FINAL

Environmental Assessment (EA) for Obstruction Removal

Bradley International Airport (BDL)

Prepared for:





FINDING OF NO SIGNIFIANT IMPACT ENVIRONMENTAL ASSESSMENT (EA) FOR OBSTRUCTION REMOVAL

BRADLEY INTERNATIONAL AIRPORT (BDL)

FAA AIP NO. 3-09-0022-058-2014 CAA CONTRACT NO. 2014-01

April 2017

Prepared for: Connecticut Airport Authority (CAA)



Prepared BY: CHA Consulting, Inc.



Bradley International Airport (BDL) Obstruction Analysis -Tree Removal

FEDERAL FINDING

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed federal action is consistent with existing national policies and objectives as set forth in Section 101 of the National Environmental Policy Act (NEPA) and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 101 (2) (c) of the NEPA.

Approved:

Richard Doucette

2/23/17 Date

Manager, Environmental Programs



FINAL ENVIRONMENTAL ASSESSMENT (EA) FINAL ENVIRONMENTAL IMPACT EVALUATION (EIE)

The complete report can be found on the CAA website at http://bradleyairport.caa-analysis.com/project-documents/



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In Association with: DY Consultants, Inc. Fitzgerald & Halliday, Inc.

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LIST OF ACRONYMS

ACRONYMS			
ABBREVIATION	MEANING		
AAC	Aircraft Approach Category		
AC	Advisory Circular		
ADG	Airplane Design Group		
ARC	Airport Reference Code		
BDL	Bradley International Airport		
CAA	Connecticut Airport Authority		
CFR	Code of Federal Regulations		
CIP	Capital Improvement Program		
DEEP	Connecticut Department of Energy and Environmental Protection		
DOT	US Department of Transportation		
EA	Environmental Assessment (Federal)		
EPA	US Environmental Protection Agency		
FAA	Federal Aviation Administration		
FAR	Federal Aviation Regulation		
FEMA	Federal Emergency Management Agency		
NAAQS	National Ambient Air Quality Standards		
NEPA	National Environmental Policy Act of 1969		
NPIAS	National Plan of Integrated Airport Systems		
03	Ozone		
OCS	Obstacle Clearance Zone		
OFZ	Obstacle Free Zone		
RDC	Runway Design Code		
ROFA	Runway Object Free Area		
RPZ	Runway Protection Zone		
RSA	Runway Safety Area		
TERPS	Terminal Instrument Procedures		
VFR	Visual Flight Rules		



1.0 INTRODUCTION

This Environmental Assessment (EA) documents the evaluation of potential impacts associated with tree removal at Bradley International Airport, which is operated by the Connecticut Airport Authority (CAA). The evaluation addresses obstruction removal associated with Federal Aviation Regulations (FAR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace and published Terminal Instrument Procedures (TERPS), which define the airspace surrounding runways. Objects that penetrate the airspace are classified as airspace obstructions, and should be removed to safely accommodate approaching and departing aircraft. As the airspace surfaces extend well beyond the airport's property boundary, this EA includes an off-airport obstruction removal and mitigation review. It is noted that tree removal activities may require environmental permits based on site conditions, which will be made in coordination with the Connecticut Department of Energy and Environmental Protection (CTDEEP). Tree removal activity may also require the purchase of a permanent easements for removals located on private property.

This EA was prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) in order to address potential impacts associated with the tree obstruction removal while providing the opportunity for public involvement and comments. The study was conducted in accordance with Federal Aviation Administration (FAA) guidelines to include the "Environmental Desk Reference for Airport Actions", FAA Order 5050.4B "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions" and FAA Order 1050.1E "Environmental Impacts: Policies and Procedures." Since the project would potentially be federally-funded, the EA must comply with federal requirements (i.e., NEPA, FAA).

As part of a previous study, the CAA and FAA have identified that trees penetrate the airspace of Bradley International Airport, including locations beyond airport property.

This EA includes the following sections:

- Introduction
- Purpose and Need
- Alternatives Analysis and Proposed Action
- Affected Environment
- Environmental Consequences
- List of Preparers
- Correspondence and Public Comments

Note that substantive report edits between the Draft EA and this final document are indicated with underlined text.

1.1 PROJECT LOCATION AND EXISITING FACILITIES

The Bradley International Airport is a public-use, commercial service airport, located 12 miles north of Hartford, CT and 16 miles south of Springfield, Massachusetts. The Airport is easily accessed from Interstate-91, to exit 40, then west onto the connector State Route 20 that flows into the looping Schoephoester Road. Appendix A provides a map which depicts the location of BDL relative to the surrounding area.

Runway 6-24

Runway 6-24 is the primary runway at the Airport and is 9,510 feet long by 200 feet wide. The runway is served by a full parallel taxiway (Taxiway C) to the east and a partial parallel taxiway to the west (Taxiway J). Both runway ends are fully equipped with Instrument Landing Systems (ILS). Runway 6 provides Category II and III precision



instrument approaches while Runway 24 is equipped for "Special Authorization" Category II and III approaches. Refer to Table 1 for a side by side comparison of the runways.

Runway 15-33

Runway 15-33 is the crosswind runway at the Airport and is 6,847 feet long by 150 feet wide. The runway is served by a full parallel taxiway (Taxiway S) to the south. Runway 33 is equipped with an Instrument Landing Systems (ILS) and provides Category I precision instrument approaches while Runway 15 provides RNAV GPS nonprecision approaches.

Runway 1-19

Runway 1/19 is a general aviation runway and measures 4,268 feet long and 100 feet wide. There is no instrument approach procedure; therefore, only Visual Flight Rule (VFR) procedures are used for this Runway. Runway 1 has a displaced landing threshold of 475'.

TABLE 1- EXISTING AIRPORT FACILITIES				
Feature	6-24	15-33	1-19	
Runway Length (Feet)	9,510′	6,847'	4,268'	
Width (Feet)	200′	150′	100′	
Surface Type	Asphalt	Asphalt	Asphalt	
Parallel Taxiway	TWY C	TWY S	TWY E	
Thursday Disable sources (Foot)	N	Nama	RWY 1: 475'	
Threshold Displacement (Feet)	None	None	RWY 19: None	

Source: Data Compiled by CHA Consulting, Inc. (2016)

1.2 BASED AIRCRAFT AND AVIATION ACTIVITY

Bradley International Airport is a commercial service airport that has grown from a regional facility to a nationally-ranked airport in terms of enplaned passengers and cargo tons handled. Bradley accommodates nearly 3 million annual enplanements (national rank 53), and 800 million annual pounds of cargo (national rank 29)

That airport also accommodates significant corporate activity with over 30 based jet aircraft. Table 2 lists the existing based aircraft and Table 3 depicts annual operations at Bradley. Note that an aircraft operation is defined as either one landing or one takeoff, therefore each flight includes at least two operations which consists of one takeoff and one landing.

	TABLE 2- BASED AIRCRAFT						
	SINGLE ENGINE	MULTI ENGINE	JET	ROTOR	GLIDERS	MILITARY	TOTAL
Based Aircraft	4	4	34	5	0	20	67

Source: FAA 5010 Database (Dated 2-4-2016)

		TABLE 3	3- ANNUAL C	PERATIONS		
	AIR CARRIER	AIR TAXI	GA LOCAL	GA ITINERANT	MILITARY	TOTAL
Operations	56,969	21,240	170	14,074	2,795	95,248

Source: FAA 5010 Database (Dated 3-31-2015)



Appendix A contains a map that represents the Project Study Area and depicts the location of the airport and the general approach areas to each runway end.

1.3 FAA DESIGN STANDARDS

The design, or critical, aircraft is defined as the most demanding aircraft operating or projected to operate on the airport's runway, taxiway, or apron. According to the FAA, the design aircraft can be either a specific aircraft model or a composite of several aircraft, and must account for a minimum of 500 annual itinerant operations.

The FAA uses the approach speed and wingspan of the design aircraft to classify the airport. The FAA term for this classification is the airport reference code (ARC). Table 4 provides the FAA specifications associated with the ARC classification system.

TABLE 4 - AIRPORT REFERENCE CODES				
	AIRCRAFT APPROACH CATEGORY (AAC) ¹	AIRPL	ANE DESIGN GRO	DUP (ADG) ²
CATEGORY	APPROACH SPEED	GROUP	TAIL HEIGHT	WINGSPAN
А	Approach speed less than 91 knots	I	< 20'	<49'
В	Approach speed 91 knots or more but less than 121 knots	II	20' - < 30'	49' - < 79'
С	Approach speed 121 knots or more but less than 141 knots	Ш	30' - < 45'	79' - < 118'
D	Approach speed 141 knots or more but less than 166 knots	IV	45' - < 60'	118' - < 171'
E	Approach speed 166 knots or more	V	60' - < 66'	171' - < 214'
		VI	66' - < 80'	214' - < 262'

Source: FAA AC 150-5300-13A, Airport Design¹

As previously identified, Bradley International Airport is served by three runways (Runway 6-24, Runway 15-33, and Runway 1-19). The design aircraft for Runway 6-24 is a wide-body such as the Boeing 747-400 which is classified has an aircraft approach category (AAC) of D and an airplane design group (ADG) of V. Therefore, based on these design aircraft characteristics for Runway 6-24, the runway design code (RDC) is D-V. The Boeing 767-300 has been identified as the design aircraft for Runway 15-33, making the RDC C-IV. The Beech King Air B200 has been identified as the design aircraft for Runway 1-19, making the RDC B-II. Table 5 provides a summary of the RDC classifications for the runways at BDL, which also includes a visibility category (listed in feet).

TABLE 5 - RUNWAY DESIGN CODE SUMMARY				
Runway	Design Aircraft	AAC	ADG	Visibility Minimum
6-24	Boeing 747-400	D	٧	1,200
15-33	Boeing 767-300	С	IV	4,000
1-19	Beech King Air B200	В	Ш	Visual

Source: Airport Master Plan Update 2007

After determining the airport runway design codes, the airport itself is classified with the appropriate ARC. The ARC is used for airport planning and design purposes and is determined by the highest RDC at the airport. The ARC uses the same classification system as the RDC. The ARC for Bradley International Airport is D-V.

Airspace Obstructions

Overall airspace obstructions include penetrations to a number of defined airspace surfaces, but predominantly include FAR Part 77 imaginary surfaces and Terminal Instrument Procedures (TERPS) surfaces, which define the



airspace surrounding runways. The most restrictive surfaces are usually the Part 77 surfaces, which are discussed below

The FAA's Federal Aviation Regulation Part 77, titled *Obstructions Affecting Navigable Airspace* are used to determine obstructions to air navigation and communication facilities. These are commonly referred to as "imaginary surfaces" and are established with relation to the airport and to each runway. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach procedure existing or planned for that runway end. The definitions of the Part 77 imaginary surfaces are listed below.

Horizontal Surface

The horizontal surface is established 150 feet above the airport elevation. The perimeter of the horizontal surface created by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs.

Conical Surface

A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

Primary Surface

A surface longitudinally centered on a runway that extends 200 feet beyond each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

Approach Surface

A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

Transitional Surface

The transitional surface extends outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

Table 6 summarizes the FAR Part 77 surface dimensions at Bradley International Airport.

TABLE 6- FAR PART 77 SURFACE DIMENSIONS (FEET) – Commercial Runways					
SURFACE	RUNWAY 6	RUNWAY 24	Runway 15	Runway 33	
Primary Surface Width	1,000'	1,000'	1,000'	1,000'	
Horizontal Surface Radius	10,000'	10,000'	10,000'	10,000'	
Approach Surface Width at End	16,000'	16,000'	4,000'	16,000'	
Approach Surface Length	10,000/40,000	10,000/40,000	10,000	10,000/40,000	
Approach Procedure	Precision	Precision	Nonprecision	Precision	
Approach Slope	50:1/40:1	50:1/40:1	34:1	50:1/40:1	

Source: CHA Consulting, Inc. (2016)



FAR PART 77 SURFACE DIMENSIONS (FEET) – GA Runway				
SURFACE	RUNWAY 1	RUNWAY 19		
Primary Surface Width	500'	500'		
Horizontal Surface Radius	5,000'	5,000'		
Approach Surface Width at End	1,500'	1,500'		
Approach Surface Length	5,000'	5,000′		
Approach Procedure	Visual	Visual		
Approach Slope	20:1	20:1		

Source: CHA Consulting, Inc. (2016)

In addition to Part 77, the US Standards for Terminal Instrument Procedures (TERPS) are used by FAA to develop all instrument approaches and other procedures to airports. These procedures are used by aircraft when visibility and cloud ceilings are low. TERPS are defined in FAA Order 8260.3B, and include numerous approach and departure surfaces surrounding runways. As the TERPS surfaces can be complex and differ from Part 77 surfaces, the FAA has provided overall airport design standards for obstruction clearing beyond any runway.

These obstruction clearing standards are defined in FAA Advisory Circular 150/5300-13A, Airport Design, and determined the minimum obstruction removal required for any runway end. In locations off-airport property, where the CAA does not own rights to clear all airspace penetrations, clearing the minimum design standards defined in the Advisory Circular may be the most feasible alternative.



2.0 PURPOSE AND NEED

Purpose: The purpose of the proposed obstruction removal project evaluated in this Environmental Assessment (EA) is to promote safety by bringing the airport into compliance with Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace.

Need: The FAA has established airspace and design criteria to provide for safe aircraft operations. In 2012 the State conducted an obstruction study to evaluate the airspace at Bradley International Airport. Based on the FAA design criteria, the results of this analysis identified existing safety deficiencies at BDL which include multiple 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 the Airport does not provide adequate airspace surfaces to its runways.



3.0 ALTERNATIVES ANALYSIS AND PROPOSED ACTION

This chapter of the Environmental Assessment (EA) addresses the potential alternatives for airport obstruction removal at Bradley International Airport. The recent airport obstruction study identified substantial areas of tree obstructions in several areas surrounding the airport. The ideal alternative from an aeronautical standpoint would be to remove all tree penetrations to the Federal Aviation Regulation (FAR) Part 77 "Objects Affecting Navigable Airspace" and Terminal Procedures (TERPS) surfaces. However, as part of the scoping process for this study, it was determined that this approach would be impractical, and other alternatives would need to be developed.

The National Environmental Policy Act (NEPA) and FAA Order 5050.4B require the consideration of alternatives commensurate with the purpose and need statement. The intent is to evaluate various options that address the recognized need so that potential environmental impacts can be compared and minimized. This chapter presents the various options considered, as well as those deemed infeasible. Where appropriate, removal methods, and site specific procedures are also discussed.

3.1 ALTERNATIVES UNDER CONSIDERATION

As part of the effort to identify project alternatives, the recommendations from the 2012 Obstruction Evaluation were considered, as well as agency comments and the concerns of affected parties and property owners. This coordination effort took into consideration both the environmental and socioeconomic impacts as well as costs, which were evaluated as part of the process to refine and develop the alternatives. The results of this refinement resulted in two alternatives plus the No Action option. All three are presented herein for consideration.

3.1.1 No Action Alternative

The No Action Alternative retains all obstructions, with CAA taking no action to address airspace hazards. The existing trees and other obstructions would continue remain as penetrations to the local airspace. As this option results in potential dangers to users of the airport it is not desirable from the perspective of the flying public. Mitigating potential airspace hazards is an important mission of the CAA and FAA. In fact, addressing airspace hazards is required by the FAA. Although, this alternative fails to improve safety for passengers and crews operating at the airport, it serves as the baseline for comparison to the build alternatives.

The No Action Alternative has the least potential impact to the environment and effect on property owners. This option also has no implementation costs. The No Action alternative cannot be selected as the preferred action as it would violate the airports federal obligations for hazard removal and mitigation. 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. This requirement is discussed in the FAA Airport Compliance Manual (FAA Order 5190.6B), which sets forth policies and procedures to be followed by public airports. This requirement is also listed in federal



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grant assurance No. 20, Hazard Removal and Mitigation of the Airport Improvement Program (AIP), per Federal Statute 49 U.S.C., Section 47101.

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.

The following summary box highlights potential advantages and disadvantages of the No Action Alternative.

No Action Alternative

Goal(s): This option minimizes environmental impacts as it takes no action to remove, lower, mark, or mitigate existing or potential future airspace obstructions.

Description: Tree obstructions have been identified beyond each of the runway ends, Transitional Surface areas, and the outer airspace of the Horizontal and Conical Surfaces. These presumed hazards would remain in place, and potentially increase in size and penetration with additional tree growth.

penetration with additional tree growth.	
Advantages	Disadvantages
 No wetland impacts (temporary or permanent) 	Retains potential hazards to airport users Retains a potential hazard to people and
 No impacts to biological resources, habitats, or species of concern No impacts to parks or recreation 	 Retains a potential hazard to people and property on the ground surrounding the airport
 No impacts or disturbance to property owners No project costs 	 Does not comply with FAA design standards or grant assurances Risks future FAA funding for improvements to the airport

3.1.2 Full Obstruction Removal Alternative

The Full Obstruction Removal Alternative would clear all obstructions to the FAR Part 77 Approach and Transitional Surfaces. These surfaces are generally the most encompassing for approach protection, whereas if cleared, it would generally assure clearance of other airspace surfaces (e.g., TERPS, threshold surface, PAPI Obstacle Clearance Surface, etc.). Within the outer Part 77 surfaces (i.e., Horizontal and Conical), this alternative includes obstruction lighting for the high terrain and tree obstructions to the west of the airport.

The Part 77 Approach Surface is trapezoidal in shape, and extends away from the runway along the centerline at a specific slope, as discussed in Section 1. The specific size and slope depends upon the aircraft served and visibility minimums of the runway end. The figures included in Appendix A for each runway end illustrate the Approach Surfaces, with the blue dots depicting tree penetrations to the Approach Surface, and orange dots for obstructions to the Transitional Surface. These dots represent the most critical obstructions only, there are likely many more trees penetrations than shown by the dots. As such, in order to removal all obstruction per this alternative, comprehensive tree clearing would be necessary in all locations where these dots are present. In



other words, the colored dots (blue and orange) indicate locations of obstructions to the Part 77 surfaces, which would be removed under the Full Obstruction Removal Alternative.

Runway ends 6, 24, and 33 are all equipped with an Instrument Landing System (ILS), and therefore, each has a relatively flat 50:1 slope Part 77 approach surface, which results in penetrations over a large area. Runway 15 offers a non-precision, GPS-based approach, and therefore, has a less restrictive 34:1 slope Part 77 approach surface. The runway ends for visual Runway 1-19 have a steep sloped 20:1 Part 77 approach surface. The majority of parcels with penetrations at BDL are located in commercial and residential areas off of the Runway 6 and 33 ends. Runways 15 and 24 have fewer penetrations and are mainly located on airport property or in undeveloped or industrial areas. Lastly, Runway 1-19 has a few penetrations to the Runway 19 approach surface and no penetrations to the Runway 1 approach surface.

For the airport as a whole, this alternative would result in hundreds of acres of tree removal across three jurisdictions (Windsor, Windsor Locks, and Suffield). For tree removals on residential and other private parcels, permanent 'avigation' easements are typically required. Avigation easements refer a permanent conveyance of airspace, from a property owner to the airport, granting the airport the right to overfly the property and remove obstructions to a defined airspace surface. These easements involve appraisals, negotiation with the individual property owner, and acquisition of the perpetual rights to remove existing tree obstructions and prevent future obstructions.

This comprehensive alternative would satisfy FAA requirements and improve safety of all operations at the airport, as well as on surrounding properties. However, as highlighted in the summary box, this alternative would include potentially significant impacts based on the large area involved, as well as the number of residents and properties affected. The cost and time involved to complete this alternative would be substantial, to the point that the successful completion is questionable due to the number of agreements needed with private parties.

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 prevents or reduces impacts to wetlands, floodplains, and archeological resources. However, it is not a permanent solution as trees will eventually regrow. Nevertheless, this alternative may be considered to have a 20-year design life.

On residential properties, the removal parameters would be limited to selective removal of tall trees only, with stump grinding, top soil placement and seeding. Removal of branches, wood chips, and repair of damage to lawn areas would also be included. Small trees that are 20 feet or more below the surface would be left in place.

Overall, the tree removal approach and methods would vary based on site conditions, environmental sensitivity, and land use, with the detailed methodology determined during the design and permitting process. Removals are typically conducted during dryer periods of the years (i.e., autumn) or winter, when partly frozen ground reduces temporary construction impacts. Winter removals are also beneficial to reduce impacts to bat, bird, and plant species.





The following summary box highlights potential advantages and disadvantages of the Full Obstruction Removal Alternative.

Full Obstruction Removal Alternative

Goal(s): This option removes all penetrations to the FAR Part 77 Approach and Transitional Surfaces, with obstruction lighting for the Horizontal and Conical Surfaces.

Description: A comprehensive removal of obstructions to the inner airspace surfaces, including substantial areas off-airport properties. This alternative provides maximum benefit to airport users and safety enhancement. Outer surfaces are protected with lighting during nighttime operations.

Advantages	Disadvantages
 Clears or lights virtually all defined aeronautical surfaces Satisfies federal design standards and assurances Comprehensive removal of potential hazards to airport users Improves safety for people and property on the ground surrounding the airport 	 Potential for impacts to wetlands (temporary or permanent) Potential impacts to biological resources, habitats, or species of concern Substantial coordination and negotiation needed with property owners The need for numerous avigation easements may prevent successful completion of project and significantly extend the required schedule High project costs Successful completion is questionable

3.1.3 Modified Obstruction Removal Alternative

The Modified Obstruction Removal Alternative is intended to eliminate the most critical obstructions while substantially reducing the number of affected properties, and therefore potential environmental impacts. To accomplish this, the planned tree removals would focus on the penetrations to a less extensive airspace surface on locations off-airport property; on-airport areas would continue to address the Part 77 Surfaces.



The FAA has recognized that full off-airport clearing of the Part 77 surfaces can be a considerable endeavor and is often impractical due to environmental impacts, costs, and property considerations. As such, the FAA Airport Design manual (Advisory Circular 150/5300-13A) has defined a different approach surface that may be used by airport sponsors to address the most critical obstructions and maintain an acceptable margin of safety.

For distinguishing purposes, this surface is often referred to as the Threshold Surface, as not to be confused with the Part 77 Approach Surface. The Threshold Surface is designed to protect use of the runway in both visual and instrument meteorological conditions. Like the Part 77 Approach Surface, it is trapezoidal in shape and extends outward and upward from the runway along the centerline at a specific slope. However, the Threshold Surface is steeper in

Sample: Selective removal of trees to reduce impacts to sensitive properties.

slope than the Part 77 Approach Surface, which reduces the size of the clearing area, and may also be smaller in size. The specific slope and size depends upon the aircraft served and visibility minimums of the runway end. In addition, for runways with displaced landing thresholds, the Threshold Surface is located based on the displacement, as opposed to the runway end, and thus both surfaces are shown. At BDL, this only applicable to Runway 1, which has a 475' foot displaced threshold. However, note that Runway 1 does not contain any obstruction.

For Bradley International Airport, the Threshold Surfaces for each commercial runway end is steeper than the associated Part 77 approach surface, which reduces the penetrations and removal area compared to the Full Obstruction Removal Alternative. Penetrations to the Threshold Surface are illustrated with a magenta (or pink) dots on the Figures. As most Threshold Surface penetrations are also Approach Surface Penetrations, these obstructions include blue dots with a magenta outline.

The figures in Appendix A illustrate the Modified Removal Alternative using shading. Yellow shading includes general tree clearing areas; green shading illustrates reduced or selective tree removal of individual tree obstructions identified during the design process – selective thinning. In other words, the hatching areas (green and yellow) indicate locations of obstructions to the threshold surfaces, which would be removed under the Modified Obstruction Removal Alternative. In some locations for preventative purposes, this alternative also recommends removals to some Part 77 surface penetrations as well. This selective thinning is use in locations where fewer obstructions are present and/or sensitive environmental conditions are anticipated (e.g., wetlands, streams). Similar to the other alternatives, for tree removals on private parcels, permanent 'avigation' easements are typically required. These easements involve appraisals, negotiation with the individual property owner, and acquisition of the perpetual rights to remove existing tree obstructions and prevent future obstructions. A summary of the removal area under this alternative is provided below:

Runway 6: Includes proposed removal to Approach Surface penetration on-airport property, and removal
to only the Threshold Surface penetrations (magenta dots) off-airport. The proposed clearing is shown
with yellow shading. Within the residential areas trees general create a solid canopy, without many
smaller understory trees. During the design process, CAA would work with property owners to refine the
removals, and reduce clearing where desired if the penetrations are below (e.g., 15-20 feet) the Threshold
Surface.



- **Runway 24**: Has a few small areas of on-airport and off-airport obstructions in undeveloped locations that are recommended for clearing.
- **Runway 15**: Only on-airport clearing is recommended.
- Runway 33: Includes proposed removal to a small off-airport area of homes. The off-airport obstruction
 are not currently penetrating the Threshold Surface, but are anticipated to in the next few years with
 additional tree growth. Thus, Runway 33 is not a priority location for removal, but was included in the EA
 recommendation as future removal are likely.
- Runway 1: No clearing is needed.
- Runway 19: Only on-airport clearing is recommended

As with the Full Removal Alternative, the Modified Removal Alternative would employ the same removal methods and techniques to minimize impacts, and may 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.
- On residential properties, removal of tall trees only, with stump grinding, top soil placement and seeding.
- Removals will be conducted in coordination with State and Federal regulatory agencies and follow techniques or procedures defined during the permitting process.

Unlike the Full Removal Alternative, the Modified Removal does not include obstruction lighting for the outer Horizontal and Conical Surface penetrations.

The following summary box highlights potential advantages and disadvantages of the Modified Obstruction Removal Alternative.

Modified Obstruction Removal Alternative

Goal(s): This option removes penetrations to the FAA Threshold Surface in off-airport locations

(and to FAR Part 77 Approach and Transitional Surfaces on-airport)				
Description: A reduced removal alternative intended to clear the critical penetrations to the runway approaches to maintain operational safety, while minimizing the impact to off-airport properties and the natural environment.				
Advantages	Disadvantages			
 Clears the critical obstructions Satisfies federal design standards and assurances Improves safety for people and property on the ground surrounding the airport Reduces impacts to environmental resources Reduces the number of affected property owners Streamlines the project schedule and reduces costs 	 Potential impacts to wetland, biological, habitat, or species of concern remain present Easement are required with property owners Less critical obstructions will remain Outer Part 77 surface are not protected with obstruction lighting 			



The CAA and FAA have identified this alternative as the most practical solution. This alternative balances 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.

As discussed above, detailed illustrations of the removal areas have been prepared for each runway end and are provided in Appendix A. These figures are referenced as necessary throughout the remainder of this document.

3.2 ALTERNATIVES CONSIDERED AND DISMISSED

This section includes a brief description of alternatives considered but dismissed because they were deemed infeasible.

- Removal of All Obstructions Ideally all Part 77 obstructions would be removed, including those to the
 Horizontal and Conical Surfaces for the maximum safety benefit. However, due to the terrain surrounding
 the airport, private property involved, and potential environmental impacts, this alternative is not a
 realistic goal.
- <u>Clear Cutting and Providing a Maintainable Surface</u> The two 'build' alternatives above remove tree obstructions; however, trees will eventually grow back. As an alternative, once trees are cut, the root balls could be pulled and the area graded and seeded. Thereafter the CAA would maintain the area as an open field with regular mowing or annual brush cutting. This option was eliminated from consideration in off-airport locations as grading the tree clearing areas would have a permanent impact to any wetlands, sensitive biological habitat, and recreational areas, and archeological resources. This alternative is also very costly.
- <u>Displaced Thresholds</u> The displacement of a runway's landing location (i.e., threshold) is often used to reduce the amount of tree penetrations to the Threshold Surface. Currently, none of the runway ends with penetrations (i.e. the commercial service runways) have displaced thresholds. Adding displaced thresholds could reduce the need for tree clearing. However, displaced thresholds reduce the landing length available for airport users. As such, this alternative was considered but dismissed. Reducing the available landing length would diminish the existing capability of the airport.
- <u>Closure of Runway</u> On occasions, an airport with multiple runways, may consider closure or elimination
 of a runway that is considered surplus or unnecessary. BDL has two runways capable of handling
 commercial traffic, the closure of one runway results in the lack of a crosswind runway, or backup runway
 for commercial activity while the primary runway is under repair or closed for snow removal activities.
 Therefore, due to the safety concerns associated with this alternative, it was eliminated from further
 consideration.
 - General aviation Runway 1-19 may be closed in the future if it is determined that it is not needed to support airport activity. However, as for the purposes of this EA, it will be retained so that any obstruction removal impacts are evaluated.
- Relocation of Runway In some cases, a runway could be relocated or shifted horizontally to reduce penetrations. In the case of runways at BDL, there does not appear to be a shifted or reoriented runway



alignment that is feasible at the airport site. In addition, the impact and cost for a runway relocation would likely far exceeded the impact and cost for tree clearing.

3.3 PROPOSED ACTION

Based on the evaluation identified in this section, and review by CAA and FAA, the Modified Obstruction Removal Alternative has been chosen as the "Preferred Alternative" for Bradley International Airport. This determination is primarily related to the Full Removal Alternative being considered not practical nor feasible from an environmental and cost standpoint. The No Action Alternative is also not considered appropriate as it does not address the safety of airport users and does not satisfy FAA requirements or obligations.

The remainder of this Environmental Assessment document focuses on the evaluation of potential impacts of the Proposed Action, with tree removals illustrated by the yellow and green shading. The goal of the evaluation is to enable the FAA to determine if the impacts of the Proposed Action are significant, or could be implemented without significant impact.



4.0 AFFECTED ENVIRONMENT

This chapter describes the environment that may be affected by the Obstruction Removal alternatives under consideration. The information provided in this chapter serves as the basis for the assessment of potential environmental, social, and economic impacts in Chapter 5.

Throughout Chapters 4 and 5, the discussion of potential impacts is in reference to the Preferred Alternative (i.e., the Proposed Action). It is assumed that the No Action alternatives, while undesirable, does not result in significant environmental impacts. It is also assumed that the Full Obstruction Removal Alternative will have greater impacts than the Preferred Alternative due to the more extensive area of tree removal and number of affected properties. As such, the remainder of this EA is focused on the potential impacts of the Proposed Action.

The sections below include the following:

- Land Use and Zoning
- Section 4(f) Lands
- Threatened and Endangered Species
- Wetlands



4.1 LAND USE AND ZONING

Bradley Airport is located primarily in the northeast corner of the Town of Windsor Locks. The Runway 15 end extends into the Town of East Granby while the Runway 24 end is located in the Town of Suffield. The Town of Windsor is located south of Route 20 and Runway 6. Airport property is surrounded by a mix of open, wooded, residential, commercial, and industrial land uses.

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Land to the north of the Airport is predominately wooded or open space with mowed fields and includes residential uses along Hale Street, Spencer Street and Austin Street approximately one mile north of the airport. West of the airport land use includes a combination of business, residential and undeveloped areas. Undeveloped lands include both open fields and woods. South of the airport is a large manufacturing complex (i.e., Hamilton Sundstrand), as well as combination of residential, wooded areas, and agricultural fields. Residential area are located just south of Route 20, beyond the end of Runway 6. The Farmington River is also located south of the airport. Lastly, locations to the east are most heavily developed, with property along Route 75 dominated by commercial uses, while lands further east contain suburban residential uses within a ¼ mile of the airport boundary.

Bradley Airport is primarily zoned Industrial (I-1), within in the northwest corner of Windsor Locks; several runway ends are located in adjacent Towns. Zoning in the vicinity of the Airport and runway approach surfaces are shown below:

Zoning in Vicinity of Bradley Airport			
RUNWAY	TOWN	Zoning	
1	Windsor Locks	Industrial Zone 1 (I-1)/Business Zone (B-1)	
6	East Granby/Windsor	East Granby: Commerce Park A (CP-A), Windsor: Residential (A)/ Agricultural (AG)/ Industrial (I)	
15	East Granby	Commerce Park A (CP-A)/Commerce Park B (CP-B)	
19	Suffield	Planned Industrial Park (PDIP)	
24	Suffield	Planned Industrial Park (PDIP)	
33	Windsor Locks	Business Zone 1 (B-1)/Residence A (R-A)	

Windsor Locks

Permitted land uses in the R-A zone include single family dwellings; uses allowed by Special Use Permit include multi-family dwellings, certain philanthropic, educational, non-profit or governmental uses. All allowable uses in the B-1 zone are either subject to site plan and design review or are allowed by special permit. Examples of uses that may be allowed include: retail sales; service shops; restaurants; child, group and adult daycare; educational, philanthropic and religious uses; hotels and motels; theatres; automotive sales and minor repairs and certain outdoor recreation facilities and other amusement enterprises. Thel-1 zone is limited to amusement enterprises, business offices, professional offices and financial institutions.

East Granby

The CP-A zone provides for office, research and development, light manufacturing, warehouses, distribution centers, medical offices, hotels, and other suitable uses, that encourage the most appropriate use of land, and promotes harmony with adjacent areas. All allowable uses are subject to Site Plan approval. The area zoned CP-B provides for office, research and development, light manufacturing, assembly, storage, automotive, landscape nursery, contractor storage yard, and other suitable uses, that encourage the most appropriate use of land, and promotes harmony with adjacent areas. All allowable uses in the CP-B zone also require Site Plan approval.

Windsor

The intent of the Residential A- single family and Residential AA- Single family zones is to provide suitable areas for appropriate residential development and for a full range and mixture of residential uses while preserving and enhancing the character and property values of single-family residential districts. Allowable uses include single family dwellings and accessory buildings/uses, certain home based businesses and professional offices.



The AG Residential zone is intended to retain suitable areas for agriculture because of its irreplaceable value for providing locally grown agricultural products and visual open space; its role in the economic diversity and cultural heritage of the community; and where appropriate, to allow low-density transitional residential uses. Allowable uses include growing crops, nursery stock, raising livestock and poultry, veterinarian offices. Dwellings must be occupied by members of the owner's family or by a permanent paid employee.

<u>Suffield</u>

Zoning in the Town of Suffield in the vicinity of Runways 19 and 24 is PDIP. The purpose of this zoning district is to allow for a range of office, research, and light industrial facilities that can be located relatively close to residential uses without negative influence and have minimum impacts on the natural resource base of the Town. Allowable uses are varied including but not limited to industrial and light industrial uses; greenhouse, farming and farmers markets; motels and hotels and indoor and outdoor recreation facilities.

4.2 SECTION 4(F) LANDS

Section 4(f) of the Department of Transportation (DOT) Act requires the approval of the Secretary of Transportation for any project that impacts publicly owned land such as a public park, recreation area, or wildlife refuge of national, state, or local significance or a historic site of national, state or local significance.

There are no public lands within the vicinity of the areas that have been identified for the removal or selective of trees. As a result no impacts to 4(f) lands will occur and no review by the Connecticut Department of Energy and Environmental Protection's (CTDEEP) is required.

4.3 THREATENED AND ENDANGERED SPECIES

The habitat assessment for the Bradley International Airport involved agency coordination with the Connecticut Department of Energy and Environmental Protection's Natural Diversity Database (NDDB), screening through the United States Fish and Wildlife Service's (USFWS) Information Planning and Conservation System (IPaC), GIS screenings, and field investigations. Agency letters are attached. Field investigations were carried out during the summer of 2015.

Fish: There are no major waterbodies within the project area, however, small intermittent and perennial streams, including DeGrayes Brook (to the west), Kettle Brook (to the southeast), Little Brook (to the northeast), Rainbow Brook (to the south), Spencer Brook (to the north), and Stony Brook (to the northwest), are located in proximity to the airport. Additionally, there are several small ponds in proximity to the airport. These ponds include several unnamed ponds (mostly to the north and west of the airport), Johnsons Pond (to the north), and Hamilton Pond (to the south). The small watercourses near the airport likely support an assemblage of coldwater fisheries tolerant of dry periods. Warmwater fisheries likely inhabit the perennial ponds near the airport, and include species tolerant of warmer water temperatures and lower oxygen concentrations.

Wildlife: Wildlife within the project area is diverse, representative of multiple taxa, and include a number of species identified as species of "Greatest Conservation Need" by the CTDEEP in the Connecticut Wildlife Action Plan (CTDEEP, 2015). Various herpetofauna (reptiles and amphibians) are known or expected to occur within the project area.

A total of 104 bird species are reported from the Bradley International Airport by area birders. A copy of the list is available here: http://ebird.org/ebird/hotspot/L109242. This list includes species distributed among many taxonomic orders and families and is indicative of the species that would be expected to be found in similar



habitats within the project area. It includes a variety of species considered to be of Greatest Conservation Need by the CTDEEP (2015), and a variety of migratory species whose distributional ranges overlap the project area, the protection of which falls under the jurisdiction of the USFWS. The airport has also been identified as one of the last remaining tracts of grassland in Connecticut suitable for a few endangered species of birds, including the Upland Sandpiper, the Horned Lark, and the Grasshopper Sparrow. Within the airport property, is a large forested block on the northern and northwestern ends of the perimeter road. These woodlands, which contain both upland and wetland habitats, are outside of the perimeter fences. The habitat within these woodlands is suitable for several of the listed species outlined in the parcel table below. Some of the potential listed species in this area include: Blue-winged Warbler, Canada Warbler, Fox Sparrow, Black-billed Cuckoo, and Wood Thrush.

The most abundant mammals observed within the project area are Gray Squirrel, Red Squirrel, and Eastern Chipmunk. Signs of White-tailed Deer (scat, tracks, and bedding areas in tall grass) were also frequently noted. Burrows of Woodchuck were encountered on or adjacent to the airport and signs of Coyote are evident along the northern and western ends of the airport. Other abundant mammals in the project area include Raccoon, Opossum, Eastern Cottontail, a variety of rodents and arboreal-roosting bats. This area is also suitable for amphibians, song birds, and other mammals. The ponded areas and small streams adjacent to the airport are suitable for various amphibians, song birds, wading birds, and mammals.

Plants: The project area is characterized by a temperate deciduous forest dominated by tall growing broadleaf trees that sometimes grow to form dense continuous-canopy stands or forests, but that are often fragmented by residential, commercial and industrial land uses adjacent to the airport. Lower layers of small trees and shrubs are weakly developed in some areas and dense in others. The most abundant forest type that occurs within the project area includes mixed deciduous hardwoods, red maple, and pine-oak associations. Non-forested habitats include marshland, grasslands, old field / early successional habitats, lawn areas, and various miscellaneous wasteland habitats. Lawn areas consist of mowed (and therefore unidentified) grasses interspersed with sheep sorrel (*Rumex acetosella*), cinquefoil (*Potentilla* sp.), English Plantain (*Plantago lanceolata*), White Clover (*Trifolium repens*), Dandelion (*Taraxacum officinale*), an unidentified spurge, and an unidentified mint.

There are many large open fields within the airport perimeter fence. These open fields include heavily maintained upland areas as well as minimally maintained upland and wetland areas. The majority of the open field habitat on the airport consists of warm season grassland. Plant species noted in these areas included Common Mullein (Verbascum thapsus), Purple Lovegrass (Eragrostis spectabilis), Evening Primrose (Oenothera biennis), Pokeweed (Phytolacca americana), Bedstraw (Galium sp.), English Plantain, Round-headed Bush-clover (Lespedeza capitata), Little Bluestem (Schizachyrium scoparia), Bracted Plantain (Plantago aristida), Yarrow (Achillea millefolia), Queen Anne's Lace (Daucus carota) and various unidentified grasses in the herbaceous layer. Spotted Knapweed (Centaurea biebersteinii) is a common invasive.

This early successional habitat is interspersed with the following shrubs: Fire Cherry (*Prunus pensylvanica*), Autumn Olive (*Eleagnus umbellata*), New Jersey Tea (*Ceanothus americanus*), Gray Birch (*Betula allegheniensis*) saplings, brambles (*Rubus* sp.) and Staghorn Sumac (*Rhus typhina*).

There are few wooded areas within the airport perimeter fence at Bradley International Airport. There are a couple of small stands of mixed hardwood trees at the northern and eastern sides of the airport. Species comprising these woodland areas include native species such as Red Maple (*Acer rubrum*), Black Cherry (*Prunus serotina*), Pitch Pine (*Pinus rigida*), Gray Birch (*Betula populifolia*), Red Oak (*Quercus rubra*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), Highbush Blueberry (*Vaccinium corymbosum*), and Northern Arrowwood



(*Viburnum dentatum*). Multiflora rose (*Rosa multiflora*), sumac (*Rhus* sp.) were also noted at woodland edges. In addition to these wooded areas to the north of the airport there are a few open field habitats with similar vegetation composition to that described above inside the airport perimeter fence. These are close to the airport perimeter road and appear to be regularly maintained.

Beyond the airport perimeter fence is a large variety of habitats. To the north of the airport is a large, mixed deciduous hardwood forest dominated by red maples in the wetter areas and red oaks in the drier areas. There are several perennial streams in this area including DeGrayes Brook, Spencer Brook, and a few unnamed streams. There are also a few small unnamed open water areas and Johnson's Pond.

Northeast of the airport is another large, mixed deciduous hardwood forest dominated by Red Maple. The wet forest area is partially fragmented by open fields and industrial development. Within this forest area is Little Brook and several unnamed perennial streams and ponds. On the northwest side of the airport is a mixed forest dominated by red maples in the wetter areas and red oaks and white pines in the upland areas. This forested area is fragmented by local roads and industrial development. Within this forest area is the southern end of DeGrayes Brook as well as several unnamed ponds. Southwest of the airport is a heavily developed industrial area with small patches of red maples. There are a few small streams that flow through this area. The areas to the south of the airport are a mixture of residential development, industrial buildings, and forested wetlands. There are also some small upland patches of pine trees adjacent to roads and the airport perimeter fence. The headwaters of Rainbow Brook as well as some unnamed perennial streams are located here as well as Hamilton Pond and several other unnamed ponds. The areas to the southeast and east of the airport are characterized by commercial, industrial, and residential land uses mixed with small patches of upland forests. Kettle Brook and a few small, unnamed open water bodies are located to the east of the airport.

Characteristic vegetation along these wetland features include Red Maple and Eastern Cottonwood (*Populus deltoides*) in the tree layer along intermittent watercourses, Red Maple alone is often dominant in the tree layer of palustrine wetlands. Silky Dogwood (*Cornus ammomum*) and Black Elderberry (*Sambucus canadensis*) are characteristic shrubs along the intermittent watercourses, while Spicebush (*Lindera benzoin*) is a dominant shrub in the palustrine forested wetlands. Multiflora rose (*Rosa multiflora*) and Tartarian Honeysuckle (*Lonicera tartaria*) are characteristic shrubs of the adjacent upland shrub layer.

In the herbaceous layer of intermittent streams, Common Reed (*Phragmites australis*), Broad-leaved Cattail (*Typha latifolia*), and Jewelweed (*Impatiens capensis*) predominate in areas of open or no canopy. An unidentified smartweed species, and Barnyard grass (*Echinocloa crus-gali*) are also present. Skunk Cabbage (*Symplocarpus feotidus*), and Sensitive Fern (*Onoclea sensibilis*) and Cinnamon Fern (*Osmunda cinnamomea*) are characteristic vegetation in the herbaceous layer of palustrine forested wetlands.

Rare Species: A review of CTDEEP Natural Diversity Database (NDDB) Geographic Information System (GIS) mapping revealed a number of mapped locations of rare breeding species sites. According to NDDB correspondence, there are eight (8) vertebrate and four (4) invertebrate species and four (4) vascular plant species listed as endangered, threatened, and special concern species as now or formerly occurring on or adjacent to Bradley International Airport property. Additionally, there are four (4) terrestrial community habitats (Dry acidic oak forest on stratified sand and gravel, Dry subacidic forest, Floodplain forest, and Subacidic rocky summit/outcrop) that have been identified as critical habitats now or formerly occurring on or adjacent to Bradley International Airport property. These species and habitats are identified in the CTDEEP response letter which is provided in Appendix C.



Additionally, the USFWS Online Screening Tool (IPAC) was referenced to obtain information on species listed by the federal Endangered Species Act. According to IPaC screening, there are fifteen (15) listed birds, one (1) listed invertebrate, and one (1) listed mammal that are potentially found within the project area. Many of the listed species are habitat dependent and may not actually be located within the limits of the project. Of the fifteen bird species listed in the IPaC screening the following are not likely to be found within the proposed impact areas: Purple Sandpiper and Bald Eagle. Further investigations at a later stage in the project may be required in order to make this determination. A copy of this report is also provided in Appendix C.

Several off-airport parcels (labeled as Parcels 1-29 and 34-41) have been identified off airport property as having potential impacts as a result of this tree obstruction removal project. These adjacent private parcels were field investigated to document habitat including characteristic vegetation and wildlife species of conservation concern as provided in Table 7 below.

Table 7: Existing Habitats, Associated Species of Conservation Concern and State and Federal Status					
Habitat	Characteristic Vegetation	Location/ Parcel No.	Species of Conservation Concern	CT Status	Federal Status
Open field/ Wet meadow/ Forested wetland/ Scrub- shrub wetland/ Powerlines red maple, red oak, black locust, staghorn sumac, silky dogwood, goldenrod, asters, mowed field	oak, black locust,	Northeast of Runway 24/1& 2	American Bittern (marshy areas)	Endangered GCN – Very Important	Conservation Concern
			Blue-winged Warbler (brushy edge, open & overgrown woodlands often associated with wetlands and watercourses)	GCN – Most Important	Conservation Concern
	silky dogwood, goldenrod,		Prairie Warbler (open brushy lands, often in mixed pine / oak woodlands)	GCN – Most Important	Conservation Concern
			Canada Warbler (Cool forested wetlands with a dense shrub layer)	GCN – Very Important	Conservation Concern
			Fox Sparrow (dense shrubby undergrowth in a variety of habitats)		Conservation Concern
I torest/ Parking lot	red oak, white	Southeast of Runway 6/3, 4, 5	Black-billed Cuckoo (woodlands)	GCN – Very Important	Conservation Concern
			Blue-winged Warbler (brushy edge, open & overgrown woodlands often associated with wetlands and watercourses)	GCN – Most Important	Conservation Concern
			Prairie Warbler (open brushy lands, often in mixed pine / oak woodlands)	GCN – Most Important	Conservation Concern



Residential / Lawn / Upland hardwood forest / Upland pine Lawn, red oak, white pine	Laura mad and	Southeast of	Prairie Warbler (open brushy lands, often in mixed pine / oak woodlands)	GCN – Most Important	Conservation Concern
	Runway 6/6, 7, 8, 9, 10	Blue-winged Warbler (brushy edge, open & overgrown woodlands often associated with wetlands and watercourses)	GCN – Most Important	Conservation Concern	
Residential / Lawn / Upland hardwood forest / Upland pine	Southeast of Runway Lawn, red oak, 6/11, 12, 13,	Blue-winged Warbler (brushy edge, open & overgrown woodlands often associated with wetlands and watercourses)	GCN – Most Important	Conservation Concern	
	14, 15, 16, 17, 18, 19, 20, 21	Prairie Warbler (open brushy lands, often in mixed pine / oak woodlands)	GCN – Most Important	Conservation Concern	
Unland hardwood	South of Runway 33/23, 24, 25, 26, 27, white pine 28, 29, , 34, 35, 36, 37, 38, 39, 40, 41	Blue-winged Warbler (brushy edge, open & overgrown woodlands often associated with wetlands and watercourses)	GCN – Most Important	Conservation Concern	
		Prairie Warbler (open brushy lands, often in mixed pine / oak woodlands)	GCN – Most Important	Conservation Concern	

GCN = Greatest Conservation Need (CTDEEP, 2015)

The species that have been identified by CTDEEP as being documented within the project area and any required mitigation is presented and discussed in Section 5.7 Fish, Wildlife and Plants.

4.4 WETLANDS

To understand the extent of wetland resources within potential obstruction removal areas, a review of National Wetland Inventory (NWI) mapping and a field investigation of the entire project area was conducted. The objective of the field investigation was to determine the approximate locations, extent, and connectivity of the wetlands and associated watercourses within land areas both on and surrounding the Airport. Knowledge of the wetlands and their position within the landscape helps for a better understanding of potential habitat impacts that may occur as a result of the obstruction removal project.

While the wetlands within the project area were not formally delineated, observations made in the field by a team of wetland scientists essentially encompassed the same criteria that are required for a formal wetland delineation (see figures at end of Section 4.4). These criteria for state and federal wetlands include hydric soil conditions, hydrophytic vegetation, and evidence of hydrology. Connecticut inland wetland boundaries are determined by the limit of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the United States Department of Agriculture, Natural Resources Conservation Service's (NRCS) National Cooperative Soils Survey, as may be amended from time to time.

Bradley International Airport is located in a broad, flat, moderately developed portion of north-central Connecticut. The airport was developed on former farmlands and is currently surrounded by industrial and



commercial development to the south and east and light residential, woodland, and agricultural lands to the north and west. In general, the dominant wetland community type in the project study area consists of forested wetlands dominated by red maples and northern spice bush. The largest contiguous wetlands are located on the eastern and northern sides of the airport property and are associated with intermittent and small perennial streams.

Within the airport security fence of the airport there are mowed emergent wetland fields at the northern end of the airport. Just outside of the airport perimeter fence on the north side of the airport is a narrow, perennial stream which receives stormwater runoff from the airport. This stream is located within a large, forested area which is mixed upland and wetland. At the southern end of the airport, a forested wetland extends south and encompasses the headwaters of Rainbow Brook. Northeast of the airport is a large area of scrub-shrub wetlands fringed by a small forested wetland to the west and an emergent wetland to the east.

Beyond the immediate airport property, a number of private parcels have been identified for tree removal as part of this obstruction removal project. These parcels have been individually numbered and were investigated for wetland and watercourse resources.

The only trees on the eastern side of the airport that have been identified as transitional surface obstructions are located on the western end of Parcel 1 and are within an upland area adjacent to Route 75. There are no identified approach surface obstructions identified in the wooded area to the east of the airport. On the north side of the airport there are several transitional surface obstructions for Runway 24 and Runway 15. These trees are within both upland and wetland areas. There are also several approach surface obstructions associated with Runway 15, located on airport property. Again, these trees are within both upland and wetland areas. All of the other identified approach surface obstructions and transitional surface obstructions are located in upland areas.

Parcels 1 and 2 are located to the northeast of Runway 24 and are dominated by scrub-shrub wetlands with forested wetlands to the west and emergent wetlands to the east. Little Brook flows from south to north between these two parcels.

Parcels 3 through 21 are located at the southern end of Runway 6. No wetland resources, waterbodies, or watercourses were observed during field investigation of these parcels.

Parcels 23 through 29 and 34 through 41 are located at the southern end of Runway 33. No wetland resources, waterbodies, or watercourses were observed during field investigation of these parcels.

Each parcel within the project study area on which a wetland resource was observed in the field during site reconnaissance is listed in Table 8 below. Please refer to Appendix A for corresponding maps.

TABLE 8: National Wetlands Inventory Mapped Wetland Cover Types					
Parcel No.	Wetlands Cover Types and NWI Classification	Location	Major Wetland Plant Associations / types		
1 & 2	Forested (PFO), Emergent (PEM), Scrub- shrub (PSS), Open Water (PUB)	Northeast of the airport and Runway 24	Red maple, silky dogwood, northern spicebush, sedge, rush		



5.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental, social, and economic impacts associated with the Preferred Alternative (i.e. Proposed Action). The analysis in this chapter was conducted in accordance with FAA Order 5050.4B "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions," FAA Order 1050.1E "Environmental Impacts: Policies and Procedures," and applicable federal and state environmental regulations. Based on the information in this chapter, coordination with federal and state agencies, and review of public comments, the FAA will determine if the Preferred Alternative would involve significant impacts. The FAA will also ensure that the document presents a full, accurate, and fair assessment of the environmental consequences of the proposed action.

Consistent with the FAA Orders 5050.4B and 1050.1E the following impact categories are addressed:

- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act: Section 4(f)
- Farmland
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archeological, and Cultural Resources
- Light Emissions and Visual
- Natural Resources and Energy Supply
- Noise
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands
- Wild and Scenic Rivers

Anticipated permit requirements and a potential impact summary are provided at the end of the chapter.

5.1 AIR QUALITY

The Clean Air Act Amendments of 1990 authorized the U.S. Environmental Protection Agency (EPA) to establish standards, known as the National Ambient Air Quality Standards (NAAQS), which are considered harmful to the public and the environment.

The Clean Air Act established two national air quality standards, including Primary and Secondary Standards. Primary Standards were established to set limits on harmful pollutants to protect the public and sensitive receptors (asthmatics, children and the elderly). Secondary Standards were set to protect the public welfare by accounting for the effects of air pollution on the public welfare, which includes protection against impaired visibility, damage to animals, soil, vegetation, crops, buildings, and other aspects of the general welfare.

The EPA has established NAAQS for the following six "criteria air pollutants" in order to protect the health and welfare of the general public. These pollutants are listed below.



- Ozone (O₃)
- Carbon monoxide (CO)
- Particulates (PM-10 and PM 2.5)
- Sulfur dioxide (SO₂)
- Nitrogen dioxide (NO₂)
- Lead (Pb)

According to the Connecticut Department of Energy & Environmental Protection (CTDEEP), Hartford County is currently in attainment for criteria air pollutants with the exception the 1971 Carbon Monoxide standard (moderate) and the 2008 8-hour Ozone standard (marginal). Hartford County is part of the Greater CT Nonattainment Area and is subject to planning and emission reduction requirements as specified in the Clean Air Act.

Section 176(c) of the Clean Air Act as amended in 1990, requires that Federal actions conform to the appropriate Federal or State air quality plans in order to attain the Act's air quality goals. Conformity is defined as conformity to the implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards, and that such Federal activities will not:

- (1) Cause of contribute to any new violation of any standard in any area
- (2) Increase the frequency or severity of any existing violation of any standard in any area
- (3) Delay timely attainment of any standard of any required interim emission reductions or other milestones in any area.¹

The obstruction removal project will improve safety, but will not change the operating characteristics of the airport. There will be no changes in activity levels, aircraft types or other facilities and as such there will be no changes in air quality as a result of this work. Thus, the three criteria above area satisfied. No impacts are anticipated and therefor no further evaluation is needed.

5.2 COASTAL RESOURCES

The CTDEEP administers the Connecticut Coastal Management Program, enacted in 1980 to protect coastal resources, including restoration of coastal habitat, improve public access, promote harbor management, and regulate work within tidal, coastal and navigable waters.

Bradley Airport is not located within a designated Coastal Zone, and therefore there will be no impact to designated coastal areas as a result of this project. As a result, no additional evaluation is necessary.

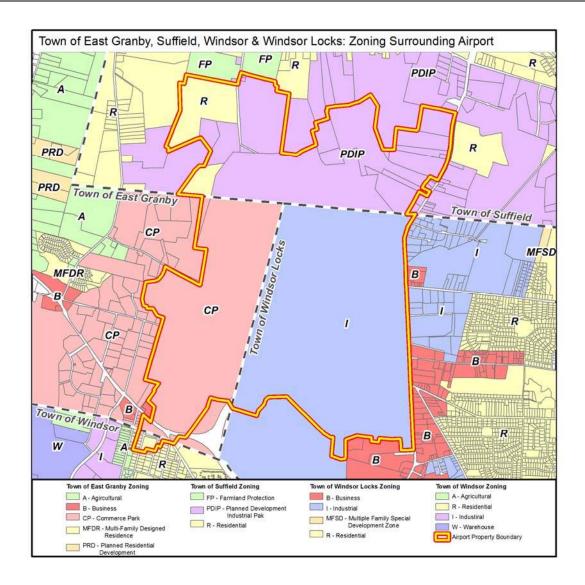
5.3 COMPATIBLE LAND USE

Land use and zoning in the immediate vicinity of the Airport within the Town of Windsor Locks is Industrial. Adjacent zoning in Windsor Locks includes Business Zone 1 and Residence A. Zoning in the Town of East Granby is Commerce Park A; in the Town of Windsor includes Residential A, Agricultural and Industrial I; and finally in Suffield, Planned Industrial Park. Please refer to Appendix A for maps that identify the potential affected parcels for each runway end at the Airport. Zoning in the areas surrounding the Airport can be found in the image below.

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¹ U.S. Department of Transportation, FAA Order 1050.1E, Appendix A, Section 2.1f



Runway 1 Approach

There are no residential parcels and no parcels identified for tree removal or selective thinning in the Runway 1 Approach. As a result there will be no impacts to compatible land use or zoning as a result of the removal of obstructions on the Bradley Airport.

Runway 6 Approach

Land use within the Runway 6 approach includes residential areas including a subdivision as well as commercial/light industrial uses on nearby highways. Tree removal areas have been identified in two areas: parcels 3 through 10 south of Rainbow Road and east of the airport boundary and parcels 11 through 21, near the terminus of Hemlock Road west of the airport boundary. Parcel 4 appears to be is use as a highway garage and/or equipment storage, parcels 3 and 5 are undeveloped. At the terminus of Hemlock Drive consists of residential lots. Parcels 20 and 21 are undeveloped and the remaining parcels are all in residential use. The selective removal of trees will not impact the continuing residential use of these parcels. Overall the project does not alter airport operations or flight patterns and therefore will not have any impacts on adjacent land use or zoning.



Each of residential lots in this area of the Town of Windsor were included in a previous airport noise mitigation program that provided voluntary noise insulation to reduce indoor noise levels. That program included easements on the participating properties, but did not incorporate the right for tree obstruction removal to the Approach or Threshold Surfaces. As such, an additional avigation easement would be necessary, with a payment to the individual property owners (fair-market-value based on appraisals) to enable tree obstruction removal. The tree clearing would not change the land use, but will alter the 'full grown' tree canopy currently present on most of the affected residential parcels.

Runway 15 Approach

Tree removal and/or selective thinning locations associated with the Runway 15 approach all fall within heavily wooded areas that are part of the airport property. As a result there will be no impacts to compatible land use or zoning as a result of the removal of obstructions in the vicinity of Runway 15.

Runway 19 Approach

Tree removal and/or selective thinning locations associated with the Runway 19 approach all fall within heavily wooded areas that are part of the airport property. As a result there will be no impacts to compatible land use or zoning as a result of the removal of obstructions in the vicinity of Runway 19.

Runway 24 Approach

With one exception, areas identified for tree removal or selective thinning are located on airport property. An area of selective removal of trees has been identified south of South Street on Parcels 1 and 2. Zoning in this area is PDIP and there are no residential structures in the area. As a result there will be no impacts to compatible land use or zoning as a result of the removal of obstructions in the vicinity of Runway 15.

Runway 33 Approach

In the vicinity of the Runway 33 Approach areas within parcels 23-29 and 34-41 have been identified for the selective removal of trees. Parcels 27-29 front on Old County Road, a busy roadway and are in commercial use; as a result the selective removal of trees will not impact their continued commercial use. The remaining properties

are residential parcels containing mature trees. All properties in this area are within the Town of Windsor Locks. Similar to the discussion above, avigation easements would be necessary, with a payment to the individual property owners (fair-market-value based on appraisals) to enable tree obstruction removal. The removal of trees will not impact the existing use of these parcels. The project does not alter airport operations or flight patterns and therefore will not have any impacts on adjacent land use or zoning.



Potential construction impacts from the removal of trees are not expected to be significant. Tree removal activities may produce temporary environmental disturbances,



such as noise from equipment, air quality impacts from dust, minor soil erosion and sedimentation, and minor disruption of local traffic patterns. These impacts can be mitigated through careful planning and consideration, as well as quality construction supervision.



5.4.1 Construction Noise

As with any construction project, the use of construction equipment and construction traffic will temporarily generates noise. All construction equipment and vehicles will be properly maintained, tuned to minimize the potential for noise. Upon project completion, ambient noise levels will return to previous conditions.

5.4.2 Air Quality

Air quality impacts during construction would be limited to short-term increases in fugitive dust, particulates, and localized pollutant emissions from construction vehicles and equipment during tree removal. As stated above, all construction equipment should be properly maintained and outfitted with emission reducing exhaust equipment. The work involves the selective removing of trees that have been identified as obstructions; other vegetation and ground covers will not be removed, protecting the soil from erosion and thereby limiting the potential for increases in fugitive dust. Adherence to the soil and erosion control plan as required in the Stormwater Pollution Protection Plan (SWPPP) will further mitigate any potential impacts.

5.4.3 Sedimentation & Erosion

The potential for erosion during the selective removal of obstructions is minimal as small trees and ground covers will remain and no new impervious surfaces will be created as part of construction operations. Adherence to the soil and erosion control plan as required in the SWPPP will further mitigate any potential impacts.

5.4.4 Traffic

Construction vehicles will enter and exit local roads and the affected parcels throughout the duration of construction. Impacts to traffic patterns will be limited as all construction activities will be performed beyond the limits of the public roadways. In order to limit impacts related to construction impacts the community will be notified of the start date of this project and alert them to potential construction traffic.

5.5 DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(f) LANDS CONSTRUCTION IMPACTS

Section 4(f) of the Department of Transportation (DOT) Act of 1966 states that the Federal Highway Administration and other DOT agencies cannot approve any program or project that requires the use of land from publicly owned recreation areas, parks, wildlife and waterfowl refuges, or public and private historical sites unless there is a determination that there is no feasible and prudent alternative, or the action includes all possible planning to minimize harm to the property resulting from use.

The proposed Project includes the removal of obstructions (trees) associated with Federal Aviation Regulations (FAR) Part 77 approach surface (on airport property), in order to maintain safe, navigable airspace beyond the ends of runways and will not require removal of any trees in a designated recreation, park, or wildlife area. Therefore this project will have no significant effect on adjacent or nearby 4(f) lands as a result of the obstruction removal project.

5.6 FARMLAND

The Farmland Protection Act (FPA) of 1981 authorizes the U.S. Department of Agriculture to develop criteria for identifying the effects of federal programs on the conversion of farmland to non-agricultural uses. The prime and



unique farmland regulations require that the U.S. Department of Agriculture determine whether land affected by any proposed action is prime and unique farmland.

If the proposed project involves the acquisition of farmland that would be converted to non-agricultural use, it must be determined whether any of that land is protected by the FPA.

The Natural Resource Conservation Service (NRCS), within the United States Department of Agriculture (USDA) has established guidelines under the Farmland Protection Policy Act (FPPA) for federal activities that involve directly undertaking, financing, or approving a project that would impact farmland soils. The guidelines recognize that the quality of farmland varies based on soil conditions, and places higher value on soils with high productivity potential. To preserve these highly productive soils, the NRCS classifies soil types as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. The NRCS requires that soils in these categories be given proper consideration before they are converted to non-farming uses by federal programs. The NRCS policy and procedures on prime and unique farmland are published in the Federal Register (Volume 43, No. 21, January 31, 1978).

According to Web Soil Survey from the NRCS, the following soil types identified as prime farmland or farmland of statewide importance are mapped in the vicinity of the potential affected parcels. These soils are generally located in forested areas or areas that have been developed for non-agricultural uses.

Farmland of Statewide Importance

- Windsor loamy sand, 0-3% slopes (36A)
- Scitico, Shaker and Maybid (9)
- Limerick and Lim soils (107)
- Brancroft silt loam, 3-8 % slopes (25B)
- Elmridge fine sandy loam, 0-3 % slopes (28A)
- Wethersfield loam, 8-15% slopes (87C)

Prime Farmland

- Sudbury sandy loam, 0-5% slopes (23A)
- Elmridge fine sandy loam, 0-3% slopes (28A)
- Wethersfield loam, 3-8% slopes (87B)

The implementation of the appropriate soil erosion controls mitigates the potential for impacts to farmland soils from tree removal activities. The tree removal locations do not do not contain any active farmland areas. Furthermore, the project does not include any development activities, new impervious areas, or acquisition of property. Therefore no adverse effects or significant impacts will occur.

5.7 FISH, WILDLIFE, and PLANTS

The area north of Bradley International Airport is generally a woodland habitat dominated by oak-pine forests in the uplands and red maple swamps in the wetland areas. Interspersed throughout the area are networks of streams and ponds.





The airport and surrounding facilities, to the south, west, and east, are located on a combination of natural and fill material that obscures and concentrates the natural environment in these areas. The areas to the north and east of the airport tend to be wetter habitats while the areas to the south and west of the airport tend to be drier upland habitats.

The infield of the airport consists of a frequently-mowed grassland environment managed to discourage use by wildlife closer to the runways and on-airport facilities. There are also less-frequently maintained grassland areas further away from the runways. As a result of the regular mowing this area is not ideal for most nesting birds or larger mammals, but may be suitable for

small rodents, insects, and birds actively feeding or resting. The areas that are not mowed as frequently may be suitable habitat for larger mammals such as rabbits and woodchucks.

Various forest or woodland areas located within the project area ranging in size from a few acres to a few dozen acres could be impacted by individual tree cutting, stand cutting, or clear cutting. Un-fragmented forest cover typically provides habitat for successful breeding populations of "area-sensitive" species. Clear-cutting and other timber treatments that would result in the disruption of contiguous canopy coverage in these habitats may render such habitat unsuitable for those species, many of which are species of state and federal conservation concern. Birds are the most prevalent group of vertebrate wildlife occurring in the obstruction removal areas, with some species requiring large tracks of undisturbed forest for successful breeding.

When compared to the smaller forested blocks, un-fragmented forest blocks larger than 500 acres tend to have higher successful breeding rates of forest interior bird populations and are also important for other larger vertebrate organisms as well. Habitat blocks between 125 and 500 acres in size are considered to have less but still fair to important value for forest interior avifauna, especially if the surrounding landscape is not intensely developed. Forest blocks smaller than 125 acres can be considered to have poor to fair value for supporting populations of forest interior species. The forest blocks at Bradley International Airport that lie within the obstruction removal area are smaller than 125 acres, and range in size from 10 to 100 acres.



The loss of mature forest cover from the obstruction removal areas is not expected to have a significant negative impact to local populations of forest interior species. Among the USFWS list of species of conservation concern identified in the IPAC report, the Northern Long-eared Bat (NLEB), Wood Thrush, and Worm-eating Warbler are considered forest species that could be negatively impacted by the loss of forest cover should these species occur in the wooded stands within the obstruction removal areas. If necessary to ascertain the presence of these species, surveys during the breeding season could be conducted by qualified personnel using the appropriate methodology.

There are stands of climax coniferous forest that provide suitable summer roosting habitat for male bats and large diameter shade trees for female bats, so the site appears to offer microhabitat features required by various bat species of conservation concern.



Additionally, the site meets suitability on a landscape level (e.g. large contiguous forest blocks with occasional

natural gaps and water features) for bat species. The IPAC report is lists the site as occurring within the known distributional range of the Northern Long-eared Bat. The Northern Long-eared Bat 4(d) rule prohibits incidental take that may occur from tree removal activities within 150 feet of a known occupied maternity roost tree during the time period when mother bats are known to be rearing their young ("pup season"). To avoid this potential tree removal activities will not occur from April 1 through September 30. Also, the 4(d) rule prohibits incidental take that may occur from tree removal activities within a 1/4 mile of a hibernation site, year round. As of February 2016, there are no known maternity roost trees in CT. The nearest known hibernacula to the site is in East Granby more than two miles northwest of the clearing areas.



Regardless of the limited value of the forests to interior birds, the forested habitat blocks at Bradley International Airport that lie within the obstruction removal areas do provide wildlife habitat to edge species and species that do not require large contiguous tracts of forest interior (habitat "generalists"). These forest blocks also serve other ecological functions and values as well which may include but may not necessarily be limited to the following:

- Soil generation
- Soil and bank stabilization
- Temperature moderation
- Wind reduction
- Water retention
- Nutrient and production export
- Noise mitigation
- Pollution retention
- Aesthetic value

The loss of a majority of these forest ecological functions and values would be avoided or minimized by employing best management practices (BMPs) for timber treatment



implementation, erosion and sedimentation control, seasonal restrictions, and by felling timber in place with no or minimal harvest. No large-scale clearing or grubbing (i.e., stump removal) across the entire obstruction removal area is included as part of the Proposed Action. Therefore, soil stabilization is not expected to be a major issue as large areas of bare soil will not be generated and exposed to the erosive forces of wind and water. Implementation of erosion and sedimentation control BMPs would further reduce the risk of soil loss from the occasional areas where limited amounts of soil disturbance might occur from equipment access.

Removal of the mature tree cover from within the obstruction removal areas at Bradley International Airport in the manner discussed above would actually serve to improve the habitat for the majority of the species of conservation concern identified by the CTDEEP and USFWS as having potential to occur within the project area. Many of the species listed by these agencies are shrub-land or barren species and, therefore forest interiors do not meet their habitat requirements. Upland species that would benefit from mature tree canopy removal and the subsequent and expected development of a robust shrub layer include the Black-billed Cuckoo, Prairie



Warbler, Blue-winged Warbler, Fox Sparrow and a number of rare scrubland lepidoptera (butterflies and moths) known to occur on or proximal to the site. Tree clearing in the manner described above would act as the disturbance mechanism needed to offset succession.

Conclusion: For the forest/woodland dependent species that may occur within the forest blocks subject to tree cutting (i.e. Wood Thrush, and Worm-eating Warbler), a biological survey would likely be needed in order to remove trees during the breeding season. The goal of a biological survey would be to assess the potential presence of the forest conservation concern and listed species during the breeding season. If those species were found, then follow-up agency consultation may be required to address impact to the habitats of these species, and mitigation may be needed.

As this process can be time consuming, CAA's preferred approach will include tree removal during winter conditions, avoiding the growing and breeding season. As discussed, under the wetland evaluation, winter cutting is the preferred approach to minimize potential impacts, and will be employed by CAA. Based on other airport obstruction removal projects, direct impacts to these species may be avoided via use of seasonal restrictions (e.g., no tree cutting from <u>April 1 through September 30</u> when these species are known to breed in New England). As such, significant impacts to critical species is not anticipated. This report was provided to USFWS and CT DEEP for review and comment.

5.8 FLOODPLAINS

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Maps (FIRMs) that depict 100-year and 500-year floodplains in many areas throughout the country. A 100-year floodplain is an area that has a 1% chance of being flooded in any given year (Zone A). A 500-year floodplain is an area that has a 0.2% chance of being flooded in a given year (Zone X).

According to the applicable FIRM, (Community Panel 09003C0204F, September 26, 2008), for Hartford County, there is a small area on airport property designated in the 500 year floodplain northwest of Perimeter Road in an area identified for tree removal. No other floodplains areas are delineated on parcels identified for either removal or selective removal activities. As there are no tree removal areas identified within the 100 year floodplain and a limited area within the 500 year floodplain, no anticipated impacts to the floodplain are anticipated as a result of this project.

5.9 HAZARDOUS MATERIALS

The scope of this task consisted of a database review of the relevant State and Federal environmental regulatory agency records and a visual field inspection for potential hazardous materials located within the tree clearing areas. Tree clearing activities do not create hazardous materials concerns in and of themselves; however it is important to identify any potential hazardous materials which may be encountered during the tree clearing activities that would require specialized management. A more detailed Environmental Site Assessment would be needed should hazardous materials be observed and/or encountered. The results of the data reviews and site inspection are summarized in the following sections.

5.9.1 Database Review

The database review consisted of a search for records in the applicable State and Federal environmental regulatory agency records for each property located in the tree clearing areas. Special attention was given to



those databases for hazardous materials spills and dumping, as these are the most likely to impact tree clearing activities.

Reported spills were identified as occurring on parcels 23, 24, 25 and 37 near Runway 33; parcel 1 near Runway 24; and parcels 6 and 20 near Runway 6. The identified properties are generally residential in nature, as such, any release is expected to be minimal. In addition, due to the fact that actual ground surfaces are not anticipated to be disturbed during the tree clearing activities, the reported incidents should not affect tree clearing operations.

5.9.2 Site Reconnaissance

The field inspection was conducted on July 30, 2015 and consisted of a detailed visual inspection of the areas of concern.

On-airport Tree Clearing Areas

Areas located on airport property that are slated for either complete or selective tree removal are located south of Runway 6, northwest of Runway 15, and to the north of Runway 24. Occasional random household debris was observed in some of these area. No hazardous materials were observed in any of these areas.

Off-airport Tree Clearing Areas

Selective tree removal areas are located northeast of Runway 24, southeast of Runway 33 and southwest of Runway 6. Each of these locations is located in a residentially or commercially developed area. No hazardous materials were observed in these areas at the time of the site inspection.

Conclusion: No potential hazardous materials or concerns were identified by the regulatory database review. No hazardous materials were observed during the visual site inspection. In summary, there are no known hazardous materials in the areas of potential tree removal at Bradley International Airport.

It should be noted that the database searches can only reveal reported hazardous materials concerns. Unreported spills or dumping of hazardous materials will not appear in these database searches. The visual field inspection was somewhat limited due to the large areas involved and the dense undergrowth encountered in some locations.

5.10 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act requires Federal agencies to review the potential effects of a proposed project on cultural resources. Through consultation, agencies identify historic properties within or adjacent to the project area and find ways to avoid, minimize or mitigate the potential effects on the identified resource while accommodating the proposed project.

Tree removal may generally include clearing without grubbing <u>unless directed otherwise by regulatory agencies</u>. The Proposed Action does not include impacts or removal of any buildings or structures. Access would be provided by unimproved routes without grading or paving. It is anticipated that no significant soil disturbance will occur and as a result impacts to cultural resources will be avoided.

To confirm this, correspondence describing the project including mapping of potential affected parcels was submitted to the Connecticut State Historic Preservation Office (SHPO) for review. Their review indicated that although there are archeological sites or historic resources in close proximity of affected parcels, SHPO recognizes that tree removal can be accomplished with minimal ground disturbance without clearing and grubbing (See correspondence in Appendix B).



5.11 LIGHT EMISSIONS AND VISUAL

The removal of tree obstructions will not result in light emissions. All tree removal operations will take place during daylight hours therefore no impacts related to light emissions are anticipated. Visual impact from tree removal are general considered limited as the project does not result in and new development or activities. However, the landscape or view will change in affected locations from wooded to open or brush and small trees.

Runway 1 Approach

No tree removal is planned for this area.

Runway 6 Approach

Land immediately south of the Airport property line and Rainbow Road have been identified for the removal of trees and include a commercial use, several undeveloped parcels and residential parcels. In addition, parcels in residential use on Larch Drive (Parcels 11-19) have been identified for the removal of trees. The removal of trees on these residential properties will increase the line of site into the adjacent property, Rainbow Road, and the Airport. The removal will result in less natural shade and corresponding additional natural sunlight.

As discussed above in Section 5.3, prior to tree removal, avigation easement would also be necessary, with payment to the individual property owners (fair-market-value based on appraisals). The easement payment is considered a mitigation to the property owner for changes in value that could occur from project activities and the new encumbrance on the parcel.

The tree clearing would alter the 'full grown' tree canopy currently present on most of the affected residential parcels. The effect or impact of this visual change is qualitative. Individuals and homeowners may prefer the additional sunlight and open site lines or the opposite may be experienced. Where feasible, selective tree removal is proposed in residential areas to moderate the visual changes. Additionally, clearing on residential lots will include removal (i.e., grinding) of tree stumps, with top soiling and reseeding where desired by the property owner. As such, significant visual impacts are not anticipated.

It is noted that replacement landscaping, such as replanting with low growing ornamental trees, is not eligible under for FAA project funding. However, as easement payments to property owners is required, some owners may choose to conduct landscaping or other improvements as a result of the visual changes.

Runway 15 Approach

The areas identified for the removal of trees are located in undeveloped portions of Airport property. With the exception of the Hartford Springfield Auction facility, surrounding properties are also heavily wooded; therefore no visual impacts are anticipated.

Runway 19 Approach

The only areas identified for the removal of trees are located in undeveloped, heavily wooded portions of Airport property and as a result no visual impacts are anticipated.

Runway 24 Approach

Two undeveloped parcels have been identified for the selective removal of trees just beyond the Airport property line east of South Street. Within the airport property one area has been identified for removal and one area for the selective removal of trees. In all instances, surrounding land use is either undeveloped or in business or airport use and as a result no visual impacts are anticipated.



Runway 33 Approach

Areas of selective thinning have been identified three commercial parcels fronting Old Country Road and a dozen residential properties (parcels 23-26 and 34-41). The selective removal of trees on residential properties may increase the line of site into surrounding properties, but not into the airport property.

The effect or impact of the visual change is qualitative. Individuals and homeowners may prefer the additional sunlight and open site lines or the opposite may be experienced. Nevertheless, the visual change is generally modest in these residential areas as selective tree removal is proposed. As such, significant visual impacts are not anticipated.

As discussed for the Runway 6 Approach, prior to tree removal, avigation easement would be necessary, with payment to the individual property owners. The easement payment is considered a mitigation to the property owner for changes in value that could occur from project activities and the new encumbrance on the parcel. The clearing on residential lots will include removal (i.e., grinding) of tree stumps, with top soiling and reseeding where desired by the property owner. Replanting with low growing ornamental trees is not eligible under for FAA project funding. However, as easement payments may be used by the owners to conduct landscaping or other improvements as a result of the visual changes.

5.12 NATURAL RESOURCES AND ENERGY SUPPLY

Energy demands associated with the proposed project is expected to be minimal as an increase in the demand for energy supplies will only occur during construction and will be limited to transportation and construction vehicles and equipment. This will not impact local or regional supplies.

5.13 NOISE

The preferred alternative includes both the removal and selective removal of tree obstructions for all Runways except Runway 1. Removals and selective thinning associated with Runways 15, 19, 24 are not proximate to residential areas or other noise sensitive sites. Runway 6 and 33 removal areas include sensitive residential areas.

As such, it is noted that tree removals will not in any way change flight patterns, runway use, and time of day of activity, and therefore does not impact airport noise levels. Furthermore, the height of aircraft on final approach to Runways 6 and 33 are controlled by airport visual aids call Precision Approach Path Indicators (PAPI) and electronic navigational aids call Instrument Landing Systems (ILS), which both guide the aircraft to fly at the appropriate height while landing at the Airport. These aides prevent aircraft from reducing their approach height over homes and other land use. As tree removals will not affect airport operations, there will be no impact on noise exposure.

Furthermore, it has been shown that trees and the foliage provide very little reduction or mitigation of airborne noise (originating from landing and departing aircraft in the air) as trees do not provide the necessary interruption of sound waves (wide waves). Studies do show that substantial areas of dense groundcover (i.e., grasses, shrubs, and tree) can have some decibel reduction from ground based noise sources. As the proposed removals do not include the ground cover, and is limited to selective thinning in residential areas, the proposed tree removal is not anticipated to affect or increase ground noise exposure.



In summary, as the preferred alternative will not affect airport activity levels or flight patterns, the project has no influence on overall aircraft or airport generated noise.

5.14 SOCIOECONOMIC ISSUES

5.14.1 Social Considerations

Social impacts can consist of a wide range of considerations as discussed below. The social and economic concerns are always specific to the proposed action, and may include impacts such as include displacement of residents, neighborhood disruption, tax base reduction, changes in school population, public services and other community concerns.

Socioeconomic impacts are typically defined as disruptions to surrounding communities, such as shifts in patterns of population movement and growth, changes in public service demands, loss of tax revenue, and changes in employment and economic activity stemming from airport development. These impacts may result from the closure of roads, increased traffic congestion, acquisition of business districts or neighborhoods, and/or by disproportionately affecting low income or minority populations.

There will be no acquisition of land, displacement of any populations or neighborhood disruption as a result of this project. Property values will not be significantly impacted by selective removal of obstructions; therefore there will be no impact on the tax base or tax revenue of any sector. With no displacement/impact to populations there will be no impact to school populations.

Obstruction removal in no way effects the delivery of existing or future public service. However, an effect of the obstruction removal is increased safety of airport operations; decreasing the risk of aircraft incidents, thereby decreasing the possibility of loss of property or human capital.

5.14.2 Environmental Justice

In regards to civil rights and environmental justice, the EPA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Title VI was enacted as part of the Civil Rights Act of 1964 to protect against discrimination based on race, color, and national origin in programs and activities receiving federal financial assistance². To prevent further such occurrences, Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was authorized in 1994.

A review of the CT Department of Economic and Community Development 2015 list of distressed communities indicates that the Towns of Windsor Locks, Windsor, Suffield or East Granby do not meet the criteria for a distressed community for the purposes of Environmental Justice. Additional review was conducted using US Census tract data for the specific locations with tree clearing on residential properties beyond Runway 6 in the Town of Windsor and Runway 33 in the Town of Windsor Locks. Per the Census data:

 Beyond Runway 6, the population of the affected census tract is 616, with <2% below poverty level, and over 75% majority of white residents



² Title VI, 42 U.S.C. § 2000d et seq, United States Department of Justice

• Beyond Runway 33, the population of the affected census tract is 1,035, with <2% below poverty level, and over 65% majority of white residents

In the state as a whole, about 70% of the populations is white, similar to that of the affected residential areas. Based on this review, it is concluded that the project does not have a disproportionate impact to low income or minority populations, or result in concerns for environmental justice.

5.14.3 Children's Health and Safety Risks

The proposed project will not result in environmental health risks and safety risks. The proposed project will not create or make more readily available products or substances that contact or ingestions through air, food, drinking water, recreational waters, or soil could harm children and therefore will not result in any significant impacts to children's health or safety.

5.15 SOLID WASTE

Trees removal activities on affected parcels will be conducted by a licensed and insured tree removal contractor. With the exception of limited vegetative matter that may be spread on site for decomposition, all materials, such as salvageable timber (lumber), firewood, and woodchips for landscaping or pellets will be recycled. These materials will be removed from the site by the contractor. If prescribed by agreement with property owners, logs and other materials may be left on site for use by the owner, in an approved means described in writing. As such, no solid waste impacts are anticipated.

5.16 WATER QUALITY

5.16.1 Ground Water

The CTDEEP classifies types of groundwater along with their respective designated uses. Groundwater in the vicinity of Bradley Airport is designated by the CTDEEP as "Class GA and GAA, may be impaired". The groundwater quality goal and designated use is Class GA or GAA (suitable for drinking) however there may be a known or potential impairment source. Two smaller areas are mapped as GB near Routes 75 and 40, and Hamilton Pond and Hamilton Brook. GB waters are assumed to have some degradation and are not suitable for drinking.

According to the Connecticut Environmental Conditions Online (CTECO) mapping tool, the project area is not located within an aquifer protection area. Tree removal projects do not produce wastewater or effluent, and thus do not generally impact ground water.

5.16.2 Surface Water

The federal Clean Water Act (CWA) and the Connecticut General Statutes establish water quality standards for all surface waters of the state. Surface water features in the vicinity of the Airport include a network of streams, wetlands, and floodplains that are part of the Connecticut River Drainage basin. Several unnamed streams in the vicinity of Runways 1 and 6 flow into the Rainbow Brook to the Farmington River. Streams to the north generally flow into Spencer Brook and Stony Brook.

Surface water quality for all mapped streams within the airport are designated A by the CTECO mapping tool, however, the Farmington River and its receiving streams are designated as an impaired River on the CTECO mapping tool.



There will be no impervious surface resulting from the removal of trees and no changes in drainage patterns or grading. Any disturbed areas will be mulched and reseeded. Permanent stormwater management systems are not needed as flow volumes and rates are expected to change. Construction activities will be protected by a SWPPP, where required. As a result surface water impacts are not anticipated.

5.17 WETLANDS

Palustrine forested (PFO) wetlands within the obstruction removal areas exhibit a variation in canopy closure of the woody overstory. In some areas, the canopy is contiguous. In other areas the PFO is interspersed with gaps. In either case, removal of the canopy layer would impact PFO wetland cover types as tree removal work would not be required in emergent (PEM) or open water (POW) areas. Scrub/Shrub (PSS) swamps may require selective cutting of a few trees but, since tree cover is not the dominant cover type in these wetlands, the loss of the tree cover would be negligible. Thus, woody overstory within PFO wetlands would change from Palustrine Forested to Palustrine Scrub/Shrub as the understory layer that is currently being shaded by the overstory would be released and exposed to more sunlight, thereby allowing it to develop fully. Existing sapling hydrophytes would eventually grow to form a woody overstory canopy over time (if periodic maintenance is not conducted). Since a tall overstory layer is produced by succession over time, the loss of overstory tree layer cannot realistically be immediately replaced through wetland enhancement or mitigation measures.

However, there are a number of reasons why impact to palustrine wetlands are not expected to be significant. They include the following:

- 1) The primary wetland functions of the wetlands would not change. The Palustrine wetlands would still provide sediment retention, bank stabilization, nutrient retention/transformation, pollution retention/ transformation, production export, groundwater recharge/discharge, and wildlife habitat, as only the tree layer would be substantially reduced.
- 2) Wildlife habitat function for certain species of conservation concern reported to occur within or proximal to the project area would potentially improve (e.g., potentially breeding Canada Warblers).



Forested wetland north of Runway 15

- 3) An increase in the understory of water loving shrubs would increase the diversity of nectar, pollen and soft mast-producing plants as they responded to better sunlight conditions reaching the lower vegetation strata (e.g. Highbush Blueberry, Winterberry, Northern Arrowwood, Elderberry, various dogwoods, etc.). This would increase the diversity of production export from the wetland.
- 4) Since trees will be felled in place, the crowns and boles will remain in their wetland of origin and will continue to serve as cover for wildlife.
- 5) Nutrients tied up in the tree biomass will return to the system via the natural decomposition process.

6) Loss of a mature tree layer is a natural ecological endpoint along a successional trajectory for many palustrine wetlands as windstorms topple shallowly rooted trees (e.g., Red Maples), or disease causes the demise of some tree stands (e.g., Tobacco Ringspot Virus of Ash, Tobacco Mosaic Virus of Ash, Ash Yellows, etc.).

Furthermore, impact to a number of ecological functions and values would be avoided or minimized by employing best management practices (BMPs) for timber treatment implementation within wetlands. These BMPs include the installation and maintenance of erosion and sedimentation control measures, seasonal work restrictions if applicable to breeding wildlife resources of conservation concern, and by felling timber in place with no or minimal harvest. No large-scale clearing, grubbing, excavation, dredging, or filling within wetland or watercourse resources is included as part of the Proposed Action. Vehicular access to many of the designated tree removal areas is possible using the existing network of roads, trails, and driveways within the adjacent upland. The project specifications may avoid the use of timber mats by requiring non-mechanized removal techniques. Alternatively, if frozen ground is present during tree removal, traditional clearing may be possible without temporary fills or soil disturbance. As frozen ground cannot be relied upon, hand cutting (i.e. using chainsaws) is anticipated within wetland areas thus avoiding vehicular traffic. The methods of access, tree cutting, work schedule, timing, and sequencing would be finalized during the permitting process in coordination with ACOE and CT DEEP Land and Water Resources Division. To avoid impacting native plants, no chipping of felled trees would be allowed to occur within sensitive natural areas.

Therefore, impacts to hydric and wetland soils is not expected to be significant as large areas of bare soil will not be generated or exposed to the erosive forces of wind and water. Implementation, inspection, and maintenance of erosion and sedimentation control BMPs would further reduce the risk of soil loss from the occasional areas where limited amounts of soil disturbance might occur in adjacent upland areas from construction vehicle movements. These measures would prevent sedimentation of wetlands and waterbodies.

The removal of tree cover from riverbanks typically raises concerns regarding bank stabilization and related erosion and sedimentation issues. Thermal pollution of the system is also generally a concern. When overhanging branches that shade the stream's waters are removed, sunlight can warm the water below. Warmer waters hold less dissolved oxygen, and many of the coldwater fisheries within the system (e.g., trout) are typically sensitive to low oxygen levels. Since tree root masses are not being removed from the system but will be left in place, bank stabilization is not expected to be compromised by tree cutting. Many of the cut stumps will remain viable and re-sprout multiple stems (termed coppicing) allowing the tree to regenerate. Additionally, understory trees, shrubs and herbaceous ground cover along the stream banks will proliferate since they will be released from the low light conditions in which they had formerly been growing. Impact to riverbank occurs in a very limited extent.

Conclusion: During the permitting phase of the project, coordination with the United States Army Corps of Engineers (ACOE) and the CT DEEP will be conducted to provide the plan details and process to avoid wetland impacts. Based on similar completed efforts in New England, it is anticipated that a Section 401 Water Quality Certification and Section 404 Permit will <u>not</u> be required, based on winter removal and the planned means and methods to minimize impacts. Application to the local inland wetland and conservation commission is not required for the proposed activities.

Coordination with the CT DEEP Inland Wetlands Resources Division (IWRD) will be completed to determine any requirements to satisfy the Connecticut Inland Wetland Protection Act. Although there will be no actual filling of wetlands from the project, converting existing forested wetlands to scrub/shrub and emergent systems will alter the wetland systems and it is anticipated that state wetland permits will likely be needed. These changes will need to be documented and considered by CT DEEP, along with BMPs and mitigation measures. Presently the CAA is



exempt from having to file Flood Management Certifications (FMC) with the CT DEEP Inland Water Resources Division (IWRD).

As this project advances into the permitting phase, more detail regarding which specific trees are to be removed and the methodology used for their removal will be thoroughly coordinated with the CTDEEP and other regulatory agencies. Tree removal methodologies to be used in upland areas, within critical habitat areas, and within forested wetland areas may vary and will proceed as directed in the approved project permits.

5.18 WILD AND SCENIC RIVERS

According to the National Park Service website, there are two rivers in Connecticut that are designated as Wild and Scenic Rivers: the Eight Mile River and Farmington River West Branch. These rivers are not in the vicinity of Bradley Airport; therefore there will be no impact to designated Wild and Scenic Rivers.

5.19 SUMMARY OF CONSEQUENCES & MITIGATION

Table 9 provides a summary of the anticipated impacts and key issues associated with the proposed project. The project is not anticipated to result in any permanent impacts or environmental concerns.

TABLE 9 – SUMMARY OF POTENTIAL IMPACTS AND KEY ISSUES			
Impact Category	Potential Impact or Key Issue		
Air Quality	The project is not anticipated to worsen the existing marginal non-attainment under NAAQS related to carbon monoxide or 8-hour ozone.		
Compatible Land Use	The project will not cause a change in land use and is consistent with local zoning. No compatible land use impacts are anticipated.		
Construction Impacts	Construction activity is restricted to a small project areas and will be completed in short timeframes. Tree removal will be conducted during daytime hours and employ proper erosion controls. As such, significant construction impacts (i.e., noise, air quality, erosion, traffic, etc.) are not anticipated.		
Department of Transportation Act: Section 4(f)	There are no publically owned lands in the vicinity of any identified tree removal areas. As such, no impacts to 4(f) lands are expected.		
Farmland	The farmland soils identified in the project area have not been used as farmland in recent history. The project will not impact farming or soils classified as either soils of statewide importance or prime farmland.		
Fish, Wildlife, and Plants	Conducting removals during winter conditions will prevent significant impacts to critical species.		
Hazardous Materials	No potential hazardous materials or concerns were identified by the regulatory database review and no hazardous materials were observed during the visual site inspection. As of July 2015 there were no known hazardous materials in the areas of concern at Bradley Airport.		
Historical, Architectural, Archeological, and Cultural Resources	SHPO has determined that the removal of trees will not have an impact on cultural or historic resources.		
Light Emissions & Visual Effects	The proposed action will not create long term visual impacts. Some residences in the vicinity of Runway 6 and 33 may have an increased line of site into the airport or other property, and reduce shade.		



Natural Resources & Energy Supply	The proposed action will required only a limited amount of natural resources and energy during construction activities. No additional resources are needed following implementation.
Socioeconomic Impacts	The project will not result in any changes to land uses, the delivery of public services or the availability of jobs.
Noise	The removal of trees does not impact flight patterns or activity levels. Trees do not provide any significant reduction in noise levels from airborne sources, such as aircraft, and thus the project will not increase the noise levels.
Water Quality	No water quality impacts are anticipated as additional runoff, impervious surfaces, or effluent will not be generated.
Wetlands	Based on the means and methods of removal, the ACOE has routinely determined that wetland impacts are not created by this type of project, and federal permits are not needed. Coordination with the CT DEEP Inland Wetlands Resources Division (IWRD) will occur during the design process to satisfy the Connecticut Inland Wetland Protection Act and if any permits are necessary. It is anticipated that no mitigation will be necessary or will be minor.
Other Categories	The analysis identified that no coastal resources, floodplains, solid waste, or wild or scenic rivers are located within the tree removal areas.



6.0 LIST OF PREPARERS

The following individuals prepared this EA on behalf of the CAA.

Federal Aviation Administration (FAA)

Richard Doucette, Environmental Protection Specialist

Connecticut Airport Authority (CAA)

Colin Goegel, Supervising Engineer Molly Parsons, Airport Planner

Clough Harbor & Associates LLP (CHA)

Jeremy Martelle, Project Manager Paul McDonnell, AICP, Principal Planner Jean Loewenstein, AICP, Principal Planner Scott Rosecrans, Senior Scientist

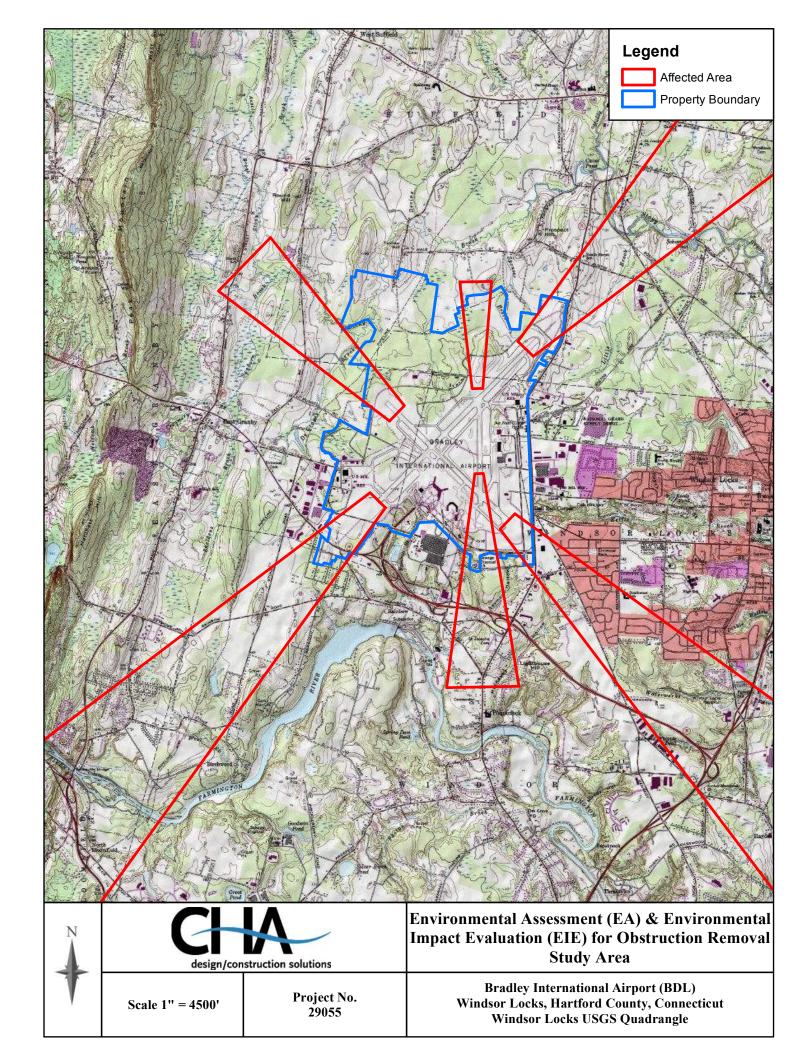
Fitzgerald and Halliday, Inc. (FHI)

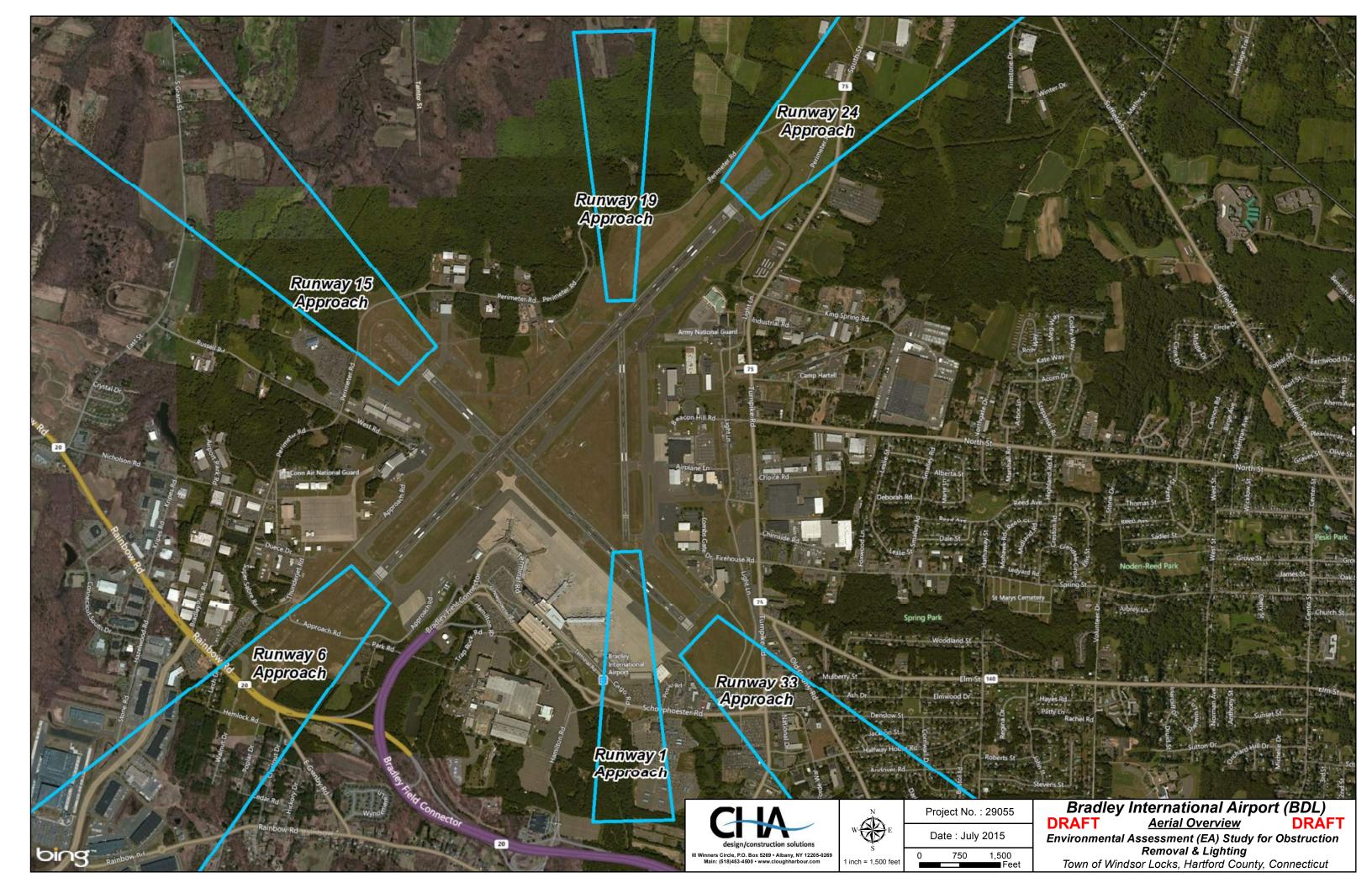
Paul Stanton, Senior Project Manager Anthony Zumba, Environmental Specialist David Laiuppa, Wetland Scientist

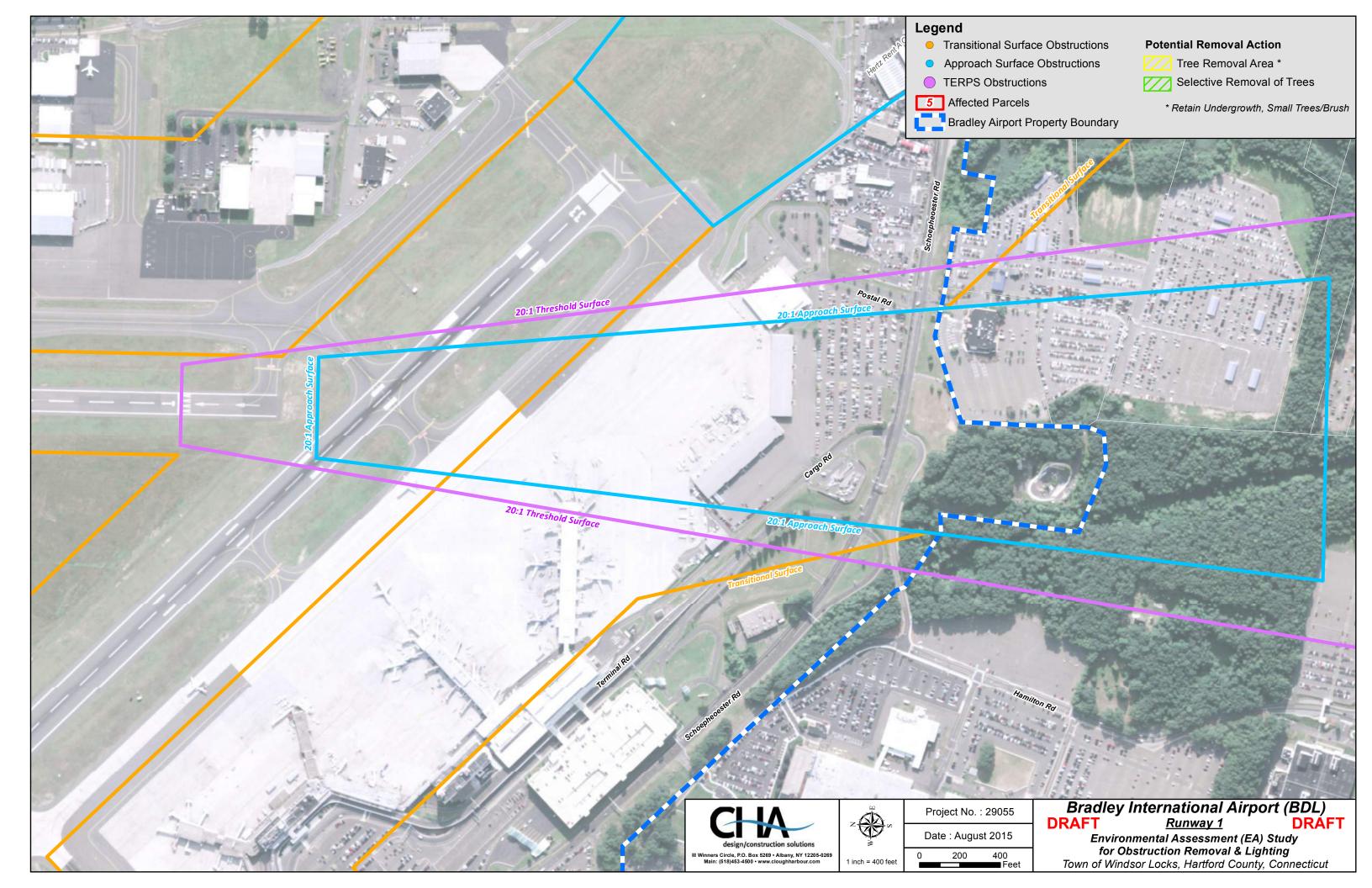


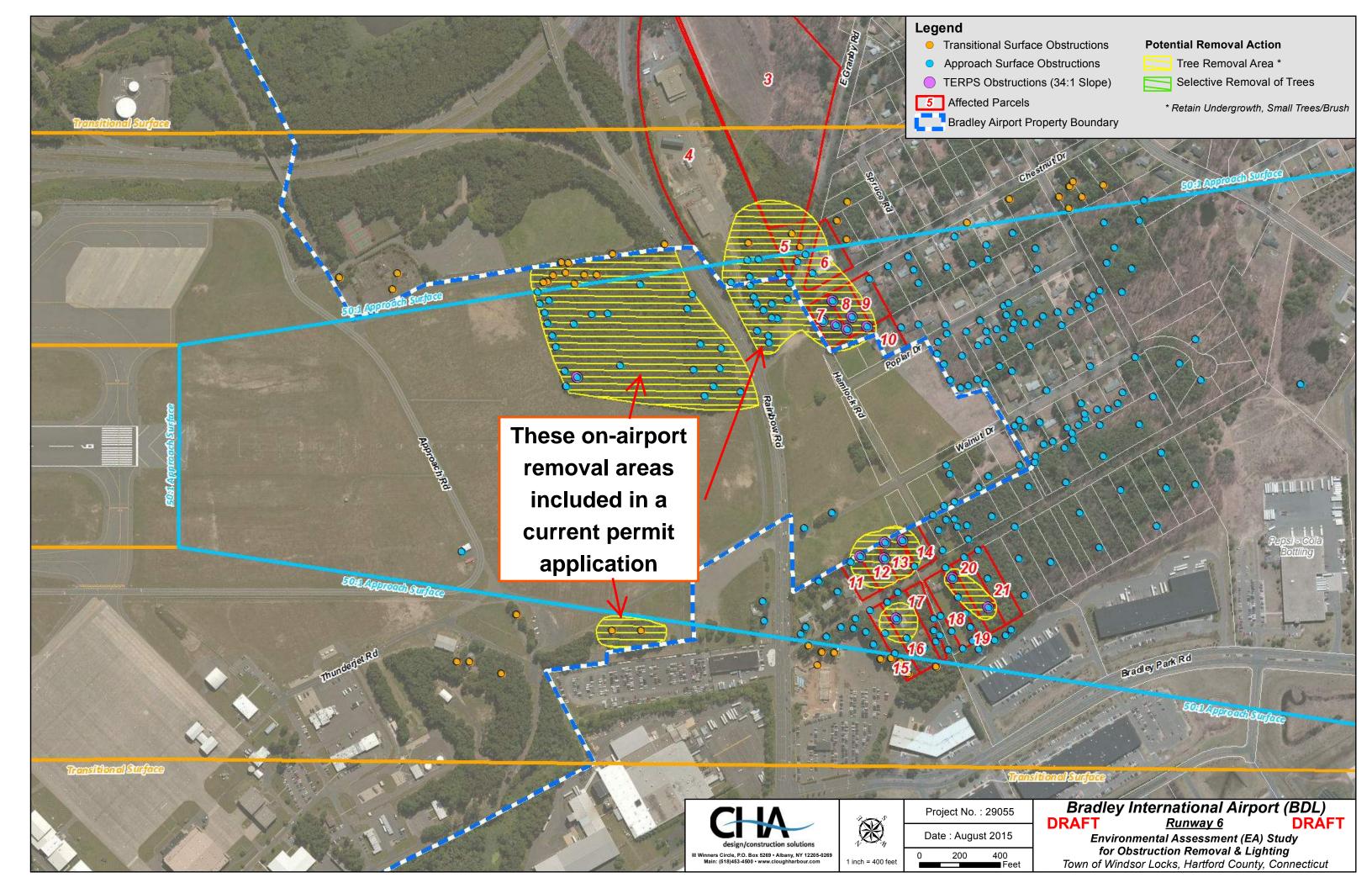
APPENDIX A

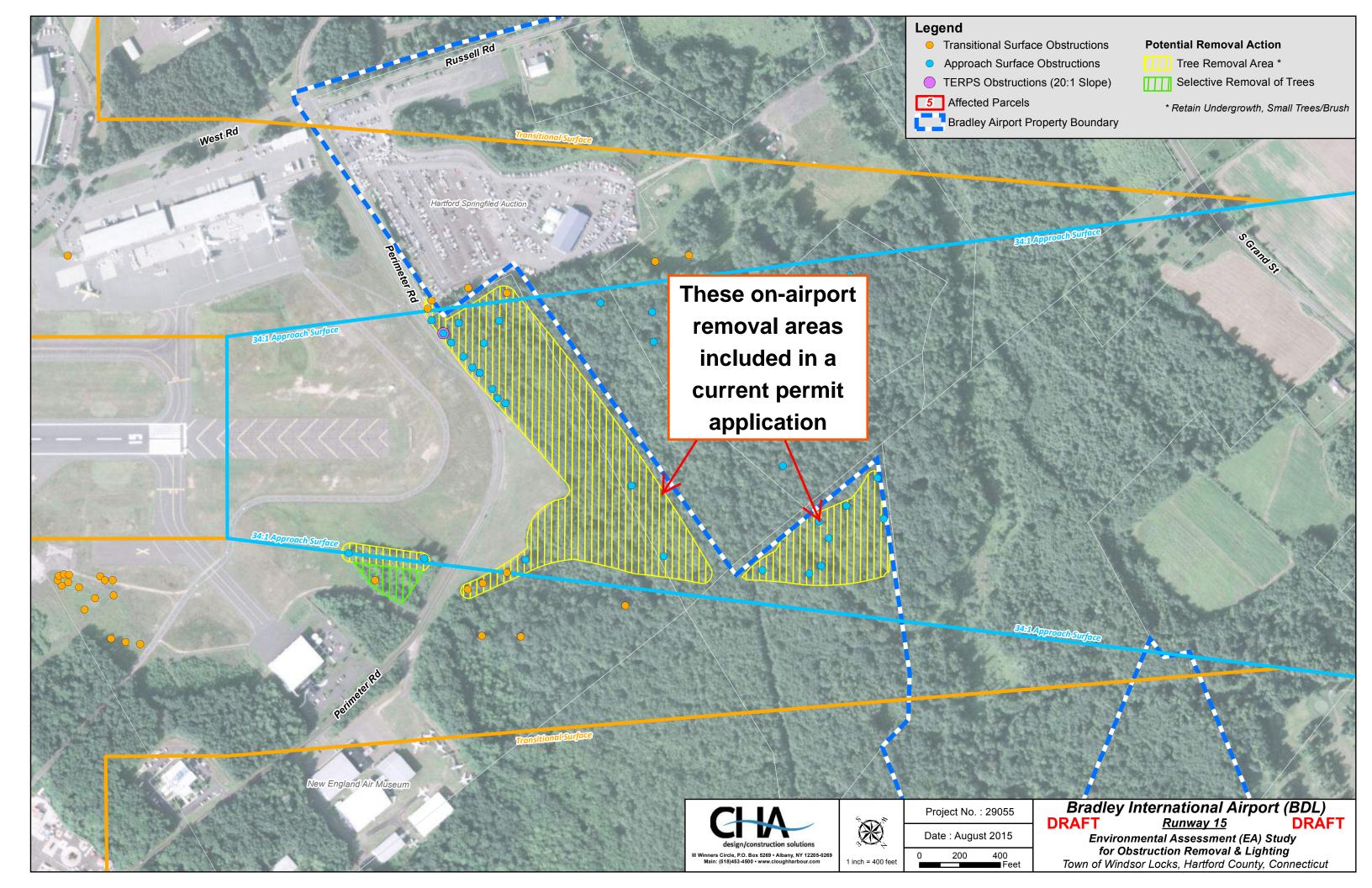


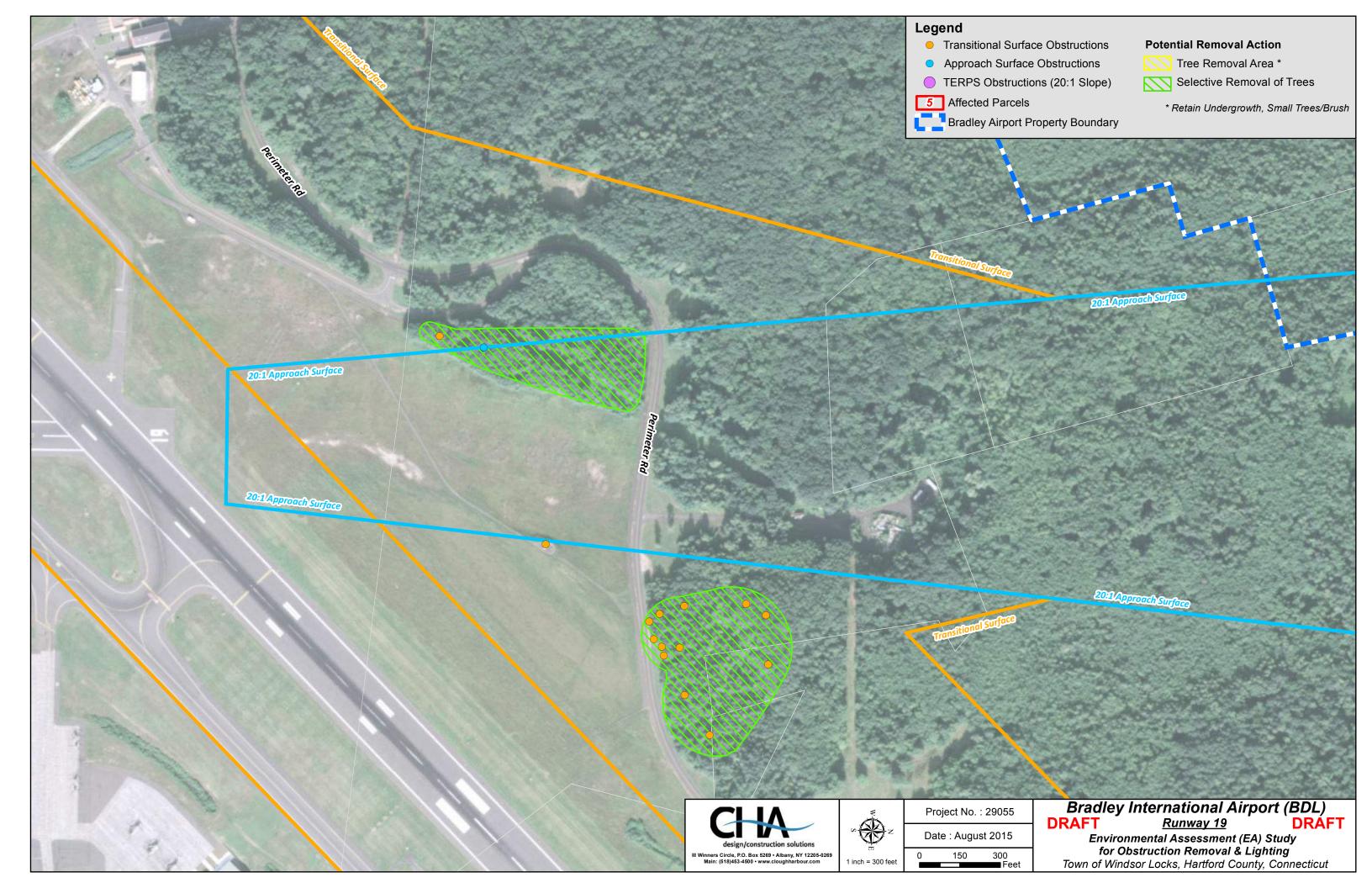


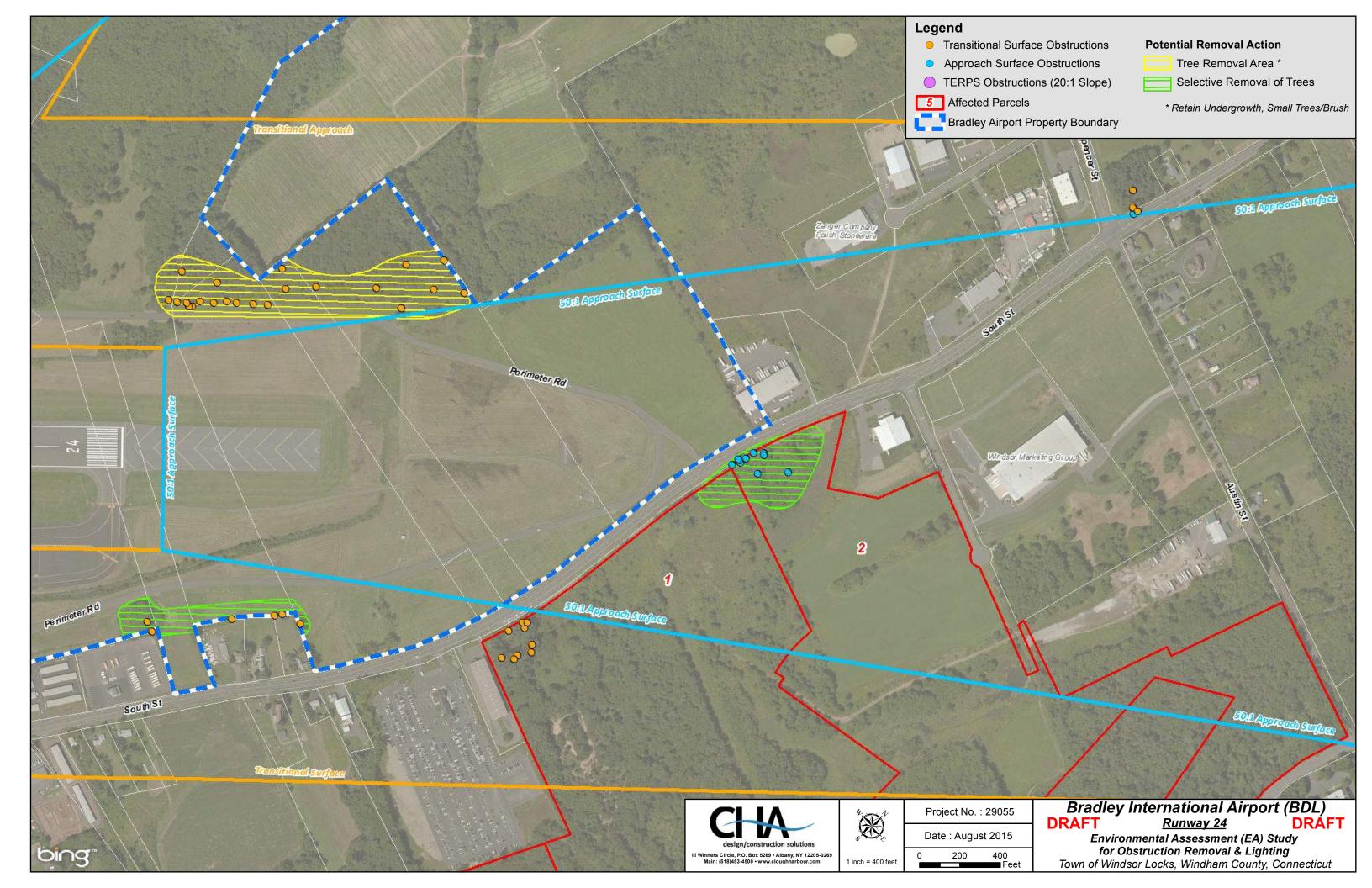


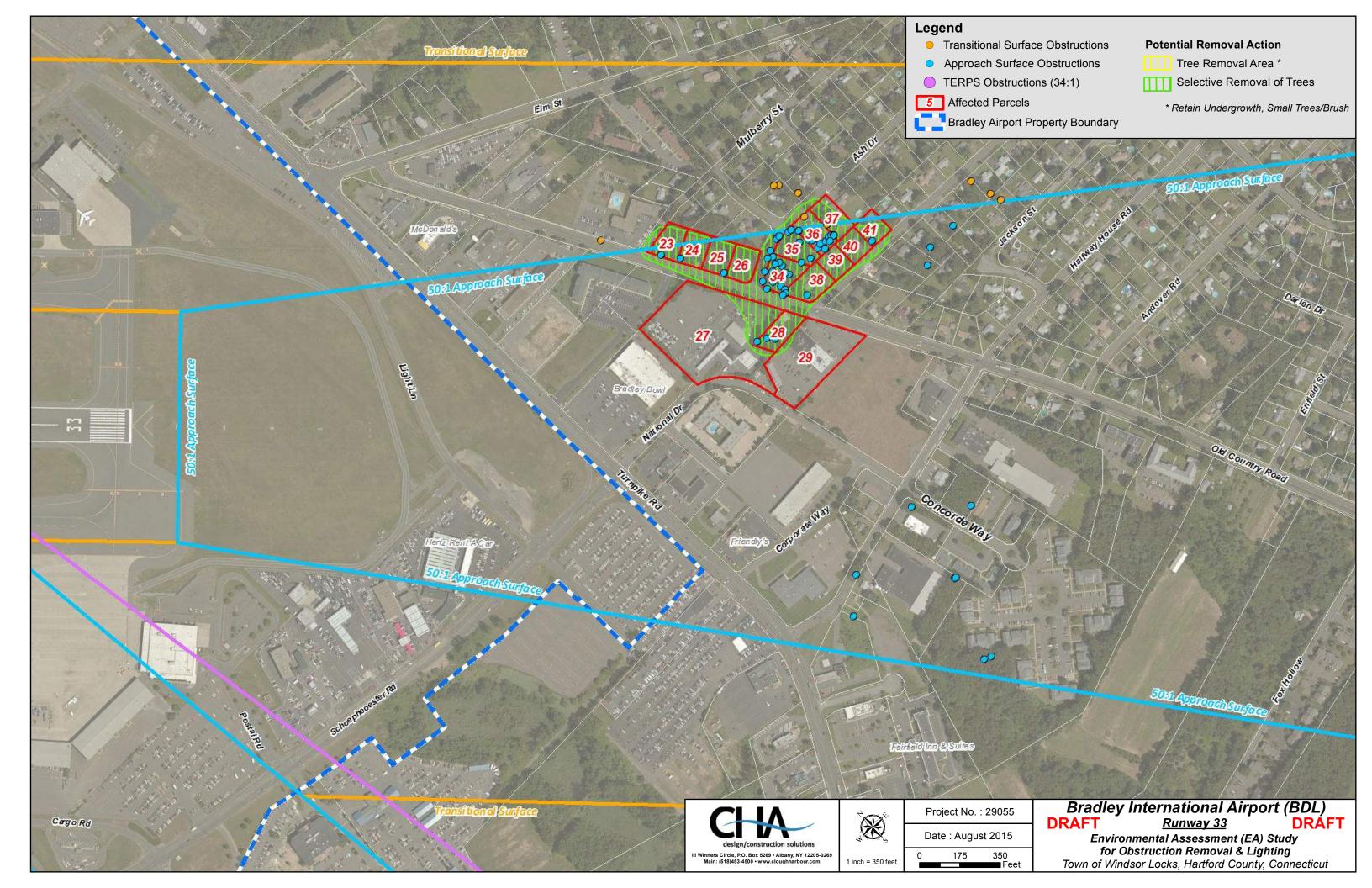


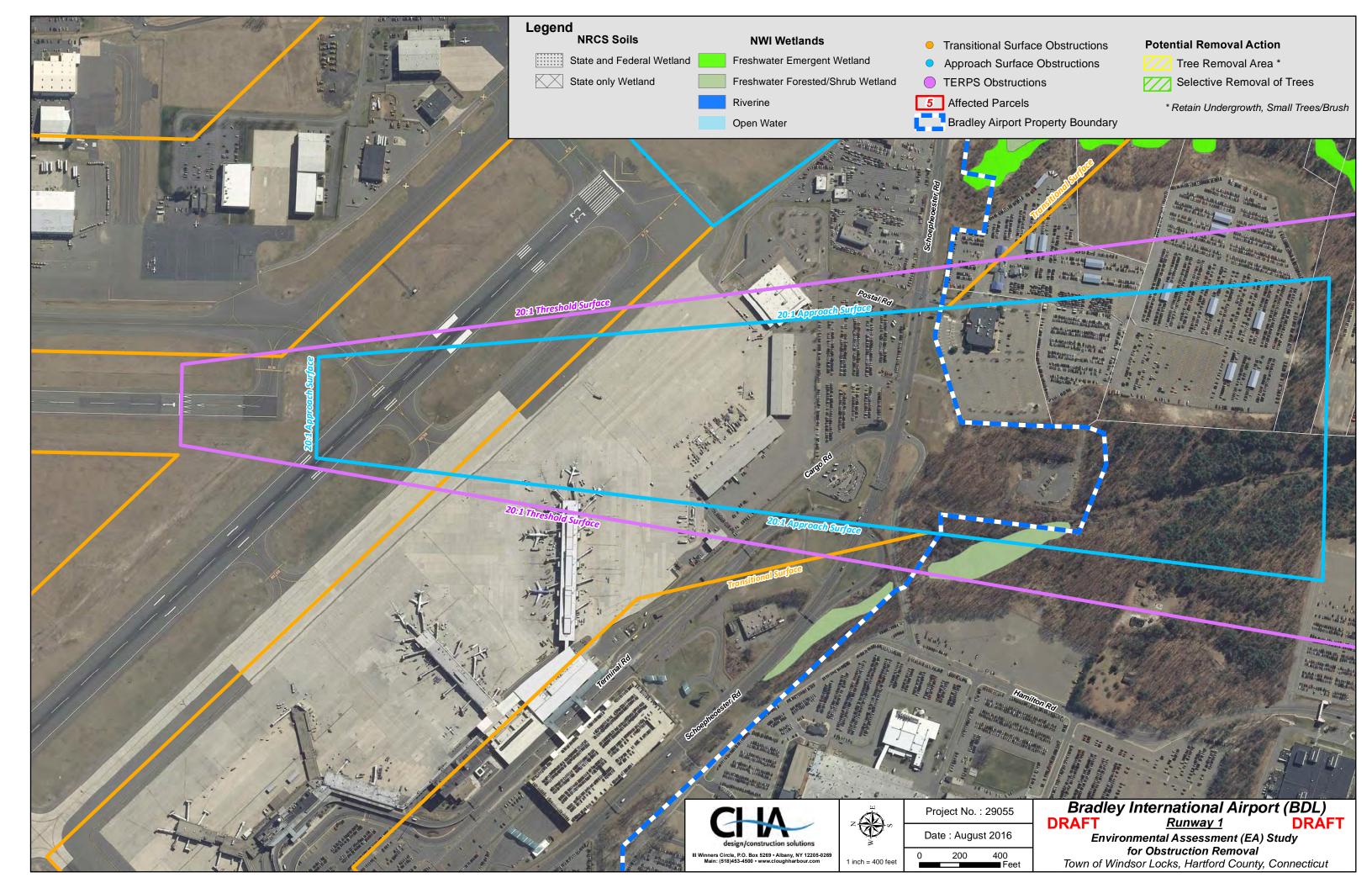


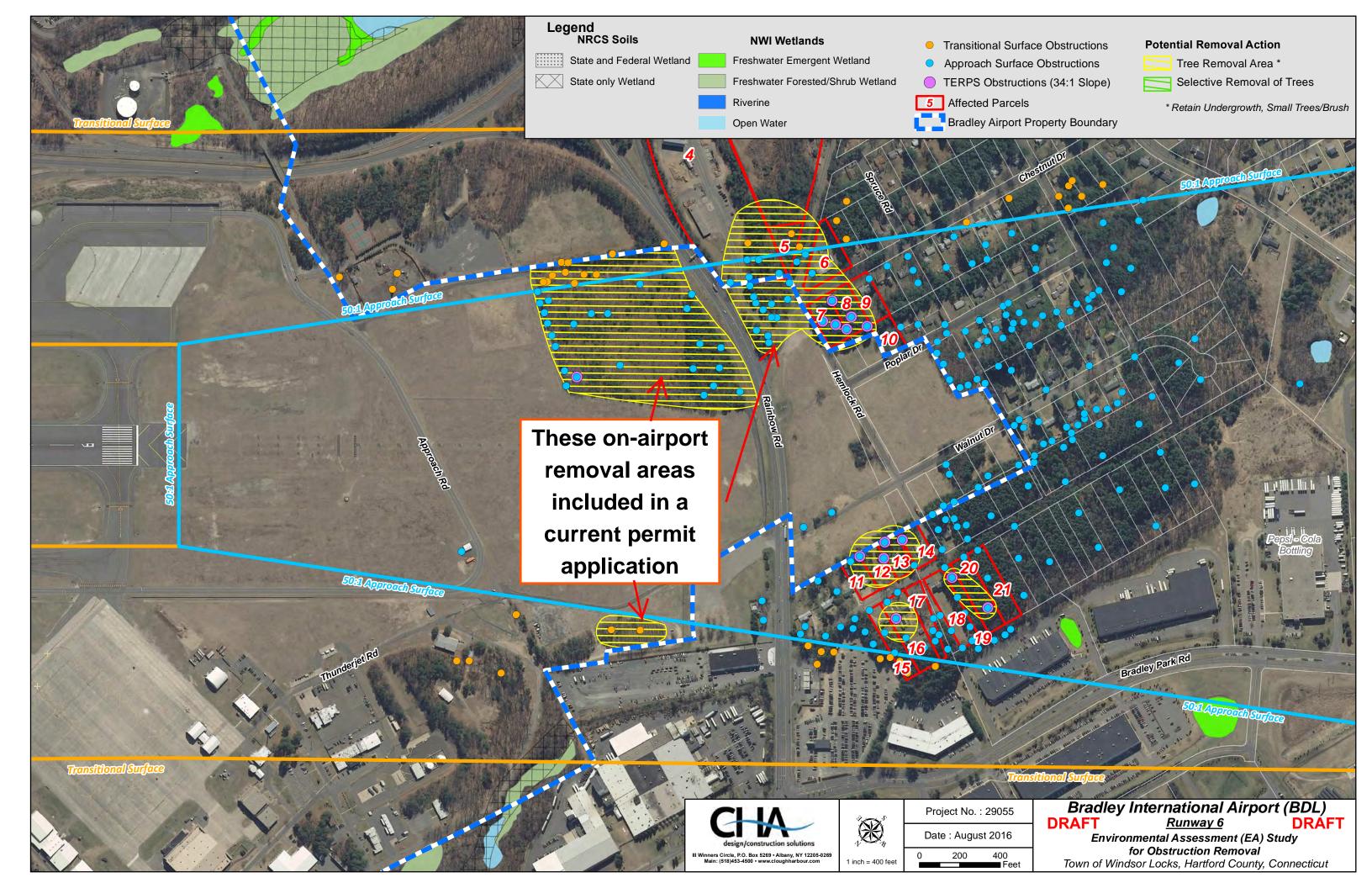


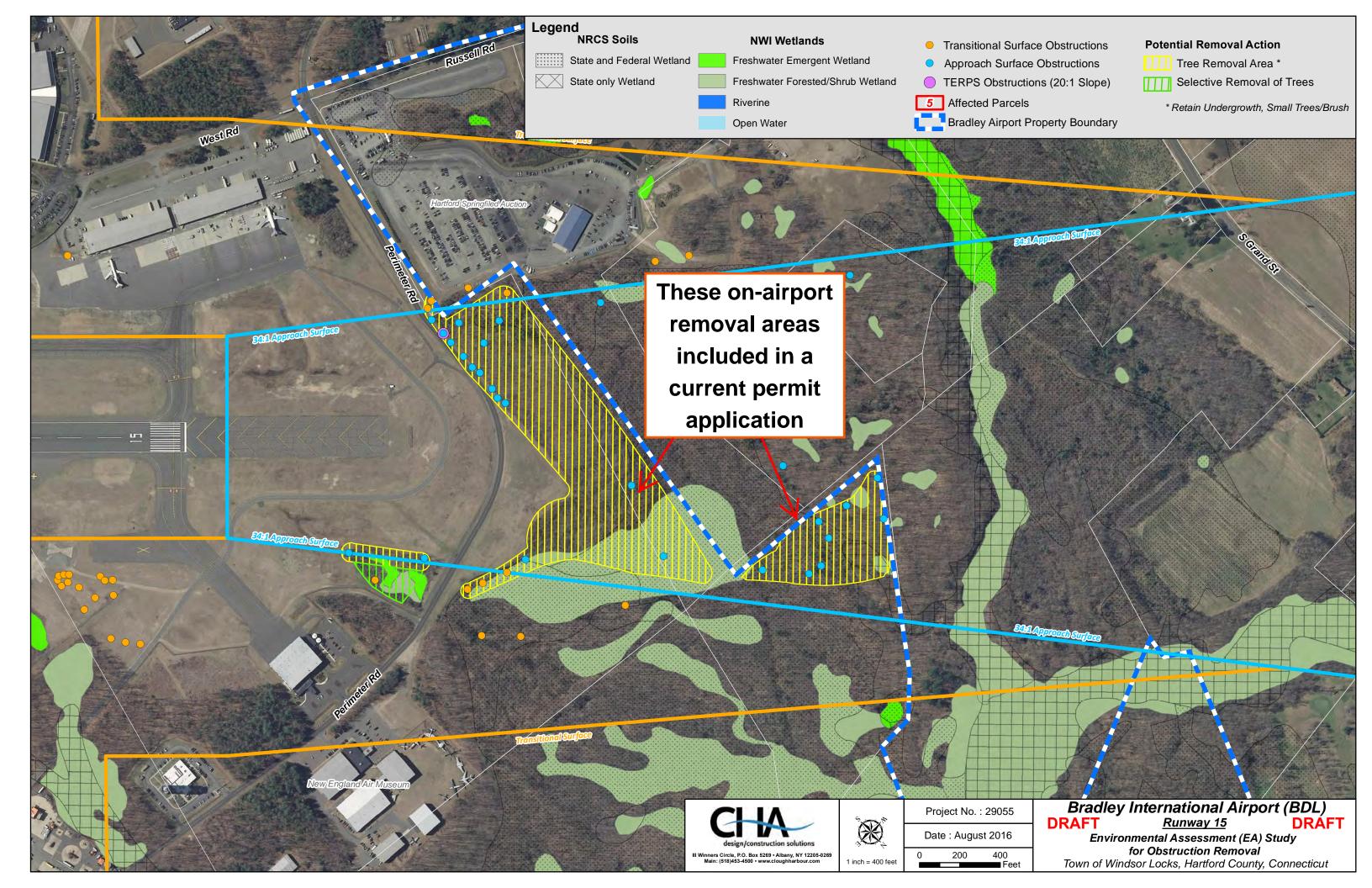


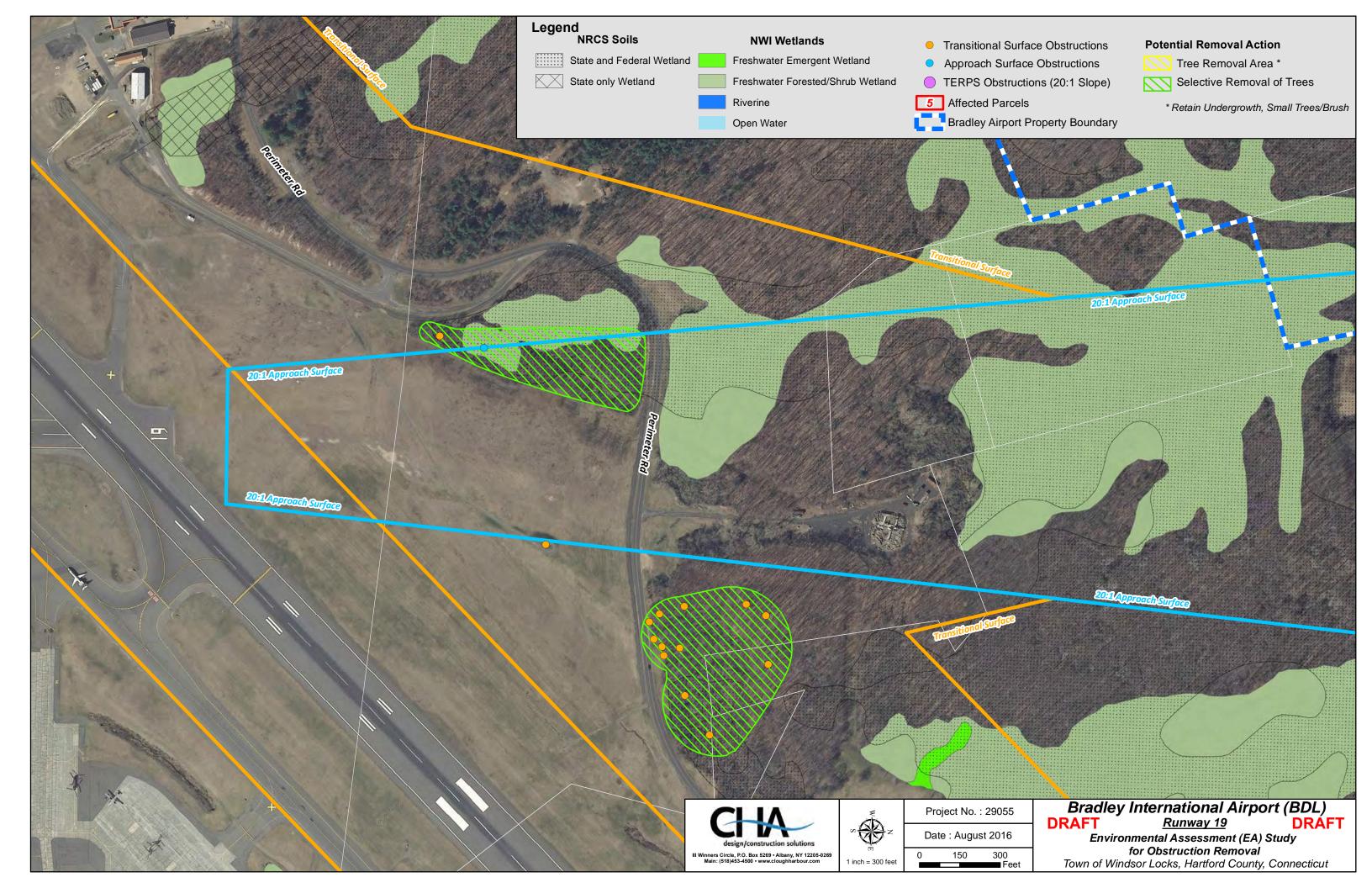


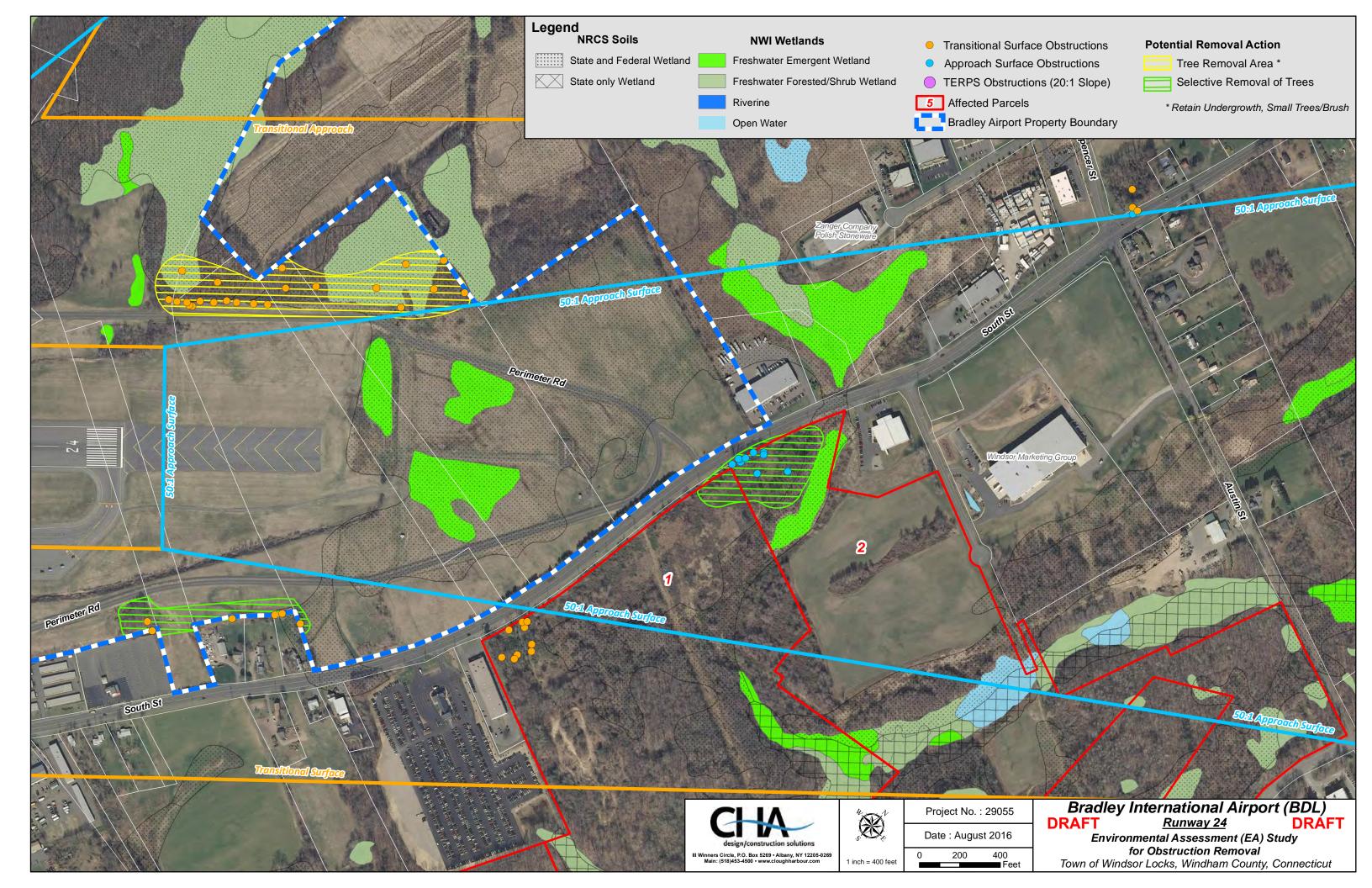


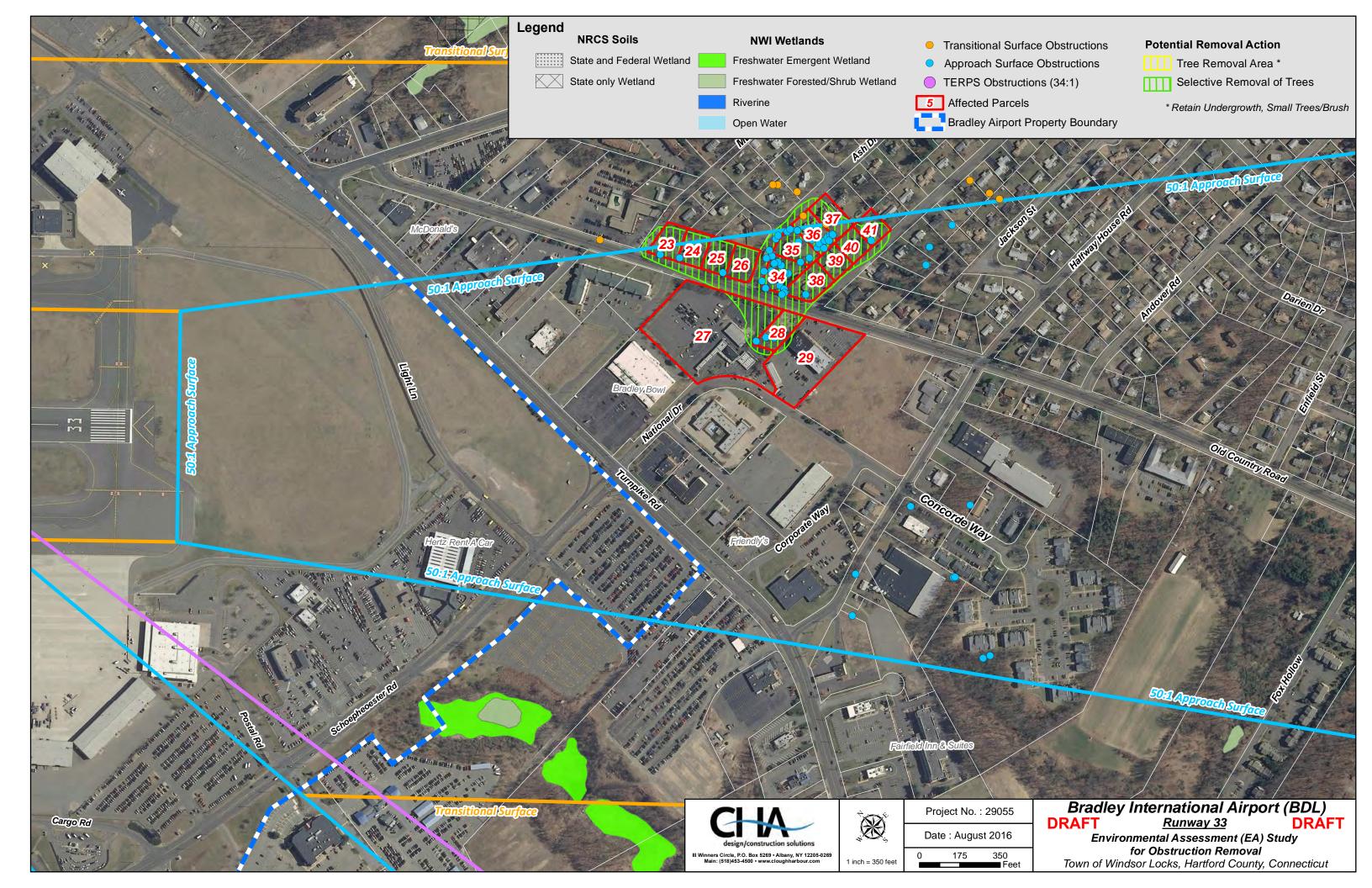












APPENDIX B



ENVIRONE ENVIRONE

STATE OF CONNECTICUT

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

To: Robert J. Bruno – Director of Planning, Engineering & Environment

Connecticut Airport Authority, 334 Ella Grasso Turnpike, Windsor Locks

From: David J. Fox - Senior Environmental Analyst Telephone: 860-424-4111

Date: July 17, 2015 E-Mail: david.fox@ct.gov

Subject: Obstruction Removal & Lighting Project

The Department of Energy & Environmental Protection (DEEP) has reviewed the Notice of Scoping for the proposed tree obstruction removal and obstruction lighting beyond airport property in areas surrounding Bradley International Airport and five stated-owned general aviation airports operated by the Connecticut Airport Authority (CAA). The following comments are submitted for your consideration.

In general, the document should:

- Identify the location and height of encroachments into the various applicable airspaces,
- Identify the extent of clearing required,
- Develop plans that, in order, avoid, minimize and mitigate potential impacts,
- Identify alternative site access/egress and staging areas needed to conduct proposed work,
- Evaluate cumulative impacts if project phasing is proposed, and
- Identify opportunities for habitat and outdoor recreational enhancements to mitigate unavoidable impacts.

At four of the airports, the affected areas identified encroach into several DEEP properties that could be impacted if obstruction clearing is proposed at these locations. These include the properties in the table below.

Groton - New London Airport	Bluff Point State Park		
	Bluff Point Coastal Reserve		
	Bluff Point Natural Area Preserve		
Windham Airport	Mansfield Hollow Wildlife Management Area		
	Airline State Park Trail		
	Natchaug State Forest		
	Beaver Brook State Park Scenic Reserve		
Waterbury - Oxford Airport	Larkin State Park Trail		
Brainard Airport	Connecticut River Wildlife Management Area		
	(or Keeney Cove WMA)		

The document should identify both direct and indirect (visual or aesthetic) impacts to DEEP property and evaluate the consistency of proposed vegetative clearing or beacon installation with any applicable State policies that apply to the various management designations (e.g., State Park, Coastal Reserve, Natural Area Preserve, etc.). The Department is particularly concerned about potential impacts to Bluff Point.

The Bluff Point peninsula is often considered the last significant undeveloped area on the Connecticut coastline. In 1975, the Connecticut Legislature designated a portion of Bluff Point as a "Coastal Reserve" in recognition of its ecological importance and to preserve its ecological integrity. One of the largest undeveloped coastal areas in the state, this mostly forested 700-acre site contains a variety of habitats supporting state threatened and endangered species. Special Act 76-27 established land use controls at the coastal reserve: "Living and nonliving resources contained within the reserve shall not be disturbed or removed for other than scientific or management purposes and only upon the approval of the commissioner of environmental protection."

The southeast section of Bluff Point is a designated Connecticut Natural Area Preserve. Governor Rowland designated these 117 acres to maintain the preserve in as natural and wild a state as is consistent with the preservation and enhancement of protected resources and educational, biological, geological, paleontological and scenic purposes. The designation is due in part to a unique coastal forest on a concave slope, known as a 'cove forest,' which supports trees that are nearly 100-years old.

Pursuant to section 23-5e of the Connecticut General Statutes (CGS), "An area designated as a natural area preserve is declared to be put to its highest, best and most important use for public benefit and no interest therein owned by the state shall be alienated or put to any use other than as a natural area preserve, except upon a finding by the commissioner in consultation with the natural area preserves committee that (1) such alienation or other use serves a public necessity and that no prudent alternative exists or (2) the features of the land found worthy of preservation have been destroyed or irretrievably damaged so that the public purpose in preserving such land has been frustrated, and after the approval of such proposed alienation or other use by the Governor."

The document should explain any procedures for obtaining variances from FAA regulations or relaxation of requirements regarding penetration by trees or other obstructions into the airspace formed by imaginary surfaces. For example, a Draft Environmental Assessment for removing off-airport airspace obstructions at T.F Green Airport proposed, as the preferred alternative, a partial clear plan for "tree removal only in those areas where trees obstruct priority operational surfaces in order to minimize impacts to the community and environment and to reduce the number of easements to achieve project goals. The priority surfaces were established through a review process conducted by RIAC and FAA and ultimately approved by FAA in the RIAC Airspace Determination." Alternative analysis should evaluate the use of variances or reduced standards in order to avoid adverse impacts at particularly sensitive locations, such as DEEP property.

In the case of Bluff Point, the relative benefit of tree clearing for the lesser used crosswind runway should be weighed against the potential impacts to this particularly sensitive area. Proposals to remove trees at Bluff Point have been the subject of several meetings between

DEEP staff and the CAA with their consultants to discuss minimizing and mitigating impacts of clearing. These efforts should be resumed if it is determined through the NEPA/CEPA process that impacts are unavoidable.

Any proposal that involved DEEP property would entail a need for property rights from the Department. Requests for temporary or permanent property rights from DEEP should be requested using DEEP's Land Management Request Application (copy attached). All such requests are reviewed by a multidisciplinary panel of DEEP staff that comprise the DEEP Property Management Review Team. After the NEPA/CEPA process has identified alternatives that avoid and minimize adverse impact, this review process can identify more specific mitigation measures for any project elements on DEEP property.

The DEEP Natural Diversity Data Base has reviewed the maps depicting the potentially affected areas surrounding the six airports to determine whether there are any records of extant populations of Federally listed endangered or threatened species or species listed by the State, pursuant to section 26-306 of the CGS, as endangered, threatened or special concern in the area. There are records of state listed species within or very close to the boundaries of these areas at five of the airports; there are no records at the Danielson Airport. Lists of these species are attached.

In addition, the Federal Threatened bat species *Myotis septentrionalis* (northern long-eared bat) may be impacted by tree-clearing activities. Additional information on this bat species can be found at: <u>Long-Eared Bat</u>. Consultation with the U.S. Fish & Wildlife Service (FWS) may be required pursuant to Section 7 of the Endangered Species Act. The FWS contact for the northern long-eared bats for New England is Susi von Oettingen: (Susi_vonOettingen@fws.gov).

Consultations with the NDDB Program should not be substitutes for onsite surveys required for environmental assessments. Depending on the extent of clearing proposed and the habitats that may be affected, surveys for some of the listed species may be required.

A report summarizing the results of surveys should include:

- survey date(s) and duration,
- site descriptions and photographs,
- list of component vascular plant and animal species within the survey area (including scientific binomials),
- data regarding population numbers and/or area occupied by State-listed species,
- detailed maps of the area surveyed including the survey route and locations of State-listed species,
- statement/resumé indicating the biologist's qualifications, and
- protection or conservation strategies and plans to protect species from project impacts.

The environmental document should include an evaluation of potential impacts to federal and state listed species as well as mitigation measures to protect these species. Based on the information included in the EIE, the NDDB will re-evaluate species impacts related to these projects.

Please be advised that this is a preliminary review and not a final determination. A more detailed review will be necessary to move forward with any subsequent environmental permit applications submitted to DEEP for the proposed project. Natural Diversity Data Base information includes all information regarding critical biological resources 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, 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 Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Existing inland wetlands and watercourses at the sites of proposed clearing should be delineated by a certified soil scientist and their functional values should be evaluated. Any clearing and access roadways should avoid regulated areas to the maximum extent practicable. Unavoidable impacts should be mitigated and buffer areas established to further protect wetlands and watercourses. The degree of impact should be quantified by acreage and a discussion of the functional values that would be lost or impaired should be included in any CEPA document. Because the CAA is a public instrumentality, any work or construction activity within inland wetland areas or watercourses will require a permit from the Inland Water Resources Division (IWRD) pursuant to section 22a-39(h) of the Connecticut General Statutes.

If there are any potential tidal wetlands at sites of proposed clearing, a qualified botanist should delineate regulated areas as defined by section 22a-29(2) of the CGS. Any regulated activity will require a permit from the Office of Long Island Sound Programs pursuant to section 22a-32 of the CGS.

Because the CAA is not a state department, institution or agency, it is not subject to flood management certification pursuant to section 25-68d of the CGS, even if activities are proposed within the 100-year flood zone on the community's Flood Insurance Rate Map.

Stormwater discharges from construction sites where one or more acres are to be disturbed, regardless of project phasing, require an NPDES permit from the Permitting & Enforcement Division. The General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (DEEP-WPED-GP-015) will cover these discharges. The construction stormwater general permit dictates separate compliance procedures for Locally Approvable projects and Locally Exempt projects (as defined in the permit). Locally Exempt construction projects, such as those performed by CAA, disturbing over 1 acre must submit a registration form and Stormwater Pollution Control Plan (SWPCP) to the Department. The SWPCP must include measures such as erosion and sediment controls and post construction stormwater management. A goal of 80 percent removal of total suspended solids from the stormwater discharge shall be used in designing and installing post-construction stormwater management measures. The general permit also requires that post-construction control measures incorporate runoff reduction practices, such as LID techniques, to meet performance standards specified in the permit. For further information, contact the division at 860-424-3018. A copy

of the general permit as well as registration forms may be downloaded at: <u>Construction</u> <u>Stormwater GP</u>.

If there are any questions concerning these comments, please contact me.

cc: Robert Hannon, DEEP/OPPD Jeff Caiola, DEEP/IWRD David Kozak, DEEP/OLISP Dawn McKay, DEEP/NDDB Graham Stevens, DEEP/OPPD New England Region Office of the Regional Administrator 12 New England Executive Park Burlington, MA 01803

Administration

OCT 2 0 2015

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Kathleen Knowles Tribal Historic Preservation Officer Mashantucket Pequot Tribal Nation 550 Trolley Line Blvd., P.O. Box 3202 Mashantucket, CT 06338

Dear Ms. Knowles:

Government-to-Government Consultation Invitation Airport Projects at six Connecticut Airports

The Federal Aviation Administration (FAA), in cooperation with airport owners and operators, is proposing projects at six Connecticut Airports, as outlined herein.

Purpose of Government-to-Government Consultation

The purpose of Government-to-Government consultation as described in the National Historic Preservation Act, Section 106, Federal Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments," and FAA's Order 1210.20, "American Indian and Alaska Native Tribal Consultation Policy and Procedures," is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA undertakings that uniquely or significantly affect Tribes.

Consultation Initiation

With this letter, the FAA is inviting the Mashantucket Pequot Tribal Nation to consult on concerns that may significantly affect your Tribe related to the proposed airport improvements. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid, mitigate, or minimize potential impact to Tribal resources and practices as project alternatives are developed and refined.

Project Information

The Connecticut Airport Authority proposes to clear trees and install lights around Bradley International Airport, Waterbury-Oxford Airport, Danielson Airport, Hartford-Brainard Airport, Windham Airport and Groton-New London Airport. Enclosed are individual plans showing the location of the areas potentially affected by the proposed clearing and lighting. More detailed plans can be found at the Airport Websites. See the web links below. All the

maps are located under the *project documents* tab. Please let us know if you would like hardcopies of any individual plans.

- http://bradleyairport.caa-analysis.com
- http://waterburyairport.caa-analysis.com
- http://hartfordairport.caa-analysis.com
- http://danielsonairport.caa-analysis.com
- http://grotonairport.caa-analysis.com
- http://windhamairport.caa-analysis.com

Confidentiality

We understand that you may have concerns regarding the confidentiality of the information on areas or resources of religious, traditional, and cultural importance to the tribe. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

FAA Contact Information

Your timely response will assist us in incorporating your concerns into project planning. For that reason, we respectfully request that you contact FAA within thirty days of your receipt of this correspondence as to your interest in Government-to-Government Consultation regarding these projects.

You may contact FAA's Regional Tribal Consultation Official, Todd Friedenberg by telephone at 781-238-7022, or by email at Todd.D.Friedenberg@faa.gov. At that time, the consultation request will be provided to the FAA, Airports Division.

Sincerely,

Amy L. Corbett Regional Administrator

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Enclosures

Federal Aviation Administration New England Region Office of the Regional Administrator 12 New England Executive Park Burlington, MA 01803

OCT 2 0 2015

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

James Quinn
Tribal Historic Preservation Officer
Mohegan Tribe
13 Crow Hill Rd.
Uncasville, CT 06382

Dear Mr. Quinn:

Government-to-Government Consultation Invitation Airport Projects at six Connecticut Airports

The Federal Aviation Administration (FAA), in cooperation with airport owners and operators, is proposing projects at six Connecticut Airports, as outlined herein.

Purpose of Government-to-Government Consultation

The purpose of Government-to-Government consultation as described in the National Historic Preservation Act, Section 106, Federal Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments," and FAA's Order 1210.20, "American Indian and Alaska Native Tribal Consultation Policy and Procedures," is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA undertakings that uniquely or significantly affect Tribes.

Consultation Initiation

With this letter, the FAA is inviting the Mohegan Tribe to consult on concerns that may significantly affect your Tribe related to the proposed airport improvements. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid, mitigate, or minimize potential impact to Tribal resources and practices as project alternatives are developed and refined.

Project Information

The Connecticut Airport Authority proposes to clear trees and install lights around Bradley International Airport, Waterbury-Oxford Airport, Danielson Airport, Hartford-Brainard Airport, Windham Airport and Groton-New London Airport. Enclosed are individual plans showing the location of the areas potentially affected by the proposed clearing and lighting. More detailed plans can be found at the Airport Websites. See the web links below. All the

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- http://grotonairport.caa-analysis.com
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Sincerely,

Amy L. Corbett Regional Administrator

any Corbit

Enclosure

Loewenstein, Jean

From: Labadia, Catherine <Catherine.Labadia@ct.gov>

Sent: Wednesday, January 04, 2017 2:27 PM

To: Loewenstein, Jean
Cc: McDonnell, Paul

Subject: RE: Environmental Assessment for Obstruction Removal and Lighting- CAA General

Aviation Airports and Bradley International Airport

Jean,

I am very embarrassed to say that I am finally getting to review items from November – my apologies. Yes, the surveys are not required if the beacons are no longer part of the project.

Thank you for providing the additional information,

Cathy

From: Loewenstein, Jean [mailto:RLoewenstein2@chacompanies.com]

Sent: Tuesday, October 18, 2016 10:55 AM

To: Labadia, Catherine **Cc:** McDonnell, Paul

Subject: FW: Environmental Assessment for Obstruction Removal and Lighting- CAA General Aviation Airports and

Bradley International Airport

Good Morning Catherine,

I am following up on my email and phone call of last week regarding the CAA's Environmental Assessments for Obstruction Removal. We would like to confirm that as the installation of beacons is no longer a part of any of these projects, the request for professional cultural resource assessment and reconnaissance surveys no longer applies.

Please contact me with any questions.

Jean

From: Loewenstein, Jean

Sent: Monday, October 10, 2016 10:22 AM

To: 'Labadia, Catherine' < Catherine. Labadia@ct.gov>

Cc: McDonnell, Paul < PMcDonnell@chacompanies.com >; Martelle Sr, Jeremy < JMartelle@chacompanies.com >

Subject: Environmental Assessment for Obstruction Removal and Lighting- CAA General Aviation Airports and Bradley

International Airport

Good Morning Catherine,

I am contacting you in regard to the above referenced projects and correspondence from your office dated November 17, 2015 (attached). In this correspondence your office indicated that while tree removal would not result in impacts to archeological sites, the installation of beacons would require the completion of professional cultural resource assessment and reconnaissance surveys prior to their installation. Since the date of this correspondence, the planned beacons have removed from all five general aviation airports and Bradly International airport and as such the projects will not require the completion of the above referenced surveys.

Should you have any questions, please do not hesitate to contact me.

Jean Loewenstein

Principal Planner

November 8, 2016

Ms. Catherine Labadia, Staff Archeologist Connecticut Department of Economic & Community Development Offices of Culture and Tourism, State Historic Preservation Office One Constitution Plaza-2nd Floor Hartford, CT. 06103

RE: Connecticut Airport Authority - Obstruction Removal at various Airports

Dear Ms. Labadia:

This is in regards to past correspondence dated September 30, 2015 to your office as it relates to historic and archeological resources. In your November 17, 2015 response SHPO identified no issues with tree removal but did identify a potential concern as it relates to the installation of beacons. Past correspondence is attached for your convenience.

Since that time the installation of beacons has been eliminated from consideration at all the above referenced airports. After review of the relevant information, the FAA issues a Section 106 Finding of No Adverse Effects to Historic Properties.

If you have any questions, please feel free to contact me at 781-238-7613 or <u>richard.doucette@faa.gov</u> or the CAA Director of Engineering Robert Bruno at (860) 254-5516 or <u>rbruno@ctairports.org</u>

Sincerely,

Richard P. Doucette

Manager of Environmental Programs

FAA New England Region

Enclosures

Cc: Colin Goegel, Project Manager, CAA

Robert Bruno, Director of Planning Engineering and Environmental, CAA

Kurt Sendlein, Airport Manager



Department of Economic and Community Development



November 17, 2015

Ms. Jean Lowenstein CHA, Inc. 3 Winners Circle Albany, NY 12205

Subject: Connecticut Airport Authority NEPA Environmental Assessment for Obstruction

Removal and Lighting at

Hartford-Brainard Airport, Hartford (CHA 29067)

Danielson Airport, Killingly (CHA 29067) Waterford-Oxford Airport, Oxford (CHA 29067) Windham Airport, Windham (CHA 29067)

Bradley International Airport, Windsor Locks (CHA 29055)

Dear Ms. Lowenstein:

The State Historic Preservation Office (SHPO) has reviewed your request for our comments regarding potential effects to historic properties for the referenced project. The existing airports referenced above have been identified as needing tree removal and pole mounted obstruction beacons. The review request currently exceeds the staffing available at this office. A preliminary review completed by this office identified archeological sites and/or historic districts within or in close proximity to each of the identified facilities. SHPO understands that the tree removal will be done with as little ground disturbance as possible, without grubbing and grading. As a result, this office considers the potential impact to archeological sites from obstruction removal to be minimal, if any.

SHPO is concerned, however, with the effects of the proposed beacons on archeological sites and historic buildings. Several of the proposed beacons are located in areas where archeological sites have been reported, as well as historic buildings or districts. We are therefore requesting that a professional cultural resources assessment and reconnaissance survey be completed prior to construction of any beacons. The survey should take into consideration potential indirect impacts on structures older than fifty years that may be eligible for listing on the National Register of Historic Places. An archeological assessment should determine the appropriate level of investigation based on sufficient research and field visits. Subsurface testing for archeological resources, if warranted, should assess all areas of anticipated ground disturbance that are considered to have a moderate/high sensitivity for containing significant archeological deposits. All work should be in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and no construction or other project-related ground disturbance should be initiated until SHPO has had an opportunity to review and comment upon the requested survey.

The SHPO appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act, as amended. For additional information, please contact me at (860) 256-2764 or catherine.labadia@ct.gov.

Sincerely.

Catherine Labadia

Deputy State Historic Preservation Officer



September 30, 2015

Ms. Catherine Labadia, Staff Archeologist
Connecticut Department of Economic & Community Development
Offices of Culture and Tourism
State Historic Preservation Office
One Constitution Plaza-2nd Floor
Hartford, CT. 06103

RE: Connecticut Airport Authority- Bradley International Airport

NEPA Environmental Assessment (and CEPA EIE) for Obstruction Removal &

Lighting

CHA Project No.: 29055

Dear Ms. Labadia:

Thank you for your recent assistance regarding submittal requirements to the Connecticut SHPO. On behalf of the Connecticut Airport Authority, CHA is submitting a request for review of the above referenced project located at Bradley International Airport and vicinity, in the Town of Windsor Locks, Hartford County Connecticut.

The Connecticut Airport Authority (CAA) previously conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential impacts of tree removal, and selective clearing or installation of polemounted red obstruction beacons in areas that contain airspace obstructions. Objects that penetrate these surfaces are classified as airspace obstructions, and should be removed to safely accommodate approaching and departing aircraft.

To accomplish this, the CAA is conducting an NEPA Environmental Assessment (EA) and CEPA Environmental Impact Evaluation (EIE) to identify affected properties and any potential environmental issues of removing trees and/or installing obstruction lights. No actual tree removal or construction activities are pending at this time; just the required evaluation. Tree removal or obstruction light installation will be accomplished under a future project. Maps outlining the potential location for tree removal and possible siting locations for the beacons are enclosed and can also be found at the project website. The web address is as follows: http://bradleyairport.caa-analysis.com/.

As part of this evaluation of potential impacts we are requesting that SHPO review the draft mapping of potential tree removal areas and beacon installation locations as it relates to historic and archeological resources so that potential impacts may be considered in future actions. It should also be noted that when tree removal does occur it will generally include clearing, without grubbing or grading and will be implemented with minimal soil disturbance (e.g., removal to trees, with retention stumps and undergrowth).

Thank you for your prompt attention to this matter. If you have any questions, please feel free to contact me at 518-453-8771 or <u>jloewenstein@chacompanies.com</u> or the CAA Director of Engineering Robert Bruno at (860) 254-5516 or <u>rbruno@ctairports.org</u>.

Sincerely,

Jean Loewenstein, AICP

Jean Louvendein

Senior Planner

JL/sc

Enc.

Cc: Colin Goegel, Project Manager, CAA
Robert Bruno, Director of Planning Engineering and Environmental, CAA
Rollin Tebbits, Airport Manager



CHA ~ *design/construction solutions*

Office: (518) 453-8771

jloewenstein@chacompanies.com

www.chacompanies.com



Responsibly Improving the World We Live In





Wildlife Division • Sessions Woods WMA • Post Office Box 1550 • Burlington, CT 06013

October 2, 2016

Kimberly Peace
Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101
kpeace@hoyletanner.com

Re: Obstruction Removal at Bradley International Airport in Windsor Locks, Connecticut NDDB Review 201607290

Dear Ms. Peace:

Materials pertaining to the above project were forwarded to me for review by the DEEP Natural Diversity Database (NDDB). According to their records, Connecticut Airport Authority (CAA) has proposed tree removal activities within wetlands, sand barren habitat (a Connecticut Critical Habitat) and in areas where State-listed invertebrates have been documented.

Sand/pine barren habitat

Very little information was provided on the vegetative composition of the upland areas proposed for removal. This is problematic given that the State Threatened pine barrens zanclognatha (Zanclognatha martha), a moth that occurs only in sand/pitch pine barrens (much of the area at the end of Runway 6 is mapped as sand barren habitat), has been documented in areas proposed for clearing. The pine barrens zanclognatha feeds on pitch pine (Pinus rigida) and scrub oak (Quercus ilicifolia) and overwinters on the forest floor. Photos provided in the NDDB application materials show some pitch pine around Runway 6. While this moth may tolerate the cutting of trees, it would be negatively impacted by the complete removal of woody vegetation, stump grinding, amending soils with topsoil, lime, fertilizers and subsequent seeding of thirteen acres as proposed. These activities would not only destroy the habitat for this species on airport property, it would negatively impact sand barren habitat, one of Connecticut's Critical Habitats. In addition to pine barrens zanclognatha, the big sand tiger beetle (Cicindela formosa generosa), a State Species of Special Concern, has been documented utilizing this area of the airport and would be negatively impacted by the addition of top soil, wood chips, lime or fertilizers, or seeding with turf grasses the existing sandy soils.

To remove the vegetative obstructions at the end of Runway 6 and not negatively impact State-listed species and Critical Habitats, the following activities should be substituted:

- mature trees can be removed but young (short) pitch pines and scrub oaks be spared to provide habitat;
- cut trees should be removed from site and not chipped on-site since chips left on sandy soils change the
 microclimate of the soils (introducing slow decaying organics and moisture);
- a plan that includes a schedule and methods for maintaining the areas at the end of Runway 6 in an
 early successional state, should be crafted and implemented to ensure that sand/pitch pine barren
 habitat is not destroyed on airport property. Please forward a copy of this plan to the Wildlife Division
 (laura.saucier@ct.gov) for review and comment.

Wetland habitat

Stony Brook, a sensitive watershed that has the Federal and State Endangered dwarf wedgemussel (*Alasmidonta heterodon*), State Endangered brook floater (*Alasmidonta varicosa*), and State Species of Special Concern

eastern pondmussel (*Ligumia nasuta*) is located north of Runway 15. Any activities that degrade the water quality of Stony Brook will negatively impact these freshwater mussels. It is not clear how close the proposed vegetation removal activities will occur from Stony Brook but these areas do ultimately drain into the brook therefore have the potential to negatively affect these mussels if work is not conducted in such a way to protect downslope water quality.

To remove the vegetative obstructions at the end of Runway 15 and not negatively impact State-listed species, we recommend the following considerations:

- no vegetation removal within 100-feet of Stony Brook;
- no use of fertilizers or lime in areas adjacent to wetland soils;
- silt fences should be removed as soon as the project is completed and soils are stabilized to limit impediments to amphibian and reptile migration;
- your DEEP Permit Analyst should include the most stringent water quality protection measures that can be imposed for this site and project to ensure that the water quality in the Stony Brook is not negatively impacted.

Birds

If work is conducted between 1 September and 1 May, potential negative impacts to state-listed bird species will be minimized.

Natural Diversity Database information includes all information regarding critical biological resources 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, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Database should not be substituted for on-site surveys required for environmental assessments. 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 as it becomes available.

Please be advised that this is a preliminary review and not a final determination. Please forward any protection strategies for the above mentioned Federal and State-listed species or modifications pertaining to this project based on this natural resource information. If you have additional questions, please feel free to contact me at Laura.Saucier@ct.gov, please reference the NDDB number in the subject line of this letter in any future correspondence.

Sincerely,

Laura Saucier Wildlife Biologist

Laur Su

cc. N. DeBarros



Raul Pino, M.D., M.P.H. Commissioner



Dannel P. Malloy Governor Nancy Wyman Lt. Governor

Drinking Water Section

December 2, 2016

Mr. Colin Goegel Supervising Engineer Connecticut Airport Authority 334 Ella Grasso Turnpike, Suite 160 Windsor Locks, CT 06096

Re: Notice of EIE for the Connecticut Airport Authority (CAA)—Off-Airport Tree Obstruction Removal at the Bradley International Airport

Dear Mr. Goegel:

The Drinking Water Section of the Department of Public Health has reviewed the above-mentioned project for potential impacts to any sources of public drinking water supply. This project does not appear to be in a public water supply source water area; therefore, the Drinking Water Section has no comments at this time.

Sincerely,

Patricia Bisacky Environmental Analyst 3

Patrin Groung

Drinking Water Section



STATE OF CONNECTICUT



OFFICE OF POLICY AND MANAGEMENT

DIVISION OF TRANSPORTATION, CONSERVATION, AND DEVELOPMENT POLICY AND PLANNING

December 2, 2016

Mr. Colin Goegel, Supervising Engineer Connecticut Airport Authority 334 Ella Grasso Turnpike, Suite 160 Windsor Locks, CT 06096

Re: Environmental Impact Evaluation: Connecticut Airport Authority (CAA) – Off-Airport Tree Obstruction Removal at the Bradley International Airport

Dear Mr. Goegel:

The Office of Policy and Management (OPM) has reviewed CAA's Environmental Impact Evaluation for Off-Airport Tree Obstruction Removal at the Bradley International Airport and submits the following comments:

• In a well-publicized 1992 US District Court case, owners of property in Greenwich adjacent to New York's Westchester Airport did not consent to having trees removed from their properties. In its decision, the court apparently only authorized the removal of trees that would require excessive trimming:

http://law.justia.com/cases/federal/district-courts/FSupp/793/1195/1369066/

This EIE, however, does not appear to consider the possibility of trimming trees in locations where property owners might prefer such trimming over removal, and the amount of trimming required would not be excessive or jeopardize the survival of the trees. An approach using tree trimming when possible as an alternative to tree removal would seem to accomplish the agency's goal while reducing the impact of obstruction removal. If such an approach was found to be appropriate in Greenwich, it should also be considered for trees owned by neighbors of Bradley Airport and other CT airports. Such an option should have been identified and evaluated in the EA/EIE.

• In addition to the proposed obstruction removal plan not considering trimming as an alternative to the removal of trees in the near term, the plan does not evaluate proactive tree trimming as a means to reduce or avoid the need for future removals. The EIE's discussion of tree removal areas includes the following:

Runway 33: Includes proposed removal to a small off-airport area of homes. The off-airport obstruction are not currently penetrating the Threshold Surface, but are anticipated to in the next few years with additional tree growth. Thus, Runway 33 is not a priority location for removal, but was included in the EA recommendation as future removal are likely.

That statement seems to provide even further justification for a tree trimming approach. An airport-funded trimming program might not only limit the impact of current

Phone: (860) 418-6323 Fax: (860) 418-6493 450 Capitol Avenue, MS# 54ORG, Hartford, Connecticut 06106-1379 obstruction removals; it might also reduce the scope of future removals and reduce the number and the difficulty of avigation easements. The EIE mentions a concern about avigation easements preventing or delaying project completion.

• The maps provided in Appendix A are confusing and make it difficult to distinguish which specific removals are being considered under the Modified Obstruction Removal Alternative (the preferred alternative). Page 3-5 of the EA/EIE states:

The figures in Appendix A illustrate the Modified Removal Alternative using shading. Yellow shading includes general tree clearing areas; green shading illustrates reduced or selective tree removal of individual tree obstructions identified during the design process – selective thinning.

Some of the maps included in Appendix A (eg. Runways 6 and 33) identify surface obstructions (blue dots) within general tree clearing areas (yellow hatching). Are we to assume that all trees will be removed from this parcel, or just the blue dots? If only the blue dots are obstructions to be removed, why does the map show general tree clearing across a larger area?

Given the technical capabilities and accuracy of GIS mapping, OPM had expected the EIE to include more detailed mapping, such as a map showing the height of the Approach and Threshold Surfaces above the ground across the areas where CAA proposes to remove obstructions. This would provide property owners and the public with more detailed information regarding what's being proposed, and what options are available, such as trimming. More detailed mapping may also foster better planning between homeowners and the CAA and create opportunities to limit future conflicts through a variety of methods such as pre-emptive trimming, constraints on planting certain tree species in critical areas, and other options.

CT ECO currently provides <u>ARC GIS</u> elevation data that would allow such a map to show the height to the Approach and Threshold Surfaces with relatively good precision. Data that are expected to be available in early 2017 will allow for even greater precision. Providing such mapping would enable property owners and others to understand the proposed impacts to their property and the broader neighborhood and help in considering best available options.

Section 3.1.2 of the EA/EIE states:

For tree removals on residential and other private parcels, permanent 'avigation' easements are typically required..... These easements involve appraisals, negotiation with the individual property owner, and acquisition of the perpetual rights to remove existing tree obstructions and prevent future obstructions.

What is the process for FAA or CAA to gain access to a property if there is no pre-existing easement or other such agreement and an owner refuses an easement to allow for such work to be conducted?

According to an article published by the International Right of Way Association, the owner of a tree is likely to value it more than an agency is likely to pay in compensation for its removal:

https://www.irwaonline.org/eweb/upload/web mar apr12 ValuationAvigation.pdf

What method does FAA/CAA use for their appraisals and what is the process for property owners to dispute the level of compensation they receive for the removal of trees?

• CAA mailed letters dated 6/31/2015 to notify affected property owners of the proposed project (see Appendix B), with a deadline for comments on 7/17/2015 — a little more than two weeks later. Did CAA conduct any further outreach or notification for property owners? Did CAA take any steps to ensure that the notification was received by the intended party?

The letters only indicate that field personnel would conduct assessments and might require access to the property. The letters did not explain the review process, the criteria for the assessment, or the process for submitting comments. In addition, the letter contains this statement:

No actual tree removal or construction activities are pending at this time; just the required evaluation.

It does not appear that owners of all properties having potential obstructions (i.e. blue, magenta, or orange dots on the maps) were notified. Since that stage of the process was to evaluate properties that could potentially be impacted, it would seem that a broader segment of area property owners and other potentially affected people should have been notified. It is important that people receive a clear explanation of what is proposed and the criteria being used at each step of such a process so that they can provide timely feedback on proposed removals or other activities.

Thank you for the opportunity to respond to this EIE and please feel free to contact me if you have any questions.

Sincerely:

Bruce Wittchen

Office of Policy & Management 450 Capitol Ave, MS# 54ORG

Hartford, CT 06106 (860) 418-6323

bruce.wittchen@ct.gov

ENVIRON ENVIRON

STATE OF CONNECTICUT

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

To: Colin Goegel - Supervising Engineer

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

From: David J. Fox - Senior Environmental Analyst Telephone: 860-424-4111

Date: December 2, 2016 **E-Mail:** david.fox@ct.gov

Subject: Bradley Airport Obstruction Removal Project

The Department of Energy & Environmental Protection (DEEP) has reviewed the Environmental Assessment (EA)/Environmental Impact Evaluation (EIE) prepared by the Connecticut Airport Authority (CAA) for proposed obstruction removal in the area surrounding Bradley Airport. The following comments are submitted for your consideration.

The Department recognizes that the need to remove obstructions to the airspace surrounding airports to ensure their safe operation will require clearing of trees beyond the airport. We also understand the CAA's challenge in striking the correct balance between public safety and resource impacts in developing a plan to remove obstructions. Our comments on the document focus on recommending measures to consider to further minimize impacts.

The document is titled an Environmental Impact Evaluation and was noticed in the Environmental Monitor as a Connecticut Environmental Policy Act (CEPA) document. However, section 15-120bb of the Connecticut General Statutes (CGS), states that the CAA "shall not be construed to be a department, institution or agency of the state." Since CEPA applies to state departments, institutions or agencies, it appears that CAA is exempt from its requirements.

Normally during NEPA/CEPA review, the Department would identify issues to be resolved and additional information required during subsequent permitting. However, the application for the Inland Wetlands and Watercourses Permit has already been submitted. A preliminary review by the Land & Water Resources Division (LWRD) has revealed a number of discrepancies between the application and the Environmental Assessment. For example, the application proposes use of swamp matting and removal of trees from the wetlands, in contradiction to the discussion on page 5-15. As the permit review progresses, the LWRD will contact the CAA for any clarifications or additional information required for permitting.

Although not discussed in the document, you explained that the permit application is limited to on-airport activities, which are exempt from NEPA review. Off-airport tree removal will be a separate project following NEPA review. The protocols and mitigation measures that are incorporated into the on-airport project permit can be used as templates in developing the subsequent off-airport obstruction removal application. We note that on-airport tree removal is also depicted to occur at the ends of Runways 19 and 24, but is not included in the permit application.

In the section on Rare Species, page 4-6 states that species identified by the Natural Diversity Data Base were listed in a response letter in Appendix C. The letter, our scoping comments for all six CAA airports dated July 17, 2015, was not in the Appendix. A subsequent review of the Bradley project resulted in an October 2, 2016 response letter (attached) recommending mitigation measures to protect sand barren habitat and listed mussels in Stony Brook. A recent site visit resulted in proposed modification to the project at the end of Runway 6 to remove large trees but retain smaller pitch pines and scrub oaks, to remove downed trees without chipping, and to maintain the sand/pitch pine barren in an early successional state. Details of the plan are to be submitted to the NDDB for a final review.

With regard to cave bats and breeding birds, page 5-9 states: "Based on other airport obstruction removal projects, direct impacts to these species may be avoided via use of seasonal restrictions (e.g., no tree cutting from May through August when these species are known to breed in New England). As such, significant impacts to critical species is not anticipated. This conclusion will be reviewed by USFWS and CT DEEP to determine if biological surveys and potential mitigation are necessary." In order to assure protection of these species, the Department recommends that this restriction be extended: from April 1 through September 30.

Over the years, the Department and ConnDOT had worked together to complete various projects and conduct operations at the airport in a manner that protected the biological diversity at Bradley Airport. DEEP anticipates that CAA, as the successor entity, will honor all legal commitments pursuant to statutory requirements made by their predecessor. We look forward to continuing collaboration with CAA toward that goal.

Stormwater discharges from construction sites where one or more acres are to be disturbed, regardless of project phasing, require an NPDES permit from the Permitting & Enforcement Division. The *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEEP-WPED-GP-015) will cover these discharges. The construction stormwater general permit dictates separate compliance procedures for Locally Approvable projects and Locally Exempt projects (as defined in the permit). Locally Exempt construction projects, such as those undertaken by CAA, disturbing over 1 acre must submit a registration form and Stormwater Pollution Control Plan (SWPCP) to the Department. The SWPCP must include measures such as erosion and sediment controls and post construction stormwater management. The construction stormwater general permit registrations can now be filed electronically through DEEP's e-Filing system known as ezFile. Additional information can be found on-line at: Construction Stormwater GP.

Thank you for the opportunity to review this proposal. If there are any questions concerning these comments, please contact me.

cc: Robin Blum, DEEP/NDDB Linda Brunza, DEEP/IWRD Jenny Dickson, DEEP/WD Robert Gilmore, DEEP/LWRD Robert Hannon, DEEP/OPPD Laura Saucier, DEEP/NDDB



ALBERTO HEREDIA 20 LARCH DR WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 20 LARCH DR

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

To accomplish this, the CAA is conducting an Environmental Assessment (EA) under federal and state procedures to identify affected properties and any potential environmental issues of removing trees and/or installing a pole-mounted red obstruction lights. No actual tree removal or construction activities are pending at this time; just the required evaluation. A map of the existing tree obstruction areas is included. As more information becomes available it will be posted on the following website: http://bradleyairport.caa-analysis.com/.

Your property has been identified as potentially having an obstruction that penetrates the federally protected airspace. As a result of the possible obstruction, the study requires a CAA contractor, Clough Harbour Associates (CHA) to conduct visual reviews of the subject areas. In many instances the field personnel will conduct their review from the public right-of-way; however in certain instances personnel may find it necessary to briefly enter private property to observe trees and site conditions in the summer and fall of 2015. These personnel will all carry proper identification.

Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



ALFRED LOVETT JR & ANDREA SAILES 58 OLD COUNTY ROAD WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 58 OLD COUNTY ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



ALLIANCE ENERGY CORP 36 EAST INDUSTRIAL ROAD BRANFORD, CT 06405

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting Affected Property Address: 107 ELLA T GRASSO TURNPIKE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

To accomplish this, the CAA is conducting an Environmental Assessment (EA) under federal and state procedures to identify affected properties and any potential environmental issues of removing trees and/or installing a pole-mounted red obstruction lights. No actual tree removal or construction activities are pending at this time; just the required evaluation. A map of the existing tree obstruction areas is included. As more information becomes available it will be posted on the following website: http://bradleyairport.caa-analysis.com/.

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Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



ANDREA WAGNER 1240 NORTH GRAND STREET WEST SUFFIELD, CT 06093

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 69 OLD COUNTY ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



ANGELO DALEO JR 8 JACKSON STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 8 JACKSON STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



BARBARA ROSBORG 1A1 CONCORDE WAY WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 1A1 CONCORDE WAY #A1

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



BRIAN & BONNIE CHASE 59 CHESTNUT DR WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 59 CHESTNUT DR

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



BRIAN KEELER 70 POPLAR DR WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 70 POPLAR DR

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



CHRISTINE GREENE & PAUL A MARTINEAU 529 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 529 ASH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



CONNECTICUT AIRPORT AUTHORITY 2800 BERLIN TPKE NEWINGTON, CT 06111

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 150 EAST GRANBY RD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



DAVID CARTER, JEFFREY M & POIRIER P C 12 JACKSON STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 12 JACKSON STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



DAVID VIVEIROS 536 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 536 DENSLOW STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



GERALD CYR 9 LARCH DRIVE EAST GRANBY, CT 06026

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 9 LARCH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



GIRARDIN MOULDING INC PO BOX 0577 WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting Affected Property Addresses: 567 HALFWAY HOUSE ROAD 571 HALFWAY HOUSE ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



GOSSELIN FAMILY LIMITED PARTNERSHIP 34 OLD COUNTY ROAD WINDSOR LOCKS. CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 34 OLD COUNTY ROAD

Dear Property Owner:

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Sincerely,



HARNEDY C B EST OF W/B HARNEDY CONSERV & 2 JACKSON STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 2 JACKSON STREET

Dear Property Owner:

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Sincerely,



JINESH LLC 440 BEDFORD STREET LEXINGTON, MA 02420

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 4 LOTEN DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



JOHN F & MARY ANN MILISKI 14 LARCH DRIVE EAST GRANBY, CT 06026

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 14 LARCH DRIVE

Dear Property Owner:

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JOHN LATONIE 12 LARCH DRIVE EAST GRANBY, CT 06026

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 12 LARCH DRIVE

Dear Property Owner:

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Sincerely,



JORGE FANDINO 10 LARCH DRIVE EAST GRANBY, CT 06026

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 10 LARCH DRIVE

Dear Property Owner:

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Sincerely,



JOSEPH F DEWHIRST, TRUSTEE C/O JOHN R CURRAN 840 SOUTH STREET FAIRFIELD, CT 06824

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 840 SOUTH ST

Dear Property Owner:

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Sincerely,



JOSEPH M & BERNADETTE SAVAGE 497 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 497 DENSLOW STREET

Dear Property Owner:

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Sincerely,



KAREN BRAY & C GAITHER 540 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 540 ASH DRIVE

Dear Property Owner:

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Sincerely,



KATHRYN LISS & MATTHEW HENSEL 9 PINE DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 9 PINE DRIVE

Dear Property Owner:

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Sincerely,



KEVIN & DIANE POMEROY 6 JACKSON STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 6 JACKSON STREET

Dear Property Owner:

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To accomplish this, the CAA is conducting an Environmental Assessment (EA) under federal and state procedures to identify affected properties and any potential environmental issues of removing trees and/or installing a pole-mounted red obstruction lights. No actual tree removal or construction activities are pending at this time; just the required evaluation. A map of the existing tree obstruction areas is included. As more information becomes available it will be posted on the following website: http://bradleyairport.caa-analysis.com/.

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Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



KEVIN T & STEPHANIE MORIARTY 13 PINE DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 13 PINE DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



LEE SWAZEY 530 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 530 ASH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



LEWIS PULTZ 535 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 535 ASH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



LINDSAY-CONNECTICUT LLC 3450 COUNTY ROAD 101 MINNETONKA, MN 55345

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 565 HALFWAY HOUSE ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



LORRAINE & ROBERT GOSSELIN 6566 35TH PLACE VERO BEACH, FL 32966

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 48 OLD COUNTY ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



MARILYN DION 511 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 511 DENSLOW STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



MARK ROGER & NANCY FISHER-ROGER 541 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 541 ASH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



MEGAN FEARON 530 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 530 DENSLOW STREET

Dear Property Owner:

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Sincerely,



MICHAEL J & ANTOINETTE BATES 54 OLD COUNTY ROAD WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 54 OLD COUNTY ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



MICHAEL LATONIE 120 EAST GRANBY RD WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 120 EAST GRANBY RD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



MICHAEL LATONIE 69 CHESTNUT DRIVE WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 69 CHESTNUT DR

Dear Property Owner:

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Sincerely,



MICHAEL LATONIE 69 CHESTNUT DRIVE WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 63 CHESTNUT DR

Dear Property Owner:

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Sincerely,



RICHARD OLKOWSKI 21 VADNAIS DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 21 VADNAIS DRIVE

Dear Property Owner:

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Sincerely,



RICHARD THOMAS 493 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 493 DENSLOW STREET

Dear Property Owner:

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Sincerely,



ROBERT & MARGARET CHRISTENSEN 1 CONCORDE WAY WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 1 CONCORDE WAY

Dear Property Owner:

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Sincerely,



ROBERT E & FRANCES URBANK 505 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 505 DENSLOW STREET

Dear Property Owner:

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Sincerely,



ROSARIO LANTIERI & DEBORAH STEGMAIER 517 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 517 DENSLOW STREET

Dear Property Owner:

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Sincerely,



RYAN & KRISTEN MALONE 520 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 520 DENSLOW STREET

Dear Property Owner:

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Sincerely,



SCOTT, RAYMOND & SHIRLEY ANDERSON, TRUSTEE 66 CHESTNUT DR WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 66 CHESTNUT DR

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Should you have any questions or concerns regarding the field observation, please contact Jean Loewenstein with CHA. She can be reached at (518) 453-8771 or via email at rloewenstein2@chacompanies.com.

Sincerely,



SEVEN ELEVEN INC 1722 ROUTH STREET STE#1000 DALLAS, TX 75201-2506

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 535 HALFWAY HOUSE ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



SHARON MCCARTHY 523 ASH DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 523 ASH DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



SPONZO & ASSOCIATES LLC P O BOX 387 WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 73 OLD COUNTY ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



STATE OF CONNECTICUT HIGHWAY DEPARTMENT WETHERSFIELD, CT 00000

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting Affected Property Address: BRADLEY FIELD CONNECTOR

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



STEPHEN J & ANGELINA WORONECKI 501 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 501 DENSLOW STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



STEVEN & AMBER HODSKA 98 HEMLOCK RD WINDSOR, CT 06095

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 98 HEMLOCK RD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



THERESA SHEEHAN 524 DENSLOW STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 524 DENSLOW STREET

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



TOWN OF SUFFIELD 83 MOUNTAIN ROAD SUFFIELD, CT 06078

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 1100 SOUTH ST

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



TOWN OF WINDSOR LOCKS 50 CHURCH STREET WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: HALFWAY HOUSE ROAD

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



TURBINE ENGINE SERVICES CORPORATION 15600 JOHN F KENNEDY BLVD HOUSTON, TX 77032

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: HALFWAY HOUSE ROAD

Dear Property Owner:

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Sincerely,



VANGUARD REAL ESTATE HOLDINGS LLC 600 CORPORATE PARK DRIVE ST LOUIS, MO 63105

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 1 NATIONAL DRIVE

Dear Property Owner:

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Sincerely,



WA II LLC 204 WEST NEWBERRY RD BLOOMFIELD, CT 06002

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Addresses: 24 LARCH DR

28 LARCH DR 32 LARCH DR

Dear Property Owner:

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Sincerely,



WALTER R OFSURYK 11 LARCH DRIVE EAST GRANBY, CT 06026

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Addresses: 11 LARCH DRIVE 15 LARCH DRIVE

Dear Property Owner:

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Sincerely,



WARREN JUBREY & KIMBERLY HAGUE 10 PALM DRIVE WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 10 PALM DRIVE

Dear Property Owner:

The Connecticut Airport Authority (CAA) has conducted a detailed study to evaluate existing obstructions that penetrate the federally protected airspace. These obstructions are primarily trees located near runway ends or located on small hills surrounding the Airport. As a follow-up study, the CAA is reviewing the potential environmental impacts of tree removal, and selective clearing and/or thinning in areas that contain airspace obstructions.

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Sincerely,



YANIK CONCORDE WAY LLC 2 CONCORDE WAY WINDSOR LOCKS, CT 06096

RE: Bradley International Airport

Environmental Assessment for Obstruction Removal and Lighting

Affected Property Address: 2 CONCORDE WAY #1

Dear Property Owner:

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Sincerely,

APPENDIX C



Connecticut Airport Authority - Bradley Airport

IPaC Trust Resource Report

Generated September 17, 2015 02:06 PM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

Connecticut Airport Authority - Bradley Airport

PROJECT CODE

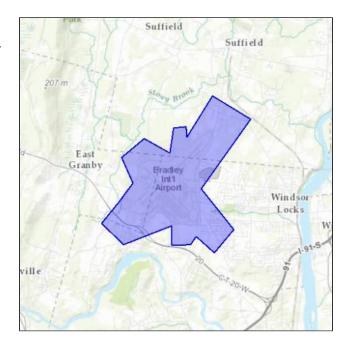
4J6YH-4ENDB-AAXEQ-GINKH-4RHU6I

LOCATION

Hartford County, Connecticut

DESCRIPTION

Environmental Assessment for Obstruction Removal and Lighting



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300 Concord, NH 03301-5094 (603) 223-2541

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the <u>Endangered Species Program</u> and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under <u>Section 7</u> of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Clams

Dwarf Wedgemussel Alasmidonta heterodon

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=F029

Mammals

Northern Long-eared Bat Myotis septentrionalis

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the <u>Migratory Bird Treaty Act</u> and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Bittern Botaurus lentiginosus

Bird of conservation concern

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3

Bald Eagle Haliaeetus leucocephalus

Bird of conservation concern

Year-round

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Black-billed Cuckoo Coccyzus erythropthalmus

Bird of conservation concern

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI

Blue-winged Warbler Vermivora pinus

Bird of conservation concern

Season: Breeding

Canada Warbler Wilsonia canadensis

Bird of conservation concern

Season: Breeding

Fox Sparrow Passerella iliaca

Bird of conservation concern

Season: Wintering

Least Bittern Ixobrychus exilis

Bird of conservation concern

Season: Breeding

Peregrine Falcon Falco peregrinus

Bird of conservation concern

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Pied-billed Grebe Podilymbus podiceps

Bird of conservation concern

Year-round

Prairie Warbler Dendroica discolor

Bird of conservation concern

Season: Breeding

Purple Sandpiper Calidris maritima

Bird of conservation concern

Season: Wintering

Short-eared Owl Asio flammeus

Bird of conservation concern

Season: Wintering

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Upland Sandpiper Bartramia longicauda

Bird of conservation concern

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC

Wood Thrush Hylocichla mustelina

Season: Breeding

Worm Eating Warbler Helmitheros vermivorum

Season: Breeding

Bird of conservation concern

Bird of conservation concern

Refuges

Any activity proposed on <u>National Wildlife Refuge</u> lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate <u>U.S. Army Corps of Engineers District</u>.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.



Federal Aviation Administration New England Region 12 New England Executive Park Burlington, MA 01803

December 6, 2016

Thomas Chapman U.S. Fish and Wildlife Service New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301

Dear. Mr. Chapman:

The Connecticut Airport Authority proposes the removal of trees in the vicinity of several airports, in an effort to promote safe use of these airports. The Federal Aviation Administration may fund these tree removal projects.

The FAA has determined the tree clearing project is unlikely to adversely affect the northern long-eared bat (*Myotis septentrionalis*), and submits the attached Streamline Consultation Forms for USFWS review.

Please do not hesitate to contact this office if you have any questions on this matter. Thank you.

Sincerely,

Richard P. Doucette Manager of Environmental Programs FAA New England Region, Airports Division

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if re-initiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

YES NO **Information to Determine 4(d) Rule Compliance:** 1. Does the project occur wholly outside of the WNS Zone¹? \boxtimes 2. Have you contacted the appropriate agency² to determine if your project is near \boxtimes known hibernacula or maternity roost trees? Could the project disturb hibernating NLEBs in a known hibernaculum? П \boxtimes Could the project alter the entrance or interior environment of a known \boxtimes hibernaculum? 5. Does the project remove any trees within 0.25 miles of a known hibernaculum at П X any time of year? 6. Would the project cut or destroy known occupied maternity roost trees, or any Xother trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.

You are eligible to use this form if you have answered yes to question #1 <u>or</u> yes to question #2 <u>and</u> no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant³

Mr. Richard Doucette, Environmental Program Manager, Airports Division

USDOT Federal Aviation Administration – New England Region

(781) 238-7613

richard.doucette@faa.gov

 $^{^1\,}http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf$

² See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html

³ If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

Project Name: Bradley International Airport Tree Obstruction Removal

Project Location: Windsor Locks, CT 41° 56' 21" N 072° 41'00" W

Basic Project Description (provide narrative below or attach additional information):

The proposed action includes removal of trees on and surrounding the Bradley International Airport that penetrate the federally-defined airport airspace. The project included an alternative evaluation to determine the critical areas of tree removal necessary to maintain a safe operating environment. The proposed removal includes both tree clearing and selective thinning of tall trees, with retention of stumps and undergrowth. For the purposes of this form, all areas of removal will be included in the estimate of 'forest conversion'. The tree obstructions removal at the Bradley International Airport includes approximately 100 acres. These estimates are conservative; it is likely the final acreage of forest conversion will be less.

All removals will occur between December and March; there is no forest conversion between April through October or June through July.

All removals are for safety purposes and to satisfy Federal Aviation Administration (FAA) standards. None of these removals are for the purposes of timber harvest.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?		\boxtimes
Does the project occur within 150 feet of a known maternity roost tree?		\boxtimes
Does the project include forest conversion ⁴ ? (if yes, report acreage below)	\boxtimes	
Estimated total acres of forest conversion	imated total acres of forest conversion 100 acres	
If known, estimated acres ⁵ of forest conversion from April 1 to October 31	0 acres	
If known, estimated acres of forest conversion from June 1 to July 31 ⁶	0 ac	eres
Does the project include timber harvest? (if yes, report acreage below)		\boxtimes
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)		\boxtimes
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)		\boxtimes
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

⁴ Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

⁵ If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

⁶ If the activity includes tree clearing in June and July, also include those acreage in April to October.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature:	Date Submitted:

APPENDIX D



Bradley International Airport Environmental Assessment and Environmental Impact Evaluation for Obstruction Removal
Notice of Public Information Meeting

NOTICE IS HEREBY GIVEN that the Connecticut Airport Authority (CAA) will be holding a Public Information Meeting for the Bradley International Airport Environmental Assessment and Environmental Impact Evaluation for Obstruction Removal. At this meeting, information on the overall project and the study's findings, including the Preferred Alternative, will be presented. The meeting will be held on Wednesday, November 9 at the Windsor Locks High School in the School Cafeteria (50 South Elm Street. Windsor Locks, CT. 06096), doors open at 6:30PM with the presentation beginning at 7:00PM. The Environmental Assessment for Tree Clearing and Lighting will be available at http://bradleyairport.caa-analysis.com/.

Hartford Courant media group

AFFIDAVIT OF PUBLICATION

State of Connecticut

November 03, 2016

County of Hartford

I, Kayla Medeiros, do solemnly swear that I am a Sales Assistant 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:

10/20/2016

119.89;

10/20/2016

10.00;

11/03/2016

119.89

In the Amount of:

\$249.78 Jean Loewenstein - CU00567516 4533578 Full Run

Sales Assistant,
Kayla Mede

Kayla Medeiros

Subscribed and sworn before me on November 03, 2016

Notary Public

RENEE N. JANES

NOTARY PUBLIC

MY COMMISSION EXPIRES MAR. 31, 2018

Hartford Courant •••• media group

Bradley international Airport Environmental Assessment and Environmental Impact Evaluation for Obstruction Removal Notice of Public Information Meeting

Notice of Public Information Meeting

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Publication Date: 11/03/2016
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Affidavit of Publication

State of Conneticut
County of Hartford } ss. Manchester

I Kathy Fuller do solemnly swear that I am Classified Bookkeeper of the JOURNAL INQUIRER printed and published at Manchester in Connecticut and that from my own personal knowledge and reference to the files of said publication the advertisement of

BRADLEY ARPT ENVIRON IMP

was inserted in the regular editions on the dates as follows:

10/19/2016 11/02/2016

Kathy Fuller Billing Department

subscribed and swort to before me this 2nd day of November, 2016

Notary Public

KARIN E. MARSH
NOTARY PUBLIC
MY COMMISSION EXPIRES OCT. 31, 2018

Seal

Ad text : PUBLIC NOTICE

Bradley International Airport Environmental Assessment and Environmental Impact Evaluation for Obstruction Removal Notice of Public Information Meeting

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Journal Inquirer October 19, 2016 November 2, 2016 34 WEDNESDAY, NOVEMBER 2, 2016 / JOURNAL INQUIRER

PUBLIC NOTICE

LIQUOR PERMIT NOTICE OF APPLICATION

This is to give notice that I, Qun Chen, 18 Windermers Ave. Vernon Rockville, CT 98085-2425 have filed an application plearaded 10/26/2016 with the Dept. of Consumer Protection for a Liquor Permit for the sale of sicoholic liquor on the premises at 519 Taicotiville, CT 96065-4020. The business will be owned by New Panda Palace Inc. Entertainments will consist of: none Remonstrance/objections must be filed by: 12/6/2016 Qun Chen October 24, 2016

Journal Inquirer October 26, 2016 November 2, 2016

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PUBLIC NOTICE

PUBLIC NOTICE

REQUEST FOR QUALIFICATIONS/PROPOSAL

he Town of Manchester, CT will receive sealed propose of General Services' office, Lincoln Center Building, ain Street until November 29, © 4:00 p.m. for Consularvices to Facilitate a Strategic Planning Process anchester Fire-Rescue-EMS Department. The Rec

PUBLIC NOTICE

PUBLIC NOTICE

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Journal Inquirer October 19, 2016 November 2, 2016

PUBLIC NOTICE



PUBLIC INFORMATION MEETING SUMMARY

Project: Environmental Assessment (EA) & Environmental Impact

Evaluation (EIE) for Obstruction Removal – Bradley International Airport (BDL)

Location: Windsor Locks High School 58 South Elm Street Windsor Locks, CT 06096

Meeting: Public Information Meeting #1

Date: November 9, 2016 – 6:30 p.m.

Summary:

A public information meeting (PIM) for the Environmental Assessment & Environmental Impact Evaluation for Obstruction Removal - Bradley International Airport (BDL) was held at the Windsor Locks High School - Lunch Room "A" on November 9, 2016 - 6:30 p.m. The purpose of the meeting presentation was to outline the overarching purpose of the EA and EIE, which is to promote safety by bringing the airport into compliance with Federal Aviation Administration (FAA) design standards and regulations regarding clear airspace as well as the process of identifying and evaluation potential obstructions. The study documents potential impacts of tree obstruction removal, includes trees both on and off the airport, satisfies the requirements of the National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) and is consistent with applicable FAA guidance.

There were no members of the public in attendance. The following representatives of the Connecticut Airport Authority and Airport.

Attendee	Affiliation
Colin Goegel	Connecticut Airport Authority
Molly Parsons	Connecticut Airport Authority
Sally Snyder	Connecticut Airport Authority
Paul McDonnell	CHA Consulting
Jeremy Martelle	CHA Consulting

The following is a summary of comments and questions discussed during the meeting:

There were no comments at the meeting.

The meeting was closed at 7:30 pm due to no attendance by the public.

Bradley International Airport (BDL)

Environmental Assessment for Tree Obstruction Removal

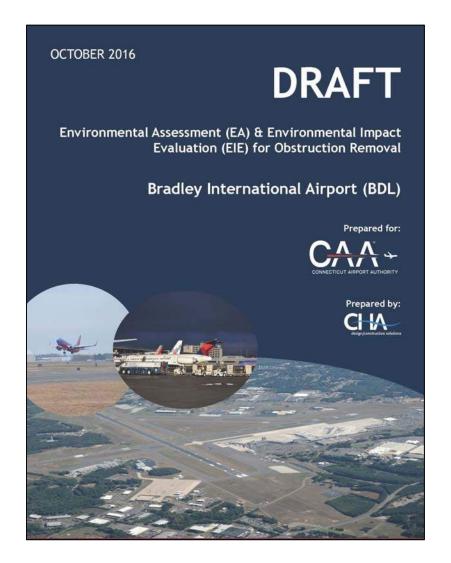






Draft Environmental Assessment Report for Bradley International Airport

October 2016







- The Environmental Assessment (EA) documents the potential impacts of tree obstruction removal at Bradley International Airport
- Include trees located on and off airport property
- Study satisfies both the National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA)
- Consistent with FAA guidance:
 - Order 1050.1F Environmental Impacts: Policies and Procedures
 - Order 5050.4B NEPA Implementing Instructions for Airport Actions

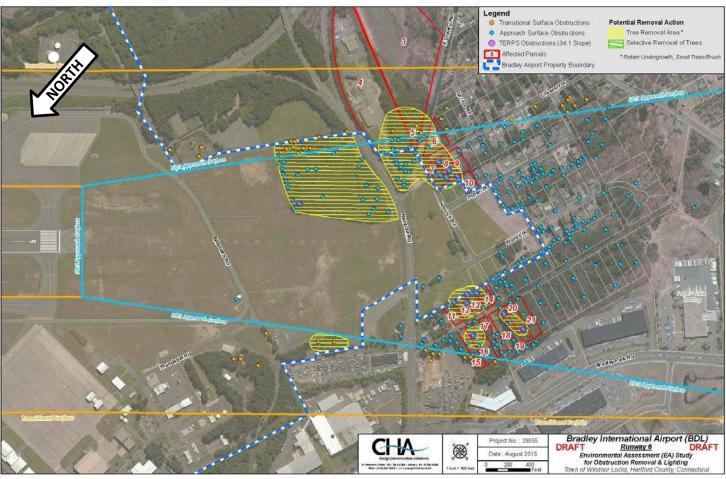








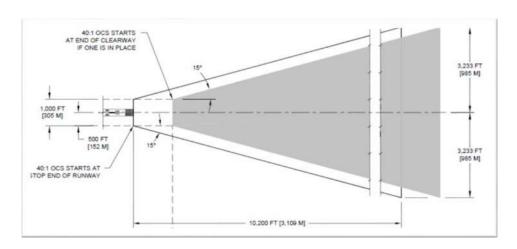
EA includes both on and off-airport obstruction removal

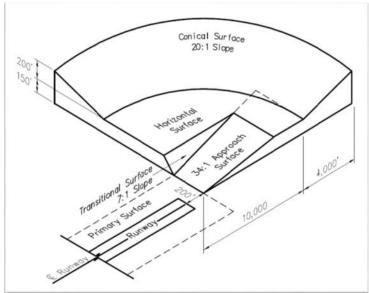






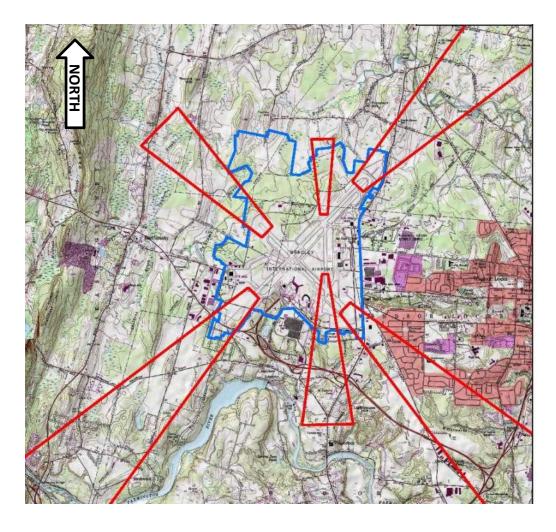
- Objects that penetrate the defined airspace are classified as obstructions, and should be removed to safely accommodate aircraft operations
- The EA addresses tree removal associated with:
 - Federal (i.e., FAR Part 77) Navigable Airspace
 - FAA Design Standards







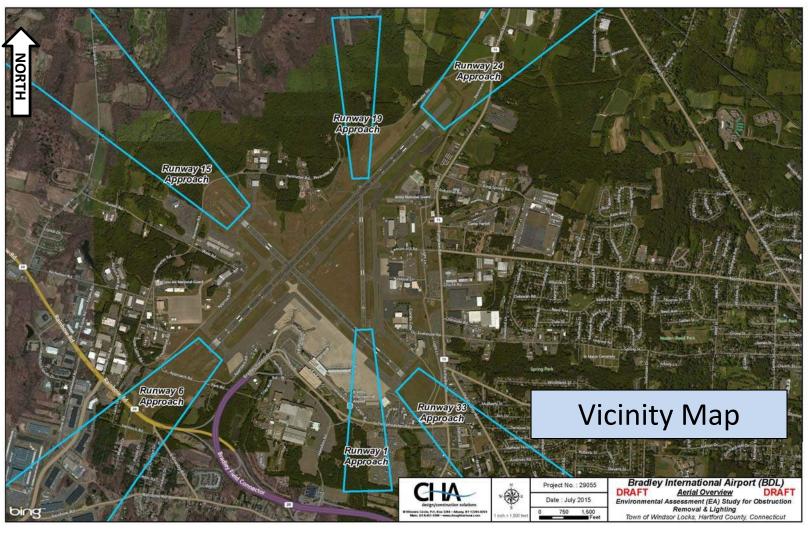






BDL Location Map









Purpose and Need

• Purpose:

 Improve airport safety by removing tree obstructions (compliance with FAA design standards).

• Need:

- FAA has established airspace and design criteria to provide for safe aircraft operations.
- The 2012 airspace analysis identified existing safety deficiencies.
- The Airport is <u>required</u> to address the <u>safety</u> deficiencies to the extent feasible.







Alternatives Analysis and Proposed Action

- No Action Alternative
- Full Obstruction Removal Alternative
- Modified Obstruction Removal Alternative







No Action Alternative

Goal(s): This option minimizes environmental impacts as it takes no action to remove, lower, mark, or mitigate existing or potential future airspace obstructions.

Description: Tree obstructions have been identified beyond both runway ends, Transitional Surface areas, and the outer airspace of the Horizontal and Conical Surfaces. These presumed hazards would remain in place, and potentially increase in size and penetration with additional tree growth.

	Advantages		Disadvantages
•	No wetland impacts (temporary or	•	Retains potential hazards to airport users
	permanent)	•	Retains a potential hazard to people and
•	No impacts to biological resources,		property on the ground surrounding the
	habitats, or species of concern		airport
•	No impacts to parks or recreation	•	Does not comply with FAA design
•	No impacts or disturbance to property		standards or grant assurances
	owners	•	Risks future FAA funding for
•	No project costs		improvements to the airport





Full Obstruction Removal Alternative

Goal(s): This option removes all penetrations to the FAR Part 77 Approach and Transitional Surfaces, with obstruction lighting for the Horizontal and Conical Surfaces.

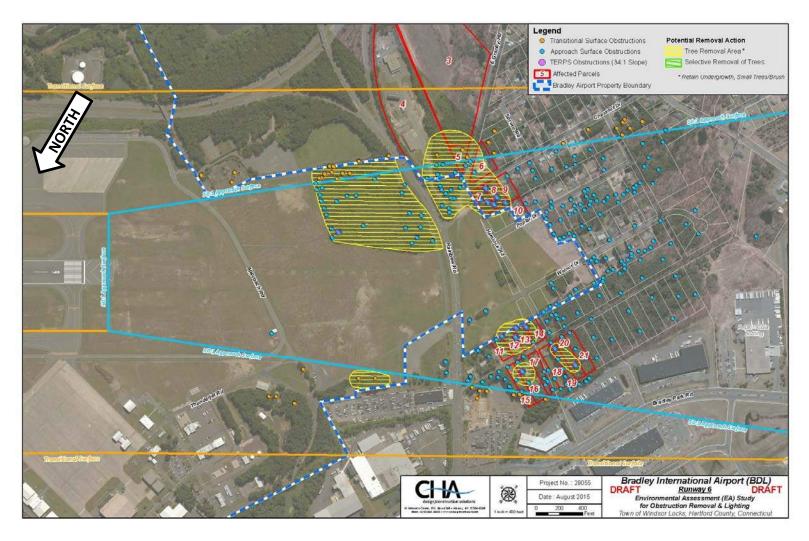
Description: A comprehensive removal of obstructions to the inner airspace surfaces, including substantial areas off-airport property. This alternative provides maximum benefit to airport users and safety enhancement. Outer surfaces are protected with lighting during nighttime operations.

Advantages	Disadvantages
 Clears or lights virtually all defined aeronautical surfaces Satisfies federal design standards and assurances Comprehensive removal of potential hazards to airport users Improves safety for people and property on the ground surrounding the airport 	 Potential for impacts to wetlands (temporary or permanent) Potential impacts to biological resources Substantial coordination and negotiation needed with property owners The need for numerous avigation easements may prevent successful completion of project and significantly extend the required schedule High project costs Successful completion is questionable





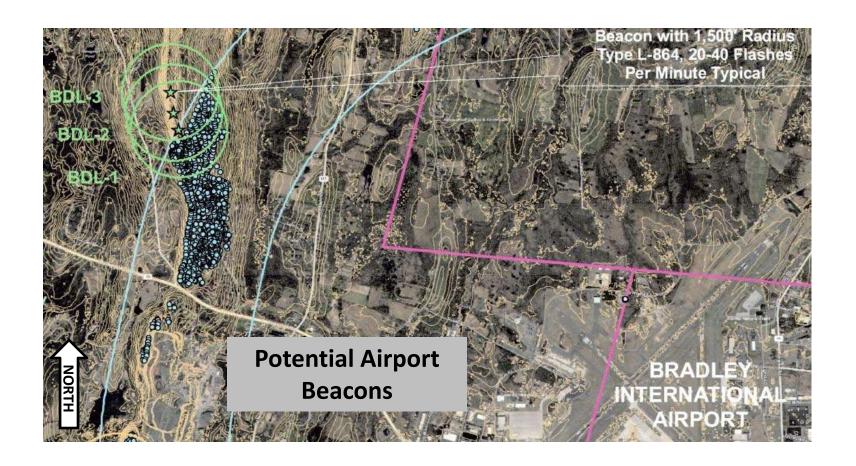
Full Obstruction Removal Alternative







Full Obstruction Removal Alternative







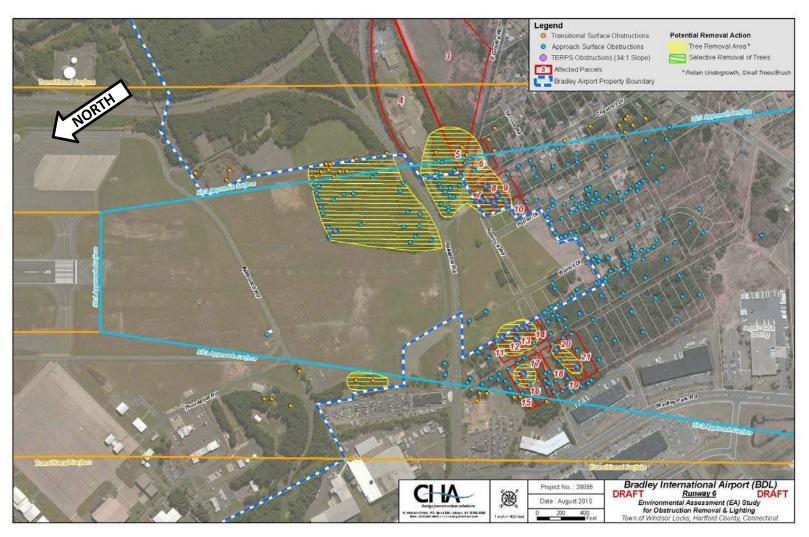
Modified Obstruction Removal Alternative

Goal(s): This option removes penetrations to the FAA Threshold Surface in off-airport locations (and to FAR Part 77 Approach and Transitional Surfaces on-airport)

Description: A reduced removal alternative intended to clear the critical penetrations to the runway approaches to maintain operational safety, while minimizing the impact to off-airport properties and the natural environment.

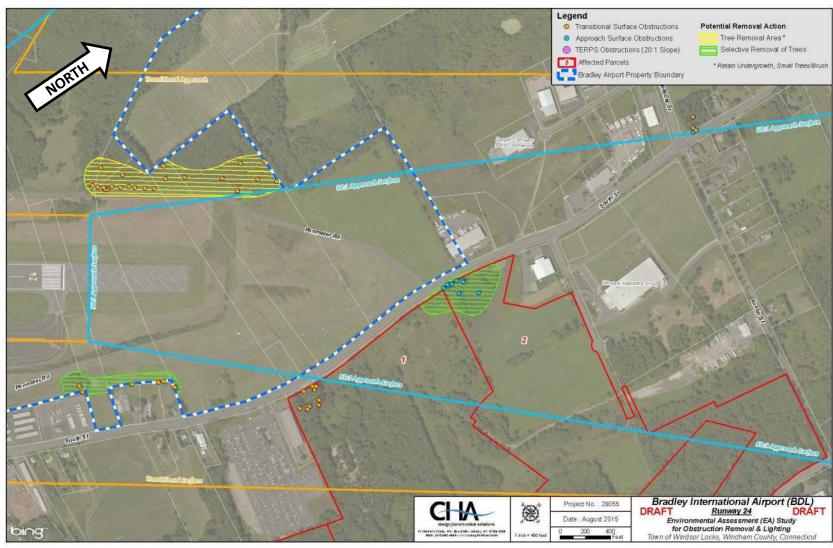








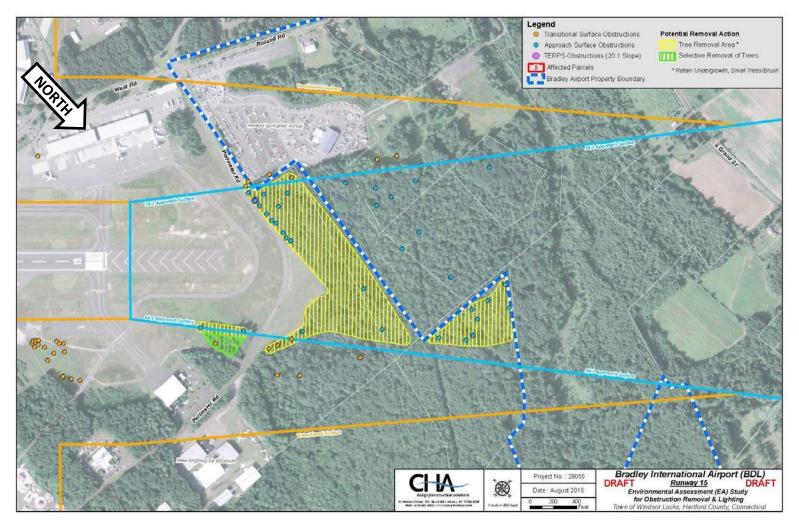






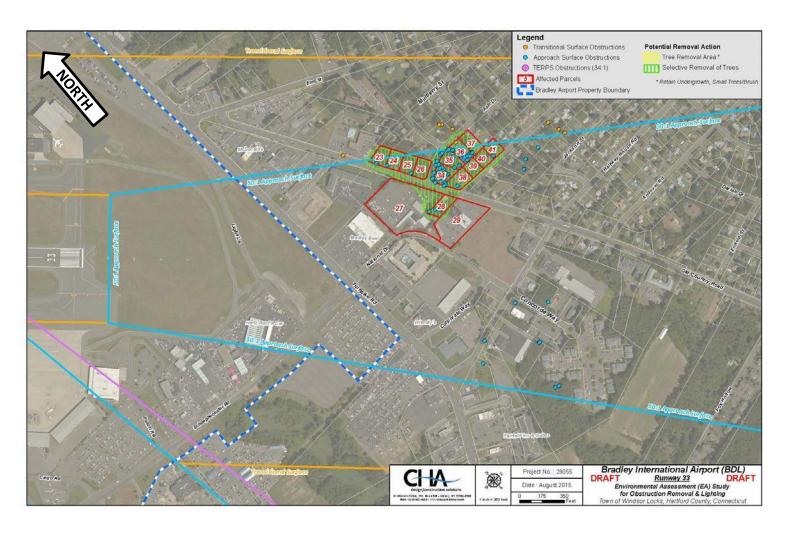


On-Airport Removal Runway 15



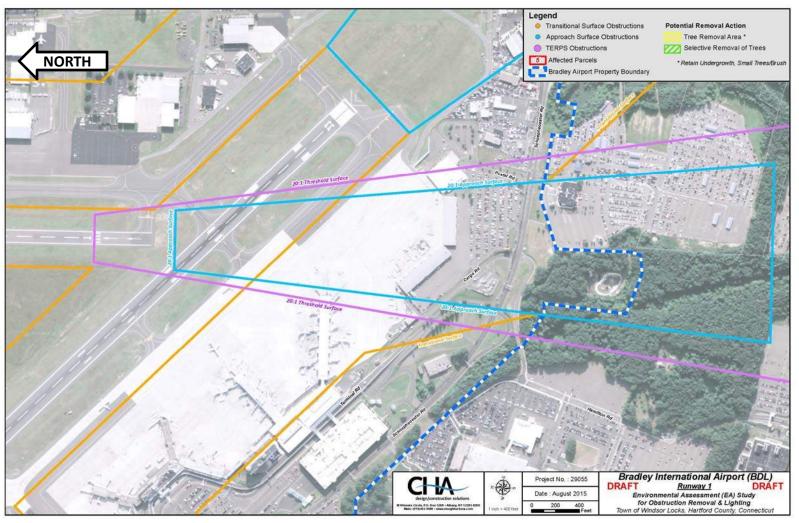






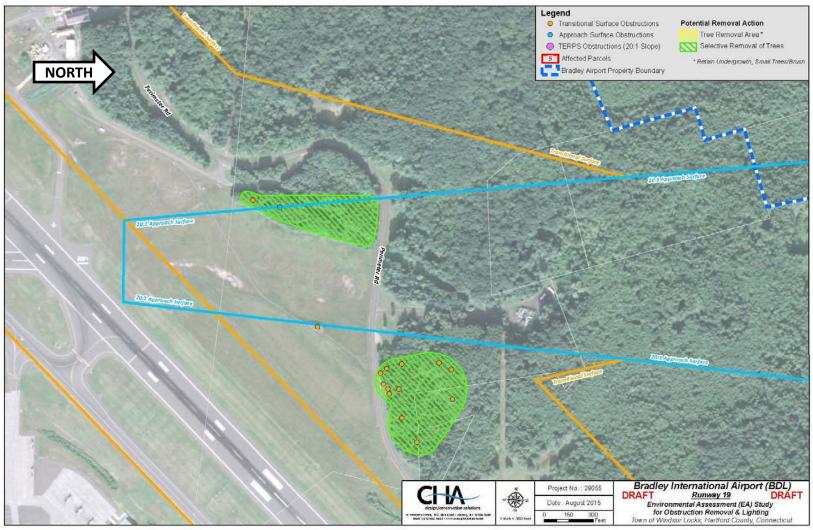
















Recommended Alternative Modified Obstruction Removal Alternative

- The CAA and FAA have identified this alternative as the most practical solution.
- Balances airport safety with environmental considerations, minimizing cost, and private property disturbance.





Affected Environment & Environmental Consequences

Consistent with the FAA guidelines, the following impact categories addressed:

- Air Quality
- Compatible Land Use
- Construction Impacts
- Parks and Recreational Facilities (Section 4(f))
- Farmland
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials and Solid Waste
- Historical, Archeological and Cultural Resources
- Light Emissions and Visual
- Natural Resources and Energy Supply
- Noise
- Socioeconomic Impacts
- Water Quality
- Wetlands







Affected Environment & Environmental Consequences

Key Issues:

- Threatened & Endangered Species
- Wetlands
- Private Property
- Visual Impacts
- Airport Noise







Threatened and Endangered Species

- **Threatened Species**
 - Northern Long-eared Bat
- **Species of Conservation Concern**
 - Wood Thrush
 - Worm-eating Warbler
 - Others (grassland species)

- Biological Survey may be required
- Seasonal Restrictions on Cutting



Northern Long-eared Bat



Wood Thrush

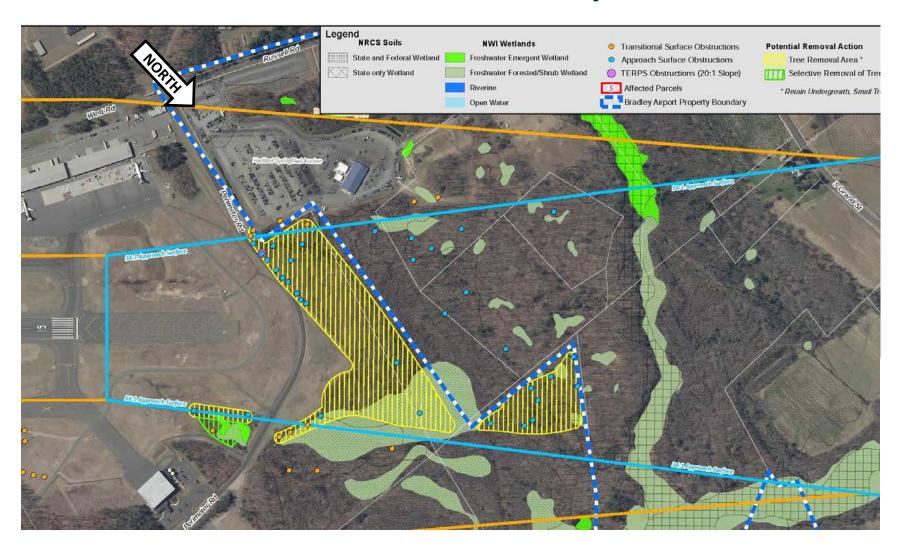


Worm-eating Warbler





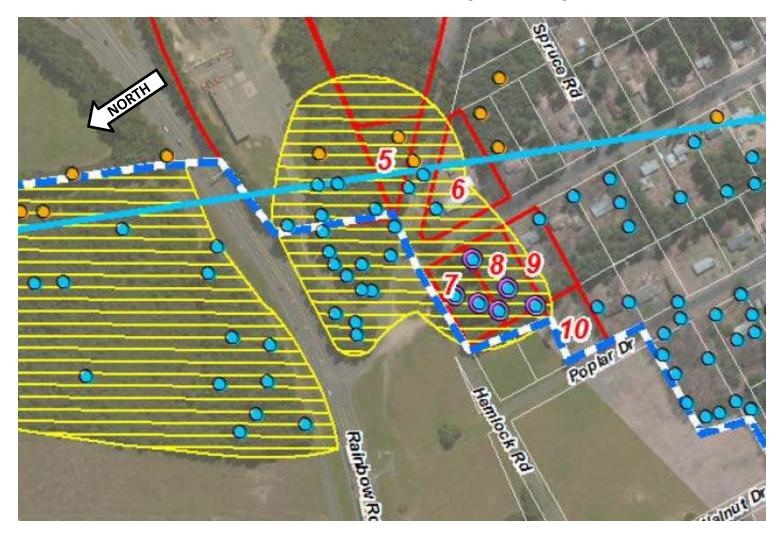
Wetlands-Runway 15







Private Property

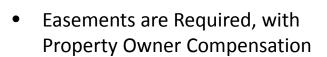






Visual Impacts











Airport Noise

- Tree Removals do not Alter flight paths
 - PAPI & Glide Slopes (Runway 6 & 33)
- Clearing does not Effect Airborne Noise











Project Outcome & Next Steps

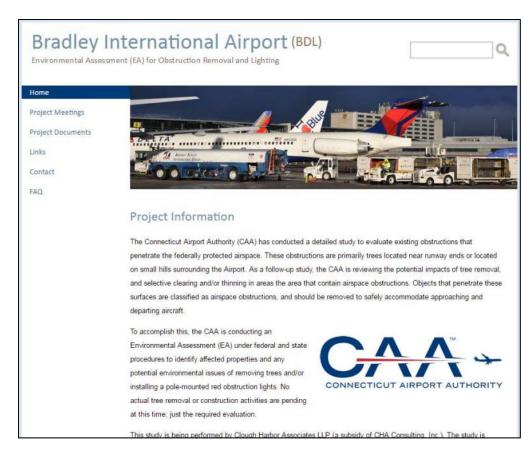
- Collect & Review Documents
- Prepare Final EA
- Federal Environmental Assessment, under NEPA
 - Lead Agency: Federal Aviation Administration (FAA)
 - Action: Publish a Finding of No Significant Impact (FONSI)
- State Environmental Impact Assessment, under CEPA
 - Lead Agency: Connecticut Office of Policy and Management
 - Action: Publish a Record of Decision (ROD)
- Next Steps:
 - Design & permitting of tree removals
 - Acquisition of easements from affected property owners
 - Tree removals





Study Information

Please visit the project website at:



http://bradleyairport.caa-analysis.com/





Study Information

Project EIE Notice posted on CEQ Environmental Monitor Online Portal – October 18, 2016

http://www.ct.gov/ceq/site/default.asp



ENVIRONMENTAL MONITOR

The official site for project information under the Connecticut Environmental Policy Act

September 30, 2016

EIE Notices

The following Environmental Impact Evaluation (EIE) notice is submitted for review and comment in this edition.

1. Notice of EIE for the Connecticut Airport Authority (CAA) – Off-Airport Tree Obstruction Removal at the Waterbury-Oxford Airport

Municipality where project is proposed: The Airport is located in the Town of Oxford approximately 7 miles southwest of Waterbury, CT. The very northern portion of the Airport is within the Town of Middlebury.

Address of Possible Project Location: The airport office is located at 300 Christian Street, off of State Route 188.

Project Description: Preparation of National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) environmental document as required to evaluate the potential impacts associated with tree obstruction removal in areas on.





Questions and Comments?

Please provide comments by December 2 to:

Colin Goegel

Connecticut Airport Authority

334 Ella Grasso Turnpike, Suite 160

Windsor Locks, CT 06096

CGoegel@ctairports.org

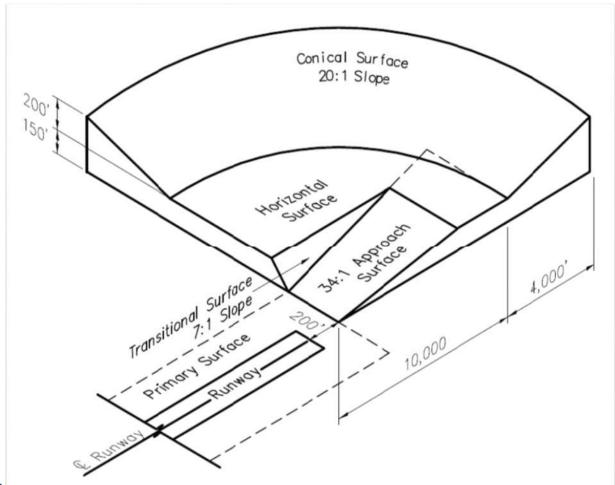
http://bradleyairport.caa-analysis.com/





Federal (FAR Part 77) Navigable Airspace

Imaginary Surfaces surrounding the Airport, for Obstruction Identification

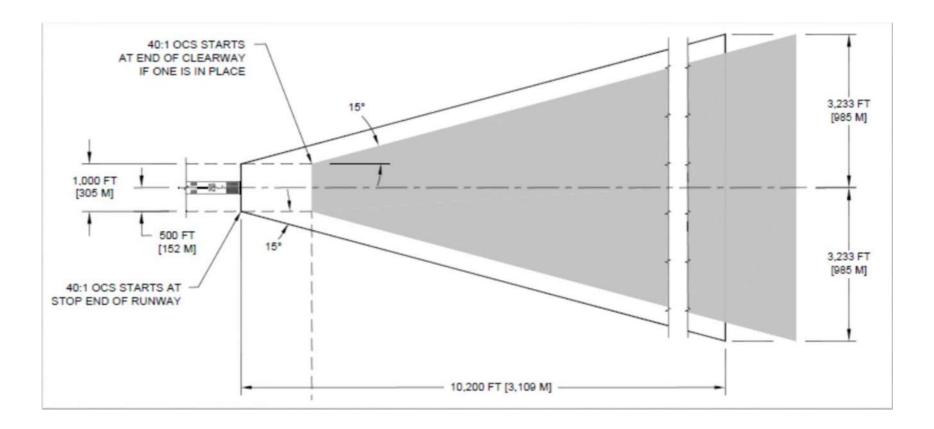






FAA Airport Design Standards

Threshold (Approach) Surface, per Advisory Circular 150/5300-13A







APPENDIX E



The following agencies provided comments on the Draft EA for the above referenced project:

- Connecticut DEEP December 2, 2016
- Connecticut Office of Policy and Management December 2, 2016
- Connecticut DEEP to Hoyle, Tanner & Associates (in reference to on airport tree removal permits- October 2, 2016

Each of these comments letters is included in its entirety in Appendix B of this document.

CHA has prepared the responses below to address the subject comments. The responses include several clarifications, as well as concurrence to adhere to environmental best practices. The CAA has also submitted an application for an Inland Wetlands and Watercourses Permit for on-airport tree obstruction removal activities. As appropriate those comments are also addressed below. Please note, many of the responses are related to activities that will occur in the future, during the design and permitting process.

For the convenience of the reader, both the comment and response are provided below.

Connecticut DEEP correspondence December 2, 2017

Comment (3rd paragraph): The document is titled an Environmental Impact Evaluation and was noticed in the Environmental Monitor as a Connecticut Environmental Policy Act (CEPA) document. However, section 15-120bb of the Connecticut General Statutes (CGS), states that the CAA "shall not be construed to be a department, institution or agency of the state." Since CEPA applies to state departments, institutions or agencies, it appears that CAA is exempt from its requirements.

Response: Agreed. The final document will have all references to CEPA removed.

Comment (4th paragraph): Normally during NEPA/CEPA review, the Department would identify issues to be resolved and additional information required during subsequent permitting. However, the application for the Inland Wetlands and Watercourses Permit has already been submitted. A preliminary review by the Land & Water Resources Division (LWRD) has revealed a number of discrepancies between the application and the Environmental Assessment. For example, the application proposes use of swamp matting and removal of trees from the wetlands, in contradiction to the discussion on page 5-15. As the permit review progresses, the LWRD will contact the CAA for any clarifications or additional information required for permitting.

Response: Agreed. The permit application for on airport activities indicated that "swamp" matting may be used. At the time the draft EA was prepared the use of timber mats was not anticipated and is still not anticipated in off-airport clearing areas. The following statement will be included in the EA Section 5.17:

"As the project advances into the permitting phase, more detail regarding which specific trees are to be removed and the methodology used for their removal will be thoroughly coordinated with the CTDEEP and other regulatory agencies including the LWRD. Tree removal methodologies to be used in upland areas, within critical habitat areas, and within forested wetland areas vary and will proceed as directed in the approved project permits."

Comment (5th paragraph): Although not discussed in the document, you explained that the permit application is limited to on-airport activities, which are exempt from NEPA review. Off-airport

tree removal will be a separate project following NEPA review. The protocols and mitigation measures that are incorporated into the on-airport project permit can be used as templates in developing the subsequent off-airport obstruction removal application. We note that on-airport tree removal is also depicted to occur at the ends of Runways 19 and 24, but is not included in the permit application.

Response: On-airport tree removal is not exempt from NEPA, but rather the FAA addresses NEPA via a Categorical Exclusion per FAA practice. Nevertheless, all applicable federal and state permit requirements remain necessary for on-airport locations.

As the project advances into the permitting phase, more detail regarding which specific trees are to be removed and the methodology used for their removal will be thoroughly coordinated with the CTDEEP and other regulatory agencies. Tree removal methodologies to be used in upland areas, within critical habitat areas, and within forested wetland areas will differ and will proceed as directed in the approved project permits.

The on-airport removals at the end of Runways 19 and 24 are specifically covered under this EA. Restrictions agreed to in the permit (Runways 6 and 15) currently under review by the LWRD, will also be applied to these areas as appropriate. As stated in the above paragraph, more detail regarding which specific trees are to be removed and the methodology used for their removal will be thoroughly coordinated with the CTDEEP and other regulatory agencies. A location map identifying the location of the on-airport removals for Runways 6 and 15 associated with the current permit is attached.

Comment (6th paragraph): In the section on Rare Species, page 4-6 states that species identified by the Natural Diversity Data Base were listed in a response letter in Appendix C. The letter, our scoping comments for all six CAA airports dated July 17, 2015, was not in the Appendix. A subsequent review of the Bradley project resulted in an October 2, 2016 response letter (attached) recommending mitigation measures to protect sand barren habitat and listed mussels in Stony Brook. A recent site visit resulted in proposed modification to the project at the end of Runway 6 to remove large trees but retain smaller pitch pines and scrub oaks, to remove downed trees without chipping, and to maintain the sand/pitch pine barren in an early successional state. Details of the plan are to be submitted to the NDDB for a final review.

Response: The DEEP scoping document dated July 17, 2015 has been added to Appendix B, Correspondence. As the on-airport permit is being pursued in advance of this EA, any requirements as a result of that action will supersede this EA. Therefore, any recommended measures to protect sand barren habitat agreed to as it relates to the separate permit application for on-airport obstruction removal submitted by CAA, will be incorporated into the design and permitting phase for this EA. Plan details will be submitted to the NDDB at the appropriate time. A location map identifying the location of the on-airport removals for Runways 6 and 15 associated with the current permit is attached.

As the project advances into the permitting phase, more detail regarding which specific trees are to be removed and the methodology used for their removal will be thoroughly coordinated with the CTDEEP and other regulatory agencies. Tree removal methodologies to be used in upland areas, within critical habitat areas, and within forested wetland areas will differ and will proceed as directed in the approved project permits.

Comment (7th paragraph): With regard to cave bats and breeding birds, page 5-9 states: "Based on other airport obstruction removal projects, direct impacts to these species may be avoided via use of seasonal restrictions (e.g., no tree cutting from May through August when these species are known to breed in New England). As such, significant impacts to critical species is not anticipated. This conclusion will be reviewed by USFWS and CT DEEP to determine if biological surveys and potential mitigation are necessary." In order to assure protection of these species, the Department recommends that this restriction be extended: from April 1 through September 30.

Response: Agreed. This change will be incorporated into Final EA.

Comment (8th paragraph): Over the years, the Department and ConnDOT had worked together to complete various projects and conduct operations at the airport in a manner that protected the biological diversity at Bradley Airport. DEEP anticipates that CAA, as the successor entity, will honor all legal commitments pursuant to statutory requirements made by their predecessor. We look forward to continuing collaboration with CAA toward that goal.

Response: Agreed.

Comment (9th paragraph): Stormwater discharges from construction sites where one or more acres are to be disturbed, regardless of project phasing, require an NPDES permit from the Permitting & Enforcement Division. The *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEEP-WPED-GP-015) will cover these discharges. The construction stormwater general permit dictates separate compliance procedures for Locally Approvable projects and Locally Exempt projects (as defined in the permit). Locally Exempt construction projects, such as those undertaken by CAA, disturbing over 1 acre must submit a registration form and Stormwater Pollution Control Plan (SWPCP) to the Department. The SWPCP must include measures such as erosion and sediment controls and post construction stormwater management. The construction stormwater general permit registrations can now be filed electronically through DEEP's e-Filing system known as ezFile. Additional information can be found on-line at: Construction Stormwater GP.

Response: Agreed, the CAA will submit a SWPCP during the design and permitting phase.

Connecticut Office of Policy and Management December 2, 2016

Comment (1st and 2nd bullet): In a well-publicized 1992 US District Court case, owners of property in Greenwich adjacent to New York's Westchester Airport did not consent to having trees removed from their properties. In its decision, the court apparently only authorized the removal of trees that would require excessive trimming:

http://law.justia.com/cases/federal/district-courts/FSupp/793/1195/1369066/

This EIE, however, does not appear to consider the possibility of trimming trees in locations where property owners might prefer such trimming over removal, and the amount of trimming required would not be excessive or jeopardize the survival of the trees. An approach using tree trimming when possible as an alternative to tree removal would seem to accomplish the agency's goal while reducing the impact of obstruction removal. If such an approach was found to be appropriate in Greenwich, it should also be considered for trees owned by neighbors of Bradley Airport and other CT airports. Such an option should have been identified and evaluated in the EA/EIE.

• In addition to the proposed obstruction removal plan not considering trimming as an alternative to the removal of trees in the near term, the plan does not evaluate proactive tree trimming as a means to reduce or avoid the need for future removals. The EIE's discussion of tree removal areas includes the following:

Runway 33: Includes proposed removal to a small off-airport area of homes. The off-airport obstruction are not currently penetrating the Threshold Surface, but are anticipated to in the next few years with additional tree growth. Thus, Runway 33 is not a priority location for removal, but was included in the EA recommendation as future removal are likely.

That statement seems to provide even further justification for a tree trimming approach. An airport-funded trimming program might not only limit the impact of current obstruction removals; it might also reduce the scope of future removals and reduce the number and the difficulty of avigation easements. The EIE mentions a concern about avigation easements preventing or delaying project completion.

Response: Tree trimming (often referred to as tree topping), is not the preferred obstruction removal approach by the FAA or CAA, but will be considered if and where necessary. Trimming/topping is generally less effective and more difficult and costly than selective removal of tall (obstructing) trees.

The general practice for airport tree obstruction removal is to selectively remove trees that are within 10' of the defined surface for the area of interest. The primary advantage to this approach is that the removal may be effective for 10 or more years, while trimming (if feasible) may require retrimming every 1-3 years, with the disturbance to property owners and the natural community. If the tree obstructions are within sensitive areas (i.e., wetlands), it may be impractical to obtain permits for continuing activity. Nevertheless, if necessary for environmental reasons or required by the property owner, trimming/topping has and will be employed as part of an FAA-funded tree obstruction removal project.

Airport obstruction projects often cite trimming as generally not an effective method to remove and manage obstructions based on information from the International Society of Arborists (ISA). ISA indicates that topping can remove 50 to 100 percent of a tree's leaf-bearing crown. This can cause significant stress to a tree as it rushes to produce new leaves. If the tree does not have adequate stored energy reserves it will be seriously weakened and may die. The ISA also identifies increased risk of insect infestation, decay, and sunburn" of tissues below the bark. In addition, altering a trees natural shape generally leaves behind trees that are "ugly". We understand that the Department would not likely request trimming if such conditions were anticipated.

Regarding avigation easements, if trimming is necessary in order to obtain property owner approvals, it would certainly be considered. In fact, if during the acquisition and permitting process, a property owner, the Department, or other regulatory agency requires tree trimming/topping, the CAA will take that approach. However, FAA and CAA prefer selective tree removal as the recommend approach.

Comment (3rd bullet). The maps provided in Appendix A are confusing and make it difficult to distinguish which specific removals are being considered under the Modified Obstruction Removal Alternative (the preferred alternative). Page 3-5 of the EA/EIE states:

The figures in Appendix A illustrate the Modified Removal Alternative using shading. Yellow shading includes general tree clearing areas; green shading illustrates reduced or selective tree

removal of individual tree obstructions identified during the design process – selective thinning.

Some of the maps included in Appendix A (e.g. Runways 6 and 33) identify surface obstructions (blue dots) within general tree clearing areas (yellow hatching). Are we to assume that all trees will be removed from this parcel, or just the blue dots? If only the blue dots are obstructions to be removed, why does the map show general tree clearing across a larger area?

Given the technical capabilities and accuracy of GIS mapping, OPM had expected the EIE to include more detailed mapping, such as a map showing the height of the Approach and Threshold Surfaces above the ground across the areas where CAA proposes to remove obstructions. This would provide property owners and the public with more detailed information regarding what's being proposed, and what options are available, such as trimming. More detailed mapping may also foster better planning between homeowners and the CAA and create opportunities to limit future conflicts through a variety of methods such as pre-emptive trimming, constraints on planting certain tree species in critical areas, and other options.

CT ECO currently provides <u>ARC GIS</u> elevation data that would allow such a map to show the height to the Approach and Threshold Surfaces with relatively good precision. Data that are expected to be available in early 2017 will allow for even greater precision. Providing such mapping would enable property owners and others to understand the proposed impacts to their property and the broader neighborhood and help in considering best available options.

Response: The text of the EA has been expanded to include the following:

Section 3.1.2: "In other words, the colored dots (blue and orange) indicate locations of obstructions to the Part 77 surfaces, which would be removed under the Full Obstruction Removal Alternative."

Section 3.1.3: "In other words, the hatching areas (green and yellow) indicate locations of obstructions to the threshold surfaces, which would be removed under the Modified Obstruction Removal Alternative. In some locations for preventative purposes, this alternative also recommends removals to some Part 77 surface penetrations as well."

CAA also intends to measure (survey) the clearing areas, where necessary, during the permitting process in order to employ the most up to date information. Tree top data may become dated with every year of growth, which is also why removal areas identified in the EA include some buffer.

Available GIS data was used during the preparation of this document. However, such information is also quickly dated with respect to vegetation. Furthermore, there is no defined accuracy of the GIS mapping for tree top elevations, thus it cannot be relied on as the only data for obstruction analysis. The photogrammetry employed for most GIS mapping may be intentionally obtained during leaf-off conditions so that the ground and objects are more clearly visible. Unfortunately, leaf-off condition data is unreliable for identifying deciduous tree top elevations. As such, GIS data was used in presentations to property owners and the public, but not for study recommendation.

The CT ECO, GIS data that may be available this year (2017) can certainly be considered for use in the next stage in the process, as well as additional site survey activities as needed.

Comment (4th bullet): Section 3.1.2 of the EA/EIE states:

For tree removals on residential and other private parcels, permanent 'avigation' easements are typically required..... These easements involve appraisals, negotiation with the individual property owner, and acquisition of the perpetual rights to remove existing tree obstructions and prevent future obstructions.

What is the process for FAA or CAA to gain access to a property if there is no pre-existing easement or other such agreement and an owner refuses an easement to allow for such work to be conducted?

According to an article published by the International Right of Way Association, the owner of a tree is likely to value it more than an agency is likely to pay in compensation for its removal:

https://www.irwaonline.org/eweb/upload/web_mar_apr12_ValuationAvigation.pdf

What method does FAA/CAA use for their appraisals and what is the process for property owners to dispute the level of compensation they receive for the removal of trees?

Response: All property owners with potential obstructions or adjacent to properties with potential obstructions were notified of this project by mail in June 2015 prior to any fieldwork or site visits. All requests to not enter a property were honored by the CAA and its representatives.

In regards to acquiring avigation easements the FAA is required to follow federal guidelines in Advisory Circular 150/5100-17: "Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects", November 7, 2005.

Prior to any tree removal at least two appraisals are required to determine the effect of the easement on the market value of the property. As a federal project the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 are followed.

Comment (5th bullet): CAA mailed letters dated 6/31/2015 to notify affected property owners of the proposed project (see Appendix B), with a deadline for comments on 7/17/2015 – a little more than two weeks later. Did CAA conduct any further outreach or notification for property owners? Did CAA take any steps to ensure that the notification was received by the intended party?

The letters only indicate that field personnel would conduct assessments and might require access to the property. The letters did not explain the review process, the criteria for the assessment, or the process for submitting comments. In addition, the letter contains this statement:

No actual tree removal or construction activities are pending at this time; just the required evaluation.

It does not appear that owners of all properties having potential obstructions (i.e. blue, magenta, or orange dots on the maps) were notified. Since that stage of the process was to evaluate properties that could potentially be impacted, it would seem that a broader segment of area property owners and other potentially affected people should have been notified. It is important that people receive a clear explanation of what is proposed and the criteria being used at each step of such a process so that they can provide timely feedback on proposed removals or other activities.

Response: The intent of the June 2015 letter sent to property owners was to inform them of the study and the possibility that personnel may need to enter their property; there was no deadline referenced in this correspondence; however, contact information as well as the link to the project website was provided so property owners could follow project progress or had comments or concerns.

A Notice of Scoping was published in the Environmental Monitor on June 16, 2015 and included a 7/17/15 deadline for comments on the project scope. The project was again published in the Environmental Monitor on October 14, 2016 to advertise the availability of the Draft EA and the date of the public informational meeting.

The letters were sent to property owners that either had a potential obstruction identified on their property or were located adjacent to a property with a potential obstruction that were located in tree removal areas or selective tree removal areas on the maps accompanying the draft EA. .

Connecticut DEEP correspondence October 2, 2016 to Hoyle, Tanner & Associates (On-airport obstruction removals)

Comment (2nd and 3rd paragraph): Sand/pine barren habitat.

Very little information was provided on the vegetative composition of the upland areas proposed for removal. This is problematic given that the State Threatened pine barrens zanclognatha (Zanclognatha martha), a moth that occurs only in sand/pitch pine barrens (much of the area at the end of Runway 6 is mapped as sand barren habitat), has been documented in areas proposed for clearing. The pine barrens zanclognatha feeds on pitch pine (Pinus rigida) and scrub oak (Quercus ilicifolia) and overwinters on the forest floor. Photos provided in the NDDB application materials show some pitch pine around Runway 6. While this moth may tolerate the cutting of trees, it would be negatively impacted by the complete removal of woody vegetation, stump grinding, amending soils with topsoil, lime, fertilizers and subsequent seeding of thirteen acres as proposed. These activities would not only destroy the habitat for this species on airport property, it would negatively impact sand barren habitat, one of Connecticut's Critical Habitats. In addition to pine barrens zanclognatha, the big sand tiger beetle (Cicindela formosa generosa), a State Species of Special Concern, has been documented utilizing this area of the airport and would be negatively impacted by the addition of top soil, wood chips, lime or fertilizers, or seeding with turf grasses the existing sandy soils.

To remove the vegetative obstructions at the end of Runway 6 and not negatively impact Statelisted species and Critical Habitats, the following activities should be substituted:

- mature trees can be removed but young (short) pitch pines and scrub oaks be spared to provide habitat;
- cut trees should be removed from site and not chipped on-site since chips left on sandy soils change the microclimate of the soils (introducing slow decaying organics and moisture);
- a plan that includes a schedule and methods for maintaining the areas at the end of Runway 6 in an early successional state, should be crafted and implemented to ensure that sand/pitch pine barren habitat is not destroyed on airport property. Please forward a copy of this plan to the Wildlife Division (laura.saucier@ct.gov) for review and comment.

Response: Agreed, these comments and processes will be incorporated into the required permits for this project and the off-airport tree removal. It is anticipated that the initial step will a pre-

permitting meeting with CT DEEP.

Comment (4th and 5th paragraph): Wetland habitat

Stony Brook, a sensitive watershed that has the Federal and State Endangered dwarf wedgemussel (*Alasmidonta heterodon*), State Endangered brook floater (*Alasmidonta varicosa*), and State Species of Special Concern eastern pondmussel (*Ligumia nasuta*) is located north of Runway 15. Any activities that degrade the water quality of Stony Brook will negatively impact these freshwater mussels. It is not clear how close the proposed vegetation removal activities will occur from Stony Brook but these areas do ultimately drain into the brook therefore have the potential to negatively affect these mussels if work is not conducted in such a way to protect downslope water quality.

To remove the vegetative obstructions at the end of Runway 15 and not negatively impact Statelisted species, we recommend the following considerations:

- no vegetation removal within 100-feet of Stony Brook;
- no use of fertilizers or lime in areas adjacent to wetland soils;
- silt fences should be removed as soon as the project is completed and soils are stabilized to limit impediments to amphibian and reptile migration;
- your DEEP Permit Analyst should include the most stringent water quality protection measures that can be imposed for this site and project to ensure that the water quality in the Stony Brook is not negatively impacted.

Response: Agreed, these comments and processes will be incorporated into the required permits for this project. It is anticipated that the initial step will a pre-permitting meeting with CT DEEP.

Comment (6th and 7th paragraph): Birds

If work is conducted between 1 September and 1 May, potential negative impacts to state-listed bird species will be minimized.

Natural Diversity Database information includes all information regarding critical biological resources 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, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Database should not be substituted for on-site surveys required for environmental assessments. 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 as it becomes available.

Response: As requested by David Fox, DEEP Senior Environmental Analyst and CAA has agreed removals will not occur between April1through September 30. The need for on-site surveys and other activities will be reviewed in a pre-permitting meeting with the CT DEEP.

