



**Hartford-Brainard Airport (HFD)
Obstruction Removal Project –
Inland Wetlands/Watercourses
Application** - Trans #202204934

An application to the CT Department of Energy and Environmental Protection for the removal of vegetative obstructions to navigable airspace at the Hartford-Brainard Airport.

April 11, 2022

Prepared for:

Connecticut Airport Authority (Applicant)
Windsor Locks, Connecticut

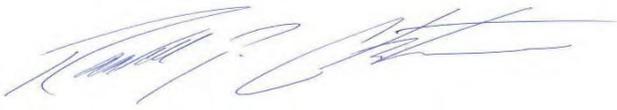
Prepared by:

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HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

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Peter Enzien, P.E.



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

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1.0 PERMIT APPLICATION TRANSMITTAL FORM DEEP-APP-001





**Connecticut Department of
Energy & Environmental Protection**

CPPU USE ONLY

App #: _____

Doc #: _____

Check #: _____

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: 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, applicant's name shall be stated exactly as it is registered with the Secretary of State.*
- *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.).*

Applicant: Connecticut Airport Authority (CAA)	
Mailing Address: 334 Ella Grasso Turnpike	
City/Town: Windsor Locks	State: CT Zip Code: 06096
Business Phone: (860)245-5628	ext.:
Contact Person: Mr. Colin Goegel, P.E.	Phone: (860)245-5628 ext.
E-Mail: cgoegel@ctairports.org	
Applicant (check one): <input type="checkbox"/> individual <input type="checkbox"/> *business entity <input type="checkbox"/> federal agency <input checked="" type="checkbox"/> state agency <input type="checkbox"/> municipality <input type="checkbox"/> tribal	
*If a business entity, list type (e.g., corporation, limited partnership, etc.):	
<input type="checkbox"/> Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.	
Please provide the following information to be used for <i>billing purposes only</i> , if different:	
Company/Individual Name:	
Mailing Address:	
City/Town:	State: Zip Code:
Contact Person:	Phone: ext.

Part II: Project Information

Brief Description of Project: <i>(Example: Development of a 50 slip marina on Long Island Sound)</i> Removal of vegetative obstructions to navigable airspace at the Hartford-Brainard Airport (HFD). Work will occur in the municipalities of Hartford, East Hartford and Wethersfield on easement properties of the airport.					
Location (City/Town): HFD is located in Hartford. Work to occur in Hartford, East Hartford and Wethersfield on easements.					
Other Project Related Permits (<i>not</i> included with this form):					
Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
Greater Hartford Flood Commission Determination	Greater Hartford Flood Commission	March 2022	Pending		
Section 408 Rivers and Harbors Act	US Army Corps of Engineers	August 17, 2021	Pending		

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review <input type="checkbox"/> Revision <input type="checkbox"/> minor mod	\$940.00			1 + 0
	Title V Operating Permits <input type="checkbox"/> Revision <input type="checkbox"/> minor mod <input type="checkbox"/> non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	\$1300.00			1 + 1
	To Sanitary Sewer (POTW)	\$1300.00			1 + 1
	To Surface Water (NPDES)	\$1300.00			1 + 1
	WATER PLANNING AND MANAGEMENT				
	Dam Safety	none			1 + 2
	Domestic Sewage Treatment Works (For municipal and private sewage treatment facilities discharging to surface waters)	\$1300.00/ Mod = \$940			1 + 1
	Water Diversion (consumptive) and Registrations	★			1 + 5
	LAND AND WATER RESOURCES				
	Flood Management Certification	none			1 + 1
	Flood Management Certification Exemption	none			1 + 1
New	Inland Wetlands and Watercourses (State Agencies Only)	none	1	0.00	1 + 5
New	Inland 401 Water Quality Certification	none			1 + 5
	FERC- Hydropower Projects- 401 Water Quality Certification	none			
	Water Diversion (non-consumptive)	★			1 + 5
	Certificate of Permission	\$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	\$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	\$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	\$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	\$100.00			1 + 0
	Stewardship	\$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡		0.00	
GENERAL PERMITS and AUTHORIZATIONS		Subtotals Page 3 & 4 ➡			
Enter subtotals from Part IV, pages 3 - 6 of this form		Subtotals Page 5 ➡			
		Subtotals Page 6 ➡			
			TOTAL ➡	1	0.00
<input type="checkbox"/> Indicate whether municipal discount or state waiver applies. Less Applicable Discount ➡					
			AMOUNT REMITTED ➡		0.00
Check # ➡	Not Applicable		Check or money order should be made payable to: "Department of Energy and Environmental Protection"		

★ See fee schedule on individual application.

**Part IV: General Permit Registrations and Requests for Other Authorizations
Application and Fee Information**

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
AIR EMISSIONS				
<input type="checkbox"/> Limit Potential to Emit from Major Stationary Sources of Air Pollution	\$2760.00			1 + 0
<input type="checkbox"/> Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	\$190.00/Xray device			1 + 0
<input type="checkbox"/> Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	\$200.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> License Revocation Request	\$0			★★
<input type="checkbox"/> Other, (please specify):				
WATER DISCHARGES				
Categorical Industry User to a POTW				
<input type="checkbox"/> Discharges ≥ 10,000 gpd	\$6250.00			1 + 0
<input type="checkbox"/> Discharges < 10,000 gpd	\$3125.00			
Comprehensive Discharges to Surface Water and Groundwater				
<input type="checkbox"/> Registration Only	\$625.00			1 + 0
<input type="checkbox"/> Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/> Domestic Sewage	\$625.00			1 + 0
<input type="checkbox"/> Food Service Establishment Wastewater		No Registration		
Groundwater Remediation Wastewater				
<input type="checkbox"/> Registration Only	\$625.00			1 + 0
<input type="checkbox"/> Approval of Registration by DEEP	\$1250.00			
Miscellaneous Discharges of Sewer Compatible Wastewater				
<input type="checkbox"/> Registration Only	\$500.00			1 + 0
<input type="checkbox"/> Approval of Registration by DEEP	\$1000.00			
<input type="checkbox"/> Nitrogen Discharges		No Registration		
<input type="checkbox"/> Point Source Discharges from Application of Pesticides	\$200.00			1 + 0
<input type="checkbox"/> Stormwater Associated with Commercial Activities	\$300.00			1 + 0
Stormwater Associated with Industrial Activities				
<input type="checkbox"/> No Exposure Certification	\$250.00			1 + 0
<input type="checkbox"/> <50 employees—see general permit for additional requirements	\$500.00			
<input type="checkbox"/> >50 employees—see general permit for additional requirements	\$1000.00			
<input type="checkbox"/> Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
<input type="checkbox"/> Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	\$625.00			1 + 0
<input type="checkbox"/> Stormwater from DOT Separate Storm Sewer Systems (DOT MS4)	\$0			1 + 0
<input type="checkbox"/> Subsurface Sewage Disposal Systems Serving Existing Facilities	★★			1 + 0
<input type="checkbox"/> Swimming Pool Wastewater - Public Pools and Contractors	\$500.00			1 + 0
Vehicle Maintenance Wastewater				
<input type="checkbox"/> Registration Only	\$625.00			1 + 0
<input type="checkbox"/> Approval of Registration by DEEP	\$1250.00			
<input type="checkbox"/> Emergency/Temporary Authorization - Discharge to POTW	\$1500.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization - Discharge to Surface Water	\$1500.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization - Discharge to Groundwater	\$1500.00			1 + 0
<input type="checkbox"/> Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal ➡		

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
AQUIFER PROTECTION PROGRAM				
<input type="checkbox"/> Registration for Regulated Activities	\$625.00			1 + 0
<input type="checkbox"/> Permit Application to Add a Regulated Activity	\$1250.00			1 + 0
<input type="checkbox"/> Exemption Application from Registration	\$1250.00			1 + 0
WATER PLANNING AND MANAGEMENT				
<input type="checkbox"/> Dam Safety Repair and Alteration: Non Filing	No Registration			
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – No PE	\$100.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Filing – PE	\$200.00			1 + 0
<input type="checkbox"/> Dam Safety Repair and Alteration: Approval of Filing	\$250.00			1 + 0
<input type="checkbox"/> Diversion of Remediation Groundwater	No Registration			
<input type="checkbox"/> Diversion of Water for Consumptive Use: Reauthorization Categories	\$2500.00			1 + 0
<input type="checkbox"/> Diversion of Water for Consumptive Use: Authorization Required	\$2500.00			1 + 4
<input type="checkbox"/> Diversion of Water for Consumptive Use: Filing Only	\$1500.00			1 + 1
<input type="checkbox"/> Water Resource Construction Activities	★			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Notice of High Hazard Dam or a Significant Hazard Dam	\$0			1 + 0
<input type="checkbox"/> Other, (please specify):				
LAND AND WATER RESOURCES				
Minor Coastal Structures				
<input type="checkbox"/> 4/40 Docks/Access Stairs	\$700.00			1 + 1
<input type="checkbox"/> Beach Grading	No Registration			
<input type="checkbox"/> Buoys or Markers	No Registration			
<input type="checkbox"/> Experimental Activities/Scientific Monitoring Devices	No Registration			
<input type="checkbox"/> Harbor Moorings	No Registration			
<input type="checkbox"/> Non-harbor Moorings	\$250.00			1 + 1
<input type="checkbox"/> Osprey Platforms and Perch Poles	No Registration			
<input type="checkbox"/> Pump-out Facilities	No Registration			
<input type="checkbox"/> Swim Floats	No Registration			
Coastal Maintenance				
<input type="checkbox"/> Backflow Prevention Structure	No Registration			
<input type="checkbox"/> Beach Grading/Raking	No Registration			
<input type="checkbox"/> Catch Basin Cleaning	No Registration			
<input type="checkbox"/> Coastal Remedial Activities Required by Order	\$700.00			1 + 1
<input type="checkbox"/> Coastal Restoration	No Registration			
<input type="checkbox"/> DEEP Boat Launch Infrastructures	No Registration			
<input type="checkbox"/> DOT Infrastructures	No Registration			
<input type="checkbox"/> Marina and Mooring Field Reconfiguration	\$700.00			1 + 1
<input type="checkbox"/> Minor Seawall Repair	No Registration			
<input type="checkbox"/> Placement of Culch	No Registration			
<input type="checkbox"/> Reconstruction of Legally Existing Structure/Obstruction/Encroachment	\$300.00			1 + 1
<input type="checkbox"/> Removal of Derelict Structures	No Registration			
<input type="checkbox"/> Residential Flood Hazard Mitigation	\$100.00			1 + 1
<input type="checkbox"/> Temporary Access of Construction Vehicles/Equipment	No Registration			
<input type="checkbox"/> Programmatic General Permit	★			1 + 1
<input type="checkbox"/> Emergency/Temporary Authorization				
<input type="checkbox"/> Other, (please specify):				
Note: Carry subtotals over to Part III, page 2 of this form.		Subtotal	➡	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.
(Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

<input checked="" type="checkbox"/> General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
WASTE MANAGEMENT				
<input type="checkbox"/> Addition of Grass Clippings at Registered Leaf Composting Facilities	\$500.00			1 + 0
<input type="checkbox"/> Beneficial Use Determination	★			1 + 0
<input type="checkbox"/> Collection and Storage of Post Consumer Paint	\$0			1 + 0
<input type="checkbox"/> Connecticut Solid Waste Demonstration Project	\$1000.00			1 + 0
Construct and Operate a Commercial Facility for the Management of Recyclable Materials and Certain Solid Wastes (Commercial GP)				
<input type="checkbox"/> Asbestos Containing Materials	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Ash Residue	\$1,250.00/\$ 625			1 + 0
<input type="checkbox"/> Clean Wood: Tier III	\$500.00/\$250			1 + 0
<input type="checkbox"/> Clean Wood: Tier II	\$250.00/\$125			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier III	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Construction and Demolition Waste: Tier II	\$500.00/\$250			1 + 0
<input type="checkbox"/> Non-RCRA Hazardous Waste/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
<input type="checkbox"/> Recyclables	\$500.00/\$250			1 + 0
<input type="checkbox"/> Universal Wastes/Compatible Solid Wastes	\$1,250.00/\$625			1 + 0
Contaminated Soil and/or Staging Management (Staging/Transfer)				
<input type="checkbox"/> New Registrations	\$250.00			1 + 0
<input type="checkbox"/> New Approval of Registrations	\$1500.00			1 + 0
<input type="checkbox"/> Renewal of Registrations	\$250.00			1 + 0
<input type="checkbox"/> Renewal of Approval of Registrations	\$750.00			1 + 0
<input type="checkbox"/> Disassembling Used Electronics	\$2000.00			1 + 0
<input type="checkbox"/> Leaf Composting Facility	\$0			1 + 1
<input type="checkbox"/> Municipal Transfer Station	\$800.00			1 + 1
<input type="checkbox"/> One Day Collection of Certain Wastes and Household Hazardous Waste	\$1000.00			1 + 0
<input type="checkbox"/> Sheet Leaf Composting Notification	\$0			★★
Special Waste Authorization				
<input type="checkbox"/> Landfill or RRF Disposal	\$660.00			1 + 0
<input type="checkbox"/> Asbestos Disposal	\$300.00			
<input type="checkbox"/> homeowner	\$0			
<input type="checkbox"/> Storage and Processing of Asphalt Roofing Shingle Waste	\$2500.00			1 + 0
<input type="checkbox"/> Storage and Processing of Scrap Tires for Beneficial Use	\$1250.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★★			★★
<input type="checkbox"/> Other, (please specify):				
REMEDIATION				
<input type="checkbox"/> In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
<input type="checkbox"/> In Situ Groundwater Remediation: Chemical Oxidation	\$500.00			1 + 0
<input type="checkbox"/> Emergency/Temporary Authorization	★			★★
Note: Carry subtotals over to Part III, page 2 of this form.				
Subtotal →				

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information.

(Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.

2.0 APPLICATION FORM DEEP-LWRD-APP-001L





**Connecticut Department of
Energy & Environmental Protection**
Bureau of Water Protection & Land Reuse
Land & Water Resources Division

LWRD License Application Form L

Check Application Type(s):

- Section 401 Water Quality Certificate (WQC) (Non-Tidal)
- Pre-Construction Notification (PCN) - USACE General Permits for CT
- Inland Wetlands and Watercourses (*State Agency/State Lands only*)
- Inland Wetlands and Watercourses and WQC (*State Agency/State Lands only*)
- Non-Consumptive Water Diversion

All sections of the LWRD License Application, when applicable, must be posted to the DEEP LWRD FTP site as instructed on Part VII of the LWRD Transmittal Form. See [LWRD Application Instructions](#) for general guidance.

Application Number (as assigned in CPPU e-mail): 202204934

Applicant Name (same name used on Part III of the LWRD Transmittal Form): Connecticut Airport Authority (CA

Part I: Pre-Submission Consultations

The application process requires preliminary coordination and input from other agencies/groups depending on the activity and the location. Consultations with other agencies must occur prior to application submission. Please allow 6-8 weeks for the necessary coordination. For this application, the applicant should start with these consultations, as applicable (See Part VII for further guidance).

Attachments:

20	NDDB
23	Fisheries

Part II: Notifications

1. PUBLIC NOTICE OF APPLICATION – Attachment 1

(REQUIRED for Section 401 Water Quality Certification , Inland Wetlands and Watercourses, and Non-consumptive Diversion applications)

One notice for any combination of these programs is acceptable. Please refer to the [Public Notice Requirements for Permit Applications](#) (DEEP-INST-005A). The public notice of application must be published prior to submitting an application, as required in CGS section 22a-6g. Refer to the [LWRD Application Instructions](#) for public notice language. A copy of the published notice of application and the completed [Certification of Notice Form](#) (DEEP-APP-005A) must be included as Attachment 1 to this application. Your application will not be processed if Attachment 1 is not included.

2. PROJECTS LOCATED IN A PUBLIC SUPPLY WATERSHED – Attachment 5

(REQUIRED for Inland Wetland and Watercourse application)

Provide proof of written notice to the water company of the filing of this application in accordance with CGS section 22a-42f as Attachment 5 following this form.

Part III: U.S. Army Corps of Engineers Coordination

(Section 401 WQC and PCN only)

1. Include a copy of the United States Army Corps of Engineers (USACE) application as Attachment 28 and provide the name of USACE Project Manager, if known:

USACE Project Manager: Kevin Kotelly - No 404 Perm

2. For PCN Applications Only:

Check the applicable General Permit(s).

- GP2 Repair or maintenance of existing currently serviceable authorized or grandfathered structures & fill, removal of structures
- GP5 Boat ramps and marine railways
- GP6* Utility line activities
- GP9* Shoreline and bank stabilization projects
- GP10 Aquatic Habitat restoration, establishment and enhancement activities
- GP11 Fish and wildlife harvesting activities
- GP17 New/expanded developments and recreational facilities
- GP18* Linear transportation projects – wetland crossings only
- GP19* Stream, river and brook crossing (not including wetland crossings)
- GP21* Temporary fill not associated with any other GP activities

* If a town is receiving funding through the CTDOT, the applicant has to coordinate with the DOT program manager to arrange participation in an Interagency Coordination Meeting. Provide a copy of the meeting notes as Attachment 30.

Part IV: Site and Resource Information

1. SITE ADDRESS

Address of Site: Hartford-Brainard Airpo City/Town: Hartford State: CT Zip Code: 06114

2. MUNICIPAL ZONING

Is the proposed work consistent with municipal zoning requirements?

Yes No If no, explain: Work in floodplain requires additional approvals through the Greater Hartford Flood Commission. Receipt of approval from

3. WATERBODY/WATERCOURSES/WETLANDS

List names of all waters impacted by the proposed activity: Wetlands associated with the Connecticut River and Folly Brook

4. INDIAN LANDS

Is the activity that is the subject of this application located on federally recognized Indian lands? Yes No

Part IV: Site and Resource Information (continued)

5. AQUIFER PROTECTION AREAS

Is the site located within a mapped Level A or Level B [Aquifer Protection Area](#), as defined in CGS section 22a-354a through 22a-354bb?

Yes No If yes, check one: Level A or Level B

If Level A, are any of the [regulated activities](#), as defined in RCSA section 22a-354i-1(34), conducted on this site? Yes No If yes, and your business is **not** already registered with the Aquifer Protection Program, contact the [aquifer protection agent](#) or DEEP to take appropriate action.

For more information on the Aquifer Protection Area Program, contact the program at 860-424-3019 or visit the website at www.ct.gov/deep/aquiferprotection. See [LWRD Application Instructions](#) for further guidance.

6. CONSERVATION OR PRESERVATION RESTRICTIONS

Will the activity which is the subject of this application be located within a conservation or preservation restriction area? Yes No

If yes, provide proof of written notice of this application to the holder of such restriction, and/or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, as Attachment 8.

7. LICENSE HISTORY

Indicate the number and date of issuance of any previous state permits or certificates issued by DEEP or USACE which authorized work at the site, and the names to whom they were issued.

<i>License/Permit/COP Authorization Number and Name of Agency</i>	<i>Date Issued</i>	<i>Name of Permittee/ Certificate Holder</i>	<i>Brief Description of Work Authorized</i>
---	------------------------	--	---

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

8. SOIL AND/OR GROUNDWATER REMEDIATION

Does the site work include soil and/or groundwater remediation? Yes No

If yes, please provide reference documentation including a) plan views of the site showing the area of contamination and b) a summary of remediation with chemical analysis, clean-up status, and remediation program identification, as Attachment 9.

9. ENFORCEMENT HISTORY

Is this application associated with a formal or informal enforcement action that is pending with DEEP?

Yes No

If yes, please provide the enforcement action reference number and name of the DEEP staff contact:

Enforcement Action #: _____

DEEP Division/Program: _____

DEEP Staff Contact: _____

If the property was the subject of any historical enforcement actions known to the applicant, explain:

N/A

Part IV: Site and Resource Information (continued)

10. RESOURCES IMPACTED

Check all that apply and complete Attachment 16, [Water Resource Impact Table](#).

A. **Inland Wetland(s)**

- Check here to confirm that a Wetland Report (include functions and values, *USACE Wetland Determination Data Forms, Northcentral and Northeast Region*, and a description of any proposed impacts) is provided as Attachment 15. See [LWRD Application Instructions](#) for report requirements.

B. **Watercourses** – includes waterbodies (lakes, ponds, and impoundments)

Please be aware that any work involving construction, alteration or modification of a dam may require additional approvals from the DEEP Dam Safety Division (860-424-3704).

11. SPECIAL RESOURCE AREAS. If one of the following wetland types (see Table 1, p. 5 of 5 of the [Department of the Army General Permits for the State of Connecticut](#)) may be impacted by the proposed activity, please coordinate with LWRD staff (860-424-3019) to determine if an Individual Section 401 Water Quality Certification is necessary:

bog	calcareous seepage swamp
cedar swamp	fen
spruce swamp	vernal pool

12. MITIGATION

Regulated activities should be designed to avoid environmental impacts, and environmental impacts that are unavoidable should be minimized. Where unavoidable environmental impacts occur as a result of construction and/or operation of the proposed activity, mitigation for adverse impacts to wildlife and fish habitat, wetlands, watercourses, waterbodies and other natural resources should be incorporated into project plans.

- Check here if mitigation was recommended through pre-application consultation with DEEP's Land & Water Resources Division, Fisheries Division, and/or Wildlife Division. Provide a mitigation plan with narrative as Attachment 17.**

Part V: Project Information

1. Describe the existing structures, conditions and uses at the site of the proposed work.

Provide photographs showing resources and existing site conditions as Attachment 10.

The site consists of floodplain forest along the Connecticut River within easement properties of the Hartford-Brainard Airport. The site includes areas on both the east (non-airport) and west (airport) sides of the river. On the west side, the work area is bordered by a flood control berm known as the Clark Dike owned by the City of Hartford. On the east side, the forested area includes a, relatively new, paved recreational trail known as the South Meadows Multi-Use Recreational Trail. Access to the airspace obstruction removal areas requires use of the Clark Dike and the South Meadows Trail. Both the dike

2a. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures and the volume and area of fill or excavations. See [LWRD Application Instructions](#) for required information.

The Connecticut Airport Authority (CAA) proposes the removal of vegetative obstructions from navigable airspace associated with the existing runway configuration at the Hartford-Brainard Airport (HFD) as shown on the attached USGS Site Locus (Attachment 14). The purpose of the proposed obstruction removal project is to promote public safety by bringing the existing airport runways (Runway 2-20 and Runway 11-29) into compliance with Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace surfaces. The FAA has established airspace and design criteria to

Part V: Project Information (continued)

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

The project proposes the use of the Clark Dike system on property of the City of Hartford for equipment access into most of the airspace obstruction areas. As the dike was a part of a public civil works project completed by the U.S. Army Corps of Engineers, its use for access is subject to the provisions of Section 14 of the Rivers and Harbors Appropriation Act of 1899, as amended, and codified in 33 USC 408 (Section 408) of the Federal Clean Water Act. Note that the plan specifies a 10' toe offset for equipment travel on the river side of the dike, and a larger offset on the airport side to protect sub-surface materials.

- 2c. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail. Such plans should be prepared in accordance with the [2002 Connecticut Guidelines for Soil Erosion and Sediment Control](#), as revised, established pursuant to CGS section 22a-328.

The subject work will be completed during a period of dry or frozen ground conditions between late-December and early-March (2023). The low ground pressure machinery and limiting of mechanical removals (replaced by hand labor) are the principle methods of limiting erosion and subsequent sedimentation. Use of a crane to lift felled trees from the site has significantly reduced equipment movement in wetlands and floodplain. Allowing the stumps to remain in-place and limiting soil

- 2d. Anticipated date of project initiation: 12/1/2022

Indicate the length of time needed to complete the project and identify any anticipated time restrictions:

75 days extending from December through March; dependent upon the presence of dry or frozen ground conditions for the mechanical removal portion of the obstruction removal work. While the mechanical efforts will be expedited once suitable ground conditions are attained, the hand topping and pruning can

3. For **new** structures, activities or encroachments, discuss project alternatives which were considered and indicate why they were rejected. After all measures to eliminate or minimize adverse resource impacts have been incorporated in the proposed project, describe why any adverse impacts that remain should be deemed acceptable by the Land & Water Resources Division. For projects involving stormwater management, low-impact development practices should be incorporated to the greatest extent practicable. Explain any reasons for not using a low-impact development practice. See [LWRD Application Instructions](#) for further guidance.

There were three alternatives that were examined by CT Airport Authority during the Project planning and are detailed in the December 2017 Final Environmental Assessment (EA) & Environmental Impact Evaluation (EIE) for Obstruction Removal report (CHA Consulting, Inc. 2017) and summarized below.

These included the following:

1. No-Action Alternative;
2. Full Obstruction Removal Alternative
3. Modified Obstruction Removal Alternative (Preferred Alternative)

A synopsis of the alternatives evaluated is presented below

4. If the project includes hydraulic and drainage structures, provide [Hydraulics Summary](#) as Attachment 19 and include Attachment 18, [Engineering Report Cover Sheet](#).

- a. Identify the type of structure: (Check one below that applies)

- | | | |
|---|--|---|
| <input type="checkbox"/> Culvert | <input type="checkbox"/> Detention/Retention Basin | <input type="checkbox"/> Infiltration Basin/Structure |
| <input type="checkbox"/> Drainage Outfall | <input type="checkbox"/> Drainage Swale | <input type="checkbox"/> Bridge |
| <input type="checkbox"/> Dam | <input type="checkbox"/> Dike | <input type="checkbox"/> Outlet Control Structure |
| <input type="checkbox"/> Weir | <input type="checkbox"/> Pipe/Conduit/Aqueduct | <input type="checkbox"/> Other: |

- b. For bridge/culvert structures, what is the openness ratio? _____ meters

The [openness ratio](#) is the X-sectional area of structure opening/ length of the structure parallel to the stream.)

- c. What is the size of the contributing watershed to the structure? _____ Acres _____ Square Miles

Part VI: Engineering Support Documentation and Certification

Certain types of projects require documentation of engineering design. If you answer yes to one of the questions below, you must submit a completed [Engineering Report Cover Sheet](#) (DEEP-LWRD-APP-001R) as Attachment 18 along with the relevant engineering report(s).

1. Does the proposed activity include engineered structures such as bridges, culverts, stormwater management systems, detention basins, and/or flood & erosion control structures?

Yes No

2. Is the proposed activity located in a FEMA-designated Riverine or Coastal Floodplain?

Yes No

If yes, provide documentation in the Engineering Report which demonstrates that the project is in compliance with FEMA's National Flood Insurance Program requirements and the local flood ordinance for the municipality.

NOTE – Only the following activities in the Coastal Floodplain require engineering: buildings, flood and erosion control structures; public access facilities; and, tide regulating structures. See Engineering Report Cover Sheet for further guidance.

3. Is the proposed activity located in a FEMA-designated Floodway Yes No

If yes, the Engineering Report must include a statement signed by a registered professional engineer that there is no-rise. This documentation must be supported by technical data that is derived from a standard step-backwater computer model utilizing source data from the Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM). If a No-rise Certification form is available through the municipality, please include it in the Engineering Report. For further information on No-Rise Certification, see [No-Rise Certification for Floodways | FEMA.gov](#)

The *Engineering Report Cover Sheet* shall be signed and sealed by a Professional Engineer licensed in the State of Connecticut. Supporting documentation as identified in the checklist may consist of engineering studies and other documentation, as appropriate, in order to describe the hydrologic and hydraulic effects of the proposed actions.

Part VII: Supporting Documents

The following attachments correspond to Form L. **If the Attachment name is followed by “REQUIRED”, the attachment must be submitted with every application.** When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment 20, etc.) and be sure to include the same applicant name used on Page 1 of this application form. Please check the box next to the attachments listed to indicate that they have been submitted, and provide the applicable attachments following this form. NOTE: Attachment numbering is NOT consecutive as the attachments relate to multiple LWRD program applications.

Attachment I.D.	Attachment Description
<input checked="" type="checkbox"/> Attachment 1	<p>Notice of Permit Application (REQUIRED for Section 401 Water Quality Certification , Inland Wetlands and Watercourses, and Non-consumptive Diversion applications only)</p> <p>A copy of the published notice of permit application, as described in the instructions, attached to a completed “Certification of Notice Form- Notice of Application” (DEEP-APP-005A)</p>
<input type="checkbox"/> Attachment 5	<p>Water Company Notification (REQUIRED for Inland Wetland and Watercourse application only)</p> <p>If the project is located in a public supply watershed, provide a certified mail receipt as proof of notice to the water company of the filing of this application in accordance with CGS section 22a-42f.</p>
<input checked="" type="checkbox"/> Attachment 7	<p>Executive Summary REQUIRED</p> <p>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.</p>

Part VII: Supporting Documents (continued)

- | | | |
|-------------------------------------|----------------------|--|
| <input checked="" type="checkbox"/> | Attachment 8 | Conservation or Preservation Restriction Information, if applicable. |
| <input type="checkbox"/> | Attachment 9 | Remediation Documentation , if applicable. |
| <input checked="" type="checkbox"/> | Attachment 10 | Photographs showing existing conditions of the site REQUIRED |
| <input checked="" type="checkbox"/> | Attachment 14 | Project Plans , use Project Plan Checklist for requirements REQUIRED |
| <input checked="" type="checkbox"/> | Attachment 15 | Wetland Report as explained in Part IV, item 10A. |
| <input checked="" type="checkbox"/> | Attachment 16 | Water Resource Impact Table (DEEP-LWRD-APP-001W) REQUIRED |
| <input checked="" type="checkbox"/> | Attachment 17 | Mitigation Plan (with narrative) as coordinated with DEEP Staff. |
| <input checked="" type="checkbox"/> | Attachment 18 | Engineering Report Cover Sheet (DEEP-LWRD-APP-001R) |
| <input type="checkbox"/> | Attachment 19 | Hydraulics Summary (DEEP-LWRD-APP-001X) |
| <input checked="" type="checkbox"/> | Attachment 20 | Natural Diversity Data Base (NDDB)
Completed NDDB Determination #: <u>202104141</u>
If the proposed activity is within an NDDB area, complete and submit a Request for NDDB State Listed Species Review Form (DEEP-APP-007) to the address specified on the form, prior to submitting this application. For NDDB maps and more information, visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDB staff at 860-424-3011.

Please note NDDB review generally takes 4 to 6 weeks and may require the applicant to produce additional documentation, such as ecological surveys, which must be completed prior to submitting this permit application. A copy of the NDDB Final Determination response letter that has not expired must be submitted as Attachment 20. Include a copy of any mitigation measures or management plan developed for this activity and approved by NDDB. Please DO NOT include a copy of the NDDB Review Request/Application. Be aware that you must renew your NDDB Determination if it expires before project work commences. |
| <input checked="" type="checkbox"/> | Attachment 23 | Fisheries Consultation Form
If your project involves one or more of the following activities, check the applicable box(es) below and submit a completed Fisheries Consultation Form (DEEP-FISH-APP-007).
<input type="checkbox"/> new public/fishing access;
<input checked="" type="checkbox"/> activities in inland/non-tidal waterbodies and watercourses. |
| <input type="checkbox"/> | Attachment 28 | For 401 Water Quality Certification and Pre-Construction Notification only , attach a copy of the USACE application, ENG FORM 4345 (form only, no attachments) |
| <input type="checkbox"/> | Attachment 30 | For Pre-Construction Notification projects with DOT funding , attach a copy of the Interagency Coordination Meeting notes |
| <input checked="" type="checkbox"/> | Attachment 41 | Applicant Compliance Information Form (DEEP-APP-002) REQUIRED |
| <input checked="" type="checkbox"/> | Attachment 42 | Applicant Background Information Form (DEEP-APP-008) REQUIRED |
| <input checked="" type="checkbox"/> | Attachment 43 | Other Information: Any other applicable information the applicant deems relevant or is required by DEEP. |

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

attachment 1 – notice of permit application

ATTACHMENT 1 – NOTICE OF PERMIT APPLICATION



AFFIDAVIT OF PUBLICATION

Sold To
Stantec Consulting Services - CU80139814
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Bill To
Stantec Consulting Services - CU80139814
136 West St, Ste 203
Northampton, MA 01060

State of Connecticut

April 12, 2022

County of Hartford

Order No: 7188418
\$202.87

I, Robin Collar, do solemnly swear that I am a representative of the Hartford Courant, printed and published daily, in the state of Connecticut and that from my own personal knowledge and reference to the files of said publication the advertisement of Public Notices was inserted in the regular edition.

On Dates as Follows:

Apr 11, 2022

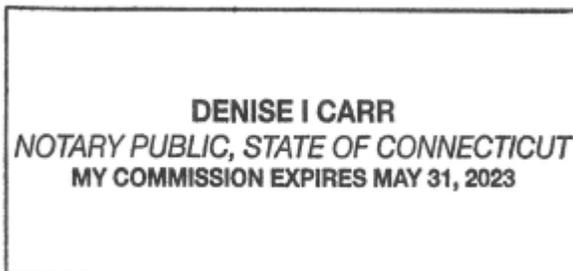


Robin Collar, Representative,

Subscribed and sworn before me on April 12, 2022



Notary Public



Name of Notary, Typed, Printed, or Stamped

Order # - 7188418

Notice of Permit Application

Municipalities: Hartford, East Hartford and Wethersfield, Connecticut

Notice is hereby given that Connecticut Airport Authority (the "applicant") of 334 Ella Grasso Turnpike, Windsor Locks, CT 06096, owner and operator of the Hartford-Brainard Airport, has submitted to the Department of Energy & Environmental Protection an application under Connecticut General Statutes Section(s): 22a-39 (Inland Wetlands) for a permit to conduct an activity in a wetland or watercourse and discharge into the waters of the state. Specifically, the applicant proposes to improve the safety and operational reliability Hartford-Brainard Airport by removing several areas of vegetative obstructions to navigable airspace per FAA requirements. The proposed activity will take place at the Hartford-Brainard Airport, and within easement properties adjacent to the airport. The proposed activity will occur wetlands and floodplain along the Connecticut River.

Interested persons may obtain copies of the application from Mr. Randall Christensen of Stantec Consulting Services, Inc., 136 West Street, Suite 203, Northampton, MA 01060-3711, (413)519-2587 or via email at randy.christensen@stantec.com.

The application is available for inspection at the Department of Energy & Environmental Protection, Inland Water Resources Division, 79 Elm Street, Hartford, CT 06106-5127, telephone 860-424-3019, from 8:30am to 4:30pm Monday through Friday.

4/11/2022 7188418

Order # - 7188418



Connecticut Department of Energy & Environmental Protection

Certification of Notice Form - Notice of Application

DEEP USE ONLY
Division
Application No.

I, Kevin Dillon of the Connecticut Airport Authority, certify that
(Name of Applicant)

the attached notice represents a true copy of the notice that appeared in Hartford Courant
(Name of Newspaper)

on April 11, 2022
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Mayor Luke Bronin Mayor
Name of Official Title of Official

Mayor's Office - Hartford City Hall 550 Main Street, 2nd Floor, Room 200

Address

Hartford CT 06103
City/Town State Zip Code

Kevin A. Dillon 4/11/22
Signature of Applicant Date

Kevin Dillon for the Connecticut Airport Authority Executive Director
Name of Applicant (print or type) Title (if applicable)



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on April 11, 2022
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Ms. Bonnie Therrien Interim Town Manager
Name of Official Title of Official

Wethersfield Town Hall 505 Silas Deane Highway
Address

Wethersfield CT 06109
City/Town State Zip Code

Kevin A. Dillon 4/11/22
Signature of Applicant Date

Kevin Dillon for the Connecticut Airport Authority Executive Director
Name of Applicant (print or type) Title (if applicable)



Connecticut Department of Energy & Environmental Protection

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DEEP USE ONLY
Division
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on April 11, 2022
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Mayor Michael P. Walsh Mayor
Name of Official Title of Official

East Hartford Town Hall 740 Main Street
Address

East Hartford, CT 06108
City/Town State Zip Code

Kevin A. Dillon 4/11/22
Signature of Applicant Date

Kevin Dillon for the Connecticut Airport Authority Executive Director
Name of Applicant (print or type) Title (if applicable)

Notice of Permit Application

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Order ID: 7188418

* Agency Commission not included

GROSS PRICE * : \$202.87

PACKAGE NAME: Legal Notice FR Daily

Product(s): Hartford Courant, Affidavits, MyPublicNotices.com

AdSize(s): 1 Column, NO AD SIZE

Run Date(s): Monday, April 11, 2022

Zone: Full Run

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Preview

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4/11/2022 7188418



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Masonic & Fraternal Items, Zippos, I
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PUBLIC NOTICES

Hartford

INVITATION TO BID
The Wethersfield Public Schools is
accepting bids for:

**SILAS DEANE MIDDLE SCHOOL
CAFETERIA AND KITCHEN RENOVATION**

All sealed bids, marked "WPS SDMS Cafeteria
and Kitchen Renovation" must be
in accordance with the specifications
detailed in the Request for Proposal (RFP),
which can be found at <https://wps.wethersfield.me/>. Bids will be received until 11 AM
on Friday, May 13th, 2022. Proposals will be
opened and publicly read followed by a review
at a later date by an authorized committee
consisting of Wethersfield Public Schools
administrators and Wethersfield Board of
Education members.
Matthew Kozaka
Business Manager
4/11/22 7188129

**THE METROPOLITAN DISTRICT HARTFORD
COUNTY, CONNECTICUT**

**REQUEST FOR PROPOSALS
FOR
Provisional Virtual Net Metering Beneficial
Credits**

RFP NUMBER 2022R-20
Issue Date: April 11, 2022
DUE DATE

April 25, 2022 at 12:00 p.m. Eastern Time

The Metropolitan District (MDC), a municipal
water and sewer utility with a primary service
area in the Capitol region of Connecticut, is
inviting firms to submit a formal response
to a Request for Proposals (RFP) for the
potential purchase of Provisional Virtual Net
Metering (VNM) Credits generated within the
State of Connecticut.

In response to the State's declaration of
the Provisional VNM Program, the MDC is
seeking to partner with solar developer
counterparties whereas the MDC would ob-
tain Virtual Net Metering (VNM) credits from
developer in exchange for receiving on bill
credits for provided MDC beneficial accounts.
Developers must have viable projects, online,
that would meet the requirements of the
Provisional VNM Program as described by
PURA in Docket No. 13-08-14RE05, VNM
Rider 04-01-22. Developer portfolio avail-
able for MDC offtake must be greater than
1 MW dc. Developer respondents to this
solicitation should be the VNM Eversource
application counterparty and not a 3rd party
endeavoring to facilitate the MDC with the so-
licitation process. The RFP may be obtained
from the MDC's ProcureWare site at <https://mdc.procureware.com/login>.

John Mirtle, District Clerk
4/11/22 7188628

Steve Dale's
PET WORLD
Sundays in Smarter Living

Steve Dale's
PET WORLD
Sundays in Smarter Living

Connecticut

**LEGAL NOTICE FOR BIDS TOWN OF ROCKY
HILL**

Sealed bids for the construction of the follow-
ing project will be received by Mona McKim,
Finance Director, Town of Rocky Hill at the
Rocky Hill Town Hall, Suite 245 located at the
761 Old Main Street, Rocky Hill, CT 06067
until Wednesday, May 4, 2022 at 11:00
A.M. at which time the bids will be publicly
opened and read. Bids received after 11:00
A.M. on May 4, 2022 will not be accepted,
NO EXCEPTIONS.

**DEMOLITION AND ABATEMENT 374 NEW
BRITAIN AVE, ROCKY HILL CT**

The project consists of the proper removal
and disposal of: lead-based paint coated
building components associated with the
asbestos abatement, asbestos containing
material, all contents located in and around
all structures and demolition of all structures
identified in the environmental report
included in the contract documents.

The project does not constitute lead-based
paint abatement in accordance with the
State of Connecticut Department of Public
Health (CTDPH) Lead Poisoning Prevention
and Control Regulation

THIS CONTRACT IS SUBJECT TO STATE SET-
ASIDE AND CONTRACT
Plans and Specifications will be available
on Monday, April 11, 2022 and may be
examined and/or procured at the Rocky Hill
Engineering Department or downloaded from
the town website at http://www.rockyhillict.gov/business/bid_notices.php.
A Mandatory Pre-Bid Meeting will be held at
the project site, 374 New Britain Avenue,
Rocky Hill, CT on Monday April 18, 2022 at
3:00 PM. Site access from New Road only.
Questions may be directed to Ray Carpentino,
Economic Development Director at the Town
of Rocky Hill rcarpentino@rockyhillict.gov
via email by Friday, April 22, 2022.
4/11/22 7186676

Connecticut

LEGAL NOTICE

**TOWN OF BERLIN, CONNECTICUT
REQUEST FOR PROPOSALS**

Bid #2022-34

LEGAL SERVICES - LABOR COUNSEL

The Town of Berlin will receive proposals for
Legal Services - Labor Counsel until 2:00 PM
on May 9, 2022. At that time proposals will
be opened in public, read aloud and then
referred for review.

The documents comprising the Request for
Proposals may be obtained on the Town's
website, www.berlinct.org, under "Bids/
RFPs."

The Town of Berlin reserves the right to
amend or terminate this Request for
Proposals, accept all or any part of a
proposal, reject all proposals, waive any
informalities or non-material deficiencies in
a proposal, and award the proposal to the
proposer that, in the Town's judgment, will be
in the Town's best interests.
4/11/22 7188296

Connecticut

Notice of Permit Application

Municipalities: Hartford, East Hartford and
Wethersfield, Connecticut
Notice is hereby given that Connecticut
Airport Authority the "applicant" of 394 Ella
Grasso Turnpike, Windsor Locks, CT 06096,
owner and operator of the Hartford-Brainard
Airport, has submitted to the Department of
Energy & Environmental Protection an ap-
plication under Connecticut General Statutes
Section(s): 22a-39 (Inland Wetlands) for a
permit to conduct an activity in a wetland or
watercourse and discharge into the waters
of the state. Specifically, the applicant pro-
poses to improve the safety and operational
reliability Hartford-Brainard Airport by re-
moving several areas of vegetative obstructions
to navigable airspace per FAA requirements.
The proposed activity will take place at the
Hartford-Brainard Airport, and within easement
properties adjacent to the airport. The
proposed activity will occur wetlands and
floodplain along the Connecticut River.
Interested persons may obtain copies of the
application from Mr. Randall Christensen of
Stantec Consulting Services, Inc., 136 West
Street, Suite 203, Northampton, MA 01060-
3711, (413)519-2587 or via email at randy.christensen@stantec.com.
The application is available for inspection at
the Department of Energy & Environmental
Protection, Inland Water Resources Division,
79 Elm Street, Hartford, CT 06106-5127,
telephone 860-424-3019, from 8:30am to
4:30pm Monday through Friday.
4/11/2022 7188418

In accordance with the provisions of State
law, there being due and unpaid charges for
which the undersigned is entitled to satisfy
an owner and/or manager's lien of the goods
hereinafter described and stored at the Life
Storage location(s) listed below.

1055 West Main Street New Britain CT,
06053 Phone# (860)215-8838

Space No. Customer Name Inventory

306 Austin Jeremiah Newbury Hsld gds/Furn

6 Diane Damiano-Hayes Hsld gds/Furn

1107 Markesha S Ranger Hsld gds/Furn

869 Juan Dominguez Hsld gds/Furn,Tools/
Appliances,TV/Stereo Equip

805 Bobby M Ellison-velazquez Hsld gds/
Furn

607 Juan Diaz Hsld gds/Furn

115 Daniel Gates-Prociw Hsld gds/Furn

1205 Fernando A Arroyo Hsld gds/Furn

786 Veronica V Renender Hsld gds/Furn

1019 Michelle Bernadette Normandy Hsld
gds/Furn

And, due notice having been given, to the
owner of said property and all parties known
to claim an interest therein, and the time
specified in such notice for payment of such
having expired, the goods will be sold to the
highest bidder or otherwise disposed of at
a public auction to be held online at www.StorageTreasures.com, which will end on
Monday April,25 2022 at 10am

Any questions regarding the above informa-
tion are to be addressed to the manager
of this facility at the phone number shown
above.
4/11,4/12/22 7184212

Request For Quotation #06-2200

The State of Connecticut Judicial Branch
invites janitorial contractors to submit quotations
to provide services at a Judicial Branch
located in East Hartford, Connecticut.

Quotations must be received by 11:30 A.M.
on FRIDAY, APRIL 29, 2022. Late bids will
not be accepted.

**ONLY VENDORS CURRENTLY REGISTERED
UNDER THE STATE'S SMALL BUSINESS SET-
ASIDE PROGRAM ARE ELIGIBLE TO BID.**

Bid package may be obtained from the
Judicial Branch Purchasing Services web site
below at:

www.jud.ct.gov/external/news/busopp/

An Equal Opportunity/Affirmative Action
Employer
4/11/2022 7188511

**STATE OF CONNECTICUT
SUPERIOR COURT
JUVENILE MATTERS**

ORDER OF NOTICE

Notice to Unidentified person of parts
unknown

A petition/motion have been filed seeking
termination of the above unidentified per-
son's parental rights female in minor child
born on 9/12/2008 in New Britain, CT to
Margarita P

The petition, whereby the court's decision
can affect your parental rights. If any regard-
ing minor child(ren) will be heard on May 6,
2022 at 3:00 PM at 20 Franklin Square, 3rd
Floor, New Britain, CT 06051.

Therefore, ORDERED, that notice of the
hearing of this petition be given by publishing
this Order of Notice once, immediately upon
receipt, in Hartford Courant, a newspaper
having circulation in the town/city of: New
Britain, CT

Judge: Hon. Sheila Huddleston
Signed By: Admin. Asst. - Melissa C. Lapert
Signed: 4/8/2022

Right to Counsel: Upon proof of inability to
pay for a lawyer, the court will make sure an
attorney is provided to you by the Chief Public
Defender. Request for an attorney should be
made immediately in person, by mail, or by
fax at the court office where your hearing is
to be held.
4/9/2022 7188504

Car Reviews

Saturdays in
MOTORING



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Size: B&W
Color Type: B&W

Hartford Courant
media group
Publication Date: 04/11/2022

This E-Sheet confirms that the ad appeared in The Hartford Courant on the date and page indicated. You may not create derivative works, or in any way exploit or repurpose any content displayed or contained on the e-tearsheet.

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 7 – Executive Summary and Project Details

**ATTACHMENT 7 – EXECUTIVE SUMMARY AND PROJECT
DETAILS**



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 7 – Executive Summary and Project Details

The Connecticut Airport Authority (CAA) proposes the removal of vegetative obstructions from navigable airspace associated with the existing runway configuration at the Hartford-Brainard Airport (HFD) as shown on the attached USGS Site Locus ([Attachment 14](#)). The purpose of the proposed obstruction removal project is to promote public safety by bringing the existing airport runways (Runway 2-20 and Runway 11-29) into compliance with Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace surfaces. The FAA has established airspace and design criteria to provide for safe aircraft operations. The CAA recently conducted an obstruction study to evaluate the airspace at HFD relative to these existing FAA airspace directives; the study followed protocols established by the FAA. Based on the FAA design criteria, the results of this analysis identified existing safety deficiencies at HFD which include multiple acres of tree obstructions to the Federal Aviation Regulation (FAR) Part 77 surfaces, Terminal Instrument Procedures (TERPS), and Airport Design Standards. Plans demonstrating the location and extent of airspace obstructions are provided in [Attachment 14](#). The results of this study identified that HFD does not provide adequate airspace surfaces to its runways. To address this public safety concern, the CAA proposes the removal of obstructions from the runway approach surfaces. The project design seeks to address airspace obstructions and near-obstructions with maximum attention to environmental sensitivity.

The work area on the airport (west) side of the Connecticut River involves approximately 30 acres of forested wetland area within the 100-year floodplain and floodway of the river in both the City of Hartford and Town of Wethersfield (Wetlands A, B, C and E). Several areas of mature floodplain forest that are not within the runway approaches will be bypassed and protected during the work. Additional hand pruning of canopy targets will occur on the non-airport (east) side of the river (Wetlands D and F) in the Town of East Hartford. The site access and staging plan in [Attachment 14](#) is color coded to depict the various vegetation management methods proposed for the project. Two of the methods employ only hand labor with no machinery access. Furthermore, three sets of arrows are included on the plan to denote travel routes by the equipment over the sensitive flood control infrastructure adjacent to the work area (the Clark Dike). The approach surface limits at each runway end are provided on the plans to demonstrate that vegetation management is limited to those areas required by FAA design criteria. A total of 33.8 acres of vegetation management within Connecticut inland wetlands will result from this project; only 23.7 acres of this total include mechanized removal. The entire acreage is within CT inland wetlands and within the 100-year floodplain. All work is located above the coastal jurisdiction line (CJL). There is no fill involved with this work and no alteration of wetland soils or floodplain volumes.

Management of the target trees will take place under dry or frozen ground conditions, ideally in the winter months of January and February (2023) but the project must react to the weather conditions at the time of the project. This project timing will maximize protection of soils, minimize impacts to vegetation and wildlife, and will promote maximum regrowth of cut tree stems to minimize the duration of the environmental impact. Note that a more aggressive approach to the vegetation management was completed in the 1980s with full removal of the trees to ground level (flush cut) for most of the obstruction area. The target trees within the management areas are nearly all multiple-stemmed, reflecting past



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 7 – Executive Summary and Project Details

cutting of each of the trees during earlier airport vegetation management efforts. Photographs of the tree conditions are provided in [Attachment 10](#).

The proposed obstruction removal will consist of a variety of mechanized tree removal and selective tree pruning and topping to allow for unobstructed flight paths for inbound and outbound aircraft. Mechanized work has been limited to those areas where full canopy removal is necessary to preserve the protected airspace (based on the difference in elevation between the canopy and protected airspace). Mechanized tree removal will consist of flush cuts and snag cuts in most of the floodplain habitats to the west of the Connecticut River. Flush cuts will remove the tree from near ground level, leaving an approximate 1-foot-tall stump. Snag cuts will remove the upper portion of the tree, leaving an approximate 12-foot-tall standing bole; both forms of mechanical cuts will readily sprout stump regrowth. The cut wood generated from the mechanical felling operation will be collected and removed from the site to prevent washing of wood debris into the river. Wood generated from the tree topping sections will be diced on the ground and scattered in the vicinity of each tree target. The mechanical obstruction removal areas will convert the forested floodplain into scrub-shrub floodplain habitat while the hand removal areas will retain the floodplain forested character of those work areas. Based on observations of similar open floodplain habitats nearby, a high density of vegetation is expected to become established, particularly from stump regrowth. Stump removal is not proposed in any areas of the project.

Hand labor (climbers with chainsaws) are specified for the remaining areas subject to tree topping and pruning. Tree pruning work will be conducted in the portion of the Project area to the east of the Connecticut River and the areas proximal to the Wethersfield Cove outlet (Folly Brook) to the south of the airport. Tree topping will be conducted primarily right above the banks of the Connecticut River. The cut wood from climbing operations will be diced with chainsaws and scattered sufficiently to avoid the suppression of groundcover growth. This technique allows for significant reduction of heavy equipment movement within the floodplain. Midstory limbs and vegetation will be left in place in areas subject to tree pruning and topping. Although mid-story limbs and vegetation will be left in place, the removal of upper canopy vegetation will result in an increased canopy opening which is expected to result in a shift in midstory and understory vegetation including recruitment of species with affinities for partially open canopies. It is expected that species diversity and areal coverage will increase over time in the areas that are subjected to the obstruction removal activities. The species shift is likely to be similar to conditions presently observed along the forest edges and within present canopy gaps within the floodplain forest.

Note that the project will not utilize construction mats within the wetland/floodplain area. Mat use is limited for protection of the flood control berm during the crane removal of trees from the site. Mats will be used as bumpers to protect the berm from any damage during the lifting operation. The flood control utilities are strictly protected by both the U.S. Army Corps of Engineers (USCOE) and the Greater Hartford Flood Commission (GHFC) (and associated City of Hartford Department of Public Works). These protections include severe limits on the use of the berm for site access for heavy equipment. Construction matting of equipment access routes through the wetland/floodplain obstruction removal areas would routinely be proposed as a soil protection measure. However, their use in this particular



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

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case would require a significant number of additional equipment trips over the berm for mat delivery and removal from the site. Such additional trips pose a potential threat to the condition of the flood control berm, and thus their use was eliminated from consideration to properly address the USCOE and GHFC regulations pertaining to the protection of floodplains and flood control utilities/structures.

Table 1 summarizes the proposed obstruction removal activities within inland wetlands.

Table 1. Summary of Inland Wetland Impacts from Proposed Tree Removal

Management Method	Inland Wetland Impact Amount (acres)
Mechanical - Flush Cut Area	6.1
Mechanical - Snag Cut Areas	17.6
Hand Removal – Topping	1.8
Hand Removal - Pruning	8.3
Total	33.8 Acres

Mitigation measures included in the project include:

1. The project timing restricted to winter removal to reduce non-target plant mortality and to take advantage of frozen soils to reduce the potential for rutting, erosion and sedimentation.
2. Sensitive removal methods are proposed for those areas where only the canopy section of the target trees penetrates the protected airspace, thus limiting equipment movement on the site.
3. The use of a crane to lift wood debris from the site which will limit equipment movement through the wetland/floodplain and significantly reduce heavy equipment trips over the flood control berm.
4. Protection procedures have been prepared for protection of the state-listed plant species mapped within and adjacent to the work areas.
5. Adequate setbacks to the active bald eagle nest have been provided based on guidelines developed per the Bald and Golden Eagles Protection Act.
6. A planting plan within a protective 100-foot buffer zone of the Connecticut River will be implemented to promote revegetation of the site; and,



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

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7. An invasive species control plan will be implemented during a 5-year period following vegetation management. Both the planting and invasives control plans are included in Attachment Q of this application.

2.1 PROTECTION OF FLOOD CONTROL INFRASTRUCTURE

The project proposes the use of the Clark Dike system on property of the City of Hartford for equipment access into most of the airspace obstruction areas. As the dike was a part of a public civil works project completed by the U.S. Army Corps of Engineers, its use for access is subject to the provisions of Section 14 of the *Rivers and Harbors Appropriation Act of 1899*, as amended, and codified in 33 USC 408 (Section 408) of the Federal Clean Water Act. Note that the plan specifies a 10' toe offset for equipment travel on the river-side of the dike, and a larger offset on the airport-side to protect sub-surface materials that support berm stability. A one-time in, one-time out access of heavy equipment over the dike is proposed to minimize potential impacts to the structure, thus necessitating other means for log removal from the site. Use of construction mats in wetlands/floodplain have been eliminated in the project design in order to limit vehicle trips over the flood control berm. Mats will be used to protect the berm during the log lift operations described below.

At each mechanical work area within wetland/floodplain, the mechanical felling work will start from the wood line nearest the toe of the levee and work towards the river stopping at the environmental setbacks from the river established on the plans. The climbing (non-mechanical) work can take place concurrently with the mechanical felling. As the (tracked) feller buncher cuts the trees, log piles will be made as feller buncher moves through the work zone. A forwarder will collect the log piles and place them in a larger collection area nearest the crane lift area; the forwarder will be specified in place of a standard skidder in order to maximize soil protection. A forwarder fully supports cut timber inside of a bunk during movement, as opposed to a skidder which drags the cut pieces over the exposed ground. Once a sufficient log pile is created the crane is brought into place on the airport-side to lift log bundles over the levee. A shovel logger will assist in creating hitches out of the larger log piles and with overall management of the log staging areas. These hitches will be placed within the reach of the crane and of a safe lifting size and weight as determined by the crane operator. After the hitch is lifted over the levee to the land side, the logs will be transported to the chipping operation located at the Maxim Road Gate 1 staging area. The northern crane location will be adjacent to the chipping operation and no additional transportation is needed. The southern crane location will require loaded log trucks and/or forwarders to travel along the designated haul route on the airport-side of the levee to the chipping area.

The crane lift operation over the dike is a project mitigation feature intended to minimize the use of the Clark Dike for the project. Furthermore, each crane lift area includes timber mat bumper protection of the river-side section of the dike slope to prevent damage from the log hitches as they're lifted over the dike. In this manner, the use of the dike for heavy equipment access is limited to one-time access and one-time exit of the heavy equipment. Pickup trucks and all-terrain vehicle access will be necessary on a daily basis during the approximate 3-week project duration for labor access and equipment fueling.



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 7 – Executive Summary and Project Details

2.2 STATE-LISTED SPECIES – NDDB COORDINATION STATUS

A data request was submitted to the Natural Diversity Database staff on March 24, 2021, and a response was received on May 4, 2021, indicating concern for the following state-listed species:

Bird Species:

- Bald eagle (*Haliaeetus leucocephalus*) – State Threatened Reptiles and Amphibians:

Invertebrate Species/Freshwater Mussels:

- Yellow lampmussel (*Lampsilis cariosa*) – State Endangered
- Eastern pondmussel (*Ligumia nasuta*) – State Special Concern
- Tidewater mucket (*Leptodea ochracea*) – State Special Concern
- Eastern pearlshell (*Margaritifera margaritifera*) – State Special Concern

Plant Species:

- Northern arrowhead (*Sagittaria cuneata*) – State Endangered
- Davis' sedge (*Carex davisii*) – State Threatened
- Cattail sedge (*Carex typhina*) – State Special Concern
- Wiegand's wild rye (*Elymus wiegandii*) – State Special Concern
- Hoary plantain (*Plantago virginica*) – State Special Concern

Fish Species:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Federally Endangered, State Endangered
- Shortnose sturgeon (*Acipenser brevirostrum*) – Federally Endangered, State Endangered
- Blueback herring (*Alosa aestivalis*) – State Special Concern

The response letter required several special studies and additional project features to address potential impacts to state-listed species. Of particular note was the mapping effort of state-listed plant species within the work area; an effort requiring a full growing season to cover the various flowering periods of the listed species. The project team has developed the necessary data and mitigation plans and have submitted these to the NDDB for review and comment. A final response from the NDDB was received on April 8, 2022, approving of the studies and mitigation efforts. See pertinent NDDB coordination materials in [Attachment 20](#) including their original letter and their final email response approving of the project design and mitigation measures.



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 7 – Executive Summary and Project Details

2.3 PROPERTY EASEMENTS

The proposed obstruction removal will occur entirely on existing and proposed property easements of various owners. On-airport work is limited to the processing of the wood debris removed from the easements. The CAA is in the process of obtaining easements from various entities where the vegetative obstructions have been identified. As the easement process is completed, the CAA has entered into license agreements with the various easement property owners allowing for the initiation of project permitting efforts and associated studies. The existing easement in the City of Hartford and the license agreements from the other easement property owners are provided in [Attachment 43](#). These documents support the Connecticut Airport Authority in their efforts to design the project and obtain necessary permits.

In addition, there is a conservation easement on a portion of the obstruction removal area known as the Folly Brook Natural Area at the Runway 2 end of the project. The easement language (provided in [Attachment 8](#)) dictates vegetation removal methods in Zones A through D (shown in the below photo and defined in the easement). The present design complies with the easement language. Early coordination was completed with The Nature Conservancy, and they have been provided a copy of this application for their consideration and comment.



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 8 – conservation restriction information

**3.0 ATTACHMENT 8 – CONSERVATION RESTRICTION
INFORMATION**

3.1.1 email correspondence – the nature conservancy

3.1.2 conservation deed and figures



From: [David Gumbart](#)
To: [Christensen, Randall](#); [Sophie Duncan](#)
Cc: [Molly Parsons](#); [Colin Goegel](#)
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination
Date: Tuesday, April 27, 2021 11:11:52 AM

Randall, hi, how are you? My colleague, Sophie Duncan, has kept me in the loop on this project, and recent activity led by the Connecticut Airport Authority. As the holder of the conservation easement on City of Hartford land immediately south of Brainard Airport, the Conservancy will certainly be engaged in discussions related to tree cutting plans proposed by the CAA to ensure flight path safety for Brainard Airport. We had a brief meeting in early April with the city of Hartford, and will continue to coordinate activities with them, and will work together concurrently with CAA.

Please let us know what you see as next steps for the CAA and, if possible, a general timeline for approvals and work to be done on the property. We are aware of the overall plans around Brainard Airport, and that this includes the involvement of other groups or landowners, beyond where the Conservancy holds its easement.

Thank you for reaching out to The Nature Conservancy, and we look forward to productive discussions to address obstructions/hazard trees, under the guidelines of the conservation easement and tree cutting plan by and between TNC and the City of Hartford. I suspect you have documents regarding this easement, but please let us know if we can provide any of this material for you.

Thanks.

Dave

David Gumbart, Director of Land Management
The Nature Conservancy

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Monday, April 19, 2021 8:12 AM
To: Sophie Duncan <sophie.duncan@TNC.ORG>
Cc: Molly Parsons <mparsons@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>; David Gumbart <dgumbart@TNC.ORG>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

[Thank you Sophie.](#)

[Our wetland delineation team will be on the site later this week to mark the wetland boundaries around the airport. I'll forward the names of the team to you later today.](#)

[Your help is appreciated.](#)

Randall P. Christensen M.S.
Senior Environmental Scientist

Direct: (413)387-4508
Mobile: (413)519-2587
randy.christensen@stantec.com

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From: Sophie Duncan <sophie.duncan@TNC.ORG>
Sent: Monday, April 19, 2021 7:54 AM
To: Christensen, Randall <randy.christensen@stantec.com>
Cc: Molly Parsons <mparsons@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>; David Gumbart <dgumbart@TNC.ORG>
Subject: Re: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

Hello Christensen,

I have cc'd Dave on this email to ensure you are in touch!

Let me know if you need anything else.

Thank you,

Sophie

From: Christensen, Randall <randy.christensen@stantec.com>
Date: Wednesday, April 14, 2021 at 7:58 AM
To: Sophie Duncan <sophie.duncan@TNC.ORG>
Cc: Molly Parsons <mparsons@ctairports.org>, Colin Goegel <cgoegel@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

Thank you so much for your response Sophie. We are actively discussing the project with the City presently and will continue to do so. As for the Nature Conservancy (TNC), could you forward this email string directly to David Gumbart so we can start the conversation? I did not have his email address and thus used the general phone and email mailbox of TNC to try and contact him.

Thanks for this additional assistance.

Randall P. Christensen M.S.
Senior Environmental Scientist

Direct: (413)387-4508
Mobile: (413)519-2587
randy.christensen@stantec.com

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From: Sophie Duncan <sophie.duncan@TNC.ORG>
Sent: Tuesday, April 13, 2021 4:16 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Cc: Molly Parsons <mparsons@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>
Subject: Re: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

Hello Randall,

Thanks so much for your email with the update. Dave is the correct contact and he will update others in the office as needed. Also in case you have not already, I recommend sharing this information with the City of Hartford as well so that they can be updated on any plans or next steps.

Thanks so much,

Sophie

From: Christensen, Randall <randy.christensen@stantec.com>
Date: Tuesday, April 13, 2021 at 11:51 AM
To: Sophie Duncan <sophie.duncan@TNC.ORG>
Cc: Molly Parsons <mparsons@ctairports.org>, Colin Goegel <cgoegel@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

Good Afternoon Ms. Duncan.

In reference to the below email. After reviewing the comments received on the project during the National Environmental Policy Act process, we found a contact letter from the Nature Conservancy of Connecticut (TNC) from your land manager; David Gumbart. We have initiated a phone call and email to Mr. Gumbart with the hope that he's the appropriate TNC contact for this project and could assist us with the necessary coordination between TNC and the CT Airport Authority. Any further direction you may provide on this matter would be greatly appreciated.

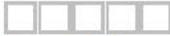
Thank you for your assistance.

Randall P. Christensen M.S.
Senior Environmental Scientist

Direct: (413)387-4508
Mobile: (413)519-2587

randy.christensen@stantec.com

Stantec



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From: Christensen, Randall

Sent: Thursday, April 8, 2021 1:44 PM

To: sophie.duncan@TNC.ORG

Cc: Molly Parsons <mparsons@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>

Subject: Hartford-Brainard Airport Obstruction Removal Project - Folly Brook Natural Area Access - Coordination

Good Afternoon Ms. Duncan.

I'm working with the Connecticut Airport Authority (CAA) in the planning and design of an Airspace Obstruction Removal Project at the Hartford-Brainard Airport (see the attached site locus). This project was the subject of a National Environmental Policy Act (NEPA) Environmental Assessment (EA) in 2017/2018 and the CAA is now advancing the project into the permitting phase. As a part of this effort, consultants for the CAA will be completing a wetland delineation of the areas involved in this project, one of which is the Folly Brook Natural Area located at the Runway 2 end (see the attached plan). This particular area is owned by the City of Hartford, is located in the Town of Wethersfield, and is subject to a conservation restriction controlled by the Natural Conservancy. The conservation restriction language includes tree management direction for four areas within the site; labeled A through D on the plan. We are attempting to coordinate access for the wetland delineation team and wanted to touch bases with you regarding this effort. The wetland delineation will involve plant and soils investigation, tying delineation markers onto the vegetation (colored surveyor's flagging), and the GPS survey of the markers. The only invasive part of this effort would be the soils investigation involving the use of hand augers. Soil removed from auger holes is routinely replaced in each hole immediately after inspection by the wetland scientist.

Would you have an opportunity to discuss the delineation effort on the Folly Brook Natural Area property? The delineation is to occur over the next 2-3 weeks, and the CAA would like to inquire as to the need for any access agreements and/or other information prior to access. Additionally, we would like to identify a contact person at the Nature Conservancy for future project-related coordination.

Thank you for any information you can provide. I look forward to hearing from you regarding this project.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

Stantec



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Hartford Trees
Brainard Airport

TREE MAINTENANCE PLAN

THIS TREE MAINTENANCE PLAN is made and executed on the 12 day of January, 1990, by and between THE CITY OF HARTFORD, a municipal corporation organized and existing within the State of Connecticut, having its principal office at City Hall, 550 Main Street, Hartford, Connecticut 06103, hereinafter referred to as The City, and THE NATURE CONSERVANCY OF CONNECTICUT, INC., a non-profit corporation organized and existing under the laws of the State of Connecticut and maintaining an office at 55 High Street, Middletown, Connecticut 06457-3788, hereinafter referred to as The Conservancy.

W I T N E S S E T H:

WHEREAS, The Conservancy is a non-profit conservation organization dedicated to the identification, protection and stewardship of ecologically significant natural areas and the rare and endangered species that inhabit them; and

WHEREAS, The City is the owner of certain real property more particularly described in Exhibit A attached hereto and incorporated by reference, which real property contains natural features of recognized value, including a flood plain forest and plant species of special concern; and

WHEREAS, The City and The Conservancy both are committed to preserving the wildlife and plant populations located on, about and indigenous to said real property, and The City has therefore entered into a 50 year CONSERVATION EASEMENT recorded in the Wethersfield Land Records, Liber 441, at page 251, a copy of which is attached hereto as Exhibit B and incorporated by reference.

WHEREAS, The City, by certain deed restriction, may not allow trees in the above real property to grow above certain maximum elevations, as shown on a map entitled "Airport Approach Plan Brainard Field Hartford, Conn. Scale 1"=200' Master Plan--Sheet No. 2," on file in the Town Clerk's Office in the Town of Hartford, a portion of which is provided in Exhibit C; and

WHEREAS, said conservation easement includes a requirement for a TREE CUTTING PLAN;

NOW, THEREFORE, the parties mutually covenant and agree as follows:

1. Only within the area labelled "A" on Exhibit C, the clear zone from the

Hartford-Wethersfield Town line (currently visible due to flagging) to the Elevation 64' line, The City shall have the right to freely cut, trim or otherwise maintain trees, shrubs and other vegetation without prior review or approval of The Conservancy.

2. Within the area labelled "B" on Exhibit C, the clear zone from the elevation 64' to the outflow area (visible on the ground) just north of elevation 84', there currently will be no cutting. Once the vegetation in this area approaches the elevation limits, The City and The Conservancy shall establish a written tree-cutting plan specific for this area. It is our mutual intention at this time that the entire area will not be cut at one time but the area will be subject to cutting on a rotational basis.

3. Within the areas labelled "C" and "D" on Exhibit C, south of the outflow Area to the end of the clear zone and west along the 20:1 inclined plane, The City shall not cut, trim or otherwise maintain trees, shrubs or other vegetation unless deemed to be "obstructions" by the FAA or bona fide hazards except as noted below. All questions regarding removal of "obstructions" or hazards will be resolved on a case-by-case basis via a method mutually agreeable to both parties and described in writing. Approval of the removal of any one "obstruction" or hazard shall not be deemed an automatic approval of the removal of any other similar "obstruction" or hazard.

There shall be no use of vehicles in areas "C" and "D" except as noted below. The parties agree to use best efforts to remove "obstructions" and hazards in such a manner as will minimize the impact on areas "C" and "D". The City shall reserve the right to use the existing toe road in Area "D". The City also reserves the right to maintain this road, including cutting trees along its edges.

4. Within the parcel described as the SECOND PIECE on Exhibit A attached hereto, The City shall not cut, trim or otherwise maintain trees, shrubs or other vegetation.

5. Notwithstanding the above, The City shall obtain all necessary and appropriate State and Federal permits that may be required to perform the

actions described herein.

6. The City of Hartford or an appropriate government agency shall bear the full cost of any and all tree-cutting scheduled under this plan. Under no circumstances will The Conservancy be responsible for any such costs.

7. This agreement shall remain in effect until March 20, 2039, the date of termination of the conservation easement entered into between the parties. The terms of this agreement may be modified only in writing subject to the mutual agreement of both parties. In the event that the adjacent premises are no longer used as an airport, The City agrees that there shall be no further cutting, trimming or other maintenance of trees, shrubs or other vegetation on the real property, which is the subject of this Tree Maintenance Plan. Provided however that any tree cutting necessary for the maintenance of the dike shall not exceed 50' from the base of dike toward the south into the easement area.

8. All notices, reports, statements, requests, or authorizations required to be given hereunder shall be sufficiently given by certified mail, return receipt requested, postage paid, addressed to The City at Municipal Building, 550 Main Street, Hartford, CT 06103, and to The Conservancy at 1815 North Lynn Street, Arlington, Virginia 22209 and at 55 High Street, Middletown, CT 06457. The notice shall be effective upon receipt.

9. All the terms, conditions and covenants to be observed and performed by the parties hereto shall be applicable and binding on their several heirs, executors, administrators, successors, legal representatives, and assigns.

IN WITNESS WHEREOF, the parties to this Tree Cutting Plan have subscribed their names hereto on the day and year above first written.

Witness:

Rose C. Lackey
Karen Marie Talara

CITY OF HARTFORD

By: [Signature]
Its: John C. Burke
City Manager

Witness:

Brian P. Zani
Sandra J. Douglas

THE NATURE CONSERVANCY OF CONNECTICUT, INC.

By: [Signature]
Its: Leslie N. Corey, Jr.
Executive Director/Vice President

STATE OF)
COUNTY OF) SS:

On this 16 day of January, 1990, before me personally appeared John C. Burke, to me personally known, who, being by me duly sworn did say that he is the City Manager of City of Hartford named in the foregoing instrument; that the seal affixed to said instrument is the seal of said City of Hartford; and acknowledged said instrument to be the free act and deed of said City of Hartford.

Approved as to legality and form.
[Signature]
Corporation Counsel.

Rose C. Lackey
Notary Public
My Commission Expires:
ROSE C. LACKEY
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 1991

STATE OF Connecticut)
COUNTY OF Middlesex) SS: Middletown

On this 24 day of January, 1990 before me personally appeared Leslie N. Corey, Jr., to me personally known, who, being by me duly sworn did say that he is the Executive Director of the Nature Conservancy of Connecticut, Inc., the corporation named in the foregoing instrument; that the seal affixed to said instrument is the corporation seal of said corporation; and acknowledged said instrument to be the free act and deed of said corporation.

Patricia A. Anderson
Notary Public
My Commission Expires:
My Commission Expires March 31, 1991

EXHIBIT ADESCRIPTION OF THE FOLLY BROOK NATURE CONSERVANCY

Two (2) certain pieces or parcels of land, situated in the town of Wethersfield, County of Hartford, State of Connecticut and shown on a map or plan entitled "CITY OF HARTFORD, DEPARTMENT OF ENGINEERING SCALE: 1"=100 ft., JAN. 1930. DAYBOOK NO. 06719 REVISED NOV. 6, 1930" which map is on file in the Division of Maps & Records, Public Works Department of the City of Hartford.

Said parcels are more particularly bounded and described as follows:

FIRST PIECE

- Northerly: By the Hartford-Wethersfield boundary line 2456 feet more or less;
- Easterly: By the Connecticut River 1070 feet more or less;
- Southerly: By the Wethersfield Cove 390 feet more or less, and
- Westerly: By land of the State of Connecticut 2050 feet more or less;

SECOND PIECE

- Northerly: By the Hartford-Wethersfield boundary line 1222 feet more or less;
- Easterly: By land of the State of Connecticut 1380 feet more or less;
- Southerly: By the Wethersfield Cove 1850 feet more or less;
- Westerly: By land of the Great Meadows Conservation Trust 913 feet more or less;
- Southerly Again: By land of the Great Meadows Conservation Trust and the Hartford Electric Light Company, partly by each, 800 feet more or less, and
- Westerly: By land of the State of Connecticut 550 feet more or less;

The Second Piece herein described is encumbered by a Right-of-Way in favor of the Connecticut Light and Power Company.

The above described First Piece is encumbered by two certain Right-of-Ways in favor of the Metropolitan District Corporation.

These are the same premises described in a resolution of the Court of Common Council, dated June 11, 1956 except for two (2) certain parcels conveyed to the State of Connecticut for highway purposes.

CONSERVATION EASEMENT

THIS INDENTURE, made this 20th day of March, 1989,

W I T N E S S E T H :

WHEREAS, the City of Hartford, a municipal corporation whose principal office is located at City Hall, 550 Main Street, Hartford, CT 06103, hereinafter called the Grantor, is the owner in fee simple of certain real property, hereinafter called the "Protected Property," which has ecological, scientific, educational and aesthetic value in its present state as a natural area which has not been subject to development or exploitation, which property is described as follows:

see Exhibit A attached

WHEREAS, THE NATURE CONSERVANCY, hereinafter called the Grantee, is a non-profit corporation incorporated under the laws of the District of Columbia whose purpose is to preserve and conserve natural areas for aesthetic, scientific, charitable and educational purposes; and

WHEREAS, the Protected Property is a natural area which provides significant habitat for fish, wildlife and plants and has substantial value as a natural, scenic and educational resource; and

WHEREAS, preservation of the Protected Property is for the scenic enjoyment of the general public and will yield a significant public benefit; and

WHEREAS, the preservation of the Protected Property is pursuant to federal, state and local governmental conservation policy; and

WHEREAS, the Grantor and Grantee recognize the natural, scenic, aesthetic, and special character of the Protected Property and have the common purpose of conserving the natural values of the Protected Property by the conveyance to the Grantee of a Conservation Easement on, over and across the Protected Property which shall conserve the natural values of the Protected Property, conserve and protect the special animal and plant populations on,

and prevent the use or development of that property for any purpose or in any manner which would conflict with the maintenance of the Protected Property in its current natural, scenic and open condition for this generation and future generations; and

WHEREAS, Grantor and Grantee have the common purpose of conserving and protecting in perpetuity the Protected Property as "a relatively natural habitat of fish, wildlife, or plants, or similar ecosystem," as that phrase is used in P.L. 96-541, 26 USC 170(h)(4)(A)(ii), as amended and in regulations promulgated thereunder; and

WHEREAS, "ecological, scientific, educational and aesthetic value," "natural, scenic and open condition" and "natural values" as used herein shall, without limiting the generality of the terms, mean the condition of the Protected Property at the time of this grant evidenced by reports, photographs, maps and scientific documentation possessed (at present or in the future) by the Grantee and which the Grantee shall make available on any reasonable request to the Grantor, its successors and assigns, and which more particularly may include, but are not limited to, the following described items:

a) the appropriate survey maps from the United States Geological Survey, showing the property lines and other contiguous or nearby protected areas;

b) a map of the area drawn to scale showing all existing man-made improvements or incursions (such as roads, buildings, fences or gravel pits), vegetation and identification of flora and fauna (including, for example, rare species locations, animal breeding and roosting areas, and migration routes), land use history (including present uses and recent past disturbances), and distinct natural features (such as large trees and aquatic areas);

c) an aerial photograph of the property at an appropriate scale taken as close as possible to the date the donation is made;

d) on-site photographs taken at appropriate locations on the property; and

e) an easement documentation report including, among other things, an owner acknowledgement of condition, background information, legal information, ecological features information, and land-use and man-made features information.

NOW, THEREFORE, the Grantor, for and in consideration of the facts above recited and of the mutual covenants, terms, conditions and restrictions herein contained does hereby give, grant, and convey unto the Grantee, its successors and assigns forever a Conservation Easement for a term of fifty (50) years with the option to renew for an additional term of years upon the mutual consent of the Court of Common Council of the City of Hartford and The Nature Conservancy of Connecticut, Inc. over the Protected Property consisting of the following:

1. The right of visual access to and view of the Protected Property in its natural, scenic and open condition.

2. The right of the Grantee, in a reasonable manner and at reasonable times, to enforce the provisions of this easement by submitting claims of violation and request for remedies for damages to binding arbitration under the rules and procedures of the American Arbitration Association. The relief requested may include but is not limited to the right to require the restoration of the Protected Property to its natural condition or as close thereto as may be practicable. The Grantee, or its successors or assigns, does not waive or forfeit the right to take action as may be necessary to insure compliance with the covenants and purposes of this grant by any prior failure to act. Nothing herein shall be construed to entitle the Grantee to institute any enforcement proceedings against the Grantor for any changes to the Protected Property due to causes beyond the Grantor's control, such as changes caused by fire, floods, storm or the unauthorized wrongful acts of third persons. In the event that the Grantee becomes aware of an event or circumstance of non-compliance with the terms and conditions herein set forth, the Grantee shall give notice to the Grantor, its successors or assigns, at its Town Clerk's office, City of Hartford, of such event or circumstance of non-compliance via certified mail, return receipt requested, and request corrective action sufficient to abate such event or circumstance of noncompliance and restore the Protected Property to its previous condition. Failure by the Grantor to cause discontinuance, abatement or such other corrective action as may be requested by Grantee within thirty (30) days after receipt of such notice shall entitle Grantee to bring an action for relief

before a duly constituted binding arbitration panel to enforce the terms of this agreement; which relief may include requiring the restoration of the property to its natural condition, or as close thereto as may be practicable, and/or enjoining such non-compliance by temporary or permanent injunction to enforce the terms of this agreement, if necessary. If such arbitration panel determines that the Grantor has failed to comply with this agreement, Grantor shall reimburse Grantee for any reasonable costs of enforcement, including costs of restoration or arbitration costs and reasonable attorneys fees, in addition to any other payments ordered by such arbitration panel.

3. The right to enter the Protected Property at all reasonable times and, if necessary, across other lands retained by the Grantor, for the purposes of (a) inspecting the Protected Property to determine if the Grantor, or its successors or assigns, is complying with the covenants and purposes of this grant; (b) enforcing the terms of this Conservation Easement; (c) taking any and all actions with respect to the Protected Property as may be necessary or appropriate to remedy or abate violations hereof; and (d) observing and studying nature and making scientific and educational observations and studies and taking samples in such a manner as will not disturb the quiet enjoyment of the Protected Property by the Grantor, its successors and assigns. Grantee shall assume the risk of injury or damage to its agents or employees while on the Protected Property for any purpose related to the inspection, monitoring or enforcement of this conservation easement, except for such injury or damage which may be caused by Grantor's negligence.

4. The right to monitor the condition of the rare plant and animal populations and plant communities on the Protected Property, and to manage them, if necessary, for their continued survival and quality on the Protected Property.

5. The Grantor and the Grantee shall prepare a tree maintenance plan for the Protected Property within one year of the date of the execution of this conservation easement. Said plan shall contain policies for and a schedule of tree-cutting for proper height maintenance to conform to F.A.A standards for the runway glide path to Brainard Airport. Said tree-cutting plan

shall be submitted for review and approved by The City of Hartford and The Nature Conservancy. The City of Hartford or an appropriate government agency shall bear the full cost of any tree-cutting which may be scheduled under this plan. Prior to undertaking any changes in the use of the property the Grantor shall consult with the Grantee regarding the proposed changes to determine the effect of such changes on the natural values being protected on the property.

And in furtherance of the foregoing affirmative rights, the Grantor makes the following covenants, on behalf of itself, its successors and assigns, which covenants shall run with and bind the Protected Property:

COVENANTS

Without prior consultation with the Grantee, on the Protected Property:

1. There shall be no construction or maintenance of buildings, camping accommodations or mobile homes, fences, signs, billboards or other advertising material, or other structures, other than those structures which currently exist, except that a boardwalk for passive recreation may be constructed on the property.

2. There shall be no ditching, draining, diking, filling, excavating, dredging, mining or drilling, removal of topsoil, sand, gravel, rock, minerals or other materials, nor any building of roads or change in the topography of the land in any manner excepting the maintenance of existing foot trails and construction of new foot trails and/or boardwalk and maintenance of existing flood control dikes as may be required by any federal or state governmental agency.

3. There shall be no removal, destruction or cutting of trees or plants (except as is necessary to construct and maintain foot trails, boardwalk, and in conformance with an approved tree-cutting plan), planting of trees or plants, use of fertilizers, spraying with biocides, introduction of non-native animals, grazing of domestic animals, or disturbance or change in the natural habitat in any manner.

4. There shall be no dumping of ashes, trash, garbage, or other unsightly or offensive material, and no changing of the topography through the placing of soil or other substance or material such as land fill or dredging spoils, nor shall activities be conducted on the Protected Property or on adjacent property which could cause erosion or siltation on the Protected Property.

5. There shall be no manipulation or alteration of natural water courses, lake shores, marshes or other water bodies, nor shall there be activities conducted on the Protected Property which would be detrimental to water purity, or which could alter natural water level and/or flow.

6. There shall be no operation of snowmobiles, dunebuggies, motorcycles, all-terrain vehicles, or any other types of motorized vehicles except as is necessary for tree-cutting and for dike maintenance.

7. There shall be no hunting or trapping except to the extent necessary to keep the animal population within the numbers consistent with the ecological balance of the area.

8. There shall be erected by the Grantee a permanent plaque or sign at a prominent location within the described premise bearing the following statement: "This area is protected by a conservation easement held by The Nature Conservancy". Additional easement boundary signs may be installed by Grantee.

NEVERTHELESS, and notwithstanding any of the foregoing provisions to the contrary and as expressly limited herein, the Grantor reserves for itself, its successors and assigns the following reserved rights, which may be exercised after providing written notice to the Grantee; provided, however, that the exercise of such rights will not interfere with or have an adverse impact on the essential natural, open and scenic quality of or the conservation interest associated with the Protected Property:

RESERVED RIGHTS

1. The right to use the property for all purposes not inconsistent with this grant or to conform to any order of a federal or state governmental agency acting in respect of its police or emergency powers.

2. The right to sell, give or otherwise convey the Protected Property or any portion or portions of the Protected Property, provided such conveyance is subject to the terms of this easement.

3. The right to maintain views from established overlooks maintain existing foot trails and to construct new trails and/or boardwalks on the Protected Property. Location and size of any boardwalk or foot trails shall be determined in consultation with Grantee.

4. The right to construct a lighted, elevated river walk with underground electric cable on the perimeter of the protected area, connecting with any interior boardwalks.

5. The right to construct and maintain a canoe or small boat landing site on perimeter of protected area, within limits of State and Federal law.

The Grantor agrees that the terms, conditions, restrictions and purposes of this grant will be inserted by it in any subsequent deed or other legal instrument by which the Grantor divests itself of either the fee simple title to or its possessory interest in the Protected Property.

Any notices required in this Conservation Easement shall be sent by registered or certified mail to the following address or such address as may be hereafter specified by notice in writing: Grantor: Town Clerk, The City of Hartford, 550 Main Street, Hartford, CT 06103. Grantee: The Nature Conservancy, 1815 North Lynn Street, Arlington, Virginia 22209.

If any provision of this Conservation Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of the Conservation Easement and the application of such provisions to persons or circumstances other than those as to which it is found to be invalid shall not be affected thereby.

The covenants agreed to and the terms, conditions, restrictions and purposes imposed with this grant shall not only be binding upon the Grantor but also its lessees, agents, personal representatives, successors and assigns, and all other successors to it in interest and shall continue as a servitude running for a term of fifty (50) years with the Protected Property.

And the Grantor does further covenant and represent that the Grantor is seized of the Protected Property in fee simple and has good right to grant and convey the aforesaid Conservation Easement, and that the Grantee shall have the use of and enjoy all of the benefits derived from and arising out of the aforesaid Conservation Easement.

The parties hereto recognize and agree that the benefits of this easement are in gross and assignable, and the Grantee hereby covenants and agrees, that in the event it transfers or assigns the easement it holds under this indenture, the organization receiving the interest will be a qualified organization as that term is defined in Section 170(h)(3) of the Internal Revenue Code

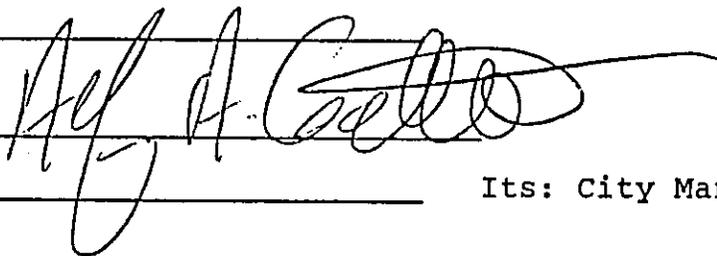
of 1986 (or any successor section) and the regulations promulgated thereunder, and which is organized and operated primarily for one of the conservation purposes specified in Section 170(h)(4)A of the Internal Revenue Code, and further covenants and agrees that the terms of the transfer or assignment will be such that the transferee or assignee will be required to continue to carry out the conservation purposes which the contribution was originally intended to advance. The Grantor shall receive written notice of any proposed assignment and shall have the right to approve the organization to which this easement may be assigned.

Whenever all or part of the Protected Property is taken in exercise of eminent domain by public, corporate, or other authority so as to abrogate the restrictions imposed by this Conservation Easement, the Grantee shall have the right to take appropriate actions at the time of such taking to recover the full value of its interest acquired under the taking and all incidental or direct damages resulting therefrom.

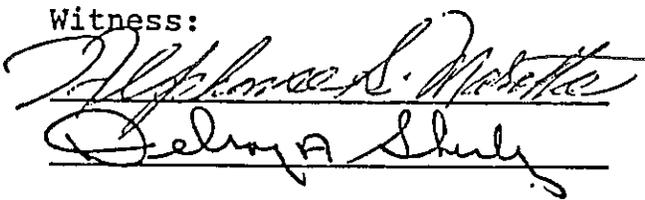
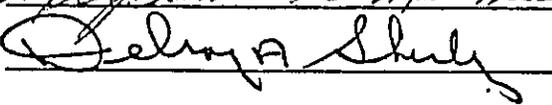
TO HAVE AND TO HOLD the said Conservation Easement unto the said Grantee, its successors and assigns forever.

IN WITNESS WHEREOF, the Grantor has executed and sealed this document the day and year first above written.

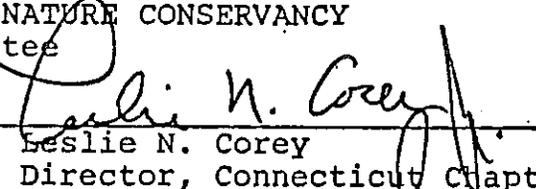
Witness: CITY OF HARTFORD
Grantor

BY: 

Its: City Manager

Witness: 


THE NATURE CONSERVANCY
Grantee

BY: 
Its: Leslie N. Corey
Director, Connecticut Chapter

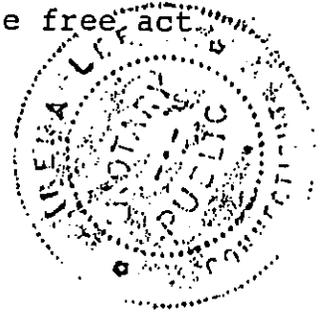
STATE OF)
COUNTY OF) SS:

On this 20th day of MARCH, 1989, before me personally appeared LESLIE N. COREY, JR., to me personally known, who, being by me duly sworn, did say that he is the Director of the CONNECTICUT Field Office of The Nature Conservancy, the corporation named in the foregoing instrument; that the seal affixed to said instrument is the corporation seal of said corporation; and acknowledged said instrument to be the free act and deed of said corporation.

Irene Lee

Notary Public
My Commission Expires:

My Commission Expires Mar. 31, 1991



STATE OF)
COUNTY OF) SS:

On this 20th day of MARCH, 1989, before me personally appeared ALFRED GATA, to me personally known, who, being by me duly sworn, did depose and say that HE is the person named in the foregoing instrument, and acknowledged said instrument to be HIS free act and deed.

Irene Lee

Notary Public
My Commission Expires:

My Commission Expires Mar. 31, 1991



EXHIBIT A

DESCRIPTION OF THE FOLLY BROOK NATURE CONSERVANCY

Two (2) certain pieces or parcels of land, situated in the town of Wethersfield, County of Hartford, State of Connecticut and shown on a map or plan entitled "CITY OF HARTFORD, DEPARTMENT OF ENGINEERING SCALE: 1"=100 ft., JAN. 1930. DAYBOOK NO. 06719 REVISED NOV. 6, 1930" which map is on file in the Division of Maps & Records, Public Works Department of the City of Hartford.

Said parcels are more particularly bounded and described as follows:

FIRST PIECE

Northerly: By the Hartford-Wethersfield boundary line 2456 feet more or less;

Easterly: By the Connecticut River 1070 feet more or less;

Southerly: By the Wethersfield Cove 390 feet more or less, and

Westerly: By land of the State of Connecticut 2050 feet more or less;

SECOND PIECE

Northerly: By the Hartford-Wethersfield boundary line 1222 feet more or less;

Easterly: By land of the State of Connecticut 1380 feet more or less;

Southerly: By the Wethersfield Cove 1850 feet more or less;

Westerly: By land of the Great Meadows Conservation Trust 913 feet more or less;

Southerly Again: By land of the Great Meadows Conservation Trust and the Hartford Electronic Light Company, partly by each, 800 feet more or less, and

Westerly: By land of the State of Connecticut 550 feet more or less;

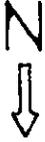
The Second Piece herein described is encumbered by a Right-of-Way in favor of the Connecticut Light and Power Company.

The above described First Piece is encumbered by two certain Right-of-Ways in favor of the Metropolitan District Corporation.

These are the same premises described in a resolution of the Court of Common Council, dated June 11, 1956 except for two (2) certain parcels conveyed to the State of Connecticut for highway purposes.

EXHIBIT C

A PORTION OF MAP ENTITLED "AIRPORT APPROACH PLAN BRAINARD FIELD", modified



1" = 200' approx.

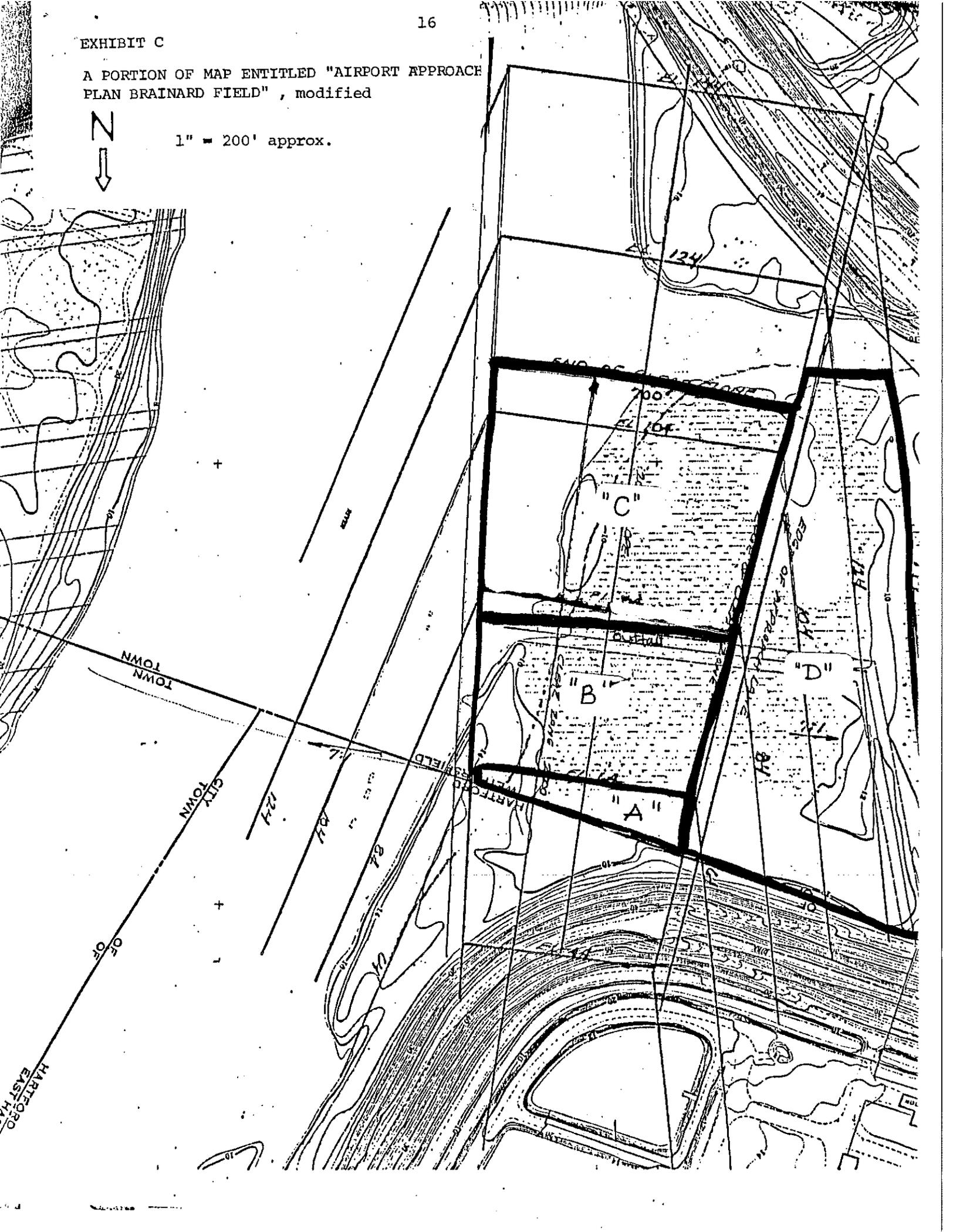


EXHIBIT C

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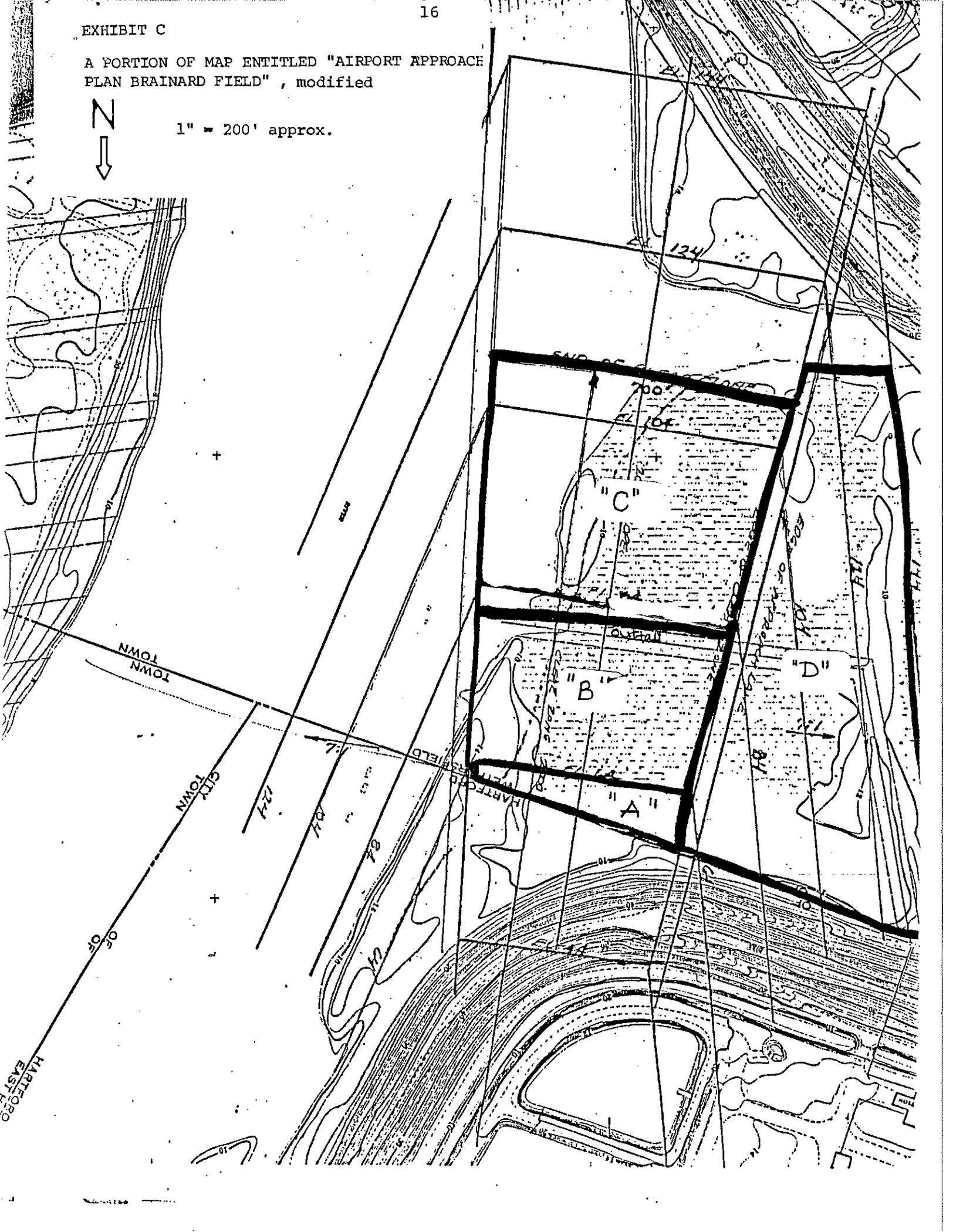
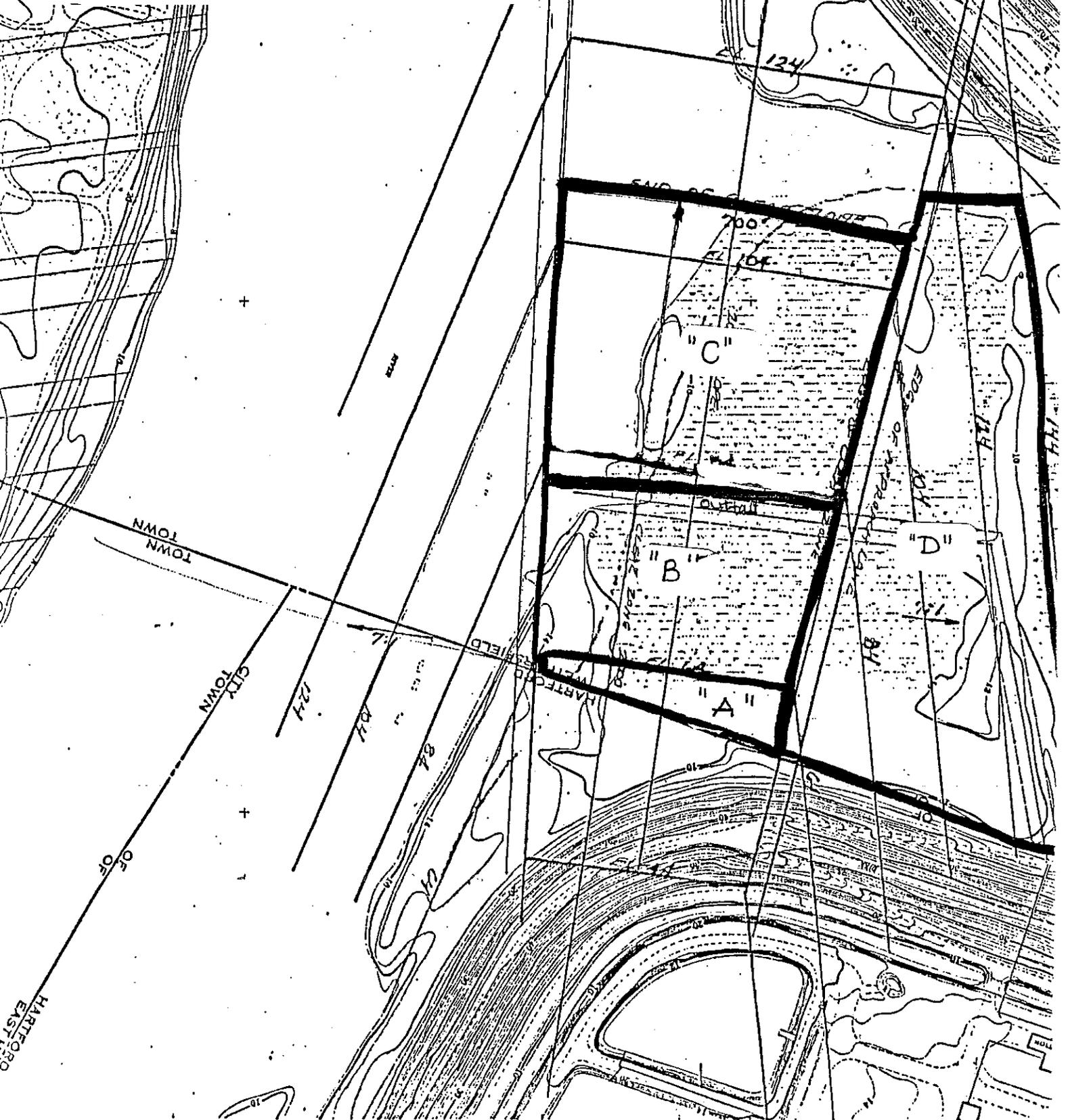


EXHIBIT C

A PORTION OF MAP ENTITLED "AIRPORT APPROACH PLAN BRAINARD FIELD", modified



1" = 200' approx.



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 10 – project photographs

4.0 ATTACHMENT 10 – PROJECT PHOTOGRAPHS





Runway 20 End Removal Area

Distant view (top) and interior view (bottom). Photos show the narrow width of the floodplain forest at this end of the project. The forested area is pinched between the river edge and the toe of the flood control levee. The trees exhibit multiple trunks from each root mass indicative of past clearing of the area. Shrub and sapling layers are sparse-to-absent, but perennial groundcover species flourish. The area is within the 100-year floodplain.





Runway 29 End Removal Area
Distant view (top) and interior view (bottom). Photos show the increased width of the floodplain forest and the interior flooded depressions. The forested area is contiguous with the Wethersfield Cove connecting channel. The trees exhibit multiple trunks from each root mass indicative of past clearing of the area. Shrub and sapling layers are sparse-to-absent, but perennial groundcover species flourish. Much of the area is annually inundated.





Runway 2 End Removal Area

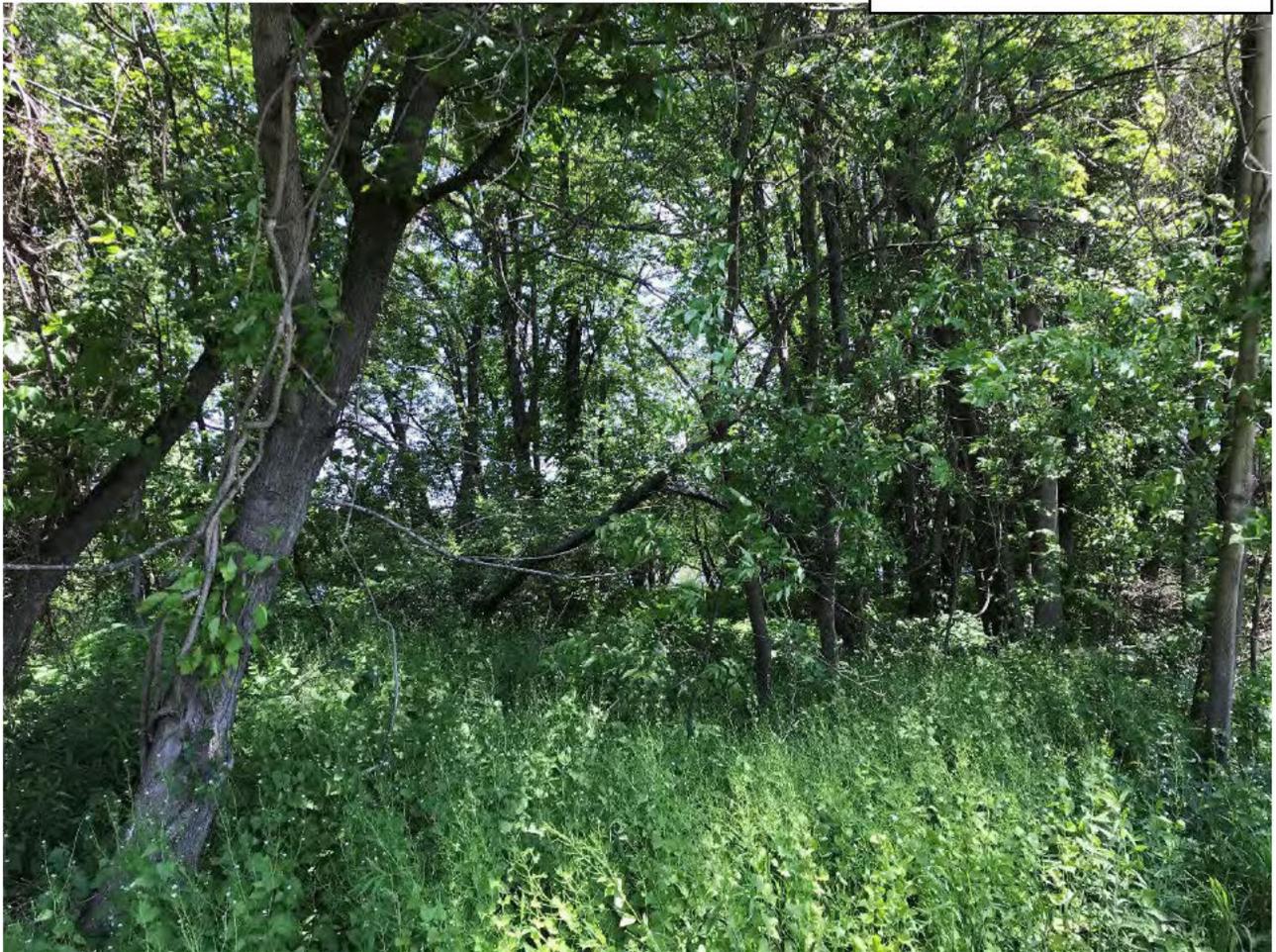
Distant view (top) and interior view (bottom). Photos show the larger area of floodplain forest mostly within the Folly Brook Natural Area. The forested area is interrupted by several seasonally inundated depressions that lack canopy species. Extensive patches of stinging nettle cover the landscape during the growing season. Ostrich fern is also found here. An active bald eagle nest occurs beyond the western edge of the site limits. Frequent inundation of this removal area has reduced the mature tree frequency in comparison to the other sites.





Understory Conditions

Typical understory conditions of the upper floodplain forest (top) and lower floodplain forest (bottom) in the removal area at the Runway 29 and 20 ends. Significant understory growth is dominated by species capable of withstanding frequent flood events. Protection of this non-target vegetation through the project timing and limitation of mechanical removal is the principle erosion control method for the project.





Clark Dike Protection

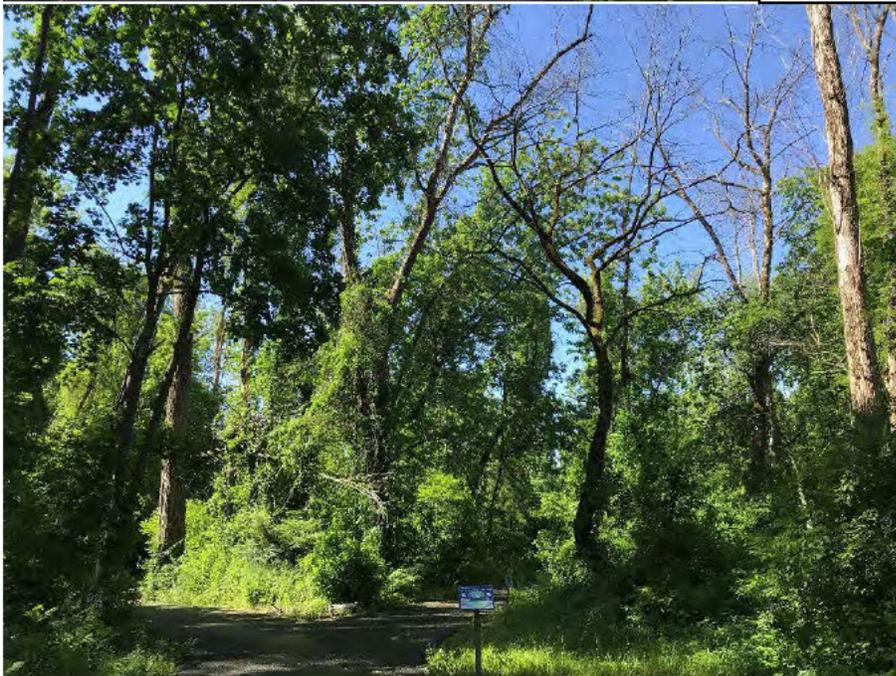
These photos show the north (top) and south (bottom) log lift locations for the project. It is necessary to crane the wood over the flood control berm (Clark Dike System) in order to minimize potential impacts to the flood control structure. A crane on the airport-side of the berm will lift logs over the dike from the obstruction removal areas. The sides of the berm will be protected with wooden mats.





**East Side of the CT River
Removal Areas**

These photos show typical sparse canopy conditions in the east side obstruction removal areas in East Hartford and Wethersfield. The South Meadows Recreational Trail is visible in the photos. Topping of select trees is proposed in this area; no mechanical work is proposed. Wood debris will be diced and scattered below each target tree.





Connecticut River and Folly Brook

Typical photo of the edge of the Connecticut River (top) showing the sandy, gently sloping shoreline. The initial treeline along the bank is quite low, with only a few target trees that will be climbed/topped, preserving most of the shoreline vegetation. Similarly; the forested area along Folly Brook (bottom) contains only a few taller trees that require hand pruning to reduce them sufficiently below the protected airspace. Only non-mechanical methods are proposed along Folly Brook with high target specificity.



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 14 – project plans and figures

5.0 ATTACHMENT 14 – PROJECT PLANS AND FIGURES

5.1.1 USGS Site Locus

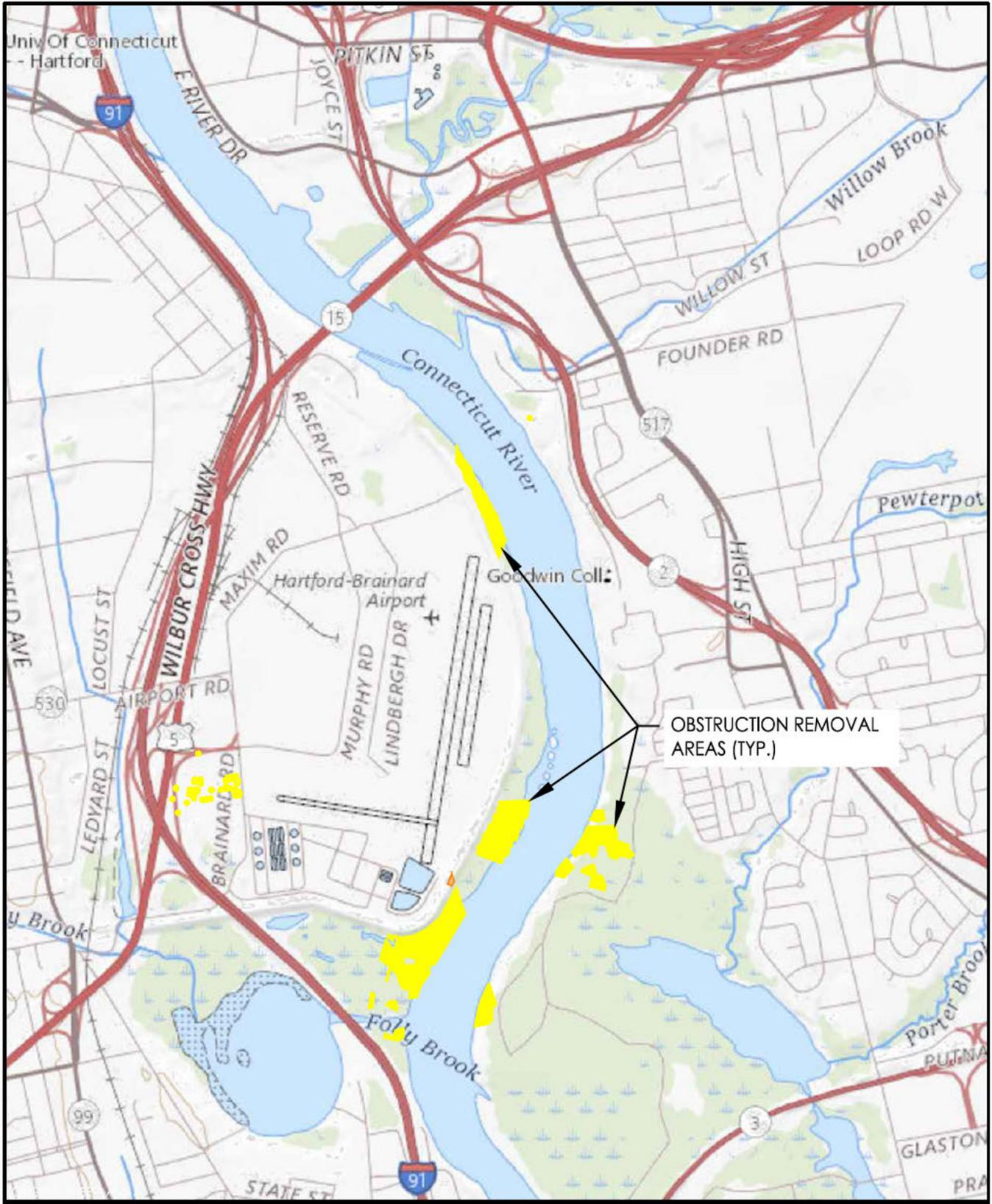
5.1.2 FEMA Flood Map

5.1.3 Hartford-Brainard Airport Airspace Obstruction Analysis (6 sheets)

5.1.4 Equipment Access and Staging Plan (1 sheet; stamped/signed)



V:\1794\ACTIVE\179450287\AVIATION\9_DRAWING\SHEET_FILES\HFD_PROJECT SKETCH.DWG
3/24/2021 10:58 AM



3 Columbia Circle, Suite 6
Albany, NY
www.stantec.com



Client/Project
HARTFORD-BRAINARD AIRPORT
2021 - PROJECT SKETCH

Figure No.
1.0

Title
OBSTRUCTION REMOVALS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to areas of 0.2 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **Floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

Accretion levels noted to users. Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan on the levee system(s) shown as providing protection for areas on the panel. To mitigate flood risk in special risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at <http://www.fema.gov/business/index.stm>.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18N. The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structures and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/NAVD83/> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA/NNGS/IC
 National Geodetic Survey
 5360C, RD202
 1015 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the Connecticut Department of Environment (CT DEP). This information was derived from digital orthophotography dated 2009.

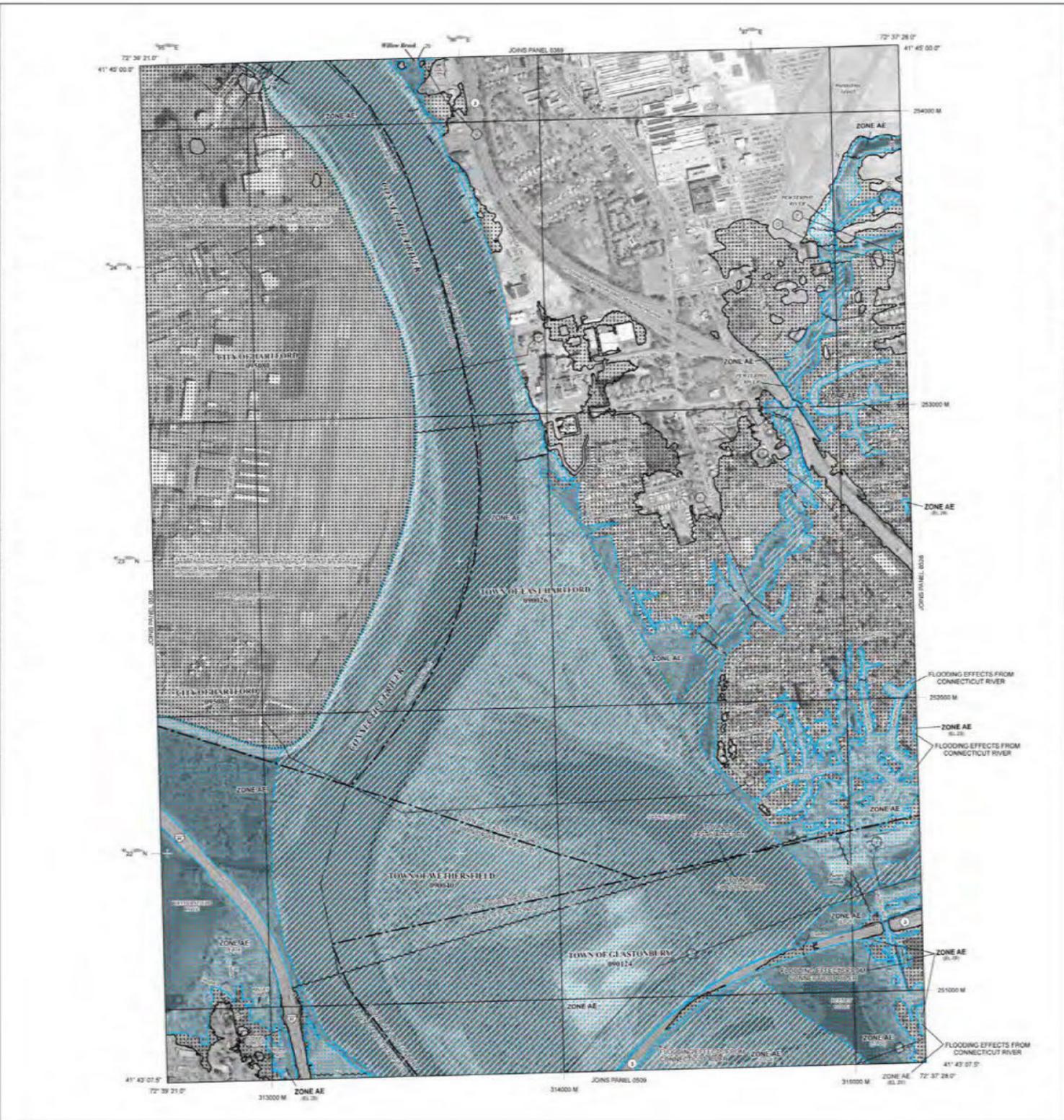
The **profile baselines** provided on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baselines**, in some cases, may deviate significantly from the channel centerline or appear outside the channel.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or re-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities with National Flood Insurance Program status for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information Exchange (FMIE)** at 1-877-FEMA-MAP (1-877-366-7627) or visit the FEMA website at <http://www.fema.gov/business/fmie>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO REVISIONS BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AV, X, and V. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevation determined.

ZONE AE Base Flood Elevation determined.

ZONE AH Flood depths of 1 to 3 feet (local areas of ponding). Base Flood Elevation determined.

ZONE AO Flood depths of 1 to 3 feet (local areas of ponding). Average depths determined. For areas of shallow flooding, section also determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that has been removed. Zone AR indicates that the former flood control system is being removed to provide protection from the 1% annual chance flood. Areas of Special Flood Hazard are to be established from the 1% annual chance flood by a flood control protection system under construction. No Base Flood Elevation determined.

ZONE AV Coastal flood zone with velocity hazard (wave action). No Base Flood Elevation determined.

ZONE V Coastal flood zone with velocity hazard (wave action). Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodable areas that must be kept free of encroachment so that the 1% annual chance flood can be passed without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE B Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depth of less than 1 foot or with average area less than 1 square mile and no encroachment to levees from 0.2% annual chance flood.

OTHER AREAS

ZONE C Areas determined to be outside the 0.2% annual chance flood.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas:

- 0.2% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Zone C and OpA Boundary
- CBRS and OpA Boundary
- Boundary Between Special Flood Hazard Areas and Boundary Between Special Flood Hazard Areas of Different Base Flood Elevations, Floor Heights, or Flood Velocities
- Base Flood Elevation line and depth, elevation in feet
- Base Flood Elevation value where uniform within panel, elevation in feet

Referenced to the North American Vertical Datum of 1988

- Class section line
- Traveled line
- Color
- Bridge
- Geographic coordinates, referenced to the North American Datum of 1983 (NAD 83) (decimal representation)
- Address in 100-foot increments; Connecticut State Plane Zone FIPS Zone 1803; Lambert Conformal Conic projection
- 1:50,000 scale (vertical) National Hydrographic and Oceanic Survey 228
- North arrow (true north) as shown in Notes to Users section of this FIRM panel
- Map scale
- MAP REVISIONS
- Note to User: Map Number shown below should be used when placing map orders.
- OFFICIAL DATE OF QUANTITATIVE FLOOD INSURANCE RATE MAP
- September 16, 2011

EFFECTIVE DATES OF REVISIONS TO THIS PANEL

September 16, 2011: To change map title and flood zones to reflect the accumulation of former previously authorized letters.

For community map repository information, please refer to the Community Map Repository website or the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-358-3433.

MAP SCALE 1" = 500'

200 0 100 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0507G

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 507 OF 675 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

JURISDICTION	COMMUNITY	NUMBER	DATE	STATUS
CONNECTICUT	HARTFORD	0507G	09/16/11	U
	BRAND	0507G	09/16/11	U
HARTFORD COUNTY, CONNECTICUT	HARTFORD	0507G	09/16/11	U
	BRAND	0507G	09/16/11	U

Note to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 090030507G

MAP REVISED SEPTEMBER 16, 2011

Federal Emergency Management Agency

Revision	By	Appd	YYYY.MM.DD	Issued	By	Appd	YYYY.MM.DD

Permit/Seal	Consultant	Client/Project Logo	Client/Project HARTFORD-BRAINARD AIRPORT	Title FEMA MAP
			HARTFORD, CONNECTICUT	Project No. 179450287
				Scale NOT TO SCALE
				Revision Sheet 1 of 1
				Drawing No. 1

Stantec Architecture Inc.
 3 Columbia Circle Suite 6
 Albany NY 12203-6158
 Tel: (518) 452-4358
 www.stantec.com

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File Name: IFD_FEMA_MAP	CAM	MA	IC	2022.03.28
Dwfl	Dgri	Chkd	YYYY.MM.DD	

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 16 – Wetland resource impact table

7.0 ATTACHMENT 16 – WETLAND RESOURCE IMPACT TABLE

7.1.1 Inland Water Resource Impact Table

7.1.2 Wetland ID Figures from Wetland Report (Wetlands A through F)



Inland Water Resource Impact Table
CT Department of Energy and Environmental Protection

Please add as many rows as necessary into the tables below.

Wetlands*			Direct Fill Impact				Additional Impact		Total Impact	
Wetland Name (Field ID)	Wetland Type: Existing (PFO/PSS/PEM)	Wetland Type: Proposed (if conversion) (PFO/PSS/PEM)	Activity ¹	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity ²	Impact Area (square feet)	CT/STATE Wetlands (square feet)	FEDERAL Wetlands (square feet)
Wetland A	PFO	PSS	no fill		0	0	Vegetation	196,020	196,020	0
Wetland B/C	PFO	PSS	no fill		0	0	Vegetation	1,067,220	1,067,220	0
Wetland D	PFO	no conversion	no fill		0	0	Vegetation	100,188	100,188	0
Wetland E	PFO	no conversion	no fill		0	0	Vegetation	17,424	17,424	0
Wetland F	PFO	no conversion	no fill		0	0	Vegetation	65,340	65,340	0
					0					
Total Wetland Impacts (all wetlands)					0	0		1,446,192	1,446,192	0

Watercourses and Waterbodies								Direct Fill Impact				Additional Impact		Total Impact		
Water Name (Field ID)	Water Name (USGS Name, if applicable)	Water Type (Perennial, Intermittent ³ , Pond, Lake, Impoundment)	Flow Type ⁴	Substrate ⁵	Water Quality Class ⁶	Drainage Area (square miles)	Bank/Edge Vegetation		Activity ¹	Temporary or Permanent (T / P)	Impact Area (square feet)	Fill Volume (cubic yards)	Activity ²	Impact Area (square feet)	CT/STATE Waters (square feet)	FEDERAL Waters (square feet)
							Type	% Cover								
CT River	same	Perennial	run	sand	SB		forested	100	N/A				N/A			
Folly Brook	same	Perennial	run	sand	SB		forested	100	N/A				N/A			
Total Watercourse Impacts (all watercourses/waterbodies)																

*CT defines inland wetlands as "land, including submerged land, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain" per the United States Department of Agriculture's Natural Resources Conservation Service Soil Survey. [\[CGS §22a-38\(15\)\]](#)

¹Identify Direct Fill activity; examples may include use of timber mats, construction of a structure, road, trail, parking lot, etc.

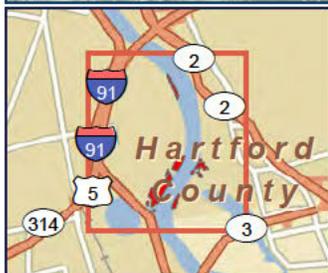
²Identify Additional Impact activity; examples may include vegetation clearing, vegetation conversion, excavation/dredging, draining/dewatering/drawdown, inundation/flooding, grading, etc.

³CT defines intermittent watercourse as: "delineated by a defined permanent channel and bank and the occurrence of two or more of the following : (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a storm incident, and (C) the presence of hydrophytic vegetation." [\[CGS §22a-38\(16\)\]](#)

⁴Watercourse flow characteristics include pools, runs, and/or riffles. If intermittent, write NA

⁵Watercourse substrates include silt/clay, sand, gravel, cobble, boulder, and/or bedrock.

⁶For Water Quality Classification information, review the [Connecticut Water Quality Standards and Classifications](#).



Legend

- Limits of Field Investigation
- Proposed Vegetation Removal Area

Hartford - Brainard Airport

Wetlands and Watercourse Assessment

Project Overview Map
Figure 1

For Planning Purposes Only

Soil Unit	Soil Series	Parent Material	Drainage Class
101	Occum fine sandy loam	Alluvial Floodplain	Well drained
102	Pootatuck fine sandy loam	Alluvial Floodplain	Moderately well drained
106	Winooski silt loam	Alluvial Floodplain	Moderately well drained
107	Limerick and Lim soils	Alluvial Floodplain	Poorly drained
108	Saco silt loam	Alluvial Floodplain	Very poorly drained
306	Udorthents-Urban land complex	Urban Influenced	Well drained
307	Urban land	Urban Influenced	Not rated
308	Udorthents, smoothed	Urban Influenced	Moderately well drained
309	Udorthents, flood control	Urban Influenced	Moderately well drained
W	Water	Water	Water



- Legend**
- Proposed Vegetation Removal Area
 - Limits of Field Investigation
 - Drainage Ditch/Feature
 - NRCS Mapped Soil Unit
 - Connecticut State-only Wetland
 - State and Federal Wetland

Hartford - Brainard Airport

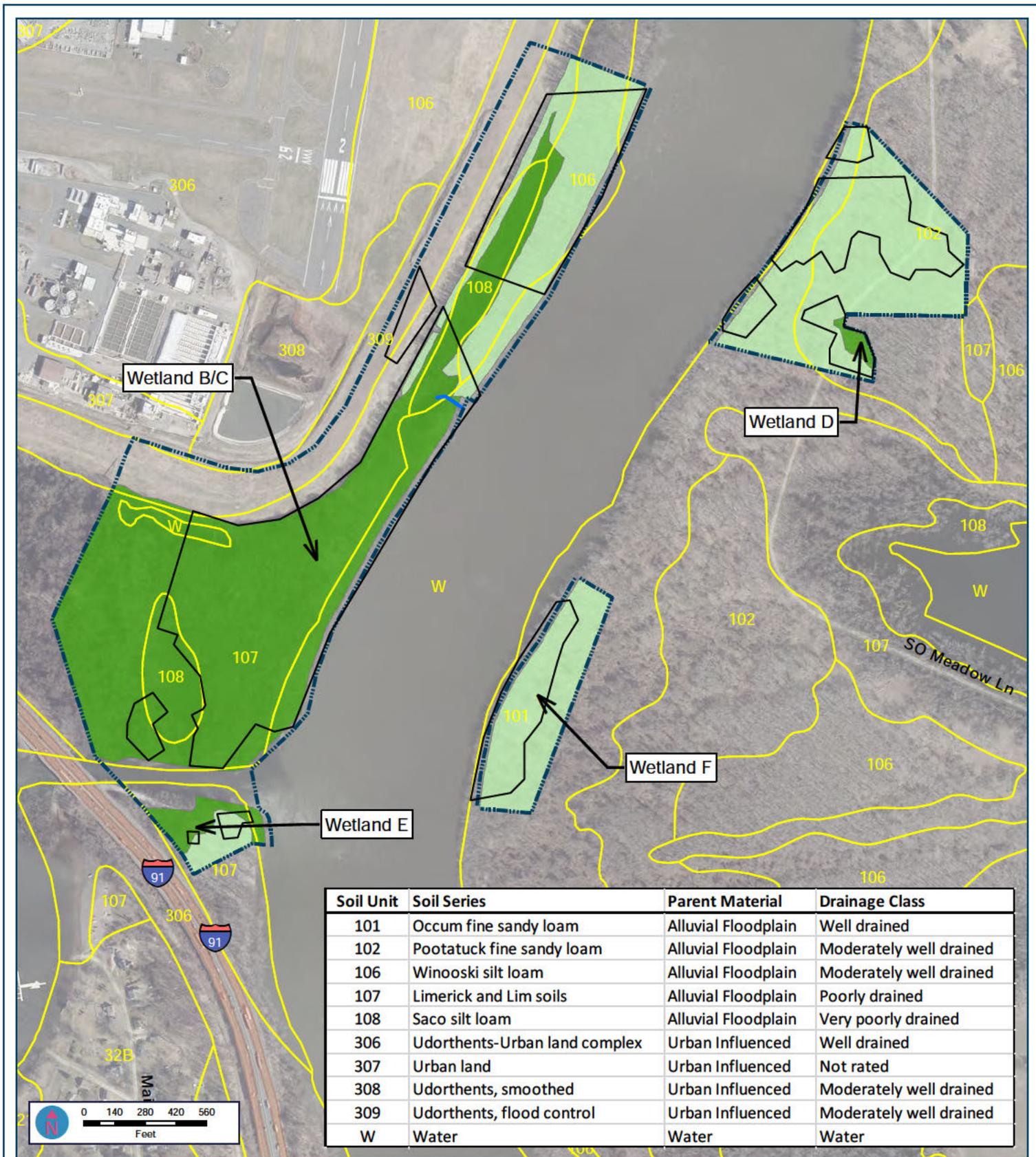
Wetlands and Watercourse Assessment

NRCS Soils Map
Figure 2A

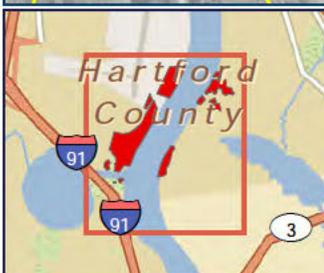
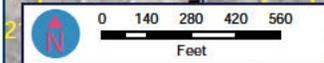
For Planning Purposes Only

Map Produced: 7/1/2021
Data Source: FHI Studio 2021





Soil Unit	Soil Series	Parent Material	Drainage Class
101	Occum fine sandy loam	Alluvial Floodplain	Well drained
102	Pootatuck fine sandy loam	Alluvial Floodplain	Moderately well drained
106	Winooski silt loam	Alluvial Floodplain	Moderately well drained
107	Limerick and Lim soils	Alluvial Floodplain	Poorly drained
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306	Udorthents-Urban land complex	Urban Influenced	Well drained
307	Urban land	Urban Influenced	Not rated
308	Udorthents, smoothed	Urban Influenced	Moderately well drained
309	Udorthents, flood control	Urban Influenced	Moderately well drained
W	Water	Water	Water



- Legend**
- Proposed Vegetation Removal Area
 - Limits of Field Investigation
 - Drainage Ditch/Feature
 - NRCS Mapped Soil Unit
 - Connecticut State-only Wetland
 - State and Federal Wetland

Hartford - Brainard Airport

Wetlands and Watercourse Assessment

NRCS Soils Map
Figure 2B

For Planning Purposes Only

Map Produced: 7/1/2021
Data Source: FHI Studio 2021





Map Produced: 7/16/2021
 Data Source: FHI Studio 2021

- Legend**
- Wetland Transect Location
 - ▭ Proposed Vegetation Removal Area
 - Limits of Field Investigation
 - Drainage Ditch/Feature
 - Wetland Delineation Flag Line
 - Connecticut State-only Wetland
 - State and Federal Wetland

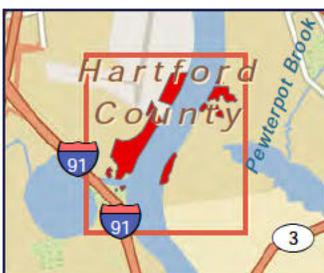
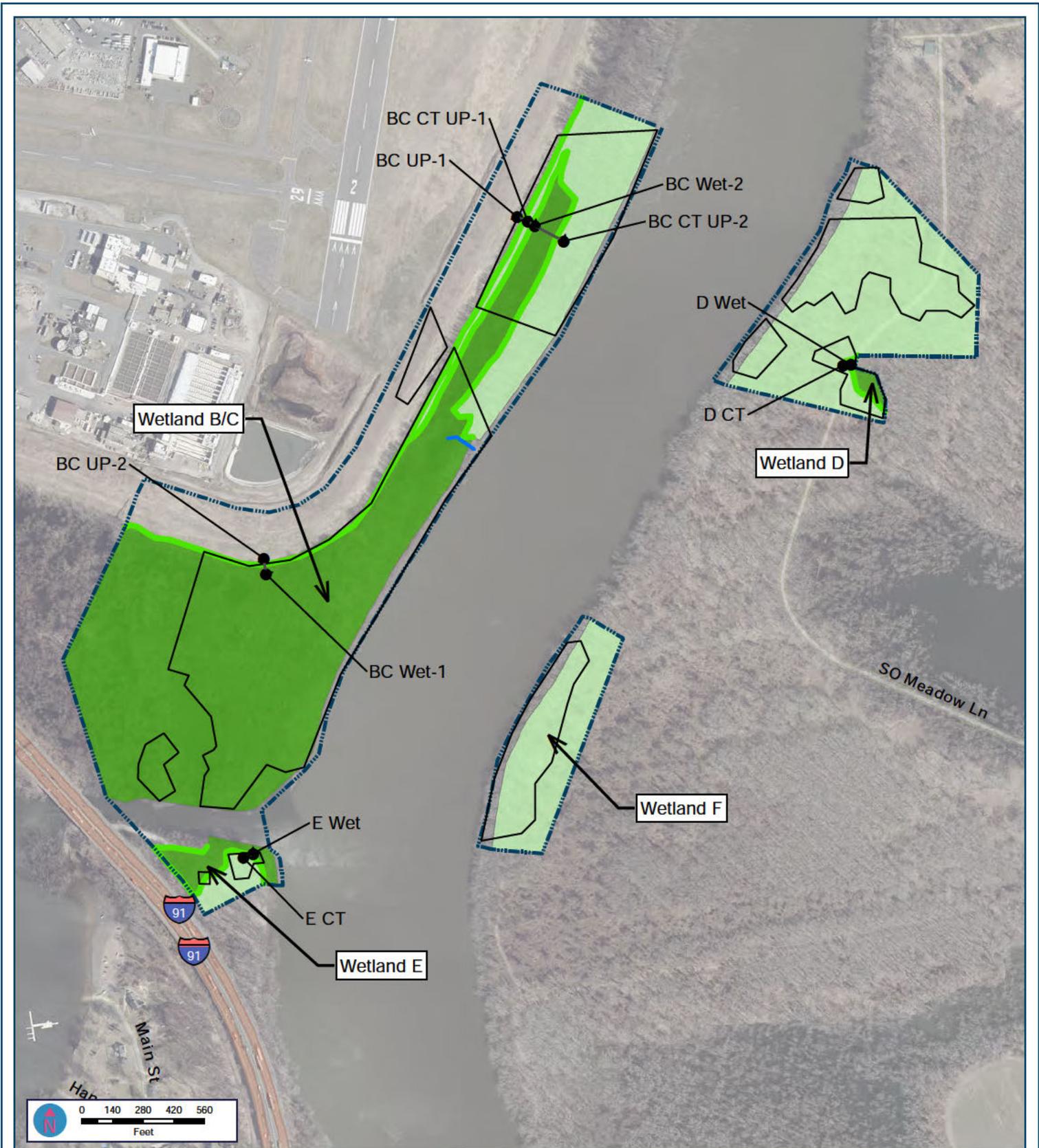
Hartford - Brainard Airport

Wetlands and Watercourse Assessment

Wetland Delineation Map
 Figure 3A

For Planning Purposes Only





Map Produced: 7/16/2021
 Data Source: FHI Studio 2021

- Legend**
- Wetland Transect Location
 - ▭ Proposed Vegetation Removal Area
 - Limits of Field Investigation
 - Drainage Ditch/Feature
 - Wetland Delineation Flag Line
 - Light Green Connecticut State-only Wetland
 - Dark Green State and Federal Wetland

Hartford - Brainard Airport

Wetlands and Watercourse Assessment

Wetland Delineation Map
 Figure 3B

For Planning Purposes Only



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 17 – mitigation plan

8.0 ATTACHMENT 17 – MITIGATION PLAN



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

Attachment 17 – mitigation plan

The project has included mitigation for potential impacts resulting from the removal of the canopy layer in areas of the floodplain forest along the Connecticut River and Folly Brook. Measures are also in place to protect state-listed species. Mitigation measures included in the project include:

1. The project timing restricted to winter removal to reduce non-target plant mortality and to take advantage of frozen soils to reduce the potential for rutting, erosion and sedimentation.
2. Sensitive removal methods (hand removal) are proposed for those areas where only the canopy section of the target trees penetrates the protected airspace, thus limiting equipment movement on the site.
3. The use of a crane to lift wood debris from the site which will limit equipment movement through the wetland/floodplain and significantly reduce heavy equipment trips through the floodplain forest and over the protected flood control berm (Clark Dike). Heavy equipment movement in wetlands and floodplain is estimated to be reduced by over 60% through the use of the crane lift operation, and thus is potentially the most significant mitigation measure of the project.
4. Protection procedures have been prepared for protection of the state-listed plant species mapped within and adjacent to the work areas. Pre-project marking of plant colonies is to be completed along with education of the work crews. Where protected plants occur within the work areas, and pre-project transplanting plan will be employed to move the plants to adjacent suitable habitat.
5. Adequate setbacks to the active bald eagle nest have been provided based on guidelines developed per the Bald and Golden Eagles Protection Act.
6. A planting plan within a protective 100-foot buffer zone of the Connecticut River will be implemented to promote revegetation of the site. The planting plan is included in Attachment 20 since the plan was a part of the NDDB coordination.
7. A turbidity monitoring plan that includes a pre-project baseline measurement and during project sampling is included to monitor turbidity and suspended solids resulting from the flooding of the post-cutting work areas. This plan is a part of the state-listed mussel species management plan included in Attachment 20. And,
7. An invasive plant species control plan will be implemented during a 5-year period following vegetation management. The invasives control plans are included in Attachment 20 since it was a part of the NDDB coordination for this project.



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

attachment 18 – engineering report

9.0 ATTACHMENT 18 – ENGINEERING REPORT



HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND WETLANDS/WATERCOURSES APPLICATION

attachment 18 – engineering report

The project is currently being reviewed by the Greater Hartford Flood Control Commission and the U.S. Army Corps of Engineers (Levee Safety Program) as it relates to the protection of the floodplain, floodway and the associated flood control utilities. Information generated for these agencies and the pending approval of the project method will dictate the information in the Engineering Report required in this Inland Wetlands Application. The full report will be provided as the CAA receives substantial support of the proposed project methods from these agencies. Review and substantial approval of the methods is anticipated for May 2022.



**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 20 – nddb coordination and documents

10.0 ATTACHMENT 20 – NDDB COORDINATION AND DOCUMENTS

10.1.1 nddb response letter of May 4, 2021

10.1.1.1 nddb correspondence and project approval

10.1.2 incidental take report cattail sedge

10.1.2.1 Invasive Plant Species Control Plan (appendix to Incidental Take Report)

10.1.3 mussel management plan

10.1.3.1 Planting Plan (appendix to Mussel Management Plan)





Stantec Consulting Services, Inc.
136 West Street, Northampton, MA 01060-3711

March 29, 2022
File: 179450287

Attention: Ms. Dawn McKay
Natural Diversity Data Base Program
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127

Dear Ms. McKay,

**Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Additional Info
NDDB Determination 202104141**

In May 2021 your office provided the CT Airport Authority (CAA) with a response to proposed vegetation management at the Hartford-Brainard Airport (HFD) relative to potential impacts to state-listed protected species; a copy is provided as **Attachment A**. The NDDB response listed several concerns/issues with the project related to the protection of state-listed plant and wildlife species. The CT Airport Authority (CAA) and Stantec have considered each of the NDDB concerns in the advanced design of the vegetation management project at HFD. We believe the modifications and additions to the project will satisfactorily address concerns related to the state-listed species. The NDDB concerns as contained in your May 4th letter are listed below in the order they appear in the NDDB response letter. Following each listed issue are a description of the materials contained in this submission and how they address the particular item.

1. Protection measures for Bald eagle (*Haliaeetus leucocephalus*)
 - a. The DEEP Wildlife Biologist coordinating eagle monitoring, Mr. Brian Hess was contacted to discuss the project design and timing as it relates to the single active nest adjacent to the project. We conducted a project phone call with Mr. Hess on August 11, 2021, and another on March 28, 2022. Emails regarding our discussions and a final determination of potential impacts to bald eagle are contained in **Attachment B**.
2. Protection measures for freshwater mussels
 - a. A Stantec mussel biologist, Mr. Bob Roy, was added to the project team to address the issues with the state-listed mussel species reported in the waterways adjacent to the project. The NDDB response required a planting plan if a 100-foot buffer from Ordinary High Water could not be retained in the project design. We addressed this issue with the development of a mussel management plan and associated planting plan, contained in **Attachment C**. The planting plan addresses the canopy loss within the 100-foot buffer from the ordinary high water mark of the river.

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Additional Info NDDDB Determination 202104141

3. Protection measures for Critical Habitats and plant species

- a. The Stantec project botanist, Mr. Matt Arsenault, worked extensively with Mr. William Moorhead of your office in the mapping of state-listed rare plant species within the project limits and the development of protective protocols to ensure proper protection during vegetation management activities. The reports and emails associated with this issue are contained in **Attachment D**, including an incidental take report for cattail sedge (*Carex typhina*). The botanical report contains a proposal for post-project invasive plant species management over a 5-year period.

4. Fish Species

- a. Stantec coordinated with Mr. Bruce Williams of the Bureau of Natural Resources – Fisheries Division regarding the potential for the project to impact anadromous fish species associated with the Connecticut River and the associated Folly Brook. A conference call was conducted with Mr. Williams on August 12, 2021, and several email discussions were also completed. The email record is contained in **Attachment E**. Our discussions ended with the submission of a CT DEEP Fisheries Consultation Form to Mr. Williams for their submission to NDDB. A response from Mr. Williams is included as well.

We hope these materials are suitable for the NDDB to issue a determination on the various issues regarding the proposed vegetation management at HFD and state-listed species. Thank you for your assistance with this public safety project. Please contact us with any questions.

Sincerely,

Stantec Consulting Services, Inc.



Randall P. Christensen M.S.
Senior Environmental Scientist
Phone: 413387 4508
randy.christensen@stantec.com

Attachment: Mussel Management Plan, planting plan, incidental take report, invasives control plan, bald eagle coord. Emails, fisheries consultation record
c. CAA, Stantec File

ATTACHMENT A
NDDB Determination 202104141 (May 4, 2021)



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Affirmative Action/Equal

May 4, 2021

Randall Christensen
Stantec Consulting Services, Inc.
136 West Street
Northampton, MA 01060-3711 randy.christensen@stantec.com

Re: Hartford – Brainard Airport Airspace Obstruction Removal Project; Hartford, East Hartford, and Wethersfield, CT
NDDB Determination 202104141

Dear Randy,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the proposed Airspace Obstruction Removal Project in Hartford, East Hartford and Windsor. According to our records, the following Critical Habitat and species have been documented in the vicinity of the project location:

Bird Species:

- Bald eagle (*Haliaeetus leucocephalus*) – State Threatened Reptiles and Amphibians:

Invertebrate Species/Freshwater Mussels:

- Yellow lampmussel (*Lampsilis cariosa*) – State Endangered
- Eastern pondmussel (*Ligumia nasuta*) – State Special Concern
- Tidewater mucket (*Leptodea ochracea*) – State Special Concern
- Eastern pearlshell (*Margaritifera margaritifera*) – State Special Concern

Critical Habitats:

- Low Floodplain Forest
- High Floodplain Forest
- Alluvial Swamp

Plant Species:

- Northern arrowhead (*Sagittaria cuneata*) – State Endangered
- Davis' sedge (*Carex davisii*) – State Threatened
- Cattail sedge (*Carex typhina*) – State Special Concern
- Wiegand's wild rye (*Elymus wiegandii*) – State Special Concern
- Hoary plantain (*Plantago virginica*) – State Special Concern

Fish Species:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Federally Endangered, State Endangered
- Shortnose sturgeon (*Acipenser brevirostrum*) – Federally Endangered, State Endangered

- Blueback herring (*Alosa aestivalis*) – State Special Concern

Protection measures for Bald eagle (*Haliaeetus leucocephalus*):

It is illegal pursuant to section 26-93 of the Connecticut General Statutes to disturb Bald eagles. This law prohibits disturbing the birds while they are roosting, feeding, or nesting. The Wildlife Division recommends a 660' setback with no public access from a bald eagle nest or critical roosting site. The critical time for nesting eagles is February 1- August 1. The critical time period for winter roosts is December 31- March 1.

Your NDDB review request application indicates the project will be implemented between December 2021 and March 2022. Section 5 of attachment 3, included with your application, states that there will be no tree cutting within 660' of an active eagle nest. NDDB concurs that this recommended setback is appropriate. To determine if nest or roost in your area is active this year contact the DEEP Wildlife Biologist coordinating eagle monitoring (Brian.hess@ct.gov).

Protection measures for freshwater mussels:

Multiple freshwater mussel species have been recently documented in the vicinity of this project, near the shoreline of the Connecticut River and Wethersfield Cove. Freshwater mussels are aquatic animals that play an important role in our environment. These sedentary organisms live in sediments on the bottom of streams and rivers and provide a service to all by filtering water and removing bacteria and phytoplankton. It is because they are filter-feeding animals that they are very susceptible to sediments and pollutants in the water in which they live. The greatest diversity of freshwater mussels in the world is found in Eastern North America. Freshwater mussels are one of the most endangered groups of animals with almost three-quarters of the native mussels in North America imperiled. The disappearance of freshwater mussels is a reliable indicator of chronic water pollution.

Typically, in order to protect these species, it is recommended that no vegetation be removed from the 100-foot buffer of waterways. Your project description indicates full removal of sizable trees, with some topping/snag creation where feasible, while retaining small trees and underbrush and leaving stumps in place.

This vegetation removal has potential to negatively impact freshwater mussel populations. Replanting these portions of the project area with suitable low-growing species will help reduce negative impacts; should you choose to implement this, please provide the NDDB program with a planting plan, including a list of species.

In the absence of a planting plan, you will need to provide the NDDB with a plan designed to minimize adverse effects on the listed freshwater mussels. This plan should demonstrate that the following recommended water quality targets will be met:

- Turbidity
 - Turbidity should not increase 8 NTU over background levels
- Suspended sediments
 - Maximum induced suspended sediments in any 24-hour period should be less than 25mg/L over background levels
 - Induced suspended sediments averaged over 30-day period should be less than 5mg/L over background levels

Protection measures for Critical Habitats and plant species:

1. Have surveys for the State-listed plants of the project areas performed by a qualified botanist or plant ecologist, at the appropriate times of year to maximize chances of detecting and identifying each species. If you do not know a qualified botanist or plant ecologist, consult The Native Plant Trust. Results of these surveys shall be submitted in a report to the NDDB prior to the initiation of the tree cutting. The survey report shall include the following elements:
 - a. Survey date(s) and duration.
 - b. Detailed description of the survey target plants and a discussion of the features used to differentiate them from similar species with which they might be confused.
 - c. Photographs of State-listed plant populations marked with high-visibility construction fencing, as discussed in Item 2 below.
 - d. Good-quality close-up photographs, which show identifying features, of State-listed plants found at each occurrence.
 - e. Data regarding population numbers and area occupied by State-listed plants.
 - f. Detailed maps of the area surveyed including the survey route and locations of State-listed species.
 - g. List of component vascular plant species within the survey area (including scientific binomials).
 - h. Statement of qualifications, résumé, or CV, indicating the State-listed plant surveyor's qualifications.

An incomplete report, missing any of the above elements, may be rejected.

2. Mark each State-listed plant population, using high-visibility construction fencing, so that field personnel can easily see them when conducting tree cutting and removal.
3. Do not cover State-listed plant populations with logs, slash piles, or wood chips.
4. Do not site equipment access roads over State-listed plant populations, unless the populations are protected by temporary timber or hard rubber matting
5. Do not run over State-listed plant populations with equipment, unless the populations are protected by temporary timber or hard rubber matting
6. Do not drag trees or parts of cut trees through/over State-listed plant populations.
7. Develop and implement an invasive plant control plan in those habitats where opening up of the tree canopy will encourage existing invasive plants to proliferate and compete with State-listed plants and other native floodplain forest species (this is certainly likely in all or much of the areas on the east side of the river). The plan must provide adequate protection from herbicide impacts for State-listed plants and aquatic animals and other non-target native plants and animals. The plan should be authored or co-authored by a qualified individual or company with documented experience controlling invasive plants in sensitive habitats with rare plants. The qualifications of this individual or company should be attached to the plan. The plan must be submitted to the NDDB for approval before tree cutting project begins, and the plan must be implemented before tree cutting project begins.

Fish Species:

Contact a DEEP Fisheries Biologist for more information. Do not contact NDDB with questions regarding fish species. The presence of a Federally endangered species may require consultation with the National Marine Fisheries Service in order to be in compliance with the Federal Endangered Species Act if the proposed project requires federal permits or uses federal funds.

The NDDB Determination for the proposed Airspace Obstruction Removal Project in Hartford, East Hartford and Windsor, as described in the submitted information is valid for two years. This

determination applies only to the project as described in the submission. Please submit an updated Request for Review if there are additional scope of work and/or timeframe changes, including if work has not begun by **May 4, 2021**.

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Database and as it becomes available. New information may result in additional review, and new or modified restrictions or conditions may be necessary to remain in compliance with certain state permits.

- During your work listed species may be encountered on site. A report must be submitted by the observer to the Natural Diversity Database promptly and additional review and restrictions or conditions may be necessary to remain in compliance with certain state permits.
- Your project involves the state permit application process or other state involvement, including state funding or state agency actions; please note that consultations with your permit analyst or the agency may result in additional requirements. In this situation, additional evaluation of the proposal by the DEEP Wildlife Division may be necessary and additional information, including but not limited to species-specific site surveys, may be required. Any additional review may result in specific restrictions or conditions relating to listed species that may be found at or in the vicinity of the site.

Thank you for continued coordination with NDDDB on this project; feel free to contact me if you have additional questions.

Sincerely,
Robin Blum
Natural Diversity Database
CT DEEP Wildlife Division
Robin.blum@ct.gov

ATTACHMENT B

Bald Eagle Consultation Record

From: [Christensen, Randall](#)
To: [Hess, Brian](#)
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination 202104141 - Bald Eagle coordination
Date: Monday, March 28, 2022 11:38:00 AM
Attachments: [image001.png](#)

Brian.

Thank you for the opportunity to update our discussion today regarding the Hartford-Brainard Airport Vegetation Management Project and the potential impacts to bald eagle. Per our updated discussion:

1. The one eagle nest [REDACTED] remains as the only active nest of concern for this project.
2. The vegetation management limits at HFD will remain well beyond 660' from the active nest based on our GPS location of the nest support tree.
3. The heavy equipment access to the vegetation management areas will be a one-time in, one-time out scenario past the active nest. This access is on the opposite side of the flood control berm from the nest and should not pose a significant disturbance to the mated eagle pair.
4. Vegetation management will likely occur in January/February 2023, but may start earlier in mid-December or may extend longer into mid-March based on the weather (and river level) conditions. Given the heightened sensitivity of the nesting pair to disturbance in mid-February and beyond, the work should be conditioned in the following manner. Attempt to finish the work at the southern end of the project by January 15th and move to the further work areas as the dates move beyond January 15th. If weather and/or river level conditions prohibit the pre-January 15th work at the south end, then the work should begin away from the nest (north end) and gradually move to the south end. This will allow the pair to acclimate to the typical noise generated by the various equipment.

I hope you find this summary to be an accurate representation of our conversation. Please do not hesitate to contact me with any updated information regarding bald eagle presence on the CT River in the vicinity of the airport. Thank you for your assistance.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Hess, Brian <Brian.Hess@ct.gov>

Sent: Monday, March 28, 2022 10:37 AM

To: Christensen, Randall <randy.christensen@stantec.com>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination

202104141 - Bald Eagle coordination

Hi Randall,

My schedule is pretty open at this point. My cell phone is the best number to reach me.

Brian

Brian Hess, Wildlife Biologist
Wildlife Division; Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
Sessions Woods WMA, P.O. Box 1550, Burlington, CT 06013-1550
C: 860-876-9259 | P: 860.424.3208 | E: Brian.Hess@CT.gov



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From: Christensen, Randall <randy.christensen@stantec.com>

Sent: Monday, March 28, 2022 10:15 AM

To: Hess, Brian <Brian.Hess@ct.gov>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination
202104141 - Bald Eagle coordination

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Good Morning Brian.

It's been a while since we conversed on this project. Our progress was delayed due to on-going easement discussions with the involved property owners. We're now back on-track and I need to update my conversations with the involved agencies. Would you have a moment for a phone call today; you can name the time?

Thanks for your help; it's much appreciated.

Randall P. Christensen M.S.
Senior Environmental Scientist

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From: Hess, Brian <Brian.Hess@ct.gov>
Sent: Wednesday, May 19, 2021 3:42 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination 202104141 - Bald Eagle coordination

Hi Randall,

Great question. There are two potential nests I can think of:

1. There is an active nest [REDACTED] about ¼ mile from the terminus of Maxim road, so you should be OK.
2. There was an inactive nest [REDACTED]. That nest has not been used in 5 years or so, and I have not checked to see whether it is still there.

Thanks,
Brian

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Wednesday, May 19, 2021 08:43
To: Hess, Brian <Brian.Hess@ct.gov>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination 202104141 - Bald Eagle coordination

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Good Morning Brian.

One additional question regarding this project. Are you aware of any additional bald eagle nests on the east side of the CT River opposite the airport? The attached site locus indicates where we may top some trees on the east side of the river (all hand cutting; we're not intending on using any heavy machinery on these off-airport parcels). Any information regarding eagles in the vicinity of these east-side vegetation management areas would be appreciated.

Randall P. Christensen M.S.
Senior Environmental Scientist

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From: Hess, Brian <Brian.Hess@ct.gov>
Sent: Thursday, May 13, 2021 1:47 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Cc: Molly Guyer <mguyer@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>; Blum, Robin <Robin.Blum@ct.gov>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDDB Determination 202104141 - Bald Eagle coordination

Hi Randall,

Thanks for reaching out. My most recent information indicates that the eagles at the south end of RW2 have successfully hatched eggs, though the number of chicks remains unknown. I agree that your project footprint looks to be a safe distance from the nest. As you develop your removal plans, a couple thoughts to consider.

1. Please consider how you will be accessing the area and removing the cut timber. While there is a road along the top of the levee, it does pass very close to the nest. Additionally, it is elevated relative to the surrounding ground and activity on the top may be perceived as a greater threat by the eagles. This was the case when eagles nested along the levee north of the Hartford landfill. If there are alternate paths that are further from or screened from the nest, those routes would be preferable.
2. February is an extremely sensitive time for eagle pairs. While they have not yet laid eggs, disturbance at this point can cause them to abandon the territory and fail to reproduce for that year. An earlier work schedule would be helpful. Alternatively, waiting until mid-April could be advantageous.

Thanks,
Brian

Brian Hess, Wildlife Biologist
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
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From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Thursday, May 13, 2021 12:46
To: Hess, Brian <Brian.Hess@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>; Goegel, Colin <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>; Blum, Robin <Robin.Blum@ct.gov>
Subject: Hartford-Brainard Airport Obstruction Removal Project - NDDB Determination 202104141 - Bald Eagle coordination

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Good Afternoon Brian.

Per the attached NDDB response to the proposed removal of vegetative airspace obstructions at the Hartford-Brainard Airport (HFD), the CT Airport Authority was directed to coordinate with you regarding the status of the known bald eagle nest located adjacent to the airport at the RW 2 end. The attached plans indicate the extent of tree obstructions that will be addressed through this project. Our detailed design effort is currently underway and hope to submit permit applications this summer. Ultimately, a winter removal project in January/February 2022 is envisioned for the project.

I wanted to establish this email coordination with you to get the conversation started regarding protection of the bald eagle during the obstruction removal project. We have GPS located the nest and believe we can maintain the minimum 660' setback from the nest for tree removal activities. We will be designing the removal plans and methods over the next few weeks and will deliver our preferred project approach to you as soon as possible. In the meantime, please let us know the status of the on-site nest, and any other information you have that may pertain to the project.

Thank you for your assistance with this project. We look forward to working with you in addressing any issues regarding the bald eagle presence at HFD.

Randall P. Christensen M.S.
Senior Environmental Scientist

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ATTACHMENT C

Mussel Management Plan and Buffer Zone Planting Plan



Freshwater Mussel Protection Plan

Removal of Vegetative Obstructions
at Hartford-Brainard Airport

Hartford, CT

March 31, 2022

Prepared for:

Connecticut Airport Authority (CAA)
334 Ella Grasso Turnpike
Windsor Locks, CT 06096

Prepared by:

Stantec Consulting Services Inc.
3 Columbia Circle, Suite 6
Albany, NY 12203-5158



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Figure 1. Project clearing details and water monitoring locations.

APPENDICES

Appendix A – Planting Plan



FRESHWATER MUSSEL PROTECTION PLAN

The following freshwater mussel plan has been prepared based on information provided by the Connecticut Natural Diversity Database Program and a vegetation removal process designed to avoid and minimize potential ground disturbance in the removal areas. This plan was developed by Robert Roy, a Certified Wildlife Biologist, with nearly 30 years of experience with freshwater mussel ecology and survey techniques, large-scale and localized forest harvesting practices and techniques, and erosion controls methods and standards.

Bob Roy

Certified Wildlife Biologist

Senior Associate

Phone: 207 406 5516

bob.roy@stantec.com



1.0 INTRODUCTION

The Connecticut Airport Authority (CAA) is proposing vegetation removal at the Hartford-Brainard Airport (HFD), adjacent to the Connecticut River, in Hartford, CT. The purpose of the proposed vegetative removal project is to promote public safety by bringing the airport into compliance with existing Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace. The FAA has established airspace and design criteria to provide for safe aircraft operations. The CAA recently conducted an obstruction study to evaluate the airspace at HFD relative to these existing FAA airspace directives. Based on the FAA design criteria, the results of this analysis identified existing safety deficiencies at HFD which include multiple acres of tree obstructions to the Federal Aviation Regulation (FAR) Part 77 surfaces, Terminal Instrument Procedures (TERPS), and Airport Design Standards. The results of this study identified that HFD does not provide adequate airspace surfaces to its runways. To address this public safety deficiency identified by the FAA, the CAA has proposed the removal of obstructions from the approach surfaces. The project design seeks to address the obstructions and near-obstructions within the runway approaches with maximum attention to environmental sensitivity.

Stantec Consulting Services Inc (Stantec), on behalf of CAA, engaged the Connecticut Natural Diversity Database (CNDDDB) about the project to identify concerns regarding listed species and Critical Habitat known or potentially located within and near the proposed work areas for the vegetation removal. CNDDDB provided a response on May 4, 2021, indicating that several Critical Habitats and species have been documented in the vicinity of the project location including several freshwater mussel species. CNDDDB indicated concern regarding the potential impact of vegetation removal within 100 feet of the river on freshwater mussel populations and suggested either a replanting plan for the vegetation removal areas or, in the absence of a planting plan, a plan designed to minimize adverse effects, in the form of turbidity and suspended sediments, of the vegetation removal on listed freshwater mussels.

The following freshwater mussel protection plan has been developed as a combination of the two plans suggested by CNDDDB. It provides: a detailed summary of the vegetation removal timing, equipment, and methods that have been selected to avoid and minimize ground disturbing activities that could lead to soil erosion and turbidity in the river to the extent practicable; an overview of planting, seeding, and other restoration activities that will take place in certain areas of the project site following the completion of activities; an outline of monitoring that will be completed; and contingency planning that will occur should negative effects of the removal activities to mussels be observed following vegetation removal and site restoration activities.

2.0 MUSSEL PROTECTION PLAN

The work area on the airport-side of the Connecticut River involves approximately 30 acres of forested area within the 100-year floodplain of the river and other areas on the airport-side and on the east side of the river are slated for individual tree trimming/topping by hand. These different areas, and individual trees, are slated for different vegetation management methods designed to minimize or eliminate ground



FRESHWATER MUSSEL PROTECTION PLAN

disturbance and the potential for erosion of floodplain and riverbank soils into the river. Figure 1 identifies these areas and individual trees targeted for the various vegetation management methods proposed for the project. Figure 1 also identifies travel routes by the various equipment proposed for the clearing, which were also chosen to eliminate or reduce ground disturbance in areas that could lead to erosion into the river. The limits of the approach surfaces at each runway end are also provided to demonstrate that vegetation management is limited to only those areas required by airport design criteria.

The following sections outline the four components of the freshwater mussel protection plan for this project. They include:

- an environmentally sensitive **Vegetation Removal Plan**,
- targeted areas of **Restoration**,
- restoration and water quality **Monitoring**, and
- a **Contingency Plan**.

2.1 VEGETATION REMOVAL PLAN

2.1.1 Vegetation Removal Summary

The project involves two types of vegetation removal techniques; mechanized felling (using heavy equipment) and climbing (using chainsaws). Please refer to Figure 1 for a depiction of where each proposed vegetation removal technique is proposed.

The mechanized felling involves two methods of feller-buncher work; flush cuts (within a foot of ground) and snag cuts (where the feller buncher will cut the tree as high as possible between 12' to 15' above the ground). Regrowth from the cut surfaces is anticipated for each of these methods, providing for rapid revegetation of the mechanical work areas. The cut wood generated from the mechanical felling operation will be collected and hauled off site using low ground pressure equipment to reduce soil disturbance. This will eliminate a mulching effect on the underlying vegetative layers.

The climbing (non-mechanical) includes methods of topping cuts, where the climbers will cut the tree to a specific elevation, and pruning cuts, where the climbers will take a certain amount off the top of the trees' canopy with cuts being made at an appropriate notch, minimizing any damage to the tree. The cut wood from climbing operations will be diced with chainsaws and scattered sufficiently to avoid the suppression of groundcover growth. This technique allows for the avoidance of heavy equipment movement within the floodplain and on steeper riverbanks, reducing the potential for ground disturbance and possible soil erosion concerns.

At each work area at the three runway ends (2, 20 and 29) the mechanical felling work will start from the wood line nearest the toe of the levee that abuts the airport property (Clark Dike) and work towards the



FRESHWATER MUSSEL PROTECTION PLAN

river. The climbing work can take place concurrently with the mechanical felling. The following sequence of mechanical cutting and tree movement will take place:

- As the (tracked) feller buncher cuts the trees, small piles of logs will be made as the feller buncher moves through the work zone.
- A forwarder will collect the small piles of logs and place them in a larger pile nearest the crane lift area adjacent to the levee; the forwarder has been specified in place of a standard skidder in order to maximize soil protection. A forwarder fully supports cut timber inside of a bunk during movement, as opposed to a skidder which drags the cut pieces over the exposed ground.
- Once a sufficient log pile is created a crane will be brought into place on the airport-side of the levee to lift log bundles over the levee. A low ground pressure shovel logger will assist in creating hitches out of the larger log piles and with overall management of the log staging areas. These hitches will be placed within the reach of the crane and will be of a safe lifting size and weight as determined by the crane operator.
- After the hitch is lifted over the levee to the land side, the logs will be transported to the chipping operation located at the Maxim Road Gate 1 staging area. Chipping and transport of full loads of logs to be chipped will occur on the airport side of the levee and will not contribute to potential soil erosion into the river.

The crane lift operation over the levee will include timber mat bumper protection on the river-side section of the levee slope to prevent damage from the log hitches as they're lifted over the dike. In this manner, the use of the levee for heavy equipment access is limited to one-time access and one-time exit of the heavy equipment, thereby further reducing use of mechanized equipment on steep slopes within and adjacent to the project work area.

Note that a more aggressive approach to the vegetation management was completed in the 1980s with full removal of the trees to ground level for most of the obstruction area. The target trees within the management areas are nearly all multiple-stemmed, reflecting the past cutting of each of the trees during earlier airport vegetation management efforts.

2.1.2 Equipment Details

Crane: The crane will not be traversing the Clark Dike but shall remain on the airport-side of the dike. A typical mobile crane for this project would be similar to a Liebherr model LTM 1130-5.1 and would be stationed on level ground at the toe of the airport side of the levee with the outriggers placed on pressure displacement matting.

Tracked Feller Buncher: The expected ground pressure from a tracked feller buncher will be within the range of 6.2 psi and 10.5 psi depending on make model and grouser configuration. Referencing the largest forestry equipment practical for use on this project, the ground pressures are less than what is typical of standard maintenance trucks or cars.



FRESHWATER MUSSEL PROTECTION PLAN

Shovel Logger: The expected ground pressure from a shovel logger will be within the range of 6.9 psi and 11.0 psi depending on make model and grouser configuration. Referencing the largest forestry equipment practical for use on this project, the ground pressures are less than what is typical of standard maintenance trucks or cars.

Log Forwarder: The expected ground pressure from a forwarder will be within the range of 9.8 psi and 10.4 psi unloaded and between 17.8 psi and 19.3 psi when fully loaded, depending on make model. Referencing the largest forestry equipment practical for use on this project, the ground pressures are less than what is typical of standard maintenance trucks or cars. Log forwarders will only be used on the airport side of the levee.

2.1.3 General Construction Sequence

CAA will construct the proposed Project in a single stage, differing construction operations will take place concurrently. The following summarizes the activities generally expected to be required within the levee ROW:

1. Survey and stake the haul routes, crane platform areas, existing utility crossings, defined environmental resource areas, and vegetation removal boundaries.
2. Identify and mark areas or objects to be avoided or protected in the work areas or along the haul routes (e.g. environmental resource areas, utilities and levee infrastructure components).
3. Install timber mats at identified MDC and Buckeye Pipeline crossings as detailed on the plans and detail sheets. See Appendix C.
4. Mobilize forestry equipment at the MDC construction site. Forestry equipment will then travel the designated haul route south from the MDC property along the bottom toe of the landside levee road and over the up and down ramps located at levee Sta. 47+00S. Once the forestry equipment accesses the river side of the levee they will remain there until the work is completed (one time in, one time out). This will only change if the Connecticut River water reaches a level described in the Flood Contingency Plan which would require the forestry equipment evacuation.
5. Vegetation removal will start on the Runway 2 and Runway 29 ends first. The mechanized felling and climbing cut operations can take place concurrently and as outline in the previous section Summary of Construction Methods.
6. Once the mechanized felling at the Runway 2 and Runway 29 work areas are complete and the logs are staged at the crane pick points, the crane will be brought to the project site for the log transfer over the levee. The weather forecast and river levels will be monitored closely for the longest window possible of low river levels and minimal precipitation prior to mobilizing the crane. The crane will access the south crane platform area, stabilized with timber mats, from the Airport property. Prior to any log lifts the crane will place timber mats along the riverside levee to act as a protective bumper to the levee during the initial lifting of the log hitches. The crane will lift the log hitches to the airport/landside of the levee, load the logs onto a forwarder to be brought to the north chipping/processing area near Maxim Rd. (Airport Gate 1). Once all the log hitches are removed



FRESHWATER MUSSEL PROTECTION PLAN

from the river side of the levee the crane will remove the timber mat bumpers and remobilize at the Runway 20 crane platform.

7. This process is repeated at the Runway 20 end until all required vegetation is cut and removed. To minimize the time the crane is onsite, mechanical felling of the Runway 20 end can happen concurrently with the crane lift operation at the Runway 2 and Runway 29 ends.
8. The forestry equipment will remove the temporary timber mats and any construction material along the haul routes as they exit the site. Existing access roads within the levee ROW will be restored to pre-existing conditions.

2.1.4 Anticipated Construction Schedule

2022/2023 Winter Season

Management of the target trees will take place under dry or frozen ground conditions, ideally in the winter months of January and February 2023. This project timing will maximize protection of soils, minimize impacts to vegetation and wildlife, and will promote maximum regrowth of cut stems to minimize the duration of the environmental impact. Winter timing is expected to be a condition of the wetland-related environmental permits that will be obtained for the project.

2.1.1 Construction Environmental Monitoring

Vegetation clearing will require an on-site Environmental Monitor (EM) to ensure that activities remain in compliance with environmental permits and to observe clearing equipment in operation. The EM will document site conditions on a daily or weekly basis, including proposed equipment access and travel routes. The EM will maintain a record of areas of ground disturbance and will advise equipment operators if conditions are encountered that require modifications to the access route or cutting practices. Observations made during environmental monitoring will be used to guide site restoration requirements once the vegetation removal is complete.

2.2 RESTORATION PLANTINGS

After construction is complete the roads used for equipment access routes will be restored to their pre-existing condition. Other disturbed areas within the vegetation clearing sites will be stabilized and revegetated, as needed, in compliance with all conditions of regulatory approvals.

Stabilization and revegetation of disturbed areas will be completed using techniques that will vary, based on the site conditions. Live staking of native willow and dogwood species will be completed in all areas within 100' of the Connecticut River where full canopy removal will occur (see the Planting Plan in Appendix A for a depiction of areas with different removal techniques and planting ratios). Live stakes and stickers will be sourced from on-site vegetation (from within or adjacent to the proposed work areas) or may be purchased from vendor, as needed. Only native species will be used and stake spacing will be according to the ratios indicated on the Planting Plan. On-site observations by the EM will guide stake installation in those areas in need, while avoiding areas not impacted by project work. Thus, an even



FRESHWATER MUSSEL PROTECTION PLAN

spacing of the live stakes is not anticipated; rather the stakes will be focused in areas of need of revegetation.

2.3 MONITORING

Besides the environmental monitoring that will occur during the active vegetation removal operation, follow-up monitoring of the site will take place throughout the 2024 growing season. Monitoring will document success of restoration activities in the work areas, including access routes that are restored and areas of willow and dogwood staking.

Turbidity monitoring in the river will be completed before, during, and following completion of the vegetation removal activities. Sampling will be conducted from the shoreline at the Charter Oaks boat launch (upstream of the project site; US-1 on Figure 1) and just above the mouth of Folly Brook (immediately downstream of the project site; DS-1 on Figure 1). Monitoring will be completed immediately before the start of clearing activities, three times during the active clearing operation, and during three storm events after completion of the clearing activities. A handheld turbidity monitor will be used to measure turbidity in real-time (NTUs) while water samples will be collected for later analysis of total suspended solids (TSS). During each sampling event, the shoreline at each vegetation removal area will also be walked to document any visible signs of soil erosion and instability. Data from DS-1 will be compared with data from US-1 on the assumption that any differences between the two sites would be attributable to the clearing operation, unless the shoreline walking observations indicate some other input that might be contributing to greater turbidity at the downstream sampling location.

2.4 CONTINGENCY PLAN

The need for additional, remedial measures to stabilize the site will be determined following each monitoring visit to the site. The establishment (percent survival) of the live stake willows and dogwood planted at the site will be documented at the end of the growing season (late September). If 50% of stakes have not survived, then follow-up live staking will be completed in April of 2024. Should water quality monitoring results indicate that the site is contributing to higher turbidity in the river (8 NTU over background, or suspended solids more than 25 mg/l over background during any single sampling event) then a restoration professional will evaluate all work areas to determine the likelihood that the increased turbidity is a result of ground disturbance associated with the vegetation removal and to develop an updated restoration plan to stabilize those work areas found to be contributing to the turbidity.

3.0 REPORTING

The results of the restoration and water quality monitoring will be summarized in a brief memo report and submitted to CNDDDB and CTDEEP Inland Wetlands.

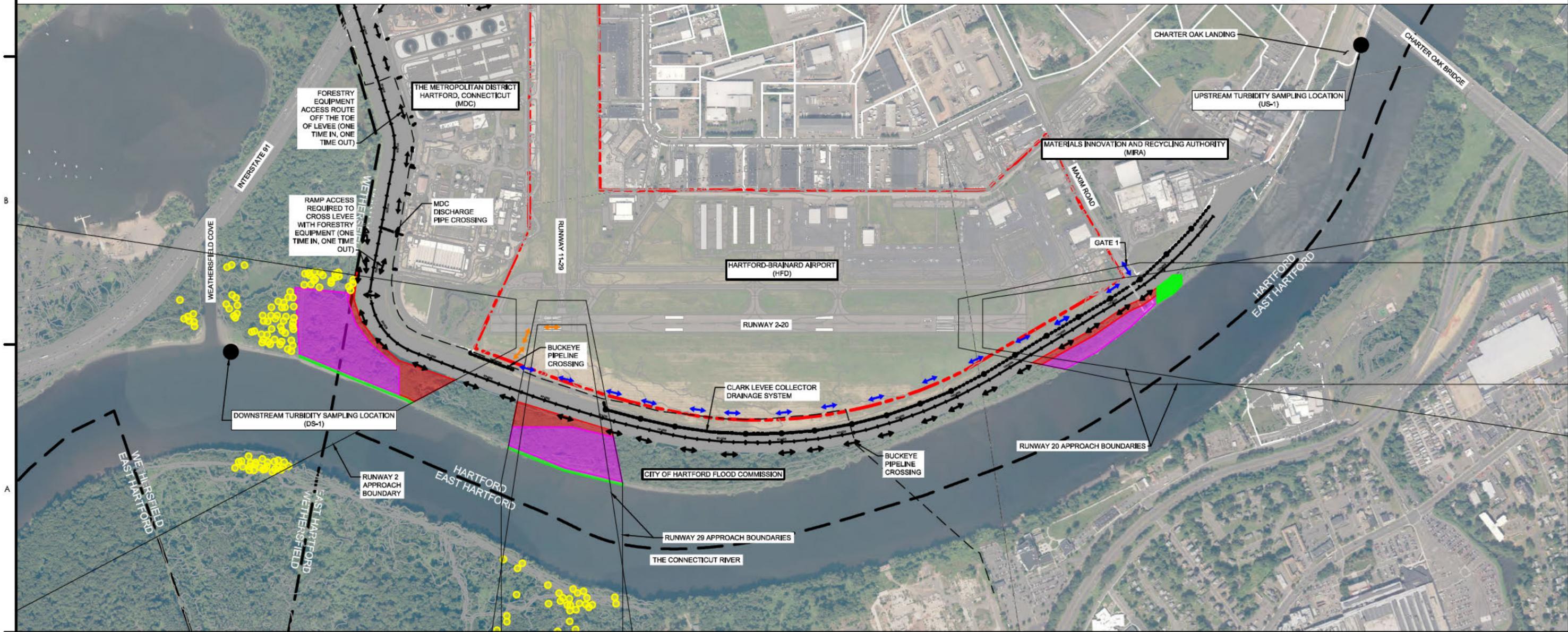
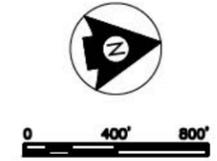


NOTES:

1. THE ENTIRE AIRPORT PROPERTY AND CITY OF HARTFORD PROPERTY SHOWN ON THIS PLAN ALONG WITH ALL WORK AREAS AND ACCESS/HAUL ROUTES ARE WITHIN 'LAND AREA BELOW ELEVATION 30.0 FT NGVD CONNECTICUT RIVER FLOOD ZONE A (100 YEAR)' ACCORDING TO THE CITY OF HARTFORD FLOOD CONTROL MAP.
2. BLUESKY INTERNATIONAL LTD, PREPARED TOPOGRAPHIC MAPPING USING HIGH RESOLUTION DIGITAL STEREO AERIAL PHOTOGRAPHY. DATUMS: HORIZONTAL CONNECTICUT STATE PLANE NAD 83 (NSRS 2011), VERTICAL NAVD88 GEOID 12B. UNITS: US SURVEY FEET.
3. ALL UTILITY CROSSINGS WILL BE PROTECTED TO THE OWNERS SPECIFICATIONS.
4. WORK WITHIN 150 FEET OF LISTED PLANTS WILL BE CONDUCTED DURING NON-GROWING SEASON CONDITIONS AFTER PLANTS HAVE SENECECED.
5. UTILIZE CONSTRUCTION MATS PLACED DURING FROZEN GROUND CONDITIONS FOR EQUIPMENT ACTIVITIES WITHIN 150 FEET OF LISTED PLANTS.
6. LISTED PLANT LOCATIONS WILL BE DEMARCATED WITHIN 30 DAYS PRIOR TO INITIATION OF TREE REMOVAL.
7. NO TREE LIMBS, WOODY DEBRIS, CONSTRUCTION MATS, OR WOOD CHIPS WILL BE PLACED WITHIN THE DEMARCATED LISTED PLANT AREAS.

LEGEND

- AIRPORT PROPERTY LINE
- ABUTTER PROPERTY LINE
- TOWN/CITY LINE
- MECHANIZED FELLING - FLUSH CUT 6.1 ACRES
- MECHANIZED FELLING - SNAG CUT 17.8 ACRES
- CLIMBING - TOPPING 1.8 ACRES
- CLIMBING - PRUNE CUT
- ACCESS ROUTE: FORESTRY EQUIP - BLACK, CRANE - ORANGE, FORWARDERS - BLUE



Revision		By		Aspd		YYYY.MM.DD		Issued		By		Aspd		YYYY.MM.DD									
Permit/Seal				Consultant				<p>Stantec</p> <p>Stantec Architecture Inc. 3 Columbia Circle Suite 6 Albany NY 12203-6158 Tel: (518) 452-4358 www.stantec.com</p> <p>Copyright Reserved</p> <p>The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawings - any errors or omissions shall be reported to Stantec without delay. The Copyright to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.</p>				Client/Project Logo				Client/Project HARTFORD-BRAINARD AIRPORT HARTFORD, CONNECTICUT File Name: TURBIDITY FIGURE CAM MA IC 2022.03.26 Dwtl. Dgrl. Chkd. YYYY.MM.DD				Title TURBIDITY SAMPLING LOCATIONS Project No. 179450287 Scale HALF SCALE Revision Sheet Drawing No. 1 of 1 1			

Appendix A – Planting Plan





Stantec Consulting Services, Inc.
136 West Street, Northampton, MA 01060-3711

March 23, 2022
File: 179450287

Attention: Ms. Dawn McKay
Natural Diversity Data Base Program
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127

Dear Ms. McKay,

**Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Planting Plan
NDDB Determination 202104141**

In May 2021 your office provided the CT Airport Authority (CAA) with a response to proposed vegetation management at the Hartford-Brainard Airport (HFD) relative to potential impacts to state-listed protected species. One item in the response included protection of fisheries resources, including anadromous fish and several state-listed mussel species. CAA employed our on-staff mussel biologist, Mr. Bob Roy, to assist in the evaluation of the project relative to your comments and the biology of the subject mussel species.

The project includes the full or partial removal of the canopy layer, under dormant winter conditions, within both upper and lower floodplain forest that was subjected to past vegetation management around 1980. This past management is reflected in the multiple-trunk form of the trees within the proposed management areas. The project has carefully assessed the tree heights relative to the elevation of the protected airspace surfaces and assigned management methods accordingly, resulting in different management zones each with a specific management method. Furthermore, the design eliminated mechanical management where hand labor is capable of addressing the obstructions. This sensitivity in the project means and methods is the primary project mitigation for protection of wetlands, wildlife, and non-target vegetation.

The NDDB response required the protection of a 100-foot vegetated buffer strip along the edge of the Connecticut River and Folly Brook to support protection of the subject mussel populations and anadromous fish species. Our computer modeling of the navigable airspace within the 100-foot buffer suggested that only partial protection of the canopy layer could be afforded within that buffer zone. To provide maximum protection of the buffer area while still providing a clear and safe airspace, the project design has included the following measures:

1. Where only the upper branching of the canopy obstructs the airspace, only specific target trees will be climbed and carefully limbed to remove the offending branches while protecting the remaining tree section and the surrounding non-target trees. This manual “pruning cut” (depicted as individual yellow circles on the plan) allows the protective vegetated buffer to remain and is completely protective of non-target vegetation and soils.

2. Where all mature trees obstruct the airspace but the management area borders directly on the river, the project proposes manual removal of the treetops by climbing (shown in green on the figures). No heavy equipment shall be permitted within this near-water zone. For much of the work area, this manual topping zone is 25' wide, but increases at the northern end of the project. In this manual topping area, maximum protection of the lower vegetative layers is achieved. Furthermore, significant regrowth of the topped trees will occur since most of the trees consist of silver maple with some red maple, cottonwood, black willow and sycamore mixed throughout. Floodplain-adapted trees species exhibit a high propensity for growth after damage or cutting. It is expected that over 75% of the managed trees in this manual topping zone will sprout new growth in the following growing season. This regrowth combined with the unimpacted lower vegetative layers will fully replace the soil protection function of this near-water zone.
3. The mechanical removal zones include two levels of canopy removal. The “snag cut” zone (shown in purple on the figures) involves use of a feller-buncher to remove all but the bottom 12'-15' of the trunk of each target tree. The removed portion will then be transferred off-site for processing, leaving a standing “snag” of trunk remaining. The operation of a tracked feller-buncher and removal vehicles in this zone during frozen soil conditions will result in some loss of non-target vegetation in the shrub and groundcover layers, even with restrictions on vehicle track turning and haul routes. While regrowth from the snags is fully anticipated, the canopy loss combined with some loss of the lower layers could result in a short-term increase in turbidity.
4. The highest level of mechanical removal can be found close-in to each runway end and involves a flush cut of each target tree to ground level. While stump regrowth will undoubtedly occur from each target, this form of management will have a short-term impact on the dense groundcover layer that occurs throughout the upper and lower floodplain forest potentially causing a turbidity increase.

Vegetation management necessary to address the safety issues with the navigable airspace at HFD requires removal of canopy species within the 100-foot zone adjacent to the Connecticut River. While the above measures have sought to minimize soil disturbance and impacts to non-target vegetation, a limited planting plan in the more heavily managed zones is proposed to further protect the subject fisheries resources from project-related turbidity increase. The planting plan involves the use of native floodplain tree/shrub live stakes and stickers in areas where impacts may occur within the 100-foot buffer area. The density of live stake/sticker installation will be commensurate with the intensity of the vegetation management method, with the “manual topping” (green) zone receiving the lowest density of plantings and the mechanical flush cut (red) zone receiving the highest installation density. The total project stake/sticker installation is provided in Table 1. The plantings for each individual runway end are provided in tabular format on the individual figures attached to this plan (Figures Plant-1, Plant-2 and Plant-3). The planting plan is intended to be adaptive to the final site conditions following vegetation management efforts. The planting ratios and numbers provided will be modified by the environmental monitor so that densities are commensurate with the observed level of disturbance.

The stake/sticker installation will occur in the late-fall months following leaf-drop and prior to frozen ground conditions. On-site collection of the native willow and dogwood species (*Salix discolor*, *S. nigra*, *S. bebbiana*, *S. eriocephala*, *S. sericea*, *S. lucida* and/or *Cornus sericea*) will occur, supplemented by nursery stock if the numbers cannot be generated by the on-site donor stock as determined by the on-site environmental monitor. No more than 25% of an individual donor will be used for stake/sticker collection. Technical specifications for the collection and planting will be provided as a part of the project bid package

and submittals from the contractor will be required for any nursery stock used on the project. Submittals and technical specifications for the stake/sticker collection and installation can be provided to your office as a part of the permit conditions.

Table 1: Live stake/sticker planting ratios and totals for the various removal method zones within the 100-foot vegetated river buffer at the Runway 2, 20 and 29 ends at HFD

Removal Method Zone	Total Area of Zone	Tree Stake Density	Shrub Stake Density	Project Totals
Manual Topping	74,331 SF	1/1000 SF	1/500 SF	74 Tree Stakes 148 Shrub Stakes
Mechanical – Snag Cut	225,606 SF	1/500 SF	1/300 SF	448 Tree Stakes 751 Shrub Stakes
Mechanical – Flush Cut	23,046 SF	1/200 SF	1/100 SF	115 Tree Stakes 230 Shrub Stakes
Total Buffer Zone Plantings 3 Runway Ends				637 Tree Stakes 1,129 Shrub Stakes

Contingency planning for the live stake/sticker installation shall include a review of the growth following one growing season after installation. A 50% survival rate is established as the replanting threshold for this project, with replanting of lost stakes by the contractor to occur following a determination by the environmental monitor that the success threshold has not been met. Replanting efforts shall follow the same technical specifications as the original planting effort and shall be subject to monitoring by the CAA.

March 23, 2022
Ms. Dawn McKay
Page 4 of 4

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Planting Plan NDDB Determination 202104141

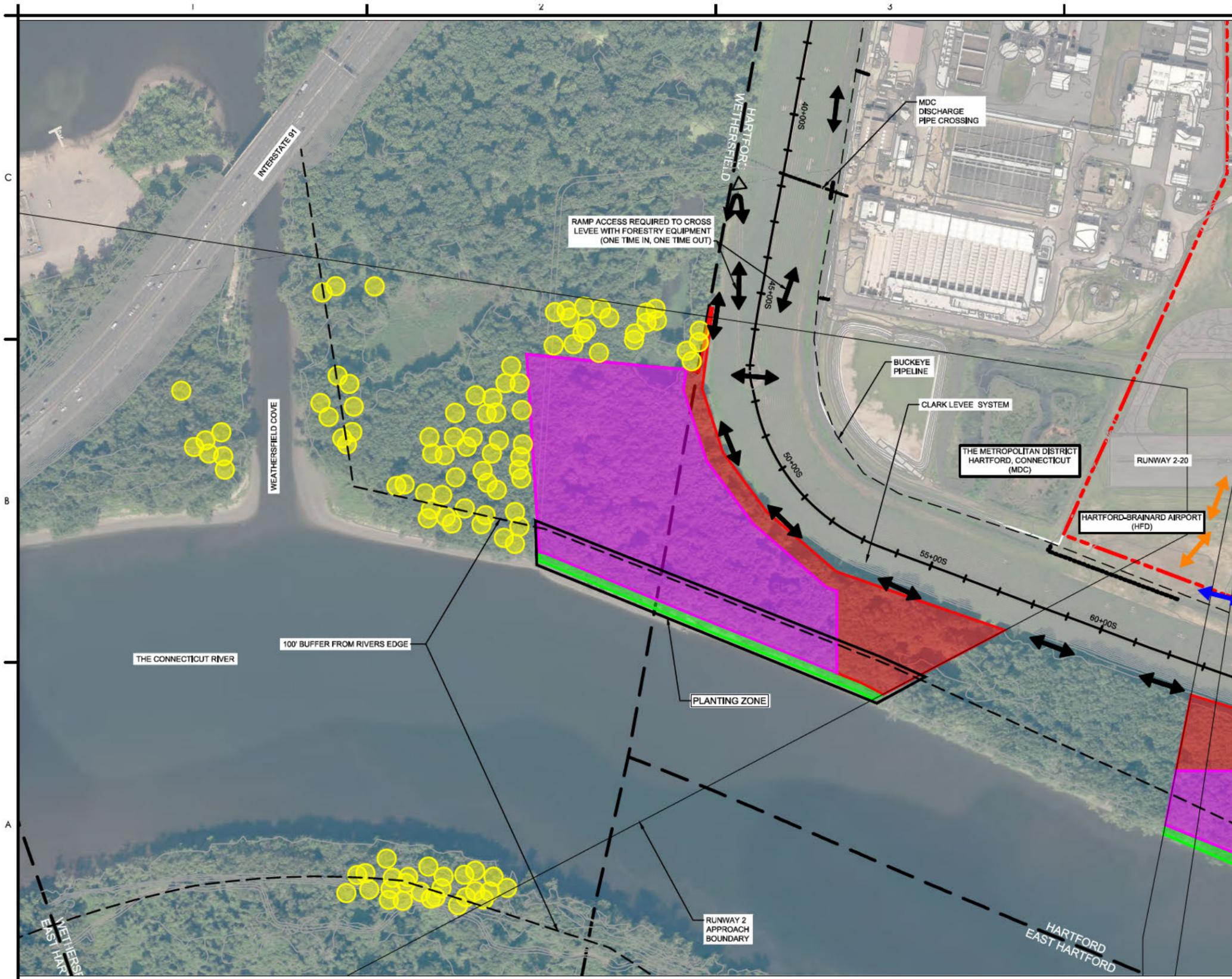
We hope the combination of this planting plan, water quality monitoring plan, and the sensitive removal methodologies afford sufficient protection against potential impacts to fisheries resources. Please contact us with any questions.

Sincerely,

Stantec Consulting Services, Inc.

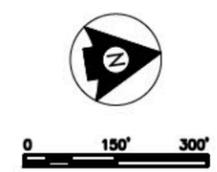
Randall P. Christensen M.S.
Senior Environmental Scientist
Phone: 413519 2587
randy.christensen@stantec.com

Attachment: Figures – Planting Plans (3 sheets)
c. CAA, Stantec File



LEGEND

- AIRPORT PROPERTY LINE
- ABUTTER PROPERTY LINE
- TOWN/CITY LINE
- MECHANIZED FELLING - FLUSH CUT
- MECHANIZED FELLING - SNAG CUT
- CLIMBING - TOPPING
- CLIMBING - PRUNE CUT
- ↔ ACCESS ROUTE: FORESTRY EQUIPMENT - BLACK
CRANE - ORANGE
FORWARDERS - BLUE
- 100' RIVERS EDGE BUFFER



NOTES:

1. THE ENTIRE AIRPORT PROPERTY AND CITY OF HARTFORD PROPERTY SHOWN ON THIS PLAN ALONG WITH ALL WORK AREAS AND ACCESS/HAUL ROUTES ARE WITHIN "LAND AREA BELOW ELEVATION 30.0 FT NGVD CONNECTICUT RIVER FLOOD ZONE A (100 YEAR)" ACCORDING TO THE CITY OF HARTFORD FLOOD CONTROL MAP.
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3. ALL UTILITY CROSSINGS WILL BE PROTECTED TO THE OWNERS SPECIFICATIONS.
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5. ON-SITE DONOR TREES AND SHRUBS SHALL BE USED TO COLLECT LIVE STAKES THAT ARE TO BE INSTALLED IN THE PLANTING ZONES. DONOR SPECIMENS SHALL BE MARKED BY THE DESIGNATED CAA REPRESENTATIVE FOR COLLECTION BY THE CONTRACTOR ACCORDING TO THE TECHNICAL SPECIFICATIONS. ONLY MARKED DONOR SPECIMENS SHALL BE FOR COLLECTION, AND NO MORE THAN 25% OF ANY SINGLE DONOR SPECIMEN SHALL BE USED FOR LIVE STAKE COLLECTION. ONLY HAND COLLECTION OF THE LIVE STAKES SHALL BE ALLOWED UNDER THIS CONTRACT.
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7. LIVE STAKE COLLECTION AND INSTALLATION BY THE CONTRACTOR SHALL ADHERE TO ALL SPECIAL CONDITIONS PERTAINING TO THE AVOIDANCE AND PROTECTION OF MARKED RARE PLANT SPECIES AREAS.

RUNWAY 2 APPROACH - PLANTING PLAN TABLE

Management Method	Planting Area (SF)	Tree Stake Ratio	Shrub Stake Ratio	Total Plantings
Topping Zone	25,446	1/1,000 SF	1/500 SF	Tree Stakes: 25 Shrub Stakes: 50
Mechanical - Snag Cut	58,863	1/500 SF	1/300 SF	Tree Stakes: 117 Shrub Stakes: 196
Mechanical - Flush Cut	13,819	1/200 SF	1/100 SF	Tree Stakes: 69 Shrub Stakes: 138
Runway 20 End Total Buffer Zone Plantings				Total Trees: 211 Total Shrubs: 384

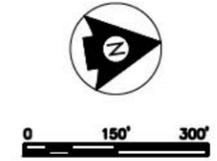
		Permit/Seal	Consultant	<p>Stantec Architecture Inc. 3 Columbia Circle Suite 6 Albany NY 12203-6158 Tel: (518) 452-4358 www.stantec.com</p> <p>Copyright Reserved</p> <p><small>The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawings - any errors or omissions shall be reported to Stantec without delay. The Copyright to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.</small></p>	Client/Project Logo	Client/Project HARTFORD-BRAINARD AIRPORT HARTFORD, CONNECTICUT Date: 2022.03.28 Drawn: CAM, Digit: MIA, Check: JIC, YYY.MM.DD	Title RUNWAY 2 APPROACH RIVER BUFFER PLANTING PLAN SHEET 1 OF 3 Project No. 179450287 Scale HALF SCALE Revision Sheet 1 of 3 Drawing No. PLANT-1
Revision	By	Appd	YYYY.MM.DD	Issued	By	Appd	YYYY.MM.DD

NOTES:

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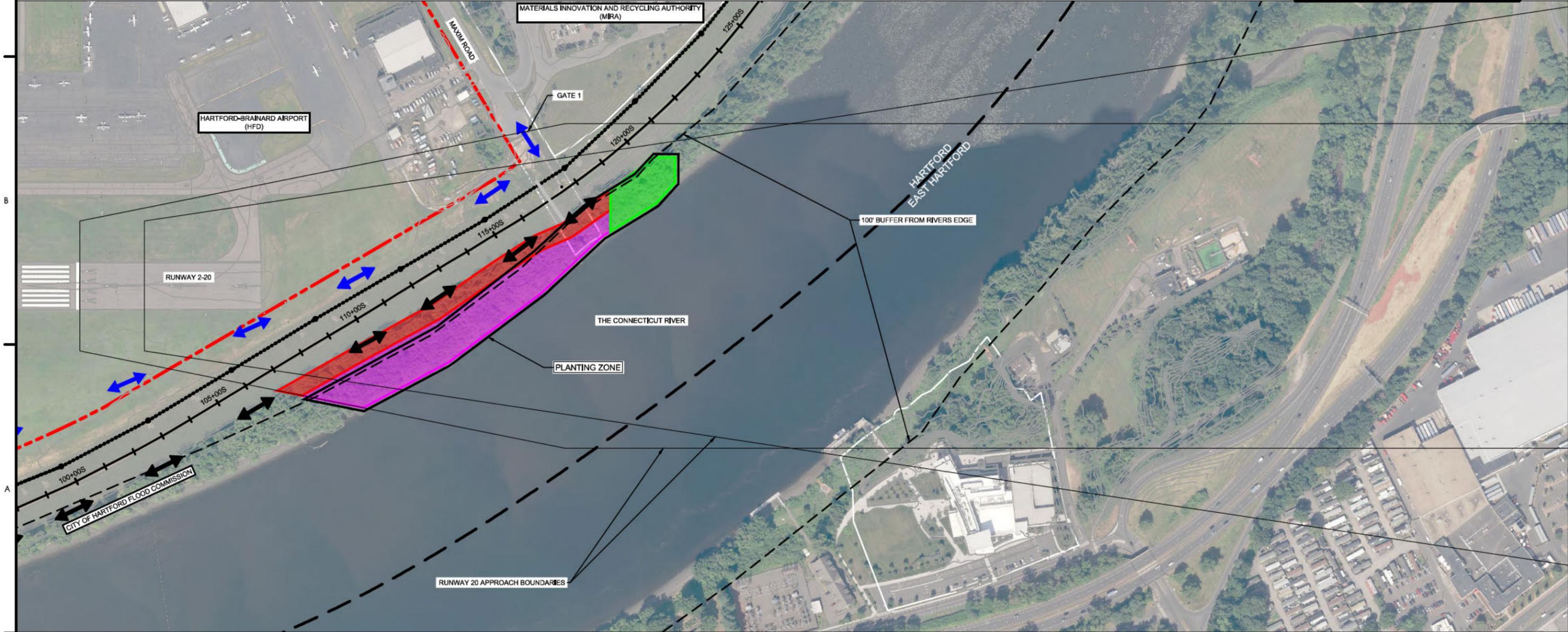
RUNWAY 20 APPROACH - PLANTING PLAN TABLE

Management Method	Planting Area (SF)	Tree Stake Ratio	Shrub Stake Ratio	Total Plantings
Toping Zone	24,117	1/100 SF	1/500 SF	Tree Stakes: 24 Shrub Stakes: 48
Mechanical - Snag Cut	53,648	1/500 SF	1/300 SF	Tree Stakes: 107 Shrub Stakes: 182
Mechanical - Flush Cut	5,227	1/200 SF	1/100 SF	Tree Stakes: 26 Shrub Stakes: 32
Runway 20 End Total				Total Trees: 257
Buffer Zone Plantings				Total Shrubs: 452

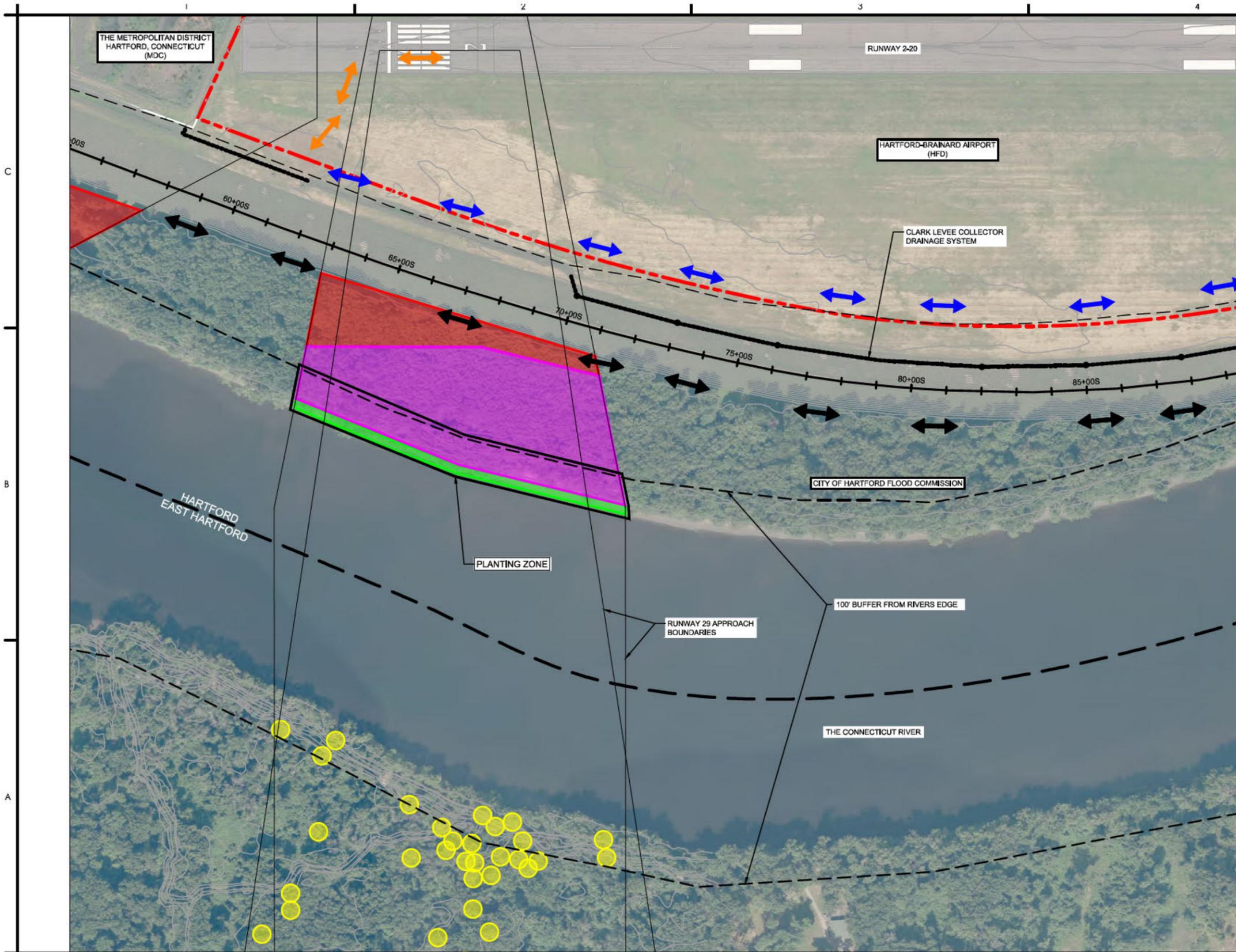


LEGEND

- AIRPORT PROPERTY LINE
- ABUTTER PROPERTY LINE
- TOWN/CITY LINE
- MECHANIZED FELLING - FLUSH CUT
- MECHANIZED FELLING - SNAG CUT
- CLIMBING - TOPPING
- CLIMBING - PRUNE CUT
- ACCESS ROUTE: FORESTRY EQUIPMENT - BLACK
CRANE - ORANGE
FORWARDERS - BLUE
- 100' RIVERS EDGE BUFFER



Revision By Appd YYYY.MM.DD Issued By Appd YYYY.MM.DD	Permit/Seal Consultant	 Stantec Stantec Architecture Inc. 3 Columbia Circle Suite 6 Albany NY 12203-6158 Tel: (518) 452-4358 www.stantec.com Copyright Reserved <small>The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawings - any errors or omissions shall be reported to Stantec without delay. The Copyright to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.</small>	Client/Project Logo Client/Project HARTFORD-BRAINARD AIRPORT HARTFORD, CONNECTICUT File Name: PLANTING PLAN CAM MA IC 2022.03.28 DwtL DgtL ChkL YYYY.MM.DD	Title RUNWAY 20 APPROACH RIVER BUFFER PLANTING PLAN SHEET 3 OF 3
				Project No. 179450287 Revision Sheet 3 of 3



LEGEND

- AIRPORT PROPERTY LINE
- ABUTTER PROPERTY LINE
- TOWN/CITY LINE
- MECHANIZED FELLING - FLUSH CUT
- MECHANIZED FELLING - SNAG CUT
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- NOTES:
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RUNWAY 29 APPROACH - PLANTING PLAN TABLE

Management Method	Planting Area (SF)	Tree Stake Ratio	Shrub Stake Ratio	Total Plantings
Topping Zone	24,768	1/1000 SF	1/500 SF	Tree Stakes: 25 Shrub Stakes: 50
Mechanized - Snag Cut	72,895	1/500 SF	1/300 SF	Tree Stakes: 144 Shrub Stakes: 243
Mechanized - Flush Cut	0	1/200 SF	1/100 SF	Tree Stakes: 0 Shrub Stakes: 0
Runway 29 End Total				Total Trees: 165
Buffer Zone Plantings				Total Shrubs: 293

Revision	By	Appd	YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD

Permit/Seal

Consultant

Stantec Architecture Inc.
3 Columbia Circle Suite 6
Albany NY 12203-6158
Tel: (518) 452-4358
www.stantec.com

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HARTFORD-BRAINARD AIRPORT

HARTFORD, CONNECTICUT

File Name: PLANTING PLAN

CAM MA IC 2022.03.28
Dwrt. Dgnt. Chkd. YYYY.MM.DD

Title
RUNWAY 29 APPROACH
RIVER BUFFER PLANTING PLAN
SHEET 2 OF 3

Project No.
179450287

Scale
HALF SCALE

Revision Sheet
2 of 3

Drawing No.
PLANT-2

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ATTACHMENT D
State-Listed Plant Species Consultation and
Incidental Take Report (*Carex typhina*) with Invasives Control
Plan



**Incidental Take Report: Cattail
sedge (*Carex typhina*)
Hartford-Brainard Airport
Obstruction Removal Project**

Hartford, East Hartford, and
Wethersfield, Connecticut

April 1, 2022

Prepared for:

Connecticut Airport Authority
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INCIDENTAL TAKE REPORT: CATTAIL SEDGE (CAREX TYPHINA) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

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Executive Summary

The Connecticut Airport Authority plans to conduct removal of vegetative obstructions associated with the protected airspace surfaces at the Hartford-Brainard Airport due to the safety hazards they present to inbound and outbound aircraft (Project). The Project will primarily involve the removal of overstory vegetation associated with the inbound and outbound flight pathways.

Information obtained from the Connecticut Department of Environmental Protection (DEEP) Natural Diversity Data Base on May 4, 2021 (NDDB Determination 202104141), indicated the presence of listed birds, freshwater mussels, plants, fish, and critical habitats proximal to the Project area. Field surveys were conducted at the request of DEEP to target the following species of plants that have been documented previously in the vicinity of the Project area:

- Davis' sedge (*Carex davisii*), State Threatened;
- Cattail sedge (*Carex typhina*), State Special Concern;
- Northern arrowhead (*Sagittaria cuneata*), State Endangered;
- Wiegand's wild-rye (*Elymus wiegandii*), State Special Concern; and
- Hoary plantain (*Plantago virginicus*), State Special Concern.

Stantec Consulting Services Inc. conducted field surveys in 2021 and observed occurrences of Davis' sedge, cattail sedge, and Wiegand's wild-rye within the Project area. Occurrences of northern arrowhead and hoary plantain were not observed during the 2021 field surveys.

To the greatest extent practicable, efforts have been undertaken to avoid and minimize impacts to the listed plants observed within the Project area. The Project will avoid adverse impacts to Davis' sedge and Wiegand's wild-rye locations, but the removal of overstory canopy vegetation will result in unavoidable take of cattail sedge in three locations to the west of the Connecticut River. To compensate for these impacts, the applicant is proposing a mitigation plan to transplant the cattail sedge specimens within the mechanized tree clearing footprint into nearby forested floodplain habitat that is consistent and contiguous with that of the affected areas. The mitigation includes invasive species control and long-term monitoring.

This Incidental Take Report has been prepared for the unavoidable impacts to cattail sedge.



1.0 PROJECT NARRATIVE

1.1 PROJECT BACKGROUND

1.1.1 Purpose and Need

The Connecticut Airport Authority (CAA) plans to conduct removal of vegetative obstructions associated with the protected airspace surfaces at the Hartford-Brainard Airport (HFD) to promote public safety by bringing the airport into compliance with existing Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace (Project; Appendix A, Figure 1). FAA has established airspace and design criteria to provide for safe aircraft operations. CAA recently conducted an obstruction study to evaluate the airspace at HFD relative to these existing FAA airspace directives. Based on the FAA design criteria, the results of this analysis identified existing safety deficiencies at HFD, which include multiple acres of tree obstructions to the Federal Aviation Regulation Part 77 surfaces, Terminal Instrument Procedures, and Airport Design Standards. The results of this study identified that HFD does not provide adequate airspace surfaces to its runways. To address this public safety deficiency identified by FAA, CAA has proposed the removal of obstructions from the approach surfaces.

1.1.2 Existing Conditions

HFD is a regional general aviation airport in the City of Hartford that serves the central Connecticut region and also serves as a reliever airport for the nearby Bradley International Airport. The airport was developed in the 1920s and presently consists of a 2,350-foot-long seasonal turf runway, two asphalt runways of 4,400 feet and 2,300 feet long, one helipad, and supporting infrastructure including a taxiway system, vehicle parking, and other airport facilities such as hangars, fueling systems, and maintenance.

HFD borders the western shore of the Connecticut River and a perimeter levee dike system between the river and the airport protects the airport from flooding. The dike is maintained as an open grassland area through periodic mowing. Commercial, industrial, transportation, and utility transmission and distribution infrastructure is present to the north and west of the airport. The obstruction removal area is primarily associated with the forested floodplains along the western shore of the Connecticut River to the east and south of the HFD runways. The South Meadows Multi-use Recreational Trail associated with Goodwin College is present through the floodplain forests to the east of the Connecticut River in the eastern portion of the proposed obstruction removal area.

CAA has conducted obstruction removal activities historically in the floodplain forests and neighboring areas historically at HFD with the previous obstruction removals occurring in the 1980s with full removal of trees to ground level within most of the obstruction removal area.

1.1.2.1 Environmental Site Description

The Project area consists largely of forested floodplain habitats along the west and east shores of the Connecticut River. The floodplain forests on the west side of the Connecticut River are low floodplains



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dominated by silver maple (*Acer saccharinum*) with a dense understory supporting common low floodplain species such as sensitive fern (*Onoclea sensibilis*), ostrich fern (*Matteuccia struthiopteris*), poison-ivy (*Toxicodendron radicans*), Gray's sedge (*Carex grayi*), inflated narrow-leaved sedge (*Carex grisea*), Canada wood-nettle (*Laportea canadensis*), small-spiked false nettle (*Boehmeria cylindrica*), sweet wood-reed (*Cinna arundinacea*), and white cut grass (*Leersia virginica*). Mid-story shrubs and saplings are generally scattered (although dense thickets are interspersed within the floodplain forest) and commonly include silver maple, green ash (*Fraxinus pennsylvanica*), rambler rose (*Rosa multiflora*), and northern spicebush (*Lindera benzoin*). Non-native invasive species are prevalent along the upper forest edge near the base of the levee dike around the airport and include species such as Japanese winged-knotweed (*Fallopia japonica*), oriental bittersweet (*Celastrus orbiculatus*), Japanese stilt grass (*Microstegium vimineum*), creeping yellow-loosestrife (*Lysimachia nummularia*), rambler rose, Japanese honeysuckle (*Lonicera japonica*), reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), and garlic-mustard (*Alliaria petiolata*). The floodplain is periodically scoured during flood events and includes semi- to permanently inundated basins with a perimeter of buttonbush (*Cephalanthus occidentalis*) and water smartweed (*Persicaria amphibia*). Many of these scoured basins are remnant excavated areas remaining from the construction of the adjacent flood levee protection system for the City of Hartford. These borrow areas were designated on the original levee construction plans for soil material excavation. The differential topography created by these excavations greatly diversifies the soil drainage characteristics of the Project site.

The floodplain along the eastern shore of the Connecticut River and generally associated with the South Meadows Multi-use Recreational Trail supports a high floodplain forest. Species diversity is generally higher with a greater component of woody shrub and mid-story species compared with the community on the western shore closer to the airport. Silver maple and eastern cottonwood (*Populus deltoides*) are the dominant canopy species. Midstory shrubs, saplings, and vines are prevalent, forming dense thickets, and include species such as northern spicebush, rambler rose, oriental bittersweet, green ash, river grape (*Vitis riparia*), American elm (*Ulmus americana*), and burning-bush (*Euonymus alatus*). Understory and herbaceous species are abundant in areas with less shrub cover and include species such as poison-ivy, ostrich fern, jumpseed (*Persicaria virginiana*), sensitive fern, wood blue grass (*Poa nemoralis*), Virginia-creeper (*Parthenocissus quinquefolia*), jewelweeds (*Impatiens capensis* and *Impatiens pallida*), smooth goldenrod (*Solidago gigantea*), garlic-mustard, inflated narrow-leaved sedge, dame's-rocket (*Hesperis matronalis*), eastern riverbank wild-rye (*Elymus riparius*), white cut grass, thin-leaved sunflower (*Helianthus decapetalus*), and lance-leaved American-aster (*Symphotrichum lanceolatum*). There is a steep and abrupt bank between the forest terrace and the river, and the forest appears to be inundated only during the major flood events and at a less frequency than the floodplain forest observed along the western shore of the river. Invasive species are prevalent throughout this area and include oriental bittersweet, garlic-mustard, burning-bush, rambler rose, Japanese stilt grass, and Japanese winged-knotweed. Generally speaking, the invasive species coverage of the eastern shore portion of the Project area greatly exceeds the coverage of the western shore portion of the Project area. The South Meadows Multi-use Recreational Trail traverses the floodplain forests within the Project area.

Beyond the riverine areas, the Project area includes a small patch of upland forest and landscaped areas associated with commercial infrastructure (e.g., Best Western hotel) to the west of the airport. The



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forested area is densely vegetated with weedy species, including a prevalence of non-native invasive species. The characteristic vegetation included boxelder (*Acer negundo*), tree-of-heaven (*Ailanthus altissima*), white willow (*Salix alba*), oriental bittersweet, common reed, garlic-mustard, river grape, and Virginia creeper. Additional obstructions to be removed in this vicinity include landscape plantings within the mowed lawn area around the hotel.

1.2 PROPOSED ACTIVITIES

CAA proposes to remove the tree obstructions within the inbound and outbound flight ways. The proposed obstruction removal will consist of a variety of mechanized tree removal and selective tree pruning and topping to allow for unobstructed flight paths for inbound and outbound aircraft (Appendix A). Mechanized work has been limited to those areas where full tree removal was determined necessary by CAA to preserve the protected airspace. Mechanized tree removal will consist of flush cuts and snag cuts in most of the floodplain habitats to the west of the Connecticut River. Flush cuts will remove the tree from near ground level, leaving an approximately 1-foot-tall stump. Snag cuts will remove the upper portion of the tree, leaving an approximately 12-foot-tall standing bole. The cut wood generated from the mechanical felling operation will be collected and hauled off site. The obstruction removal actions will convert the forested floodplain habitat into scrub-shrub floodplain habitat. Based on observations of similar open floodplain habitats nearby, a high density of vegetation is expected to become established.

Hand labor (climbers with chainsaws) are specified for the remaining areas subject to tree topping and pruning. Tree pruning work will be conducted in the portion of the Project area to the east of the Connecticut River and the areas proximal to the Wethersfield Cove outlet to the south of the airport. Tree topping will be conducted primarily along the banks of the Connecticut River. The cut wood from climbing operations will be diced with chainsaws and scattered sufficiently to avoid the suppression of groundcover growth. This technique allows for the limitation of heavy equipment movement within the floodplains. Midstory limbs and vegetation will be left in place in areas subject to tree pruning and topping. Although mid-story limbs and vegetation will be left in place, the removal of upper canopy vegetation will result in an increased canopy opening which is expected to result in a shift in midstory and understory vegetation including recruitment of species with affinities for partially open canopies. It is expected that species diversity and areal coverage will increase over time in the areas that are subjected to the obstruction removal activities. The species shift is likely to be similar to those conditions presently observed along the forest edges and within present canopy gaps within the floodplain forest.

Table 1 summarizes the proposed obstruction removal activities in inland wetland environments.

Table 1. Summary of Inland Wetland Impacts from Proposed Tree Removal

Activity Type	Inland Wetland Impact Amount (acres)
Flush Cut Area	6.1
Snag Cut Areas	17.6
Hand Removal – Topping	1.8
Hand Removal – Pruning	8.3



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Apart from invasive species control for five years following tree removal (see Section 4.2.3), no post-management maintenance of the vegetation management areas is proposed. It is anticipated that a 20-year Project lifespan will be realized from the Project design. Increasing this longevity would require mechanical removal of tree stumps or herbicide applications to prevent stump regrowth. The environmental consequences of each measure were evaluated and found to be prohibitive from a permitting perspective.

1.2.1 Construction Sequence

The precise construction method and sequencing will be determined by the selected contractor and may change based on site-specific conditions. However, the following outlines a typical construction sequence that would be expected for this Project.

- Demarcate the limits of disturbance with flagging and staking, including demarcating locations of listed plant populations proximal to the work areas
- Install erosion and sedimentation control measures
- Install temporary timber mats in wetland areas within 150 feet of listed plant species
- Mobilize tree clearing equipment and commence tree removal activities
- Remove felled tree debris
- Remove timber mats
- Revegetate and stabilize exposed soils, as necessary
- Remove erosion and sedimentation control measures

At each work area subject to mechanical removal, the mechanical felling work will start from the wood line nearest the toe of the levee and work towards the river. The climbing work can take place concurrently with the mechanical felling. As the (tracked) feller buncher cuts the trees, small piles of logs will be made as feller buncher moves through the work zone. A forwarder will collect the small piles of logs and place them in a larger pile nearest the crane lift area; the forwarder will be specified in place of a standard skidder to maximize soil protection. A forwarder fully supports cut timber inside of a bunk during movement, as opposed to a skidder that drags the cut pieces over the exposed ground. Once a sufficient log pile is created, the crane is brought into place on the airport-side to lift log bundles over the levee. A shovel logger will assist in creating hitches out of the larger log piles and with overall management of the log staging areas. These hitches will be placed within the reach of the crane and of a safe lifting size and weight as determined by the crane operator. After the hitch is lifted over the levee to the land side, the logs will be transported to the chipping operation located at the Maxim Road Gate 1 staging area. Pickup trucks and all-terrain vehicle access will be necessary on a daily basis during the approximate 3-week project duration for labor access and equipment fueling.

1.3 PERMIT STATUS

The permits required for the proposed actions include the following:

- Connecticut Department of Environmental Protection (DEEP) – Inland Wetlands and Watercourses Division (IWWD) Inland Wetlands and Watercourses Permit



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- DEEP – IWWF Flood Management Certification
- DEEP – 410 Water Quality Certification
- U.S. Army Corps of Engineers Section 404 Permit (General Permit)

The permit applications are currently being prepared and are expected to be submitted in 2022.

1.4 FUNDING SOURCES

The Project is being funded through the FAA Airport Improvement Program (AIP). The AIP funding is typically covers 90 percent (%) of the costs with the airport sponsor (i.e., CAA) responsible for the remaining portion.

2.0 SPECIAL CONCERN, THREATENED, AND ENDANGERED SPECIES

The Connecticut Endangered Species Act was passed in 1989 to protect plant and animal populations. DEEP maintains a present list of 335 Endangered, Threatened, and Special Concern Species and a database of the locations of these plant species (as of 2015). The DEEP Natural Diversity Data Base (NDDDB) program assists in compliance with Sec. 26-310(a) of the Connecticut General Statutes. According to this statute *“Each state agency, in consultation with the commissioner, shall conserve endangered and threatened species and their essential habitats, and shall ensure that any action authorized, funded or performed by such agency does not threaten the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat designated as essential to such species, unless such agency has been granted an exemption as provided in subsection (c) of this section. In fulfilling the requirements of this section, each agency shall use the best scientific data available.”*

Information obtained from the DEEP NDDDB on May 4, 2021 (NDDDB Determination 202104141), indicated that five listed rare plant species have been documented within and in the vicinity of the proposed project footprint (Appendix B). These species include:

- Davis’ sedge (*Carex davisii*), State Threatened;
- Cattail sedge (*Carex typhina*), State Special Concern;
- Northern arrowhead (*Sagittaria cuneata*), State Endangered;
- Wiegand’s wild-rye (*Elymus wiegandii*), State Special Concern; and
- Hoary plantain (*Plantago virginicus*), State Special Concern.

In 2021, Stantec Consulting Services Inc. (Stantec) conducted surveys targeting these five plant species to identify and quantify potential impacts.



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2.1 SPECIES INFORMATION

2.1.1 Davis' Sedge

Davis's sedge is ranked as a Division 2 species in New England, indicating that the species is rare throughout the region with 20 or fewer extant locations (Brumback and Gerke 2013). In Connecticut, the species is listed as Threatened. According to the Connecticut Endangered Species Act of 1989, threatened species "*means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the federal Endangered Species Act, except for such species determined to be endangered by the Commissioner in accordance with section 4 of this act.*" In Connecticut, Davis' sedge grows in riparian forests and meadows.

2.1.2 Cattail Sedge

Cattail sedge is listed as Special Concern in Connecticut. According to the Connecticut Endangered Species Act of 1989, Species of Special Concern "*means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.*" Cattail sedge is associated with floodplain forest habitats including backwater sloughs and oxbows.

2.1.3 Wiegand's Wild-rye

Wiegand's wild-rye is listed as a Species of Special Concern in Connecticut. Within Connecticut, it is found in riparian habitats and floodplain forests.

2.1.4 Northern Arrowhead

Northern arrowhead is listed as Endangered in Connecticut. According to the Connecticut Endangered Species Act of 1989, endangered species "*means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act.*" In Connecticut, northern arrowhead grows in a variety of aquatic habitats including oxbow and backwater areas, quiet coves, floodplains, and shorelines.

2.1.5 Hoary Plantain

Hoary plantain is listed as a Species of Special Concern in Connecticut and is also ranked as a Division 2 species in New England per Brumback and Gerke (2013). Hoary plantain inhabits open dry-mesic habitats such as fields, roadsides, and waste areas.



2.2 ON-SITE STATUS OF LISTED RARE PLANTS

Stantec conducted field surveys targeting Davis' sedge, Cattail sedge, Wiegand's wild-rye, northern arrowhead, and hoary plantain on June 9, June 10, September 1, and September 9, 2021. The surveys documented populations of Davis' sedge, cattail sedge, and Wiegand's wild-rye. The following summarizes the methodology and results of the field surveys. Appendix C includes the complete survey report as prepared by Stantec and submitted previously to DEEP.

2.2.1 Methodology

Prior to conducting field surveys, Stantec conducted a review of available natural resource information to identify areas within the Project area supporting likely habitats associated with the target species. This included a review of aerial imagery, topography, wetland, and hydrological data. Stantec also reviewed past rare plant survey reports associated with the South Meadows Multi-use Recreational Trail at Goodwin College as portions of this previous survey area intersected with the Project area (Moorhead 2016, 2017).

Field surveys were led and conducted by Matt Arsenault, a professional botanist and Certified Ecologist with 20 years of botanical survey experience in New England, including direct survey and monitoring experience with most of the target species in Connecticut and the surrounding region. Matt was supported by Randy Christensen, a senior environmental scientist with extensive field survey experience in New England.

Field surveys were conducted at two separate times during the growing season due to the phenological differences of the target species. One survey event was conducted in June 2021 to target Davis' sedge, hoary plantain, and cattail sedge and a second survey event was conducted in September 2021 to target Wiegand's rye and northern arrowhead.

To facilitate the field surveys, the Project area as well as the locations of the previously documented listed plant surveys associated with the South Meadows Multi-use Recreational Trail 2016 and 2017 surveys were overlain on a digital aerial image and uploaded to the GIS-enabled tablet device with submeter GPS accuracy. Meander surveys were conducted throughout the habitats within the Project area that were observed to be potentially suitable for the target species. For each listed plant population observed, data were recorded on population size, condition, overall vigor, and associated habitat characteristics. The plants were demarcated with surveyor's flagging and/or wire stake flags and located with the submeter GPS. Photographs were taken of the population area, including associated habitat, as well as of diagnostic identifying features.

2.2.2 Results

The field surveys observed populations of Davis' sedge, cattail sedge, and Wiegand's wild-rye.



2.2.2.1 Davis' Sedge

[REDACTED]

[REDACTED]

2.2.2.2 Cattail Sedge

[REDACTED]

2.2.2.3 Wiegand's Wild-rye

[REDACTED]



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[REDACTED]

[REDACTED]

Many Wiegand's wild-rye locations observed during the previous 2017 survey were not relocated and are presumed extirpated. The 2021 surveys observed remnant demarcations (e.g., snow stakes) at several previously documented locations but no Wiegand's wild-rye plants were observed.

2.3 AVOIDANCE, MINIMIZATION, AND IMPACTS TO STATE-LISTED SPECIES

2.3.1 Activities Involving Take of Cattail Sedge

The proposed mechanized tree removal activities will result in incidental take of three cattail sedge specimens (genets) within and immediately adjacent to the mechanized tree removal areas to the west of the Connecticut River. The mechanized tree removal will result in a transition in habitat from a forested floodplain to an open floodplain dominated by herbs and shrubs. Based on observations of similar open floodplain habitats nearby, a high density of vegetation is expected to become established consisting of common floodplain associates such as poison-ivy, ostrich fern, sensitive fern, river grape, common eastern wild-rye, Canada goldenrod, deer-tongue rosette-panicgrass, jewelweeds, and/or smooth goldenrod. Invasive species such as oriental bittersweet, rambler rose, Japanese winged-knotweed, Japanese stilt grass, reed canary grass, and dame's-rocket have the potential to also become established. Cattail sedge is a species of forested floodplains and appears intolerant of open canopy conditions (M. Arsenault, personal observations). As such, the removal of canopy vegetation and the accompanying habitat transformation is not likely compatible with the ecological needs of this species and is likely to result in a take.



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2.3.2 Activities Not Involving Take

Davis' sedge and Wiegand's wild-rye populations are outside of the proposed mechanized tree clearing areas and are not expected to be adversely affected by these actions. Davis' sedge populations are additionally located beyond the limits of the hand removal tree topping and pruning activities and will not be affected by the proposed actions.

Approximately three cattail sedge genets occur within and adjacent to areas that are subject to hand tree topping in the floodplain forests to the west of the Connecticut River and approximately seven genets occur in areas that are subject to hand pruning to the east of the Connecticut River. Approximately three Wiegand's wild-rye populations occur within and adjacent to areas that are subject to hand pruning to the east of the Connecticut River. However, the proposed hand removal activities are not anticipated to result in take of cattail sedge or Wiegand's wild-rye in these locations. The work will be performed in winter months during non-growing season conditions with snow covered or frozen ground conditions and will consist of arborists working from bucket-mounted trucks or climbing trees to remove the obstructing vegetation. The work will result in temporary impacts to understory vegetation as a result of the placement of temporary construction matting in certain areas to create a stable work surface for machinery and to reduce rutting or other ground disturbances. There will also be temporary impacts to understory vegetation as a result of limb drop and subsequent removal of the cut tree limbs. Midstory limbs and vegetation will be left in place in areas subject to tree pruning and topping.

Although mid-story limbs and vegetation will be left in place, the removal of upper canopy vegetation will result in an increased canopy opening which is expected to result in a shift in midstory and understory vegetation including recruitment of species with affinities for partially open canopies. It is expected that species diversity and areal coverage will increase over time in the areas that are subjected to the obstruction removal activities. The species shift is likely to be similar to those conditions presently observed along the forest edges and within present canopy gaps within the floodplain forest. Species such as thin-leaved sunflower, jumpseed, Virginia-creeper, jewelweed, deer-tongue rosette-panicgrass, river grape, and eastern riverbank wild-rye as well as non-native species such as oriental bittersweet, reed canary grass, dame's-rocket, and rambler rose also have the potential to increase in abundance due to the reduced canopy cover.

While mature cattail sedge specimens appear largely intolerant of an open canopy, the midstory vegetation will remain in place and continue to provide partial to filtered shading of cattail sedge populations consistent with the ecological needs of the species and the existing habitat conditions. Therefore, take of cattail sedge in areas subject to hand removal activities is not anticipated. It is also important to note that the partial opening of the canopy may favor increased recruitment of cattail sedge elsewhere within the Project area through germination from the seedbank as cattail sedge germination is reported to be positively correlated with open canopy conditions (Cromley 2005).

Wiegand's wild-rye is associated with a wider range of canopy cover conditions varying from shaded understories to partially shaded forest edges, forest gaps, and riverbanks compared with cattail sedge based on onsite observations and past monitoring and survey experience with this species. As such, the



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tree topping and pruning activities are not expected to result in habitat changes that would be inconsistent with the ecological requirements of Wiegand's wild-rye.

The following measures will be implemented to avoid and minimize impacts to listed plant species in areas subject to tree pruning and topping:

- Work within 150 feet of listed plants will be conducted during non-growing season conditions after plants have senesced.
- Ground disturbance within 150 feet of listed plants will be minimized by using low ground pressure equipment during frozen ground conditions, and through the use of temporary matting where pinch-points in the mechanized work areas are identified; frozen ground conditions will be determined based on on-site observations of a frost layer in the soil extending to at least 1 inch below the ground surface or the presence of at least 4 inches of snow cover combined with an average ambient air temperature of 32 degrees Fahrenheit or less during the previous three days.
- Within 30 days prior to the start of obstruction removal, the listed plant locations identified during the surveys in 2021 that are within or within 150 feet of proposed tree removal areas and within 25 feet of access routes will be demarcated with high visibility flagging and/or fencing (e.g., orange snow fencing or "CAUTION" tape); a GPS capable of submeter accuracy will be used to demarcate the populations.
- No tree limbs, woody debris, constriction mats, or wood chips will be placed within the demarcated listed plant areas.
- An invasive species monitoring and management plan will be implemented following the completion of obstruction removal to monitor and control invasive species encroachment proximal to listed plant occurrences.

3.0 ALTERNATIVES ANALYSIS

There were three alternatives that were examined by CAA during the Project planning and are detailed in the December 2017 *Final Environmental Assessment (EA) & Environmental Impact Evaluation (EIE) for Obstruction Removal: Hartford-Brainard Airport (HFD)* report (CHA Consulting, Inc. 2017) and summarized below. These included the following:

1. No-Action Alternative
2. Full Obstruction Removal Alternative
3. Modified Obstruction Removal Alternative (Preferred Alternative)

A synopsis of the alternatives evaluated is presented below.



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3.1 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, all obstructions would remain and continue to present airspace hazards. FAA requires airspace hazards to be address. This alternative does not meet the purpose and need of the Project and fails to improve safety for passengers and crews operating at the airport. Airports developed or improved with federal funds are obligated to prevent the growth or establishment of obstructions in the approaches to the airport and to take reasonable actions to remove existing obstructions. It is also noted that the No Action Alternative does not eliminate potential environmental and social impacts as the increased risk of airport operations poses an impact to airport users. Potential aircraft incidents could create environmental damage to wetlands, habitat, and endanger emergency responders and even persons and property on the ground. Therefore, this alternative was excluded from consideration.

3.2 FULL OBSTRUCTION REMOVAL ALTERNATIVE

The Full Obstruction Removal Alternative would clear all obstructions in the HFD protected airspaces and provide maximum benefit to airport uses and safety enhancement. Comprehensive tree clearing would be conducted, resulting in approximately 74 acres of tree removal. This alternative would result in significant impacts to wetlands and sensitive habitats as a result of the tree clearing required.

To reduce potential environmental impacts of this Alternative, the tree clearing parameters would primarily include removal of all sizable trees but retaining small trees and underbrush. Tree stumps would be left in place to minimize ground disturbance and potential erosion. This practice reduces impacts to wetlands, floodplains, and archeological resources. However, it is not a permanent solution as trees will eventually regrow.

3.3 MODIFIED OBSTRUCTION REMOVAL ALTERNATIVE (PREFERRED ALTERNATIVE)

The Modified Obstruction Removal Alternative is the Preferred Alternative. This alternative eliminates the most critical obstructions while reducing the number of affected properties and environmental impacts. In total, this alternative would result in approximately 30 acres of tree removal compared to 74 acres for the Full Obstruction Removal Alternative. As with the Full Obstruction Removal Alternative, the Modified Removal Alternative would employ the same removal methods and techniques to minimize impacts, including:

- Removal of all sizable trees but retaining small trees and underbrush;
- Tree stumps would be left in place to minimize ground disturbance and potential erosion;
- On residential properties, removal of tall trees only, with stump grinding, topsoil placement and seeding;
- Fall and/or winter removals may be employed to reduce impacts to bat and bird species and reduce ground disturbance; and
- Removals will be conducted in coordination with State and Federal regulatory agencies, and follow required techniques or procedures defined during the permitting process.



INCIDENTAL TAKE REPORT: CATTAIL SEDGE (CAREX TYPHINA) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

CAA and FAA have identified this alternative as the most practical solution. This alternative is a balance to the airport needs and safety while taking into account environmental considerations and minimizing both cost and private property disturbance. The review considered land use, access, ownership, wetlands, and general environmental conditions.

The selected alternative includes the Modified Obstruction Removal Plan where a significant number of the obstructing trees are to be managed by hand with significant portions to remain standing to compensate for plant community impacts; the detailed removal method is explained in a previous section of this report (Section 1.2). The selected Project design utilizes several “soft” management techniques that will provide for tree regrowth well below the elevation of the protected airspace surfaces at the outer limits of the protected airspace. Closer to the runway ends, where the difference in ground and airspace elevations are reduced, the more aggressive mechanical removal techniques are proposed. The reduction in airspace surfaces to be cleared combined with the evaluation and selection of lower impact vegetation management techniques creates an alternative that balances the safety objectives of airspace maintenance with reduction of environmental impacts.

4.0 MITIGATION

To mitigate for the unavoidable take of cattail sedge within the proposed Project area, transplant activities are proposed to relocate three cattail sedge genets that are within and immediately adjacent to the mechanical tree removal areas to the west of the Connecticut River to nearby on-site forested floodplain habitat (Appendix A). Subsequent to transplanting, long-term monitoring, habitat maintenance, and permanent preservation will be implemented to promote the long-term success and persistence of the transplanted cattail sedge populations. The following further summarizes the proposed mitigation activities.

4.1 TRANSPLANTING

Prior to the initiation of tree removal activities, cattail sedge will be transplanted to suitable floodplain forest habitat to the west of the Connecticut River. The forested floodplain habitat is contiguous and consistent with that associated with the existing cattail sedge locations. Furthermore, the proposed transplant area presently supports few non-native invasive species that could adversely affect the establishment of cattail sedge. The cattail sedge species will be transplanted to slightly higher terraces within the floodplain (i.e., not within the lowest elevations of the floodplain). This will limit potential adverse effects from flooding to the transplanted individuals before the plants become fully established.

Based on an initial literature search, data on the transplant success of cattail sedge is not available. However, there is demonstrated transplant success of numerous other species of sedges (e.g., Everett 2001, Quistberg and Stringham 2010, Steed and DeWald 2003). Furthermore, past transplanting efforts by Stantec of sedge species including Davis’ sedge, bronze sedge (*Carex foenea*), and Fernald’s sedge (*Carex merritt-fernaldii*) has indicated transplant success rates of nearly 100% during the first year of follow-up monitoring (Stantec 2019, 2021). Transplant success of these other sedge species suggests that cattail sedge likely will successfully transplant to suitable habitat.



INCIDENTAL TAKE REPORT: CATTAIL SEDGE (CAREX TYPHINA) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

4.1.1 Transplant Methodology

Transplanting is anticipated to occur in spring or fall 2022, prior to the initiation of tree clearing. A botanist will conduct the transplanting efforts.

To maximize the likelihood for transplant success, transplanting will occur during overcast skies, cool days, or when rain is forecasted. Transplanting will not occur during unseasonably warm temperatures or periods of drought. These considerations will minimize the likelihood of desiccation or additional stress on the transplanted individuals.

A straight-blade or spade-shaped shovel will be used to dig around the base of the plant. The diameter of the hole will be based on the size of the individual genet, but in general a minimum 10-inch-diameter circle will be dug around each plant. For larger specimen, a larger diameter circle will be necessary. The depth of the hole should be a minimum of 4 inches. Deeper holes will be needed for larger specimens. The holes will maintain a sufficient amount of soil around the root ball to minimize loss or exposure of roots during the transplant.

Once removed from the ground, the plants will be placed in a bucket, wheelbarrow, or similar container and taken to the transplant location. Individuals be promptly transported and planted, which will minimize the exposure time and potential for desiccation. If plants cannot be promptly transplanted, the plants will be lightly watered and placed in a shaded location.

For transplanting, a hole of sufficient size and depth will be dug to accommodate the root ball. The hole will be dug slightly deeper and wider than the existing root ball. Topsoil will be backfilled around the plant and lightly compacted to remove subsurface air spaces. A slightly concave depression will be created around each transplant to concentrate surface water and precipitation towards the base of the plant. The plants will be promptly watered. Exposed soil around the plants will be covered with leaf litter or other available organic material to conserve moisture around the plants.

The individual transplanted cattail sedge genets will be demarcated with a pin flag and wooden grade stake and located with a GPS receiver capable of submeter accuracy to allow for relocation. Representative photographs will be taken of the transplant locations as well as habitat details of the transplant locations.

4.2 LONG-TERM MAINTENANCE AND MONITORING

The following measures will be implemented to promote the long-term success of transplanted cattail sedge.

4.2.1 Preservation

The transplant area is located on property controlled by the City of Hartford Flood Commission, which has restricted access due to the airport. The City of Hartford has provided permission to transplant the cattail sedge specimens onto their property. The land is zoned as Open Space and contained within the Connecticut River Overlay District. The Open Space zoning district provides limited allowed uses, with



INCIDENTAL TAKE REPORT: CATTAIL SEDGE (CAREX TYPHINA) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

those being restricted to uses with a minimal development footprint that are compatible with the open space nature of the site. CAA or the City of Hartford does not propose to establish protection measures specific to the cattail sedge transplant location. Given the proximity of the site to the airport and Connecticut River, the flood control levee dikes, current zoning regulations, and widespread presence of inland wetlands, there is little threat of future development or other direct anthropogenic change to the forested floodplain habitat at the transplant location. The forested floodplain habitat associated with the transplant locations will continue to be preserved and will not be altered during airport operations. If in the unlikely event future development or land alteration activities are proposed in this location, state and local permits will likely be needed and analyses of impacts to natural resources, including listed plants, will be considered and measures to avoid, minimize, and further mitigate would be required.

4.2.2 Monitoring

Long-term monitoring will be implemented after transplanting to evaluate the success of the transplanting efforts. Monitoring will be conducted by a qualified botanist. The monitoring schedule will be as follows:

- Monitoring within 7 days following transplanting and again at approximately 30 days following transplanting;
- Monitoring during the first growing season following transplanting and again on an every-other-year basis for two additional years (i.e., Year 3 and Year 5). Monitoring will be conducted during a single monitoring event between June 15 and September 15 each year.

Monitoring will include data collection on the status of the transplanted population including quantification of survivorship and qualitative observations of overall health and vigor. Photographs will be taken from fixed locations to allow annual comparisons.

An annual summary report will be completed and submitted to DEEP by December 31 of each monitoring year.

Changes to the monitoring frequency or protocol as well as remedial measures will be evaluated, as necessary, through consultation with DEEP.

CAA will be responsible for conducting and/or contracting the transplanting and long-term monitoring.

4.2.3 Invasive Species Monitoring and Control

Control of invasive species will be conducted within the tree removal areas and cattail sedge transplant area every other year for five years following the completion of the tree removal activities. Targeted invasive species include tree-of-heaven, Russian-olive (*Elaeagnus angustifolia*), autumn-olive (and *Elaeagnus umbellata*), European buckthorn (*Rhamnus cathartica*), glossy false-buckthorn (*Frangula alnus*), rambler rose, Japanese barberry, burning-bush, shrub honeysuckles (*Lonicera maackii*, *L. morrowii*, *L. tartarica*, *L. ×bella*, *L. xylosteum*), privet (*Ligustrum obtusifolium*, *L. ovalifolium*, *L. sinense*, *L. vulgare*), oriental bittersweet, Japanese winged-knotweed, and common reed. Insofar as possible, the invasive species control efforts will coincide with the long-term monitoring of the cattail sedge transplants.



INCIDENTAL TAKE REPORT: CATTAIL SEDGE (CAREX TYPHINA) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

Control methods will include mechanical removal (e.g., hand-pulling, hand-cutting, or hand-digging) and herbicide control. Herbicide control will be conducted by a licensed herbicide applicator. Mechanical control will be conducted to the extent feasible within 25 feet of state-listed plants. If herbicide control is necessary within 25 feet of state-listed plants, it will consist only of direct hand application and there will be no broadcast spraying of herbicide. The herbicide applicators will be trained in the identification of cattail sedge, Davis' sedge, and Wiegand's wild-rye. A GPS system capable of submeter accuracy that contains the locations of the known listed plant occurrences will be utilized to navigate the Project area and avoid herbicide applications proximal to listed plants during invasive control efforts.

A summary of the invasive control efforts will be included in the annual monitoring report. An Invasive Species Management Plan has been prepared that further details the methods of invasive species management (Appendix D).

5.0 SUMMARY

Unavoidable impacts to cattail sedge will result from the necessary removal of obstructing trees from inbound and outbound flight paths to HFD. The mechanical removal of the forested overstory will result in conversion of the cattail sedge forested floodplain to an open floodplain that is not compatible with the ecological needs of the species. To mitigate for unavoidable impacts to cattail sedge, CAA will undertake efforts to transplant individuals from within the Project area to a nearby suitable habitat.

A long-term monitoring program will be implemented to evaluate the success of transplant. Invasive plants that pose a potential threat to the transplanted populations will also be monitored and controlled as necessary.



INCIDENTAL TAKE REPORT: CATTAIL SEDGE (*CAREX TYPHINA*) HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT

6.0 REFERENCES

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Appendix A PROJECT FIGURES AND SITE PLANS

Pages 144-145 REDACTED due to sensitive State-listed
species location information. 11/8/2022



Appendix B DEEP CORRESPONDENCE





79 Elm Street • Hartford, CT 06106-5127
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Affirmative Action/Equal

May 4, 2021

Randall Christensen
Stantec Consulting Services, Inc.
136 West Street
Northampton, MA 01060-3711 randy.christensen@stantec.com

Re: Hartford – Brainard Airport Airspace Obstruction Removal Project; Hartford, East Hartford, and Wethersfield, CT
NDDB Determination 202104141

Dear Randy,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the proposed Airspace Obstruction Removal Project in Hartford, East Hartford and Windsor. According to our records, the following Critical Habitat and species have been documented in the vicinity of the project location:

Bird Species:

- Bald eagle (*Haliaeetus leucocephalus*) – State Threatened Reptiles and Amphibians:

Invertebrate Species/Freshwater Mussels:

- Yellow lampmussel (*Lampsilis cariosa*) – State Endangered
- Eastern pondmussel (*Ligumia nasuta*) – State Special Concern
- Tidewater mucket (*Leptodea ochracea*) – State Special Concern
- Eastern pearlshell (*Margaritifera margaritifera*) – State Special Concern

Critical Habitats:

- Low Floodplain Forest
- High Floodplain Forest
- Alluvial Swamp

Plant Species:

- Northern arrowhead (*Sagittaria cuneata*) – State Endangered
- Davis' sedge (*Carex davisii*) – State Threatened
- Cattail sedge (*Carex typhina*) – State Special Concern
- Wiegand's wild rye (*Elymus wiegandii*) – State Special Concern
- Hoary plantain (*Plantago virginica*) – State Special Concern

Fish Species:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Federally Endangered, State Endangered
- Shortnose sturgeon (*Acipenser brevirostrum*) – Federally Endangered, State Endangered

- Blueback herring (*Alosa aestivalis*) – State Special Concern

Protection measures for Bald eagle (*Haliaeetus leucocephalus*):

It is illegal pursuant to section 26-93 of the Connecticut General Statutes to disturb Bald eagles. This law prohibits disturbing the birds while they are roosting, feeding, or nesting. The Wildlife Division recommends a 660' setback with no public access from a bald eagle nest or critical roosting site. The critical time for nesting eagles is February 1- August 1. The critical time period for winter roosts is December 31- March 1.

Your NDDB review request application indicates the project will be implemented between December 2021 and March 2022. Section 5 of attachment 3, included with your application, states that there will be no tree cutting within 660' of an active eagle nest. NDDB concurs that this recommended setback is appropriate. To determine if nest or roost in your area is active this year contact the DEEP Wildlife Biologist coordinating eagle monitoring (Brian.hess@ct.gov).

Protection measures for freshwater mussels:

Multiple freshwater mussel species have been recently documented in the vicinity of this project, near the shoreline of the Connecticut River and Wethersfield Cove. Freshwater mussels are aquatic animals that play an important role in our environment. These sedentary organisms live in sediments on the bottom of streams and rivers and provide a service to all by filtering water and removing bacteria and phytoplankton. It is because they are filter-feeding animals that they are very susceptible to sediments and pollutants in the water in which they live. The greatest diversity of freshwater mussels in the world is found in Eastern North America. Freshwater mussels are one of the most endangered groups of animals with almost three-quarters of the native mussels in North America imperiled. The disappearance of freshwater mussels is a reliable indicator of chronic water pollution.

Typically, in order to protect these species, it is recommended that no vegetation be removed from the 100-foot buffer of waterways. Your project description indicates full removal of sizable trees, with some topping/snag creation where feasible, while retaining small trees and underbrush and leaving stumps in place.

This vegetation removal has potential to negatively impact freshwater mussel populations. Replanting these portions of the project area with suitable low-growing species will help reduce negative impacts; should you choose to implement this, please provide the NDDB program with a planting plan, including a list of species.

In the absence of a planting plan, you will need to provide the NDDB with a plan designed to minimize adverse effects on the listed freshwater mussels. This plan should demonstrate that the following recommended water quality targets will be met:

- Turbidity
 - Turbidity should not increase 8 NTU over background levels
- Suspended sediments
 - Maximum induced suspended sediments in any 24-hour period should be less than 25mg/L over background levels
 - Induced suspended sediments averaged over 30-day period should be less than 5mg/L over background levels

Protection measures for Critical Habitats and plant species:

1. Have surveys for the State-listed plants of the project areas performed by a qualified botanist or plant ecologist, at the appropriate times of year to maximize chances of detecting and identifying each species. If you do not know a qualified botanist or plant ecologist, consult The Native Plant Trust. Results of these surveys shall be submitted in a report to the NDDB prior to the initiation of the tree cutting. The survey report shall include the following elements:
 - a. Survey date(s) and duration.
 - b. Detailed description of the survey target plants and a discussion of the features used to differentiate them from similar species with which they might be confused.
 - c. Photographs of State-listed plant populations marked with high-visibility construction fencing, as discussed in Item 2 below.
 - d. Good-quality close-up photographs, which show identifying features, of State-listed plants found at each occurrence.
 - e. Data regarding population numbers and area occupied by State-listed plants.
 - f. Detailed maps of the area surveyed including the survey route and locations of State-listed species.
 - g. List of component vascular plant species within the survey area (including scientific binomials).
 - h. Statement of qualifications, résumé, or CV, indicating the State-listed plant surveyor's qualifications.

An incomplete report, missing any of the above elements, may be rejected.

2. Mark each State-listed plant population, using high-visibility construction fencing, so that field personnel can easily see them when conducting tree cutting and removal.
3. Do not cover State-listed plant populations with logs, slash piles, or wood chips.
4. Do not site equipment access roads over State-listed plant populations, unless the populations are protected by temporary timber or hard rubber matting
5. Do not run over State-listed plant populations with equipment, unless the populations are protected by temporary timber or hard rubber matting
6. Do not drag trees or parts of cut trees through/over State-listed plant populations.
7. Develop and implement an invasive plant control plan in those habitats where opening up of the tree canopy will encourage existing invasive plants to proliferate and compete with State-listed plants and other native floodplain forest species (this is certainly likely in all or much of the areas on the east side of the river). The plan must provide adequate protection from herbicide impacts for State-listed plants and aquatic animals and other non-target native plants and animals. The plan should be authored or co-authored by a qualified individual or company with documented experience controlling invasive plants in sensitive habitats with rare plants. The qualifications of this individual or company should be attached to the plan. The plan must be submitted to the NDDB for approval before tree cutting project begins, and the plan must be implemented before tree cutting project begins.

Fish Species:

Contact a DEEP Fisheries Biologist for more information. Do not contact NDDB with questions regarding fish species. The presence of a Federally endangered species may require consultation with the National Marine Fisheries Service in order to be in compliance with the Federal Endangered Species Act if the proposed project requires federal permits or uses federal funds.

The NDDB Determination for the proposed Airspace Obstruction Removal Project in Hartford, East Hartford and Windsor, as described in the submitted information is valid for two years. This

determination applies only to the project as described in the submission. Please submit an updated Request for Review if there are additional scope of work and/or timeframe changes, including if work has not begun by **May 4, 2021**.

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Database and as it becomes available. New information may result in additional review, and new or modified restrictions or conditions may be necessary to remain in compliance with certain state permits.

- During your work listed species may be encountered on site. A report must be submitted by the observer to the Natural Diversity Database promptly and additional review and restrictions or conditions may be necessary to remain in compliance with certain state permits.
- Your project involves the state permit application process or other state involvement, including state funding or state agency actions; please note that consultations with your permit analyst or the agency may result in additional requirements. In this situation, additional evaluation of the proposal by the DEEP Wildlife Division may be necessary and additional information, including but not limited to species-specific site surveys, may be required. Any additional review may result in specific restrictions or conditions relating to listed species that may be found at or in the vicinity of the site.

Thank you for continued coordination with NDDDB on this project; feel free to contact me if you have additional questions.

Sincerely,
Robin Blum
Natural Diversity Database
CT DEEP Wildlife Division
Robin.blum@ct.gov

From: [McKay, Dawn](#) on behalf of [DEEP Nddbrequest](#)
To: [Arsenault, Matt](#)
Cc: [Christensen, Randall](#); [Moorhead, William](#); [DEEP Nddbrequest](#)
Subject: Re: NDDB 202104141 CAA Hartford Airport rare plant survey
Date: Wednesday, February 2, 2022 7:35:31 AM
Attachments: [image001.png](#)

Matt,

Your report is acceptable and the mitigation measures are also acceptable in concept (transplant, monitoring and and invasive management plan implementation) but specific plans for both were not included. We really don't have the availability to meet with you to assist you in developing the specifics and it is best if you provide the specific timelines and guidelines that will be followed for the transplanted, monitoring and invasive management plan for the site and we will provide feedback on the plan.

We noted that you plan to work in winter on frozen ground, with some limited use of matting. We would prefer if you let us know how you will determine (testing) of the degree to which ground is frozen before moving equipment in, and if the ground is not frozen enough then use matting is a must when moving equipment. Please provide the specific plans outlined above and the protocols that will be used to ensure that the ground is frozen enough to move heavy equipment into place without matting.

Thank you.

Dawn

Dawn M. McKay
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
P: 860.424.3592 | E: dawn.mckay@ct.gov

From: Arsenault, Matt <matt.arsenault@stantec.com>
Sent: Wednesday, January 26, 2022 11:07 AM
To: DEEP Nddbrequest <DEEP.Nddbrequest@ct.gov>; Moorhead, William <William.Moorhead@ct.gov>
Cc: Christensen, Randall <randy.christensen@stantec.com>
Subject: RE: NDDB 202104141 CAA Hartford Airport rare plant survey

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hi Bill and Dawn – would you be able to provide an update on where the CAA Brainard airport rare plant report lies in your queue? We'd like to pass along an update to CAA on when feedback may be received. Thanks for your assistance!
-matt

From: Arsenault, Matt
Sent: Tuesday, January 11, 2022 1:55 PM
To: DEEP Nddbrequest <DEEP.Nddbrequest@ct.gov>; Moorhead, William

<William.Moorhead@ct.gov>

Cc: Christensen, Randall <randy.christensen@stantec.com>

Subject: RE: NDDDB 202104141 CAA Hartford Airport rare plant survey

Hello Bill and Dawn, I just wanted to follow up on the botanical report for the Brainard Airport in Hartford and whether you've had a chance to review or if it's still in the queue. We'd like to talk through the anticipated plant impacts and path forward once you've had a chance to review.

Thanks and I look forward to hearing from you

-matt

From: McKay, Dawn <Dawn.McKay@ct.gov> **On Behalf Of** DEEP Nddbrequest

Sent: Friday, November 26, 2021 1:58 PM

To: Arsenault, Matt <matt.arsenault@stantec.com>

Cc: Moorhead, William <William.Moorhead@ct.gov>

Subject: Re: NDDDB 202104141 CAA Hartford Airport rare plant survey

Matt,

Thank you for providing the plant survey. Bill wanted me to let you know we have received it but it might take a few weeks to get to it for review since we are trying to get a few late determinations out. He will be in touch as soon as he has a chance to review.

Take care,

Dawn

Dawn M. McKay

Wildlife Division

Bureau of Natural Resources

Connecticut Department of Energy and Environmental Protection

79 Elm Street, Hartford, CT 06106-5127

P: 860.424.3592 | E: dawn.mckay@ct.gov

From: Moorhead, William <William.Moorhead@ct.gov>

Sent: Thursday, November 25, 2021 2:59 PM

To: DEEP Nddbrequest <DEEP.Nddbrequest@ct.gov>

Subject: FW: NDDDB 202104141 CAA Hartford Airport rare plant survey

Dawn,

This from Matt Arsenault re Brainerd tree removal thing. See his message below.

Bill Moorhead

Botanist/Plant Community Ecologist

Natural Diversity Data Base

Wildlife Division

Bureau of Natural Resources

Connecticut Department of Energy and Environmental Protection

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***Conserving, improving and protecting our natural resources and environment;
Ensuring a clean, affordable, reliable, and sustainable energy supply.***

From: Arsenault, Matt <matt.arsenault@stantec.com>
Sent: Monday, November 22, 2021 11:41 AM
To: Moorhead, William <William.Moorhead@ct.gov>
Cc: Christensen, Randall <randy.christensen@stantec.com>
Subject: NDDB 202104141 CAA Hartford Airport rare plant survey

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Hello Bill – I hope this finds you well. I wanted to share with you the rare plant survey report from work this year relative to CAA's obstruction removal project at Brainard airport in Hartford (NDDB # 202104141). You'll see as part of the survey results that Carex typhina occurs within and proximal to the proposed tree removal areas. We'd like to set up a time to discuss the results, the anticipated impacts, and the path forward in the coming weeks once you've had a chance to review. To that end, please let me know if you have availability for a discussion in early to mid December. I look forward to hearing from you and happy Thanksgiving!

-matt

Matt Arsenault, PWS
Ecologist / Botanist

Mobile: 207 798-2135
matt.arsenault@stantec.com

Stantec



Appendix C RARE PLANT SURVEY REPORT





**Hartford-Brainard Airport
Obstruction Removal Project:
Rare Plant Survey Report**

Hartford, East Hartford, and
Wethersfield, Connecticut

October 18, 2021

Prepared for:

Connecticut Airport Authority
334 Ella Grasso Turnpike
Windsor Locks, Connecticut 06096

Prepared by:

Stantec Consulting Services Inc.
30 Park Drive
Topsham, Maine 04086

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HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT: RARE PLANT SURVEY REPORT

Introduction
October 18, 2021

1.0 INTRODUCTION

The Connecticut Airport Authority (CAA) plans to conduct removal of vegetative obstructions associated with the protected airspace surfaces at the Hartford-Brainard Airport (HFD) due to the safety hazards they present to inbound and outbound aircraft (project; Figure 1). The activities will occur within areas supporting state-listed species listed as endangered, threatened, or special concern as identified by the Connecticut Department of Environmental Protection (DEEP) on their Natural Diversity Data Base (NDDDB) maps. Stantec Consulting Services Inc. (Stantec), on behalf of CAA, filed a NDDDB review request to initiate consultation with DEEP NDDDB regarding the associated listed species. The NDDDB response was received on May 4, 2021 (NDDDB Determination 202104141), and indicted the presence of listed birds, freshwater mussels, plants, fish, and critical habitats proximal to the project area and requested, in part, field surveys be conducted for listed plant species. The field surveys for listed plants were conducted in 2021 by Stantec and targeted the following species:

- Davis' sedge (*Carex davisii*), State Threatened;
- Cattail sedge (*Carex typhina*), State Special Concern;
- Northern arrowhead (*Sagittaria cuneata*), State Endangered;
- Wiegand's wild rye (*Elymus wiegandii*), State Special Concern; and
- Hoary plantain (*Plantago virginicus*), State Special Concern.

This report presents the results of the survey for listed plant species.

2.0 TARGET SPECIES IDENTIFICATION AND ECOLOGY

2.1 DAVIS' SEDGE

Identification of Davis' sedge must be made while the species is fruiting, which typically occurs in June to mid-July in Connecticut (M. Arsenault, personal observations). Davis' sedge is a member of the *Hymenochlanae* section of the genus *Carex*. This section is recognized by its generally tall plants (e.g., up to 1 meter tall), with long-narrow drooping flowering spikes with perigynia that are typically smooth and beaked with three stigmas. Within section *Hymenochlanae*, Davis' sedge can be distinguished by the following characteristics: terminal spike gynecandrous (i.e., with carpellate flowers borne in the distal portion of the spike and above the staminate flowers), carpellate scales with a 2.5–3 millimeter (mm) long awn, perigynia with several evident veins, and perigynia turning orangish brown in maturity (Haines 2011). From a distance, Davis' sedge is most likely to be confused with inflated narrow-leaved sedge (*Carex grisea*), a common species of floodplain forests with which Davis' sedge often occurs with. Like Davis' sedge, inflated narrow-leaved sedge has similarly shape ellipsoid-ovoid perigynia with several evident veins. However, unlike Davis' sedge, inflated narrow-leaved sedge does not turn orangish brown at maturity, has perigynia that gradually taper to the apex (versus an abruptly tapering apex in Davis' sedge), and has a terminal spike that is entirely staminate.



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2.2 CATTAIL SEDGE

Cattail sedge is a member of the sedge (*Carex*) section *Squarrosae*. Species within this section are recognized by their tufted wetland growth habit; dense cylindrical, bristly looking spikes with tightly congested perigynia; carpellate lateral spikes and gynecandrous terminal spikes; weakly inflated perigynia that taper abruptly to a beak over 2 mm long; and trigonous achenes with three stigmas. Cattail sedge is associated with floodplain forest habitats including backwater sloughs and oxbows (Arsenault et al. 2013). It is identifiable from late spring through late summer in New England (M. Arsenault, personal observations).

The dense cylindrical gynecandrous terminal spike and weakly-inflated perigynia help to readily distinguish cattail sedge from many other wetland-associated sedge species with thick cylindrical spikes such as hop sedge (*Carex lupulina*) or sallow sedge (*Carex lurida*). Within Connecticut, cattail sedge could be confused with squarrose sedge (*Carex squarrosa*). The two species can be differentiated by morphological characteristics of the spikes as well as habitat preferences. Squarrose sedge typically has spikes with widely spreading to reflexed perigynia and occurs in palustrine marshes and wetlands (less commonly in floodplains) whereas cattail sedge has spikes with ascending perigynia and strong affinities for riverine and lacustrine floodplain forests (Haines 2011).

2.3 NORTHERN ARROWHEAD

Northern arrowhead is a submerged, floating-leaved, or emergent aquatic plant and its morphology is highly variable depending on site hydrology. Leaves are generally sagittate (arrow-shaped) with two short lobes at its base on emergent and floating-leaved plants. However, entirely submerged plants and some floating-leaved plants will have long, ribbon-like submerged or floating leaves. The flowers are white with three petals and are borne in three-flowered whorls on emergent racemes. The rounded petals are 7–10 mm long and the fruit has a 0.1–0.5 mm long ascending beak. The roots are segmented or strongly constricted. Northern arrowhead grows in a variety of aquatic habitats including oxbow and backwater areas, quiet coves, floodplains, and shorelines. It flowers in early to mid-summer and produces fruit in mid- to late summer (Haines 2011, NHESP 2015, Skawinski 2014).

Emergent specimens of northern arrowhead are easily confused with common arrowhead (*Sagittaria latifolia*). Compared with common arrowhead, the beak on the fruit of northern arrowhead is smaller and doesn't exceed 0.5 mm long. Whereas, the beak on the fruit of common arrowhead is 0.5–1.8 mm long. The petals of northern arrowhead are also slightly smaller (i.e., 7–10 mm long) compared with common arrowhead which has petals that are 10–20 mm long. Common arrowhead also does not produce floating leaves (Haines 2011, NHESP 2015).

2.4 WIEGAND'S WILD-RYE

Wiegand's wild-rye is a robust grass and is generally distinct due to its conspicuously pendulous inflorescence and broad, lax leaves compared to other wild-rye species. It is associated with riparian forests and banks (Haines 2011). Robust specimens of eastern riverbank wild-rye (*Elymus riparius*),



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which commonly occur in the floodplain to the east of the Connecticut River could be confused with Wiegand's wild-rye. The combination of the following characteristics were used to differentiate Wiegand's wild-rye: robust plant often exceeding 1 meter tall, flowering spikes strongly pendulous and drooping from the base of the rachis, leaves along stem numbering 10 or more and 15 mm wide or more, glumes flattened in cross-section at the base, and awns of lemma often curving. Robust specimens of eastern riverbank wild-rye had arching to somewhat drooping inflorescences that were not evidently pendulous and drooping from the base of rachis, fewer than 10 leaves per stem (generally 8–9 leaves 12–18 mm wide), and glumes that were terete for 1–2 mm at their base (Mittelhauser et al 2019).

2.5 HOARY PLANTAIN

Hoary plantain inhabits open dry-mesic habitats such as fields, roadsides, and waste areas. The plants consist of a basal rosette of ovate to oblanceolate leaves with several raised parallel veins, entire margins, and small hairs across the leaf surfaces. Flowering stalks are 30–240 mm tall and covered with evident hairs on the bracts and sepals. The flowering spikes bear small greenish to yellowish flowers that become erect in maturity with the petals converging over the fruit (Haines 2011). The evidently hairy flowering stalks and leaves help to readily separate hoary plantain from other plantain species with ovate to oblanceolate leaves such as English plantain (*Plantago lanceolata*).

3.0 METHODOLOGY

Prior to conducting field surveys, Stantec conducted a review of available natural resource information to identify areas within the project area supporting likely habitats associated with the target species. This included a review of aerial imagery, topography, wetland, and hydrological data. Stantec also reviewed past rare plant survey reports associated with the South Meadows Multi-use Recreational Trail at Goodwin College as portions of this previous survey area intersected with the project area (Moorhead 2016; Moorhead 2017).

Field surveys were led and conducted by Matt Arsenault, a professional botanist and Certified Ecologist with 20 years of botanical survey experience in New England, including direct survey and monitoring experience with most of the target species in Connecticut and the surrounding region (resume provided in Appendix D). Matt was supported by Randy Christensen, a senior environmental scientist with extensive field survey experience in New England.

Field surveys were conducted at two separate times during the growing season due to the phenological differences of the target species. One survey event was conducted in June 2021 to target Davis' sedge, hoary plantain, and cattail sedge and a second survey event was conducted in September 2021 to target Wiegand's rye and northern arrowhead.

To facilitate the field surveys, the project area as well as the locations of the previously documented listed plant surveys associated with the South Meadows Multi-use Recreational Trail 2016 and 2017 surveys were overlain on a digital aerial image and uploaded to the GIS-enabled tablet device with submeter GPS



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accuracy. Meander surveys were conducted throughout the habitats within the project area that were observed to be potentially suitable for the target species. For each listed plant population observed, data were recorded on population size, condition, overall vigor, and associated habitat characteristics. The plants were demarcated with surveyor's flagging and/or wire stake flags and located with the submeter GPS. Photographs were taken of the population area, including associated habitat, as well as of diagnostic identifying features (Appendix A). Rare Plant Survey Forms were completed for the listed plant populations observed (Appendix B).

4.0 RESULTS

Field surveys were conducted on June 9, June 10, September 1, and September 9, 2021, and documented occurrences of Davis' sedge, cattail sedge, and Wiegand's wild rye within and adjacent to the project area. Figures 2–6 show the locations of the listed species observations, the area surveyed, and photograph locations. Table 1 summarizes the listed plant occurrences. No observations of northern arrowhead, hoary plantain, or other listed plant species were observed during the field surveys.

4.1 PROJECT AREA SETTING

The project area consists largely of forested floodplain habitats along the west and east shores of the Connecticut River. The floodplain forests on the west side of the Connecticut River are low floodplains dominated by silver maple (*Acer saccharinum*) with a dense understory supporting common low floodplain species such as sensitive fern (*Onoclea sensibilis*), ostrich fern (*Matteuccia struthiopteris*), poison-ivy (*Toxicodendron radicans*), Gray's sedge (*Carex grayi*), inflated narrow-leaved sedge, Canada wood-nettle (*Laportea canadensis*), small-spiked false nettle (*Boehmeria cylindrica*), sweet wood-reed (*Cinna arundinacea*), and white cut grass (*Leersia virginica*). Mid-story shrubs and saplings are generally scattered (although dense thickets are interspersed within the floodplain forest) and commonly include silver maple, green ash (*Fraxinus pennsylvanica*), rambler rose (*Rosa multiflora*), and northern spicebush (*Lindera benzoin*). Non-native invasive species are prevalent along the upper forest edge near the base of the levee dike around the airport and include species such as Japanese winged-knotweed (*Fallopia japonica*), oriental bittersweet (*Celastrus orbiculatus*), Japanese stilt grass (*Microstegium vimineum*), creeping yellow-loosestrife (*Lysimachia nummularia*), rambler rose, Japanese honeysuckle (*Lonicera japonica*), reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), and garlic-mustard (*Alliaria petiolata*). The floodplain is periodically scoured during flood events and includes semi-to permanently inundated basins with a perimeter of buttonbush (*Cephalanthus occidentalis*) and water smartweed (*Persicaria amphibia*). Many of these scoured basins are remnant excavated areas remaining from the construction of the adjacent flood levee protection system for the City of Hartford. These borrow areas were designated on the original levee construction plans for soil material excavation. The differential topography created by these excavations greatly diversifies the soil drainage characteristics of the project site.

The floodplain along the eastern shore of the Connecticut River and generally associated with the South Meadows Multi-use Recreational Trail supports a high floodplain forest. Species diversity is generally



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higher with a greater component of woody shrub and mid-story species compared with the community on the western shore closer to the airport. Silver maple and cottonwood (*Populus deltoides*) are the dominant canopy species. Midstory shrubs, saplings, and vines are prevalent, forming dense thickets, and include species such as northern spicebush, rambler rose, oriental bittersweet, green ash, river grape (*Vitis riparia*), American elm (*Ulmus americana*), and burning-bush (*Euonymus alatus*). Understory and herbaceous species are abundant in areas with less shrub cover and include species such as poison-ivy, ostrich fern, jumpseed (*Persicaria virginiana*), sensitive fern, wood blue grass (*Poa nemoralis*), Virginia-creeper (*Parthenocissus quinquefolia*), jewelweeds (*Impatiens capensis* and *Impatiens pallida*), smooth goldenrod (*Solidago gigantea*), garlic-mustard, inflated narrow-leaved sedge, dame's-rocket (*Hesperis matronalis*), eastern riverbank wild-rye, white cut grass, thin-leaved sunflower (*Helianthus decapetalus*), and lance-leaved American-aster (*Symphyotrichum lanceolatum*). There is a steep and abrupt bank between the forest terrace and the river and the forest appears to be inundated only during the major flood events and at a less frequency than the floodplain forest observed along the western shore of the river. Invasive species are prevalent throughout this area and include oriental bittersweet, garlic-mustard, burning-bush, rambler rose, Japanese stilt grass, and Japanese winged-knotweed. Generally speaking, the invasive species coverage of the eastern shore portion of the project area greatly exceeds the coverage of the western shore portion of the project area. The South Meadows Multi-use Recreational Trail traverses the floodplain forests within the project area.

Beyond the riverine areas, the project area includes a small patch of upland forest and landscaped areas associated with commercial infrastructure (e.g., Best Western hotel) to the west of the airport. The forested area is densely vegetated with weedy species, including a prevalence of non-native invasive species. The characteristic vegetation included boxelder (*Acer negundo*), tree-of-heaven (*Ailanthus altissima*), white willow (*Salix alba*), oriental bittersweet, common reed, garlic-mustard, river grape, and Virginia creeper. This area does not provide suitable habitat for the target species. Additional obstructions to be removed in this vicinity include landscape plantings within the mowed lawn area around the hotel.

4.2 DAVIS' SEDGE

[REDACTED]

[REDACTED]



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[REDACTED]

4.3 CATTAIL SEDGE

[REDACTED]

4.4 WIEGAND'S WILD-RYE

[REDACTED]

[REDACTED]

[REDACTED]



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Many Wiegand's wild-rye locations observed during the previous 2017 survey were not relocated and are presumed extirpated. The 2021 surveys observed remnant demarcations (e.g., snow stakes) at several previously documented locations but no Wiegand's wild-rye plants were observed.

Pages 164-166 REDACTED due to sensitive State-listed species location information. 11/8/2022



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5.0 IMPACT ANALYSIS

The proposed obstruction removal will consist of a variety of mechanized tree removal and selective tree pruning and topping to allow for unobstructed flight paths for inbound and outbound aircraft (Appendix C). Mechanized work has been limited to those areas where full tree removal is absolutely necessary to preserve the protected airspace. Mechanized tree removal will consist of flush cuts and snag cuts in most of the floodplain habitats to the west of the Connecticut River. Flush cuts will remove the tree from near ground level, leaving an approximately 1-foot tall stump. Snag cuts will remove the upper portion of the tree, leaving an approximately 12-foot tall standing bole. Forest harvest equipment (e.g., feller bunchers and forwarders) will be used to cut trees and forward them to a log pile staging area. Temporary construction mats will be placed to minimize rutting and ground disturbances. The work will be performed in winter months during non-growing season conditions with snow covered or frozen ground conditions. The mechanized tree removal will result in a transition in habitat from a forested floodplain to an open floodplain dominated by herbs and shrubs. Based on observations of similar open floodplain habitats nearby, a high density of vegetation is expected to become established consisting of common floodplain associates such as poison-ivy, ostrich fern, sensitive fern, river grape, eastern wild-rye, Canada goldenrod, deer-tongue rosette-panicgrass, jewelweeds, and/or smooth goldenrod. Invasive species such as oriental bittersweet, rambler rose, Japanese winged-knotweed, Japanese stilt grass, reed canary grass, and dame's-rocket have the potential to also become established.

Davis' sedge and Wiegand's wild-rye are outside of the proposed mechanized tree clearing areas and are not expected to be adversely affected by these actions. The mechanized tree removal area is associated with two clumps of cattail sedge to the west of the Connecticut River. Cattail sedge is a species of forested floodplains and appears intolerant of open canopy conditions (M. Arsenault, personal observations). As such, the removal of canopy vegetation and the accompanying habitat transformation is not likely compatible with the ecological needs of this species and is likely to result in a take. Further consultation with DEEP NDDDB staff regarding incidental take of this species is recommended. Transplanting of the affected cattail sedge specimens in the mechanized tree removal areas to nearby suitable floodplain habitat along with follow-up monitoring to evaluate survivorship may be an appropriate mitigative measure for the unavoidable take as result of the obstruction removal activities.

Hand labor (climbers with chainsaws) are specified for the remaining areas subject to tree topping and pruning. The work will be performed in winter months during non-growing season conditions with snow covered or frozen ground conditions and will consist primarily of arborists working from bucket-mounted trucks or climbing trees to remove the obstructing vegetation. The work will result in temporary impacts to understory vegetation as a result of the placement of temporary construction matting in certain areas to create a stable work surface for machinery and to reduce rutting or other ground disturbances. There will also be temporary impacts to understory vegetation as a result of limb drop and subsequent removal of the cut tree limbs. Tree pruning work will be conducted in the portion of the project area to the east of the Connecticut River and the areas proximal to the Wetherfield Cove outlet to the south of the airport. Tree topping will be conducted primarily along the banks of the Connecticut River. Midstory limbs and vegetation will be left in place in areas subject to tree pruning and topping.



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Although mid-story limbs and vegetation will be left in place, the removal of upper canopy vegetation will result in an increased canopy opening which is expected to result in a shift in midstory and understory vegetation including recruitment of species with affinities for partially open canopies. It is expected that species diversity and areal coverage will increase over time in the areas that are subjected to the obstruction removal activities. The species shift is likely to be similar to those conditions presently observed along the forest edges and within present canopy gaps within the floodplain forest. Species such as thin-leaved sunflower, jumpseed, Virginia-creeper, jewelweed, deer-tongue rosette-panicgrass, river grape, and eastern riverbank wild-rye as well as non-native species such as oriental bittersweet, reed canary grass, dame's rocket, and rambler rose also have the potential to increase in abundance due to the reduced canopy cover.

The observed Davis' sedge populations are outside of the areas subject to mechanized and hand clearing and are not anticipated to be affected by the obstruction removal activities. Observed occurrences of cattail sedge and Wiegand's wild-rye are within and adjacent to areas subject to tree topping and pruning. As noted above, the tree topping and pruning actions will result in an increased canopy opening. Although cattail sedge is intolerant of an open canopy, the midstory vegetation will remain in place and continue to provide partial to filtered shading of cattail sedge populations consistent with the ecological needs of the species and the existing habitat conditions. Wiegand's wild-rye is associated with a wider range of canopy cover conditions varying from shaded understories to partially shaded forest edges, forest gaps, and riverbanks compared with cattail sedge based on onsite observations and past monitoring and survey experience with this species. As such, the tree topping and pruning activities are not expected to result in habitat changes that would be inconsistent with the ecological requirements of Wiegand's wild-rye.

The following measures will be implemented to avoid and minimize impacts to listed plant species in areas subject to tree pruning and topping:

- Work will be conducted during non-growing season conditions after plants have senesced.
- Ground disturbance will be minimized by using low ground pressure equipment during frozen ground conditions, and through the use of temporary matting where pinch-points in the mechanized work areas are identified.
- [REDACTED]
- No tree limbs, woody debris, constriction mats, or wood chips will be placed within the demarcated listed plant areas.
- An invasive species monitoring and management plan will be implemented following the completion of obstruction removal to monitoring and control invasive species encroachment proximal to listed plant occurrences.



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With anticipated habitat changes following the hand-removal tree pruning and topping actions and the implementation of the above measures, incidental take of Wiegand's wild-rye and cattail sedge are not anticipated within the hand-removal areas. Further consultation with DEEP NDDB is recommended to discuss the findings of the 2021 field surveys and anticipated impacts as a result of the obstruction removal activities.



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Figures

Pages 172-177 REDACTED due to sensitive State-listed species location information. 11/8/2022

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Appendix A Representative Photographs
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Appendix A REPRESENTATIVE PHOTOGRAPHS

Page 179-220 REDACTED due to sensitive State-listed species
location information.



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Appendix B Rare Plant Survey Forms
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Appendix B RARE PLANT SURVEY FORMS



OFFICE USE ONLY		EO#:
SNAME:	SITE:	SURVEY DATE:
	TOWN:	ENTERED BY:

- New record
 Update

RARE PLANT SURVEY FORM

Natural Diversity Data Base
Connecticut Department of Environmental Protection
79 Elm Street, 6th Floor
Hartford, CT 06106-5127

*Please complete this form to the best of your ability.
Submit survey forms, maps, and all supporting documents to the address above.*

*SPECIES SCIENTIFIC NAME: <i>Carex davisii</i>	Element Occurrence (EO) # (if known):
--	---------------------------------------

REPORTER INFORMATION

Name(s): <i>Matt Arsenault</i>	
Address: <i>Stantec Consulting Services Inc., 30 Park Drive</i> <i>Topsham, Maine 04086</i>	Telephone No: <i>207-798-2135</i> E-mail address: <i>matt.arsenault@stantec.com</i>

SURVEY/SITE INFORMATION

Site Name: <i>South Meadows Multi-use Trail, Goodwin College</i>	Survey Date(s): <i>June 10, 2021</i>
Town(s): <i>East Hartford</i>	County: <i>Hartford</i>

Directions to plant population, including best parking and access points. Please attach a map with boundaries drawn around observed plant populations (or surveyed area if plants not found).
REDACTED 11/8/2022

GPS Coordinates	Method Used to Determine Coordinates:
Latitude <i>See supplemental table</i> N	<input checked="" type="checkbox"/> GPS Unit GPS Make/Model: <i>Eos Arrow</i>
Longitude: W	<input checked="" type="checkbox"/> Mapping Software Software: <i>AGOL</i>
Coordinate system (NAD83 preferred): <i>NAD83</i>	<input type="checkbox"/> Online Maps Online site:

POPULATION DATA

Population Size	
Actual No. Observed	<i>19</i>
Estimated No./Range	

What was counted?
(e.g. stems, clumps, floating masses, etc.)
Clumps (genets)

Population Area	
Length (units)	
Width (units)	
Area (units)	<i>500 sf</i>

Evidence of disease, predation or injury? Yes No Explain: *Northern occurrence is periodically mowed*

Phenology			
	% In leaf	<i>100</i>	% Mature fruit
	% In flower bud		% Seed dispersing
	% In flower		% Dormant
	% Immature fruit		% Senescent

Age Structure	
	% Seedlings
	% Immature
<i>100</i>	% Mature (established)
	% Senescent
<input type="checkbox"/>	Age structure unknown

Vigor	
<input type="checkbox"/>	Very feeble
<input type="checkbox"/>	Feeble
<input checked="" type="checkbox"/>	Normal
<input type="checkbox"/>	Vigorous
<input type="checkbox"/>	Exceptionally vigorous

Comments on above:

HABITAT

Aspect		Slope	Light	Topographic Position	Moisture
<input type="checkbox"/> N	<input type="checkbox"/> NE	<input checked="" type="checkbox"/> 0-3%	<input type="checkbox"/> Open	<input type="checkbox"/> Crest	<input type="checkbox"/> Permanently Inundated
<input type="checkbox"/> E	<input type="checkbox"/> NW	<input type="checkbox"/> 3-8%	<input checked="" type="checkbox"/> Partial	<input type="checkbox"/> Upper Slope	<input type="checkbox"/> Seasonally Inundated/Exposed
<input type="checkbox"/> S	<input type="checkbox"/> SE	<input type="checkbox"/> 8-15%	<input type="checkbox"/> Filtered	<input type="checkbox"/> Mid-Slope	<input type="checkbox"/> Tidally Inundated/Exposed
<input type="checkbox"/> W	<input type="checkbox"/> SW	<input type="checkbox"/> 15-35%	<input type="checkbox"/> Shade	<input checked="" type="checkbox"/> Lower-Slope	<input type="checkbox"/> Saturated (Hydric)
<input checked="" type="checkbox"/> Flat		<input type="checkbox"/> 35% - vertical		<input type="checkbox"/> Bottom	<input checked="" type="checkbox"/> Moist (Mesic)
	° re true N	Measured (° or %):		Other:	<input type="checkbox"/> Dry-Mesic
	° re mag N	Horizontal shape (as for next item):			<input type="checkbox"/> Dry-Xeric
		Vertical shape (ie. Convex, concave, straight, variable): <i>Flat</i>			Other:

Elevation: 15 to feet meters

Soil/substrate name/description(give source): *Pootatuck fine sandy loam (NRCS Soil Survey)*

Estimated # of acres of potential habitat in the immediate area: <1

Evidence of disturbance: fire logging disease insect damage windthrow invasives

Comments: *Invasive species are prevalent and densisty of existing thickets significantly limits opportunity for Cx. davisii; numerous areas surveyed in associated floodplain but no additional locations observed.*

Associated natural/plant communities: *High floodplain forest*

Associated plant species (separated strata, e.g. tree, shrub, herb layers): *Tree: Acer saccharinum. Shrub: Linder benzoin. Herb: Matteuccia struthiopteris., Persicaria virginiana, Alliaria petiolata, Carex bromoides, Carex grisea, Glechoma hederacea, Cardamine impatiens, Laportea canadensis, Fallopia japonica, Poa pratensis, Pilea sp., Oxalis stricta. Vine: Celastrus orbiculatus, Parthenocissus quinquefolia.*

IDENTIFICATION

Photograph taken?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Photo ID:
Specimen taken*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, provide: Collector: Repository: Collection #:
Identification problems?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Explain: <i>Carex grisea is widespread and robust specimens superficially resemble Cx. davisii. Careful inspection of spikes is needed</i>

*DEP Scientific Collection Permit is needed to collect specimens

CONSERVATION

Owner info: <i>Goodwin College</i>	
Owner aware of EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Owner protecting EO?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown
Threats to EO:	<i>Invasive species are ubiquitous and have likely reduced availale habitat.</i>
Conservation/management needs:	<i>Continued monitoring</i>
Research needs:	

SUPPORTING DOCUMENTS (please attach)

- Sketch map (showing finer detail than topo or aerial photo)
 Aerial photo map
 Topographic map (available at <http://www.econmap.com/magic/> OR <http://ctecoapp1.uconn.edu/advancedviewer/>)
 Cross section of topography/habitat (include scale, direction, element position, description, and sub-occurrence ID[s], if needed)
 Photos Slides Field notes Route of survey map

OFFICE USE ONLY		EO#:
SNAME:	SITE:	SURVEY DATE:
	TOWN:	ENTERED BY:

- New record
 Update

RARE PLANT SURVEY FORM

Natural Diversity Data Base
Connecticut Department of Environmental Protection
79 Elm Street, 6th Floor
Hartford, CT 06106-5127

*Please complete this form to the best of your ability.
Submit survey forms, maps, and all supporting documents to the address above.*

*SPECIES SCIENTIFIC NAME: <i>Carex davisi</i>	Element Occurrence (EO) # (if known):
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REPORTER INFORMATION	
Name(s): <i>Matt Arsenault</i>	
Address: <i>Stantec Consulting Services Inc., 30 Park Drive Topsham, Maine 04086</i>	Telephone No: <i>207-798-2135</i>
	E-mail address: <i>matt.arsenault@stantec.com</i>

SURVEY/SITE INFORMATION	
Site Name: <i>South Meadows Multi-use Trail, Goodwin College</i>	Survey Date(s): <i>June 10, 2021</i>
Town(s): <i>East Hartford</i>	County: <i>Hartford</i>
Directions to plant population, including best parking and access points. Please attach a map with boundaries drawn around observed plant populations (or surveyed area if plants not found). <i>REDACTED 11/8/2022</i>	
GPS Coordinates	Method Used to Determine Coordinates:
Latitude <i>See supplemental table</i> N	<input checked="" type="checkbox"/> GPS Unit GPS Make/Model: <i>Eos Arrow</i>
Longitude: W	<input checked="" type="checkbox"/> Mapping Software Software: <i>AGOL</i>
Coordinate system (NAD83 preferred): <i>NAD83</i>	<input type="checkbox"/> Online Maps Online site:

POPULATION DATA

Population Size	
Actual No. Observed	<i>14</i>
Estimated No./Range	

What was counted?
(e.g. stems, clumps, floating masses, etc.) <i>Clumps (genets)</i>

Population Area	
Length (units)	
Width (units)	
Area (units)	<i>1.3 ac</i>

Evidence of disease, predation or injury? Yes No Explain: *Plants growing along edge of walkway are periodically mowed*

Phenology			
	% In leaf		% Mature fruit
	% In flower bud		% Seed dispersing
	% In flower		% Dormant
<i>100</i>	% Immature fruit		% Senescent

Age Structure	
	% Seedlings
	% Immature
<i>100</i>	% Mature (established)
	% Senescent
<input type="checkbox"/>	Age structure unknown

Vigor
<input type="checkbox"/> Very feeble
<input type="checkbox"/> Feeble
<input checked="" type="checkbox"/> Normal
<input type="checkbox"/> Vigorous
<input type="checkbox"/> Exceptionally vigorous

Comments on above: *Plants generally occurring singly and scattered within habitat area.*

HABITAT

Aspect		Slope		Light		Topographic Position		Moisture	
<input type="checkbox"/> N	<input type="checkbox"/> NE	<input checked="" type="checkbox"/> 0-3%		<input type="checkbox"/> Open		<input type="checkbox"/> Crest		<input type="checkbox"/> Permanently Inundated	
<input type="checkbox"/> E	<input type="checkbox"/> NW	<input type="checkbox"/> 3-8%		<input checked="" type="checkbox"/> Partial		<input type="checkbox"/> Upper Slope		<input type="checkbox"/> Seasonally Inundated/Exposed	
<input type="checkbox"/> S	<input type="checkbox"/> SE	<input type="checkbox"/> 8-15%		<input type="checkbox"/> Filtered		<input type="checkbox"/> Mid-Slope		<input type="checkbox"/> Tidally Inundated/Exposed	
<input type="checkbox"/> W	<input type="checkbox"/> SW	<input type="checkbox"/> 15-35%		<input type="checkbox"/> Shade		<input checked="" type="checkbox"/> Lower-Slope		<input type="checkbox"/> Saturated (Hydric)	
<input checked="" type="checkbox"/> Flat		<input type="checkbox"/> 35% - vertical				<input type="checkbox"/> Bottom		<input checked="" type="checkbox"/> Moist (Mesic)	
	° re true N	Measured (° or %):				Other:		<input type="checkbox"/> Dry-Mesic	
	° re mag N	Horizontal shape (as for next item):						<input type="checkbox"/> Dry-Xeric	
		Vertical shape (ie. Convex, concave, straight, variable): <i>Flat</i>						Other:	

Elevation: 10 to 15 feet meters

Soil/substrate name/description(give source): *Occum fine sandy loam (NRCS Soil Survey)*

Estimated # of acres of potential habitat in the immediate area: *<1*

Evidence of disturbance: fire logging disease insect damage windthrow invasives

Comments: *Invasive species are prevalent and densisty of existing thickets significantly limits opportunity for Cx. typhina; numerous areas surveyed in associated floodplain but no additional locations observed.*

Associated natural/plant communities: *High floodplain forest*

Associated plant species (separated strata, e.g. tree, shrub, herb layers): *Tree: Acer saccharinum, Populus deltoides, Fraxinus pennsylvanica. Shrub:Lindera benzoin, Rosa multiflora, Amorphia fruticosa. Herb: Toxicodendron radicans, Leersia virginica, Carex tribuloide. Vine: Celastrus orbiculatus. ,*

IDENTIFICATION

Photograph taken?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Photo ID:
Specimen taken*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, provide: Collector: Repository: Collection #:
Identification problems?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Explain:

*DEP Scientific Collection Permit is needed to collect specimens

CONSERVATION

Owner info: <i>Goodwin College</i>	
Owner aware of EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Owner protecting EO?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown
Threats to EO:	<i>Invasive species are ubiquitous and have likely reduced availale habitat.</i>
Conservation/ management needs:	<i>Continued monitoring</i>
Research needs:	

SUPPORTING DOCUMENTS (please attach)

- Sketch map (showing finer detail than topo or aerial photo)
- Aerial photo map
- Topographic map (available at <http://www.econmap.com/magic/> OR <http://ctecoapp1.uconn.edu/advancedviewer/>)
- Cross section of topography/habitat (include scale, direction, element position, description, and sub-occurrence ID[s], if needed)
- Photos Slides Field notes Route of survey map

OFFICE USE ONLY		EO#:
SNAME:	SITE:	SURVEY DATE:
	TOWN:	ENTERED BY:

- New record
 Update

RARE PLANT SURVEY FORM

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Hartford, CT 06106-5127

*Please complete this form to the best of your ability.
Submit survey forms, maps, and all supporting documents to the address above.*

*SPECIES SCIENTIFIC NAME: <i>Carex davisi</i>	Element Occurrence (EO) # (if known):
---	---------------------------------------

REPORTER INFORMATION

Name(s): <i>Matt Arsenault</i>	
Address: <i>Stantec Consulting Services Inc., 30 Park Drive</i> <i>Topsham, Maine 04086</i>	Telephone No: <i>207-798-2135</i> E-mail address: <i>matt.arsenault@stantec.com</i>

SURVEY/SITE INFORMATION

Site Name: <i>Hartford Brainard Airport</i>	Survey Date(s): <i>June 9, 2021</i>
Town(s): <i>Hartford and Wethersfield</i>	County: <i>Hartford</i>

Directions to plant population, including best parking and access points. Please attach a map with boundaries drawn around observed plant populations (or surveyed area if plants not found).
REDACTED 11/8/2022

GPS Coordinates	Method Used to Determine Coordinates:
Latitude: <i>See supplemental table</i> N	<input checked="" type="checkbox"/> GPS Unit GPS Make/Model: <i>Eos Arrow</i>
Longitude: W	<input checked="" type="checkbox"/> Mapping Software Software: <i>AGOL</i>
Coordinate system (NAD83 preferred): <i>NAD83</i>	<input type="checkbox"/> Online Maps Online site:

POPULATION DATA

Population Size	
Actual No. Observed	<i>5</i>
Estimated No./Range	

What was counted?
(e.g. stems, clumps, floating masses, etc.) <i>Clumps (genets)</i>

Population Area	
Length (units)	
Width (units)	
Area (units)	

Evidence of disease, predation or injury? Yes No Explain:

Phenology			
	% In leaf		% Mature fruit
	% In flower bud		% Seed dispersing
	% In flower		% Dormant
<i>100</i>	% Immature fruit		% Senescent

Age Structure	
	% Seedlings
	% Immature
<i>100</i>	% Mature (established)
	% Senescent
<input type="checkbox"/>	Age structure unknown

Vigor	
<input type="checkbox"/>	Very feeble
<input type="checkbox"/>	Feeble
<input checked="" type="checkbox"/>	Normal
<input type="checkbox"/>	Vigorous
<input type="checkbox"/>	Exceptionally vigorous

Comments on above: *Suitable floodplain forest habitat is extensive (50+ acres) but plants occur very sporadically in various areas within floodplain.*

HABITAT

Aspect		Slope		Light		Topographic Position		Moisture	
<input type="checkbox"/> N	<input type="checkbox"/> NE	<input checked="" type="checkbox"/> 0-3%	<input type="checkbox"/> 3-8%	<input type="checkbox"/> Open	<input checked="" type="checkbox"/> Partial	<input type="checkbox"/> Crest	<input type="checkbox"/> Upper Slope	<input type="checkbox"/> Permanently Inundated	<input type="checkbox"/> Seasonally Inundated/Exposed
<input type="checkbox"/> E	<input type="checkbox"/> NW	<input type="checkbox"/> 8-15%	<input type="checkbox"/> 15-35%	<input type="checkbox"/> Filtered	<input type="checkbox"/> Shade	<input type="checkbox"/> Mid-Slope	<input type="checkbox"/> Lower-Slope	<input type="checkbox"/> Tidally Inundated/Exposed	<input checked="" type="checkbox"/> Saturated (Hydric)
<input type="checkbox"/> S	<input type="checkbox"/> SE	<input type="checkbox"/> 35% - vertical	Measured (° or %):		Other:		Other:		<input type="checkbox"/> Moist (Mesic)
<input type="checkbox"/> W	<input type="checkbox"/> SW	Horizontal shape (as for next item):		Other:		Other:		<input type="checkbox"/> Dry-Mesic	<input type="checkbox"/> Dry-Xeric
<input checked="" type="checkbox"/> Flat	Vertical shape (ie. Convex, concave, straight, variable): <i>Flat</i>								
° re true N									
° re mag N									
Elevation: 10 to <input checked="" type="checkbox"/> feet <input type="checkbox"/> meters									
Soil/substrate name/description(give source): <i>Winooski silt loam, Limerick and Lim soils (NRCS Soil Survey)</i>									
Estimated # of acres of potential habitat in the immediate area: <i><1</i>									
Evidence of disturbance: <input type="checkbox"/> fire <input type="checkbox"/> logging <input type="checkbox"/> disease <input type="checkbox"/> insect damage <input type="checkbox"/> windthrow <input checked="" type="checkbox"/> invasives									
Comments: <i>Celastrus orbiculatus is prevalent around plants</i>									

Associated natural/plant communities: *Low floodplain forest*Associated plant species (separated strata, e.g. tree, shrub, herb layers): *Tree: Acer saccharinum, Platnus occidentalis, Fraxinus pennsylvanica. Herb. Leersia virginica, Boehmeria cylindrica, Toxicodendron radicans, Carex grisea, Carex crinita, Lysimachia ciliata, Elymus virginicus. Vine: Celastrus orbiculatus***IDENTIFICATION**

Photograph taken?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Photo ID:
Specimen taken*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, provide: Collector: Repository: Collection #:
Identification problems?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Explain:

*DEP Scientific Collection Permit is needed to collect specimens

CONSERVATION

Owner info: <i>Connecticut Airport Authority</i>	
Owner aware of EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Owner protecting EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Threats to EO:	<i>Invasive species are ubiquitous and have likely reduced availale habitat.</i>
Conservation/ management needs:	<i>Continued monitoring</i>
Research needs:	

SUPPORTING DOCUMENTS (please attach)

- Sketch map (showing finer detail than topo or aerial photo)
 Aerial photo map
 Topographic map (available at <http://www.econmap.com/magic/> OR <http://ctecoapp1.uconn.edu/advancedviewer/>)
 Cross section of topography/habitat (include scale, direction, element position, description, and sub-occurrence ID[s], if needed)
 Photos Slides Field notes Route of survey map

OFFICE USE ONLY		EO#:
SNAME:	SITE:	SURVEY DATE:
	TOWN:	ENTERED BY:

- New record
 Update

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*Please complete this form to the best of your ability.
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*SPECIES SCIENTIFIC NAME: <i>Elymus wiegandii</i>	Element Occurrence (EO) # (if known):
---	---------------------------------------

REPORTER INFORMATION	
Name(s): <i>Matt Arsenault</i>	
Address: <i>Stantec Consulting Services Inc., 30 Park Drive</i>	Telephone No: <i>207-798-2135</i>
<i>Topsham, Maine 04086</i>	E-mail address: <i>matt.arsenault@stantec.com</i>

SURVEY/SITE INFORMATION	
Site Name: <i>South Meadows Multi-use Trail, Goodwin College</i>	Survey Date(s): <i>September 1, 2021</i>
Town(s): <i>East Hartford and Wethersfield</i>	County: <i>Hartford</i>
Directions to plant population, including best parking and access points. Please attach a map with boundaries drawn around observed plant populations (or surveyed area if plants not found). REDACTED 11/8/2022	

GPS Coordinates	Method Used to Determine Coordinates:
Latitude <i>See supplemental table</i> N	<input checked="" type="checkbox"/> GPS Unit GPS Make/Model: <i>Eos Arrow</i>
Longitude: W	<input checked="" type="checkbox"/> Mapping Software Software: <i>AGOL</i>
Coordinate system (NAD83 preferred): <i>NAD83</i>	<input type="checkbox"/> Online Maps Online site:

POPULATION DATA

Population Size	
Actual No. Observed	<i>104</i>
Estimated No./Range	

What was counted?
(e.g. stems, clumps, floating masses, etc.)
Ramets (individual flowering stems)

Population Area	
Length (units)	<i>2100'</i>
Width (units)	<i>50'</i>
Area (units)	<i>~2.5 ac</i>

Evidence of disease, predation or injury? Yes No Explain:

Phenology			
	% In leaf		% Mature fruit
	% In flower bud		% Seed dispersing
	% In flower		% Dormant
<i>100</i>	% Immature fruit		% Senescent

Age Structure	
	% Seedlings
	% Immature
<i>100</i>	% Mature (established)
	% Senescent
<input type="checkbox"/>	Age structure unknown

Vigor	
<input type="checkbox"/>	Very feeble
<input type="checkbox"/>	Feeble
<input checked="" type="checkbox"/>	Normal
<input type="checkbox"/>	Vigorous
<input type="checkbox"/>	Exceptionally vigorous

Comments on above: *Plants restricted to terrace floodplain with semi-open canopy located above the top of river bank.*

HABITAT

Aspect		Slope		Light		Topographic Position		Moisture	
<input type="checkbox"/> N	<input type="checkbox"/> NE	<input checked="" type="checkbox"/> 0-3%		<input checked="" type="checkbox"/> Open		<input type="checkbox"/> Crest		<input type="checkbox"/> Permanently Inundated	
<input type="checkbox"/> E	<input type="checkbox"/> NW	<input type="checkbox"/> 3-8%		<input checked="" type="checkbox"/> Partial		<input type="checkbox"/> Upper Slope		<input type="checkbox"/> Seasonally Inundated/Exposed	
<input type="checkbox"/> S	<input type="checkbox"/> SE	<input type="checkbox"/> 8-15%		<input type="checkbox"/> Filtered		<input type="checkbox"/> Mid-Slope		<input type="checkbox"/> Tidally Inundated/Exposed	
<input type="checkbox"/> W	<input type="checkbox"/> SW	<input type="checkbox"/> 15-35%		<input type="checkbox"/> Shade		<input type="checkbox"/> Lower-Slope		<input checked="" type="checkbox"/> Saturated (Hydric)	
<input checked="" type="checkbox"/> Flat		<input type="checkbox"/> 35% - vertical				<input checked="" type="checkbox"/> Bottom		<input type="checkbox"/> Moist (Mesic)	
	° re true N	Measured (° or %):				Other:		<input type="checkbox"/> Dry-Mesic	
	° re mag N	Horizontal shape (as for next item):						<input type="checkbox"/> Dry-Xeric	
		Vertical shape (ie. Convex, concave, straight, variable): <i>Flat</i>						Other:	

Elevation: 10 to feet meters

Soil/substrate name/description(give source): *Occum fine sandy loam (NRCS Soil Survey)*

Estimated # of acres of potential habitat in the immediate area: <1

Evidence of disturbance: fire logging disease insect damage windthrow invasives

Comments: *Celastrus orbiculatus and Rosa multiflora is prevalent around plants*

Associated natural/plant communities: *High floodplain forest*

Associated plant species (separated strata, e.g. tree, shrub, herb layers): *Trees: Acer saccharinum. Shrub: Linder benzoin, Rosa multiflora, Euonymus alatus. Herbs: Solidago gigantea, Toxicodendron radicans, Lysimachia ciliata, Microstegium vimineum, Elymus riparius, Persicaria virginica, Helianthus decapetalus, Matteuccia struthiopteris, Bromus latiglumis, Solidago canadensis. Vine: Celastrus orbiculatus, Parthenocissus quinquefolius.*

IDENTIFICATION

Photograph taken?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Photo ID:
Specimen taken*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, provide: Collector: Repository: Collection #:
Identification problems?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Explain:

*DEP Scientific Collection Permit is needed to collect specimens

CONSERVATION

Owner info: <i>Goodwin College</i>	
Owner aware of EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Owner protecting EO?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown
Threats to EO:	<i>Invasive species are ubiquitous and have likely reduced available habitat.</i>
Conservation/management needs:	
Research needs:	

SUPPORTING DOCUMENTS (please attach)

- Sketch map (showing finer detail than topo or aerial photo)
- Aerial photo map
- Topographic map (available at <http://www.econmap.com/magic/> OR <http://ctecoapp1.uconn.edu/advancedviewer/>)
- Cross section of topography/habitat (include scale, direction, element position, description, and sub-occurrence ID[s], if needed)
- Photos Slides Field notes Route of survey map

OFFICE USE ONLY		EO#:
SNAME:	SITE:	SURVEY DATE:
	TOWN:	ENTERED BY:

- New record
 Update

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Hartford, CT 06106-5127

*Please complete this form to the best of your ability.
Submit survey forms, maps, and all supporting documents to the address above.*

*SPECIES SCIENTIFIC NAME: <i>Elymus wiegandii</i>	Element Occurrence (EO) # (if known):
---	---------------------------------------

REPORTER INFORMATION	
Name(s): <i>Matt Arsenault</i>	
Address: <i>Stantec Consulting Services Inc., 30 Park Drive</i>	Telephone No: <i>207-798-2135</i>
<i>Topsham, Maine 04086</i>	E-mail address: <i>matt.arsenault@stantec.com</i>

SURVEY/SITE INFORMATION	
Site Name: <i>Hartford Brainard Airport</i>	Survey Date(s): <i>September 9, 2021</i>
Town(s): <i>Hartford</i>	County: <i>Hartford</i>
Directions to plant population, including best parking and access points. Please attach a map with boundaries drawn around observed plant populations (or surveyed area if plants not found). REDACTED 11/8/2022	

GPS Coordinates	Method Used to Determine Coordinates:
Latitude <i>See supplemental table</i> N	<input checked="" type="checkbox"/> GPS Unit GPS Make/Model: <i>Eos Arrow</i>
Longitude: W	<input checked="" type="checkbox"/> Mapping Software Software: <i>AGOL</i>
Coordinate system (NAD83 preferred): <i>NAD83</i>	<input type="checkbox"/> Online Maps Online site:

POPULATION DATA

Population Size	
Actual No. Observed	<i>42</i>
Estimated No./Range	

What was counted?
(e.g. stems, clumps, floating masses, etc.)
Ramets (individual flowering stems)

Population Area	
Length (units)	<i>1000'</i>
Width (units)	<i>~10'</i>
Area (units)	

Evidence of disease, predation or injury? Yes No Explain:

Phenology			
	% In leaf		% Mature fruit
	% In flower bud		% Seed dispersing
	% In flower		% Dormant
<i>100</i>	% Immature fruit		% Senescent

Age Structure	
	% Seedlings
	% Immature
<i>100</i>	% Mature (established)
	% Senescent
<input type="checkbox"/>	Age structure unknown

Vigor	
<input type="checkbox"/>	Very feeble
<input type="checkbox"/>	Feeble
<input checked="" type="checkbox"/>	Normal
<input type="checkbox"/>	Vigorous
<input type="checkbox"/>	Exceptionally vigorous

Comments on above: *Suitable habitat is located along forest edge; interior floodplain forest is densely shaded which may limit opportunity for E. wiegandii as species prefers partial canopy cover.*

HABITAT

Aspect		Slope	Light	Topographic Position	Moisture
<input type="checkbox"/> N	<input type="checkbox"/> NE	<input checked="" type="checkbox"/> 0-3%	<input checked="" type="checkbox"/> Open	<input type="checkbox"/> Crest	<input type="checkbox"/> Permanently Inundated
<input type="checkbox"/> E	<input type="checkbox"/> NW	<input type="checkbox"/> 3-8%	<input checked="" type="checkbox"/> Partial	<input type="checkbox"/> Upper Slope	<input type="checkbox"/> Seasonally Inundated/Exposed
<input type="checkbox"/> S	<input type="checkbox"/> SE	<input type="checkbox"/> 8-15%	<input type="checkbox"/> Filtered	<input type="checkbox"/> Mid-Slope	<input type="checkbox"/> Tidally Inundated/Exposed
<input type="checkbox"/> W	<input type="checkbox"/> SW	<input type="checkbox"/> 15-35%	<input type="checkbox"/> Shade	<input type="checkbox"/> Lower-Slope	<input checked="" type="checkbox"/> Saturated (Hydric)
<input checked="" type="checkbox"/> Flat		<input type="checkbox"/> 35% - vertical		<input checked="" type="checkbox"/> Bottom	<input type="checkbox"/> Moist (Mesic)
	° re true N	Measured (° or %):		Other:	<input type="checkbox"/> Dry-Mesic
	° re mag N	Horizontal shape (as for next item):			<input type="checkbox"/> Dry-Xeric
		Vertical shape (ie. Convex, concave, straight, variable): <i>Flat</i>			Other:

Elevation: 10 to feet meters

Soil/substrate name/description(give source): *Winooski silt loam (NRCS Soil Survey)*

Estimated # of acres of potential habitat in the immediate area: <1

Evidence of disturbance: fire logging disease insect damage windthrow invasives

Comments: *Celastrus orbiculatus* is prevalent around plants; *Lonicera japonica* is also present.

Associated natural/plant communities: *Low floodplain forest*

Associated plant species (separated strata, e.g. tree, shrub, herb layers): *Trees: Acer saccharinum. Herbs: Toxicodendron radicans, Symphyotrichum lanceolatum, Solidago gigantea, Elymus virginicus, Dichanthelium clandestinum. Vines: Celastrus orbiculatus, Lonicera japonica, Vitis riparia.*

IDENTIFICATION

Photograph taken?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Photo ID:
Specimen taken*	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes, provide: Collector: Repository: Collection #:
Identification problems?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Explain:

*DEP Scientific Collection Permit is needed to collect specimens

CONSERVATION

Owner info: <i>Connecticut Airport Authority</i>	
Owner aware of EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Owner protecting EO?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Threats to EO:	<i>Invasive species are ubiquitous and have likely reduced available habitat.</i>
Conservation/management needs:	<i>Continued monitoring, periodic mowing of access road edge likely maintains favorable habitat by reducing vine competition.</i>
Research needs:	

SUPPORTING DOCUMENTS (please attach)

- Sketch map (showing finer detail than topo or aerial photo)
- Aerial photo map
- Topographic map (available at <http://www.econmap.com/magic/> OR <http://ctecoapp1.uconn.edu/advancedviewer/>)
- Cross section of topography/habitat (include scale, direction, element position, description, and sub-occurrence ID[s], if needed)
- Photos Slides Field notes Route of survey map

**HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT: RARE PLANT SURVEY
REPORT**

Appendix C Equipment Access and Staging Plan for Vegetation Removal
October 18, 2021

**Appendix C EQUIPMENT ACCESS AND STAGING PLAN FOR
VEGETATION REMOVAL**



Page 233 REDACTED due to sensitive State-listed species location information. 11/8/2022

**HARTFORD-BRAINARD AIRPORT OBSTRUCTION REMOVAL PROJECT: RARE PLANT SURVEY
REPORT**

Appendix D Botanist Resume
October 18, 2021

Appendix D BOTANIST RESUME



Matt Arsenault

Certified Ecologist, Botanist

Matt is a Certified Ecologist and regionally recognized expert Botanist responsible for performing ecological and botanical assessments and characterizations; natural resource inventories including rare, threatened, and endangered species surveys; wetland delineations and function and value assessments; wildlife population surveys; long-term biological monitoring; and water quality monitoring surveys. For over 15 years, Matt has worked on a multitude of ecological projects, including natural community and rare plant and wildlife survey projects throughout the northeastern, northcentral, mid-Atlantic, and southern United States. These projects have ranged from general reconnaissance observations to quantitative, community- and species-specific surveys. These projects have involved detailed natural community mapping and analysis. He has also provided expert witness testimony regarding the findings of various ecological field studies. Matt has taught many workshops, led field trips, and published manuscripts on plant identification and ecology.

EDUCATION

BS, Botany, summa cum laude honors, University of Maine, Orono, Maine, US, 2003

Wetland Delineation Methods, University of New Hampshire, Durham, New Hampshire, 2005

10-Hour Construction Safety & Health Certified, OSHA, Topsham, Maine, 2009

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2010

CPR Certified, American Safety & Health Institute, Topsham, Maine, 2020

OSHA 8-Hour HAZWOPER Refresher Certification, Topsham, Maine, 2020

REGISTRATIONS

Certified Wetland Scientist #278, New Hampshire Joint Board

Ecologist, Ecological Society of America, 6-1-2020 through 6-30-2025

MEMBERSHIPS

Survey-approved Botanist, Massachusetts Division of Fisheries & Wildlife, Natural Heritage and Endangered Species Program

Member, Maine Natural Areas Program Botanical Advisory Group

Member, New England Plant Conservation Program Task Force, Native Plant Trust

Member, New England Botanical Club

Member, Friends of the Maine Herbarium, The University of Maine Herbaria

Member, Josselyn Botanical Society of Maine

Member, Ecological Society of America

Member, Maine Association of Wetland Scientists

PROJECT EXPERIENCE

Rare Plant Monitoring, Groton-New London Airport | Groton, Connecticut | Lead Botanist

Lead Botanist responsible for conducting annual monitoring of yellow thistle (*Cirsium horridulum*) at a regional airport in coastal Connecticut. Completed annual counts of flowering and vegetative individuals in order to evaluate population trends over time. Prepared detailed report for state agencies of the field monitoring results.

Rare Plant Surveys, Pleasure Beach State Park | Bridgeport, Connecticut | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys at a coastal project site in southern Connecticut. Rare plant surveys were completed during appropriate periods of the growing season to target seaside threeawn (*Aristida tuberculosa*), eastern prickly-pear (*Opuntia humifusa*), northern blazing-star (*Liatris novae-angliae*), and sickle-leaved silk-grass (*Pityopsis falcata*). Prepared detailed reports of the results of the field surveys.

Rare Plant Surveys and Mitigation, Old Farms Road | Avon, Connecticut | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys associated with a proposed road and bridge replacement project in Avon, Connecticut. Species targeted and identified within the project area included Davis' sedge (*Carex davisii*), Virginia waterleaf (*Hydrophyllum virginianum*), Wiegand's rye grass (*Elymus wiegandii*). Prepared a detailed report of the findings, consulted with state regulatory agencies to reach an agreement on appropriate mitigation, and prepared an incidental take permit application for unavoidable impacts to rare plant species. Conducted transplanting of rare plants within the project footprint to an off-site mitigation area and oversaw herbicide treatment of the mitigation area. Conducted follow-up monitoring to evaluate survivorship of transplanting efforts.

Rare Plant Survey, Eversource Line 321/1681 | New Milford, Connecticut | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in New Milford, Connecticut. Meander surveys were conducted in habitats suitable for rare plants. Located populations of purple cress (*Cardamine douglassii*). Prepared detailed report and impact assessment.

Rare Plant Survey, Private Solar Development Site | Lakeville, Connecticut | Lead Botanist

Lead Botanist responsible for conducting surveys for rare plants of a proposed solar power development site in northwestern Connecticut. Field surveys targeted handsome sedge (*Carex formosa*) as well as other state-listed species. Documented population of handsome sedge and provided recommendations for avoidance of impacts. Prepared detailed report of findings.

Rare Plant Survey, Route 7/15 Interchange| Norwalk, Connecticut | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a proposed roadway realignment project in Norwalk, Connecticut. Meander surveys were conducted in habitats suitable for rare plants.

Rare Plant Surveys, Shoreline Greenway Trail | East Haven, Connecticut | Field Manager

Field Manager responsible coordinating and overseeing field surveys targeting rare plants at a proposed recreational trail development site in southern Connecticut. Oversaw implementation of field methods and provided quality controls of field data and reporting. Species targeted during the field surveys included bitter panicgrass (*Panicum amarum*), Hervey's aster (*Eurybia x herveyi*), bracted orache (*Atriplex glabriuscula*), and bearded sprangletop (*Leptochloa fusca*).

Rare Plant Surveys, Silver Sands State Park | Milford, Connecticut | Field Manager

Field Manager responsible coordinating and overseeing field surveys targeting rare plants at a proposed state park expansion site in southern Connecticut. Oversaw implementation of field methods and provided quality controls of field data and reporting. Prepared an Incidental Take Permit application for unavoidable impacts which detailed proposed on-site mitigation efforts including transplanting and long-term monitoring.

Rare Plant Surveys, Private Development | Tolland County, Connecticut | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys associated with a proposed development site in Tolland County, Connecticut. A landscape analysis was completed prior to field surveys to identify habitats with potential for rare plant species. Meander surveys were completed throughout the project area to locate rare plants and characterize the natural communities present. A detailed report of the findings was prepared for the client.

Host Plant Assessment, Private Client | Putnam, Connecticut | Lead Botanist

Lead Botanist responsible for conducting a host-plant survey for frosted elfin (*Callophrys irus*). Prepared report of findings.

Rare Species Survey, Private Client | Bloomfield, Connecticut | Lead Ecologist

Lead Ecologist responsible for conducting surveys to evaluate the presence of several state-listed species at a proposed development site. Species targeted included meadow horsetail (*Equisetum pratense*), wood turtle (*Glyptemys insculpta*), and box turtle (*Terrapene carolina*). Prepared report of findings.

Rare Plant Surveys, National Grid | Providence County, Rhode Island | Project Manager and Lead Botanist

Lead Botanist responsible for conducting surveys for rare plants along an approximately 14-mile transmission line corridor. Field efforts documented numerous populations of state-listed species including bur-reed sedge (*Carex sparganioides*), floodplain avens (*Geum laciniatum*), orange-fruited horse-gentian (*Triosteum aurantiacum*), slender-leaved agalinis (*Agalinis tenuifolia*), fern-leaved false foxglove (*Aureolaria pedicularia*), pink-corydalis (*Capnoides sempervirens*), woodland sunflower (*Helianthus divaricatus*), and forest lousewort (*Pedicularis canadensis*). Prepared detailed report of findings.

Rare Plant Survey, Massachusetts Department of Transportation, Schell Bridge Replacement Project | Northfield, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys associated with a bridge replacement project in western Massachusetts. Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in western Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included intermediate spikesedge (*Eleocharis intermedia*), wapato (*Sagittaria cuneata*), Frank's lovegrass (*Eragrostis frankii*), Wright's spikesedge (*Eleocharis diandra*), ovate spikesedge (*Eleocharis ovata*), American waterwort (*Elatine americana*), and many-fruited seedbox (*Ludwigia polycarpa*). Prepared detailed report and impact assessment.

Rare Plant Survey, Eversource Line 1161 | Lenox, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in western Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included bur oak (*Quercus macrocarpa*), intermediate spikesedge (*Eleocharis intermedia*), wapato (*Sagittaria cuneata*), Frank's lovegrass (*Eragrostis frankii*), and bristly buttercup (*Ranunculus pensylvanicus*). Prepared detailed report and impact assessment.

Rare Species Habitat Assessment, Massachusetts Department of Transportation | Bourne, Massachusetts | Lead Ecologist

Lead Ecologist responsible for conducting habitat assessments for threatened and endangered species associated with a bridge replacement project in eastern Massachusetts. Field surveys were conducted within the project area to characterize the existing habitats and evaluate their potential to support state-listed species of plants and wildlife. Prepared report of the findings.

Rare Plant Surveys, Eversource Line 3419 | Wilbraham and Hampden, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in Wilbraham and Hampden, Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included climbing fern (*Lygodium palmatum*) and bristly buttercup (*Ranunculus pensylvanicus*). Prepared detailed report and impact assessment. Also prepared a rare plant protection plan designed to avoid take of rare species during construction. Conducted monitoring to assess rare plant populations following construction activities

Rare Plant Surveys, Eversource Line 1113 | Amherst and Granby, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in Amherst and Granby, Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included green rockcress (*Boechera missouriensis*), large-bracted tick-trefoil (*Desmodium cuspidatum*), and violet wood sorrel (*Oxalis violacea*). Prepared detailed report and impact assessment.

Rare Plant Surveys, Eversource Line 1447/1428 | South Hadley, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in South Hadley, Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included Gray's sedge (*Carex grayi*), cat-tail sedge (*Carex typhina*), Tuckerman's sedge (*Carex tuckermanii*), winged monkey-flower (*Mimulus alatus*), and swamp dock (*Rumex verticillatus*). Prepared detailed report and impact assessment.

Rare Plant Surveys, Eversource Line 1211 | Pittsfield, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in Pittsfield, Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included chestnut-colored sedge (*Carex castanea*), barren strawberry (*Geum fragarioides*), hairy honeysuckle (*Lonicera hirsuta*), and crooked-stem aster (*Symphotrichum prenanthoides*). Prepared detailed report and impact assessment.

Rare Plant Surveys, Massachusetts Department of Transportation | Sheffield, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting surveys for rare plants and evaluating after-the-fact impacts to rare plants associated with an emergency slope stabilization project. Prepared study plan for review and approval by the Massachusetts Natural Heritage and Endangered Species Program prior to conducting field surveys. Field surveys targeted Tuckerman's sedge (*Carex tuckermanii*) and small dropseed (*Sporobolus neglectus*) as well as other state-listed species. Documented populations of Tuckerman's sedge. Prepared detailed report of findings.

Rare Plant Surveys, Massachusetts Department of Transportation | Brookfield, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting surveys for and evaluating potential impacts to rare plants associated with a proposed bridge replacement project. Prepared study plan for review and approval by the Massachusetts Natural Heritage and Endangered Species Program prior to conducting field surveys. Field surveys targeted dwarf bulrush (*Lipocarpa micrantha*) and Long's bulrush (*Scirpus longii*). Documented populations of dwarf bulrush. Prepared detailed report and impact assessment.

Invasive Species Assessment, Private Client | Granby, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting an assessment of invasive plant species occurring at an inactive landfill. Efforts included a species inventory and estimation of their overall abundance. Prepared report of findings including recommendations for management.

Rare Plant Survey and Assessment, Massachusetts Department of Transportation | Williamstown, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting a rare plant survey and impact assessment along a proposed roadway rehabilitation project to target crooked-stem aster (*Symphotrichum prenanthoides*). Prepared study plan for review and approval by the Massachusetts Natural Heritage and Endangered Species Program. Surveys resulted in documentation of numerous new populations. Prepared a report of the survey results.

Rare Plant Surveys | Worcester, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys along a transmission line corridor in Worcester, Massachusetts. Meander surveys were conducted in habitats suitable for rare plants. Species targeted included smooth rockcress (*Boechera laevigata*) and downy wild rye (*Elymus villosus*).

Hoosac Wind Project | Iberdrola Renewables Inc. | Florida, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting annual monitoring of large-leaved goldenrod (*Solidago macrophylla*) at the Hoosac Wind Project in western Massachusetts. Data were collected on transplant success and establishment as well as seed germination success. Prepared detailed reports for client and state agencies.

Rare Plant Surveys, Mount Wachusett | Princeton, Massachusetts | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys associated with a road rehabilitation project by the Massachusetts Department of Conservation and Recreation on Mt. Wachusett. Targeted plant species included narrow false oat (*Trisetum spicatum*), Back's sedge (*Carex backii*), Bartram's shadbush (*Amelanchier bartramiana*), millet grass (*Milium effusum*), and adder's-tongue fern (*Ophioglossum pusillum*).

Rare Plant Surveys | Grafton County, New Hampshire | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys at a project site on the Connecticut River in Grafton County, New Hampshire. Rare plant species located included great St. John's-wort (*Hypericum ascyron*), Kalm's lobelia (*Lobelia kalmii*), fen grass-of-Parnassus (*Parnassia glauca*), sticky false asphodel (*Triantha glutinosa*), and Virginia stickseed (*Hackelia virginiana*). Prepared detailed report for client and state agencies.

Significant Ecological Evaluations | New Hampshire | Coos County | Lead Project Scientist

Lead Project Scientist responsible for performing a broad-spectrum survey and evaluation of significant natural resources within an approximately 60,000-acre project area in northern New Hampshire. Evaluations included rare plant and wildlife surveys, wildlife habitat characterizations, reconnaissance wetland and stream surveys, and natural community characterizations.

Rare Plant Survey | Londonderry, New Hampshire | Lead Project Scientist

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Rare Species Habitat Assessment, Private Client | Success, New Hampshire | Lead Ecologist

Lead Ecologist responsible for conducting a rare species habitat assessment at a proposed development site. Meander surveys were conducted to characterize the existing habitats in order to evaluate their potential to support rare, threatened, and endangered species of plants and wildlife. Prepared detailed report of findings.

Rare Plant Surveys and Transplanting, Pine Street Boat Launch | Walpole, New Hampshire | Lead Botanist

Lead Botanist responsible for conducting rare plant surveys at a proposed dredge site on the Connecticut River in Walpole, New Hampshire. Field surveys targeted several plant species including Vasey's pondweed (*Potamogeton vaseyi*), grass-leaved mud-plantain (*Heteranthera dubia*), long-leaved pondweed (*Potamogeton nodosus*), pygmy-weed (*Crassula aquatica*), and awned flatsedge (*Cyperus squarrosus*). Participated in consultation with the New Hampshire Natural Heritage Bureau to determine appropriate compensatory mitigation requirements for unavoidable impacts to the rare plant populations. Prepared rare plant transplanting plan. Conducted transplanting to relocate rare aquatic plants outside of project area and conducted long-term monitoring to assess overall viability of rare plant populations.

Wetland Delineation and Rare Species Habitat Assessment, Merrimack Riverfront Trail System | Hooksett, New Hampshire | Lead Project Scientist

Lead Project Scientist responsible for conducting a wetland delineation as well as field surveys and habitat evaluations of several species of rare wildlife and plants at a proposed recreational trail project site in southern New Hampshire. Targeted species included eastern hognose snake (*Heterodon platirhinos*), Blanding's turtle (*Emydoidea blandingii*), bald eagle (*Haliaeetus leucocephalus*), dry-land sedge (*Carex siccata*), licorice goldenrod (*Solidago odora*), blunt-leaved milkweed (*Asclepias amplexicaulis*), and grass-leaved goldenrod (*Euthamia caroliniana*).

Ecological Characterizations | Portland Water District | Windham and Westbrook, Maine | 2008 | Field Manager and Lead Project Scientist

Field Manager and Lead Project Scientist responsible for leading field surveys including surveys for rare, threatened, and endangered species of plants and wildlife; assessments of existing wildlife habitat values; and mapping of wetland and stream resources. Provided detailed reports of the findings as well as an analysis on the overall landscape value of each parcel and mitigation potential.

Proposed Transmission Line Natural Resource Identification | Central Maine Power Connection | Penobscot and Aroostook Counties, Maine | 2008 | Project Scientist

Project Scientist responsible for conducting vernal pool surveys, wetland delineations, and rare plant surveys along over 40 miles of a proposed transmission line corridor in northern Maine. Coordinated with the State agencies regarding potential impacts to several species of rare plants that were identified within the project corridor.

Saddleback Maine Ski Area Expansion | Saddleback Maine | Rangeley and Dallas Plantation, Maine | 2006-2007 | Field Manager and Lead Project Scientist

Field Manager and Lead Project Scientist responsible for conducting landscape analyses and field surveys to identify and characterize the existing natural resources present on Saddleback Mountain in western Maine prior to construction of a proposed development. Provided detailed analyses and expert witness testimony relative to the potential effects of the proposed development on significant natural resources including plants and wildlife and their associated habitats.

Stetson Mountain Wind Power Project | First Wind | Washington and Penobscot Counties, Maine | 2006-2007 | Project Scientist

Project Scientist responsible for conducting wetland delineations and rare, threatened, and endangered plant surveys of a low elevation ridgeline and over 30 miles of a proposed transmission line associated with a proposed wind power facility.

Significant Ecological Resource Evaluations | Plum Creek Timber Company | Moosehead Lake Region, Piscataquis and Somerset Counties, Maine | 2006-2007 | Field Manager and Lead Project Scientist

Field Manager and Lead Project Scientist responsible for coordinating and conducting field efforts on over 300,000 acres of forest land in northern Maine. Efforts included conducting a landscape analysis focused on identifying areas likely to support significant natural resources including large wetland systems, exemplary natural communities, and rare, threatened, and endangered species of plants and wildlife and their associated habitats. Subsequent field surveys targeted areas to identify and characterize the existing natural resources and their overall landscape significance. Species-specific targeted surveys were conducted for several species of sensitive wildlife including rusty blackbird, Bicknell's thrush, and Clayton's copper butterfly. Conducted detailed analyses and provided expert witness testimony relative to the potential effects of a proposed development and conservation easements on the significant natural resources present within the project area.

Long-term Saltmarsh Vegetation Monitoring, Town of Old Orchard Beach | Old Orchard Beach, Maine | Lead Botanist

Lead Botanist responsible for monitoring annual changes in saltmarsh vegetation and evaluating potential effects of downgradient tidal gates installed at a road crossing on the saltmarsh hydrology.

Rare Plant Surveys, Private Wind Energy Development | Oxford County, Maine | Lead Botanist

Lead Botanist responsible for conducting surveys for rare plants associated with a proposed wind energy development project in western Maine. Conducted a landscape analysis to identify potentially suitable rare plant habitats based on landscape position followed by meander-based field surveys to characterize the existing conditions and locate rare plants. Prepared detailed report of findings.

Rare Plant Surveys, Number Nine Wind Project | Arostook County, Maine | Lead Botanist

Lead Botanist responsible for conducting de novo rare plant surveys at a proposed wind project site in Arostook County, Maine. Tasks included the completion of a landscape analysis to identify areas within the project area with potential habitat for rare plants. Follow-up field surveys were completed to identify rare plants and natural communities within the project area. Several new locations of rare plants were located as a result of the field surveys including Goldie's fern (*Dryopteris goldiana*), male fern (*Dryopteris filix-mas*), showy lady's-slipper (*Cypripedium reginae*), northern bog sedge (*Carex gynocrates*), marsh valerian (*Valeriana uliginosa*), lesser yellow water crowfoot (*Ranunculus gmelinii*), and swamp honeysuckle (*Lonicera oblongifolia*). A detailed report of the field results was prepared and included with permit applications.

Rare Plant Surveys and Baseline Water Quality Monitoring, Downeast Wind Project | Washington County, Maine | Field Scientist

Field Scientist responsible for establishing baseline water quality conditions of several streams associated with a proposed wind energy development facility in eastern Maine. Streams were monitored by conducting an inventory and analysis of benthic macroinvertebrate species through systematic sampling and analytical methods. Also completed extensive rare plant surveys throughout the proposed project area. Field efforts identified numerous new locations for a state listed species: Canada mountain-rice grass (*Piptatherum canadense*) as well as a new location for bog Jacob's-ladder (*Polemonium vanburntia*).

Rare Species Survey and Habitat Characterization, Private Client | Auburn, Maine | Lead Scientist

Field Scientist responsible for conducting a characterization of existing ecological conditions of a proposed development site in central Maine. Efforts consisted of a desktop review of available information followed by field surveys to document existing conditions. Efforts focused on evaluating potential habitats for rare, threatened, and endangered species. Documented several occurrences of swamp white oak (*Quercus bicolor*), a state-listed species. Prepared a detailed report of the findings.

**Rare Plant Survey, Private Client | Alfred, Maine |
Lead Botanist**

Lead Botanist responsible for conducting rare plant surveys associated with a proposed solar facility in southern Maine. Meander surveys were conducted in habitats suitable for rare plants. Species observed included spotted wintergreen (*Chimaphila maculata*), hairy clover (*Lespedeza hirta*), Missouri rock cress (*Boecheira missouriensis*), Kalm's brome (*Bromus kalmii*), spicebush (*Lindera benzoin*), Muhlenberg's sedge (*Carex muehlenbergii*), smooth winterberry (*Ilex laevigata*), and blunt-lobed grape fern (*Botrychium oneidense*). Prepared detailed report of findings.

**Rare Plant Surveys, Vermont Agency of
Transportation | Georgia, Vermont | Lead Botanist**

Lead Botanist responsible for conducting rare plant surveys at a proposed culvert replacement project. Surveys identified two state listed species: Fernald's sedge (*Carex merritt-fernaldii*) and short-beaked sedge (*Carex brevior*). Coordinated with client and state heritage program staff regarding avoidance and minimization measures to avoid adverse impacts to rare plant populations.

**Rare Species Surveys and Habitat Assessments |
Portland to Montreal Pipeline, Northern Vermont |
Lead Botanist**

Lead Botanist responsible for conducting rare plant surveys and habitat assessments at several ecologically sensitive areas in advance of proposed maintenance activities along an existing pipeline. Documented several rare plant occurrences including lance-leaved violet (*Viola lanceolata*), grass-leaved rush (*Juncus marginatus*), mountain honeysuckle (*Lonicera villosa*), northern sweet-coltfoot (*Petasites frigidus*), yellow lady's-slipper (*Cypripedium parviflorum*), and Lake Huron bog orchid (*Platanthera huronensis*). Also documented occurrences of wood turtle (*Glyptemys insculpta*) and invasive plant species. Coordinated with natural resource agencies and prepared a report of the findings.

**Wetland Delineation and Habitat Assessment,
Vermont Agency of Transportation | Bennington and
Rutland Counties, Vermont | Lead Wetland Scientist
and Ecologist**

Lead Wetland Scientist and Ecologist responsible for conducting wetland and watercourse delineations and evaluations of potentially suitable habitat for rare, threatened, and endangered species at several railroad bridge replacement locations in southwestern Vermont. Documented several rare plant populations including lesser clearweed (*Pilea fontana*), rough-leaved goldenrod (*Solidago patula*), mudflat spikeweed (*Eleocharis intermedia*), and weak-stalked bulrush (*Schoenoplectus purshianus*). Prepared report of findings.

**Wetland Delineation and Habitat Assessment,
Vermont Agency of Transportation | Burke, Vermont |
Lead Wetland Scientist and Ecologist**

Lead Wetland Scientist and Ecologist responsible for conducting wetland and watercourse delineations and evaluations of potentially suitable habitat for rare, threatened, and endangered species at a bridge replacement location. Assessed habitat for wood turtle (*Glyptemys insculpta*), showy lady's-slipper (*Cypripedium reginae*), sheathed sedge (*Carex vaginata*), northern sweet coltsfoot (*Petasites frigidus*), and a moss (*Calligeron obtusiolium*). Prepared report of findings.

**Rare Plant Survey and Assessment, Vermont Agency
of Transportation | Fairlee, Vermont | Lead Botanist**

Lead Botanist responsible for conducting rare plant surveys at a proposed ledge stabilization project on I-91. Surveys identified three state listed species: Fernald's sedge (*Carex merritt-fernaldii*), bronze sedge (*Carex foenea*) and Canada rockcress (*Boecheira stricta*). Coordinated with client and state heritage program staff regarding mitigating efforts to off-set unavoidable impacts to state-listed species. Coordinated seed collection and processing for anticipated transplanting efforts. Assisted with the preparation of a take permit for unavoidable impacts. Conducted transplanting of rare plant specimens that were grown from seed at an off-site location and conducted follow-up monitoring to assess survivorship.

**Wetland Delineation and Habitat Assessment,
Vermont Agency of Transportation | Statewide,
Vermont | Lead Wetland Scientist and Ecologist**

Lead Wetland Scientist and Ecologist responsible for conducting wetland and watercourse delineations and evaluations of potentially suitable habitat for rare, threatened, and endangered species at several airports throughout Vermont. Prepared report of findings.

**Rare Plant Survey, North Hartland Lake | Hartland,
Vermont | Lead Botanist**

Lead Botanist responsible for conducting rare plant surveys associated with a large recreational area. Meander surveys were conducted in habitats suitable for rare plants. Species targeted and observed included hyssop-leaved fleabane (*Erigeron hyssopifolius*), ginseng (*Panax quinquefolius*), Wiegand's rye (*Elymus wiegandii*), cursed crowfoot (*Ranunculus sceleratus*), narrow false oat (*Trisetum spicatum*), tall wood-beauty (*Drymocallis arguta*), short-beaked sedge (*Carex brevior*), broad-beech fern (*Phegopteris hexagonoptera*), spotted wintergreen (*Chimaphila maculata*), slender muhly (*Muhlenbergia tenuiflora*), Garber's sedge (*Carex garberi*), and shining lady's-tresses (*Spiranthes lucida*). Prepared detailed report of findings.

New England Floristic Quality Assessment Index Development Project | Expert Botanist

Selected as an Expert Botanist to participate in the development of a Floristic Quality Assessment Index (FQAI) for New England. Duties included reviewing comprehensive vascular plant species lists for Maine and assigning a Coefficient of Conservatism value to each species based on direct knowledge of species tolerance for disturbances and affinities for particular habitats.

ForSAFE-Veg Model Setup and Evaluation Project: Northern Hardwood Forest Ecosystem | Expert Botanist

Selected as an Expert Botanist to participate in the setup of the ForSAFE-Veg model (an integrated forest ecosystem model) to simulate ecosystem biogeochemistry and ground vegetation composition in Northern Hardwood Forest ecosystems in the Northeastern U.S. relative to climate change and air pollution. Duties included participating in meetings with other regional botanists to review vegetation characteristic of northern hardwood forests in order to assign values to each species relative to their colonization ability, rooting depths, shading heights, palatability, temperature ranges, shade tolerance, water requirements, nitrogen needs, and pH tolerance for model calibration.

Rare Plant Survey | Lower Chichester, Pennsylvania | Lead Project Scientist

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Moresville Wind Power Project | Delaware County, New York | Lead Project Scientist

Lead Project Scientist responsible for conducting a broad-spectrum survey and characterization of the existing natural resources including natural communities, rare plants, and rare wildlife along an approximately 5-mile ridgeline in south central New York. Provided a detailed report of the results of the field surveys.

PUBLICATIONS AND PRESENTATIONS

Mittelhauser, G.H, **M. Arsenault**, D. Cameron, E. Doucette. Grasses and Rushes of Maine. *University of Maine Press, Orono, Maine*, 2019.

Belyazip, S., J. Phelan, B. Nihlgård, H. Sverdrup, C. Driscoll, I. Fernandez, J. Aherne, L.M. Teeling-Adams, S. Bailey, **M. Arsenault**, N. Cleavitt, B. Engstrom, R. Dennis, D. Sperduto, D. Werier, and C. Clark. 2019. Assessing the effects of climate change and air pollution on soil properties and plant diversity in northeastern U.S. hardwood forests: model setup and evaluation. *Water, Air, & Soil Pollution*, 230: 106

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Arsenault, M. and A. Haines. Rediscovery of *Carex typhina* (Cyperaceae) in Maine. *Rhodora*, 106:52-54, 2004.

Arsenault, M., J. Presby-Germano, A. Klein, W. Wright, and C. Campbell. Incongruence between three genomes in phylogenetic studies within *Picea* (Pinaceae). *Presented at the Botany 2003 conference, Alabama*, 2003.

Presentation: Winter Twigs of Maine. *Maine Association of Wetland Scientists*, 2016.

Presentation: The Sedges of Maine - A Field Guide to Cyperaceae Project Overview. *Josselyn Botanical Society*, 2014.

Presentation: Charismatic Sedges. *New England Wildflower Society*, 2014.

Presentation: The Sedges of Maine - A Field Guide to the Cyperaceae Project Overview. *Northeast Natural History Conference*, 2013.

Presentation: *Carex* Identification. *Maine Association of Wetland Scientists*, 2009.

Presentation: Winter Twig Identification. *Stantec Consulting*, 2008.

Presentation: Natural Resource Inventories. Maine Land Trust Conference. *Maine Coast Heritage Trust*, 2007.

Presentation: The Genus *Galium*. *Plant Identification Workshop for Josselyn Botanical Society Annual Meeting*, 2006.

Appendix D INVASIVE SPECIES MANAGEMENT PLAN





Stantec Consulting Services, Inc.
136 West Street, Northampton, MA 01060-3711

April 1, 2022
File: 179450287

Attention: Ms. Dawn McKay
Natural Diversity Data Base Program
Wildlife Division
Bureau of Natural Resources
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDB Determination 202104141

Dear Ms. McKay,

In May 2021, the Connecticut Department of Energy and Environmental Protection Natural Diversity Data Base (NDDB) provided the Connecticut Airport Authority (CAA) with a project review response to a proposed vegetation management (i.e., airspace obstruction removal) project at the Hartford-Brainard Airport (HFD) relative to potential impacts to state-listed protected species (NDDB Determination 202104141). One item in the NDDB response included the post-management control of invasive plant species that are presently found throughout the project site. The methods of vegetation management to be employed at HFD will increase sunlight penetration to the forest floor, providing opportunities for the spread of invasive shrub and groundcover species. Several measures have been included in the project design that will limit the spread of invasives, including the following:

1. The work is to occur during the dormant season during a period of frozen or dry soil conditions to limit the disturbance of the existing (dense) groundcover layer and underlying soils.
2. Protection of non-target canopy trees and underlying vegetative layers where feasible by employing manual removal in the outer reaches of the protected airspace.
3. Limiting the use of mechanical vegetation management to those areas where it is necessary to achieve the clear airspace objective.
4. Limiting the number and distance of vehicle trips on the site to remove the wood debris from the mechanical management areas.

Further control of invasives resulting from the HFD project is proposed through use of herbicide applications compliant with Connecticut General Statutes Title 22a Chapters 441 and 451. The project specifications will require a subcontractor that is a licensed herbicide applicator according to Title 22a using only products that are currently deemed acceptable for the intended use in the subject floodplain environment. No aquatic applications are to occur under this project. Application methods that have a high target specificity, low product volume and minimal overspray potential are proposed, with three applications over a 5-year period. Applications are to begin the growing season following vegetation management (Year 1), with two additional applications in Year 3 and Year 5. The intermediate (non-application) years provide for some limited growth of the target species providing a more visible target and larger stem diameter facilitating the next application. Herbicide applications will be conducted in tree removal areas subject to "topping",

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDB Determination 202104141

“mechanical – snag cut”, and “mechanical – flush cut” management zones at the three runway ends (a total of 25.5 acres; see Attachment 1). Invasive control will also be conducted in areas associated with cattail sedge (*Carex typhina*) transplant area adjacent to the above tree removal areas. No invasives control is proposed for the management areas where only manual pruning cuts are proposed; this includes the management areas along the east side of the Connecticut River and the south side of Folly Brook. Note that no herbicides are to be applied within 10 feet of any standing water or within 25 feet of any marked rare plant species location. In these locations, hand removal of invasives will be practiced. A draft specification to be used in the project bid package is attached indicating the process of interaction between the CAA team and the invasives control contractor (Attachment 2).

Targeted invasive species include tree-of-heaven (*Ailanthus altissima*), Russian-olive (*Elaeagnus angustifolia*), autumn-olive (*Elaeagnus umbellata*), European buckthorn (*Rhamnus cathartica*), glossy false-buckthorn (*Frangula alnus*), rambler rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergia*), burning-bush (*Euonymus alatus*), shrub honeysuckles (*Lonicera maackii*, *L. morrowii*, *L. tartarica*, *L. ×bella*, *L. xylosteum*), privet (*Ligustrum obtusifolium*, *L. ovalifolium*, *L. sinense*, *L. vulgare*), oriental bittersweet (*Celastrus orbiculatus*), Japanese knotweed (*Fallopia japonica*) and common reed (*Phragmites australis*). The application techniques to be employed include cut stem application to woody shrub and vine species and the cut-and-inject application to hollow-pith herbaceous species (e.g., common reed and Japanese knotweed).

The vegetated areas adjacent to the work areas and the associated upriver watershed of the Connecticut River contains a myriad of invasive plant species and recruitment of invasive species into the project site during flood events will occur. It is the objective of this plan to control the spread of these problematic species on the project site resulting from the vegetation management program. The 5-year control period is intended to provide the native regrowth the opportunity to colonize the modified environment reducing the area available for invasives colonization. This effort will give the native regrowth and seed stock a competitive advantage over the first 5 years following management. In particular, avoidance of the creation of a monoculture of the more problematic invasive species (common reed, Japanese knotweed, buckthorns, Russian-olive, and autumn-olive) in the log staging areas and haul routes will be a focus of our control efforts. Modifications to this invasive control program may be necessary following on-site observation during the course of the invasive control efforts.

Thank you for your assistance with this public safety project. Please contact us with any questions.

Sincerely,

Stantec Consulting Services Inc.



Matt Arsenault PWS, Ecologist, NHCWS
Botanist / Ecologist
Phone: 207 406 5488
matt.arsenault@stantec.com



Randall P. Christensen M.S.
Senior Environmental Scientist
Phone: 413 387 4508
randy.christensen@stantec.com

Attachment: Attachment 1: Figures
Attachment 2: Draft Invasives Control Specification

c. CAA, Stantec File

April 1, 2022
Ms. Dawn McKay
Attachments

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDB Determination
202104141

ATTACHMENT 1: FIGURES

Page 246 REDACTED due to sensitive State-listed species location information. 11/8/2022

April 1, 2022
Ms. Dawn McKay
Attachments

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDB Determination
202104141

ATTACHMENT 2: DRAFT INVASIVES CONTROL SPECIFICATION

DRAFT CONTROL AND REMOVAL OF INVASIVE VEGETATION

Description: This work shall include all materials, labor and equipment necessary for the identification, removal, and disposal of unwanted vegetation in locations either indicated on the plan sheets or as directed by an Environmental Scientist from the Connecticut Airport Authority (CAA). While any and all invasive species, including those listed on the website for the Connecticut Invasive Plant Working Group’s (CIPWG) Invasive Plants Council (<http://www.hort.uconn.edu/cipwg/IPC.html>), may be subject to removal at the direction of the Environmental Scientist, the following species must always be removed: tree-of-heaven (*Ailanthus altissima*), Russian-olive (*Elaeagnus angustifolia*), autumn-olive (and *Elaeagnus umbellata*), European buckthorn (*Rhamnus cathartica*), glossy false-buckthorn (*Frangula alnus*), rambler rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergia*), burning-bush (*Euonymus alatus*), shrub honeysuckles (*Lonicera maackii*, *L. morrowii*, *L. tartarica*, *L. ×bella*, *L. xylosteum*), privet (*Ligustrum obtusifolium*, *L. ovalifolium*, *L. sinense*, *L. vulgare*), oriental bittersweet (*Celastrus orbiculatus*), Japanese knotweed (*Fallopia japonica*) and common reed (*Phragmites australis*). If project-specific invasive species additional to those listed above need to be removed, the Environmental Scientist will give appropriate direction.

All vegetation designated for removal shall be removed in its entirety in accordance with the methods submitted by the Contractor and approved by the Environmental Scientist. Some work will be completed within areas where desirable and or designated rare species are present and will remain. The Contractor will be responsible for protection of desirable/rare species that are to remain.

This specification applies to the areas denoted as “Mechanized Felling – flush cut”, “Mechanized Felling – snag cut”, the “Contractor Staging Areas”, and the “Cattail Sedge Transplant Area” as shown on the contract plans; a combined area of 25± acres within the floodplain of the Connecticut River.

Materials: Mechanical removal shall consist of either manual labor, utilizing a weed wrench or other approved machine, or some other approved method that will enable removal of all root pieces and other parts of the target species while minimizing soil disturbance and avoiding any spread of invasive plant material. Where large infestations of invasive/unwanted vegetation are present and identified on the plans, removal via over-excavation of such vegetation and the underlying soils may be required. Pre-approval of such action is required.

All herbicides shall be registered for the species being treated and shall be formulated as applicable for target-species foliar treatment, cut surface, or injection applications. Where work in or immediately adjacent to wetlands is necessary, the product label(s) for any chemical/adjuvant formulation applied must indicate that the formulation is approved for aquatic environments.

April 1, 2022
Ms. Dawn McKay
Attachments

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDDB Determination 202104141

Invasive Species Control Methods: The Contractor shall have sole responsibility for identifying all invasive species present within the invasive removal areas called out in the contract documents prior to the initiating invasive removal efforts. The Contractor shall submit the required invasive removal plan at the pre-work meeting for the review and approval of the Environmental Scientist. This plan shall include a list of all invasive species present on site, along with a schedule of operations and an outline of construction methodologies for the required control and removal of invasive vegetation specific to each species listed. Only cut-stem treatment for invasive shrubs, trees and vines, and cut-and-inject treatments for common reed and knotweed are to be used on this project. Mechanical removal of other species may be allowed after consultation with the Environmental Scientist.

While the Environmental Scientist will review the Contractor's delineation and removal plan, the Contractor must be competent to identify invasive vegetation at all times of the year and to prepare a plan for its removal without assistance.

During the pre-work meeting, a field review shall be scheduled so that the Contractor and the Environmental Scientist can review the areas of invasive species removal, the specific species required to be removed, and the Contractor's submitted invasive species control plan.

Mechanical control will be conducted to the extent feasible within 25 feet of state-listed plants (e.g., within the "Cattail Sedge Transplant Area") and 10 feet of open water. If herbicide control is necessary within 25 feet of state-listed plants, it will consist only of direct hand application and there will be no broadcast spraying of herbicide. The herbicide applicators will be trained in the identification of cattail sedge (*Carex typhina*), Davis' sedge (*Carex davisii*), and Wiegand's wild-rye (*Elymus wiegandii*). A GPS system capable of submeter accuracy that contains the locations of the known listed plant occurrences will be utilized to navigate the Project area and avoid herbicide applications proximal to listed plants during invasive control efforts.

Upon receiving a Notice to Proceed, the Contractor will delineate all areas designated for invasive species removal. The Contractor will be responsible for maintaining this delineation throughout the life of the contract. Note that invasive species removal will not occur until after completion of the vegetative obstruction removal efforts by the CAA.

The Contractor will not be allowed to begin control activities for each of the three applications in the designated removal areas until all schedules, outlines, and methodologies are approved in writing by the Environmental Scientist. This schedule must take into consideration the time period required between herbicide application and the physical removal of the target species wherever such removal is to occur. No removal work can occur for a minimum of two weeks after herbicide application. In all cases, the submitted schedule shall consider mechanical methods for removal before proposing herbicide application.

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDDB Determination 202104141

The schedule and outline shall include:

- 1) The type(s) of invasive species identified in the designated area(s);
- 2) Species specific treatment methods describing a full course of treatment for each species to achieve eradication. These methods must show:
 - a. Removal methods planned (e.g. pulling, cutting, spraying, etc);
 - b. Types and concentrations of any herbicides to be used, including any adjuvants; and
 - c. Schedules showing dates and types of initial, intermediate and final treatments;
- 4) Disposal methods, including:
 - a. Onsite methods and locations; and
 - b. Requests for off-site disposal locations;
- 5) Proof of licensure for herbicide application;
- 6) A description of safety equipment required; and
- 7) Procedures for handling chemical spills.

The Contractor shall also:

- a. Maintain the labels for herbicides being used in his/her possession;
- b. Provide CAA with a 10-day work notice prior to proceeding so that the Environmental Scientist can schedule to be present when appropriate;
- c. Conduct all herbicide formulations and applications, including the addition of appropriate surfactants and other adjuvants, in strict conformance with the manufacturer's recommendation and per requirements of regulatory agencies; and
- d. Maintain a written record of herbicide application, including the formulation, concentration, area treated, and date for each application, to be provided by the commercial applicator and submitted to the Environmental Scientist following each treatment.

A “treatment period” for each designated area will be derived from the schedule submitted by the Contractor and determined by the following:

- 1) The first treatment date of the earliest treatable vegetation; and
- 2) The last treatment date of the latest treatable vegetation

It is anticipated that many species will require more than one season to obtain control. For this project, three applications are proposed over a 5-year period. The treatment period must take into consideration those species that will require follow up treatments and more than one season for control. Upon completion of the treatment period, the Contractor shall notify the Environmental Scientist in writing of the status of control. If the desired control has not been successful, the Contractor shall also submit additional treatment plans. If the Contractor believes that control has been achieved, the Contractor shall request a site inspection by the Environmental Scientist for concurrence.

April 1, 2022
Ms. Dawn McKay
Attachments

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDDB Determination 202104141

The Contractor will be responsible for removal of plant material deemed as invasive or unwanted within the delineated area(s) for the duration of the project or until relieved of responsibility of the removal item, and the delineation shall remain in place until this time.

Flush cut brush and trees shall not be more than 2 inches (50mm) above the ground line. Flush cutting shall be performed in a controlled manner that will prevent the spread of parts or seeds of invasive species. Brush hogging or any other clearing method that may promote the spread of invasive plant material is also not permissible.

Broadcast or uncontrolled spray application will not be permitted, and care must be taken to avoid contacting non-target species and/or deterring the recolonization of native species following application.

Processing and disposal of unwanted vegetation shall be done in a controlled manner so as not to spread invasive seed or plant parts within the surrounding areas. All cut invasive vegetation shall be separated from clearing and grubbing operations and all other cleared material. Cut invasive plant materials shall be removed from the site and disposed of at the approved location(s) identified in the Contractor's submitted schedule and outline of construction methodologies.

No equipment or vehicles other than that required to complete the work will be permitted in the areas designated for invasive vegetation removal. Any equipment used to process invasive materials, such as chippers and transport vehicles, must be cleaned prior to further use. Processing equipment must also be cleaned prior to further transport. Note that vehicle access may be limited on this site due to the protection of flood-control utilities. Small utility vehicles and/or hiking into the site by treatment crews may be necessary.

Wherever removal operations result in exposed soils, disturbed areas must be vegetatively stabilized with the appropriate seed mix and protected with hay, cellulous fiber mulch, or erosion control matting. The application rate for hay mulch and fiber mulch shall be 3500 lbs per acre (3920 kg/hectare).

Method of Measurement: The control and removal of invasive vegetation will be measured by the number of acres of invasive and unwanted vegetation identified and controlled as required above, including any required re-treatment of any regrowth or new growth. The area for removal will be delineated prior to treatment and measured for payment. After a review of the delineated areas, the Environmental Scientist may designate additional areas for removal that are not shown on the plans. These additional areas will be delineated, measured for payment, and included as part of the contract work.

April 1, 2022
Ms. Dawn McKay
Attachments

Reference: Hartford-Brainard Airport Airspace Obstruction Removal Project – Invasive Plant Species Control Plan – NDDB Determination 202104141

Where selective control is required, the drip line of the invasive vegetation will be measured for payment and shall include larger trees.

Basis of Payment: This work will be paid for at the contract unit price per acre for "Control and Removal of Invasive Vegetation". This payment shall include all labor, materials, tools, and equipment necessary for delineation of the invasive area(s); maintenance of the delineation throughout the project; species identification; and cutting, treating, re-treating, removal, and on or off-site disposal of designated invasive plant material. Off-site disposal of residue shall include the loading, transport, dumping, and fees associated with legal off-site disposal.

Pay Item

Control and Removal of Invasive Vegetation

Pay Unit

Per Acre (Ac)

ATTACHMENT E

Fisheries Impacts Consultation Record

From: [Christensen, Randall](#)
To: [Williams, Bruce](#)
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination
Date: Wednesday, March 30, 2022 1:11:00 PM
Attachments: [Planting Plan-RW 2 APPROACH.pdf](#)
[Planting Plan-RW 20 APPROACH.pdf](#)
[Planting Plan-RW 29 APPROACH.pdf](#)
[image001.png](#)
[HFD Obstructions_fisheriesconsultationappdoc_052421.pdf](#)
[HFD Obstructions_fisheriesconsultationappdoc_052421.doc](#)
[access plan_MDC Temp Easement Schedule B_20220403.pdf](#)

Bruce.

I've attached an original copy and pdf of the completed DEEP Fisheries Consultation Form. Furthermore, the most recent site plan is attached showing our limit of vegetation management at the three runway ends. Note that most of the work near the OHW mark consists of hand pruning or hand topping. However, since we do have some level of mechanical removal within 100' of the OHW, we have proposed a planting plan to compensate for the loss of canopy.

The three planting plan figures depict the clearing methods at each runway end, and the tree/shrub live stakes to be installed in each zone (see the table located on each figure). We do expect complete regrowth from each snag cut and flush cut, and the regrowth will be rapid (as is typical of floodplain-adapted woody species). The live stake installation will be an adaptive effort, reacting to the site in the post-vegetation management condition. Some areas will receive less than the stated ratio, while others will exceed the ratio. The total number of stakes/stickers to be installed will remain per the plan.

Also proposed is a water quality sampling procedure to measure any turbidity increases associated with the project. Baseline and post-project sampling will be conducted to determine if any project-related increases result from the work. These data are to be submitted to the NDDB and Inland Wetland staff as a condition of the permits.

I hope this information is sufficient for you to issue your fisheries determination to the NDDB. Please review these materials and get back to me with any questions.

Thank you for your assistance.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Christensen, Randall

Sent: Wednesday, March 30, 2022 10:55 AM

To: Williams, Bruce <Bruce.Williams@ct.gov>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Good Morning Bruce.

We had a delay in our project due to on-going easement acquisition, but have made substantial progress and can now move forward with permitting. I believe your August email (below) was our final communication. To address your below comment and to conclude our anadromous fisheries discussion, I'll be sending you later today our planting plan for the 100-foot buffer zone of the river and the DEEP fisheries consultation form. We can have a phone call if necessary once I forward those materials to you. We will be submitting our remaining materials to NDDDB later this week (the package to NDDDB will include the planting plan that I'm copying to you). Your comments on the fisheries consultation form should conclude our process.

Thanks for the help with this, and sorry for the delay. Please contact me with any questions.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>

Sent: Monday, August 16, 2021 10:01 AM

To: Christensen, Randall <randy.christensen@stantec.com>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDDB Response - Fisheries Coordination

Randall,

If there is any significant areas of clear cutting within 100' of the river, we may ask for the area to be live-stake planted, probably with black willows. This can be done fairly easily and cheaply. The planting is usually done in late winter/early spring. Live stakes are available from a number of suppliers and the planting method is simply to push them into wet soils where they can take root and grow. They grow very quickly and are great at stabilizing soils. One of the advantages to the airport is that they don't grow very tall (6-8') and by encouraging their growth you may crowd-out other species that grow taller and would require cutting in the future.

My guess is that the Wildlife Division will make a similar suggestion to help protect mussels.

Bruce

Bruce Williams

Fisheries Biologist

Diadromous Fish and Habitat Conservation and Enhancement Programs

Connecticut Department of Energy and Environmental Protection

Bureau of Natural Resources – Fisheries Division

Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.

Old Lyme, CT 06371

P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov



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Ensuring a clean, affordable, reliable, and sustainable energy supply***

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Friday, August 13, 2021 11:03 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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Good Morning Bruce.

Thanks for your feedback; we'll complete the consultation form and will return it to you. Please note that we will need to conduct some limited flush-cut work within 100' of the river at one location (the Runway 2 end; see the plan I submitted with my previous email); we are not proposing any stump removal (or any soil disturbance) at any of the sites. Only the tall canopy layer is to be removed with the existing sapling, shrub and groundcover layers to remain. We are quite hesitant on proposing any replanting scheme due to the high frequency of flooding of the site and the expectation that all of the cut stumps will rapidly generate re-growth (for silver maple, we expect 3-5' per year over the first few years). Nursery stock plantings in this dynamic environment would quickly be overcome by the existing vegetation and stump regrowth. Hopefully we can further discuss this issue and perhaps identify other mitigation/protection strategies.

We will return the form to you and then follow-up with a final call to summarize the project. Thanks for your help.

Randall P. Christensen M.S.
Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>

Sent: Thursday, August 12, 2021 11:16 AM

To: Christensen, Randall <randy.christensen@stantec.com>

Cc: Molly Guyer <mguyer@ctairports.org>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDDB Response - Fisheries Coordination

Hi Randall,

I've taken a look at the revised plans and the only fisheries related concern is the potential disturbance to the river bank. Typically we recommend that no vegetation within 100' of ordinary high water (OHW) be removed. This would only apply to areas that are being clear-cut or where the trees are being flush cut. If the trees are only being topped, then it is not an issue. If clear cutting must be done within 100' feet of the river, we would then ask that no efforts are made to remove the stumps or roots, and that a plan is submitted to replant the area with suitable low growing species like willow.

If you want to discuss things in more detail, I'll be in the office until 4PM today and I can be reached at (860)447-4317. I have also attached a copy of the fisheries consultation form that will need to be submitted with your permit application. Please fill-out the applicant information and send it back to me. I should be able to complete it and get it back to you shortly.

Thanks,

Bruce Williams

Fisheries Biologist

Diadromous Fish and Habitat Conservation and Enhancement Programs

Connecticut Department of Energy and Environmental Protection

Bureau of Natural Resources – Fisheries Division

Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.

Old Lyme, CT 06371

P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov



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From: Christensen, Randall <randy.christensen@stantec.com>
: Tuesday, August 10, 2021 9:37 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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Good Morning Bruce.

I'd like to review the updated draft plan with you regarding the Hartford-Brainard Airport airspace obstruction removal project. Ultimately, I'll need you to comment back to the NDDB office regarding your findings on potential fisheries impacts related to the project. We've made several modifications to the vegetation management plan that minimizes our work along the bank of the river. I'd welcome the opportunity to present the revised plans to you via a Teams call if you have Teams access? If not, we can simply conduct a phone call while looking over the plan. Let me know your preference and your availability this week for a quick call (Wednesday at 1PM or Thursday at 9AM are both open for me....I expect we could keep the call to 30 minutes or less).

I've attached the updated draft plan and the original NDDB response for your convenience.

Thanks for your continued help with this project.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>
Sent: Friday, May 14, 2021 4:27 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Cc: Molly Guyer <mguyer@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Hi Randall,

I've taken a look at the site map and the issue of biggest concern to the Fisheries Division is river bank stability. Do the current plans call for clear cutting the obstructed airspace or selectively cutting the larger trees? Other issues like freshwater mussels are actually the responsibility of the DEEP Wildlife Division.

I'm available to talk next week preferably Monday to Tuesday afternoon, or anytime on Wednesday.

Thanks,

Bruce Williams
Fisheries Biologist
Diadromous Fish and Habitat Conservation and Enhancement Programs
Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources – Fisheries Division
Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.
Old Lyme, CT 06371
P: 860.447.4317 / F: 860.434.6150 / E: bruce.williams@ct.gov



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From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Friday, May 14, 2021 8:19 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>; Goegel, Colin <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>
Subject: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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Good Morning Bruce.

Dawn McKay provided me with your name as a potential fisheries contact for the above-referenced project. We're presently in the design phase, developing the limits and methods of tree removal to

address obstructed airspace issues at all four runway ends at Hartford-Brainard Airport (HFD). The project was the subject of a National Environmental Policy Act – Environmental Assessment back in 2016/2017, and the CT Airport Authority (CAA) is now proceeding with the detailed design and permitting, with the intent of a winter removal project in Jan/Feb 2022. We'd like to involve you as early as possible in the design process so we might address as many environmental-related concerns as possible, while still addressing the penetrations to existing protected airspace at HFD.

I'd like to propose a conference call for next week with you and the CAA team to provide current information on the project and to discuss a possible site visit to review the project limits. Please get back to me with your availability and I can send an e-invite for the call. I've attached a site locus containing the approximate work limits for your review.

Thanks for your assistance and I look forward to hearing from you.

Randall P. Christensen M.S.

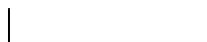
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**Connecticut Department of
Energy & Environmental Protection**
Bureau of Natural Resources
Fisheries Division

DEEP Fisheries Consultation Form

To the Applicant - Prior to the submission of your permit application, registration, or authorization to the Connecticut Department of Energy & Environmental Protection (DEEP), please complete Part I below and e-mail the following to deep.inland.fisheries@ct.gov:

1. this completed DEEP *Fisheries Consultation Form*;
2. a site location map,
3. a PDF version of the proposed project plans including a site survey of existing conditions (if available), and
4. photos of the site.

Fisheries Division staff will contact you if further details are needed. Once the Fisheries Division staff returns the completed form to you, please include the form, and any signed plans (if applicable) in your license application submittal to DEEP or as a supporting document along with your NDDB Determination letter.

Part I: Applicant and Site Information *(to be completed by APPLICANT)*

1. Applicant/Registrant Information

Name: Connecticut Airport Authority (CAA)

Mailing Address: 334 Ella Grasso Turnpike

City/Town: Windsor Locks

State: CT

Zip Code: 06096

Business Phone: 860.254.5628

Ext.: _____

Contact Person: Colin F. Goegel, P.E.

Phone: _____

Ext: _____

E-mail Address: cgoegel@ctairports.org

2. Engineer/Surveyor/Agent Information (list as applicable)

Name: Stantec Consulting Services, Inc.

Mailing Address: 136 West Street; Suite 203

City/Town: Northampton

State: MA

Zip Code: 01060-3711

Business Phone: 413-519-2587

Ext.: _____

Contact Person: Randall Christensen

Phone: _____

Ext: _____

E-mail Address: randy.christensen@stantec.com

Service Provided: Environmental Scientist

3. Site Location:

Name of Site: Hartford-Brainard Airport

Address of Site or Location Description: 20 Lindbergh Dr,

City/Town: Hartford

State: CT

Zip Code: 06114

Parcel Location/Tax Assessor's Reference: Map 333 Block 077

Lot 003

Name of Stream or Waterbody: Connecticut River and Folly Brook

4. Activity: Check the box best describing your activity: (check all that apply):

- new public/fishing access;
- new docks and marinas on the Connecticut River;
- coastal/tidal dredging projects;
- activities in inland/non-tidal waterbodies and watercourses;
- withdrawal of water from a non-tidal/inland river, stream, pond or lake;
- withdrawal of water from a wetland, marsh, swamp, or bog hydrologically connected to a non-tidal/inland river, stream, pond or lake;
- withdrawal of groundwater from stratified drift deposits hydrologically connected to a non-tidal/inland river, stream, pond or lake.
- other, please describe: airport vegetation management in CT inland wetlands

Part I: Applicant and Site Information (to be completed by APPLICANT) (continued)

Note: Fisheries consultation is **not required** for docks and marinas on Long Island Sound.

5. DEEP Pre-application Contact: Indicate name of permit analyst or engineer, if applicable.
Ms. Dawn McKay - NDDB Environmental Analyst

6. Project Description: Provide or attach a brief, but thorough, description of the project including any measures to protect, enhance or restore fish populations:

Management of vegetation, including tree removal, within approximately 30 acres of floodplain forest adjacent to the Connecticut River and Folley Brook in Hartford, East Hartford and Wethersfield. Mitigation includes revegetation of a 100-foot buffer adjacent to the river.

Part II: Fisheries Determination (To be completed by DEEP Fisheries Staff only)

To Fisheries Staff - This completed consultation form is required to be submitted as part of an application to DEEP. The application has not yet been submitted to DEEP. Please review the enclosed materials and determine whether the project will significantly impact any fisheries or fisheries habitat. You may provide comments or recommendations regarding the proposal. Send this completed form to the applicant and copy the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor. If the proposed work **WILL** significantly impact any fisheries and/or habitat or if you have any comments or concerns regarding the regulatory review for this project, contact the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor.

DEEP FISHERIES DIVISION DETERMINATION

Date Consultation Form received: _____

Please check applicable boxes and return the completed Consultation Form to the applicant:

- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat;
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the below Recommendations are followed**; and/or,
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the design features shown on the attached plans are incorporated**. Fisheries staff to sign and date plans and return to the applicant with the completed Consultation Form.

COMMENTS/RECOMMENDATIONS (or check here if these are attached following this page:):

“By entering my name below, I agree that I am providing my legal signature, and am legally bound by the determination above.”

 Signature of Fisheries Division Staff

 Date

 Print Name of Fisheries Division Staff

 Title



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Natural Resources
Fisheries Division

DEEP Fisheries Consultation Form

To the Applicant - Prior to the submission of your permit application, registration, or authorization to the Connecticut Department of Energy & Environmental Protection (DEEP), please complete Part I below and e-mail the following to deep.inland.fisheries@ct.gov:

1. this completed DEEP *Fisheries Consultation Form*;
2. a site location map,
3. a PDF version of the proposed project plans including a site survey of existing conditions (if available), and
4. photos of the site.

Fisheries Division staff will contact you if further details are needed. Once the Fisheries Division staff returns the completed form to you, please include the form, and any signed plans (if applicable) in your license application submittal to DEEP or as a supporting document along with your NDDB Determination letter.

Part I: Applicant and Site Information (*to be completed by APPLICANT*)

1. Applicant/Registrant Information

Name: Connecticut Airport Authority (CAA)

Mailing Address: 334 Ella Grasso Turnpike

City/Town: Windsor Locks

State: CT

Zip Code: 06096

Business Phone: 860.254.5628

Ext.: _____

Contact Person: Colin F. Goegel, P.E.

Phone: _____

Ext: _____

E-mail Address: cgoegel@ctairports.org

2. Engineer/Surveyor/Agent Information (list as applicable)

Name: Stantec Consulting Services, Inc.

Mailing Address: 136 West Street; Suite 203

City/Town: Northampton

State: MA

Zip Code: 01060-3711

Business Phone: 413-519-2587

Ext.: _____

Contact Person: Randall Christensen

Phone: _____

Ext: _____

E-mail Address: randy.christensen@stantec.com

Service Provided: Environmental Scientist

3. Site Location:

Name of Site: Hartford-Brainard Airport

Address of Site or Location Description: 20 Lindbergh Dr,

City/Town: Hartford

State: CT

Zip Code: 06114

Parcel Location/Tax Assessor's Reference: Map 333 Block 077

Lot 003

Name of Stream or Waterbody: Connecticut River and Folly Brook

4. Activity: Check the box best describing your activity: (check all that apply):

- new public/fishing access;
- new docks and marinas on the Connecticut River;
- coastal/tidal dredging projects;
- activities in inland/non-tidal waterbodies and watercourses;
- withdrawal of water from a non-tidal/inland river, stream, pond or lake;
- withdrawal of water from a wetland, marsh, swamp, or bog hydrologically connected to a non-tidal/inland river, stream, pond or lake;
- withdrawal of groundwater from stratified drift deposits hydrologically connected to a non-tidal/inland river, stream, pond or lake.
- other, please describe: airport vegetation management in CT inland wetlands

Part I: Applicant and Site Information (to be completed by APPLICANT) (continued)

Note: Fisheries consultation is **not required** for docks and marinas on Long Island Sound.

5. DEEP Pre-application Contact: Indicate name of permit analyst or engineer, if applicable.
Ms. Dawn McKay - NDDDB Environmental Analyst

6. Project Description: Provide or attach a brief, but thorough, description of the project including any measures to protect, enhance or restore fish populations:

Management of vegetation, including tree removal, within approximately 30 acres of floodplain forest adjacent to the Connecticut River and Folley Brook in Hartford, East Hartford and Wethersfield. Mitigation includes revegetation of a 100-foot buffer adjacent to the river.

Part II: Fisheries Determination (To be completed by DEEP Fisheries Staff only)

To Fisheries Staff - This completed consultation form is required to be submitted as part of an application to DEEP. The application has not yet been submitted to DEEP. Please review the enclosed materials and determine whether the project will significantly impact any fisheries or fisheries habitat. You may provide comments or recommendations regarding the proposal. Send this completed form to the applicant and copy the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor. If the proposed work **WILL** significantly impact any fisheries and/or habitat or if you have any comments or concerns regarding the regulatory review for this project, contact the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor.

DEEP FISHERIES DIVISION DETERMINATION

Date Consultation Form received: _____

Please check applicable boxes and return the completed Consultation Form to the applicant:

- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat;
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the below Recommendations are followed**; and/or,
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the design features shown on the attached plans are incorporated**. Fisheries staff to sign and date plans and return to the applicant with the completed Consultation Form.

COMMENTS/RECOMMENDATIONS (or check here if these are attached following this page:):

“By entering my name below, I agree that I am providing my legal signature, and am legally bound by the determination above.”

Bruce H Williams
 Signature of Fisheries Division Staff

 Date

Print Name of Fisheries Division Staff

Title

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 23 – fisheries consultation form

11.0 ATTACHMENT 23 – FISHERIES CONSULTATION FORM

11.1.1 Email consultation

11.1.2 Consultation Form DEEP-FISH-APP-007 – Signed by Fisheries Staff



From: [Williams, Bruce](#)
To: [Christensen, Randall](#)
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination
Date: Friday, April 1, 2022 2:09:39 PM
Attachments: [image005.png](#)
[image001.png](#)
[Fisheries Consultation_HFD Airport Obstructions_040122.pdf](#)

Randy,

Please find attached the completed fisheries consultation for the proposed airport clearing.

Thanks,

Bruce Williams
Fisheries Biologist
Diadromous Fish and Habitat Conservation and Enhancement Programs
Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources – Fisheries Division
Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.
Old Lyme, CT 06371
P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov



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***Conserving, improving and protecting our natural resources and environment;
Ensuring a clean, affordable, reliable, and sustainable energy supply***

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Friday, April 1, 2022 12:15 PM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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[Thank you Bruce; have a great weekend.](#)

Randall P. Christensen M.S.
Senior Environmental Scientist
Direct: (413)387-4508

Mobile: (413)519-2587
randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>
Sent: Friday, April 1, 2022 12:13 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Thanks Randall,
I'll review the documents and if I have any questions, I'll get back to you.

Bruce

*Bruce Williams
Fisheries Biologist
Diadromous Fish and Habitat Conservation and Enhancement Programs
Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources – Fisheries Division
Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.
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P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov*



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From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Wednesday, March 30, 2022 1:12 PM
To: Williams, Bruce <Bruce.Williams@ct.gov>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Bruce.

I've attached an original copy and pdf of the completed DEEP Fisheries Consultation Form. Furthermore, the most recent site plan is attached showing our limit of vegetation management at the three runway ends. Note that most of the work near the OHW mark consists of hand pruning or hand topping. However, since we do have some level of mechanical removal within 100' of the OHW, we have proposed a planting plan to compensate for the loss of canopy.

The three planting plan figures depict the clearing methods at each runway end, and the tree/shrub live stakes to be installed in each zone (see the table located on each figure). We do expect complete regrowth from each snag cut and flush cut, and the regrowth will be rapid (as is typical of floodplain-adapted woody species). The live stake installation will be an adaptive effort, reacting to the site in the post-vegetation management condition. Some areas will receive less than the stated ratio, while others will exceed the ratio. The total number of stakes/stickers to be installed will remain per the plan.

Also proposed is a water quality sampling procedure to measure any turbidity increases associated with the project. Baseline and post-project sampling will be conducted to determine if any project-related increases result from the work. These data are to be submitted to the NDDB and Inland Wetland staff as a condition of the permits.

I hope this information is sufficient for you to issue your fisheries determination to the NDDB. Please review these materials and get back to me with any questions.

Thank you for your assistance.

Randall P. Christensen M.S.
Senior Environmental Scientist

Direct: (413)387-4508
Mobile: (413)519-2587
randy.christensen@stantec.com

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From: Christensen, Randall

Sent: Wednesday, March 30, 2022 10:55 AM

To: Williams, Bruce <Bruce.Williams@ct.gov>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Good Morning Bruce.

We had a delay in our project due to on-going easement acquisition, but have made substantial progress and can now move forward with permitting. I believe your August email (below) was our final

communication. To address your below comment and to conclude our anadromous fisheries discussion, I'll be sending you later today our planting plan for the 100-foot buffer zone of the river and the DEEP fisheries consultation form. We can have a phone call if necessary once I forward those materials to you. We will be submitting our remaining materials to NDDDB later this week (the package to NDDDB will include the planting plan that I'm copying to you). Your comments on the fisheries consultation form should conclude our process.

Thanks for the help with this, and sorry for the delay. Please contact me with any questions.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>

Sent: Monday, August 16, 2021 10:01 AM

To: Christensen, Randall <randy.christensen@stantec.com>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDDB Response - Fisheries Coordination

Randall,

If there is any significant areas of clear cutting within 100' of the river, we may ask for the area to be live-stake planted, probably with black willows. This can be done fairly easily and cheaply. The planting is usually done in late winter/early spring. Live stakes are available from a number of suppliers and the planting method is simply to push them into wet soils where they can take root and grow. They grow very quickly and are great at stabilizing soils. One of the advantages to the airport is that they don't grow very tall (6-8') and by encouraging their growth you may crowd-out other species that grow taller and would require cutting in the future.

My guess is that the Wildlife Division will make a similar suggestion to help protect mussels.

Bruce

Bruce Williams

Fisheries Biologist

Diadromous Fish and Habitat Conservation and Enhancement Programs

Connecticut Department of Energy and Environmental Protection

Bureau of Natural Resources – Fisheries Division

Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.

Old Lyme, CT 06371

P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov



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Ensuring a clean, affordable, reliable, and sustainable energy supply***

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Friday, August 13, 2021 11:03 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mgyuer@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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Good Morning Bruce.

Thanks for your feedback; we'll complete the consultation form and will return it to you. Please note that we will need to conduct some limited flush-cut work within 100' of the river at one location (the Runway 2 end; see the plan I submitted with my previous email); we are not proposing any stump removal (or any soil disturbance) at any of the sites. Only the tall canopy layer is to be removed with the existing sapling, shrub and groundcover layers to remain. We are quite hesitant on proposing any replanting scheme due to the high frequency of flooding of the site and the expectation that all of the cut stumps will rapidly generate re-growth (for silver maple, we expect 3-5' per year over the first few years). Nursery stock plantings in this dynamic environment would quickly be overcome by the existing vegetation and stump regrowth. Hopefully we can further discuss this issue and perhaps identify other mitigation/protection strategies.

We will return the form to you and then follow-up with a final call to summarize the project. Thanks for your help.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>

Sent: Thursday, August 12, 2021 11:16 AM

To: Christensen, Randall <randy.christensen@stantec.com>

Cc: Molly Guyer <mguyer@ctairports.org>

Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Hi Randall,

I've taken a look at the revised plans and the only fisheries related concern is the potential disturbance to the river bank. Typically we recommend that no vegetation within 100' of ordinary high water (OHW) be removed. This would only apply to areas that are being clear-cut or where the trees are being flush cut. If the trees are only being topped, then it is not an issue. If clear cutting must be done within 100' feet of the river, we would then ask that no efforts are made to remove the stumps or roots, and that a plan is submitted to replant the area with suitable low growing species like willow.

If you want to discuss things in more detail, I'll be in the office until 4PM today and I can be reached at (860)447-4317. I have also attached a copy of the fisheries consultation form that will need to be submitted with your permit application. Please fill-out the applicant information and send it back to me. I should be able to complete it and get it back to you shortly.

Thanks,

Bruce Williams

Fisheries Biologist

Diadromous Fish and Habitat Conservation and Enhancement Programs

Connecticut Department of Energy and Environmental Protection

Bureau of Natural Resources – Fisheries Division

Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.

Old Lyme, CT 06371

P: 860.447.4317 / C: 860.876.9140 / F: 860.434.6150 / E: bruce.williams@ct.gov



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Ensuring a clean, affordable, reliable, and sustainable energy supply***

From: Christensen, Randall <randy.christensen@stantec.com>
: Tuesday, August 10, 2021 9:37 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

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Good Morning Bruce.

I'd like to review the updated draft plan with you regarding the Hartford-Brainard Airport airspace obstruction removal project. Ultimately, I'll need you to comment back to the NDDB office regarding your findings on potential fisheries impacts related to the project. We've made several modifications to the vegetation management plan that minimizes our work along the bank of the river. I'd welcome the opportunity to present the revised plans to you via a Teams call if you have Teams access? If not, we can simply conduct a phone call while looking over the plan. Let me know your preference and your availability this week for a quick call (Wednesday at 1PM or Thursday at 9AM are both open for me....I expect we could keep the call to 30 minutes or less).

I've attached the updated draft plan and the original NDDB response for your convenience.

Thanks for your continued help with this project.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

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From: Williams, Bruce <Bruce.Williams@ct.gov>
Sent: Friday, May 14, 2021 4:27 PM
To: Christensen, Randall <randy.christensen@stantec.com>
Cc: Molly Guyer <mguyer@ctairports.org>; Colin Goegel <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>
Subject: RE: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

Hi Randall,

I've taken a look at the site map and the issue of biggest concern to the Fisheries Division is river bank stability. Do the current plans call for clear cutting the obstructed airspace or selectively

cutting the larger trees? Other issues like freshwater mussels are actually the responsibility of the DEEP Wildlife Division.

I'm available to talk next week preferably Monday to Tuesday afternoon, or anytime on Wednesday.

Thanks,

Bruce Williams
Fisheries Biologist
Diadromous Fish and Habitat Conservation and Enhancement Programs
Connecticut Department of Energy and Environmental Protection
Bureau of Natural Resources – Fisheries Division
Marine Headquarters - P.O. Box 719 / 333 Ferry Rd.
Old Lyme, CT 06371
P: 860.447.4317 / F: 860.434.6150 / E: bruce.williams@ct.gov



www.ct.gov/deep

***Conserving, improving and protecting our natural resources and environment;
Ensuring a clean, affordable, reliable, and sustainable energy supply***

From: Christensen, Randall <randy.christensen@stantec.com>
Sent: Friday, May 14, 2021 8:19 AM
To: Williams, Bruce <Bruce.Williams@ct.gov>
Cc: Molly Guyer <mguyer@ctairports.org>; Goegel, Colin <cgoegel@ctairports.org>; Bruno, Bob <rbruno@ctairports.org>
Subject: Hartford-Brainard Airport Obstruction Removal Project - NDDB Response - Fisheries Coordination

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good Morning Bruce.

Dawn McKay provided me with your name as a potential fisheries contact for the above-referenced project. We're presently in the design phase, developing the limits and methods of tree removal to address obstructed airspace issues at all four runway ends at Hartford-Brainard Airport (HFD). The project was the subject of a National Environmental Policy Act – Environmental Assessment back in 2016/2017, and the CT Airport Authority (CAA) is now proceeding with the detailed design and permitting,

with the intent of a winter removal project in Jan/Feb 2022. We'd like to involve you as early as possible in the design process so we might address as many environmental-related concerns as possible, while still addressing the penetrations to existing protected airspace at HFD.

I'd like to propose a conference call for next week with you and the CAA team to provide current information on the project and to discuss a possible site visit to review the project limits. Please get back to me with your availability and I can send an e-invite for the call. I've attached a site locus containing the approximate work limits for your review.

Thanks for your assistance and I look forward to hearing from you.

Randall P. Christensen M.S.

Senior Environmental Scientist

Direct: (413)387-4508

Mobile: (413)519-2587

randy.christensen@stantec.com

Stantec



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**Connecticut Department of
Energy & Environmental Protection**
Bureau of Natural Resources
Fisheries Division

DEEP Fisheries Consultation Form

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1. this completed DEEP *Fisheries Consultation Form*;
2. a site location map,
3. a PDF version of the proposed project plans including a site survey of existing conditions (if available), and
4. photos of the site.

Fisheries Division staff will contact you if further details are needed. Once the Fisheries Division staff returns the completed form to you, please include the form, and any signed plans (if applicable) in your license application submittal to DEEP or as a supporting document along with your NDDB Determination letter.

Part I: Applicant and Site Information (*to be completed by APPLICANT*)

1. Applicant/Registrant Information

Name: Connecticut Airport Authority (CAA)

Mailing Address: 334 Ella Grasso Turnpike

City/Town: Windsor Locks

State: CT

Zip Code: 06096

Business Phone: 860.254.5628

Ext.: _____

Contact Person: Colin F. Goegel, P.E.

Phone: _____

Ext: _____

E-mail Address: cgoegel@ctairports.org

2. Engineer/Surveyor/Agent Information (list as applicable)

Name: Stantec Consulting Services, Inc.

Mailing Address: 136 West Street; Suite 203

City/Town: Northampton

State: MA

Zip Code: 01060-3711

Business Phone: 413-519-2587

Ext.: _____

Contact Person: Randall Christensen

Phone: _____

Ext: _____

E-mail Address: randy.christensen@stantec.com

Service Provided: Environmental Scientist

3. Site Location:

Name of Site: Hartford-Brainard Airport

Address of Site or Location Description: 20 Lindbergh Dr,

City/Town: Hartford

State: CT

Zip Code: 06114

Parcel Location/Tax Assessor's Reference: Map 333 Block 077

Lot 003

Name of Stream or Waterbody: Connecticut River and Folly Brook

4. Activity: Check the box best describing your activity: (check all that apply):

- new public/fishing access;
- new docks and marinas on the Connecticut River;
- coastal/tidal dredging projects;
- activities in inland/non-tidal waterbodies and watercourses;
- withdrawal of water from a non-tidal/inland river, stream, pond or lake;
- withdrawal of water from a wetland, marsh, swamp, or bog hydrologically connected to a non-tidal/inland river, stream, pond or lake;
- withdrawal of groundwater from stratified drift deposits hydrologically connected to a non-tidal/inland river, stream, pond or lake.
- other, please describe: airport vegetation management in CT inland wetlands

Part I: Applicant and Site Information (to be completed by APPLICANT) (continued)

Note: Fisheries consultation is **not required** for docks and marinas on Long Island Sound.

5. DEEP Pre-application Contact: Indicate name of permit analyst or engineer, if applicable.
Ms. Dawn McKay - NDDDB Environmental Analyst

6. Project Description: Provide or attach a brief, but thorough, description of the project including any measures to protect, enhance or restore fish populations:

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DEEP FISHERIES DIVISION DETERMINATION

Date Consultation Form received: _____

Please check applicable boxes and return the completed Consultation Form to the applicant:

- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat;
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the below Recommendations are followed**; and/or,
- I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the design features shown on the attached plans are incorporated**. Fisheries staff to sign and date plans and return to the applicant with the completed Consultation Form.

COMMENTS/RECOMMENDATIONS (or check here if these are attached following this page:):

“By entering my name below, I agree that I am providing my legal signature, and am legally bound by the determination above.”

Bruce H Williams
 Signature of Fisheries Division Staff

 Date

Print Name of Fisheries Division Staff

Title

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

attachment 41 - Applicant Compliance information Form (DEEP-APP-002)

**12.0 ATTACHMENT 41 - APPLICANT COMPLIANCE
INFORMATION FORM (DEEP-APP-002)**





**Connecticut Department of
Energy & Environmental Protection**

Applicant Compliance Information

DEEP ONLY

App. No. _____

Co./Ind. No. _____

Applicant Name: Connecticut Airport Authority (CAA)

Mailing Address: **334 Ella Grasso Turnpike**

City/Town: **Windsor Locks**

State: **CT**

Zip Code: **06096**

Business Phone: **860-245-5628**

ext.:

Contact Person: **Colin Goegel, P.E.**

Phone: **860-245-5628** ext.

*E-mail: **cgoegel@ctairports.org**

If you answer yes to any of the questions below, you must complete the Table of Enforcement Actions on the reverse side of this sheet as directed in the instructions for your permit application.

- A. During the five years immediately preceding submission of this application, has the applicant been convicted in any jurisdiction of a criminal violation of any environmental law?

Yes No

- B. During the five years immediately preceding submission of this application, has a civil penalty been imposed upon the applicant in any state, including Connecticut, or federal judicial proceeding for any violation of an environmental law?

Yes No

- C. During the five years immediately preceding submission of this application, has a civil penalty exceeding five thousand dollars been imposed on the applicant in any state, including Connecticut, or federal administrative proceeding for any violation of an environmental law?

Yes No

- D. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal court issued any order or entered any judgement to the applicant concerning a violation of any environmental law?

Yes No

- E. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal administrative agency issued any order to the applicant concerning a violation of any environmental law?

Yes No

Table of Enforcement Actions

(1) Type of Action	(2a) Date Commenced	(2b) Date Terminated	(3) Jurisdiction	(4) Case/Docket/ Order No.	(5) Description of Violation

Check the box if additional sheets are attached. Copies of this form may be duplicated for additional space.

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

attachment 42 - Applicant Background Information Form (DEEP-APP-008)

**13.0 ATTACHMENT 42 - APPLICANT BACKGROUND
INFORMATION FORM (DEEP-APP-008)**





**Connecticut Department of
Energy & Environmental Protection**

Applicant Background Information

Check the box by the entity which best describes the applicant and complete the requested information. **You must choose one of the following:** corporation, limited liability company, limited partnership, general partnership, voluntary association and individual or business type. Be sure to include the signatory authority or authorized representative certifying the application.

Corporation

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Parent Corporation

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

2. Subsidiary Corporation:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

3. Directors:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

4. Officers:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Applicant Background Information (continued)

Limited Liability Company

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List each member.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

2. List any manager(s) who, through the articles of organization, are vested the management of the business, property and affairs of the limited liability company.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Applicant Background Information (continued)

Limited Partnership

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

2. Limited Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Applicant Background Information (continued)

General Partnership

Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

Phone:

ext.

E-mail:

Applicant Background Information (continued)

Voluntary Association

Check box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List authorized persons of association or list all members of association.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

E-mail:

Individual or Other Business Type

Check the box, if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Name: Connecticut Airport Authority (CAA)

Mailing Address: 334 Ella Grasso Turnpike Attn: Mr. Colin Goegel

City/Town: Windsor Locks

State: CT

Zip Code: 06096

Business Phone: 860-254-5628

ext.:

E-mail: cgoegel@ctairports.org

2. State other names by which the applicant is known, including business names.

Name:

**HARTFORD-BRAINARD AIRPORT (HFD) OBSTRUCTION REMOVAL PROJECT – INLAND
WETLANDS/WATERCOURSES APPLICATION**

Attachment 43 – Additional Information

14.0 ATTACHMENT 43 – ADDITIONAL INFORMATION

14.1.1 easement (city of Hartford) and license agreements (Towns of Wethersfield and East Hartford)



CHARLES L. MORRIS, COMMISSIONER
GEORGE P. KANE, DEPUTY COMMISSIONER



WILLIAM B. SMITH, M. D., CHIEF FLIGHT SURGEON
RUTH T. GENEROUS, CHIEF CLERK

STATE OF CONNECTICUT
DEPARTMENT OF AERONAUTICS

HARTFORD, CONN.,

ZONING REGULATIONS

for area adjacent to the

HARTFORD, CONNECTICUT MUNICIPAL AIRPORT
(Brainard Field)

TO WHOM IT MAY CONCERN:

In pursuance of the provisions of Section 3096 of the General Statutes of the State of Connecticut, Revision of 1930, the following safety zone regulations are hereby promulgated and established this twenty-seventh day of January, 1941 governing the area adjacent to Brainard Field, so-called, which is the Hartford Municipal Airport in the town of Hartford, Connecticut; said Brainard Field being a piece, parcel or plot of land situated in the South Meadows section of Hartford, as more particularly appears and is shown upon a map entitled "Zoning Plan of Brainard Field, Hartford, Conn., 1940, Prepared for the Hartford Aviation Commission by the Dept. of Engineering, City of Hartford," which is hereto annexed.

The word "airport" as used and employed herein shall mean all of said land and the appurtenances thereon owned and used by the City of Hartford for airport purposes.

The phrase "approach zone" as herein used and employed shall mean a trapezoidal section of land 1000 feet in width at each end of the airport runways or proposed runways as shown on said map, and broadened to a width of 4000 feet two miles horizontally from the end of the respective runway, which section of land shall be symmetrical about its center line which is the continuation of the center line of the runway.

The phrase "turning zone" as herein used and employed shall mean any land immediately surrounding the airport on all sides, which is not included in an approach zone, and which is not more than two miles horizontally distant from the nearest boundary of the airport as defined by the boundary lines shown on said map.

1. Within the air space above the southwest approach zone to runway number 4, and above the northeast approach zone to runway number 4, as more particularly detailed on said map, no obstruction to aerial traffic shall

Master File

be erected, constructed, placed or allowed to grow, unless the highest part of such obstruction shall be, and shall continue to be, at an angle not to exceed the ratio of 40 to 1 from the nearest end of said runway number 4.

(For example, an obstruction, the highest point of which is 10 feet above the level of the airport surface, shall be located not less than 400 feet from the nearest end of the runway).

2. Within the air space above the approach zone to each end of runways number 1, 2, 3 and 6 as more particularly detailed on said map, no obstruction to aerial traffic shall be erected, constructed, placed or allowed to grow, unless the highest part of such obstruction shall be, and shall continue to be, at an angle not to exceed the ratio of 30 to 1 from the nearest end of the airport runway in question.

(For example, an obstruction, the highest point of which is 10 feet above the level of the airport surface, shall be located not less than 300 feet from the nearest end of the runway).

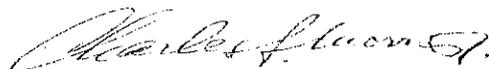
3. Within the air space above the turning zone, no obstruction to aerial traffic shall be erected, constructed, placed or allowed to grow, unless the highest part of such obstruction shall be, and shall continue to be, at an angle not to exceed 10 to 1 from said nearest boundary.

(For example, an obstruction whose highest point is 10 feet above the level of the airport surface, shall be located not less than 100 feet from the nearest boundary of the airport).

4. Any present existing obstructions of record on the date of this order, shall be exempt herefrom, but nothing herein contained shall be interpreted to prevent negotiations, or the exercise of the right of eminent domain, by the City of Hartford or the State of Connecticut, for the removal of such present obstructions.

5. It is ordered that a copy of these regulations and the map pertinent hereto, be filed with the respective Clerks of the City of Hartford, the Towns of Hartford, Wethersfield, East Hartford and Glastonbury, and the Zoning Commissions and/or Planning Commissions of said city and towns; and it is further ordered that a copy of these regulations be printed once in the Hartford Courant and once in the Hartford Times, newspapers published in the City of Hartford and having a daily circulation in the aforementioned towns.

6. The within regulations shall become effective on the first day of February, 1941.



Charles L. Morris
Commissioner of Aeronautics
State of Connecticut

January 27, 1941

Zone File

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

KNOW YE, That the CITY OF HARTFORD, a municipal corporation located in the County of Hartford and State of Connecticut, acting herein by Frank A. Murphy, its Acting City Manager,

by virtue of authority pursuant to a vote of the Court of Common Council of said City of Hartford dated March 23, 1959, for the consideration of One (1) Dollar and other valuable considerations received to its full satisfaction of the STATE OF CONNECTICUT, does give, grant, bargain, sell and confirm, unto the said STATE OF CONNECTICUT, its successors and assigns forever, a certain piece or parcel of land situated in the Town of Hartford, County of Hartford and State of Connecticut on the southerly side of Maxim Road and the easterly side of Brainard Road, with the buildings and all other improvements thereon, and being more particularly bounded and described as follows, to wit:

Beginning at a point in the southerly street line of Maxim Road, said point being the northwest corner of land of the State of Connecticut; thence running southerly in a line making an interior angle of 90° with the southerly street line of Maxim Road along said land of the State of Connecticut, two hundred ten (210) feet to a point; thence running easterly in a line making an interior angle of $270^{\circ} 51' 40''$ with the last described line along said land of the State of Connecticut, eighty-eight and fifty-two one-hundredths (88.52) feet to a point; thence running southerly in a line making an interior angle of $93^{\circ} 55' 50''$ with the last described line along said land of the State of Connecticut, eleven and thirty-seven one-hundredths (11.37) feet to a point; thence running easterly in a line making an interior angle of $265^{\circ} 12' 30''$ with the last described line along said land of the State of Connecticut, five hundred twenty-one and eighty-two one-hundredths (521.82) feet to a point; thence running northerly in a line making an interior angle of $274^{\circ} 47' 30''$ with the last described line along said land of the State of Connecticut, two hundred sixty-four and ninety-six one-hundredths (264.96) feet to a point in the southerly street line of Maxim Road; thence running easterly in a line making an interior angle of 90° with the last described line along the southerly street line of Maxim Road, one hundred thirty and seventy-one one-hundredths (130.71) feet to a point; thence running southerly in a line making an interior angle of $90^{\circ} 34'$ with the last described line along other land of the City of Hartford, one hundred twenty-four and fifty-nine one-hundredths (124.59) feet to a point, said last described line being 60 feet west of and parallel to the west taking line for the Clark Dike established March 10, 1930; thence continuing southerly in a line making an interior angle of $178^{\circ} 04' 35''$ with the last described line still along said other land of the City of Hartford, one thou-

said one hundred ninety-two and sixty-one one-hundredths (1192.61) feet to a point, said last described line being 60 feet west of and parallel to said west taking line for the Clark Dike; thence continuing southerly on a curve to the right, the initial radial line of which makes an interior angle of $91^{\circ} 55' 25''$ with the last described line, and having a radius of 3596.67 feet and a central angle of $44^{\circ} 44' 20''$, still along said other land of the City of Hartford, two thousand eight hundred eight and forty-three one-hundredths (2808.43) feet to a point, said last described line being 60 feet west of and parallel to said west taking line for the Clark Dike; thence continuing southerly in a curve to the right tangent to the last described curve, and having a radius of 10020 feet and a central angle of $6^{\circ} 56' 20''$, still along said other land of the City of Hartford, one thousand two hundred thirteen and forty-nine one-hundredths (1213.49) feet to a point, said last described line being 60 feet west of and parallel to said west taking line for the Clark Dike; thence continuing southerly in a line making an interior angle of $88^{\circ} 26' 08''$ with the final radial line of the last described curve, still along said other land of the City of Hartford, three hundred sixty-two and ten one-hundredths (362.10) feet to a point in the northerly line of land of The Metropolitan District, said last described line being 60 feet west of and parallel to said west taking line for the Clark Dike; thence running westerly in a line making an interior angle of $87^{\circ} 34' 20''$ with the last described line along said land of The Metropolitan District, one thousand three hundred eighty-seven and thirty-six one-hundredths (1387.36) feet to a point marked by a merestone; thence continuing westerly in a line making an interior angle of $229^{\circ} 23' 32''$ with the last described line still along said land of The Metropolitan District, three hundred fifty-five and fifty-four (355.54) feet to a point; thence continuing westerly in a line making an interior angle of $155^{\circ} 03' 21''$ with the last described line along other land of the City of Hartford, one thousand two hundred fifty-three and sixty-two one-hundredths (1253.62) feet to a point in the easterly street line of Brainard Road; thence running northerly in a line making an interior angle of $104^{\circ} 04' 44''$ with the last described line along the easterly street line of Brainard Road, six hundred eighteen and fifty-eight one-hundredths (618.58) feet to a point; thence running easterly in a line making an interior angle of $75^{\circ} 55' 16''$ with the last described line along other land of the City of Hartford, one thousand six hundred eighty-one and sixty-five one-hundredths (1681.65) feet to a point; thence running northerly in a line making an interior angle of 270° with the last described line along said other land of the City of Hartford, three thousand one hundred ninety-six and twenty-one one-hundredths (3196.21) feet to a point; thence continuing northerly in a line making an interior angle of $223^{\circ} 07' 45''$ with the last described line still along said other land of the City of Hartford, six hundred seventy-one and thirty-eight one-hundredths (671.38) feet to a point in the southerly street line of Maxim Road; thence running easterly in a line making an interior angle of $72^{\circ} 44' 04''$ with the last described line along the southerly street line of Maxim Road, six hundred twenty-six and seventy-five one-hundredths (626.75) feet to the point or place of beginning;

together with the right to the grantee, its successors and assigns, to install, maintain and operate airport lighting on the Connecticut River Dike situated on other land of the grantor lying easterly of the herein described premises, said right to continue so long as the herein conveyed premises or any portion thereof are used as an airport, the exercise of said right to be subject to the approval of the U. S. Army Corps of Engineers.

Said premises are more particularly shown on a map entitled "Map showing land acquired from the City of Hartford by the State of Connecticut Scale 1" = 200' March 1959, Plans prepared by F. P. Molloy Associates" and certified substantially correct by G. L. Davis, on file in the Town Clerk's Office in said Town of Hartford.

Said premises are subject to a sewer easement to The Metropolitan District appearing of record.

The grantor covenants and agrees, for itself, its successors and assigns, that all land remaining to the grantor, of what is now known as "Brainard Field", together with other land of the grantor lying between Brainard Road and the Wilbur Cross Highway and together with other land of the grantor lying in the Town of Wethersfield, County of Hartford and State of Connecticut between the Hartford-Wethersfield town line and the edge of the Wethersfield Cove, so-called, all of which land is designated "City of Hartford Land Subject to Height Restrictions" on a map entitled "Airport Approach Plan Brainard Field Hartford, Conn. Scale 1" = 200' Master Plan - Sheet No. 2",

on file in the Town Clerk's Office in said Town of Hartford, shall be subject to the restrictions that no structure shall be erected and no trees allowed to grow above the maximum elevations as delineated on said last mentioned map, such maximum elevations being on inclined planes extending from field elevation to an elevation of one hundred sixty-four (164) feet above sea level, said restrictions to remain in force as long as the herein conveyed premises or any portion thereof are used as an airport.

The grantor agrees that it will as soon as practicable adopt, in accordance with Section 15-91 of the General Statutes of Connecticut, Revision of 1958, airport zoning regulations as may be necessary to effectuate the above mentioned plan covering the areas designated "Land to become subject to airport zoning regulations", as delineated on said last mentioned map, within the limits of the one hundred sixty-four (164) foot elevation as shown on said plan, which regulations shall conform to the requirements of a document known as

"TSO-N18, Amendment 1, July 30, 1952, Technical Standard Order issued by Office of the Administrator of Civil Aeronautics, U.S.A."

[The grantor and grantee further covenant and agree that in the event that the grantee should ever decide in the future to discontinue the use of the land herein conveyed as an airport facility, that the grantee will give the grantor the first refusal to purchase said land and improvements thereon at the then fair market value price of the land and improvements.] In such event, the grantor shall have one (1) year within which to accept or reject the offer, the one(1) year running from the date of written notice by the grantee offering to sell to the grantor; and in the event that the grantor exercises its option to repurchase said land and improvements, conveyance shall take effect no later than six (6) months from the date of the exercise of the option. In the event that the grantor does exercise its option to purchase upon offer by the grantee, as herein provided, transfer of the property from the grantee may be either to the grantor or to its assigns. In the event, however, that the grantor does not exercise its option to repurchase, as herein provided for, the grantee may then sell any or all of said land for use in accordance with the existing City of Hartford zoning regulations only.

TO HAVE AND TO HOLD the above granted and bargained premises, with the privileges and appurtenances thereof unto the said grantee, its successors and assigns forever, to its and their own proper use and behoof. AND ALSO, it the said grantor does for itself, and its successors and assigns covenant with the said grantee, its successors and assigns, that at and until the ensealing of these presents it is well seized of the premises as a good indefeasible estate in fee simple, and has good right to bargain and sell the same in manner and form as is above written, and that the same is free from all encumbrances whatsoever, except as afore-

said.

AND FURTHERMORE, the said grantor does by these presents bind itself and its successors forever to WARRANT AND DEFEND the above granted and bargained premises to it the said grantee, its successors and assigns against all claims and demands whatsoever, except as aforesaid.

IN WITNESS WHEREOF, said City of Hartford has caused this instrument to be executed in its corporate name and its official corporate seal to be hereto affixed this 25th day of March A. D. 1959.

Signed, Sealed and Delivered
in the presence of

Sheldon J. Kahn
Sheldon J. Kahn

John T. Walsh
John T. Walsh
STATE OF CONNECTICUT

COUNTY OF HARTFORD

CITY OF HARTFORD

By *Frank A. Murphy*
Its Acting City Manager
Frank A. Murphy



ss. Hartford, March 25, 1959

Personally appeared Frank A. Murphy, Acting City Manager, as aforesaid, signer and sealer of the foregoing instrument, and acknowledged the same to be his free act and deed and the free act and deed of said City of Hartford, before me,

Sheldon J. Kahn
Notary Public
Sheldon J. Kahn



August 18, 2021

Mr. Bryant L. Harrell
Vice President
Facilities, Security and Information Technology
One Riverside Drive
East Hartford, CT 06118

RE: License Agreement for Hartford Brainard Airport Obstruction Removal

Dear Mr. Harrell:

The Connecticut Airport Authority (CAA) is required to provide documentation of property owner support for the permitting phase of the Obstruction Removal Project at Hartford Brainard Airport. The "support" is only indicative of the willingness of the property owner to allow for the submission of applications by the CAA that include activity on your property.

Enclosed you will find a License Agreement for your signature. We are asking for you and your organization to execute this License Agreement while we finalize the permanent aviation easement. This will allow the CAA continued property access to finalize the design and provide the required documentation to submit all required permit applications for the Obstruction Removal Project. The applications will provide for the required environmental review of the project. Following submission of the permitting, we will be in touch to discuss finalizing an easement and compensation for said easement.

Should you have any questions or if you would like to set up a meeting to discuss this request, please feel free to contact Robert J. Bruno at 860-254-5516 or via e-mail rbruno@ctairports.org.

Sincerely,

A handwritten signature in black ink that reads 'Kevin A. Dillon'.

Kevin A. Dillon A.A.E
Executive Director
Connecticut Airport Authority

LICENSE

THIS LICENSE and AGREEMENT made this 14 day of September, 2021, by and between Goodwin University, 1 Riverside Dr, East Hartford, CT 06118, and its successors or assigns, hereinafter referred to as the "Grantor", and the Connecticut Airport Authority, constituting a public instrumentality and political subdivision of the State of Connecticut, having a principal place of business at Bradley International Airport, Terminal A, Administrative Offices, 3rd Floor, Windsor Locks, Connecticut 06096, hereinafter referred to as the "CAA" and its successors or assigns, hereinafter referred to as the "Grantee".

WITNESSETH:

WHEREAS, Hartford Brainard Airport, hereinafter referred to as the "Airport," is owned by the Grantee; and

WHEREAS, certain real estate, is owned by Grantor, in fee simple, known as:

1. Property is located in the Town of East Hartford and is shown on the attached Exhibit as 300-001, 300-004, 300-005, 300-006, 300-008, 10-5/6, 7-28, 8-2, 7-25, 7-26

hereinafter collectively referred to as the "Property"; and

WHEREAS, the Federal Aviation Administration has identified obstructions to the flight surfaces at the Airport, which are located on the Property, which must be removed for safe operation at Hartford Brainard Airport; and

WHEREAS, Grantee desires a right to obtain access and enter upon the Property for the necessary study of the work area in preparation of any and all necessary environmental permit applications and for public and agency site visits related to the permit application processes; and

WHEREAS, CAA desires a right to file any and all necessary permit applications for the management of airspace obstructions on the Property with the written support of the Grantor

NOW THEREFORE, for One Dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereby agree as follows:

- 1) Grantor hereby grants the Grantee a license to access and enter upon the Property for the presentation of the project to permitting agency officials and interested public as required by the various permitting processes
- 2) Grantee will utilize elements of the levee system right of way to access the work areas as well as to remove and dispose of cut vegetation on the west side of the river after receipt of necessary environmental permits and approvals.
- 3) Grantor will support the filing of any and all necessary permit applications for the project including providing written support documents and/or signatures as required by the various permit regulations, applications and processes.

4) Grantee, and its successors and assigns, shall indemnify Grantor, and its successors and assigns, against, and hold them harmless from, any and all liabilities, obligations, losses, expenses (including reasonable attorneys' fees), claims, judgments, suits, or damages of any kind whatsoever, resulting from or arising out of the entry onto Grantor's property by Grantee or Grantee's employees, agents or contractors.

5) Grantee will undertake and complete the process for acquiring an avigation easement over the Property, in accordance with FAA Guidelines, including establishing a price for the easement through an appraisal process.

Dated as of the day and year first set forth above.

NAME

ANTONIO J. MATTA
GOODWIN UNIVERSITY ARCHITECT


STATE OF CONNECTICUT

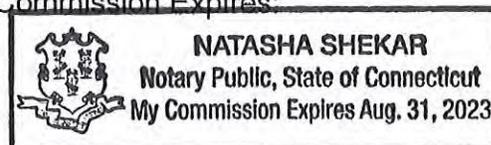
ss:

COUNTY OF HARTFORD

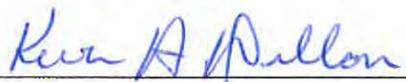
On this 3rd day of Sept., 2021 YEAR, before me personally appeared NAME, known by me to be the person executing the foregoing instrument, and he acknowledged said instrument, by him executed, to be his free act and deed.


Commissioner of the Superior Court

Notary Public
My Commission Expires:



CONNECTICUT AIRPORT AUTHORITY



Kevin A. Dillon A.A.E.
Executive Director
Connecticut Airport Authority



August 18, 2021

Mr. Timothy Lewis
34 Ridge Road
Rocky Hill, CT 06067

RE: License Agreement for Hartford Brainard Airport Obstruction Removal

Dear Mr. Lewis:

The Connecticut Airport Authority (CAA) is required to provide documentation of property owner support for the permitting phase of the Obstruction Removal Project at Hartford Brainard Airport. The "support" is only indicative of the willingness of the property owner to allow for the submission of applications by the CAA that include activity on your property.

Enclosed you will find a License Agreement for your signature. We are asking for you and your organization to execute this License Agreement while we finalize the permanent avigation easement. This will allow the CAA continued property access to finalize the design and provide the required documentation to submit all required permit applications for the Obstruction Removal Project. The applications will provide for the required environmental review of the project. Following submission of the permitting, we will be in touch to discuss finalizing an easement and compensation for said easement.

Should you have any questions or if you would like to set up a meeting to discuss this request, please feel free to contact Robert J. Bruno at 860-254-5516 or via e-mail rbruno@ctairports.org.

Sincerely,

Kevin A. Dillon A.A.E
Executive Director
Connecticut Airport Authority

LICENSE

THIS LICENSE and AGREEMENT made this 31st day of August, 2021, by and between Great Meadow Conservation Trust, and its successors or assigns, hereinafter referred to as the "Grantor", and the Connecticut Airport Authority, constituting a public instrumentality and political subdivision of the State of Connecticut, having a principal place of business at Bradley International Airport, Terminal A, Administrative Offices, 3rd Floor, Windsor Locks, Connecticut 06096, hereinafter referred to as the "CAA" and its successors or assigns, hereinafter referred to as the "Grantee".

WITNESSETH:

WHEREAS, Hartford Brainard Airport, hereinafter referred to as the "Airport," is owned by the Grantee; and

WHEREAS, certain real estate, is owned by Grantor, in fee simple, known as:

1. Property is located in the Town of Wethersfield and is shown on the attached Exhibit as parcels 300-003.

hereinafter collectively referred to as the "Property"; and

WHEREAS, the Federal Aviation Administration has identified obstructions to the flight surfaces at the Airport, which are located on the Property, which must be removed for safe operation at Hartford Brainard Airport; and

WHEREAS, Grantee desires a right to obtain access and enter upon the Property for the necessary study of the work area in preparation of any and all necessary environmental permit applications and for public and agency site visits related to the permit application processes; and

WHEREAS, CAA desires a right to file any and all necessary permit applications for the management of airspace obstructions on the Property with the written support of the Grantor

NOW THEREFORE, for One Dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereby agree as follows:

- 1) Grantor hereby grants the Grantee a license to access and enter upon the Property for the presentation of the project to permitting agency officials and interested public as required by the various permitting processes
- 2) Grantee will utilize elements of the levee system right of way to access the work areas as well as to remove and dispose of cut vegetation on the west side of the river after receipt of necessary environmental permits and approvals.
- 3) Grantor will support the filing of any and all necessary permit applications for the project including providing written support documents and/or signatures as required by the various permit regulations, applications and processes.

4) Grantee, and its successors and assigns, shall indemnify Grantor, and its successors and assigns, against, and hold them harmless from, any and all liabilities, obligations, losses, expenses (including reasonable attorneys' fees), claims, judgments, suits, or damages of any kind whatsoever, resulting from or arising out of the entry onto Grantor's property by Grantee or Grantee's employees, agents or contractors.

5) Grantee will undertake and complete the process for acquiring an avigation easement over the Property, in accordance with FAA Guidelines, including establishing a price for the easement through an appraisal process.

Dated as of the day and year first set forth above.

NAME *Timothy Lewis*
President
Great meadows conservation trust

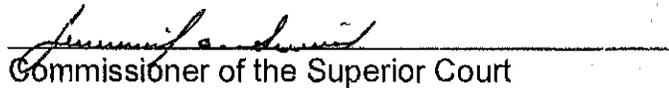


STATE OF CONNECTICUT

ss:

COUNTY OF HARTFOIRD

On this 31st day of August, YEAR, before me personally appeared NAME, known by me to be the person executing the foregoing instrument, and he acknowledged said instrument, by him executed, to be his free act and deed.


Commissioner of the Superior Court

Notary Public
My Commission Expires:

JENNIFER A. SIMKO
NOTARY PUBLIC
State of Connecticut
My Commission Expires
November 30, 2026

CONNECTICUT AIRPORT AUTHORITY



Kevin A. Dillon A.A.E.
Executive Director
Connecticut Airport Authority

LICENSE

THIS LICENSE and AGREEMENT made this 20th day of December, 2021, by and between Town of East Hartford 740 Main Street, East Hartford, CT 06108, and its successors or assigns, hereinafter referred to as the "Grantor", and the Connecticut Airport Authority, constituting a public instrumentality and political subdivision of the State of Connecticut, having a principal place of business at Bradley International Airport, Terminal A, Administrative Offices, 3rd Floor, Windsor Locks, Connecticut 06096, hereinafter referred to as the "CAA" and its successors or assigns, hereinafter referred to as the "Grantee".

WITNESSETH:

WHEREAS, Hartford Brainard Airport, hereinafter referred to as the "Airport," is owned by the Grantee; and

WHEREAS, certain real estate, is owned by Grantor, in fee simple, in the Town of East Hartford, as shown on the attached Exhibit A as parcels, 8-4, 8-5 and 8-1 (hereinafter collectively referred to as the "Property"); and

WHEREAS, the Federal Aviation Administration has identified obstructions to the flight surfaces at the Airport, which are located on the Property, which must be removed for safe operation at Hartford Brainard Airport; and

WHEREAS, Grantee desires a right to obtain access and enter upon the Property for the necessary study of the work area in preparation of any and all necessary environmental permit applications and for public and agency site visits related to the permit application processes; and

WHEREAS, CAA desires a right to file any and all necessary permit applications for the management of airspace obstructions on the Property with the written support of the Grantor

NOW THEREFORE, for One Dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereby agree as follows:

- 1) Grantor hereby grants the Grantee a revocable license solely to access and enter upon the Property for the presentation of the project to permitting agency officials and interested public as required by the various permitting processes.
- 2) Grantee will utilize elements of the levee system right of way to access the work areas for the purposes set forth in paragraph 1 above.
- 3) Grantor will review, and in its sole and absolute discretion, support the filing of any and all necessary permit applications for the project including providing written support documents and/or signatures as required by the various permit regulations, applications and processes.
- 4) To the fullest extent permitted by law, Grantee agrees on behalf of itself and its successors and assigns, covenants and agrees at its sole cost and expense, to protect, defend, indemnify, release and hold Grantor, its agents, servants, officials, employees, volunteers and members of its boards and commissions (Collectively the "Grantor"), harmless from and against any and all Losses (defined below) imposed upon or incurred

by or asserted against Grantor by reason of bodily injury, personal injury, death, or property damage of whatsoever kind or nature, to any individuals or parties (including, but not limited to Grantor, Grantee, or any other third party) arising out of or resulting from, or alleged to arise out of or arise from Grantee's entry onto Grantor's property, or the exercise of Grantee's rights under this license. The term "Losses" includes any losses, damages, costs, fees, expenses, claims, suits, judgments, awards, liabilities (including, but not limited to, strict liabilities), obligations, debts, fines, penalties, charges, amounts paid in settlement, foreseeable and unforeseeable consequential damages, litigation costs, attorneys' fees, expert's fees, and investigation costs, of whatever kind or nature, and whether or not incurred in connection with any judicial or administrative proceedings, actions, claims, suits, judgments or awards.

Upon written request by Grantor, Grantee shall defend and provide legal representation to Grantor with respect to any of the matters referenced above. Notwithstanding the foregoing, Grantor may, in its sole and absolute discretion, engage its own attorneys and other professionals to defend or assist it with respect to such matters and, at the option of Grantor, its attorneys shall control the resolution of such matters. Upon demand, Grantee shall pay or, in the sole and absolute discretion of Grantor, reimburse, Grantor for the payment of reasonable fees and disbursements of attorneys and other professionals in connection with this license.

Grantee shall be responsible for maintaining insurance coverage in force for the life of this license of the kinds and adequate amounts set forth on the Certificate of Insurance attached hereto as Exhibit B, with an insurance company(ies) with an AM Best Rating of A-VII or better licensed to write such insurance in the State of Connecticut and acceptable to the Town of East Hartford.

Grantee shall require all subcontractors and independent contractors to carry the same coverages as Grantee, and will obtain appropriate Certificates of Insurance before the subcontractors and independent contractors are permitted to begin work.

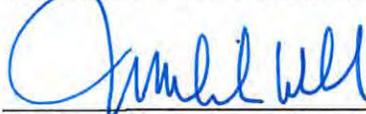
Grantee shall require that "The Town of East Hartford, its officials, employees, volunteers, boards and commissions" be included as an Additional Insured on its insurance policies, and shall make certain that "The Town of East Hartford, its officials, employees, volunteers, boards and commissions" are included as an Additional Insured on the insurance policies of all of its subcontractors and independent contractors insurance, before permitted to begin work. Additional Insured status is not required with respect to Worker's Compensation and Professional Errors & Omissions).

The GRANTEE and all subcontractors and independent contractors and their insurers shall waive all rights of subrogation against the Grantor, and its officers, agents, servants and employees for losses arising from work performed by each under this license.

5) Grantee will undertake and complete the process for acquiring an avigation easement over the Property, in accordance with FAA Guidelines, including establishing a price for the easement through an appraisal process.

Dated as of the day and year first set forth above.

TOWN OF EAST HARTFORD



Michael P. Walsh, Mayor

CONNECTICUT AIRPORT AUTHORITY



Kevin A. Dillon A.A.E.
Executive Director
Connecticut Airport Authority

Approved as to form: 12/30/2021

Richard P. Gentile

Richard P. Gentile

Assistant Corporation Counsel

LICENSE

THIS LICENSE and AGREEMENT made this 7th day of December, 2021, by and between Town of Wethersfield, 505 Silas Deane Highway, Wethersfield, CT 06109, and its successors or assigns, hereinafter referred to as the "Grantor", and the Connecticut Airport Authority, constituting a public instrumentality and political subdivision of the State of Connecticut, having a principal place of business at Bradley International Airport, Terminal A, Administrative Offices, 3rd Floor, Windsor Locks, Connecticut 06096, hereinafter referred to as the "CAA" and its successors or assigns, hereinafter referred to as the "Grantee".

WITNESSETH:

WHEREAS, Hartford Brainard Airport, hereinafter referred to as the "Airport," is owned by the Grantee; and

WHEREAS, certain real estate, is owned by Grantor, in fee simple, known as:

1. Property is located in the Town of Wethersfield and is showing on the attached Exhibit as Cove Park

hereinafter collectively referred to as the "Property"; and

WHEREAS, the Federal Aviation Administration has identified obstructions to the flight surfaces at the Airport, which are located on the Property, which must be removed for safe operation at Hartford Brainard Airport; and

WHEREAS, Grantee desires a right to obtain access and enter upon the Property for the necessary study of the work area in preparation of any and all necessary environmental permit applications and for public and agency site visits related to the permit application processes; and

WHEREAS, CAA desires a right to file any and all necessary permit applications for the management of airspace obstructions on the Property with the written support of the Grantor

NOW THEREFORE, for One Dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, the parties hereby agree as follows:

- 1) Grantor hereby grants the Grantee a license to access and enter upon the Property for the presentation of the project to permitting agency officials and interested public as required by the various permitting processes
- 2) Grantee will utilize elements of the levee system right of way to access the work areas as well as to remove and dispose of cut vegetation on the west side of the river after receipt of necessary environmental permits and approvals.
- 3) Grantor will support the filing of any and all necessary permit applications for the project including providing written support documents and/or signatures as required by the various permit regulations, applications and processes.
- 4) Grantee, and its successors and assigns, shall indemnify Grantor, and its successors and assigns, against, and hold them harmless from, any and all liabilities,

obligations, losses, expenses (including reasonable attorneys' fees), claims, judgments, suits, or damages of any kind whatsoever, resulting from or arising out of the entry onto Grantor's property by Grantee or Grantee's employees, agents or contractors.

Dated as of the day and year first set forth above.

NAME

Bamie L. Thui

STATE OF CONNECTICUT

ss: Wethersfield

COUNTY OF HARTFORD

On this 7th day of December, 2021, before me personally appeared NAME, known by me to be the person executing the foregoing instrument, and he acknowledged said instrument, by him executed, to be his free act and deed.

Cheryl Pearce

Commissioner of the Superior Court

Notary Public

My Commission Expires:

CHERYL PEARCE
NOTARY PUBLIC

My Commission Expires Jan. 31, 2023

CONNECTICUT AIRPORT AUTHORITY

Kevin A. Dillon

Kevin A. Dillon A.A.E.

Executive Director

Connecticut Airport Authority

