Final Environmental Assessment (NEPA)
Final Environmental Impact Evaluation (CEPA)
Wildlife Hazard Deterrent Fence

Hoyle, Tanner Project Number: 306807

Prepared for:

CONNECTICUT AIRPORT AUTHORITY

Groton-New London Airport
Groton, Connecticut

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October 2016

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1. INTRODUCTION

1.1 Project Location and Introduction

The proposed project involves preparation of National Environmental Policy Act (NEPA) of 1969 and Connecticut Environmental Policy Act (CEPA) documentation to evaluate the installation of a wildlife deterrent fence at the Groton-New London Airport. The airport is currently surrounded on two sides by a wildlife fence. The project would include inspection of and repairs to the existing fence, as well as installation of additional fencing along portions of the airport abutting the Poquonnock River.

Groton-New London Airport (GON) is a general aviation airport located in the Town of Groton in New London County, Connecticut and is bounded by Interstate 95 to the northwest and the Poquonnock River to the east, and Long Island Sound to the south (Figure 1: Location Map). GON is certified by the FAA to operate as a commercial service airport under Part 139 certification criteria as a minimum Class IV airport with an Index A firefighting capability. The airport boundary contains approximately 489 acres. The FAA operates the Air Traffic Control Tower (ATCT) with contract personnel. The tower is equipped and staffed to provide separation of arriving and departing aircraft and control of taxiing aircraft between 7:00 AM and 10:00 PM.

The airport consists of paved surfaces (roads, parking lots, runways and taxiways), structures, grassed areas/lawn, woodland and coastal habitat. The airport has two runways: Runway 5/23, the primary runway that is 100 feet wide and 5,000 feet long, and Runway 15/33, the cross-wind runway that is 96 feet wide and 4,000 feet long.

1.2 NEPA and CEPA Requirements

This Environmental Assessment (EA)/Environmental Impact Evaluation (EIE) was prepared to satisfy the requirements of NEPA and CEPA to address the potential impacts associated with the installation of a wildlife deterrent fence while providing the opportunity for public involvement and comments.

The proposed federal action for this project includes FAA approval of the revised Airport Layout Plan (ALP) to include the new fence and potential federal funding for elements of the proposed project. Thus, the EA/EIE must comply with the Federal Aviation Administration (FAA) NEPA requirements. The study was conducted in accordance with FAA-issued guidelines, including the “Environmental Desk Reference for Airport Actions”, FAA Order 5050.4B "National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions" and FAA Order 1050.1F "Environmental Impacts: Policies and Procedures."

FAA Order 1050.1F, Paragraph 5-6.4(f) includes construction of fences and the ALP approval of such construction as a categorically excluded action provided no Extraordinary Circumstances, as listed in FAA Order 1050.1F, Paragraph 5-2, are affected. Preliminary review of the project indicated that specific Extraordinary Circumstances may be affected, as analyzed in the sections below.

The purpose of CEPA is to identify and evaluate the impacts of proposed state actions which may significantly affect the environment per Sections 22a-1 through 22a-1h of the Connecticut General

Statutes. The process also provides opportunity for public review and comment. CEPA review is required for each state agency action that could have a major impact on the state's land, water, air or other environmental resources. Because CAA is a quasi-public agency, and the proposed project is an agency action, review of the Department of Transportation's Environmental Classification Document (ECD) was required to see if the proposed project is listed as an action requiring development of an EIE. This project falls under the list of "Typical Actions Whose Degree of Impact is Indeterminate but Could have Significant Impacts" requiring initiation of the scoping process as detailed in Section 3.3 of this document. Comments received during scoping resulted in CAA's determination that the project may have environmental impacts, requiring development of an Environmental Impact Evaluation.

1.3 Federal, State and Local Agency Jurisdiction

The proposed project would require state and local permitting as listed in Table 1.3-1.

Table 1.3-1. Agency Coordination and Permitting

Agency	Resource	Potential Permit
US Army Corps of Engineers (ACOE)	Tidal and Freshwater Wetlands	Work within tidal or freshwater wetlands would require a General Permit
Connecticut Department of Energy and Environmental Protection (CTDEEP) Inland Water Resources	Freshwater or Inland Wetlands	Work within freshwater or inland wetlands would require an Individual or General Permit
CTDEEP's Office of Long Island Sound Programs (OLISP)	Coastal Resources and waters below the Coastal Jurisdiction Line (CJL)	Work oceanward of the CJL would require a permit and review of the project for coastal consistency
CTDEEP Inland Water Resources	Coastal and Tidal Waters	401 Water Quality Certification
CTDEEP and US Environmental Protection Agency (EPA)	Stormwater/NPDES	Construction General Permit

Figure 1 – Location Map

CAA CONNECTICUT AIRPORT AUTHORITY / Hoyle, Tanner & Associates, Inc.					GROTON-NEW LONDON AIRPORT (KGON) GROTON (NEW LONDON), CONNECTICUT	FIGURE
CHKD. BY KRP	DR. BY JLC	DES. BY KRP	DATE: AUG, 2015	SCALE: AS SHOWN	LOCATION PLAN	1

2. PURPOSE AND NEED

The *purpose* of the project is to improve safety and prevent human injury or fatality by excluding deer and other hazardous wildlife from the airfield. The airport is currently surrounded on two sides by a wildlife fence. The project would include inspection of and repairs to the existing fence, as well as installation of additional fencing along portions of the airport abutting the Poquonnock River.

2.1 Wildlife Hazards at GON

There is a well-defined and urgent *need* to protect aircraft and their passengers from hazardous conditions at the airport as a result of wildlife, including deer or other mid-to-large sized mammals and large birds, accessing the airport property. The Louis Berger Group (LBG) conducted a twelve-month Wildlife Hazard Assessment (WHA) pursuant to 14 CFR 139.337(a and b) at the Airport in 2012. Identified hazards fell into two basic groups: birds, including waterfowl; and mammals, both large and small. The assessment notes that wildlife are currently attracted, and provided relatively unobstructed access to, the grassy areas, tidal and freshwater wetlands and runways for use in foraging, hunting, nesting and loafing as a result of the existing limitations in the wildlife fence.

As reported in the WHA, GON reports wildlife strikes to FAA via submittal of Form 5200-7. Between June 1, 1990 and December 31, 2011, there were 221 reported wildlife strikes at GON, of which 202 strikes (91%) were attributed to birds, including gulls, woodland songbirds, grassland birds, waterfowl, corvids/icterids (crows, ravens, jays, passerines), birds of prey and columbids (pigeons and doves). The remaining 9% of strikes were reported as unknown wildlife, with 1% being attributed to mammals. Review of the FAA Wildlife Strike Database (www.wildlife.faa.gov) resulted in 37 additional strike reports from January 1, 2012 through November 2015 (the latest available data as of July 28, 2016), all of which were attributed to birds. While 97% of all strikes with civil aircraft in the US involve birds, deer were the most commonly struck non-bird species during the period of 1990-2012 (FAA 2016) and 83% of mammal-aircraft strikes are caused by deer (Wright 2016).

The 2012 WHA included the following recommendations to reduce wildlife hazards at GON:

- Reduce or eliminate wildlife attractants, including monitoring of the recently developed wetland mitigation site and assessment to determine if this site increases wildlife activity, and review of future construction projects by a wildlife biologist for assessment of potential for wildlife attraction.
- Continuation of implementing habitat manipulation, including maintaining grass areas at a height of 6-12 inches wherever conditions allow, and incorporation of appropriate seed mixes that deter the feeding of birds and other wildlife on the airport. The airport should not be managed for state-listed species where it compromises recommended standard management practices and causes hazardous species to be attracted.
- Implement a zero tolerance policy for hazardous wildlife to help prioritize events as they occur and establish an attitude for all GON personnel.

- **Extend the perimeter fence into the Poquonnock River and Baker Cove in the northern and western portions of the property and along any areas of the airport perimeter currently not fenced.**
- Enhance capabilities and resources of operations personnel to manage wildlife, including providing personnel with appropriate equipment, training and authorization to conduct wildlife management activities, such as increasing the number of personnel who use pyrotechnics and firearms.
- Develop a Wildlife Hazard Working Group (WHWG) to meet quarterly, or more often if situations merit, including on and off airport stakeholders.
- Increase reporting and retention of wildlife hazard information, including submittal of all wildlife strikes to FAA and continuance of the Wildlife Incident Log to standardize reporting of wildlife sightings and control activities by personnel.
- Continue and enhance open communication along with development of a wildlife strike communication protocol that can be used by all airport entities, including maintenance, air traffic control, airlines, FBOs and others.

A Wildlife Hazard Management Plan (WHMP) per 14 CFR 139.337(e) was developed in 2014 detailing the implementation of the 2012 WHA recommendations. The WHMP identified extending the existing wildlife fence into the Poquonnock River and Baker Cove and installing fence along the entire airport perimeter as a future action, pending funding and receipt of a permit from the CT Department of Energy and the Environmental Protection (CTDEEP) for impacts to jurisdictional resources.

CAA recognizes that the hazards identified at GON based on the available strike data are mostly birds, and that installation of a wildlife fence will have little effect on reducing local populations or bird use of the airport facilities. However, the fact that there have been low numbers of wildlife strikes attributed to mammals at GON does not reflect that fact that there are deer that currently access the runway to feed on grassed areas within and near active runways and taxiways. Airport staff observe deer on a regular basis using the areas adjacent to the eastern and western ends of the existing fence, where the deer can walk around the fence ends, as well as along the southeast portion of the airport where deer have been observed crossing the old trestle along the Poquonnock River and crossing the river from Bluff Point. Observation of deer on the runways or taxiways requires staff to cease other activities and devote immediate attention to implementing the WHMP. The airport does not have the funding to provide staff exclusively dedicated to wildlife management 24 hours a day, thus wildlife management must be part of staff work duties along with other necessary airport operations. Current methods of wildlife deterrence used by airport staff at GON as detailed in the WHMP are labor intensive and include harassment either by driving vehicles near the wildlife or using noise-making or pyrotechnics, habitat modification such as maintaining grass height between 6 and 12 inches, removing nests, and removal or prey species. The fence will reduce immediate concerns regarding medium- to large-sized mammals on the airport, which will allow for increased vigilance and focus on preventing bird hazards, which in turn will reduce the incidence of bird strikes and increase the overall safety of the airport.

2.2 Wildlife Hazards and FAA

Even though deer strikes are rare, FAA believes the costs of installing a wildlife deterrent fence are necessary in order to reduce the occurrence of a hazardous event and minimize risks to airport

users. The potentially catastrophic results of a deer strike require extreme prevention measures even when the potential of a collision may be low.

While mammal strikes such as deer and coyote are much less common than bird strikes, mammal strikes have a higher potential to be lethal and cause substantially more damage to humans and aircraft than birds. The average cost per deer strike based on data from 1983 to 1997 was $74,537, for a total of $21.2 million for the reported 285 strikes, however it is noted by the authors of this study that these values are considerable underestimates, and monetary values from this time-period would need to be inflated based on today's costs (Wright, Dolbeer and Montoney 1998). The average cost of a bird strike based on data from 1990-2001 is estimated at $39,983 (Allan 2001)

FAA Circular No. 150/5200-33B (2007) lists deer as the highest ranking species in terms of damage, major damage, effect on flight and relative hazard. FAA Cert Alert No. 04-16 Deer Hazard to Aircraft and Deer Fencing notes that elevated deer populations in the US represent increasingly serious threats to aircraft, and that during the period of 1990-2004 over 650 deer-aircraft collisions were reported, of which over 500 collisions resulted in aircraft damage. The Cert Alert also states that "Proper fencing is the best way of keeping deer off aircraft movement areas."

3. PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action: Wildlife Deterrent Fence

In accordance with the recommendations of the 2012 WHA and as proposed in the 2014 WHMP, GON proposes to completely enclose the airfield with a wildlife deterrent fence. The project would include inspection of and repairs to the existing fence.

Fence Location

Fencing along an airport property can become a hazard to aircraft if not placed in appropriate locations. Because of the angles and associated clear space required by aircraft to take off and land, as well as safety areas and additional terrain for emergency vehicles to respond to potential aircraft malfunctions, there are areas around the runways where fencing cannot be installed. The fence design must adhere to constraints in several locations due to FAA regulations directing set-backs from the Very High Frequency Omni-directional Range (VOR) Navigation equipment, Runway Safety Area (RSA) lengths and widths, and other areas which must remain clear of obstructions unless FAA grants a Modification to Standards.

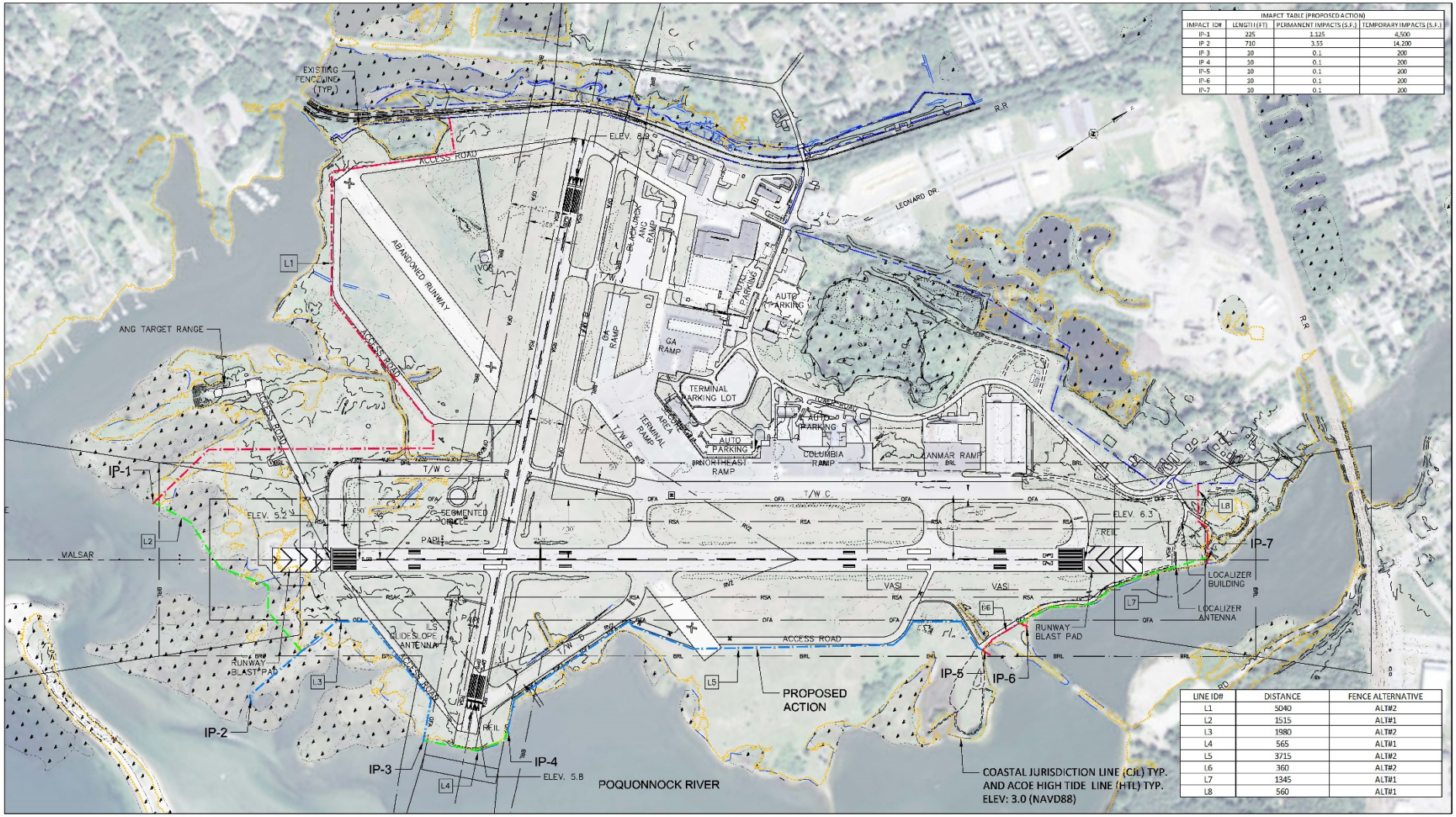
Figure 2 shows the proposed fence alternative locations on the airport. The proposed fence alignment has been chosen to leave as much grassland outside of the fence as possible, notably in the southwest and east terminus of the existing fence, at the end of the causeway, and south of the access road, so that the deer and geese that currently are attracted to the grass habitat within the airport and are habituated to entering these areas would have access to food yet remain safely outside of active runway and taxiway areas.

Fence Design

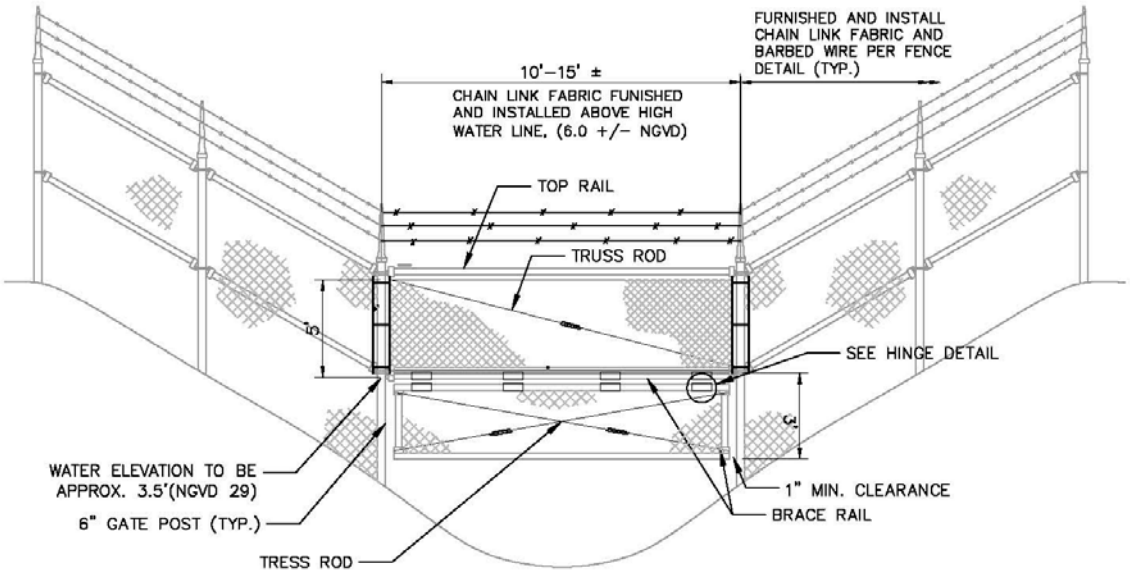
As identified in the Draft EA/EIE, the recommended wildlife fence design per FAA CertAlert No. 04-16 specifies deer fencing should be a chain link fence at a minimum of 10-12 feet in height topped with three strands of barbed wire and including a 4-foot burrowing deterrent chain link “skirt” attached to the bottom buried in the ground at an angle of 45 degrees. The fence height may be reduced to 8 feet (topped with three strands of barbed wire) if deer activity is low enough to warrant such reduction. The Draft EA/EIE proposed a fence designed to meet this recommendation.

At this time, in response to public and agency comments regarding the potential impacts due to the fence on biological resources, visual aesthetics, water resources and coastal resources, and upon further discussion with FAA officials, the fence has been re-designed as follows:

- the effective fence height would be 8 feet tall;
- the strands of barbed wire along the top would not be installed;
- the use of woven wire mesh fabric instead of chain link fabric may be used should it be determined that such a fence would have a comparable design life to the chain link fabric; use of a woven wire mesh would allow fence posts to be spaced further apart than would be needed for a chain link fence, thus reducing the amount of direct impact to tidal wetlands; and,



GROTON-NEW LONDON AIRPORT (KGON)
GROTON (NEW LONDON), CONNECTICUT
PROPOSED WILDLIFE FENCE LOCATION (FIG 2)



BREAK AWAY FENCE DETAIL AT CHANNEL CROSSING

NOT TO SCALE

Hoyle, Tanner & Associates, Inc. 150 Dow Street Manchester, NH 03101–1227 Tel 603–669–5555 Fax 603–669–4168 Web Page www.hoyletanner.com HOYLE, TANNER & ASSOCIATES © 2014					GROTON-NEW LONDON AIRPORT - GON GROTON, CONNECTICUT	FIGURE
CHKD. BY TJA	DR. BY NEC	DES. BY TJA	DATE: AUG., 2015	SCALE: AS SHOWN	BREAK AWAY FENCE AT CHANNEL CROSSING	3

- the fence fabric may include varying spaced openings, with smaller openings at the bottom and larger openings at the top- this will allow for deterrence against smaller-sized wildlife from entering the airfield and becoming attractants for larger raptors such as hawks, great horned owls and American kestrels while still providing large mammal deterrence and would reduce the visual impact of the fence.

Final fence design will be determined after discussion with permitting agencies. As discussed in the Draft EA/EIE, the chain-link skirt along the bottom to deter burrowing wildlife will be attached in upland areas only, while in wetlands the fence will be placed with the bottom of the wire mesh along the ground surface. Photos of sample wire mesh fence fabric that may be used are below:

Woven wire fence installed at Norwood Memorial Airport, MA (fence shown is 10-feet high, proposed fence at GON would be 8-feet high)

Woven wire fence at New Bedford Airport, MA (fence shown with barbed wire along the top, no barbed wire is proposed for GON fence)

Vegetation can undermine the effectiveness of the barrier by either creating a bridge over the barbed wires for both people and animals, or growing through the fence and lifting the fabric, creating openings along the bottom. In order to avoid such circumstances, the area within 10-feet on both sides of the fence would be reviewed for the need to remove vegetation. Most of the proposed fence location is along the edge of pavement, or within areas that are currently maintained by regular mowing, thus, vegetation in most locations would not need to be removed and the existing vegetation management schedules would be maintained. In areas where existing vegetation would need to be removed within wetlands, vegetation would be cut flush to the ground, with no soil disturbance, and maintained by hand removal as needed over time. In uplands, vegetation within 10-feet on both sides of the fence would be removed and the soil grubbed to remove stumps, and the areas would be recovered with loam and seeded with an upland seed mix to allow for a surface that will be able to be maintained by mowing. Gates would be installed where necessary along the fence to ensure airport staff have access to both sides of the fence for maintenance of the fence and vegetation, fence inspection and debris removal. There would be no proposed change in ground elevation on either side of the fence upon completion of the fence installation, and surface soil contours and vegetative conditions would be conserved as much as possible during fence installation.

The fence would be visually inspected by airport staff on a daily basis to ensure debris and wrack do not accumulate on the fence, as well as ensure the fence has adequate stability and integrity. Repairs will be made as needed.

In freshwater and tidal wetlands, fence poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track-mounted skid steer.

Canada Geese Deterrence

Discussion with airport operation staff who have experience with the wildlife that currently access the airport and become hazardous to aircraft resulted in modification of the fence design proposed during the Draft EA/EIE along the southern /southeastern sections of the airport that abut the Poquonnock River along the Access Road and Taxiway D, as shown on Figure 2 as Alternative #2B. The species of concern in this location is Canada geese, which have been observed swimming across the river and walking onshore to feed on the triangular lawn area between the end of RW 5 and RW 33. Although Canada geese can fly over fencing, evolutionarily, Canada geese are tundra nesters that prefer to congregate on low vegetation adjacent to open water and are known to walk to their feeding sites from water (WDFW 2016). Geese often prefer to walk, primarily because a goose is a grazing animal and grazers walk as they graze (Cornell Lab 2016). Their legs are positioned on their bodies farther forward than either duck or swan legs so that they can effectively walk and graze on dry land.

Fence in this location would differ from the proposed wildlife deterrent fence that is aimed towards larger wildlife such as deer. This fence would be installed at a lower height, 5 feet high, and will consist either of single strand or woven wire mesh. Reflective flagging or tape may be attached to the fence fabric as additional deterrence. Final fence design will be completed during state and local permitting. This section of fence will be evaluated for efficiency and modified as needed should it be determined that this alternative fence is not providing deterrence of Canada geese.

Project Funding

The project will be funded as a joint effort by FAA, who will provide 90% of the funding, and CAA, who will provide the remaining 10%. FAA funding will come from the Airport and Airway Trust Fund (AATF) which was created to provide funding for capital improvements to the US airport and airways system. AATF revenue is derived from aviation-related excise taxes on passengers, cargo and fuel, such as domestic passenger ticket taxes, international arrival and departure taxes and domestic commercial fuel taxes. This project will not be funded from the US General Fund.

3.2 Alternatives

Federal guidelines require that alternatives to the proposed project must be identified and evaluated in order to determine the alternative that best meets the evaluated criteria, with the least amount of overall impacts to the ecological and human environment, as agreed upon through consensus by stakeholders. It is imperative that these alternatives be reasonable, feasible, and meet the project purpose and need in order to be eligible for detailed analysis.

The following briefly summarizes and evaluates the alternatives considered for this project.

No Action – No Improvements to Existing Conditions

The existing conditions do not deter wildlife such as deer and other animals from entering the airfield because the existing fence does not completely surround the Airport. Although this alternative does not impact the surrounding environment, the potential for property damage and hazard to life caused by a wildlife strike has an indeterminate cost and loss associated with it.

This Alternative, by its very definition, does not meet the purpose and need for the project and was not carried forward for analysis.

Action Alternative #1 – Complete Enclosure

This alternative was the first approach developed to meet the recommendations in the WHA and WHMP (Figure 2: Proposed Wildlife Fence Locations). Because there would be no gaps in the fence, the fence could be placed in the upland edges of areas abutting the Poquonnock River and Bakers Cove, reducing environmental impacts to the extent that CTDEEP permits would not be required. The proposed fence alignment would completely enclose the airfield and enhance the existing fence line, thus meeting the purpose and need for the project.

However, this alignment would have to cross the boundaries of restricted areas, including the Object Free Area (OFA) and Runway Safety Areas (RSA) of Runway 5/23 and Runway 15/33 and approach surfaces of Runway 5 and Runway 33 and the Localizer Critical Area of Runway 23. The FAA will not allow a static obstruction to be placed in the approach surfaces of either runway in order to prevent a potential obstruction (wildlife) from entering the protected areas.

Because Alternative #1 cannot be constructed, it does not meet the purpose and need for the project and was not carried forward for analysis.

Alternative #2 – Proposed Action

Alternative #2, the Proposed Action, would locate the fence as shown on Figure 2. This alternative has been located with discussion and input from CTDEEP, OLISP and ACOE and is offered to balance the need to impact jurisdictional aquatic resources with the efficacy of the fence. As noted in the 2012 WHA and 2014 WHMP, deer and large mammals currently go around the ends of the fence at its terminal locations. The fence must have gaps in it due to the inability to erect the fence in protected airspace surfaces. In order for the fence to effectively prohibit large mammals from following the fence until reaching the new terminal at gap areas and going around it, the fence must be placed into deep enough water to deter animals from walking around the fence.

An Essential Fish Habitat and Wildlife Assessment was developed for the project by a wildlife biologist in December 2015 (Appendix A). Review of the existing site conditions and discussion with airport staff provided a clear picture of the extent of wildlife use and their current paths of access, specifically deer, coyote and large flocking or large-bodied birds such as Canada goose, American crows, European starlings and gulls. The Assessment notes that the proposed Action would effectively prevent larger mammals from entering the airport, and that in the locations where fence gaps would have to remain, they would provide targeted areas for airport staff to monitor, increasing the likelihood that wildlife entering would be quickly detected. The Assessment supports the fact that the fence terminals should extend into the water and would deter mammals from swimming around the ends of fencing to enter the property.

Canada geese are regularly seen entering the airport on foot from the river. The fence section extending into the tidal marsh along the southeast side of the airport would deter these birds from entering at this location, while leaving substantial portions of marsh habitat for use outside of the fence.

The starting point for the fence in the southwest corner of the project along the edge of the Access Road would be located to leave the large wetland and a pocket of grass habitat outside of the fenced area. Wildlife that currently follow the existing fence to its end and go around it would still have an area to use, while not being able to access the active airport areas within the fence. This would prevent a majority of animals from traveling along the fence looking for another access point. The fence would be placed along the edge of the Access Road until skirting the edge of Taxiway C, at which point it would turn south to follow an upland peninsula before entering the water. This would leave large areas of grass and aquatic habitat available for wildlife use without allowing access to the airport. Where the fence would need to cross the creek adjacent to Taxiway C, the fence would straddle the crossing and would not extend the fence fabric or fence poles into the water; a hinged breakaway fence (Figure 3: Breakaway Fence at Channel Crossing) would extend to just above the water surface, deterring potential mammal use while not impeding flow or becoming blocked during flood events. Similar to all areas of the fence, this would be inspected regularly to ensure it is not blocked by debris and functions as designed.

The fence along the eastern side of the airport, facing the Poquonnock River, would allow for some grass and forested areas to remain for wildlife use while effectively preventing access to the runway and taxiway. Deer currently use the stone causeway as an access point from the large forested areas within Bluff Point State Park, west of the airport, thus the fence would enter the

water along the steep rocky section of shore north of the causeway, causing deer that cross the river using the causeway to remain on the small grassy area outside of the fence.

The proposed fence would tie into the existing northern terminus of the fence along the bottom edge of the small bluff accessed from South Road. This would permit the wildlife that currently go around the end of the fence along the river, as airport staff have reported, to remain in the area and use the grass habitat while effectively preventing access to the runway. The fence would enter the water along the northern edge of the rocky steep shore, so that the area left unfenced would be limited to a section of steep, rocky shoreline. Wildlife crossing the river would have to climb the slope at this location to access the airport through the gap.

3.3 Public Involvement

A Scoping Notice was published in the CEPA Environmental Monitor on September 22, 2015 to allow for 30 days of public comment, ending on October 22, 2015. No comments were received.

A Draft EA/EIE was prepared for the project in March 2016 and submitted to the stakeholder agencies for review and comment as listed in Chapter 6. Contact was also initiated with federal and state resource agencies prior to the Draft EA/EIE during the development of design and alternatives. Agency correspondence is included in Appendix B.

On May 17 the Draft EA/EIE was published in the Environmental Monitor (http://www.ct.gov/ceq/site/default.asp). A notice of the Draft EA/EIE publication, including information on how the document could be accessed, the location, date and time of the public informational meeting, and details on the comment process, was advertised in The Day Newspaper on May 17, May 24 and May 31 (Appendix C). This notice was also mailed to CTDEEP, the City of Groton, the CT Office of Tourism, CEPA, and the Connecticut Office of Policy and Management (OPM). Comments were accepted through July 1, 2016.

Per CEPA requirements, a public hearing on the Draft EA/EIE would be required if twenty-five persons or an association having not less than twenty-five persons requests such a hearing within ten days of the publication of the notice in the Environmental Monitor. A request for public hearing was not received and such meeting was not held.

A public informational meeting was held on June 23, 2016 at the City of Groton Municipal Building. This meeting was attended by representatives from Hoyle, Tanner and CAA who introduced the project and discussed the identified alternatives and proposed action. This meeting was attended by thirteen members of the public. The questions and comments provided by the public at this meeting were summarized and are provided as Appendix C. Also included in Appendix C are the comments provided by the public subsequent to the meeting.

Comments and issues identified from the public and agency stakeholders have been reviewed, acknowledged and incorporated into the alternatives analysis, project design and analysis of environmental consequences where feasible and practicable.

This Final EA/EIE will be publicly displayed and available for comment on the CAA website (www.ctairports.org) and published in the Environmental Monitor (http://www.ct.gov/ceq/site/default.asp).

4. AFFECTED ENVIRONMENT

There are 14 environmental impact categories identified by FAA Order 1050.1F. Per direction provided in FAA Guidance Memo #2, 2011, *Guidance on Preparing Focused, Concise and Timely Environmental Assessments*, it is not the intent of this document to provide detailed discussion or analysis of all categories. Only those areas where there may be significant environmental impact caused by the proposed action, or where there are uncertainties which require evaluation, are identified in this document.

For the following potential impact categories, analysis is not required because the resource is not present within the project boundary or the no action, Proposed Action, and reasonable alternatives would not affect it:

- Air Quality and Greenhouse Gases
- Climate
- Hazardous Materials, Solid Waste, Pollution Prevention
- Land Use
- Natural Resources and Energy Supply
- Noise and Compatible Land Use
- Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety/Public Health and Safety
- Visual Effects and Light Emissions
- Traffic, Bike and Pedestrian Access*

*This category pertains to CEPA analysis, not NEPA

The Project Area identified for review in the analysis described below includes the areas within the airport boundary as shown on Figure 2. The Proposed Action, as defined in Chapter 3 as Alternative #2, would impact the following environmental categories:

4.1 Biological Resources

The assessment of biotic communities used existing data, field investigations, wildlife sightings, and the identification of vegetative communities.

Fisheries

The Poquonnock River, including Baker Cove, is a tidal estuary that provides nursery habitat for several species of recreationally important fish including striped bass, black sea bass, scup (porgy), alewives and rainbow smelt. The area is also utilized by forage fish, which are short-lived, highly prolific fish that spend a majority of their life cycles inshore where they are common food for other fish. Such species play an important role in the global ocean ecosystem by transferring energy from plankton to sea birds, marine mammals and larger fish species, including commercially substantial tuna, salmon and cod. A study of Marine Recreational Fisheries in Connecticut, Annual Performance Report 2014-2015 (CTDEEP Marine Fisheries Division 2015) includes data from marine finfish surveys by estuarine seine for the period from 1988-2014; an estuarine seine sampling station (labeled Groton) is located along the northern shoreline of Bushy Point Beach at the confluence of Baker Cove and the Poquonnock River immediately south of the

airport. Across all sites, 60 species have been captured and 22 species are commonly captured over the 27-year period. Mean catch of all finfish in 2014 was the second highest in the 27-year time series: 301 fish/haul, significantly above the long-term mean of 146 fish/haul, attributed to above-average catch of black sea bass, tautog, scup/porgy, northern kingfish, striped searobin, bay anchovy and menhaden. The most frequently caught forage fish over the 27-year period are Atlantic silversides, striped killifish, mummichog and sheepshead minnow. The index of abundance for forage fish for 2014 was the eleventh highest across the 27-year dataset; forage fish abundance shows an overall increasing trend from a low in 1997 to 2014. Recreationally important fish (black seabass, scup) show an overall increasing trend from 1998 with substantial increases from 2010.

An Essential Fish Habitat (EFH) and Wildlife Assessment was developed for the project by a wildlife biologist in December 2015 to determine the potential for adverse effects on EFH, and managed species (Appendix A). The Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act mandate that National Marine Fisheries Service (NOAA Fisheries) identify and protect important marine and anadromous fish habitat. This essential fish habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C.1802 § 3). The Magnuson-Stevens Act requires consultation with NOAA Fisheries for proposed activities that may have an "adverse effect" on EFH. An "adverse effect" is defined as any impact which reduces quality and/or quantity of EFH, including direct, indirect, individual, cumulative or synergistic impacts.

Review of the physical and chemical properties of the Project Area and the NOAA Fisheries definition of species-specific habitat conditions identified EFH for 6 of the 13 federally managed fish species in the Project Area:

Atlantic salmon	J,A
Atlantic sea herring	J,A
Bluefin tuna	A
Bluefish	J,A
Cobia	E,L,J,A
Dusky shark	J
King mackerel	E,L,J,A
Monkfish	A
Pollock J	A
Red hake	E, L,J,A
Sand tiger shark	L
Spanish mackerel	E,L,J,A
Windowpane flounder	E,L,J,A

E=eggs, L= larvae, J=juveniles, A=adults.

The airport is bounded by the Poquonnock River to the east and southeast Bakers Cove to the west; these are estuarine embayments that connect to Fisher's Island Sound estuary and on to Long Island Sound. Baker Cove and the Poquonnock River are both designated as hard clam (*Mercenaria mercenaria*) shellfish concentration areas. These geographic areas support and produce significant concentrations of shellfish that are of recreational and commercial value. The Poquonnock River is designated by the CTDEEP as an "Approved" recreational shellfishing area. Baker Cove, however, is closed to recreational shellfishing. The shellfish beds within Baker Cover

are designated by the CTDEEP as "Conditionally Restricted Relay" beds. These beds are leased by commercial shellfisherman, who must first remove or relay their harvest to approved waters for natural cleansing before their harvest can be made available for market consumption.

Marsh forage fish species which utilize the tidal creeks and marsh platforms for feeding, particularly during spring tides, include mummichog, killifish, etc.

Plants

Upland

Upland vegetative communities within and near the Airport primarily consist of maintained grounds. The maintained grounds areas include paved surfaces (roadways, parking lots, runways and taxiways) and structures. Most of the developed lands are vegetated with lawns, and landscaped with trees and shrubs. All of the upland areas surrounding the project areas have been highly influenced by human activity.

The turf grass/mowed field habitats are composed primarily of planted grass species that are mowed on a regular basis as required by FAA regulations. Currently the grass is maintained at a 3- to 6-inch height alongside runways and taxiways, and a 6- to 12-inch height elsewhere.

Aquatic and Wetland

In wetland areas, low bearing pressure (tracked) equipment would be used to access the fence alignment. Poles would be pile-driven as depicted in the photo provided.

Existing wetland vegetation is comprised of species that either grow to minimal height or are amenable to the airport's mowing schedule. Where necessary, vegetation would be cut flush to the ground. Long-term vegetation management would occur within wetland areas along the 20-foot wide fence corridor (10-feet on each side) only where necessary and would be conducted in a similar manner as initial removal using the least impacting methods.

Wildlife Habitat and Listed Species

Habitat on the Airport is varied and includes sufficient cover and food/foraging opportunities for a variety of species. As summarized in the Wildlife Hazard Assessment developed in 2012, a total of 48 standardized surveys were conducted from late December 2010 through early December 2011. A total of 13,053 birds, 92 mammals, and 18 amphibians were observed in 384 separate observations.

Wildlife was observed at all stations on the airport with the greatest number observed east of Runway 23, adjacent to the Poquonnock River and notably overlooking the site of the wetlands mitigation project and associated habitat. West of Taxiway E, had the second highest number observations. Wildlife in these two areas was often observed forging in the grass, loafing on the Poquonnock River and Bluff Point parking-lot and flying locally.

Listed Species

The US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) online tool was used to review the project. The federally-threatened Red knot (*Calidris canutus rufa*) and the federally-threatened Northern long-eared bat (*Myotis septentrionalis*) were identified as potentially using the Project Area. No critical habitat has been designated for either species (Appendix D).

State-listed endangered/threatened species and species of special concern utilize the Airport and surrounding habitats. The existing CT Natural Diversity Database (NDDB) mapping, updated December 2014, indicates that portions of the Airport contain habitat for State and Federal Listed Species & Significant Natural Communities (Appendix E). A Natural Diversity Database Review request was submitted to CTDEEP for the project on September 16, 2015.

Correspondence from CTDEEP dated December 10, 2015 indicates the following listed plant species have been documented at the Airport:

- Sea-coast angelica (*Angelica lucida,* State Endangered)
- Bracted orache (*Atriplex glabriuscula*, State Special Concern)
- Yellow thistle (*Cirsium horridulum,* State Endangered)
- Scotch lovage (*Ligusticum scothicum,* State Endangered)
- Field paspalum (*Paspalum leave*, State Threatened)

CTDEEP has also confirmed the following state-listed animal species at the Airport:

- Grassland birds, which includes Savannah sparrow (*Passerculus sandwichensis*, State Species of Special Concern), bobolink (*Dolichonyx oryzivorus*, State Species of Special Concern), and horned lark (*Eremophila alpestris*, State Endangered)
- Saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*, State Species of Special Concern)
- Brown thrasher (*Toxostoma rufum*, State Species of Special Concern)
- Northern diamondback terrapin (*Malaclemys terrapin*, State Species of Special Concern)

A copy of this correspondence is located in Appendix E.

4.2 Water Resources and Groundwater Quality

Floodplains

GON falls within the 100-year floodplain of The Town of Groton. Flood insurance studies for New London County (FEMA Flood Insurance Rate Map Revised August 5, 2013; Appendix F) indicate that the 100-year flood would inundate all of the airport. The Town of Groton Zoning Regulations

apply to all Flood Hazard Areas as designated on the FEMA FIRM map. Essentially, all development within the 100-year floodplain must secure a permit and undergo review by the Zoning Official.

Groundwater and Surface Water Quality

The Project Area is located within the Southeast Coastal Drainage Basin. According to CTDEEP Surface Water Quality Standards, the Poquonnock River, which forms the northeast boundary of GON, is classified as a Class SA surface water resource. Class SA surface waters are saline and are known or presumed to meet specific defined water quality criteria for Class SA waters that support several designated uses, including: habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply, and navigation.

Baker Cove, the waterbody to the west of the Project Area, has a state water quality classification of Class SB. Designated uses for Class SB surface waters are similar to Class SA designated uses with the exception that shellfish cannot be harvested for direct human consumption from waters designated as Class SB. Commercial shellfish harvesting, however, can occur in Class SB waters.

Nearby freshwaters, including the wetland located northwest of Tower Avenue, are designated as Class A surface water resources. Designated uses for Class A waters are based on established criteria defined in the February 2011 CTDEEP Surface Water Quality manual and include the following: habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture.

There are no CTDEEP designated aquifer protected areas in the Project Area.

Wetlands

Wetlands within the Project Area are identified from the National Wetland Inventory (NWI) mapping provided by the US Fish and Wildlife Service (USFWS; Appendix G). Two small freshwater wetland areas are present along the western limit of the airport while coastal marshes occur within the intertidal zone of the moderate to low energy shorelines along the Poquonnock River south and west to Baker Cove.

The wetlands on-site are described in the 2012 WHA as supporting large numbers of waterfowl, gulls, wading birds, fish-eaters, and shorebirds. A compensatory mitigation tidal wetland was constructed in the vicinity of the former Town Beach on the Poquonnock River on the east side of the airport. This wetland mitigation area was designed and built to serve as functioning salt marsh which would attract wildlife, some of which are clearly hazardous to nearby airport operations and is counter to FAA separation guidelines as detailed in Advisory Circular 150-/5200-33B.

Coastal habitat is significant as the basis for a large food web that supports many marine organisms as well as numerous species of shorebirds, wading birds, and waterfowl. The salt marsh which abuts the airport to the east and south produce large amounts of organic matter, a significant portion of which is exported as detritus and dissolved organics to estuarine and coastal waters. These areas provide spawning and nursery habitat for several important forage finfish as well as food, shelter, breeding areas, and migratory and overwintering areas for many wildlife

species. Similarly, tidal flats consisting of unconsolidated sediment (sand and mud) offer ideal habitat for food sources for fish and migratory and wintering birds.

4.3 Coastal Resources

The state agency responsible for compliance with the requirements of the Coastal Zone Management Act (CZMA) of 1972, as amended, is Connecticut's Coastal Management Program administered by CTDEEP and approved by National Oceanic and Atmospheric Administration (NOAA) through the Office of Long Island Sound Program (OLISP). The proposed project is within Connecticut's coastal boundary as defined by section 22a-94 of the Connecticut General Statutes (CGS) and is subject to the provisions of the Connecticut Coastal Management Act (CCMA), sections 22a-90 through 22a-112. In accordance with CGS section 22a-100, state actions within the coastal boundary that may significantly affect the environment must be consistent with the standards and policies of the CCMA.

In 2012, the Connecticut General Assembly passed PA 12-101 which included a revision to the State's regulatory jurisdiction under Connecticut General Statutes (CGS) Section 22a-359. In essence, this revision changes the regulatory jurisdiction limit from the "high tide line" to the area up to and including the elevation of the "coastal jurisdiction line" (CJL) as determined for the State's major tidal waterbodies. The CJL for Long Island Sound in Groton is 2.0' NAVD88. The regulatory jurisdiction encompasses areas with tidal wetland vegetation with elevations up to 1' above the CJL. The project would require a permit from OLISP pursuant to section 22a-32 of the CGS for impacts to land below the CJL.

4.4 Department of Transportation, Section 4(F) and Historic, Architectural, Archeological and Cultural Resources

The Section 4(f) of the Department of Transportation Act of 1966 requires review of the Project Area for impacts to historic sites and parks, recreation areas, and wildlife and waterfowl refuges, while the procedures in Section 106 of the National Historic Preservation Act of 1966 and the Archaeological and Historic Preservation Act of 1974 are used to evaluate impacts to Archaeological, Architectural, and Cultural resources.

There are no parks, recreation areas or wildlife and waterfowl refuges within the Project Area. There would be no impacts to these resources.

Procedures in Section 106 of the National Historic Preservation Act of 1966 and the Archaeological and Historic Preservation Act of 1974 are used to evaluate impacts to Archaeological, Architectural, and Cultural resources.

A Request for Review was submitted on October 1, 2015, with a follow-up email and revised graphics on October 6, as well as an invitation to attend a field review meeting on October 22, no response was received from the Connecticut State Historic Preservation Office (SHPO). On November 12, 2015 a final email was sent to SHPO stating "We intend to move forward with the NEPA analysis of this project and assume there will be no historic, cultural or archaeologic resources affected". A copy of the correspondence is provided in Appendix B.

4.5 Farmlands/Agricultural Lands

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Although some of the soils within the Project Area are designated as farmland of statewide importance and prime farmland as shown on the Natural Resource Conservation Service (NRCS) Web Soil Survey map (Appendix H), the areas in question are within the boundary of the airport and have been so since its designation in 1929 and can be considered urban, built-up land that is excluded from FPPA jurisdiction.

The FAA has determined that the Proposed Action would not affect FPPA soils or agricultural lands. No mitigation is proposed.

5. ENVIRONMENTAL CONSEQUENCES AND MITIGATION

In this chapter the impact of the proposed action, and, where necessary for comparison, the Proposed Action is described in detail for each environmental impact category identified in Chapter 4, Affected Environment. The cumulative impact of the Proposed Action is determined by the significance and duration of these impacts in conjunction with impacts from previous projects.

5.1 Biological Resources

Fisheries

The proposed action would have minimal, localized and mostly temporary impacts to fisheries resources resulting from both direct and indirect sediment disturbance. Direct impacts to the benthic substrate and sediment have been minimized from publication of the Draft EA/EIE by changing the fence from a chain link fabric to woven wire, which will allow for a longer distance between fence posts, resulting in less fence posts needed. Within the jurisdictional tidal areas (1 foot above the CTDEEP CJL elevation), no disturbance to existing vegetation would be anticipated beyond the current vegetation management that is on-going. Therefore, any alterations to vegetation as a result of the project would be limited to fencepost locations.

Localized populations of finfish foraging within high salt marsh habitat may encounter the fence for a short period during most spring tide events. These species are highly mobile, and individuals are expected to both avoid areas during temporary construction periods and be able to navigate around, or through the fence after construction. The fence will be inspected on a daily basis to ensure there is no accumulation of debris or wrack along the fence that would reduce or impair fish movement through the fence holes. As noted in the description of the Fence Design in Section 3.1, gates will be installed where necessary along the fence to ensure airport staff have access to both sides of the fence for maintenance, inspection and debris removal.

Based upon the information provided in the EFH assessment, it has been determined that the adverse effect on EFH from the project is not substantial. The proposed project will have minimal and mostly temporary adverse effects on EFH species. In addition, the project will have minimal effects on other NOAA-trust resources. Therefore, no EFH conservation recommendations have been provided for this action pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act. A potential positive impact of adding structure to the area is that it would provide a substrate upon which benthic organisms can attach that would then serve as a potential food source for fish.

Plants

There would be minimal and mostly temporary impacts to existing upland and wetland vegetation due to installation and long-term maintenance of the wildlife fence.

Wildlife Habitat and Listed Species

All efforts would be made by airport operators and staff to harass wildlife that enter through the openings in the fence back through these openings where and when feasible. Wildlife that are unable to be harassed off-site and remain within active runway and taxiway areas would be dealt with by enacting the State depredation permit.

Installation of a fence would impact wildlife and state-listed species. In order to successfully meet the purpose and need of this project, the Airport must fence in some or all of the existing wildlife habitat. The least environmentally damaging practicable alternative (LEDPA) is anticipated to be the Proposed Action. However, in terms of wildlife impacts, any alternative which requires installation of a fence would limit habitat use from individuals currently using these areas. The overall human impact resulting from not implementing this project could be overwhelming in terms of financial cost and human life liability.

Coordination with Susi VonOettingen, USFWS Endangered Species Biologist, on October 14, 2015 concluded the following, as included in Appendix D:

- The federally-threatened Red knot migrate across coastal New England between their Arctic breeding ground and wintering regions. The Delaware Bay and coastal Massachusetts and New Jersey are important migration stopovers. The proposed project would not permanently alter or reduce rocky coastal, beach or mudflat habitat available for this species to use during migratory stopover. There would be no effect on this species.
- The project is located within the federally-designated suitable habitat zone for the federally-threatened Northern long-eared bat (Coastal New England). However, the project does not include removal of trees greater than 3" diameter breast height (dbh) other than a few individual trees along the edge of one wetland area. Most of the impact areas are mowed lawn or high saltmarsh. There would be no effect on this species.

Mitigation

Requests made by CTDEEP would be addressed and completed during the permitting phase of this project, and may include the following:

- Mowing of grassland areas and installation of fencing would not be conducted during the breeding season for grassland-nesting species, which is May 15 through August 15.
- Backfilling of soils to cover the skirting would not result in a change in elevation.
- Fencing materials would not include screening that would impeded sight lines of foraging birds.
- Areas requiring re-seeding would be done with warm-season grasses.
- Impacts to shrubby habitats would be minimized during the nesting season for brown thrasher.
- Botanical surveys would be conducted by a qualified botanist along the proposed fence alignment, within any vegetated staging areas or transportation routes, and within currently vegetated areas that would be managed differently upon construction of the proposed fence when each of the target plant species is identifiable.
- An Incidental Take Report may be required for unavoidable impacts to state-listed plants; this document would be reviewed by CTDEEP and the CT Office of Policy and management (OPM) prior to issuance of authorizations or permits from CTDEEP.
- Impacts to Northern diamondback terrapin would be minimized by providing a 6-inch gap along the fence bottom in sections of the fence proposed within the CJL jurisdiction (including the section of fence identified as Canada geese fence) to allow turtles to pass under unimpeded.

- Maintenance mowing in areas of saltmarsh grass would not occur during active turtle season and would be conducted from November 1 through May 1.

5.2 Water Resources and Groundwater Quality

Floodplains

Impacts to the 100-year floodplains or flood hazard areas within the Airport property would be minimal, temporary and mitigated via use of Best Management Practices (BMPs) and Connecticut Guidelines for Erosion and Sediment Control. The proposed fence alignment and maintenance access corridor would be too small in scale to have an effect on the 100-year flood plain; however, it may have the potential to change the hydraulic characteristics of the marsh area in smaller inland and tidal events. This would be avoided by designing the access corridor with profile grades that mimic the natural environment and the use of BMPs where necessary and prudent.

Groundwater and Surface Water Quality

Impacts to groundwater and surface water quality would be minimal. The potential to impact water quality increases in the event of ground disturbance due to sedimentation caused by erosive forces.

Mitigation

This potential would be mitigated by best management practices such as erosion control and soil stabilization using native seeding or CTDEEP approved warm-season grasses. The extent of soil disturbance would be limited during construction.

Wetlands

As shown in Table 5.2-1, the proposed wetland impacts for the Proposed Action would be minimal.

Table 5.2-1 Wetland Impacts by Alternatives

	ACOE/OLISP Wetlands Impacts	
	Permanent (lin ft/sq ft)	Secondary (sq ft/acres)
Proposed Action	985/ 5.18	19,700/ 0.45

State-Regulated Wetland Impacts

As determined by CTDEEP and OLISP, permanent wetland impacts regulated by CTDEEP and OLISP would be minimal and limited to the footprint of the fence poles; the values in Table 5.2-1 reflect a fence design requiring fence poles every 10 feet, however, design modifications may allow for the length between poles to be increased. Within tidal wetlands, the Proposed Action would result in approximately 5.18 sq ft (0.001 acres) of permanent wetland impacts. Poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track mounted skid steer.

Clearing or removal of vegetation within 10-feet on both sides of the fence (where required) would be considered a secondary impact by these agencies; this impact would not be due to filling or result in a net loss of wetlands, rather it is due to the change from one type of wetland to another. Much of the vegetation within the tidal wetland areas is low growing, is currently maintained by routine mowing and would not affect the ability of the fence to be seen by wildlife or airport staff or maintained, thus would not need to be disturbed. In areas where existing vegetation would need to be removed within wetlands, vegetation would be cut flush to the ground, with no soil disturbance, and maintained by hand removal as needed over time. The values in Table 5.2-1 assume clearing would be required in all wetland areas- 19,700 sq ft (0.45 acre) is the maximum value of potential impact and would be reduced reflecting site-specific field conditions during fence installation.

Federally-Regulated Wetland Impacts

The placement of pilings, such as the proposed fence posts/poles, would not have the effect of a discharge of fill material, as described and documented in ACOE Regulatory Guidance Letters (RGL) 88-14 and 90-08, as well as ACOE regulations at 33 CFR 323.3(c) and as such are not considered a permanent impact in freshwater wetlands. ACOE Section 404 permit and wetland compensation would not be required. However, per Section 10 of the Rivers and Harbors Act, installation of the fence poles in navigable waters below 2.0' NGVD would require a permit from ACOE.

The clearing or removal of vegetation where necessary for maintenance of the fence and access corridor to allow for structural upkeep and visibility, would be considered a secondary jurisdictional impact by ACOE within the jurisdictional areas and this value may differ slightly due to changes in site-specific field conditions during fence installation.

Mitigation

Mitigation via design modification of the fence alignment must demonstrate 1) the impacts are unavoidable; 2) the adverse impacts, including specific impacts on coastal resources, navigation and water-dependent uses have been minimized to the greatest extent practicable; 3) the scope and extent of encroachments into tidal, coastal or navigable waters have been minimized to the greatest extent practicable; 4) any remaining adverse impacts are acceptable and consistent with applicable statutory standards; 5) and alternatives with the least adverse impact has been presented. Wetland avoidance and minimization measures have guided the design of the fence and the alignment of the corridor.

Impacts to freshwater and tidal wetlands would be minimized by limiting fill to pile-driven fence posts and not installing skirts within wetland areas. Where necessary, vegetation would be cleared 10 feet on both sides of the fence alignment corridor and permanently maintained either by using small equipment or hand clearing in order to keep the fence visible and reduce maintenance. Trees and overhanging branches would be trimmed in all areas of fence installation to reduce the potential attraction for wildlife to use as assistance in crossing the fence. In wetland areas, low bearing pressure (tracked) equipment would be used to access the fence alignment. Poles would be pile-driven as depicted in the previous photo. All vegetation deemed necessary for removal would be cut flush to the ground. Long-term vegetation management would occur within wetland areas along the fence corridor only where deemed necessary to maintain the efficacy of the fence

and would be conducted in a similar manner as initial removal using the least impacting methods.

A permit would be required from each respective agency for impacts to areas within their jurisdiction. Additional mitigation may be established as a condition of agency permits.

5.3 Coastal Resources

Minimal and temporary impacts are anticipated to resources regulated by the applicable standards and policies of Part VII of the Connecticut Coastal Management Plan, and Section 307(c)(1) of the Coastal Zone Management Act of 1972, Subpart C of 15 CFR Part 930, as amended. Coordination with OLISP has been initiated and has been incorporated into the fence design, installment procedures and potential alignment corridors to ensure impacts to coastal resources are minimized and avoided to the maximum extent practicable.

Mitigation

Mitigation for impacts to coastal resources includes design analysis to avoid and minimize impacts to these resources to the extent practicable.

5.4 Department of Transportation, Section 4(F) and Historic, Architectural, Archeological and Cultural Resources

There are no parks, recreation areas or wildlife and waterfowl refuges within the Project Area. There would be no impacts to these resources.

All of the work areas have been previously disturbed and graded due to historic and ongoing airport operations, and are currently paved or mowed grass/landscaping adjacent to or in between active runways and taxiways. There is no reason to believe such areas would contain historic or cultural resources.

The FAA has determined that no historic properties will be affected by the undertaking. No mitigation is proposed.

5.5 Farmlands/Agricultural Lands

The FAA has determined that the Proposed Action would not affect FPPA soils or agricultural lands. No mitigation is proposed.

6. LIST OF AGENCIES CONTACTED AND PERSON CONSULTED, EA PREPARERS

Federal Aviation Administration
Richard Doucette- Environmental Program Manager
John Merck- Project Manager, Connecticut

Connecticut Airport Authority
Colin Goegel – Transportation Supervising Engineer
Sally Snyder- Environmental Analyst 3, Regulatory Compliance

Connecticut Department of Energy and Environmental Protection
David Fox- Senior Environmental Analyst
Michael Grzywinski- Office of Long Island Sound Programs
Doug Hoskins- Inland Water Resources Division
Laura Saucier- Wildlife Biologist

Connecticut State Historic Preservation Office (SHPO)
Todd Levine – Review Officer

US Army Corps of Engineers
Barbara Newman, Project Manager, Regulatory Division

US Fish and Wildlife Service
Susi VonOettingen- Endangered Species Biologist

ESS Group, Inc.
Craig A. Wood - Principal Ecologist

Hoyle Tanner & Associates, Inc. (EA Preparers)
Tim Audet, P.E.- Project Manager
Kimberly Peace- Environmental Coordinator
Deb Coon- Assistant Environmental Coordinator

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Appendix A: Essential Fish Habitat (EFH) and Wildlife Assessment

Essential Fish Habitat & Wildlife Assessment

Groton-New London Airport Wildlife Deterrent Fencing

Groton, Connecticut

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Manchester, New Hampshire 03101

PREPARED BY:
ESS Group, Inc.
10 Hemingway Drive, 2nd Floor
East Providence, Rhode Island 02915

H174-000

March 2016

ESSENTIAL FISH HABITAT & WILDLIFE ASSESSMENT
Groton-New London Airport Wildlife Deterrent Fencing

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March 2016

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1.0 INTRODUCTION

ESS conducted an Essential Fish Habitat (EFH) and Wildlife Assessment for the proposed wildlife deterrent fencing at Groton-New London Airport (GON) located in Groton, Connecticut. Currently, the northwest side of Runway 5-23, around the developed portion, is fenced with 8 foot chain link with three strands of barbed wire on the top. The perimeter fencing terminates at the west side of the abandoned runway end traveling northeast to the Runway 23 end. The Connecticut Airport Authority (CAA) is proposing to install additional wildlife deterrent fencing around the perimeter of the airport facility. An 8 foot chain link fence with a 3 foot horizontal burrowing deterrent chain link "skirt" attached to the bottom and 3 strands of barbed wire on the top, in accordance with FAA specifications, would be installed, along portions of the remaining airfield. This work will require environmental review mandated by the National Environmental Policy Act (NEPA).

This EFH and Wildlife Assessment provides a description of the alternatives and proposed action and an analysis of the potential adverse effects of the action on EFH, managed species, and wildlife resources. To assist in the evaluation, ESS scientists conducted an on-site inspection on October 7, 2015 to evaluate the habitat in the immediate vicinity of the project site.

2.0 EXISTING SITE CONDITIONS

The proposed project site is the Groton-New London Airport, located in the Town of Groton, New London County, Connecticut. The airport grounds consist of approximately 490 acres situated on a peninsula bounded by the Poquonnock River to the east and south and Baker Cove to the west. Bluff Point State Park is located to the east of the airport on the eastern bank of the Poquonnock River. Land use to the north and west of the airport is dominated by residential and commercial properties.

The airport is currently fenced only on the landward (northern) side of the property. The existing fence extends in a generally northeast-southwest orientation from the western bank of the Poquonnock River to the eastern bank of Baker Cove. The eastern, southern, and western sides of the peninsula which border the Poquonnock River and Baker Cove are currently unfenced.

Habitat

The airport was constructed primarily on filled saltmarsh and tidelands. Photographs of representative habitat types are contained in the attached Photographic Log. Remaining saltmarsh areas are primarily located on the southern and eastern sides of the peninsula. While not filled as part of the construction of the airport, the remaining saltmarsh habitat has been impacted by extensive ditching for mosquito control purposes. The remainder of the peninsula consists primarily of mowed fields and the airport facilities.

The Poquonnock River and Baker Cove, which bound the southern extent of the airport, are estuarine embayments, which connect to the Fisher's Island Sound estuary and on to Long Island Sound. Large rip-rap is located along much of the Poquonnock River shoreline along the airport property's eastern edge.

Wetlands on the airport property consist of both inland wetlands and tidal wetlands. The southern portion of the airport, bordering the Poquonnock River and Baker Cover, consists of large concentrations of impacted tidal wetlands. Based on data collected for the 2013 Master Plan update, low marsh exists North of Runway 23, along the Poquonnock River, with an elevation change of 8 to 10 feet from the shoreline to the upland. Located south of Runway 5 is an extensive area where low salt marsh transitions to high salt marsh.

There is one relatively large inland wetland that is located north of Tower Avenue. The wetland is described by Parsons as a Palustrine Forested/Shrub-Scrub/Emergent/Aquatic/Open Water Wetland that consists of an excavated pond/wetland separated into three areas by an access road and associated berms (Parsons 2007). The wetland, which has a high degree of interspersion of different wetland vegetative types, has several principal functions; including wildlife habitat, production export, fish habitat, and potential threatened/endangered species habitat. A smaller Forested/Shrub-Scrub/Emergent Wetland

is found within the western corner of the property near the head of Baker Cove. Small isolated depressions have been reported (e.g., north of Runway 23) where temporary ponding may occur. These isolated areas may also contain hydric soils and represent additional inland wetland resources.

Water Quality

The airport property is located within the Southeast Coastal Drainage Basin. According to CTDEEP Surface Water Quality Standards, the Poquonnock River, which forms the northeast boundary of GON is classified as a Class SA surface water resource. Class SA surface waters are saline and are known or presumed to meet specific defined water quality criteria for Class SA waters that support several designated uses, including: Habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply, and navigation.

The southerly adjoining Baker Cove has a state water quality classification of Class SB. Designated uses for Class SB surface waters are similar to Class SA designated uses with the exception that shellfish cannot be harvested for direct human consumption from waters designated as Class SB. Commercial shellfish harvesting, however, can occur in Class SB waters.

Nearby freshwaters, including the wetland located northwest of Tower Avenue, are designated as Class A surface water resources. Designated uses for Class A waters are based on established criteria defined in the February 2011 CTDEEP Surface Water Quality manual and include the following: habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture.

Shellfish

Baker Cove and the Poquonnock River are both designated as hard clam (*Mercenaria mercenaria*) shellfish concentration areas. These geographic areas support and produce significant concentrations of shellfish that are of recreational and commercial value. The Poquonnock River is designated by the CTDEEP as an “Approved” recreational shellfishing area. Baker Cove, however, is closed to recreational shellfishing. The shellfish beds within Baker Cover are designated by the CTDEEP as “Conditionally Restricted Relay” beds. These beds are leased by commercial shellfisherman, who must first remove or relay their harvest to approved waters for natural cleansing before their harvest can be made available for market consumption.

3.0 PROPOSED PROJECT ALTERNATIVES

There are currently four build alternatives under consideration for the GON Wildlife Deterrent Fencing Project. The proposed alternatives vary in the extent to which they enclose currently unfenced portions of the airfield. Alternative 1 (identified as the Proposed Action in Figure 1) would require the installation of approximately 11,000 linear feet of fencing. This alternative would leave substantial gaps in the fencing south of Runway 5-23 and at the Runway 5 end to accommodate FAA safety setbacks. Alternative 1 (revised) would shorten terminal segments of the fencing to avoid encroachment into salt marsh and/or the CJL. This alternative would have an overall length of approximately 10,000 linear feet. Alternative 2 would add additional fencing of an alternative design (e.g., non-metal posts, shorter fence height) along Taxiway D and the northeast end of Runway 23 for a total length of approximately 14,000 linear feet. Alternative 3 would completely enclose the airfield by addressing the remaining gaps at the Runway 5 and 33 ends for a total length of approximately 15,500 linear feet. This alternative has been included for the purposes of offering a complete enclosure option, however this alternative is not feasible without FAA waivers of standard setbacks for flight operations. It is highly unlikely that FAA would grant such waivers.

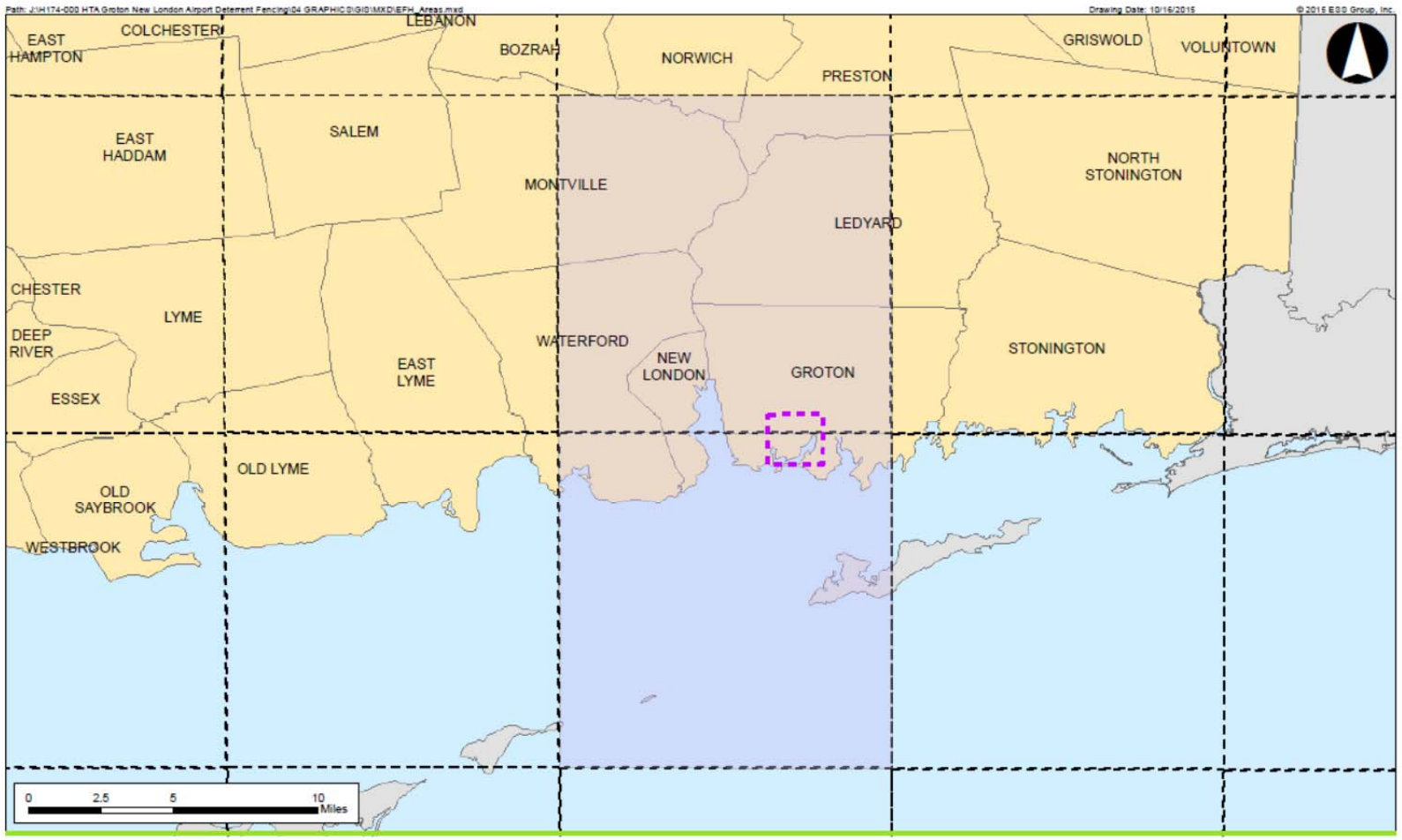
4.0 ESSENTIAL FISH HABITAT ASSESSMENT

The Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act mandate that National Marine Fisheries Service (NOAA Fisheries) identify and protect important marine and anadromous fish habitat. This essential fish habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C.1802 § 3). The Magnuson-Stevens Act requires consultation with NOAA Fisheries for proposed activities that may have an "adverse effect" on EFH. An "adverse effect" is defined as any impact which reduces quality and/or quantity of EFH, including direct, indirect, individual, cumulative or synergistic impacts.

In the Northeast, NOAA Fisheries works with the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council to define essential habitat for key species in New England coastal waters, including those of Long Island Sound and the Poquonnock River. The Management Councils and NOAA Fisheries designates EFH for numerous species in association with a mapped grid of 10 x 10 minute squares, which covers all marine habitat along the United States coast. The Poquonnock River and area surrounding the Groton-New London Airport lie within two of the 10 x 10 minute squares, identified as 41107200 and 41207200 (Figure 2). This Project requires the investigation of 13 federally managed fish species (Table 1).

Table 1. Summary of specific life stage EFH designations for species in the NOAA Fisheries designated 10 x 10 minute squares encompassing the Proposed Project Area

Species Common Name	Species Scientific Name	Eggs	Larvae	Juveniles	Adults
Atlantic salmon	*Salmo salar*			X	X
Atlantic sea herring	*Clupea harengus*			X	X
Bluefin tuna	*Thunnus thynnus*				X
Bluefish	*Pomatomus saltatrix*			X	X
Cobia	*Rachycentron canadum*	X	X	X	X
Dusky shark	*Carcharhinus obscurus*			X	
King mackerel	*Scomberomorus cavalla*	X	X	X	X
Monkfish	*Lophius americanus*				X
Pollock	*Pollachius virens*			X	X
Red hake	*Urophycis chuss*	X	X	X	X
Sand tiger shark	*Carcharias Taurus*		X		
Spanish mackerel	*Scomberomorus maculatus*	X	X	X	X
Windowpane flounder	*Scophthalmus aquosus*	X	X	X	X



Groton-New London Airport Wildlife Deterrent Fence
Groton, Connecticut

1 inch = 5 miles

Source: 1) NOAA, Essential Fish Habitat Designations, Online resource
2) CT GIS, Town Boundaries, 2002

Legend

- Approximate Project Area
- 10 min x 10 min EFH Grid Squares
- 10 min x 10 min Grid Squares Overlapping Project Area
- Connecticut Towns

Essential Fish Habitat (EFH)

Figure 1

4.1 EFH Species / Life Stages

All EFH Descriptions are from NOAA website "Guide to EFH Descriptions" (http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm) unless otherwise noted.

4.1.1 Atlantic salmon

Juveniles: Atlantic salmon juveniles have EFH designated within Poquonnock River and the coastal area surrounding GON. EFH includes bottom habitats of shallow gravel / cobble riffles interspersed with deeper riffles and pools in rivers and estuaries. Generally, the following conditions exist where Atlantic salmon parr are found: clean, well-oxygenated fresh water, water temperatures below 25°C, water depths between 10 cm and 61 cm, and water velocities between 30 and 92 cm per second. As they grow, parr transform into smolts. Atlantic salmon smolts require access downstream to make their way to the ocean. Upon entering the sea, "post-smolts" become pelagic and range from Long Island Sound north to the Labrador Sea.

Adults: Atlantic salmon adults have EFH designated within Poquonnock River and the coastal area surrounding GON. Returning Atlantic salmon require access to their natal streams and access to the spawning grounds. For adult Atlantic salmon returning to spawn, EFH includes habitats with resting and holding pools in rivers and estuaries. Generally, the following conditions exist where returning Atlantic salmon adults are found migrating to the spawning grounds: water temperatures below 22.8°C, and dissolved oxygen above 5 ppm.

4.1.2 Atlantic sea herring

Juveniles, Adults: Atlantic sea herring juveniles and adults have EFH designated within Poquonnock River and the coastal area surrounding GON. However, it was determined that EFH is not present in the Project Area because these life stages require deep water, minimum of 15 meters (49 feet) for juveniles and minimum of 20 meters (65 feet) for adults) according to NOAA's Guide to EFH Descriptions. The depths found in the Project area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for all life stages of Atlantic sea herring does not exist in the Project area and no further analysis is required.

4.1.3 Bluefin tuna

Adults: Bluefin tuna adults have EFH designated within the coastal area surrounding GON. However, bluefin tuna EFH occurs in minimum water depth of 50 meters (164 feet) for adults according to NOAA's Guide to EFH Descriptions. The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for adult bluefin tuna does not exist in the Project Area and no further analysis is required.

4.1.4 Bluefish

Juveniles: EFH is designated for bluefish juveniles within Poquonnock River and the coastal area surrounding GON. Inshore, EFH is all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Juveniles are primarily distributed on the Connecticut side of the Sound from New Haven to Norwalk over mud bottom at depths between 9-27 m (Gottschall et al. 2000). Juveniles tend to occur in estuaries, bays, and the coastal ocean, but do not use the marsh surface. Due to their habitat and minimum water depth preferences, EFH for juvenile bluefish does not exist in the Project Area and no further analysis is required.

Adults: EFH is designated for bluefish adults within Poquonnock River and the coastal area surrounding GON. Inshore, EFH is all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida. Bluefish adults are highly migratory and distribution varies seasonally and according to the size of the individuals comprising the schools. Bluefish adults are generally found in normal shelf salinities (> 25 ppt) and appear to be more abundant in the deeper portions of the Central and Western Basins of Long Island Sound (Gottschall et al. 2000). Adult abundance also tended to generally increase with depth, with a minimum depth of 9 m (Gottschall et al. 2000). The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for adult bluefish does not exist in the Project Area and no further analysis is required.

4.1.5 Cobia

Eggs, Larvae, Juveniles, Adults: EFH is designated for cobia eggs, larvae, juveniles, and adults within Poquonnock River and the coastal area surrounding GON. EFH consists sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break; as well as high salinity bays, estuaries, and seagrass habitat. Cobia is a pelagic species found in small schools near piers, buoys, boats and platforms, sandy shoals, and offshore sandbars. While usually found in the coastal areas, they occasionally inhabit inshore bays and inlets. Cobia eggs are planktonic and float freely in the water column. All life stages tend to be distributed along the inner shelf in water depths between 10 and 50 m (Nelson et al. 1991). The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for cobia does not exist in the Project Area and no further analysis is required.

4.1.6 Dusky shark

Juveniles: EFH is designated for dusky shark juveniles within Poquonnock River and the coastal area surrounding GON. EFH for neonate/early juveniles consists of shallow coastal waters, inlets and estuaries to the 25 m isobath from the eastern end of Long Island, NY to Cape Lookout, NC. EFH for late stage juveniles/subadults is located off the coast of southern New England in coastal and pelagic waters between the 25 and 200 m isobaths. The depths found in the Project area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for dusky shark early juveniles may exist in the Project area; it does not exist for late stage juveniles.

4.1.7 King mackerel

Eggs, Larvae, Juveniles, Adults: EFH is designated for king mackerel eggs, larvae, juveniles, and adults within Poquonnock River and the coastal area surrounding GON. EFH consists sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from surf zone to shelf break; as well as high salinity bays, estuaries, and seagrass habitat. King mackerel live in large schools in pelagic waters at depths from about 23 to 34 meters (75 to 112 feet). Spawning takes place over the Outer Continental Shelf from May through October. Larvae are found in estuaries with water temperatures from 26° to 31°C (79° to 88°F). The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for king mackerel does not exist in the Project Area and no further analysis is required.

4.1.8 Monkfish

Adults: Monkfish adults have EFH designated within the Poquonnock River. EFH consists of bottom habitats with substrates of a sand-shell mix, algae covered rocks, hard sand, pebbly gravel, or mud along the outer continental shelf in the middle Atlantic, the mid-shelf off southern New England, along

the outer perimeter of Georges Bank and all areas of the Gulf of Maine. Generally, the following conditions exist where monkfish adults are found: water temperatures below 15° C, depths from 25 - 200 meters, and a salinity range from 29.9 - 36.7 ppt. The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for adult monkfish does not exist in the Project Area and no further analysis is required.

4.1.9 Pollock

Juveniles: EFH is designated for pollock juveniles within the Poquonnock River. EFH for juveniles are bottom habitats with aquatic vegetation or a substrate of sand, mud or rocks in the Gulf of Maine and Georges Bank and the following estuaries: Passamaquoddy Bay to Saco Bay; Great Bay to Waquoit Bay; Long Island Sound, and Great South Bay. Generally, the following conditions exist where pollock juveniles are found: water temperatures below 18°C, depths from 0-250 meters, and salinities between 29 – 32 ppt.

Adults: Pollock adults have EFH designated within the Poquonnock River. However, it was determined that EFH is not present in the Project Area because adults are generally found at water depths ranging from 15 to 365 meters (49 to 1,197 feet) according to NOAA's Guide to EFH Descriptions. The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for the adult life stages of pollock does not exist in the Project Aea and no further analysis is required.

4.1.10 Red hake

Eggs: EFH is designated for red hake eggs within the Poquonnock River. EFH for eggs is surface waters of the Gulf of Maine, Georges Bank, the continental shelf off southern New England, and the middle Atlantic south to Cape Hatteras. Generally, the following conditions exist where hake eggs are found: sea surface temperatures below 10°C along the inner continental shelf with a salinity less than 25 ppt. Hake eggs are most often observed during the months of May to November, with peaks in June and July.

Larvae: EFH is designated for red hake larvae within the Poquonnock River. EFH for larvae consists of surface waters of Gulf of Maine, Georges Bank, the continental shelf off southern New England, and the middle Atlantic south to Cape Hatteras. Generally, the following conditions exist where red hake larvae are found: sea surface temperatures below 19°C, water depths less than 200 meters, and a salinity greater than 0.5 ppt. Red hake larvae are most often observed from May through December, with peaks in September - October. According to NOAAA's EFH Source Document by Steimle et al. (1999), red hake larvae were collected on the middle to outer continental shelf of the Middle Atlantic Bight at temperatures between 8 and 23°C within water depths between 10 and 200 meters, with a few deeper occurrences. The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for the larval of red hake does not exist in the Project Area and no further analysis is required.

Juveniles: EFH is designated for red hake juveniles within the Poquonnock River. EFH for juveniles is bottom habitats with a substrate of shell fragments, including areas with an abundance of live scallops, in the Gulf of Maine, on Georges Bank, the continental shelf off southern New England, and the middle Atlantic south to Cape Hatteras. Generally, the following conditions exist where red hake juveniles are found: water temperatures below 16°C, depths less than 100 meters and a salinity

range from 31 – 33 ppt. According to NOAAA's EFH Source Document by Steimle et al. (1999), in the inshore waters off southern New England, juvenile red hake were collected at temperatures of 2-22°C, in depths from 5 m to > 50 m, and at salinities of 24-32 ppt. The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for red hake juveniles does not exist in the Project Area and no further analysis is required.

Adults: Red hake adults have EFH designated within the Poquonnock River and the coastal area surrounding GON. However, it was determined that EFH is not present in the Project Area for these life stages because of water depth. According to NOAAA's EFH Source Document by Steimle et al. (1999), most red hake adults were generally found in water depths greater than 25 meters (82 feet). The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for the adult life stages of red hake does not exist in the Project Area and no further analysis is required.

4.1.11 Sand tiger shark

Larvae/neonates: EFH is designated for sand tiger shark larvae/neonates within Poquonnock River and the coastal area surrounding GON. EFH for neonate/early juveniles consists of shallow coastal waters from Barnegat Inlet, NJ south to Cape Canaveral, FL to the 25 m isobath. They are generally coastal and usually found from the surf zone to depths of around 25 meters (82 feet). However, they may also be found in shallow bays and to depths of 200 meters (656 feet). Therefore, EFH for larvae/neonates may be found in the Project Area; however, EFH for neonate/early juveniles does not exist in the Project Area.

4.1.12 Spanish mackerel

Eggs, Larvae, Juveniles, Adults: EFH is designated for Spanish mackerel eggs, larvae, juveniles, and adults within Poquonnock River and the coastal area surrounding GON. EFH consists sandy shoals of capes and offshore bars, high profile rock bottoms and barrier island ocean side waters from the surf zone to shelf break. All coastal inlets and all state designated nursery habitats are of particular importance to Spanish mackerel. The Spanish mackerel is most commonly found in waters with a temperature above 20°C (68°F) and salinity greater than 30 ppt. The species prefers the waters from the surf zone to shelf break from the Gulf Stream shoreward, especially sandy shoal and reef areas, and can occasionally be found in shallow estuaries and in grass beds. Spawning takes place over the Outer Continental Shelf from May through October. Larvae may also be found in estuaries with water temperatures from 26° to 31°C (79° to 88°F). All life stages tend to be distributed along the inner shelf in water depths between 10 and 50 m, while larvae and juveniles may be found in shallower waters (Nelson et al. 1991). The depths found in the Project Area are reported to be no deeper than approximately 3 meters (10 feet). Therefore, EFH for all life stages of Spanish mackerel do not exist in the Project Area and no further analysis is required.

4.1.13 Windowpane flounder

Eggs: EFH is designated for windowpane flounder eggs within the Poquonnock River and the coastal area surrounding GON. EFH for eggs is surface waters around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras. Generally, the following conditions exist where windowpane flounder eggs are found: sea surface temperatures less than 20°C and water depths less than 70 meters. Windowpane flounder eggs are often observed from February to November with peaks in May and October in the Mid-Atlantic.

Larvae: EFH is designated for windowpane flounder eggs within the Poquonnock River and the coastal area surrounding GON. EFH for larvae is pelagic waters around the perimeter of the Gulf of Maine, on Georges Bank, southern New England, and the middle Atlantic south to Cape Hatteras. Generally, the following conditions exist where windowpane flounder larvae are found: sea surface temperatures less than 20°C and water depths less than 70 meters. Windowpane flounder larvae are often observed from February to November with peaks in May and October in the Mid-Atlantic.

Juveniles: EFH is designated for windowpane flounder eggs within the Poquonnock River and the coastal area surrounding GON. EFH for juveniles is bottom habitats with a substrate of mud or fine-grained sand around the perimeter of the Gulf of Maine, on Georges Bank, southern New England and the Mid-Atlantic south to Cape Hatteras. Generally, the following conditions exist where windowpane flounder juveniles are found: water temperatures below 25°C, depths from 1-100 meters, and salinities between 5.5 – 36 ppt.

Adults: EFH is designated for windowpane flounder adults within the Poquonnock River and the coastal area surrounding GON. EFH for adults is defined as bottom habitats with a substrate of mud or fine-grained sand around the perimeter of the Gulf of Maine, on Georges Bank, southern New England and the middle Atlantic south to the Virginia-North Carolina border. Generally, the following conditions exist where windowpane flounder adults are found: water temperatures below 26.8°C, depths from 1-75 meters, and salinities between 5.5 – 36 ppt.

This review of the physical and chemical properties of the Project Area and the NOAA Fisheries definition of species-specific habitat conditions (NOAA Fisheries, 2007) concludes that EFH for only 6 of the 13 federally managed fish species required to be included in this investigation are present in the Project Area. See Table 2 for a listing of species and life stages determined to be present in the Project Area. Therefore, construction of the proposed project is not expected to have impacts on any other species and/or their designated EFH, as described by NOAA Fisheries.

Table 2. EFH Life Stages Present in the Project Area

Species Common Name	Present	Absent
Atlantic salmon	J,A	
Atlantic sea herring		J,A
Bluefin tuna		A
Bluefish		J,A
Cobia		E,L,J,A
Dusky shark	J	
King mackerel		E,L,J,A
Monkfish		A
Pollock	J	A
Red hake	E	L,J,A
Sand tiger shark	L	
Spanish mackerel		E,L,J,A
Windowpane flounder	E,L,J,A	

E=eggs, L= larvae, J=juveniles, A=adults.

4.2 Assessment of Impacts

Impacts to EFH and EFH species from installation and maintenance of a wildlife fence along the perimeter of the GON depends on the extent to which the fence extends into the low marsh (salt marsh dominated by tall form *Spartina alterniflora*) and unvegetated tidal flat habitat (Table 3). High marsh habitat is typically not considered to include EFH due to the lack of daily tidal inundation. Limits of low and high marsh were based on field observations of plant communities in October of 2015.

Table 3. Summary of Habitat Type Encroachment by Project Alternative

	Upland	High Marsh	Low Marsh	Tidal Flat	Rounded Total Distance
Alternative 1	9810	1270	70	80	11,000
Alternative 1 (revised)	9810	-	18	-	10,000
Alternative 2	12320	1280	70	230	14,000
Alternative 3	12320	2000	70	1050	15,500

Note: All distances are in linear feet and are approximate, total distances may vary slightly from values provided in Figure 1

.

In areas where the wildlife deterrent fencing extends into low marsh and tidal flat habitats, impacts to EFH and EFH species include direct impacts to benthic EFH habitat and benthic-oriented EFH species from the physical disturbance of the habitat and indirect and temporary impacts to the water column and sediment composition from suspension of sediments. Alternative 1 (revised) would avoid any impact to EFH and EFH species by limiting fence installation to upland zones above the CJL. One possible exception is a crossing of a narrow well-defined tidal creek (18 linear feet) located along the eastern bank of Baker Cove near Taxiway C. While post installation would not be required within the limits of tidal influence, an extension from the bottom of the chain link fence to the existing ground surface would be necessary to deter wildlife from entering the airport at this location. Further design at this location would be undertaken to determine the best solution to deter wildlife without creating an obstruction to water flow. Alternative 1 would limit encroachment into EFH to 150 linear feet. Alternatives 2 and 3 have greater potential to impact to EFH and EFH species with habitat encroachments of 300 and 1,120 linear feet, respectively.

In general, potential impacts to EFH and species with designated EFH in the Project Area from installation of the wildlife deterrent fencing will be localized in nature, resulting from both direct and indirect sediment disturbance. Management controls, including application of best management practices to control erosion, and protecting existing functional habitats, will help ensure impacts are minimized. A description of the potential environmental impacts to EFH and EFH species associated with installation and maintenance of deterrent fencing within intertidal zones of the GON is described in the following sections.

4.2.1 Direct Impacts

Benthic Habitat and Species

In the immediate area of installation, the benthic habitat will be directly disturbed and benthic invertebrates (prey for EFH species) will experience mortality or injury. There will be limited permanent impact to the habitat, given the presence of fence and the need to conduct regular maintenance. This area of permanent impact is small compared to the large area of adjacent unimpacted habitat. Further, recovery of the benthic community in areas directly impacted by

installation activities is expected to be rapid, given the large area of adjacent unimpacted habitat that will serve as a recruitment source for recolonization (Van Dolah et al. 1984).

Impacts to finfish with EFH-designated life stages that utilize the area as habitat and a source of benthic invertebrate prey are expected to be minimal. During installation activities, mobile fish and invertebrate species are expected to avoid the areas and relocate to similar nearby habitat. As benthic invertebrates rapidly recolonize the dredged area, fish are expected to return to utilize the habitat. Therefore, impacts to benthic habitat used by EFH-designated species for foraging is expected to be temporary.

Finfish

Benthic egg and larval stages of EFH species that lie within the direct footprint of the fence are expected to experience mortality since they lack mobility. EFH species with pelagic eggs and larvae will be less affected by benthic disturbance since they are not as closely associated with the bottom; however, those in the immediate area of construction could experience some injury or mortality. Of the species indicated above, there are no species with designated EFH for benthic or demersal-oriented eggs or larvae potentially present in the Project Area. Three species have the potential to have pelagic or planktonic early life stages present in the Project Area, including red hake, sand tiger shark, and windowpane flounder. Since these species occur higher in the water column and are not directly associated with the bottom, they should be less affected by temporary benthic habitat disturbance.

Juvenile and adult species with designated EFH in the Project area are not likely to become buried given their mobility and the limited nature of the sediment disturbance. Each of these species is highly mobile and individuals are expected to temporarily avoid areas disturbed by construction activities but return to the area as soon as the construction activity ceases. Therefore, direct mortality of juveniles and adults resulting from installation activities will be minimal. A potential positive impact of adding structure to the area is that it provides a substrate upon which benthic organisms can attach that would then serve as a potential food source for fish.

4.2.2 Indirect Impacts

Water Quality

Impacts to water quality, including an increase in total suspended solids (TSS), will be temporary and limited to the immediate area of installation. In areas where the sediment is composed of sands and coarser grained materials, suspended sediments are expected to quickly settle out of the water column and redeposit on the seafloor. In areas where the sediment is composed of finer materials such as silt, suspended sediments may remain suspended in the water column for a longer period of time.

No substantial adverse impacts to juvenile or adult life stages are expected from installation activities since these life stages are highly mobile and would have the ability to avoid the temporary area of disturbance during construction. The limited area of sediment disturbance would minimize the distance that the fish with designated EFH need to relocate. Therefore, indirect disturbance from temporary elevated suspended sediment concentrations to these older life stages will be minimal.

Egg and larval stage fish are more likely to be affected by increases in suspended sediment; however, they also exhibit a wide suspended sediment tolerance range. As indicated above, there are no species with designated EFH for benthic or demersal-oriented eggs or larvae in the Project Area. Three species have the potential to have pelagic or planktonic early life stages present in the Project Area (Table 2).

If any of these species with demersal or pelagic early life stages are present during installation activities, they may experience indirect impacts from temporary elevated TSS concentrations. Given the shallow nature of the area, TSS concentrations are likely to be uniformly distributed through the water column in the immediate area of activity. Any eggs or larvae that are affected may be temporarily displaced in the water column as a result of the disturbance. However, the overall area of habitat disturbed is likely insignificant in comparison to surrounding areas of larval habitat in this area. In addition, the increased TSS concentrations are expected to be short-term and water column TSS concentrations are expected to return to ambient conditions once installation activities have stopped. Given the limited area over which suspended sediment would be increased, the resuspension of bottom sediment that would result from installation activities associated with the Project would not result in adverse impacts to finfish species and life stages with designated EFH.

Sedimentation

Deposition of the sediment suspended in the water column during installation activities is expected to occur over time as the sediment particles settle through the water column to the seabed. Resettling sediments during installation activities can potentially bury any demersal eggs or larvae that are within the zone of deposition in the Project Area. However, as previously stated, there are no species with designated EFH for benthic or demersal-oriented eggs or larvae potentially present in the Project Area. Burial of older life stages of demersal fish may also occur, but is not expected because construction activity will facilitate avoidance behavior in fish before sediments are settled.

5.0 WILDLIFE ASSESSMENT

The primary wildlife species of concern at GON related to potential wildlife aircraft collisions are birds that form large flocks and birds of large body size (including European Starlings, Herring Gulls, Canada Geese, American Crows, Brown-headed Cowbirds, Ring-billed Gulls, American Black Ducks, and Barn Swallows (LBG 2012). Large mammals including White-tailed Deer and Coyote ae also concern at the airport and were observed on several occasions during field studies for the Wildlife Hazard Assessment.

The airport currently conducts operational wildlife management including harassment, habitat modification, and direct control/lethal take.

The Wildlife Hazard Management Plan (LBG 2012) stated large mammal (i.e., White-tailed Deer and Coyote) exclusion would be greatly enhanced by: extending the existing perimeter fence into the Poquonnock River and Baker Cove, installation of a continuous perimeter fence, increasing the height of the existing 8 foot height perimeter fence to 10 feet, if possible, and include a fence skirt as described in FAA Cert Alert 04-16. In general, the airport should also remove any vertical structures not germane to airport operations as they can serve a hunting perches for wildlife.

The airport has adopted a zero-tolerance policy toward hazardous wildlife on the airfield including White-tailed Deer, Coyotes, European Starlings, Herring Gulls, waterfowl, wading and shorebirds. As part of the

policy, the airport staff implement aggressive actions to immediately and consistently disperse birds. These actions include sirens, pyrotechnics, and deployment of maintenance vehicles with warning lights. To the extent possible, the airport attempts to manage populations of Eastern Cottontail (rabbits) to remove this prey species.

The following section describes the wildlife habitat currently present within the alignment of the proposed fencing, the wildlife communities that are or may be present at the site, and the potential impacts to wildlife, both positive and negative, that may result from the proposed project alternatives. For the purposes of this report, "wildlife" includes mammals, birds, reptiles, amphibians, and terrestrial invertebrates. Fish are discussed in Section 4.0 above.

5.1 Wildlife Resources at the Proposed Project Site

A 2006 comprehensive bird survey recorded a total of 98 species of birds of which 27 species were determined to be nesting on the airport property. Of the 98 bird species identified, 19 were listed by the CTDEEP; including six endangered, three threatened, and 10 species of special concern. Of these listed birds, four are suspected of breeding at the airport.

The airport includes a diversity of terrestrial and coastal wildlife habitat types. These types are described below. Photographs of representative habitat types are containing in the attached Photographic Log.

Table 4 provides a list of the wildlife species observed at the airport during a site walk on October 7, 2015.

5.1.1 Mowed Fields

Other than non-impervious surfaces, mowed grassy fields account for the majority of the land at the airport. Mowed fields are present between and around the airport's runways, taxiways, and roads. In some areas, mowed fields extend to the banks of the Poquonnock River and Baker Cove. The mowed fields are used primarily for foraging by White-tailed Deer, Woodchucks, Eastern Cottontail Rabbits and Canada Geese. The abundance of clover in the fields is especially attractive to deer. Seeds are eaten by a variety of avian species such as Horned Larks and Mourning Doves. The managed grasslands support earth worms, rodents and insects which in turn are an important prey base for Starlings, gulls, and Coyotes. Ground nesting birds such as Bobolinks, Killdeer and Eastern Meadowlarks use open fields for breeding. Aerial predators such as American Kestrel (*Falco sparverius*) also use the grassy fields for foraging. The airport staff currently maintain grassy areas to less than 12 inches in an effort to reduce the attractiveness of the habitat to some species of wildlife. In recent years, small patches of shrub/sapling growth have been cleared to reduce available perching and cover habitat.

Table 4. Wildlife observed at the Groton-New London Airport, October 7, 2015

Common Name	Scientific Name	Taxonomic Group	Count	Habitats Utilized at GON
Great Egret	*Ardea alba*	Bird	2	Saltmarsh
Double-crested Cormorant	*Phalacrocorax auritus*	Bird	Uncounted	Intertidal areas
Turkey Vulture	*Cathartes aura*	Bird	3	Grassland
Northern Harrier	*Circus cyaneus*	Bird	1	Grassland and Saltmarsh
American Kestrel	*Falco sparverius*	Bird	4	Grassland
Greater Yellowlegs	*Tringa melanoleuca*	Bird	1	Saltmarsh
Herring Gull	*Larus argentatus*	Bird	Uncounted	Intertidal areas and Grassland
Northern Flicker	*Colaptes auratus*	Bird	1	Forest edge
American Crow	*Corvus brachyrhynchos*	Bird	Uncounted	Grassland
Savannah Sparrow	*Passerculus sandwichensis*	Bird	Uncounted	Grassland and Saltmarsh
Eastern Meadowlark	*Sturnella magna*	Bird	8	Grassland
Monarch	*Danaus plexippus*	Butterfly/Moth	Uncounted	Grassland
Cabbage White	*Pieris rapae*	Butterfly/Moth	Uncounted	Grassland

5.1.2 Saltmarsh and Coastal Habitats

Saltmarsh habitat is present along nearly the entire shoreline of Poquonnock River and Baker Cove. The larger mash complexes are located toward the southern limits of the airport property. This habitat type includes a recently constructed wetland mitigation area near the Runway 23 end. Saltmarsh habitats are vegetated primarily with saltmarsh cordgrass (*Spartina alterniflora*), saltmeadow cordgrass (*Spartina patens*), saltgrass (*Distichlis spicata*), and glasswort (*Salicornia* sp.). Saltmarsh and associated tidal flat habitats provide habitat for a variety of species including wading birds such as Great Egret (*Ardea alba*), shorebirds such as Greater Yellowlegs (*Tringa melanoleuca*), gulls, cormorants, songbirds, small mammals, and Diamondback Terrapin (*Malaclemys terrapin terrapin*). These areas also provide spawning and nursery habitat for several important forage finfish. These coastal habitats provide habitat for important mollusk and crustacean prey species.

5.1.3 Freshwater Wetlands

A relatively large freshwater wetland is located northwest of Tower Avenue. The wetland is described as a Palustrine Forested/Shrub-Scrub/Emergent/Aquatic/Open Water Wetland that consists of an excavated pond/wetland separated into three areas by an access road and associated berms (Parsons 2007). The northernmost open water pond connects to offsite ponds associated with an active quarry. The wetland, which has a high degree of interspersion of different wetland vegetative

types, has several principal functions; including wildlife habitat, production export, fish habitat, and potential threatened/endangered species habitat. A smaller Forested/Shrub-Scrub/Emergent Wetland is found within the western corner of the property near the head of Baker Cove. Small isolated depressions have been reported (e.g., north of Runway 23) where temporary ponding may occur. These isolated areas may also contain hydric soils and represent additional inland wetland resources.

These wetlands provide a source of freshwater for all wildlife and provide limited breeding habitat for wetland-dependent wildlife (e.g., Red-winged Blackbirds) as well as cover for woodland songbirds and small and large mammals.

5.1.4 Adjacent Lands

Existing lands to the west of the current perimeter fencing appear to support a substantial population of wildlife (primarily White-tailed Deer and Coyotes) which are of concern to airport operations. Deer are frequently observed entering the airfield at the terminus of the fencing at the western end of the abandoned runway. Deer have also been observed entering the airfield at the terminus of the fencing north of the Runway 23 end.

While not contained within the Project Area, it is important to note the location of Bluff Point State Park in relation to the airfield. The park is an approximately 800-acre wooded peninsula located in the Town of Groton and bounded by the Poquonnock River to the west, Mumford Cove to the east, and Long Island Sound to the south. This open space also supports a substantial deer herd which have been observed by airport personnel crossing the shallow estuary to access grazing habitat within the airport.

5.1.5 Rare, Threatened, and Endangered Species

The United States Fish and Wildlife Service (USFWS) and Connecticut Department of Energy and Environmental Protection (DEEP) maintain lists of rare, threatened, and endangered species that are of high conservation priority (USFWS 2015, DEEP 2015). Consultation with the USFWS reported a total of 2 threatened or endangered species which may be found within the Project Area. These species include Red Knot (*Calidris canutus rufa*) and Northern long-eared Bat (*Myotis septentrionalis*). There is no critical habitat within the Project Area. Based on a lack suitable habitat for these species, USFWS has issued a No Effect determination.

A Request for Natural Diversity Data Base (NDDB) State Listed Species Review Form was submitted by HTA to CTDEEP and a response was received on December 11, 2015. The state-listed species, groups, or features documented at GON are provided in Table 5 are described below.

Grassland birds include a variety of bird species that rely on open grassland habitats for at least some portion of their life cycle. Grassland birds encompass species from several taxonomic orders and families, including Savannah Sparrow (*Passerculus sandwichensis*), Bobolink (*Dolichonyx oryzivorus*), and Horned Lark (*Eremophila alpestris*). Of these species, Savannah Sparrow was observed at GON during the site visit on October 7, 2015. Grassland birds nest on the ground and can hence be negatively impacted by mowing during the breeding season.

Saltmarsh Sparrows (*Ammodramus caudacutus*) are a species of small passerine bird that nest exclusively in coastal saltmarshes above the high tide line. Saltmarsh Sparrows inhabit a narrow coastal strip from New England to Florida and breed as far south as the Chesapeake Bay. Saltmarsh Sparrows and the very similar Nelson's Sparrow (*Ammodramus nelson*) were formerly considered one species, the Sharp-tailed Sparrow. According to the DEEP letter, Connecticut hosts a globally significant proportion of the breeding population of Saltmarsh Sparrows.

Brown Thrashers (*Toxostoma rufum*) are a species of passerine bird in the family Mimidae, which includes mockingbirds and Gray Catbird (*Dumetella carolinensis*). Brown thrashers typically inhabit scrub-shrub and forest edge habitats where they feed upon a variety of foods, including insects and berries. Brown Thrashers breed throughout the eastern and central United States and winter in the southern U.S.

Two known owl roost locations are present at GON. Owl roosts typically comprise an area of trees or tall shrubs located in an otherwise open habitat. Owls use roosts for shelter and resting, especially during the winter. The owl roosts at GON are known to harbor two state-listed owl species: Short-eared Owl (*Asio flammeus*) and Northern Saw-whet Owl (*Aegolius acadicusis*). Short-eared Owls inhabit open habitats including grasslands, agricultural fields, and coastal marshes. As a species, Short-eared Owls range worldwide, and in North America, Short-eared Owls breed throughout Canada, Alaska, and the northern United States. The species' winter range includes most the conterminous United States and northern Mexico, including Connecticut. Unlike many owl species, Short-eared Owls are primarily diurnal, and are often seen soaring over open habitats in search of small mammals, their primary prey source. The Northern Saw-whet Owl (*Aegolius acadicus*) is a very small species of forest owl that ranges throughout most of the conterminous United States and southern Canada. Northern Saw-whet Owls are present in New England year-round but are detected more frequently in southern New England during migration and in the winter. Northern Saw-whet Owls are nocturnal and rarely seen, but can be detected via call where they are present. This species feeds primarily on small mammals including mice and voles.

The Diamondback Terrapin is a species of brackish-water turtle that ranges from Massachusetts to Texas, and is the only turtle species in North America that is entirely reliant upon brackish water habitats for its survival. The northern subspecies (*M. t. terrapin*) occurs from the northern extent of the species range south to Virginia. Northern diamondback terrapins inhabit coastal saltmarshes, tidal rivers, estuaries, and other brackish water habitats in the coastal zone. The species is highly aquatic and feeds, rests, and mates in aquatic environments. The primary foods include mollusks, crustaceans, worms, and other small invertebrates, as well as fish. Gravid females come to shore in the late spring and early summer to lay eggs in sandy soils in upland areas adjacent to coastal habitats. Diamondback terrapin nests are frequently predated by mesocarnivores including Coyotes, Red Fox (*Vulpes vulpes*), and Northern Raccoon (*Procyon lotor*). Eggs hatch in late summer at which time hatchings either enter the water or find cover and overwinter on land until the following spring. Diamondback Terrapins are threatened by loss and development of coastal habitat, population increases of nest predators in part resulting from human development, and sea level rise.

Table 5. State-listed species and groups that have been documented at GON

Common Name	Scientific Name	Taxonomic Group	State Status	Federal Status
Grassland Birds	N/A	Bird	Varies	N/A
Saltmarsh Sparrow	*Ammodramus caudacutus*	Bird	Special Concern	Not listed
Brown Thrasher	*Toxostoma rufum*	Bird	Special Concern	Not listed
Short-eared Owl	*Asio flammeus*	Bird	Threatened	N/A
Northern Saw-whet Owl	*Aegolius acadicusis*	Bird	Special Concern	N/A
Northern Diamondback Terrapin	*Malaclemys terrapin terrapin*	Reptile	Special Concern	Not listed

Source: CT DEEP letter dated December 11, 2015

5.2 Wildlife Impact Assessment

The impact assessment below assumes that the non-volant (non-flying) wildlife species of concern (primarily White-tailed Deer and other large mammals) would be unable to pass through constructed portions of the fence. Non-volant wildlife species that, due to their small size, would be able to pass through the deterrent fence (i.e., Eastern Gray Squirrel, Eastern Chipmunk) are not considered in the assessments below.

5.2.1 General Assessment

In general, the primary direct positive impact to wildlife of installing the wildlife deterrent fencing would be a decrease in wildlife-human conflict at GON. This would entail fewer incidences of wildlife being harassed or lethally removed in order to deter them from using the airfield. While some wildlife species would lose the ability to use habitats within the airport property as foraging or resting habitat, this indirect impact would likely not entail a significant adverse impact to populations of any excluded species.

The primary negative impact to wildlife of installing the wildlife deterrent fencing would likely be disruption of the saltmarsh habitat on the perimeter of the airport property, through which portions of the proposed fencing would be placed. The installation of the fencing in the saltmarsh may negatively impact the ability of wildlife species to use the marsh for foraging or roosting habitat. Where the fence follows existing paved areas, including airport access roads, the fence will be installed within the pavement to avoid impacting adjacent vegetation. Where the fence is placed within vegetation, a 15-foot mowed buffer will be maintained on either side to increase the effectiveness of the fence. Fence post installation within wetlands will be performed using pile driving in order to avoid unnecessary impacts to wetland vegetation. Fence skirts will not be used within wetlands to avoid additional vegetation and habitat impacts.

Each of the alternatives described below will increase perching opportunities for bird species by introducing a linear structure through much of the airfield perimeter. Increased perching opportunities will likely benefit visual hunters such as birds of prey (American Kestrel, Northern Harrier) and flycatchers (Eastern Phoebe). Increased perching opportunities for raptors could in turn negatively

impact populations of small mammals and bird species upon which they prey, such as Eastern Meadowlark and Savannah Sparrow.

5.2.2 Rare, Threatened, and Endangered Species

The following section will describe potential impacts to state-listed species that have been documented at GON based on correspondence with DEEP. The DEEP correspondence also included recommended measures to avoid or minimize adverse impacts to state-listed species. Select avoidance and minimization measures are also described below.

Grassland birds may be impacted by the installation of the proposed fence through disruption of nesting and foraging habitat during construction. In order to avoid impacts to nesting grassland birds, installation of the proposed fence would take place outside of the breeding period, which is approximately May 15 to August 15. In order to avoid disrupting the line of sight of grassland birds, soils will not be mounded along the fence line during backfilling and fence screening will not be utilized. Installation of the fence and fence skirting will not result in any change in elevation. Any areas that require reseeding will be done so using warm-season grasses. Maintenance mowing will be conducted outside of the breeding season in order to avoid impacts to nests, eggs, or chicks.

Saltmarsh Sparrows have been documented as breeding in the saltmarsh habitats at GON. Installation of the fencing in saltmarsh would result in a negligible and highly localized direct loss of habitat and could indirectly reduce the quality of nesting habitat for this species. Additional disturbance could result during the construction of the fence. In order to avoid impacts to Saltmarsh Sparrows, installation of the fence will take place outside of the breeding season for this species, which is approximately mid-May through early August.

Brown Thrashers have been documented as breeding at GON. Impacts to this species could result from disruption of thickets and shrub habitats, especially during the breeding season. In order to avoid impacts to Brown Thrashers, installation of the fence will take place outside of the breeding season for this species, which is approximately April through mid-August. Since the proposed alignment of the fence is almost entirely within existing cleared areas, it is unlikely that Brown Thrashers will be impacted by the fence installation.

Short-eared Owls and Northern Saw-whet Owls are known to roost at GON. Impacts to these species could result during construction due to disturbance of roosting areas. The DEEP letter indicated that the proposed project is unlikely to impact these owl species or their roosts. Changes in the proposed route should be reviewed by DEEP to determine if any impacts to owl roosts would occur.

Northern Diamondback Terrapin have been documented at GON and are known to nest in the upland habitats of the airport grounds. Installation of the fencing would result in a negligible and highly localized direct loss of saltmarsh habitat used by terrapins. As noted in the DEEP letter, the most significant concern regarding this species during construction is the potential for individuals to be crushed by construction vehicles. An additional concern in the long-term is the potential barrier to access of upland nesting sites that the fence could create. Terrapin nesting takes place in June and July; installation of the fence will not occur during this time to avoid impacts to nesting terrapins as well as the bird species described above. Peak hatching occurs from April through June and from September to October. The construction of the proposed fence will occur outside of these timeframes to avoid impacts to hatchling terrapins. In order to avoid creating a barrier to movement for terrapins, turtle inclusion devices (see attached Photographic Log) will be installed at regular intervals along the length of the proposed fence. These small openings at the base of the fence will allow adult terrapins to move between estuarine habitats and upland nest sites. Hatchling terrapins may also use these openings to access estuarine habitats, but would also be capable of passing through the chain-link

fence. Maintenance mowing in saltmarsh areas will take place from November 1 to May 1 to avoid additional impact to terrapins.

5.2.3 Alternatives Analysis

The following sections detail the specific positive and negative impacts to wildlife from the three Action Alternatives and the No-Action Alternative.

Culvert and creek crossings may become breaches in the fence, allowing access by some species unless properly designed. According to the GON maintenance staff, Coyotes currently use the airport's stormwater drainage system to access the airport grounds. If possible, these culverts should be outfitted with an acceptable breakaway device to deter wildlife access. Alternatives 1 and 2 include gaps in the perimeter fencing to comply, in part, with FAA regulations regarding objects within the VOR critical area.

The fence alignment for Alternative 3 (and Alternative 2 to a lesser extent) would place the fence within some of the exclusion zones developed per FAA regulations, including the Runway Safety Areas (RSAs), Runway Object Free Area (ROFA) and the VOR critical area. FAA allowances could be made for alternative, non-metal fence materials within the VOR critical area, which would increase the project cost. However, the ROFA and RSA have restrictions on object heights and vehicle movements for aviation safety. The RSA was developed to reduce the risk of damage to the aircraft in an event of landing short or over-running the runway. The ROFA was developed to protect the wingspan of an aircraft that would come to rest at the edge of the RSA. No object taller than 3 inches can be fixed in an RSA and no objects in the ROFA may protrude above the nearest point of the RSA. The proposed fence alignment associated with Alternative 3 is a clear violation of these restrictions and exemptions to these restrictions are unlikely.

The gaps in the perimeter fencing associated with Alternatives 1 and 2 provide continuing opportunities for wildlife to access GON. While these gaps reduce the overall effectiveness of the perimeter fencing to exclude wildlife, they do offer the benefit of allowing wildlife which has accessed the airport grounds to escape without being removed lethally. Relatively small gaps in the perimeter fencing will improve the ability for airport staff to monitor these areas increasing the likelihood that wildlife entering the airport through these gaps will be quickly detected. Using other technologies may present opportunities for further minimizing wildlife entrance through the gaps in Alternatives 1 and 2. Infrared detection systems could be installed at each gap, which would alert GON staff when the sensor is triggered by movement through the gap. Grates and electrified mats have shown some promise in certain applications and could be used to prevent wildlife from crossing fence gaps, however these technologies typically require high levels of maintenance in order to remain effective. The western end of the fence would prevent deer from accessing the airport at a location where they are currently known to frequently do so, while still providing access to the inland wetland located in this portion of the site. The existing fence fabric in this portion of the site should be removed, however existing poles can remain to avoid additional disturbance.

Under Alternatives 1 and 2, wildlife may also continue to enter the airport grounds by circumventing the termini of fence segments at the edge of saltmarsh. Therefore, the previous recommendation to extend fence segments into the river should be implemented where possible. Canada geese are regularly observed entering the airport grounds from the river on foot. The gaps in the fence under Alternatives 1 and 2 would continue to allow access to the airport by geese. In order to avoid the continual access by geese from the river, a vegetated buffer could be established by restricting mowing of the gaps in the fence to once per year. If allowed under FAA regulations, narrow vegetated buffers have been shown to be effective deterrents to geese accessing shoreline habitats on foot. Another possible alternative could be primitive fence supports with mylar reflective flagging. Locations

where the edge of the airfield consists of riprap leading to the water's edge (e.g., Runway 33 end) would be of less concern.

5.2.3.1 Alternative 1 (Proposed Action)

Alternative 1 would include approximately 11,000 linear feet of new fence disturbance, of which approximately 90% would occur in upland habitats and approximately 10% would occur in saltmarsh or tidal flats. Alternative 1 would extend the existing fence line of the airport, however significant gaps in the fence would remain. Alternative 1 would reduce the ability of non-volant wildlife species to access the airport grounds.

Potential Positive Impacts

Alternative 1 would involve additional fencing around the perimeter of the airport, however three portions of the airport perimeter would remain unfenced. The primary positive impact of Alternative 1 would be the partial restriction of the ability of wildlife to access the airport grounds. A reduction in the wildlife use of the airport grounds would entail a commensurate reduction in the need for wildlife harassment or lethal control techniques. The reduction in the use of these techniques would represent a positive impact to local wildlife. An additional benefit of Alternative 1 is that the fence openings would allow for wildlife escape from the airport without lethal take.

Potential Negative Impacts

Under Alternative 1, a portion of the fencing would be installed in the saltmarsh habitat bordering the airport grounds. Installation of fencing in the saltmarsh may negatively impact wildlife species which use the saltmarsh for foraging, resting, or nesting habitat. Wildlife could be impacted in the short-term by disruption of the habitat during the installation of the fence. In the long-term, it is expected that most individuals would adjust to the presence of the fence, and that it would not result in any major impacts to the wildlife community that use the saltmarsh habitat.

5.2.3.2 Alternative 1 (revised)

Alternative 1 (revised) follows the same alignment as Alternative 1, but would shorten terminal segments of the fencing to avoid encroachment into salt marsh and/or the CJL. Alternative 1 (revised) would include approximately 10,000 linear feet of new fence disturbance, all of which would be upland habitat with the exception of a minor tidal creek crossing. Eliminating the extension of the wildlife deterrent fencing into saltmarsh and adjacent tidal flat would substantially decrease the effectiveness of the fence terminus as wildlife would easily circumvent the fence at this location. This condition is readily observed on the airport property at the current terminus of the airport fence.

Potential Positive Impacts

The primary positive effect of Alternative 1 (revised) would be the avoidance of impacts to saltmarsh habitats which are documented habitats of state-listed species such as Saltmarsh Sparrow and Northern Diamondback Terrapin. However, in order to provide access to upland nesting locations for Northern Diamondback Terrapin, turtle inclusion devices should be installed at regular intervals along the fence.

Potential Negative Impacts

The primary negative impact of Alternative 1 (revised) would be that wildlife would have continued access to airport grounds by more easily circumventing the terminus of the fence and therefore would be subject to on-going harassment and lethal removal.

5.2.3.3 Alternative 2

Alternative 2 would entail approximately 14,000 linear feet of new fence disturbance, of which approximately 88% would occur in upland and approximately 12% would occur in saltmarsh and tidal flats. Alternative 2 would extend the existing fence line of the airport to a greater extent than Alterative 1, however two relatively small gaps in the fence would remain. Alternative 2 would likely inhibit, but not completely restrict, the ability of non-volant wildlife species to access the airport grounds.

Potential Positive Impacts

Compared to Alternative 1, Alternative 2 would involve additional fencing around the perimeter of the airport, however two gaps in the fence would still remain. Alternative 2 would be expected to result in some degree of reduction in wildlife use of the airport grounds, however, it would likely not completely restrict this use. A reduction in the wildlife use of the airport grounds would entail a commensurate reduction in the need for wildlife harassment or lethal control techniques. The reduction in the use of these techniques would represent a positive impact to local wildlife. This effect would be expected to be greater than that achieved under Alternative 1. An additional benefit of Alternative 2 is that the fence openings would allow for wildlife escape from the airport without lethal take.

Potential Negative Impacts

Alternative 2 would entail the same degree of fencing installed in saltmarsh as Alternative 1. Therefore, Alternative 2 would not be expected to result in any negative impacts beyond those discussed for Alternative 1.

5.2.3.4 Alternative 3

Alternative 3 would entail approximately 15,500 linear feet of new fence disturbance, of which approximately 79% would occur in uplands and approximately 21% would occur in saltmarsh and tidal flats. Alternative 3 would extend the existing fence line along the entire perimeter of the airport grounds. This alternative would completely restrict the ability of non-volant wildlife species to access the airport grounds.

Potential Positive Impacts

The primary positive impact of Alternative 3 would be the complete restriction of the ability of wildlife to access the airport grounds. This would preclude the need for continued harassment and lethal control techniques which are currently used to discourage wildlife from using the airport grounds. Since these techniques have a negative impact on local wildlife, the cessation of their use would constitute a positive impact.

Potential Negative Impacts

Alternative 3 would entail additional fencing installed in saltmarsh compared to Alternatives 1 and 2. Therefore, impacts to wildlife using the saltmarsh habitat bordering the airport could potentially be greater for Alternative 3 than for Alternatives 1 or 2. The fencing within the saltmarsh proposed under Alternative 3 would completely enclose portions of the marsh and separate them from the larger saltmarsh habitat located farther from the airport perimeter. This enclosure may effectively shut out these portions of the saltmarsh to larger species, such as heron and egrets, which would be unable to fly through the fence, and which may be too wary to fly over the fence and land on the relatively small area of saltmarsh located on the landward side. If larger wading birds did use the “inside” portion of the saltmarsh and were suddenly frightened (for instance, by incoming

aircraft), they may be unable to clear the top of the fence and could collide with it. The fencing under this alternative would also completely enclose the upland habitats within fence line and prevent medium to large-sized mammals from accessing them.

5.2.3.5 No-Action Alternative

The No-Action Alternative would result in the existing airport fence remaining unchanged. The ability of non-volant wildlife species to access the airport grounds would likewise be unchanged from current conditions. The existing conditions do not deter wildlife such as deer and other animals from entering the airfield because the existing fence does not completely surround the Airport.

Potential Positive Impacts

The primary positive impact of the No-Action Alternative would be the avoidance of impacts to the saltmarsh habitat bordering the airfield. Since there would be no impacts to the saltmarsh habitat under this alternative, there would also be no impacts to the wildlife species that may use this habitat.

Potential Negative Impacts

The primary negative impact of the No-Action Alternative would be that the ability of wildlife (especially White-tailed Deer) to enter the airfield would be unchanged from current conditions. This would entail the continued use of various methods to discourage wildlife from using the airport grounds. Since these techniques, when carried out successfully, have the intended effect of scaring or lethally removing wildlife, their on-going use would constitute a negative impact to local wildlife populations.

6.0 CONCLUSION

The potential impacts associated with all wildlife fence alternatives are limited to temporary, localized impacts primarily associated with installation activities for both EFH and wildlife. In general, eggs and larvae are more susceptible to impacts than juveniles and adults, which can avoid installation related disturbance. Demersal species, particularly sessile species, are also more susceptible to impacts than pelagic species, since most installation related disturbance occurs near the bottom.

The extent of impacts to EFH and EFH species from installation and maintenance of the fence along the perimeter of the GON depends on the extent to which the fence extends into low marsh and unvegetated tidal flat habitats (Table 3). While Alternatives 1 through 3 all involve the installation of fence in low marsh and intertidal habitat; the greatest impact to EFH and EFH species exists under Alternative 3, which involves the installation of fence that extends the greatest distance into the low marsh and intertidal habitat. A revision to Alternative 1 has been proposed that would avoid installation of fence in the intertidal habitat, thus minimizing impacts to EFH and EFH species. Furthermore, management controls, including application of best management practices to control erosion, and protecting existing functional habitats, will help ensure impacts are minimized.

The adverse effect on EFH from the project is not substantial. Based upon the information in this EFH assessment, the proposed project alternatives would have minimal and mostly temporary adverse effects on EFH species. In addition, the project will have minimal effects on other NOAA-trust resources, including those covered under the Fish and Wildlife Coordination Act. Therefore, EFH conservation recommendations for this action pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act have not been provided.

Alternatives 1, 2, and 3 each entail some impact to saltmarsh habitats which have been documented as habitats of state-listed species, including Saltmarsh Sparrow and Northern Diamondback Terrapin. Of these, Alternative 1 entails the least impact to saltmarsh, while Alternative 3 entails the most. Alternative 1 (revised) would not impact saltmarsh or intertidal habitats, but would be less effective in preventing wildlife from easily circumventing the fence termini. Under current conditions, deer are commonly observed by airport staff circumventing the existing fence termini which end short of tidal waters. Since wildlife which access the airport grounds are subject to harassment and lethal removal, measures to restrict wildlife access to the airport are considered a positive impact of the proposed Alternatives 1, 2, and 3. While Alternative 1 would result in gaps in the wildlife deterrent fence, this alternative is anticipated to reduce the frequency of wildlife gaining access to airport grounds due to a combination of improved efficacy as a deterrent and enhanced detection by airport staff. Other methods may be used to further discourage wildlife from passing through gaps in the fence under Alternatives 1 and 2.

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Appendix A

Photographic Log

Photograph No.: 1
Looking northeast along the proposed fence line and airport access road

Photograph No.: 2
Looking south along proposed fence line and airport access road

Photograph No.: 3
Looking southeast at a terminus of the proposed fence

Photograph No.: 4
Looking south along proposed fence line (Alternative 3)

Photograph No.: 5
Looking northeast along proposed fence line

Photograph No.: 6
Looking southeast along proposed fence line (Alternative 3)

Photograph No.: 7
Looking east along proposed fence line – some tree clearing will be required in this area

Photograph No.: 8
Looking east at proposed fence line over culvert

Photograph No.: 9
Looking northeast along proposed fence line

Photograph No.: 10
Looking southeast at a terminus of the proposed fence

Photograph No.: 11
Two eastern box turtles captured at the New Bedford airport

Photograph No.: 12
Wildlife deterrent fence at New Bedford airport with turtle inclusion device

Appendix B: Agency Correspondence

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

E-Mail: david.fox@ct.gov

Date: October 27, 2015

Subject: Groton-New London Airport Perimeter Fence

The Department of Energy & Environmental Protection (DEEP) has reviewed the Notice of Scoping for the proposed installation of a wildlife deterrent fence at Groton-New London Airport. The following comments are submitted for your consideration.

A meeting and field tour were held at the airport on October 22 with personnel from DEEP, Army Corps of Engineers, the Connecticut Airport Authority (CAA) and their consultants. A conceptual plan, slightly revised from the scoping notice, was presented and alternatives designs, natural resource information and permitting issues were discussed. As a result, it appears that the CAA is well aware of the appropriate environmental resources to be evaluated in the CEPA/NEPA document and the state permits, reviews and authorizations required for the project. To supplement this information, I have included some comments summarizing permit requirements and general recommendations to minimize impacts.

As noted in the meeting, the document should thoroughly explain the purpose and need for the project and each of its elements. Several sections of the proposed fence are primarily to deter deer while others are intended to deter geese incursions. The historical frequency of wildlife encroachment and existing management measures should also be documented.

As you know, the proposed project is within Connecticut's coastal boundary as defined by section 22a-94 of the Connecticut General Statutes (CGS) and is subject to the provisions of the Connecticut Coastal Management Act (CCMA), sections 22a-90 through 22a-112. In accordance with CGS section 22a-100, state actions within the coastal boundary that may significantly affect the environment must be consistent with the standards and policies of the CCMA. The airport has abundant coastal resources, including most notably, coastal waters and tidal wetlands. As the project proceeds towards design, these resources should be protected to the maximum extent practicable, with remaining impacts to be fully mitigated. The Office of Long Island Sound Programs (OLISP) expects to provide further analysis once plans are developed.

Any work or construction activity within tidal, coastal or navigable waters requires authorization from OLISP pursuant to the Structures, Dredging and Fill Act, section 22a-359 through 22a-363f of the CGS. The regulatory jurisdiction limit is the area up to and including the elevation of the coastal jurisdiction line (CJL) as determined for the State's major tidal waterbodies. The CJL for Long Island Sound in Groton is 2.0’ NAVD88. Any work or

construction activity within tidal wetlands at the site will require a permit from OLISP pursuant to section 22a-32 of the CGS. The regulatory jurisdiction encompasses areas with tidal wetland vegetation with elevations up to 1' above the CJL. We understand that the tidal wetlands will be delineated next spring/summer.

Among measures proposed to minimize impacts to tidal wetlands were limiting fill to pile-driven fence posts and not installing skirts within wetland areas. In addition, vegetation would be mowed along the fences, but would follow the existing mowing schedule at the airport to mitigate wildlife impacts.

There was some discussion of extending the deer deterrent fences into the intertidal zone or coastal waters to minimize deer incursion around the ends of the fences. If this alternative is proposed, the effectiveness of the technique must be documented, with evidence that deer are reluctant to wade through water of a certain depth as they graze. Plans to maintain the structures that will regularly entrap flotsam should be developed. If this extension into the water is effective, simply extending the existing fences at the southwest and northeast corners of the airport may minimize the need to extend the fenceline further along the airport periphery at these locations.

Based on information provided, impacts to inland wetlands would be avoided. Because the CAA is a public instrumentality, any work or construction activity within inland wetland areas or watercourses would require a permit from the Inland Water Resources Division (IWRD) pursuant to section 22a-39(h) 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: Construction Stormwater GP.

The DEEP Natural Diversity Data Base has received a request from Hoyle, Tanner & Associates to determine whether there may be impacts to 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. That request is being processed. The document should include the NDDB findings and measures that will be undertaken to protect state listed species from being impacted by the project.

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

cc: Kimberly Peace, Hoyle, Tanner & Associates
Robert Hannon, DEEP/OPPD
Jeff Caiola, DEEP/IWRD
Robert Gilmore, DEEP/IWRD
Micheal Grzywinski, DEEP/OLISP
Dawn McKay, DEEP/NDDB
Laura Saucier, DEEP/WD

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

E-Mail: david.fox@ct.gov

Date: June 29, 2016

Subject: Groton-New London Airport Perimeter Fence

The Department of Energy & Environmental Protection (DEEP) has reviewed the Environmental Impact Evaluation (EIE) prepared for the proposed installation of a wildlife deterrent fence at Groton-New London Airport. The following comments are submitted for your consideration.

The Department recognizes the need to deter wildlife that may pose a threat to airplane operations from accessing airport property. We also understand the CAA's challenge in striking the correct balance between public safety and resource impacts in developing a plan to deter such wildlife. Our comments on the EIE include: 1) a request for additional information to clarify the extent of the existing problem, 2) suggested alternatives that may be effective deterrents with reduced environmental impact, 3) questions for clarification on some details of the project design and 4) recommended measures to consider to further minimize impacts to important natural resources.

The purpose and need for the fence is briefly described in the EIE by referencing several statistics from the *Wildlife Hazard Assessment*. While we understand that even one collision with a deer could be too many, the justification provided in the EIE is meager. Only 1% of the wildlife strikes from 1990 to 2011 and none of the additional strikes from 2102 to 2015 were attributed to mammals. There was no mention of any deer strike ever occurring. Since the 8' tall fence is primarily designed to exclude deer from the airport, additional evidence of the extent of their incursion onto the airport property should be provided. During our October 22, 2015 site visit, there was considerable discussion of the frequency of deer appearing on the airport and the staff's effort to force them to leave. This documentation would provide reviewers with a better understanding of the need for the fence.

The EIE did not include the results of any surveys for state listed species nor delineations of tidal wetlands. Therefore, detailed review the extent of potential impacts to these resources and opportunities to mitigate them cannot be made at this time and must be resolved during the permit pre-application process. Tidal wetland surveys must delineate high and low marsh areas and species found in each area. The extent of botanical surveys required for protected species, is correctly noted in the EIE on page 18, taken from our scoping comments.

Page 16 states: "The regulatory jurisdiction encompasses areas with tidal wetland vegetation with elevations up to 1' above the CJL. The project would require a permit from

OLISP pursuant to section 22a-32 of the CGS for impacts to land below the CJL." The project will also require a permit for impacts to tidal wetlands up to 1' above the CJL.

As explained on pages 8 and 9, the fence is proposed to extend into water deep enough to deter animals from walking around it. Figure 2 depicts extensions for fence segments L1 (eastern end), L3 (both ends), L5 (southern end) and L8. As noted in our scoping comments "the effectiveness of the technique must be documented, with evidence that deer are reluctant to wade through water of a certain depth as they graze. Plans to maintain the structures that will regularly entrap flotsam should be developed." The length of fence required to reach the effective depth should also be provided. All of this information must be included in the permit application.

Our scoping comments also noted that "If this extension into the water is effective, simply extending the existing fences at the southwest and northeast corners of the airport may minimize the need to extend the fenceline further along the airport periphery at these locations." If the L1 segment was extended into the water at its western end, just past the end of the abandoned runway, and this effectively deterred deer, would there be a need for the remainder of segment L1? While we understand that there is also a problem with geese accessing the airport grassland by walking up from the water, a much lower fence could be used to deter them. As noted in Appendix C, "another possible alternative could be primitive fence supports with mylar reflective flagging." Similarly, could segments L3 and L5 be such an alternative design? A less obtrusive fence in these locations would reduce impacts and would not have to extend into the water.

Another deer access route is the stone causeway from Bluff Point State Park and Coastal Reserve. The northern end of segment L6 does not extend into the water on Figure 2 although it is noted as doing so in the text. If an effective deterrent was constructed at the end of the causeway, could rest of segment L6 to the south also be a lower alternate design? We note that segment L7 immediately north of the causeway cannot be built due to FAA obstruction restrictions, although as explained it is a steep, rocky climb to access the airport.

Page 18 notes that alteration of the hydraulic characteristics of the marsh would be avoided by designing the access corridor with proper culvert design and profile grades that mimic the natural environment. There does not appear to be any reason to install new culverts for the fence project. If culverts are proposed, their need must be justified and a complete description of their design and installation should be provided.

The EIE explains that the fence and access corridor follow existing roads where possible and will not involve fill in wetland areas. However, it is not clear whether any fill that changes the profile of the access corridor is proposed in other upland areas. The nature of the construction techniques for the access roadway should be detailed. The Department has a concern that raised road beds would not only impact existing site hydrology, but could impact future marsh migration due to rising sea levels. The existing profile of the site should not altered.

Page 17 indicates that "the proposed action would have minimal and mostly temporary impacts to fisheries resources." However, this conclusion appears to be based upon an evaluation of potential direct impacts to essential fish habitat in Appendix C for 13 key species, as required under Federal law, rather than a comprehensive assessment of how the project may

impact other marsh forage fish species. The EIE does not evaluate the potential adverse impacts of the proposed action on these marsh forage fish (e.g., mummichog, killifish, etc.) that feed in the tidal creeks and marsh platform during spring tides. An evaluation of such potential impacts should be provided.

One potential source of such impact would be the hinged fence proposed across and within tidal creeks. It is not clear how many of these crossings are proposed. One would obviously be required along the section of segment L1 parallel to Taxiway C. Other potential locations would be in the middle of segment L5 and another creek crossed by the access road parallel to the abandoned runway along segment L1. However, these latter two locations have paved surfaces crossing the creek which is culverted. Keeping the fence along the upland would seem to obviate the need for the hinged portion at these locations.

If the alternative fence design previously discussed were to be utilized at these locations, there may be no need for any hinged fence. If one is proposed, additional information regarding its design and impacts must be provided. This includes: elevations of lowest member of the fixed fence and lowest member of hinged portion, the frequency that each portion of the fence would be submerged, vegetation and habitat value of creek and wetland areas upstream of the crossing, size of openings in chain link fabric, and maintenance required to clear debris (which would be often).

Page 6 states that "in locations within wetlands and tidal areas, the access corridor **may** be reduced on one or both sides such that the access corridor would only allow for clearing and vegetation removal via the use of small equipment and on foot." (emphasis added). This restriction will be a condition of the permit. In addition, it is not clear why vegetation removal would be required in tidal wetland areas, where only low growing species will be found.

In describing the wetland mitigation at the airport, page 15 states that it "was designed and built to serve as functioning salt marsh which would attract wildlife, some of which are clearly hazardous to nearby operations and is counter to FAA separation guidelines as detailed in Advisory Circular 150-/5200-33B." It should be noted that this mitigation area was required by DEEP as compensation for the direct impact to tidal wetlands caused by construction of the engineered materials arrestor system.

Page 4 states that "Between June 1, 1990 and December 31, 2011, there were 221 reported wildlife strikes at GON, of which 202 strikes (91%) were attributed to birds, including gulls, woodland songbirds, grassland birds, waterfowl, corvids/icterids (crows, ravens, jays, passerines), birds of prey and columbids (pigeons and doves) … Review of the FAA Wildlife Strike Database (www.wildlife.faa.gov) resulted in 32 additional strike reports from January 1, 2012 through September 2015 (the latest available data as of February 2016), all of which were attributed to birds." The Wildlife Division questions the usefulness of data that lumps the protected small grassland birds together with larger species. A query of the FAA Strike Database suggests that a large percentage of the 202 strikes attributed to birds are from large bodied birds like gulls and geese. Listing "wildlife strikes" as a lumped birds category is extremely misleading as all species have different behavior and habitat use patterns and do not present equal strike hazard risks. Additionally, it should be noted that the FAA Wildlife Strike Database is based on where strikes are reported, not necessarily where the strikes occur, which can also result in reports being assessed a "strike hazard" that is inaccurate.

Page 4 also states that "the airport should not be managed for state-listed species where it compromises recommended standard management practices and causes hazardous species to be attracted." Scientific literature suggests that small non-flocking passerines pose little threat of strike hazard to airplanes. The state-listed grassland bird species utilizing GON to nest would fall into this description of small, non-flocking passerines. Management practices for these true grassland bird species have been documented to reduce the suitability of airports for many of the larger species that present significantly great strike hazard risks. In the past, the Wildlife Division and GON staff successfully coordinated and managed for state-listed species on airport property since the inception of Connecticut's Endangered Species Act in 1992. Planning for the minimization of negative impacts to these state-listed species outside of safety areas on airport property through adjustments in the timing of maintenance and construction projects will limit potential violations of the federal Migratory Bird Treaty Act of 1918 and Connecticut Endangered Species Act.

Page 5 states that no scoping comments were received. Because the site visit coincided with the comment deadline, our comments, intended to be scoping comments, were sent on October 27 so that they could be informed by the experience gained during the site visit. In addition, DEEP was not involved in the stakeholder review in March 2016.

Table 1.3-1 lists a 401 Water Quality Certification from the Inland Water Resources Division. Because it involves coastal and tidal waters, the certificate will be from OLISP.

The direct permanent impact to inland wetlands is listed as 1.16 sq.ft. It appears that moving the east-west fence line slightly to the north would avoid regulated areas completely.

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

cc: Kimberly Peace, Hoyle, Tanner & Associates
Jeff Caiola, DEEP/IWRD
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Robert Hannon, DEEP/OPPD
Mark Johnson, DEEO/IFD
David Kozak, DEEP/IWRD
Dawn McKay, DEEP/NDDB
Laura Saucier, DEEP/WD

Appendix C: Public Involvement

From: syma ebbin [mailto:saebbin@sbcglobal.net]
Sent: Wednesday, June 22, 2016 1:40 PM
To: Environmental <environmental@ctairports.org>
Subject: EIE for GON Fence Proposal

Dear Mr. Bruno.

The EIE for the GON Fence proposal you have posted on the CT state website does not include Figure 2 which shows the spatial location of the proposed fence. Lacking this piece of information, it is not possible for the public to comment intelligently on the proposal. You should really repost with ALL the information required to understand the proposed project and extend the comment period.

Sincerely,
Syma Ebbin

>>(((((*>~~~~~>>(((((*>~~~~~>>(((((*>~~~~~
Syma A. Ebbin, PhD.

CONNECTICUT AIRPORT AUTHORITY

PUBLIC COMMENT SHEET

If you would like to provide Comment on the Draft Environmental Assessment (EA)/Environmental Impact Evaluation (EIE) for the Connecticut Airport Authority (CAA) Groton – New London Airport: Wildlife Hazard Deterrent Fence, Groton, CT, you can write your comment in the space below and return the sheet to a CAA representative at this meeting.

You can also fill this Comment Sheet out at home and return it to:

Mr. Robert J. Bruno
Director of Planning, Engineering & Environmental
Connecticut Airport Authority
334 Ella Grasso Turnpike, Suite 160
Windsor Locks, CT 06096

Or you may call or email Mr. Bruno at (860) 254-5516, environmental@ctairports.org

Comments must be received before July 1, 2016; comments received after this date will be considered to the extent practicable.

Name: Kathryn Hornat

Address: 41 Pine Island Rd

City: Groton State: CT Zip: 06340

Comment: This comment is opposed to the deterrent fence at the Groton/New London airport. I believe it is ecologically incorrect to fence in the airport. You will not stop wildlife from entering the facility and if an animal gets trapped inside it could mean sure death for that animal. Also it seems to be a waste of tax dollars to erect and maintain the structure.

Note: By Providing your name and address, it becomes public information and may be provided to individuals and organizations upon request under provisions of the Freedom of Information Act of 1974. Except for proprietary information, CAA and FAA will make all submissions from organizations or individuals available to the public in their entirety.

STATE OF CONNECTICUT

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

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The direct permanent impact to inland wetlands is listed as 1.16 sq.ft. It appears that moving the east-west fence line slightly to the north would avoid regulated areas completely.

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

cc: Kimberly Peace, Hoyle, Tanner & Associates
Jeff Caiola, DEEP/IWRD
Jenny Dickson, DEEP/WD
Micheal Grzywinski, DEEP/OLISP
Robert Hannon, DEEP/OPPD
Mark Johnson, DEEO/IFD
David Kozak, DEEP/IWRD
Dawn McKay, DEEP/NDDB
Laura Saucier, DEEP/WD

CONNECTICUT AIRPORT AUTHORITY

PUBLIC COMMENT SHEET

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Director of Planning, Engineering & Environmental
Connecticut Airport Authority
334 Ella Grasso Turnpike, Suite 160
Windsor Locks, CT 06096

Or you may call or email Mr. Bruno at (860) 254-5516, environmental@ctairports.org

Comments must be received before July 1, 2016; comments received after this date will be considered to the extent practicable.

Name: Frances Hohenstein

Address: 56 Jupiter Pt

City: Groton State: CT Zip: 06340

Comment: So the FAA wants zero tolerance of wildlife at Groton-New London Airport. The 2010-2011 report said there was "no persistent wildlife identified". 99% of any interaction is with birds. Have we to spend $1.2 Million for less than 1% to keep wildlife off the airport? The State is in dire financial straits and I find it unbelievable that we need to spend any part of that because the FAA says we must. We used to have much more traffic here with no accidents. The only fatality was due to a plane hitting the new lights installed in the water "for safety"! Please rethink this & use available deterrents in place now rather than a fence.

Note: By Providing your name and address, it becomes public information and may be provided to individuals and organizations upon request under provisions of the Freedom of Information Act of 1974. Except for proprietary information, CAA and FAA will make all submissions from organizations or individuals available to the public in their entirety.

From: Shumway, Sandra [mailto:sandra.shumway@uconn.edu]
Sent: Wednesday, June 29, 2016 5:42 PM
To: Environmental <environmental@ctairports.org>
Subject: proposed fencing around Groton Airport

To Whom It May Concern:

This entire effort strikes me as just one more complete and utter waste of time and money under the guise of 'improvement' of some public facility. Almost all of the problems involve birds and a fence will do absolutely nothing to alleviate that. A report noted there were 'no persistent wildlife identified' and I find that preposterous. Deer, chipmunks, voles, mice, raccoons, opossums, turkeys, and others are all resident in the general vicinity of the airport and adjoining lands and there is no scientific reason to believe that they are not present at the airport itself. They already are. If an animal does get inside the fencing, how will it escape? Answer: it won't and it will die of dehydration, hunger, or fear, and exhaustion (heart attack).

I can't wait to see the barbed wire covered in plastic bags and other debris, what an attractive sight for such a pristine area. If there are not enough staff present to scare away the odd deer, who will clean the fences? Given a month, it will look just like the slums of India and China.

I can think of many more deserving projects to spend $1.2M. Please rethink the project.

Yours sincerely,
Dr. Sandra E. Shumway
Fellow, American Academy for the Advancement of Science
Member, Connecticut Academy of Sciences

Sandra E. Shumway, Ph.D., D.Sc.
Department of Marine Sciences
UCONN
1080 Shennecossett Road
Groton, CT 06340
Ph: 860 405 9282
FAX: 860 405 9153
"Great spirits have always encountered violent opposition from mediocreminds..."
Albert Einstein

CONNECTICUT AIRPORT AUTHORITY

PUBLIC COMMENT SHEET

If you would like to provide Comment on the Draft Environmental Assessment (EA)/Environmental Impact Evaluation (EIE) for the Connecticut Airport Authority (CAA) Groton – New London Airport: Wildlife Hazard Deterrent Fence, Groton, CT, you can write your comment in the space below and return the sheet to a CAA representative at this meeting.

You can also fill this Comment Sheet out at home and return it to:

Mr. Robert J. Bruno
Director of Planning, Engineering & Environmental
Connecticut Airport Authority
334 Ella Grasso Turnpike, Suite 160
Windsor Locks, CT 06096

Or you may call or email Mr. Bruno at (860) 254-5516, environmental@ctairports.org

Comments must be received before July 1, 2016; comments received after this date will be considered to the extent practicable.

Name: Steve + Abby Bruce

Address: 42 Pine Island Rd

City: Groton State: CT Zip: 06340

Comment: From what we understand the plan as proposed is total overkill and costs an outrageous amount of money. Plus it is not aesthetically necessary or acceptable to those of us who live next to the airport.

Since the deer only enter from 2 places, why not just put fencing up there? Why do we have to make the airport look like a maximum security prison for a rather small and quite manageable problem?

Note: By Providing your name and address, it becomes public information and may be provided to individuals and organizations upon request under provisions of the Freedom of Information Act of 1974. Except for proprietary information, CAA and FAA will make all submissions from organizations or individuals available to the public in their entirety.

30 June 2016

Connecticut Airport Authority
334 Ella Grasso Turnpike, Suite 160
Windsor Locks, CT 06096
(860) 254-5516
environmental@ctairports.org

Dear Mr. Robert J. Bruno, Director of Planning, Engineering & Environmental:

The purpose of this letter is to respond to the CAA draft proposal to erect a fence at the Groton-New London Regional Airport.

I own a residence at 111 Jupiter Point Road, Groton, CT just southwest of the airport property. As a local resident I enjoy the sights of Bluff Point State park, Bakers Cove, Bushy Point, as well as enjoy fishing and clamming in the Poquonnock River. I also appreciate the airport is a neighbor that keeps further development at bay. I am a Civil and Mining Eng. by trade with 33 years of industrial experience.

After reading the report prepared by Hoyle and Tanner Associates I have several comment areas:

A. You have a bird problem, treat it as such.
B. You will destroy marshland by fencing the perimeter boundary in both Alt.1 and Alt 2 proposed actions.
C. The airport has been in place for decades, why a fence to stop birds now?

To get to the point of my comments. ***You have a bird problem.***

A. Fences don't stop birds. As a matter of course they create perch sites for most birds. Your 8' galvanized chain-link fence with cemented posts with included three strands of barbed wire facing out with a buried girdle sure sounds like a great perch site for thousands of birds. I drove along the north and west side of the airport and you have many birds sitting on top of the barbed wire of your fence. Tell me…how do you stop them from flying there to perch and then flying across the airfield??? MAYBE YOU DON'T CREATE THE PERCH SITE!!!! With the addition of Alt. 1 and Alt. 2 proposed actions you will be adding 2+ miles of fencing!!! Now think about all those perch sites!!!

B. Placing a fence around "most" of the airport does little to effect birds' flight path. Further, you are only going to increase the height at which birds will be flying near the fence…near the runways creating a worse condition for potential bird strikes. On the southerly airstrip if Alt. 1 is applied there is a strong probability that this risk will be an added. Same thing on the easterly side at the end of the airstrip. Trying to put a fence around an airport located adjacent to estuaries, a state park, and bird/wildlife sanctuaries within shouting distance of the airport, and Fisher Island Sound would seem like engineering folly and questionable use of $1.2MM of FAA resources. To be specific, you already have a fence around the north, and easterly and westerly sides of the airport now…is that stopping birds for you??? NO, THE EXISTING FENCE LOCATED AT THE AIRPORT DOES VERY LITTLE TO STOP BIRDS. BY DIRECT EXTRAPOLATION, WHAT WOULD MAKE AN ENGINEER THINK THAT A FENCE AROUND MOST OR ALL OF THE AIRPORT WILL DETER BIRDS??? I DID NOT SEE ANY STUDIES/DATA WITHIN THE HOYLE & TANNER REPORT INCLUDING APPENDICIES THAT DEMONSTRATES THE EFFECTIVITY OF FENCING. Please understand I recognize the need for security fencing for the airport.

C. In my past I owned chickens, and we used a chicken wire fence to keep the chickens by the henhouse to keep the predators at bay. I would postulate (please prove me wrong) that placing a fence around the airport will only aid in the birds to fly there for safety against other predators and having a barrier will

only increase their habit to fly toward safety…uh oh…the airport…the place we don't want them to fly Animals use barriers to their advantages many times much better than why we place them.

D. You make mention of animals running around the airport, but I cannot find any data…If there is data on the number of animals, where is it. I know for sure if a plane had hit a deer or woodchuck or coyote it would have been attached in an appendix. So since there is no data, you don't have an animal problem to require a fence. Nor does ESS, Hoyle and Tanner or any DEEP officials show pictures or detail an animal problem at the airport.

You will destroy wetlands by fencing the perimeter boundary in both Alt. 1 and Alt. 2 proposed actions

1. In Fig. 2 on the south and east sides of the airport along Bakers Cove and Puoquonnock River Alt. 1 and Alt. 2 shows the proposed action area. Alt. 2 section is mostly in marshland within the VE zone and within the floodplain…that's why its marshland. Figure 3 "Chain link fence in Wetlands" details how the fence shall be constructed and maintained. **This is where you destroy marshland.** Your drawing detail states, *"Clear all trees, brush, grind stumps flush with ground, location shown on plans, and mow grass and clear all brush flush to the existing ground along entire length of fence 15' either side of fence." In the notes section of Fig.3 it states, "Note 4 – All trees, brush and Phargmites shall be brought offsite and not mulched /chipped and left on site". Note 3 says, " Clearing limits may vary to avoid wetlands, see wildlife fence plans for limits." And finally the drawing states that the 8' exposed fence posts should be mechanically driven to a depth of 13" or until refusal, whichever comes first.* I take issue with many facets of this proposed fence in the wetlands.
    a. ITS WETLANDS! If you mow "thatch" aka wetlands for more than one year you kill it.! That would be the objective of maintenance, but wetland takes many, many years to replace, and for all points of matter in the proposed action area the wetland is static or decreasing by erosion or not in the best of shape due to other incursions of mankind. In the drawing it states limits may vary to avoid wetlands…which is a good thing for the wetlands, but one or two years of thatch growing around and through your fence will be the end of trying to maintain it without extensive cost. By scale there are area along the proposed action areas where you cannot mow 15' either side of the proposed fence or you will be in the Cove or river! And what reason do you have trying to maintain a fence in wetlands near or on the water's edge and not expect to do further ecological damage.
    b. As an engineer we take statics…the study of forces. To the construction detail of your wetland fence, with a little resistance (like vegetation growth) in the 8' fence with a 13" driven stake does not stand a chance of remaining upright in a storm surge or ice movement. Mother Nature has an 8/1 lever arm advantage to topple your fence. The design is not to cement it and only mechanically drive it…this is a loser structure as far as an engineered solution to stop what??? So what happens when you have to repair the fence after a winter storm has taken it down, new permitting to the EPA, just do it, or create yet a bigger engineering structure to preserve the fence which damages more wetlands? STOP!!!!! Don't put in a fence where the risk of damage is greater than the benefit of placement.
    c. After one or two winters/years in the wetland there will be gaps under the fence which will allow entry of animals and the birds will still be flying over the fence and creating nests in the thatch surrounding the fence areas you decide not to mow or kill… or do you intend to use non-selective herbicides to kill that vegetation or weed whack the proposed actions areas??? We do know airport maintenance have to make decisions on what to do, they have a job to do and they are going to do it! So besides killing the marsh, you are going to have a huge increase in maintenance costs to mow this proposed action area or you are going to clear it with herbicides or trimmers and get a handle on that wetland stuff. Who will know and who will question??? I say to you if you needed a fence around the airport, there would already have been one…this is not original thought by the CAA and Hoyle and Tanner Associates!!!

d. Transcript of Letter from CT DEEP David Fox – Senior Environmental Analyst, dated 10/27/15 to all associated CAA affiliates, "There was some discussion of extending the deer deterrent fences into the intertidal zone or coastal waters to minimize deer incursion around the ends of the fences. If this alternative is proposed, the effectiveness of the technique must be documented, with evidence that deer are reluctant to wade through water of a certain depth as they graze. Plans to maintain the structures that will regularly entrap flotsam should be developed. If this extension into the water is effective, simply extending the existing fences at the southwest and northeast corners of the airport may minimize the need to extend the fence line further along the airport periphery at these locations." **Maybe CAA might want to save a whole bunch of money and follow the wisdom of Mr. Fox.**

I would like to take a moment and refute your archeologist findings. The Puonquonnock Bridge area and Puonquonnock River are a bed of history. There are several books which I have read that detail how Native American's used the land on what is now the airport as these areas had limited rock and were close to the cove where fish and seaweed could be applied to crops for fertilizer. Further there are collection of arrow heads and native tools in the Groton area which came from areas either on the airport or close by. The airport is where it is, if someone decided to dig around long enough they are going to find some artifacts. I am stating that where you desire to put improvements was walked on and used by our native parents to this land, so think and improve wisely. Respect that which you visit.

As an engineer and a person who uses the area for its natural bounty, including visual bounty…your idea of placing a fence around the entirety of airport is a disappointment to engineering solutions. If you would desire to investigate active protection systems, area denial systems, and autonomous interdiction, please contact me and I will put your consultant or engineer in touch with integration houses that will mitigate birds from your airport.

As a neighbor to the airport I appreciate the service you provide to countless many. I respect your purpose and in the genuine sense I appreciate your need to potentially reduce the risk of avian encounters. But a fence???...NO, not because I think so, but because it is not the correct solution. If you have a bird problem then design a system that will mitigate that risk, but don't spend a bunch of money on something that will not do you any good and only make your airport look like a prison in paradise. Do better!

In closing, I will gladly appear to defend my position and opinions at your most urgent contact.

Respectfully submitted,

Peter G. McGuinness
111 Jupiter Point Road
Groton, CT 06340
860-668-0500
pvmcguinness@juno.com

Dear Mr. Bruno,

I spoke at the public informational session on June 23, 2016 regarding the Groton New London Airport Wildlife Hazard Public. Please include these additional comments in your record.

The Environmental Impact Assessment (EIA) is deficient in several areas. The primary reason being that it assesses only 1 alternative, presenting no other feasible alternatives. This negates the entire intent of the National Environmental Policy Act. Further, the EIA does not provide any information regarding costs, nor does it assess the benefits or costs of the single alternative. Thus, it would appear this EA is really an exercise in hoop-jumping, providing no alternatives to the FAAs preferred option.

The one option examined is also deficient in that is does not address 99.9% or perhaps ANY of the actual wildlife hazards present at the airport.

The 2012 wildlife hazard assessment conducted by Louis Berger Group noted that 0.006 % of all species found on the airport were mammals, and the majority (over 50%) of these were mice and squirrels, which as the EIA states will be ABLE to pass through the fence. An even lower percentage were amphibians. Over 99% were various bird species.

If you look at the 2002-2011 strike data recorded in that 2012 document, in 202 out of 221 strikes where it was possible to identify the guild – all were bird species. None (0%) identified were mammals.

The primary wildlife hazard is constituted by avian wildlife. This fence is entirely ineffective at keeping out the primary wildlife hazard to the airport operations – which are BIRDS, specifically gulls and swallows. It will also be entirely ineffective at excluding the most abundant mammal species: which are MICE and SQUIRRELS.

My copy of the EIA included lots of maps except for the map of the proposed project.

The report does not analyze the impacts to estuarine or saltmarsh associated with the 30 foot clearing and access road to accompany the fence. The fence would impact threatened bird species such as saltmarsh sparrow that nest in the grasslands which the fence and road and vegetation-free safety clearing would transect

There has been no analysis of what will happen to this chainlink fence in tidal areas and areas subject to storm surge (which is the entire fence perimeter) when debris is washed up and impedes water flow in the lower portion of the fence. This fence clogged with debris, will certainly impede tidal flows and possibly lead to the destruction of even more saltmarsh habitat, cause upland pooling, accelerate subsidence of the land, enhance mosquito production, destroy habitat essential to threatened and special concern species.

Without any info on the relative merits of alternative plans, the costs of the project, the benefit-cost tradeoffs this EIA is entirely inadequate and does not meet the intent of NEPA

The fence will have significant impacts on saltmarsh and other sensitive habitats as a result of the 30 foot non-vegetated buffer and access road, impacts on coastal hydrology, and on the essential habitats of species of special concern

There has been no analysis of the aesthetic impacts to visitors to Bluff Point or to the residents who will have this 8 foot high chainlink fence with barbed wire strands in their viewshed.

There has been no analysis of the impacts to aviation safety that this new obstacle will present.

There has been no analysis of the cumulative impacts that this project will have on species of special concern or significant habitats.

I urge you to reject this as fiscally imprudent, environmentally risky and technically deficient fencing plan.

Sincerely,

Syma Ebbin

From: Jean Hart [mailto:jeanate@verizon.net]
Sent: Friday, July 01, 2016 8:23 AM
To: Environmental <environmental@ctairports.org>
Subject: Installation of Wildlife Hazard Deterrent Fence at CT Groton-New London Airport - comments

Attention: Mr. Robert J. Bruno, Director of Planning, Engineering, & Environmental

From: Jean Hart
106 Jupiter Point Rd. Groton Ct 06340
and 505 Spring Valley Drive, Bridgewater NJ 08807

I wish to express my concerns about installation of wildlife hazard deterrent fence surrounding the Groton-New London Airport.

I am supportive of pilot and passenger safety, both private and public. However, the proposal under consideration appears to be out of proportion to the size of the airport and the number of people it serves, as well as the fact that it seems the potential outcome does not fit the cost. 1.2 million dollars is a large sum to dedicate to build a fence to keep small to medium sized land animals off the runways. This fence will completely surround the airport, having openings (width?) at the ends of three runways - three open gates for any of the mentioned animals to have unhindered entrance. Once inside, animal instinct suggests that they will frantically try to escape when they confront the fence, finding the open areas unlikely. Compare this to a lobster or a crab, entering a trap through a small opening, and then trying to get free by finding its entrance opening. How will those animals which may gain entrance to the grounds be handled?

Further, I suggest that this does not solve what over the years seems to be the greatest challenge to safety at this airport. Canadian geese and gulls are far more common in the sky, land, and waters around Baker Cove, and I see the constant efforts to control these issues.

I recommend that the funds be used to support airport safety and counter-terrorism measures at some larger airports In Connecticut, those which serve many more persons with much larger capacity planes.

Final thought: Is there statistical data available to support the hypothesis that land animals of a certain size, and present in a specific density, are detrimental to air traffic at said airport?

Thank you for your anticipated consideration of my thoughts.

Regards, Jean Hart

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

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

Dannel P. Malloy
Governor
Nancy Wyman
Lt. Governor

Drinking Water Section

June 28, 2016

Robert Bruno
Director of Planning, Engineering and Environmental
Connecticut Airport Authority
334 Ella Grasso Turnpike, Suite 160
Windsor Locks, CT 06096

Re: Notice of EIE for Wildlife Hazard Deterrent Fence at Connecticut Airport Authority's (CAA) Groton-New London Airport

Dear Mr. Bruno:

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
Drinking Water Section

Phone: (860) 509-7333 • Fax: (860) 509-7359 • VP: (860) 899-1611
410 Capitol Avenue, P.O. Box 340308, MS#51WAT
Hartford, Connecticut 06134-0308
www.ct.gov/dph/publicdrinkingwater

From: Toby and George Hohenstein [mailto:tobygeo@gmail.com]
Sent: Wednesday, June 29, 2016 4:51 PM
To: Environmental <environmental@ctairports.org>
Subject: Groton-New London Airport Proposed Fence

PLEASE reconsider installing the proposed fence at our airport. We love this airport and want to keep it safe, but to put up this fence when the 2010-2011 report indicates that 99% of the incidents are with birds and less than1% with other wildlife seems excessive. We have had major lines here, Continental and US Air, and no major incidents occurred. They say the FAA wants zero tolerance, but less than 1% for $1,200,000.00? Does the CAA have to do everything the FAA says they must?

Yes, the FAA will contribute some of the expense, but when we are closing the State House and state parks, eliminating jobs and programs, we need to rethink our priorities. Connecticut is going to contribute the majority of the money and we still don't know the ultimate price.

Groton-New London is unique among airports as it is surrounded mostly by water. The report said that "there was not enough manpower to scare off the wildlife" in 2010-2011. How will the airport personnel be able to keep the debris off the fence, especially when part of it will be in the water? And how will they be able to scare off wildlife if they are caught inside the fence--there will nowhere for them to go.

Please reconsider!
Frances Hohenstein, 56 Jupiter Point Rd, Groton, CT 06340

Appendix D: US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) Report and Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-0101 October 14, 2015
Event Code: 05E1NE00-2016-E-00133
Project Name: Groton-New London Wildlife Fence Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Groton-New London Wildlife Fence Project

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
(603) 223-2541
http://www.fws.gov/newengland

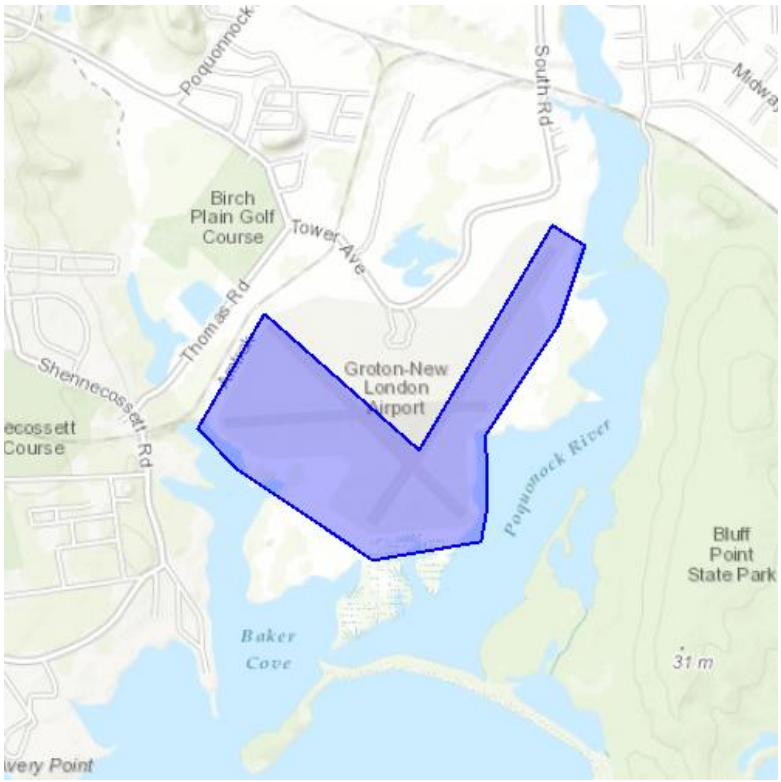
Consultation Code: 05E1NE00-2016-SLI-0101
Event Code: 05E1NE00-2016-E-00133

Project Type: Animal Control

Project Name: Groton-New London Wildlife Fence Project
Project Description: Installation of a wildlife hazard deterrent fence along the edges of the airport currently not fenced.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-72.0531291977386 41.333242974346, -72.05652809090678 41.32886031943585, -72.05450248875422 41.32728764824909, -72.0476360336761 41.32383279437799, -72.04210853786208 41.324528935718845, -72.0417308807373 41.325818068169085, -72.04183387861121 41.32860250702415, -72.03816032619216 41.33280472192591, -72.03682136430871 41.335820868919456, -72.03843498544302 41.33659421739739, -72.04523277439876 41.3280095348024, -72.0531291977386 41.333242974346)))

Project Counties: New London, CT

Endangered Species Act Species List

There are a total of 2 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	**Status**	**Has Critical Habitat**	**Condition(s)**
Red Knot *(Calidris canutus rufa)*	Threatened		
Mammals			
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Peace, Kimberly R.

From: vonOettingen, Susi <susi_vonoettingen@fws.gov>
Sent: Wednesday, October 14, 2015 12:45 PM
To: Peace, Kimberly R.
Cc: richard.doucette@faa.gov; cgoegel@ctairports.org; Audet, Timothy J.; Coon, Deb
Subject: Re: Groton-New London Wildlife Hazard deterrent Fence project

Yes, I agree. No species present, no suitable habitat for either northern long-eared bat or red knot.

Susi

****
Susi von Oettingen
Endangered Species Biologist
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
(W) 603-223-2541 ext. 6418
Please note my new extension.

www.fws.gov/newengland

On Wed, Oct 14, 2015 at 11:26 AM, Peace, Kimberly R. <kpeace@hoyletanner.com> wrote:

> Hi Susi-
>
> The Connecticut Airport Authority (CAA) is proposing to install a wildlife hazard deterrent fence along unfenced areas of the Groton-New London Airport in order to prevent large to medium sized mammals from accessing airport operational areas. The proposed plan is attached. The project is currently undergoing NEPA review via FAA and is in preliminary design, thus the attached design figures are examples of what the fence will entail: an 8-ft chainlink fence with three strands of barbed wire along the top and a 3-foot wide buried skit along the bottom edge extending outward along a slope to deter animals from burrowing under the fence. Permanent impacts to uplands and wetlands would include the footprint of the fenceposts, the fence, and a 15-foot wide maintained vegetated or gravel corridor on at least one side of the fence, typically both sides in uplands, to allow for vegetation and fence maintenance. In wetlands, this corridor would not include earthwork, with vegetation cut flush to the ground and stumps left in-place.
>
> The IPAC review is attached, and has listed red knot and NLEB. There is no critical habitat identified for either species.

Red knot migrate across coastal New England between their Arctic breeding ground and wintering regions. The Delaware Bay and coastal Massachusetts and New jersey are important migration stopovers. The proposed project will not permanently alter or reduce rocky coastal, beach or mudflat habitat available for this species to use during migratory stopover. There will be no effect on this species.

The project is located within suitable habitat zone for NLEB (Coastal New England). However, the project does not include removal of trees greater than 3 dbh other than a few individual trees along the edge of one wetland area. Most of the impact areas are mowed lawn or high saltmarsh. We believe there will be no effect on NLEB or their habitat.

Please let us know if you concur with the suggested determinations.

Thank you-

Kimberly R. Peace

Environmental Coordinator

Hoyle, Tanner & Associates, Inc.

150 Dow Street | Manchester, NH 03101

(603) 669-5555, ext 151 | Fax: (603) 669-4168

kpeace@hoyletanner.com

www.hoyletanner.com

Our vision is to provide innovative, collaborative and sustainable engineering and planning solutions to the challenges our clients face, while enhancing the communities in which we work and live. We strive to uphold the highest ethical standards while maintaining integrity and respect within our professional relationships. We continue to build a corporate culture that honors and values the individuality and strengths of our team members and our clients.

Appendix E: CT Natural Diversity Database (NDDB) Review Request and Response

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

December 10, 2015

Kimberly R. Peace
Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101

Re: Wildlife deterrent fencing at Groton-New London Airport in Groton, Connecticut
NDDB review 201506425

Dear Ms. Peace:
Materials pertaining to the above project were forwarded for review by the DEEP Natural Diversity Database (NDDB). According to our records, Incidental Take Consultations have been initiated for impacts to State-listed plant species resulting from the following activities at the Groton-New London Airport (GON) in Groton, CT:

- 2007 – DOT Project #58-305; drainage repairs within runway safety area of Runway 5
- 2009 – DOT Project #58-303; construction of Engineered Material Arresting Systems (EMAS) for runways 5 and 23.
- 2014 – Rehabilitation of MALS/R and PAPI lighting systems for Runway 5

As of November 2015, the following State-listed plant species have documented at GON:

- **Sea-coast angelica (*Angelica lucida*)**
  Protection Status: State Endangered
  Habitat: Sea beaches, fields, and forest edges adjacent to coastal sites. Blooms Jun, Jul, Aug, Sep.
- **Bracted orache (*Atriplex glabriuscula*)**
  Protection Status: State Special Concern
  Habitat: Sandy sea beaches, salt marshes, waste places. Blooms Aug - Oct.
- **Yellow thistle (*Cirsium horridulum*)**
  Protection Status: State Endangered
  Habitat: Found in fields and on the borders of salt marshes along the coast. Blooms Jun, Jul.
- **Scotch lovage (*Ligusticum scothicum*)**
  Protection Status: State Endangered
  Habitat: Rocky shores and borders of salt marshes. Blooms Jul-Aug.
- **Field paspalum (*Paspalum laeve*)**
  Protection Status: State Threatened
  Habitat: Damp, sandy fields, thickets, and shores. Identifiable Aug – Sep.

To prevent impacts to these State-listed species, botanical surveys should be conducted along the proposed fence alignment, within any vegetated staging areas or transportation routes, and within currently vegetated areas that will be managed differently upon construction of the proposed fence. Botanical field surveys of the site should be performed by a qualified botanist when each of the target plant species is identifiable. A report summarizing the results of such surveys should include:

1. Survey protocol, including survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant species within the survey area (including scientific binomials)

4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State-listed plant species
6. Statement/résumé indicating the botanist's qualifications

The report should be sent to the Natural Diversity Data Base (deep.nddbrequest@ct.gov) for further review. **Please note that incomplete reports may not be accepted.**

If direct and unavoidable impacts to State-listed plants are anticipated, the project proponent will be required to develop an Incidental Take Report in collaboration with DEEP staff. Such report will identify actions required to avoid or mitigate for impacts to State-listed species. This document will be reviewed by both DEEP and the CT Office of Policy and Management (OPM) prior to the issuance of authorizations or permits from DEEP. For questions regarding State-listed plant species, please contact Nelson DeBarros (nelson.debarros@ct.gov).

The following state-listed animal species have been documented at GON:

Grassland birds are grassland-obligate species. This group of birds, which includes Savannah sparrow (*Passerculus sandwichensis*, State Species of Special Concern), bobolink (*Dolichonyx oryzivorus*, State Species of Special Concern), and horned lark (*Eremophila alpestris*, State Endangered), require large open fields or agricultural areas for breeding, nesting and foraging. The breeding season for these birds is approximately from 15 May through 15 August. It is during this period that they are most susceptible to disturbances in their feeding and nesting habitat.

- Installation of the fence through grassed areas should be conducted outside of the breeding season window for these grassland-nesting species
- From the site walk on 10/22/15, some of the sections of fencing are slated to be installed along existing access roads; we concur with and encourage this placement since it minimizes the amount of disturbance and structures placed in grassland habitat
- Backfilling of soils to cover the fence skirting should not result in a change in elevation (i.e. no mounding of soils along the fence) which might disturb sight lines of nesting birds
- Fencing materials should not include any screening that would impede sight lines of foraging birds
- Any areas requiring reseeding should be with warm-season grass species. A list of suitable species that meet FAA requirements and the preferred seeding ratios for each grass species should be on file in the Bureau of Aviation and Ports.
- Maintenance mowing should be conducted **outside** of the breeding season window to minimize the potential for crushing of eggs or chicks

Saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*, State Species of Special Concern) breeds in saltmarsh habitat from mid-May through early August. Connecticut possesses a globally significant proportion of the breeding population of this species.

- Installation of the fence through saltmarsh habitat should be minimized to the greatest extent possible
- Installation of the fence through saltmarsh habitat should be conducted outside of the breeding season window for this sparrow

Brown thrasher (*Toxostoma rufum*, State Species of Special Concern) nests in brushy second-growth tangles, briers and dense thickets. Its breeding season is from April through mid-August. It is during this window of time that they are most susceptible to disturbances in their feeding and nesting habitat.

- Minimizing impacts to shrubby habitats during the nesting season will likewise minimize impacts to this species

Owl roosts are habitat features, typically concentrations of trees or tall shrubs in open areas, that are utilized by owls as shelter to rest and conserve energy during the harsh winter months. These roosts often harbor more than one species and are in close proximity to prime foraging areas. The airport facility has two known roost locations that harbor short-eared owls (*Asio flammeus,* State Threatened*)* and saw-whet owls (*Aegolius acadicusis,* State Species of Special Concern). As proposed in the application materials, it is unlikely that these roosts will be negatively impacted by the fence construction. If the proposed route of the fence changes, please contact the Wildlife Division for additional review for potential impacts to the owl roosts at GON.

Northern diamondback terrapin (*Malaclemys terrapin*, State Species of Special Concern) has been reported from this general area. Habitat destruction, degradation or alteration and fragmentation of saltmarsh and sandy coastal shores all threaten diamondback terrapin populations. This species is active from the beginning of May through the end of October. Nesting takes place in June through July on salt marshes and adjacent beach areas. The peaks of hatching occurrences are April through June and again in September through October. This species hibernates in depressions at the bottom of tidal creeks that are 2 to 5 meters wide. Disturbances to saltmarshes and sandy borders of coastal marshes and dunes are potentially detrimental to this turtle. The greatest concern during construction projects occurring in diamondback terrapin habitat are individuals being run over and crushed by mechanized equipment. An additional concern with the installation of fencing through saltmarsh habitat is the potential of creating a barrier to movement for this species.

- We recommend that in areas where the fencing is proposed to go through saltmarsh that those sections of fence be raised to allow for a 6-inch gap along the bottom for turtles to pass under unimpeded
- If leaving a gap along the bottom of the fence in certain sections is problematic, then we recommend that a herpetologist familiar with the habitat requirements of northern diamondback terrapins conduct surveys to determine if diamondback terrapins utilize areas of the airport and to what extent. A report summarizing the results of such surveys should include habitat descriptions, methodology and effort, a reptile species list and a statement/resume giving the herpetologist's qualifications. DEEP does not maintain a list of herpetologists in the state. A DEEP Wildlife Division permit may be required for the herpetologist to conduct survey work; you should ask your herpetologist if they have a permit. The results of this investigation can be forwarded to the Wildlife Division (laura.saucier@ct.gov) and, after evaluation, recommendations for additional surveys, if any, may be made. **Please note that incomplete reports may not be accepted.**
- Maintenance mowing in areas of saltmarsh grasses should not occur during the active season for this species; mowing should be conducted from 1 November through 1 May

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If you have any 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

cc. N. DeBarros
M. Grzywinski, DEEP-OLISP
D. Fox, DEEP-Environmental Review

Groton-New London Airport
Wildlife Hazard Deterrent Fence
Request for Natural Diversity Database (NDDB)
State Listed Species Review

Hoyle, Tanner Project Number: 306807

Prepared for:

Connecticut Airport Authority
Windsor Locks, Connecticut

September 2015

Prepared by:

Hoyle, Tanner & Associates, Inc.
150 Dow Street, Manchester, New Hampshire 03101
Phone: 603.669.5555 Fax: 603.669.4168
Web: www.hoyletanner.com

Table of Contents

Attachments

1. INTRODUCTION

This request for a Natural Diversity Database (NDDB) State Listed Species Review pertains to the Groton-New London Airport Wildlife Hazard Deterrent Fence Project. Groton-New London Airport (Airport) is a general aviation use airport located in the Town of Groton, New London County, Connecticut (Attachment A, Figure 1, USGS Location Map). The Airport is owned and operated by the Connecticut Airport Authority (CAA), a quasi-public agency established in July 2011 to develop, improve and operate Groton New-London Airport and the state's other general aviation airports.

The project involves preparation of National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) documentation as required to evaluate the installation of a wildlife deterrent fence at the Groton New-London Airport. Because the project is partially funded by the Federal Aviation Administration (FAA), an Environmental Assessment (EA) shall be prepared pursuant to NEPA and shall address all CEPA requirements.

2. PROJECT DETAILS

The Louis Berger Group (LBG) conducted a Wildlife Hazard Assessment (WHA) at the Airport in 2012. The assessment notes that the Airport is only partially fenced and recommended complete fencing be provided.

The purpose of the project is to enclose the entire Airport with an 8 foot chain link fence with a 3 foot horizontal burrowing deterrent chain link "skirt" attached to the bottom and 3 strands of barbed wire on the top, in accordance with FAA specifications. The need for the proposed project is to protect aircraft and their passengers from hazardous conditions at the airport as a result of medium to large sized wildlife, including deer, coyote, raccoons and woodchuck, entering the airport property. The airport is currently surrounded on three sides by a wildlife fence. The project would include inspection of and repairs to this fence, as well as installation of the additional fencing along a portion of the airport abutting the Poquonnock River and Long Island Sound.

2.1 Fence Location

Fencing along an airport property can become a hazard to aircraft if not placed in appropriate locations. Because of the angles and associated clear space required by aircraft to take off and land, as well as distances needed to successfully maneuver along the runways, and allow for additional space to respond to potential aircraft malfunctions, there are areas around the runways which cannot be used for fence locations. The fence design must adhere to constraints in several locations due to FAA regulations directing set-backs from the Very High Frequency Omni-directional Range (VOR), Runway Safety Area (RSA) lengths and widths, and other areas which must remain clear of impediment to aircraft. The fence cannot be placed along the edges of the mowed grass areas at the sides and ends of Runways 5/23 or 15/33 because of RSAs and FAR Part 77 transitional surfaces.

2.2 Fence Design

The fence would have the effective height of nine feet with eight feet of vertical fence fabric and three strands of out-facing barbed wire along the top. In upland locations, a two foot fabric skirt

would be buried on the exterior to discourage burrowing underneath the vertical fence, while in wetland areas the fence skirt would either be laid on the ground and tied into the substrate to prevent animals from digging under the edge, or removed based on permitting conditions from CTDEEP, OLISP and ACOE (Attachment B, Fence Design Details).

Vegetation can undermine the effectiveness of the barrier by either creating a bridge over the barbed wires for both people and animals, or growing through the fence and lifting the fabric, creating openings along the bottom. In order to avoid such circumstances, the fence would be constructed within a varying-width corridor of approximately thirty (30) feet to allow room for access for inspection and maintenance. Where practicable and in upland and non-wetland buffer areas, a 15-foot access road would be constructed along one side of the fence to allow for vehicle monitoring. In locations within wetlands, the access corridor may be reduced on one or both sides such that the access corridor would only allow for clearing and vegetation removal via the use of small equipment and on foot.

In freshwater and tidal wetlands, fence poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track mounted skid steer.

3. EXISTING CONDITIONS

3.1 Upland Vegetation

Upland vegetative communities within and near the Airport primarily consist of maintained grounds. The maintained grounds areas include paved surfaces (roadways, parking lots, runways and taxiways), structures, grassland, woodland and coastal habitat. Most of the developed lands are vegetated with lawns, and landscaped with trees and shrubs. All of the upland areas surrounding the project areas have been highly influenced by human activity.

The turf grass/mowed field habitats are composed primarily of planted grass species that are mowed on a regular basis as required by FAA regulations. Currently the grass is maintained at a 3 to 6 inch height alongside runways and taxiways, and a 6-12 inch height elsewhere.

3.2 Aquatic and Wetlands Vegetation

Two small freshwater wetland areas were present along the western limit of the airport while coastal marshes occur within the intertidal zone of the moderate to low energy shorelines along the Poquonnock River south and west to Baker Cove. The wetland areas were observed to support large numbers of waterfowl, gulls, wading birds, fish-eaters, and shorebirds during the WHA. Wetlands shown on Figure 2 are taken from the National Wetland Inventory (NWI) mapping provided by the USFWS.

Coastal habitat is significant as the basis for a large food web that supports many marine organisms as well as numerous species of shorebirds, wading birds, and waterfowl. The salt marsh which abuts the airport to the east and south produce large amounts of organic matter, a significant portion of which is exported as detritus and dissolved organics to estuarine and coastal waters. These areas provide spawning and nursery habitat for several important forage finfish as well as food, shelter, breeding areas, and migratory and overwintering areas for many wildlife species. Similarly, tidal flats consisting of unconsolidated sediment (sand and mud) offer ideal habitat for food sources for fish and migratory and wintering birds.

A compensatory mitigation tidal wetland was constructed in the vicinity of the former Town Beach on the Poquonnock River on the east side of the airport. According to the U.S. Army Corps of Engineers New England District Mitigation Plan Checklist, the on-site mitigation would create 0.6 acres of estuarine intertidal emergent high marsh, 1.5 acres of estuarine intertidal emergent low marsh, and 0.3 acres of estuarine intertidal unconsolidated shore and an additional 0.1 acres of upland transitional areas. Habitat diversity within the mitigation site was enhanced by incorporating channels, upland inclusion, and salt pannes which provide habitat for small fish. This wetland mitigation area constructed east of Runway 23, was designed and built to serve as functioning salt marsh which will attract wildlife, some of which are clearly hazardous to nearby operations and is counter to FAA separation guidelines as detailed in Advisory Circular 150-/5200-33B..

3.3 Wildlife Habitat

The habitat on the Airport is varied, as noted in the above sections, and includes sufficient cover and food/foraging opportunities for a variety of species. As summarized in the Wildlife Hazard Assessment developed in 2012, a total of 48 standardized surveys were conducted from late December 2010 through early December 2011. A total of 13,053 birds, 92 mammals, and 18 amphibians were observed in 384 separate observations. The summary from this report is included as Attachment C.

Wildlife was observed at all stations on the airport with the greatest number observed east of Runway 23, adjacent to the Poquonnock River and notably overlooking the site of the wetlands mitigation project and associated habitat. West of Taxiway E, had the second highest number observations. Wildlife in these two areas was often observed forging in the grass, loafing on the Poquonnock River and Bluff Point parking-lot and flying locally.

State-listed endangered/threatened species and species of special concern utilize the Airport and surrounding habitats. The existing CT NDDB mapping, updated December 2014 (Attachment D), indicates that portions of the Airport contain habitat for State and Federal Listed Species & Significant Natural Communities.

4. REQUEST FOR NDDB STATE LISTED SPECIES REVIEW FORM

See attached completed form.

Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

CPPU USE ONLY
App #:_____
Doc #:_____
Check #: No fee required
Program: Natural Diversity Database **Endangered Species**
Hardcopy _____ **Electronic** _____

Request for Natural Diversity Data Base (NDDB) State Listed Species Review

Please complete this form in accordance with the instructions (DEEP-INST-007) to ensure proper handling of your request.
There are no fees associated with NDDB Reviews.

Part I: Preliminary Screening & Request Type

Before submitting this request, you must review the most current Natural Diversity Data Base "State and Federal Listed Species and Significant Natural Communities Maps" found on the DEEP website. These maps are updated twice a year, usually in June and December.

Does your site, including all affected areas, fall in an NDDB Area according to the map instructions:

☒ Yes ☐ No **Enter the date** of the map reviewed for pre-screening: **December 2014**

This form is being submitted for a :

☒ *New* NDDB request ☐ *Renewal/Extension* of a NDDB Request, ***without*** *modifications and within* ***one year*** *of issued NDDB determination* (no attachments required) [*CPPU Use Only - NDDB-Listed Species Determination #* 1736]	☐ *New* **Safe Harbor Determination** (optional) must be associated with an application for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ☐ *Renewal/Extension* of an existing Safe Harbor Determination ☐ With modifications ☐ Without modifications (no attachments required) [*CPPU Use Only - NDDB-Safe Harbor Determination #* 1736]
Enter NDDB Determination Number for Renewal/Extension:	Enter Safe Harbor Determination Number for Renewal/Extension:

Part II: Requester Information

***If the requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, the name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of the State's database CONCORD.* (www.concord-sots.ct.gov/CONCORD/index.jsp)

If the requester is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change company/Individual Information to the address indicated on the form.

1. Requester*

Company Name: **Hoyle, Tanner & Associates, Inc.**

Contact Name: **Kimberly Peace**

Address: **150 Dow Street**

City/Town: **Manchester** State: **NH** Zip Code: **03101**

Business Phone: **603-669-5555** ext. **151**

E-mail: **kpeace@hoyletanner.com

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

a) Requester can best be described as:

☐ Individual ☐ Federal Agency ☐ State agency ☐ Municipality ☐ Tribal

☒ *business entity (* if a business entity complete i through iii):

i) Check type ☒ corporation ☐ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other:

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

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

b) Acting as (Affiliation), pick one:

☐ Property owner ☒ Consultant ☐ Engineer ☐ Facility owner ☐ Applicant

☐ Biologist ☐ Pesticide Applicator ☐ Other representative:

2. List Primary Contact to receive Natural Diversity Data Base correspondence and inquiries, if different from requester.

Company Name:

Contact Person: Title:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.

**E-mail:

Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

1. SITE NAME AND LOCATION

Site Name or Project Name: **Wildlife Deterrent Fence**

Town(s): **Groton**

Street Address or Location Description:
Groton-New London Airport

Size in acres, or site dimensions: **489 acres**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **41.3305** Longitude: **-72.04664**

Method of coordinate determination (check one):

☐ GPS ☒ Photo interpolation using CTECO map viewer ☐ Other (specify):

2a. Describe the current land use and land cover of the site.

The project areas are impervious taxiways and adjacent mowed grass areas within a large, active general aviation airport.

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

☒ Industrial/Commercial 75%	☐ Residential _____	☐ Forest _____
☒ Wetland 5%	☒ Field/grassland 20%	☐ Agricultural _____
☐ Water _____	☐ Utility Right-of-way _____	
☐ Transportation Right-of-way _____	☐ Other (specify): _____	

Part IV: Project Information

1. PROJECT TYPE:

Choose Project Type: Other , If other describe: **Installation of a wildlife deterrent fence**

2. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint? ☐ Yes ☒ No If yes, explain.

Part IV: Project Information (continued)

3. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used. Include a description of steps that will be taken to minimize impacts to any known listed species.

   The purpose of the project is to enclose the entire Airport with an 8 foot chain link fence with a 3 foot horizontal burrowing deterrent chain link "skirt" attached to the bottom and 3 strands of barbed wire on the top, in accordance with FAA specifications. The need for the proposed project is to protect aircraft and their passengers from hazardous conditions at the airport as a result of medium to large sized wildlife, including deer, coyote, raccoons and woodchuck, entering the airport property. The airport is currently surrounded on three sides by a wildlife fence. The project would include inspection of and repairs to this fence, as well as installation of the additional fencing along a portion of the airport abutting the Poquonnock River.

4. If this is a renewal or extension of an existing Safe Harbor request *with* modifications, explain what about the project has changed.

5. Provide a contact for questions about the project details if different from Part II primary contact.

   Name:

   Phone:

   E-mail:

Part V: Request Requirements and Associated Application Types

Check *one* box from either Group 1, Group 2 *or* Group 3, indicating the appropriate category for this request.

Group 1. If you check one of these boxes, complete Parts I – VII of this form and submit the required attachments A and B.

- ☐ Preliminary screening was negative but an NDDB review is still requested
- ☐ Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- ☐ Request regards a preliminary site assessment or project feasibility study
- ☐ Request relates to land acquisition or protection
- ☐ Request is associated with a *renewal* of an existing permit, with no modifications

Group 2. If you check one of these boxes, complete Parts I – VII of this form and submit required attachments A, B, *and* C.

- ☒ Request is associated with a *new* state or federal permit application
- ☐ Request is associated with modification of an existing permit
- ☐ Request is associated with a permit enforcement action
- ☐ Request regards site management or planning, requiring detailed species recommendations
- ☐ Request regards a state funded project, state agency activity, or CEPA request

☐ **Group 3.** If you are requesting a **Safe Harbor Determination**, complete Parts I-VII and submit required attachments A, B, and D. Safe Harbor determinations can only be requested if you are applying for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

If you are filing this request as part of a state or federal permit application(s) enter the application information below.

Permitting Agency and Application Name(s): _____

State DEEP Application Number(s), if known: _____

State DEEP Enforcement Action Number, if known: _____

State DEEP Permit Analyst(s)/Engineer(s), if known: _____

Is this request related to a previously submitted NDDB request? ☐ Yes ☐ No

If yes, provide the previous NDDB Determination Number(s), if known: _____

Part VI: Supporting Documents

Check each attachment submitted as verification that *all* applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all new requests and Safe Harbor renewals/extensions with modifications.** Renewals/Extensions with no modifications do not need to submit any attachments. Attachments C and D are supplied at the end of this form.

☒ Attachment A:	**Overview Map:** an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
☒ Attachment B:	**Detailed Site Map:** fine scaled map showing site boundary and area of work details on aerial imagery with relevant landmarks labeled. (Site and work boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
☒ Attachment C:	**Supplemental Information, Group 2 requirement (attached, DEEP-APP-007C)** ☒ Section i: Supplemental Site Information and supporting documents ☒ Section ii: Supplemental Project Information and supporting documents
☐ Attachment D:	**Safe Harbor Report Requirements, Group 3 (attached, DEEP-APP-007D)**

Part VII: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

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

Signature of Requester (a typed name will substitute for a handwritten signature)	Date
Name of Requester (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

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

Or email request to: **deep.nddbrequest@ct.gov**

Attachment C: Supplemental Information, Group 2 requirement

Section i: Supplemental Site Information

1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

See attached narrative

☐ **Site Photographs (optional) attached**

☒ **Site Plan/sketch of existing conditions attached**

2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species ☐ Yes ☒ No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name: _____

Habitat and/or species targeted by survey: _____

Dates when surveys were conducted: _____

☐ **Reports of biological surveys attached**

☐ **Documentation of biologist's qualifications attached**

☐ **NDDB Survey forms for any listed species observations attached**

Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

   The project is in preliminary design and permitting. A detailed project schedule can be provided in the future.

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

   The project is in preliminary design and review of alturnatives for NEPA/CEPA. Detailed impacts will be provided when an alternatiove is chosen and design is completed.

☐ **Annotated Site Plan attached**

EXECUTIVE SUMMARY

The Louis Berger Group, Inc. in a partnership with BASH, Inc., was selected by the Connecticut Department of Transportation's Bureau of Aviation and Ports (Project Number: DOT01703010PL) to provide expert professional services to conduct a Wildlife Hazard Assessment (WHA) Update for Groton-New London Airport (GON). This WHA Update was completed by Jason Ringler, a Certified Wildlife Biologist, and Dr. Russell DeFusco, a Federal Aviation Administration (FAA) qualified Airport Wildlife Biologist in accordance with the FAA Advisory Circular (AC) 150/5200-36A.

Pursuant to 14 CFR Part 139.337(b), LBG developed this Wildlife Hazard Assessment for Groton-New London Airport to provide an update to previously collected baseline data on wildlife hazards to aircraft/human safety in a manner authorized by the Administrator. This twelve-month assessment provides recommendations for reducing wildlife hazards to human health and safety. In addition, the Wildlife Hazard Assessment serves as a basis from which a Wildlife Hazard Management Plan may be developed.

The WHA at Groton-New London Airport had four main objectives. The objectives were as follows:

1. Conduct a review of the available wildlife strike records;
2. Determine wildlife population parameters such as abundance and periods of activity with a particular emphasis on the species most threatening to aircraft/human safety;
3. Identify wildlife attractants and land use practices in the vicinity of Groton-New London Airport;
4. Provide management recommendations for reducing wildlife hazards.

The WHA places a particular emphasis on identification and abatement of wildlife hazards within the airfield environment. Additional wildlife attractants (e.g., parks, recreational fields, etc.) within five miles of the airfield are also addressed as they can potentially attract wildlife in a manner that could jeopardize safety of air traffic operating into and out of Groton-New London Airport.

The habitats in and around Groton-New London Airport attracts wildlife. European Starlings, Herring Gulls, Canada Geese, and White-tailed Deer are the most serious wildlife-related threats to human safety to operations at the airport. It should be noted this WHA utilizes and builds off of existing information provided in the previous WHA prepared by the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services (WS) (Hubach 2003).

RECOMMENDATIONS

LBG has developed several recommendations which include; Habitat Manipulation, Wildlife Population Management, Operations and Communications, and Administrative Recommendations as a means to alleviate hazards identified at GON. These recommendations include:

REDUCE OR ELIMINATE WILDLIFE ATTRACTANTS - Recently, a wetland mitigation site was constructed to replace wetlands removed for the installation of an EMAS bed on Runway 5. As constructed, the mitigation design incorporates all of the typical design features to increase habitat diversity for wildlife. It is recommended the area be monitored closely and for any increase in wildlife activity. Making the site less of a wildlife attractant should be done in conjunction with DEEP. If this cannot be achieved, it is recommended the site be de-constructed and located off airport property so as not to create a hazard to aircraft. Additionally, LBG also recommends all future construction projects be reviewed during the planning and construction phases by a wildlife damage biologist for potential impacts the construction may have on the airport operating environment.

CONTINUE TO IMPLEMENT HABITAT MANIPULATION: Grass areas on the airport should be maintained at a height of 6 to12 inches whenever conditions allow and not allowed to exceed 12 inches. Certain varieties of grass are more attractive to wildlife than others; every effort must be made to incorporate appropriate seed mixtures so as to deter the feeding of birds and other wildlife on the airport. Additionally, the airport must not manage for state-listed species where it compromises recommended standard management practices and causes hazardous species to be attracted to the airfield.

IMPLEMENT A ZERO TOLERANCE POLICY FOR HAZARDOUS WILDLIFE: Establishing a strict zero-tolerance policy towards hazardous wildlife helps prioritize events as they occur and establishes an attitude for all GON personnel.

EXTEND EXISTING PERIMETER FENCE: The existing fencing should be extended into the Poquonnock River and Baker Cove in the northern and western portions of the property, respectively. Additionally, fencing should be installed throughout the perimeter of the airport. The lack of fencing between the existing northern and western fence line allows for easy access for wildlife.

ENHANCE CAPABILITIES AND RESOURCES OF OPERATIONS PERSONNEL TO MANAGE WILDLIFE: Provide personnel with appropriate equipment, training, and authorizations to conduct wildlife management activities. An important need regarding training is to take the necessary actions to increase the number of personnel who use pyrotechnics as well as firearms for managing wildlife. Also see FAA Advisory Circular 150/5200-36A for training requirements.

DEVELOP A WILDLIFE HAZARD WORKING GROUP: GON should create a Wildlife Hazard Working Group (WHWG) that meets at least quarterly or more often if situations warrant. Suggested attendees of this WHWG should include the on and off airport groups who attended the Stakeholder Outreach Meeting in February of 2011. This includes interested airport tenants, off-site neighbors, as well as those identified by the Eastern Connecticut Conservation District, Inc. (2011).

INCREASE REPORTING AND RETENTION OF WILDLIFE HAZARD INFORMATION AT GON: All wildlife strikes should be submitted directly to the FAA via the electronic system. GON should require strike reporting of all tenants, pilots, and aircraft maintenance personnel. GON Operations should continue to maintain and develop the Wildlife Incident Log at GON. Standardize reporting of wildlife sightings and control activities by personnel responsible for monitoring and controlling wildlife should be included.

CONTINUE AND ENHANCE OPEN COMMUNICATION: GON should develop a specific wildlife strike communication protocol that can be used by all airport entities, including, maintenance, air traffic control, airlines, FBOs, and others regarding the hazards associated with bird strikes and the importance of reporting all wildlife strikes to the airport. GON and the ATCT should encourage all pilots to report observed wildlife in the vicinity of GON as well as all strikes. GON maintenance staff and the ATCT should continue to actively communicate regarding observed wildlife hazards and coordinate dispersal activities to prevent hazed wildlife from becoming a strike hazard.

Attachment D:
NDDB Mapping December 2014

Natural Diversity Data Base Areas

GROTON, CT

December 2014

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

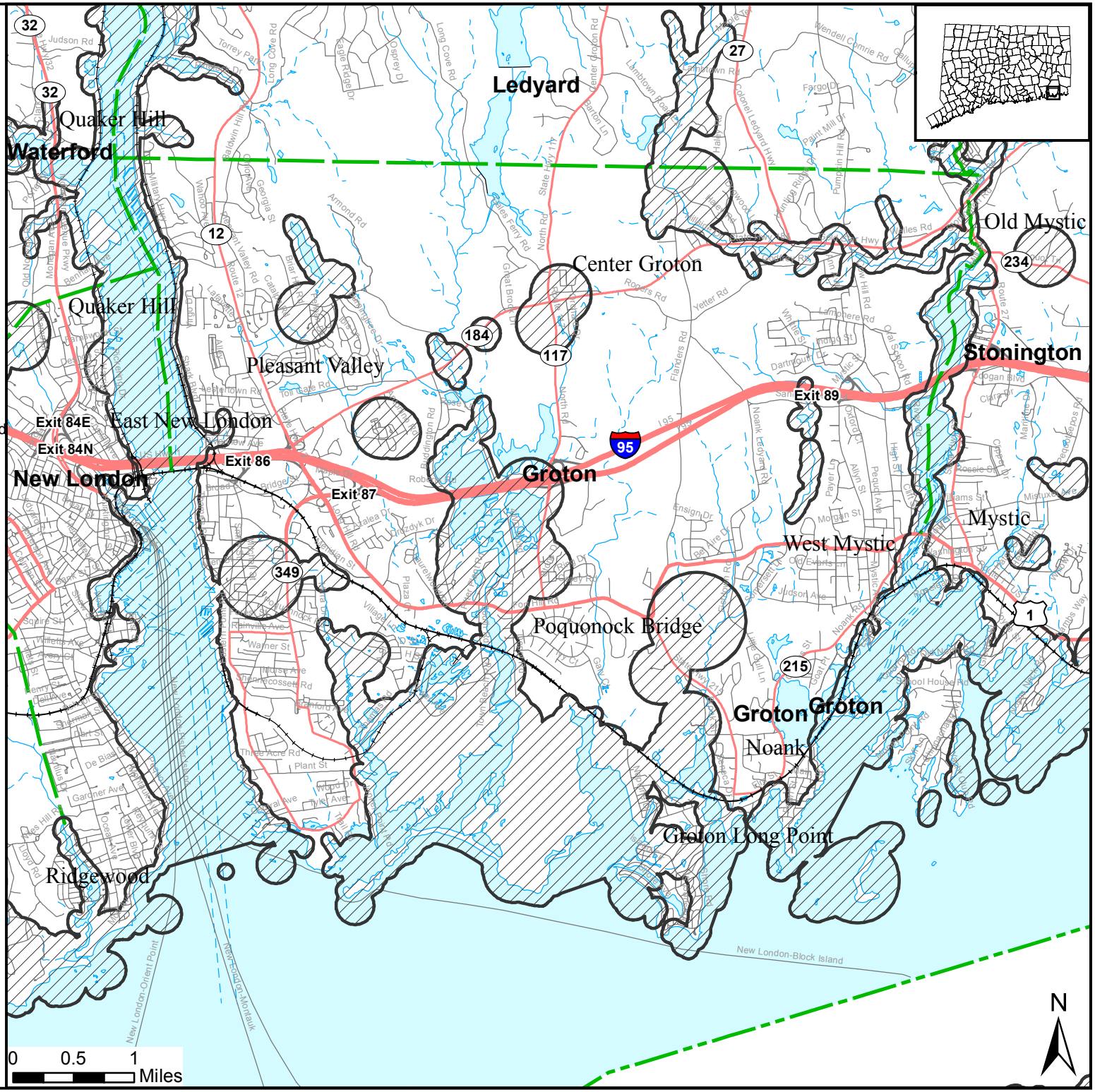
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



Appendix F: FEMA Flood Insurance Rate Map (FIRM)

NOTES TO USERS

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

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

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

The **projection** used in the preparation of this map was Connecticut State Plane Zone (FIPS zone 0600). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

Base map information shown on FIRM panels produced for this coastal study revision was derived from digital orthophotography. Base map files were provided in digital form by the Connecticut Department of Environmental Protection. Ortho imagery was produced at a scale of 1:12,000. Aerial photography is dated 2000, 2004 and 2005. The projection used in the preparation of this map was Connecticut State Plane zone (FIPSZONE0600). The horizontal datum was NAD83, GRS1980 spheroid.

The AE Zone category has been divided by a **Limit of Moderate Wave Action (LiMWA)**.The LiMWA represents the approximate landward limit of the 1.5 foot breaking wave. The effects of wave hazards between the VE Zone and the LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

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

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

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

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

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

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip

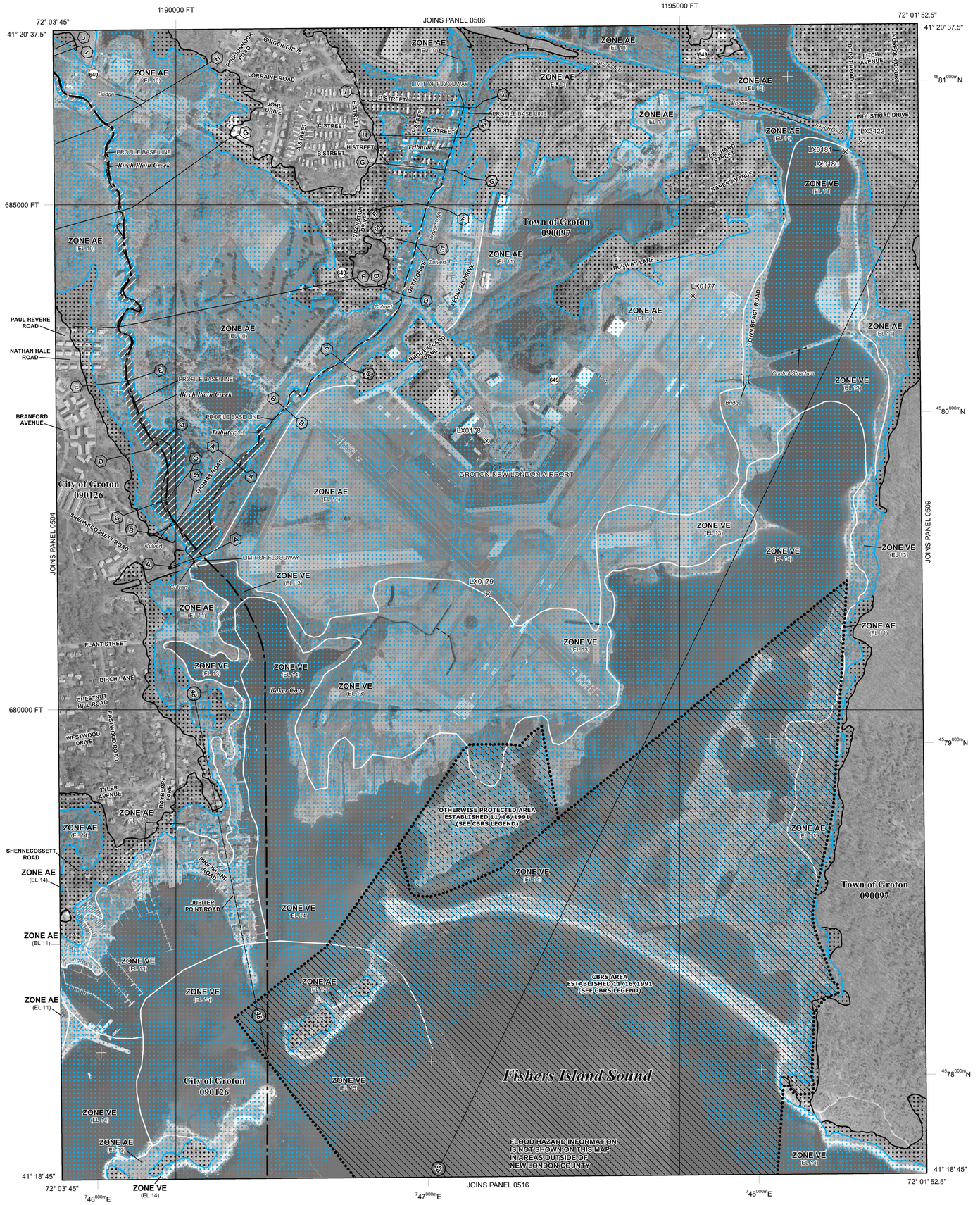
COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

11-16-1991 CBRS Area
FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991 IN DESIGNATED CBRS AREAS.

11-16-1991 Otherwise Protected Area (OPA)
FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991 IN DESIGNATED OPAs WITHIN CBRS AREAS.

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this FIRM were transferred from the official CBRS source map(s) for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at http://www.fws.gov. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at 603-223-2541.

Only coastal structures that are certified to provide protection from the 1 percent annual chance flood are shown on this panel. However, all structures taken into consideration for the purpose of coastal flood hazard analysis and mapping are present in the FIRM database in S_Gen_Struct.



LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Limit of Moderate Wave Action
- Limit of Moderate Wave Action coincident with Zone Break
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert
- Bridge
- 45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT — 5000-foot ticks: Connecticut State Plane Zone (FIPS Zone 0600), Lambert Conformal Conic projection
- 4 89 000m N — 1000-meter Universal Transverse Mercator grid values, zone 18N
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
July 18, 2011

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
August 5, 2013 - to change Base Flood Elevations and Special Flood Hazard Areas, to change zone designations, to update the effects of wave action, to update corporate limits, to add roads and road names and to modify Coastal Barrier Resources System units.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0508J

FIRM

FLOOD INSURANCE RATE MAP

NEW LONDON COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 508 OF 554
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GROTON, CITY OF	090126	0508	J
GROTON, TOWN OF	090097	0508	J

-NOTE-
THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT ENABLING LEGISLATION.

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

MAP NUMBER
09011C0508J
MAP REVISED
AUGUST 5, 2013

Federal Emergency Management Agency

Appendix G: National Wetland Inventory (NWI) Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Groton Airport wetlands

Feb 26, 2016

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

User Remarks:

Appendix H: Natural Resources Conservation Service (NRCS) Soils Map

Farmland Classification—State of Connecticut
(Groton Airport Farmland Soil Map)

Map Scale: 1:12,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 13, Oct 28, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Appendix I: Finding of No Significant Impact (FONSI)

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

Wildlife Hazard Deterrent Fence
Groton – New London Airport
Groton, Connecticut

Proposed Action

The Connecticut Airport Authority proposes to install a wildlife hazard deterrent fence at Groton-New London Airport. An Environmental Assessment (EA) was prepared to assess this proposed action.

Purpose & Need

The *purpose* of the project is to improve safety and prevent human injury or fatality by excluding deer and other hazardous wildlife from the airfield.

Alternatives Considered

The airport is currently surrounded on two sides by a wildlife fence. The project would include inspection of and repairs to the existing fence, as well as installation of additional fencing along portions of the airport abutting the Poquonnock River. The following briefly summarizes and evaluates the alternatives considered for this project, which are described in Chapter 3 of the EA.

No Action – No Improvements to Existing Conditions

The existing conditions do not deter wildlife such as deer and other animals from entering the airfield because the existing fence does not completely surround the Airport. Although this alternative does not impact the surrounding environment, the potential for property damage and hazard to life caused by a wildlife strike has an indeterminate cost and loss associated with it.

Action Alternative #1 – Complete Enclosure

This alternative was the first approach developed to meet the recommendations in the Wildlife Hazard Assessment (WHA) and Wildlife Hazard Management Plan (WHMP). Because there would be no gaps in the fence, the fence could be placed in the upland edges of areas abutting the Poquonnock River and Bakers Cove, reducing environmental impacts to the extent that CTDEEP permits would not be required. The proposed fence alignment would completely enclose the airfield and enhance the existing fence line, thus meeting the purpose and need for the project.

However, this alignment would have to cross the boundaries of restricted areas, including the Object Free Area (OFA) and Runway Safety Areas (RSA) of Runway 5/23 and Runway 15/33 and approach surfaces of Runway 5 and Runway 33 and the Localizer Critical Area of Runway 23.

Alternative #2 – Proposed Action

Alternative #2, the Proposed Action, would locate the fence as shown on Figure 2, page 8 of the EA. This alternative has been located with discussion and input from CTDEEP, OLISP and ACOE and is offered to balance the need to impact jurisdictional aquatic resources with the efficacy of the fence. As noted in the 2012 WHA and 2014 WHMP, deer and large mammals

currently go around the ends of the fence at its terminal locations. The fence must have gaps in it due to the inability to erect the fence in protected airspace surfaces. In order for the fence to effectively prohibit large mammals from following the fence until reaching the new terminal at gap areas and going around it, the fence must be placed into deep enough water to deter animals from walking around the fence.

Assessment and Mitigation

The environmental impacts of the proposed action are described in Chapter 5 of the EA.

Fisheries

The proposed action would have minimal, localized and mostly temporary impacts to fisheries resources resulting from both direct and indirect sediment disturbance. Direct impacts to the benthic substrate and sediment can be minimized by installation of a woven wire fence (in lieu of chain link), which will allow for a longer distance between fence posts, resulting in less fence posts needed. Within the jurisdictional tidal areas (1 foot above the CTDEEP CJL elevation), no disturbance to existing vegetation would be anticipated beyond the current vegetation management that is on-going. Therefore, any alterations to vegetation as a result of the project would be limited to fencepost locations.

Localized populations of finfish foraging within high salt marsh habitat may encounter the fence for a short period during most spring tide events. These species are highly mobile, and individuals are expected to both avoid areas during temporary construction periods and be able to navigate around, or through the fence after construction. The fence will be inspected on a daily basis to ensure there is no accumulation of debris or wrack along the fence that would reduce or impair fish movement through the fence holes. Gates will be installed where necessary along the fence to ensure airport staff have access to both sides of the fence for maintenance, inspection and debris removal.

Based upon the information provided in the EFH assessment, it has been determined that the adverse effect on EFH from the project is not substantial. The proposed project will have minimal and mostly temporary adverse effects on EFH species. In addition, the project will have minimal effects on other NOAA-trust resources. Therefore, no EFH conservation recommendations have been provided for this action pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act. A potential positive impact of adding structure to the area is that it would provide a substrate upon which benthic organisms can attach that would then serve as a potential food source for fish.

Wildlife Habitat and Listed Species

All efforts would be made by airport operators and staff to harass wildlife that enter through the openings in the fence back through these openings where and when feasible. Wildlife that are unable to be harassed off-site and remain within active runway and taxiway areas would be dealt with by enacting the State depredation permit.

Installation of a fence would impact wildlife and state-listed species. In order to successfully meet the purpose and need of this project, the Airport must fence in some or all of the existing

wildlife habitat. The least environmentally damaging practicable alternative (LEDPA) is anticipated to be the Proposed Action. However, in terms of wildlife impacts, any alternative which requires installation of a fence would limit habitat use from individuals currently using these areas.

Coordination with USFWS Endangered Species Biologist concluded the following, as included in Appendix D of the EA:

- The federally-threatened Red knot migrates across coastal New England between their Arctic breeding ground and wintering regions. The Delaware Bay and coastal Massachusetts and New Jersey are important migration stopovers. The fence would not permanently alter or reduce rocky coastal, beach or mudflat habitat available for this species to use during migratory stopover. There would be no effect on this species.
- The project is located within the federally-designated suitable habitat zone for the federally-threatened Northern long-eared bat (Coastal New England). However, the project will only result in removal of a few trees greater than 3" diameter, along the edge of one wetland area. Most of the impact areas are mowed lawn or high saltmarsh. There would be no effect on this species.

Mitigation

Requests made by CTDEEP would be addressed and completed during the permitting phase of this project, and may include the following:

- Mowing of grassland areas and installation of fencing would not be conducted during the breeding season for grassland-nesting species, which is May 15 through August 15.
- Backfilling of soils to cover the skirting would not result in a change in elevation.
- Fencing materials would not include screening that would impede sight lines of foraging birds.
- Areas requiring re-seeding would be done with warm-season grasses.
- Impacts to shrubby habitats would be minimized during the nesting season for brown thrasher.
- Botanical surveys would be conducted by a qualified botanist along the proposed fence alignment, within any vegetated staging areas or transportation routes, and within currently vegetated areas that would be managed differently upon construction of the proposed fence when each of the target plant species is identifiable.
- An Incidental Take Report may be required for unavoidable impacts to state-listed plants; this document would be reviewed by CTDEEP and the CT Office of Policy and management (OPM) prior to issuance of authorizations or permits from CTDEEP.
- Impacts to Northern diamondback terrapin would be minimized by providing a 6-inch gap along the fence bottom in sections of the fence proposed within the CJL jurisdiction (including the section of fence identified as Canada geese fence) to allow turtles to pass under unimpeded.
- Maintenance mowing in areas of saltmarsh grass would not occur during active turtle season and would be conducted from November 1 through May 1.

Wetlands

STATE: As determined by CTDEEP and OLISP, permanent wetland impacts regulated by CTDEEP and OLISP would be minimal and limited to the footprint of the fence poles; the values

in Table 5.2-1 reflect a fence design requiring fence poles every 10 feet, however, design modifications may allow for the length between poles to be increased. Within tidal wetlands, the Proposed Action would result in approximately 5.18 sq ft (0.001 acres) of permanent wetland impacts. Poles would be hydraulic ram driven, not cemented in place. This is typically done with a hydraulic hammer/ram attachment mounted on a low pressure track mounted skid steer. Clearing or removal of vegetation within 10-feet on both sides of the fence (where required) would be considered a secondary impact by these agencies; this impact would not be due to filling or result in a net loss of wetlands, rather it is due to the change from one type of wetland to another.

FEDERAL: The placement of pilings, such as the proposed fence posts/poles, would not have the effect of a discharge of fill material, as described and documented in ACOE Regulatory Guidance Letters (RGL) 88-14 and 90-08, as well as ACOE regulations at 33 CFR 323.3(c) and as such are not considered a permanent impact in freshwater wetlands. ACOE Section 404 permit and wetland compensation would not be required. However, per Section 10 of the Rivers and Harbors Act, installation of the fence poles in navigable waters below 2.0' NGVD would require a permit from ACOE. The clearing or removal of vegetation where necessary for maintenance of the fence and access corridor to allow for structural upkeep and visibility, would be considered a secondary jurisdictional impact by ACOE within the jurisdictional areas and this value may differ slightly due to changes in site-specific field conditions during fence installation.

Mitigation

Mitigation via design modification of the fence alignment must demonstrate 1) the impacts are unavoidable; 2) the adverse impacts, including specific impacts on coastal resources, navigation and water-dependent uses have been minimized to the greatest extent practicable; 3) the scope and extent of encroachments into tidal, coastal or navigable waters have been minimized to the greatest extent practicable; 4) any remaining adverse impacts are acceptable and consistent with applicable statutory standards; 5) and alternatives with the least adverse impact has been presented. Wetland avoidance and minimization measures have guided the design of the fence and the alignment of the corridor.

Impacts to freshwater and tidal wetlands would be minimized by limiting fill to pile-driven fence posts and not installing skirts within wetland areas. Where necessary, vegetation would be cleared 10 feet on both sides of the fence alignment corridor and permanently maintained either by using small equipment or hand clearing in order to keep the fence visible and reduce maintenance. Trees and overhanging branches would be trimmed in all areas of fence installation to reduce the potential attraction for wildlife to use as assistance in crossing the fence. In wetland areas, low bearing pressure (tracked) equipment would be used to access the fence alignment. Poles would be pile-driven as depicted in the previous photo. All vegetation deemed necessary for removal would be cut flush to the ground. Long-term vegetation management would occur within wetland areas along the fence corridor only where deemed necessary to maintain the efficacy of the fence and would be conducted in a similar manner as initial removal using the least impacting methods.

A permit would be required from each respective agency for impacts to areas within their jurisdiction. Additional mitigation may be established as a condition of agency permits.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

Coastal Resources

Minimal and temporary impacts are anticipated to resources regulated by the applicable standards and policies of Part VII of the Connecticut Coastal Management Plan, and Section 307(c)(1) of the Coastal Zone Management Act of 1972, Subpart C of 15 CFR Part 930, as amended. Coordination with OLISP has been initiated and has been incorporated into the fence design, installment procedures and potential alignment corridors to ensure impacts to coastal resources are minimized and avoided to the maximum extent practicable.

Mitigation

Mitigation for impacts to coastal resources includes design analysis to avoid and minimize impacts to these resources to the extent practicable.

Finding of No Significant Impact

I have carefully and thoroughly considered the facts contained in the attached EA. Based on that information, I find the proposed Federal action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. I also find the proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to section 102(2)(C) of NEPA. As a result, FAA will not prepare an EIS for this action.

APPROVED:

R Doucette

Richard Doucette,
Environmental Program Manager

10/14/16
Date

DISAPPROVED:

_____
Richard Doucette,
Environmental Program Manager

_____
Date