

New York State Department of Environmental Conservation

Division of Environmental Permits, Region One

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Alexander B. Grannis
Commissioner

Richard Hanley, Director
Town of Riverhead Planning Department
200 Howell Ave.
Riverhead, N.Y. 11901-2596

October 16, 2008

Re: Draft Scope of Issues for DSEIS on REPCAL, LLC Action SCTM# 0600-135-1-p/o 7.33
DEC # 1-4730-01483 / 00001

Dear Mr. Hanley:

The Department of Environmental Conservation has reviewed the draft scope of issues document circulated for the draft supplemental environmental impact statement (DSEIS) to be prepared for the REPCAL, LLC (Rechler Center for Business and Technology) action.

The action includes a series of land division and subsequent development activities, including:

- The division of a 300-acre parcel from the Town of Riverhead Community Development Agency's EPCAL property, with this 300 acres divided into five blocks ranging in size from 32.7 acres to 76.7 acres.
- The subdivision of the 48.9 acre Block 1 into six parcels ranging in size from 2.7 acres to 10.9 acres.
- The construction of nine buildings totaling 318,475 square feet of industrial /commercial building area on the six Block 1 parcels with associated parking, drainage, landscaping, access roadway, sidewalks and lighting.
- Blocks 2 through 5 are planned to be further subdivided in the future with a full build out potential of approximately 2,726,000 square feet of industrial use buildings with parking areas, roadways, drainage and other appurtenances.

We believe the draft scope should be expanded and modified in order to ensure that the DSEIS will include all of the information required for the involved agencies to make the findings and determinations required of them pursuant to the State Environmental Quality Review Act (ECL Article 8 as implemented by 6 NYCRR Part 617). The inclusion of substantive information responsive to the following comments or issues should result in a scope which captures the information necessary to meet statutory requirements. The comments follow the sequence established in the section of the draft scoping document titled "Extent and Quality of Information Existing and Needed," preceded by the page number and heading name of the appropriate location.

1. Page 8, Natural Environmental Resources, Subsurface Geology: The description of the property's past uses conducted on the site and summary of available environmental assessments should include a discussion of any known areas of soil or groundwater contamination on or adjacent to the subject site, i.e.: REPCAL's 300 acres.

2. Page 9, Natural Environmental Resources, Water Resources: The draft scope indicates that the REPCAL development will be served by the Riverhead Water District (RWD). RWD is a Public Water Supply, and as such, its service area was established under the Public Water Supply (PWS) regulatory authority of New York State pursuant to Environmental Conservation Law (ECL) Article 15. This service area includes downtown Riverhead and some surrounding areas, but currently does not include the REPCAL site, and except for a single 42-acre parcel, does not include any of the 2900 acres of EPCAL and former EPCAL parcels to be referred to from this point forward as land or parcels "within the fence" or "inside the fence" meaning land located inside the fence line of the former Grumman or Naval Weapons Industrial Reserve (NWIRP) property. RWD does possess at least one well field near the site (two wells located on the northeast boundary of the area within the fence) and has water mains in the area. In addition, there are two existing wells located on land within the fence which were formerly owned and operated by Grumman Corporation.

In order to serve REPCAL, RWD would have to apply for a Public Water Supply permit from DEC to extend its service area. In addition, while not expressed in the environmental assessment form or draft scope, the Department is aware that RWD will go forward with applications for PWS approvals to operate the two former Grumman wells located within the fence and the two, above described wells on the northeast boundary of the area within the fence. Presumably, the use of these four wells would be necessary to meet the needs of REPCAL's development and other future development of the land within the fence. Pumping from these wells, for the REPCAL project and/or existing and future projects, may be substantial, given that RWD reportedly experienced a PWS emergency during the summer of 2008, due to an inability to meet summer peak demand over a period of several weeks.

In establishing the hydrologic setting for the proposed action, and thereby setting forth the framework for assessing impacts, the SDEIS should note that the four above-described wells that would be required to serve REPCAL and other uses of the area within the fence are situated in and adjacent to the ground water shed of the Peconic River. They are also in close proximity to surface waters, in particular a complex of coastal plain ponds that provide important habitat for wildlife. These coastal plain ponds are actually expressions of the water table. As such, if ground water levels were to be drawn down by the pumping of any one of the subject wells, or by pumping of all the wells in aggregate, the ponds would be impacted. The impacts of supply well pumping on nearby shallow water bodies are considered during the impact analysis done as part of DEC's review of PWS permit applications. A nearby example is the area around Laurel Lake, where the Suffolk County Water Authority has been constrained from adding wells to an existing wellfield due to concerns for impacts on water levels in the lake.

The REPCAL site and the referenced nearby wells are all situated in a Special Groundwater Protection Area, established pursuant to ECL Article 55. They are also situated in what is known as the Deep Flow Recharge Area, which was established during the Federal 208 Study and codified in Suffolk County Code. These designations reflect the fact that groundwater recharged in this area tends to move deep into the aquifer system of Long Island, and thus, extensive protection from contamination is prescribed.

The Long Island aquifer system has also received the federal designation of Sole Source Aquifer, another recognition that this aquifer system is the only source of water for Long Island which needs to be protected from contamination and conserved.

Other aspects of the proposed action, including the overall water budget as impacted by stormwater management and wastewater management, must be considered, both in the context of potential impacts to groundwater quality and groundwater levels, as well as surface water quality, particularly at critical targets such as the noted coastal plain ponds. It should be recognized that some of the coastal plain ponds and other wetland areas in the area within the fence are documented as breeding habitat for the tiger salamander, a state endangered species. The analysis of any surface water level or quantity impacts, and any surface water quality impacts expected from the proposed action and other actions proposed for the area within the fence must include the potential to degrade tiger salamander breeding habitat.

There is existing soil and groundwater contamination in the area within the fence due to the site's former industrial use which has led to the designation of at least one Federal Superfund site. This contamination has impacted the site of the two existing former Grumman wells, requiring an ongoing remediation project. The potential for the proposed action and/or related water supply pumping to interfere with the active groundwater remediation project, or affect the movement of contaminated groundwater must be assessed.

The draft scope indicates that REPCAL will be served by the Calverton Sewer District (CSD). The action's impacts on the CSD plant, the capacity of the plant, and the needed changes to the collection system must be assessed. The SDEIS must also address the fact that the CSD plant is slated for upgrade and/or relocation, with the outfall to be relocated to the northeast corner of the area within the fence. Impacts of the added flow from the proposed action on the plant and its impending upgrades and move must be analyzed.

3. Page 10, Natural Environmental Resources, Vegetation: In addition to the reporting of Natural Heritage Program botanical records and the results of field inventory work described here, this section should introduce the concept of the development of a comprehensive habitat protection plan for all listed species of plants and animals identified or expected on the REPCAL site and all other parcels within the fence. See comment 4 below.

4. Page 10, Natural Environmental Resources, Wildlife: This section must include a detailed identification and examination of the issue of rare, threatened and endangered species of animals on the REPCAL site as well as the adjacent and nearby parcels inside the fence.

DEC has current records of the northern harrier (threatened), short eared owl (endangered) and the eastern tiger salamander (endangered) occurring on or adjacent to the REPCAL site. The existence of threatened and endangered species at this location has been known for decades and likewise recognized as a major limiting factor for the future development of the property. See the December 1997 Final Environmental Impact Statement - Transfer and Reuse Naval Weapons Industrial Reserve Plant by the US Department of the Navy, and records of the Town Planning Department and Conservation Advisory Council. The potential for the proposed action and other nearby projects to negatively affect the animal species identified above and other protected species of animals and plants is a major impact of statewide importance which must be completely and thoroughly explored.

Richard Hanley
October 16, 2008
Page 4

The assessment of natural resources must take into account the cumulative impacts of the suite of actions proposed for the area within the fence. The assessment, design and implementation of effective mitigation measures can only be accomplished when all parcels within the fence and the plans for their future use are considered. The SDEIS should include a comprehensive habitat protection plan for all listed species of animals and plants found inside the fence. This plan should identify each species involved, along with its distribution on the site, habitat requirements, any seasonality of habitat or site usage, important breeding nesting, feeding, roosting or other habitat, any movement or migration corridors. In addition, this plan should provide an accurate assessment of the existing acreage and distribution of each habitat type before and after the subject action, as well as before and after other pending actions for the area within the fence. Based on this information, project design changes necessary to protect and maintain the viability of habitats, avoid direct mortality of individual organisms, and ensure long term survival must be identified. These project design changes should then be developed into an alternative project design for the subject action which should be described and evaluated in the SDEIS section titled "Reasonable Alternatives to be Considered" with the other alternatives. An acceptable comprehensive habitat protection plan would also provide a blueprint for the design of future development proposals for the area inside the fence.

As we have previously noted, the action as currently proposed is likely to result in the "take" of one or more protected species, as this term is used in the Environmental Conservation Law (ECL), thereby requiring an additional approval from this Department under ECL Article 11 known as an Incidental Take Permit. The preparation of a comprehensive habitat protection plan will be a requirement for any application for an Incidental Take Permit.

5. Page 11, Human Resources, Transportation: In addition to the nine intersections listed for turning movement counts, this section of the SDEIS, and the underlying Traffic Impact Study it will be based on, must include data collection, analysis and future volume projections (for the subject action and other approved and proposed developments inside the fence) for the intersection and nearby roadways in the vicinity of Long Island Expressway Exit 70, which is the intersection of Suffolk County Route 111. These roadways should include Raynor Road, North Street/Mill Road, Wading River Manor Road, River Road, Old River Road, Line Road, Connecticut Avenue.

6. Page 12, Energy Conservation and Climate Change: The goal of the energy conservation and climate change analysis is for the applicant to assess the action's use of energy and fossil fuels along with alternatives and mitigation measures to minimize such use and thereby reduce its greenhouse gas emissions to the maximum extent practicable. In furtherance of these goals, the SDEIS should include an analysis of the project's reasonably anticipated potential to cause emissions of greenhouse gases (GHG) as well as identification of potential measures to avoid as well as to reduce its GHG emissions by, among other things, reducing consumption of fossil fuels across all project components.

The six main recognized GHGs are: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). The evaluation of the emissions of any of these GHGs, which can reasonably be expected to result from the action, should be included in the scope of the SDEIS. Both direct and indirect emissions of GHG should be assessed for both stationary and mobile sources. The analysis should address GHG emissions and mitigation both at the completion of development of Block 1 and at the expected full build out of Blocks 2 through 5. The discussion of avoidance and mitigation measures in this section must identify the specific measures proposed to address particular GHG emission sources.

The evaluation of direct GHG emission sources should include the following:

- A characterization of emissions from the combustion of fossil fuels for any processes reasonably expected to be contained in the proposed buildings (e.g., heating and cooling requirements). The discussion should identify and estimate quantities of GHG emissions. Modeling may be used to quantify such estimates.
- A discussion of emissions from fleet vehicles owned and operated by the occupants of the facilities and associated with the facility. The discussion should estimate quantities of GHG emissions. Modeling may be used to quantify such estimates.

The evaluation of indirect GHG emissions should include the following:

- A discussion of emissions from vehicle trips generated by the project where vehicles are not owned or operated by the site occupants. Employee commuting, freight deliveries and customer visits should be included, and may be modeled or qualitatively described.
- A qualitative discussion of emissions from the generation, transportation, treatment and disposal of wastes.

As with other potentially significant impacts addressed in an EIS, the GHG portion of an EIS should also include a review and assessment of alternatives and mitigation measures to avoid or reduce consumption of fossil fuels and thereby reduce the project's consumption of fossil fuels and consequent generation of GHGs. The alternatives and mitigation discussion should include estimates of the projected reduction in GHG emissions that would result from implementation of each identified mitigation measure. Reasonable alternatives to reduce GHG emissions may include project changes involving alternative technologies and design changes that reduce the action's use of fossil fuels.

The discussion of alternatives should address reasonable demand reductions for electricity and transportation fuels, in addition to changes in site or building-related design and alternative technologies.

The lead agency may allow qualitative rather than fully-quantified discussions of GHG emissions if the applicant demonstrates that the project has minimized its emissions of GHGs by incorporating mitigation measures into the design of the project so as to reduce consumption of fossil fuels and emissions of GHGs to the maximum extent practicable.

7. Page 12, Human Resources, Air Resources: Will the action include or result in the construction of a new, fossil fuel burning power generation facility? If yes, the air resources impact of this facility, including greenhouse gas emissions, must be evaluated according to the methodology set forth in this section.

8. Pages 12 & 13, Human Resources, Land Use / Zoning / Plans: The discussion of the action's conformance with land use plans should include an analysis of its impact on, and consistency with, the comprehensive management plan for the Special Groundwater Protection Area Program as implemented pursuant to Article 55 of the ECL and an analysis of its impact on, and compliance with the Central Pine Barrens Comprehensive Use Plan, implemented pursuant to Article 57 of the ECL.

9. Page 13, Human Resources, Community Character: The description of the community and landscape surrounding the subject site must include a discussion of the thousands of acres of environmentally sensitive land the State of New York and Suffolk County own, control or manage in close proximity to REPCAL. Referred to as the Peconic Headwaters, this approximately 4,150 acre area includes the Otis Pike Preserve, Robert Cushman Murphy County Park and associated cooperative hunting areas. It contains some of the most important natural areas remaining on Long Island. These extensive wetlands and forests surrounding the Peconic River and its tributaries contain large numbers of Natural Heritage Program endangered, threatened and special concern species of animals, plants and communities and provide regionally significant public access opportunities for fishing, hunting, paddling, hiking and other uses. As a steward of this large portion of the Peconic Headwaters area near the REPCAL site, the Department has the responsibility to ensure that the environmental review for this action takes into account impacts on the public lands, associated resources and public recreational opportunities under its care.

Accordingly, the DSEIS must assess the effects of the proposed action, along with the effects of the other approved and planned developments located within the fence, on this complex of public land. The same hydrologic and other natural resource impacts identified in numbers 2 through 4 above for the area inside the fence must be assessed for the Peconic Headwaters. This should include the interrelated groundwater and surface water system with associated coastal plain ponds, wetlands and the Peconic River itself, and the potential for negative impacts to these resources from activities which will affect water quantity or quality. Likewise, negative effects on the habitat for endangered, threatened or rare species of animals, plants and communities in the Peconic Headwaters area from the proposed action and other developments inside the fence must be assessed. This evaluation may actually fit better in the section discussing Natural Environmental Resources. Impacts to the use of the Peconic Headwaters area by the public for the traditional uses identified above, as well as the impacts which accompany increases in population and human development, such as vehicular traffic, noise, night lighting, litter and illegal dumping must also be evaluated.

10. Page 14, Human Resources, Cultural Resources: The Office of Parks, Recreation & Historic Preservation should also be consulted about the presence of State (or National) Register of Historic Places -listed, or eligible buildings or structures on or in the vicinity of the REPCAL site and whether the proposed action will result in negative impacts to listed or eligible structures. Some of the former Grumman buildings may have Cold War-era significance.

11. Page 15, Human Resources, Growth Inducing Aspects: This section should include a discussion and analysis of the potential for the REPCAL action and the other developments approved or proposed for the area inside the fence to create a demand for the expansion of the existing Town and County roads located between the site and Long Island Expressway Exits 69, 70 and 71. Many of these roadways pass through important wetland areas and Peconic Headwaters public lands or cross the Peconic River. Expansion or improvement of some of these roadways can result in significant negative impacts to wetlands, surface water quality, endangered, threatened or special concern species of plants, animals or communities and community character. See also comment 5 above.

12. Page 16, Reasonable Alternatives to be Considered: This section indicates that only the No Action Alternative will be evaluated in the DSEIS and justifies this approach by citing the alternatives analyses performed in the 1997 EIS prepared by the US Navy for the transfer of the Grumman site to the Town of Riverhead and the 2005 FSEIS for the Calverton Enterprise Park Reuse Plan Zoning Change by the Town of Riverhead.

This approach is not acceptable because it will result in an environmental review document which will not include the information necessary for the involved agencies to make the required findings and determinations required by the SEQR regulations.

DEC determined that the 1997 Navy EIS was not sufficient to meet the decision making and findings requirements of SEQR, and so notified the Navy at the time. The main reasons for our determination were the cursory nature of the information provided on the proposed alternatives and the environmental impacts which could reasonably be expected to result from them.

Richard Hanley
October 16, 2008
Page 8

These included wetlands, surface water, groundwater, habitat of rare, threatened and endangered species, and the total lack of discussion or analysis of the impacts of the development of the area inside the fence on the public lands in the Peconic Headwaters area as described above.

Also, it must be acknowledged that the development which has been approved and constructed to date inside the fence bears little resemblance to the preferred alternative recommended and adopted in the December 1997 FEIS. This preferred alternative, known as the Calverton Enterprise Park Reuse Plan, proposed 282 acres of land to be developed as "Industrial / Business Park." Before the REPCAL action was ever proposed or submitted, the Town had already approved at least 470 acres of industrial or commercial development inside the fence. The REPCAL action proposes an additional 300 acres of industrial development. This weakness in the original EIS should not be carried through to today's SDEIS.

Reasonable alternatives to the proposed action should be considered. Given the unusual circumstances of the REPCAL action, including the cursory treatment of alternatives in the underlying Navy DEIS/FEIS, the Town's evolving planning vision for the area inside the fence and the strong possibility that the comprehensive habitat protection plan to be developed (see comment 4 above) will result in significant modification of the action, it is not possible to identify specific alternative designs for consideration at this point. In this case, it may be most efficient to identify the specific alternatives for consideration in the SDEIS after the pivotal comprehensive habitat management plan work and energy conservation / climate change analysis are completed. For now, we can state that alternative designs for the action which avoid impacts to important habitats identified via the comprehensive habitat protection planning effort to be undertaken, minimize impacts to groundwater and surface water quality and quantity, conserve energy and minimize the emission of greenhouse gasses to the maximum extent practicable should be fully evaluated.

Several factors will complicate our efforts to arrive at a comprehensive, yet manageable, scope for the REPCAL SDEIS. These include the need for the applicant to consider the entire area inside the fence, including the effects of development on land controlled by others, for several of the required impact identification and analysis tasks and the need to evaluate the impacts of the development inside the fence on the Peconic Headwaters area. It is understood that there is uncertainty about some aspects of the future development of the area inside the fence, and perhaps even the development of Blocks 2 through 5 of the REPCAL property. We request the opportunity to discuss these considerations with the lead agency to delineate a reasonable extent of required evaluation.

Richard Hanley
October 16, 2008
Page 9

I can be reached at (631) 444-0371 if you have any questions or need to discuss the Department's position. Thank you for your anticipated cooperation in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "George W. Hammarth", with a stylized flourish at the end.

George W. Hammarth
Deputy Regional Permit
Administrator

cc: REPCAL, LLC
NYS Department of Transportation, Region 10
Suffolk County Department of Health Services
Hon. Philip Cardinale, Supervisor, Town of Riverhead

**THREATENED & ENDANGERED
GRASSLAND BIRD SPECIES SURVEYS
AT
EPCAL
(A portion of the former Grumman Proving Grounds)
CALVERTON**

Riverhead, Suffolk County, New York

June 2009

Prepared for and Submitted in Draft to:
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Reformatted w/brief revisions
September 2011

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ASGECI Project # 2968A

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGES</u>
1.0. INTRODUCTION.....	1
1.1 Focus of Study.....	1
1.2 Survey Methodology	2-5
1.2.1 Winter Bird Surveys	
1.2.2 Breeding Season Bird Surveys	
1.2.3 Pinelands Species Bird Surveys	
1.3 Habitat Descriptions	5-6
1.3.1 Grasslands	
1.3.2 Pinelands	
2.0. SURVEY RESULTS AND DISCUSSION	6
2.1 Winter Bird Species Surveys.....	6
2.2 Pinelands Bird Species Surveys	6
2.3 Grassland Bird Species Survey	7
3.0. RECOMMENDATIONS	7-8
4.0. REFERENCES.....	9-12
APPENDIX A	FIGURES
APPENDIX B	PHOTOGRAPHS
APPENDIX C	AGENCY CORRESPONDENCE
APPENDIX D	SURVEY DATA SHEETS
APPENDIX E	COMPREHENSIVE LIST OF BIRD SPECIES OBSERVED
APPENDIX F	RESUMES OF SURVEYORS
 <u>TABLES</u>	
TABLE 1 - TARGET GRASSLAND BIRD SPECIES	2
TABLE 2 - TARGET PINELAND BIRD SPECIES.....	2

1.0. INTRODUCTION

Amy S. Greene Environmental Consultants Inc. (ASGECI) performed comprehensive surveys for New York State designated threatened and endangered grassland bird species at a portion of a defunct military establishment named the Grumman Proving Grounds located in the Enterprise Park at Calverton (EPCAL), in the Town of Riverhead, Suffolk County, New York (NY). Riverhead Resorts LLC has proposed to construct a multi-use resort on approximately 755 acres (identified as “site” in this report) of the nearly 3,000 acre property.

ASGECI staff ornithologists, Scott Angus and Max Devane performed passive visual and auditory surveys for the species of concern beginning in February 2008 through August of 2008. This report memorializes and discusses the results of those surveys.

1.1 Focus of Study

New York State Department of Environmental Conservation (NYSDEC) records and the NY State Breeding Bird Atlas list eight (8) species of grassland birds as having been observed on or in the vicinity of the site (Appendix A). Based upon discussions with Chip Hamilton of the Long Island office of the NYSDEC, and a letter dated May, 14, 2008 (Appendix C, Agency Correspondence) outlining recommended survey protocols for breeding grassland bird species at EPCAL from NYSDEC Wildlife Diversity Section Head, Dan Rosenblatt, PhD. to Phil Cardinale, Supervisor of the Town of Riverhead; ASGECI included five (5) additional grassland bird species and three (3) pinelands bird species to target for the surveys.

Six (6) of the 13 grassland bird species are classified as “endangered” or “threatened” by NYSDEC. The remaining seven (7) grassland species are classified as “special concern” or “watch list” species (Table 1). The three (3) pineland species are classified as species of “special concern” by the NYDEC (Table 2).

ASGECI performed winter and breeding season passive visual and auditory surveys with a focus on these 13 target species for the purpose of identifying species which use areas of the site either for winter foraging or for breeding activities.

TABLE 1
GRASSLAND BIRD SURVEYS
TARGET BIRD SPECIES - NY PROTECTION STATUS

Grassland Bird Species - New York	NY Status
Northern Harrier, <i>Circus cyaneus</i>	T
American Kestrel, <i>Falco sparverius</i>	WL
Upland Sandpiper, <i>Bartramia longicauda</i>	T
Short-eared Owl, <i>Asio flammeus</i>	E
Loggerhead Shrike, <i>Lanius ludovicianus</i>	E
Horned Lark, <i>Eremphila alpestris</i>	SC
Sedge Wren, <i>Cistothorus platensis</i>	T
Vesper Sparrow, <i>Pooecetes gramineus</i>	SC
Savannah Sparrow, <i>Passerculus sandwichensis</i>	WL
Grasshopper Sparrow, <i>Ammodramus savannarum</i>	SC
Henslow's Sparrow, <i>Ammodramus henslowii</i>	T
Bobolink, <i>Dolichonyx oryzivorus</i>	WL
Eastern Meadowlark, <i>Sturnella magna</i>	WL

TABLE 2
BIRD SURVEYS
PINELANDS SPECIES - NY PROTECTION STATUS

Pinelands Bird Species - New York	NY Status
Common Nighthawk, <i>Chordeiles minor</i>	SC
Whip-poor-will, <i>Caprimulgus vociferus</i>	SC
Red-headed woodpecker, <i>Melanerpes erythrocephalus</i>	SC

E – Endangered T- Threatened SC – Special Concern WL – Watch List

1.2 Survey Methodology

The surveys were divided into two different survey seasons, winter season surveys and breeding season surveys.

1.2.1 Winter Bird Species Surveys

The following represents the methodology utilized by ASGECI while performing visual winter grassland bird species surveys:

- ASGECI reviewed existing available information for the site, including but not limited to local birding websites, NYSDEC websites, NY State Natural Heritage database and website, the NY State Breeding Bird Atlas, NY State Ornithological Association's Kingbird periodical and other sources.
- ASGECI staff ornithologist, Scott Angus performed field reconnaissance to evaluate the natural communities that could support winter grassland State listed species within and adjoining the site.
- Based on the existing literature and the experience of ASGECI staff, survey points were identified to provide the best vantage points for observing the target species during the winter months.
- Surveys were conducted in the evening and early morning hours on consecutive days to detect nocturnal and diurnal grassland bird species.
- Surveys began in February 2008 through April 2008 and were conducted on a monthly basis except in March in which three surveys were conducted to assure detection of any potential nesting short-eared owls and Northern harriers.

1.2.2 Breeding Season Bird Species Surveys

The following represents the methodology utilized by ASGECI while performing visual breeding season grassland bird species surveys:

- ASGECI reviewed existing available information for the site, including but not limited to NYSDEC's recommended survey protocols for breeding grassland birds, the NY State Breeding Bird Atlas, NY State Ornithological Association's Kingbird periodical, local birding websites, NYSDEC websites, NY State Natural Heritage database and website, and other sources.
- ASGECI staff ornithologist, Scott Angus performed field reconnaissance to evaluate the natural communities that could support breeding grassland State listed species within and adjoining the site.
- Based on the May 14, 2008 letter from NYSDEC and the experience of ASGECI staff, survey 41 survey points were identified approximately 200 meters apart in transects. Each survey point was visited twice a week (one nocturnal and one diurnal survey) on consecutive days.
- Surveys were conducted in the evening, beginning one hour prior to sunset, and early morning, beginning one hour prior to sunrise on consecutive days to detect nocturnal and diurnal grassland bird species.

- Surveys began in April 2008 and continued through the middle of August 2008. The surveys began on a monthly basis until May 14, 2008 correspondence from NYSDEC recommended surveys be conducted on a weekly basis. Surveys began on a weekly basis on May 20, 2008 and continued weekly to the end of the survey season.
- Point count – passive, auditory and visual surveys commenced between 0400 and 0430 hours and ended on or before 1100 hours each survey period.
- Evening surveys began approximately one hour before sunset and continued for two hours after dark to target species which are more active or sing more aggressively in the evening hours compared to the morning hours.
- During the May and June 2008 surveys, a nocturnal survey was conducted after midnight to target Henslow's sparrow. These surveys were passive, auditory surveys since Henslow's sparrows have weak songs and are often overlooked during diurnal surveys due to background noise and other bird songs. Studies in northern New York have shown that the Henslow's sparrow actively sing more frequently between midnight and 0400 hours.
- Survey point locations were chosen beginning at the northeast corner of the site, headed east and were placed every quarter mile or sooner at significant habitat changes. The points traversed the north side of the runway to the northwest corner and points were placed in a grid fashion every quarter mile to the east until the study area boundary was met.
- Significant habitat changes include: large areas of grass height and grass species changes, locations where the forest encroaches upon the grasslands, large trees and shrubs within the grasslands, forb dominated portions of the site, and wetlands.
- Each survey location was assigned an identification number and passively searched utilizing auditory and visual methods for five minute periods. All bird species encountered were documented with emphasis on the targeted grassland birds. It was determined that forty (40) survey points were needed to sufficiently cover the site.
- If after the five minute period no sing birds were noted, then survey techniques such as pishing, squeaking and whistling screech owl imitations were utilized to confirm absence or presence. All forms of identification were utilized including visual confirmation, males singing territorial breeding songs, along with call and chip notes from non-singing individuals.
- Survey results have been tabulated from the field data sheets onto report data sheets with correlating survey point number for each site visit.
- When birds were encountered the approximate location of the birds were noted when possible (example: north side of runway) and included on field data sheet.

- All surveys were conducted during optimal weather conditions (no rain or windy conditions).
- Survey locations and identification number were placed on aerial photograph of the site via GPS.

1.2.3 Pinelands Bird Species Surveys

The following represents the methodology utilized by ASGECI while performing visual/auditory breeding season Pinelands bird species surveys:

- ASGECI reviewed existing available information for the site, including but not limited to a letter dated May 14, 2008 from Dan Rosenblatt, Ph.D. of the NYSDEC to the Town of Riverhead, Supervisor, Phil Cardinale outlining recommended survey protocols for breeding grassland birds, the NY State Breeding Bird Atlas, NY State Ornithological Association's Kingbird periodical, local birding websites, NYSDEC websites, NY State Natural Heritage database and website, and other sources.
- ASGECI staff ornithologist, Scott Angus performed field reconnaissance to evaluate the natural communities that could support breeding Pinelands State listed species within and adjoining the site.
- In accordance with the May 14, 2008 letter from NYSDEC, ASGECI modified the survey points from 41 survey points to 12 survey points to determine the presence or absence of nocturnal bird species. Each survey point was visited twice a week (one nocturnal and one diurnal survey) on consecutive days.
- Surveys were conducted in the evening, beginning one hour prior to sunset, consecutive days to detect nocturnal and diurnal grassland bird species.

1.3 Habitat Descriptions

1.3.1 Grasslands

Approximately 400 of the 755 acre site are contiguous open grasslands. Generally, the open grasslands are vegetated by warm season grasses such as little bluestem (*Schizachyrium scoparium*), broomsedge (*Andropogon virginicus*) and numerous other clump grass species. In addition, to the clump grasses, numerous forbs are scattered throughout the grasslands. The dominant forbs include common Saint John's Wort (*Hypericum perforatum*) and common mullein (*Verbascum thapsus*). Although neither species is native to North America they both provide elevated perches for singing male bird species.

Additionally, large areas of barren ground with sparse vegetation can be found throughout the grasslands. Barren areas are formed due to the poor nutrients in the soil, and were vegetated golden-heather (*Hudsonia ericoides*) and sickle-leaved golden aster (*Chrysopsis falcata*) are dominant.

1.3.2 Pinelands

Pitch pine/scrub oak uplands comprise nearly all of the remaining land of the 755 acre site. The majority of this habitat is dominated by pitch pine (*Pinus rigida*) and scrub oak (*Quercus ilicifolia*). The understory is dominated by sweet fern (*Comptonia peregrine*), blueberry species (*Vaccinium spp.*), huckleberry (*Gaylussacia sp.*), juvenile pitch pine, and juvenile scrub oak.

2.0. SURVEY RESULTS AND DISCUSSION

2.1 Winter Bird Species Surveys

Of the six (6) endangered or threatened target grassland species, only the northern harrier and the short-eared owl were observed at the site during the winter surveys. Six other grassland species, Rough-legged hawk, American kestrel, long-eared owl, horned lark, savannah sparrow and Eastern meadowlark were observed during winter surveys at the site.

The winter survey dates included evening and dawn surveys on consecutive days and were conducted by ASGECI staff ornithologist, Scott Angus.

High individual count and dates for the winter species surveys

17 - Northern harrier - 3/26/2008
3 - Rough-legged hawk - 3/25/2008
14 - American kestrel - 2/28/2008
1 - long-eared owl – 3/5/2008
10 - short-eared owl - 3/13/2008
21 - horned lark - 2/28/2008
16 - savannah sparrow - 2/27/2008
114 - Eastern meadowlark - 3/14/2008

2.2 Pineland Bird Species Survey

Surveys for Pinelands specialty species began on the evening of May 29, 2008. The target species include whip-poor-will, chuck-wills-widow, common nighthawk, and red-headed woodpecker.

Five pairs of whip-poor-wills utilized the site during the breeding season of 2008. A calling chuck-wills widow was located on June 5, 2008. A common nighthawk flew over the site as it called on June 12, 2008. Neither of the latter species was observed or heard more than once on the site and are surmised to be nesting in the vicinity, but not on the site.

In addition, a red-headed woodpecker was observed on June 6, 2008. The bird was heard calling and when located visually was observed being pursued by territorial red-bellied woodpeckers. This was the only date a red-headed woodpecker was observed during the surveys and ASGECI believes it was a wandering/foraging bird from a small colony known to nest on the golf course across Grumman Road from the site. ASGECI staff ornithologist, Scott Angus performed most of the surveys for this portion of the project. An additional ASGECI staff ornithologist, Max Devane, performed surveys on three survey dates.

2.3 Grassland Bird Species Survey

ASGECI surveys identified seven (7) nesting species of grassland birds on the EPCAL site; American kestrel, upland sandpiper, horned lark, vesper sparrow, savannah sparrow, grasshopper sparrow and eastern meadowlark. Of these species, only the upland sandpiper is classified as endangered or threatened by the NYDEC. Two pairs of upland sandpipers observed on the site. Both pairs were leading around a loose group of young birds and were found on opposite sides of the project (east and west). Scott Angus performed most of the surveys for this portion of the project. Max Devane, performed surveys on three survey dates.

3.0. RECOMMENDATIONS

The Riverhead Resorts LLC's, proposed development will result in the removal of nearly all of the grassland habitats on the site. The potential for displacement of the birds referenced in this report is likely. It appears however, based upon a brief preliminary investigation that there is sufficient alternative grassland habitats in the immediate surrounding area to which the relevant species could readily relocate.

The Calverton National Cemetery, to the north and northwest of the site, has large expanses of grassland habitats. Portions of these fields are being lost to succession of woody vegetation and other portions are overly maintained (mowed), which depletes certain clump grass species that grassland birds prefer for nesting. Developing an agreement with the Calverton National Cemetery for a grassland management plan could mitigate for lost grassland habitat on the EPCAL site. Restoring the areas nearly lost to succession of woody vegetation and developing a mowing regime that would enhance warm season grass growth on the National Cemetery will provide at least a portion of the acreage that will be lost on the EPCAL site.

In addition, there are two other grassland areas on the EPCAL Property, which if entered into a grassland management agreement would mitigate the loss of habitat as well. The area immediately adjacent to the eastern runway outside of the study site includes numerous early to late successional fields meet the criteria to make a successful mitigation site for the grassland loss at EPCAL.

Agricultural and turf grass farms are located in the vicinity of the site. The creation of grassland habitat from these farms is simple and desired by the regulatory authorities. They are already cleared of woody vegetation and would only require disking of the soils and plantings of warm season grasses to create grassland habitats.

Long term preservation and proper management of adjacent existing grassland habitats and agricultural lands in the vicinity of the EPCAL site should provide sufficient mitigation for permanent loss of the existing grasslands from the development. These recommendations are provided to demonstrate that there are a number of options at the disposal of the developer to mitigate impacts of the proposed development on the population of grassland birds which currently utilize the site for wintering and breeding activities.

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APPENDIX A
FIGURES

APPENDIX B
PHOTOGRAPHS

APPENDIX C

AGENCY CORRESPONDENCE

MEETING MINUTES/STATUS MEMO

PROJECT NO.: 2968

PROJECT NAME: RIVERHEAD

MEETING DATE: 3/14/08

MEETING LOCATION: Riverhead, Long Island, NY

ATTENDEES: Chip Hamilton and 2 techs from DEC, Mark Wagner, of Cameron Eng., Scott Angus, ASGECI

On Friday 3/14/08 Mark Wagner and I met with the NY DEC biologists at our site to discuss our approach to surveying the property for grassland birds. It also provided the DEC with their first viewing of the site since they have become involved with the project. Chip Hamilton is the main avian biologist for the LI Section of the DEC and he brought two of his tech staff with him. Chip stated that the DEC would not be on our site looking for tiger salamanders that evening. We walked most of the site and discussed the following:

I provided my proposed protocols for the breeding grassland bird surveys, a point count approach. This type of survey is conducted in the following manner:

- Traversing the runways and taxiways by vehicle and stopping at a predetermined location.
- Get out of vehicle wait 3 minutes to allow birds to become accustomed with my presence
- A passive listening strategy (no broadcast recorded calls) will be utilized to detect calling birds (males attracting females) for 5 minutes at each survey point.
- Counts will include species, number of individuals and approximate location of calling birds (which side of the runway/taxiway).
- Each survey point will be distanced based upon current literature and survey models (usually about 0.25 miles from each other).
- GPS locations of each survey point will be included in the final report.
- Additional survey points will be added at significant habitat changes. This included locations of significant grass height change, locations where the forested portions of the property become closer to the runways/taxiways and are less desirable for grassland birds and shrubby areas.

- Surveys will commence one hour prior to sunrise and continue until completed but should be completed by noon.
- Surveys will begin again in late afternoon and continue until darkness.
- Surveys during May and June will include a 3am visit to determine if Henslow's sparrows are utilizing the site (they call between 3am and 5am and are difficult to hear).
- One survey is proposed each month starting in April and ending in June (as referenced in our work agreement).

Chip stated my proposed survey approach is exactly as he would conduct the surveys on such a large land parcel. Chip mentioned that there are other species of concern he would like noted if found (Scarlet Tanager for example). I told him I would provide a complete avian species list. Chip requested that if possible, and if available, one of his techs accompany me during some of the surveys. We agreed that I would provide them with written protocols for our surveys (close to the same as above). Chip said there might be minor revisions based upon what we talked about, but he could not think of any off hand. We discussed species which DEC expects or knows are at the site. Chip confessed he was not sure which grassland species are on the NY State T&E species and Species of Special Concern lists and said he always needs to refer to the website. Chip stated the DEC not only would be interested in T&E species but Species of Special Concern. The listed grassland species include:

Endangered

Short-eared owl*
Loggerhead shrike

Threatened

Northern harrier*
Upland sandpiper
Sedge wren
Henslow's sparrow

Special Concern

Horned lark*
Vesper sparrow
Grasshopper sparrow

*Already observed on the site.

During our site visit a shrike was observed. The bird was too far away to determine if the shrike was a Northern shrike, which is a bird that eruptively invades our area during the winter months from the tundra. This bird would have no regulatory significance. The

other species is a Loggerhead shrike, which is listed above as endangered in NY and is declining rapidly in the northeast. Because of its listing, if the bird we saw was a Loggerhead shrike it could pose a significant problem. The bird flew away and could not be relocated before we were able to identify the shrike to species. I told the DEC I will incorporate a shrike search in my breeding grassland bird surveys. Chip seemed satisfied with that (more discussion on the shrike will follow).

During our field view with the DEC, we walked about two-thirds of the site and I feel Chip was impressed with my identification skills and was more than satisfied with my proposed methodology (Mark do you agree?). Chip made an interesting remark that normally the DEC would not be involved in a development like this and stated they usually expect the applicants to hire qualified consultants and they rely on their findings. He did not elaborate any more than that.

Chip also mentioned that the LI Beagle Club is for sale and that the county had attempted to buy it. For some reason the purchase fell through. Someone from our team should look into this because this is a location I have identified as one of the suitable mitigation sites for the loss of grassland habitat. The Beagle Club is part of the contiguous agricultural/grassland areas adjacent to the site. Chip also mentioned there are numerous surrounding areas that are already protected in open space that the DEC would like to see managed for grassland species. The DEC was having a hard time managing the grasslands prior to last year when they received a new mower. To me it sounds like there are plenty of opportunities to team with surrounding land owners and provide an active grassland management plan to mitigate for the disturbances on our site.

During the afternoon the DEC met with Lara Pomi from Nelson, Pope & Voorhis, the consultant for the adjacent site. The Ms. Pomi did not receive a callback to permit access for me onto their site during their field view. Chip agreed to meet with me after he finished his field view of the adjacent site. While they were on the adjacent site, I attempted to relocate the shrike, perform reconnaissance for my breeding bird surveys and document any other potential issues. During their meeting I noticed a short-eared owl flying near the active construction area on the adjacent site. I noticed the DEC returning to their truck and waited for them to arrive at our meeting place. I showed them the owl. They told me that they had found the owl roost on the adjacent site and spooked three owls to fly. The roost was on the ground near the center of their site and Chip said apparently the owls utilized the roost all winter based upon the amount of pellets (owls swallow prey whole and regurgitate the bones and fur) and droppings at the location. What this means for the adjacent site I do not know. But based upon my searches, we do not have a roost on our site. Chip also mentioned he noted Northern harriers performing a courtship flight on the adjacent site. He asked if I had proposed to survey for nesting owls and harriers. I told him yes my next visit would be taking care of that. The DEC left the site about 4pm.

After the DEC left I went back to see if the owls were on our site (they weren't) but I relocated the shrike and was able to photograph it well. This confirmed the bird was a

Northern shrike and not the listed Loggerhead shrike. If it is ok to contact them, I will inform the DEC of this confirmation.

On Thursday 3/13/08 the DEC cancelled our site meeting after I had already driven out to Long Island. During that time I documented that the short-eared owls were still present, that there are about 3 pairs of horned larks already setting up territories on our site and I located 12 egg masses of tiger salamanders and three adult salamanders in the wetland on the southeast side of our site (actually the ponded water is just offsite to the southeast). I provided this information to Mark before the DEC arrived and Mike Nowicki via phone incase the DEC wanted to survey for tiger salamanders on Friday evening.

In summary

I have documented the following grassland bird species on the site:

- Short-eared owls (no courtship displays noted)(maximum count 10)(recently down to 4)
- Northern harrier (courtship display observed on adjacent site) (maximum count 10)
- Red-tailed hawk (two pairs on opposite ends of the project)(very common bird)
- Rough-legged hawk (maximum count 2) (winter visitor)
- American kestrel (two pairs) (declining in the NE but not listed in NY)
- Savannah sparrows (numbers undetermined)
- Eastern meadowlarks (four large flocks of 10 to 12 birds)
- Horned larks (three territorial pairs as of 3/14/08. High count of 15 on 2/27/08)
- Water pipit (flock of 6 on 3/14/08)(unregulated migrant bird species)

The DEC is in agreement with my proposed grassland bird survey protocols and would like a written copy sent to them. I will provide the Riverhead team with the protocols for review prior to submitting them to the DEC. DEC would like a complete list of bird species encountered during the surveys not just grassland birds. DEC appears satisfied with my proposed owl and harrier nesting survey. I have not located an owl roosts on our site, but the DEC located a roost on the adjacent site.

Additionally, I have also documented short-eared owls and northern harriers utilizing the surrounding agricultural fields in the vicinity of the site during each survey. Three owls were noted over two different fields on 2/27/08 and one was over a sod field on 3/5/08. Harriers have been documented offsite on every visit.

I will be returning to the RR site during the last week in March to conduct the visual survey for nesting owls and harriers. During that time I will also survey for the horned larks since they appear to be breeding early this year. I will note any suggestive breeding activity on our site. From our property line I will attempt to identify courtship activity of owls and harriers on the adjacent site.

Copies: Riverhead Resort Team, Tom Brodde Amy Greene, ASGECI File #2968

New York State Department of Environmental Conservation
Regional Director, Region One
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, New York 11790-3409
Phone: (631) 444-0345 • FAX: (631) 444-0349
Website: www.dec.state.ny.us



Alexander B. Grannis
Commissioner

FAX

TO: Janice Jizina

FAX #: 516-827-4900 PHONE#: _____

FROM: PETER A. SCULLY DATE: _____
Regional Director

FAX # (631) 444-0349 PHONE: (631) 444-0345

SUBJECT: Bird Survey Protocol

NUMBER OF PAGES INCLUDING COVER SHEET 36

MESSAGE: _____

New York State Department of Environmental Conservation

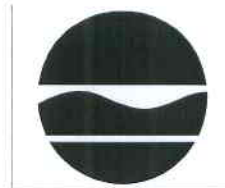
Division of Fish, Wildlife & Marine Resources

Bureau of Wildlife, 5th Floor

625 Broadway, Albany, New York 12233-4754

Phone: (518) 402-8919 ☎ FAX: (518) 402-9027

Website: www.dec.ny.gov



May 14, 2008

Honorable Phil Cardinale
Supervisor
Town of Riverhead
200 Howell Ave.
Riverhead, NY 11901-2596

Dear Supervisor Cardinale,

Per our discussions, enclosed please find a grassland breeding bird survey protocol for establishing the extent of use of the EPCAL grasslands by breeding birds. If you have any questions on this protocol, please do not hesitate to call. Thank you for your attention to this matter.

Sincerely,



Dan Rosenblatt, Ph.D.
Wildlife Diversity Section Head

DR; jam
encl.

c: Thomas Kirwin, Rechler Equity Partners
Mitch Pally, Riverhead Resorts
Jan Burman, Engle-Burman

New York State Department of Environmental Conservation
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Recommended Survey Protocol for Breeding Grassland Bird Assessments at the EPCAL Site

Potential Species - Focus of surveys should be on State-listed species. In addition to Northern Harrier and Short-eared Owls, Upland Sandpiper is another potential listed species that may nest on the subject parcel. Additional Species of Special Concern are either known to occur at the site or have been confirmed adjacent to the site is similar habitat. Breeding birds identified as present within the general area during the 2000-2005 New York State Breeding Bird Atlas should be addressed in the implementation of this protocol (enclosed, and available on the web at: <http://www.dec.ny.gov/cfm/xtapps/bba/>).

Time of year: Driven by Northern Harrier and Grasshopper Sparrow- Should be initiated in late March and last through mid-August to capture nest success and other breeding bird activity.

Northern Harrier: Initiates territories in March; Begins courtship displays and territorial defense late March - April; Nest construction mid-April to mid-May; Eggs laid late April - Mid June (earlier in years of high prey abundance); 30-32 day incubation period, 30-41 days to fledging, 21-28 post-fledging dependency on parental care. Note: Single male may maintain multiple females, with females doing all incubation and male providing food to all mates.

For good background information on Natural History and behavior of Northern Harriers, please consult:
<http://bna.birds.cornell.edu/bna/species/210/articles/introduction>

Grasshopper Sparrow: Initiates nesting in May, lays eggs June - July, incubation period 11-13 days, 10-12 days to fledging, may have double broods.

For good background information on Natural History and behavior of Grasshopper Sparrows, please consult:

<http://bna.birds.cornell.edu/bna/species/239/articles/introduction>

The nesting chronology of these two species overlaps that of other potential grassland nesting species, including but not limited to Upland Sandpiper and Short-eared Owl.

Frequency of visits: Twice per week per survey point (once in morning and once at dusk).

Time of day for surveys: From ½ hour before to 4 hours post sunrise for breeding passerine birds and Northern Harriers. From one hour prior to sunset to one hour post-sunset for nocturnal species (i.e. Short-eared Owls and Whip-poor-wills).

Survey method: Transects should be laid out over the property in question at equidistant points that allow nearly complete coverage of the area. Ideally, all grassland habitat will fall within 100 meters of at least one survey point. Along each transect, at 150 - 200 meter intervals survey points should be established and a point count should be conducted. Look and listen for 5 minutes. Surveyor should stand quietly and visually scan the area within 100 meters, using binoculars as necessary to positively identify birds seen. Repeat until transect complete. Surveys should be done on foot. If any nests are located along the survey route, record the location and make sure to avoid walking through the area immediately adjacent to the nest on subsequent surveys.

Data Recording: At initiation of survey, record weather data (do not perform survey if heavy wind or precipitation may interfere with ability to see or hear birds). Record observer, date, start time of survey effort, and time at start of survey at each observation point. For each observation point, count all birds observed or heard (do not count any individual more than once - this may require some estimation for which birds were included at any one point). Identify each bird heard or seen to species and note behavior (e.g., flyover, flocks, hunting, perched, nesting, distraction display, singing, etc). Include any notes about signs of breeding activity: copulations, carrying food, carrying fecal sacs, nest construction, chicks present, etc. Incidental observations should also be recorded as surveyor moves between survey points. For rapid recording of information, a numeric code for behaviors and observations can be used (i.e. 1 for foraging, 2 for

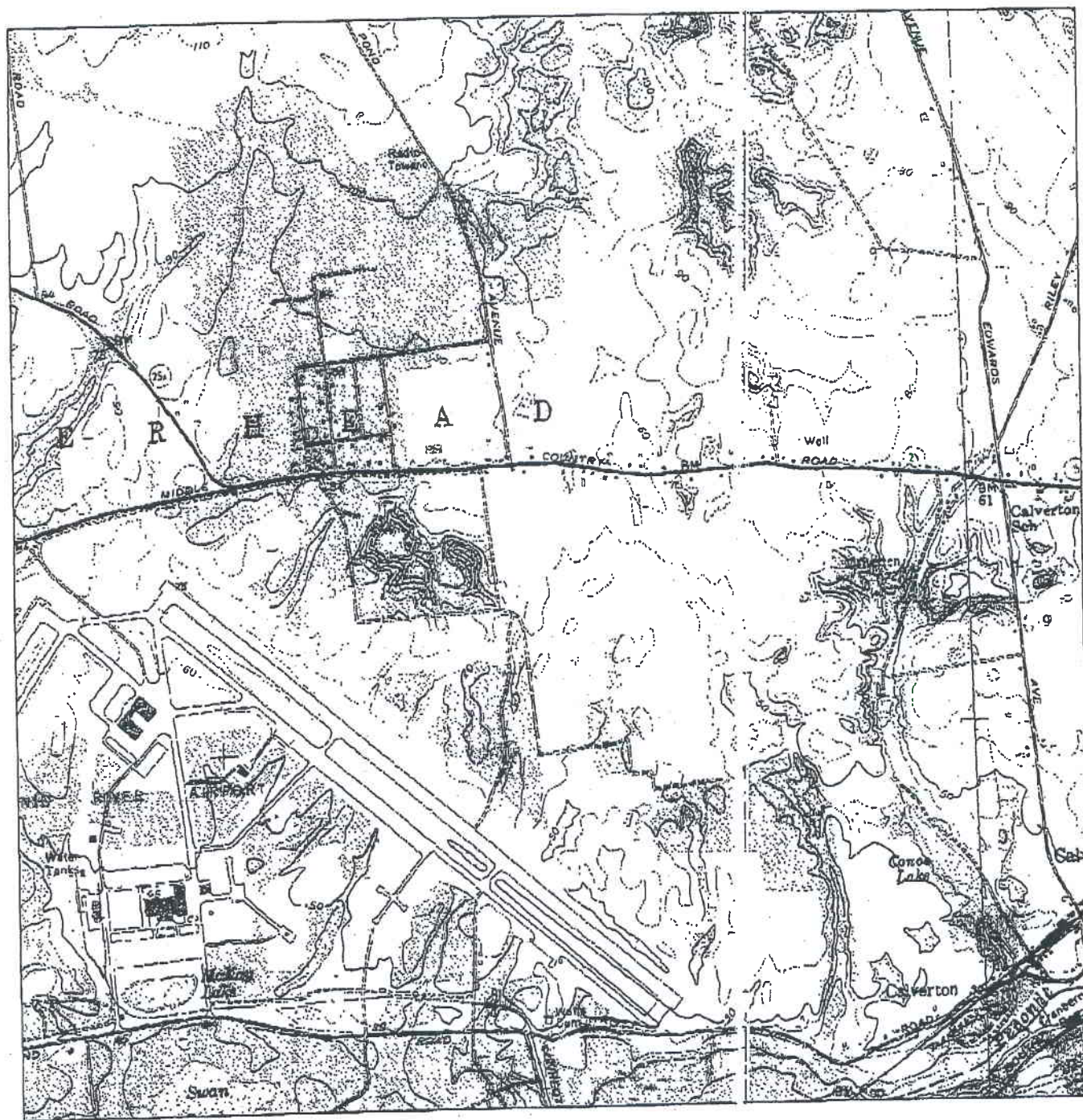
nesting, 3 for courtship behavior, 4 for roosting, etc.). Note that bird song is only an effective method for assessing presence of species with calling males. Not all species call. Visual observations are only likely method of identifying Northern Harrier breeding activity.

Surveyor Criteria: Individuals conducting surveys must be able to rapidly and positively identify all potential breeding bird species in the field by call and by sight.

Reporting:

Upon completion of the survey season, submit a written summary that lists the dates of each survey and the list of all species recorded on each survey date. The GPS coordinates of each survey point should be provided. Use a copy of an aerial photo/topo map to plot the transect route and point count locations. Plot the location of any confirmed nests and any endangered and threatened species activity on the air photo or topo map with a mark distinctive for each species (se, us, hs, gs, sw). Alternatively, this information can be provided in an ARCMAP-compatible GIS format. Also, for each grassland bird species detected, provide a summary of the total approximate number of individuals seen/heard at each survey point over the course of the survey season and summarize the species breeding status at the site based on the field observations made during the survey period. Reports should be submitted to the Regional Wildlife Office at NYS DEC - Bureau of Wildlife, SUNY at Stony Brook, 50 Circle Rd, Stony Brook, NY 11790-3409, Fax: (631) 444-0272 and to our Central Office at Endangered Species Unit, NYSDEC, 625 Broadway, Albany, 12233-4754.

Breeding Bird Atlas Block 6853C



1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

Breeding Bird Atlas Block 6753D

1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

Breeding Bird Atlas Codes

Possible

- X1 Species seen in possible nesting habitat or singing male(s) present in breeding season

Probable

- S2 Singing male present on more than one date in the same place.
P2 Pair observed in suitable habitat in breeding season.
T2 Bird (or pair) apparently holding territory.
D2 Courtship and display, agitated behavior. Includes copulation, well-developed brood patch.
N2 Visiting probable nest site.
B2 Nest building or excavation of a nest hole.

Confirmed

- DD Distraction display or injury-feigning.
UN Used nest found.
FE Female with egg in the oviduct.
FL Recently fledged young.
ON Adults(s) entering or leaving nest site indicating occupied nest.
FS Adult carrying fecal sac.
FY Adult(s) with food for young or feeding young.
NE Nest and eggs, bird on nest or egg, or eggshells beneath nest.
NY Nest with young.

NYS Breeding Bird Atlas Data 2000-05
Block 6863C

Common Name	Scientific Name	Breeding Code	Breeding Category	Date
Canada Goose	<i>Branta canadensis</i>	FL	Confirmed	5 7 2002
Mute Swan	<i>Cygnus olor</i>	FL	Confirmed	6 21 2001
Wood Duck	<i>Aix sponsa</i>	UN	Confirmed	3 1 2002
Mallard	<i>Anas platyrhynchos</i>	FL	Confirmed	7 23 2001
Ring-necked Pheasant	<i>Phasianus colchicus</i>	X1	Possible	5 7 2002
Wild Turkey	<i>Meleagris gallopavo</i>	FL	Confirmed	7 15 2001
Northern Bobwhite	<i>Collinus virginianus</i>	T2	Probable	6 29 2001
Green Heron	<i>Butorides virescens</i>	X1	Possible	5 16 2002
Turkey Vulture	<i>Cathartes aura</i>	X1	Possible	7 1 2004
Northern Harrier	<i>Circus cyaneus</i>	X1	Possible	6 29 2002
Cooper's Hawk	<i>Accipiter cooperii</i>	X1	Possible	5 7 2002
Red-tailed Hawk	<i>Buteo jamaicensis</i>	FL	Confirmed	7 20 2002
American Kestrel	<i>Falco sparverius</i>	P2	Probable	7 15 2001
Killdeer	<i>Charadrius vociferus</i>	FL	Confirmed	6 9 2002
Rock Pigeon	<i>Columba livia</i>	P2	Probable	6 29 2002
Mourning Dove	<i>Zenaidura macroura</i>	FL	Confirmed	7 7 2001
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	FY	Confirmed	6 22 2004
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	S2	Probable	5 15 2003
Eastern Screech-Owl	<i>Megascops asio</i>	T2	Probable	6 1 2002
Great Horned Owl	<i>Bubo virginianus</i>	T2	Probable	1 6 2002
Common Nighthawk	<i>Chordeiles minor</i>	X1	Possible	6 15 2002
Whip-poor-will	<i>Caprimulgus vociferus</i>	T2	Probable	5 25 2002
Chimney Swift	<i>Chaetura pelagica</i>	P2	Probable	7 15 2001
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	P2	Probable	7 7 2001
Belted Kingfisher	<i>Ceryle alcyon</i>	X1	Possible	7 23 2001
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	T2	Probable	6 29 2001
Downy Woodpecker	<i>Picoides pubescens</i>	FL	Confirmed	6 29 2002
Northern Flicker	<i>Colaptes auratus</i>	FL	Confirmed	7 7 2001
Eastern Wood-Pewee	<i>Contopus virens</i>	T2	Probable	6 29 2001
Eastern Phoebe	<i>Sayornis phoebe</i>	T2	Probable	5 25 2002
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	T2	Probable	6 29 2001
Eastern Kingbird	<i>Tyrannus tyrannus</i>	FY	Confirmed	7 15 2001
White-eyed Vireo	<i>Vireo griseus</i>	X1	Possible	6 7 2004
Yellow-throated Vireo	<i>Vireo flavifrons</i>	X1	Possible	5 15 2003
Warbling Vireo	<i>Vireo gilvus</i>	T2	Probable	7 7 2001
Red-eyed Vireo	<i>Vireo olivaceus</i>	T2	Probable	6 29 2001
Blue Jay	<i>Cyanocitta cristata</i>	T2	Probable	7 7 2001
American Crow	<i>Corvus brachyrhynchos</i>	FL	Confirmed	6 29 2001
Fish Crow	<i>Corvus ossifragus</i>	T2	Probable	7 25 2001
Horned Lark	<i>Eremophila alpestris</i>	X1	Possible	2 29 2001
Purple Martin	<i>Progne subis</i>	FY	Confirmed	7 23 2001
Tree Swallow	<i>Tachycineta bicolor</i>	NY	Confirmed	7 20 2002
No. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	X1	Possible	6 29 2001
Bank Swallow	<i>Riparia riparia</i>	X1	Possible	7 15 2001
Barn Swallow	<i>Hirundo rustica</i>	FL	Confirmed	6 29 2001

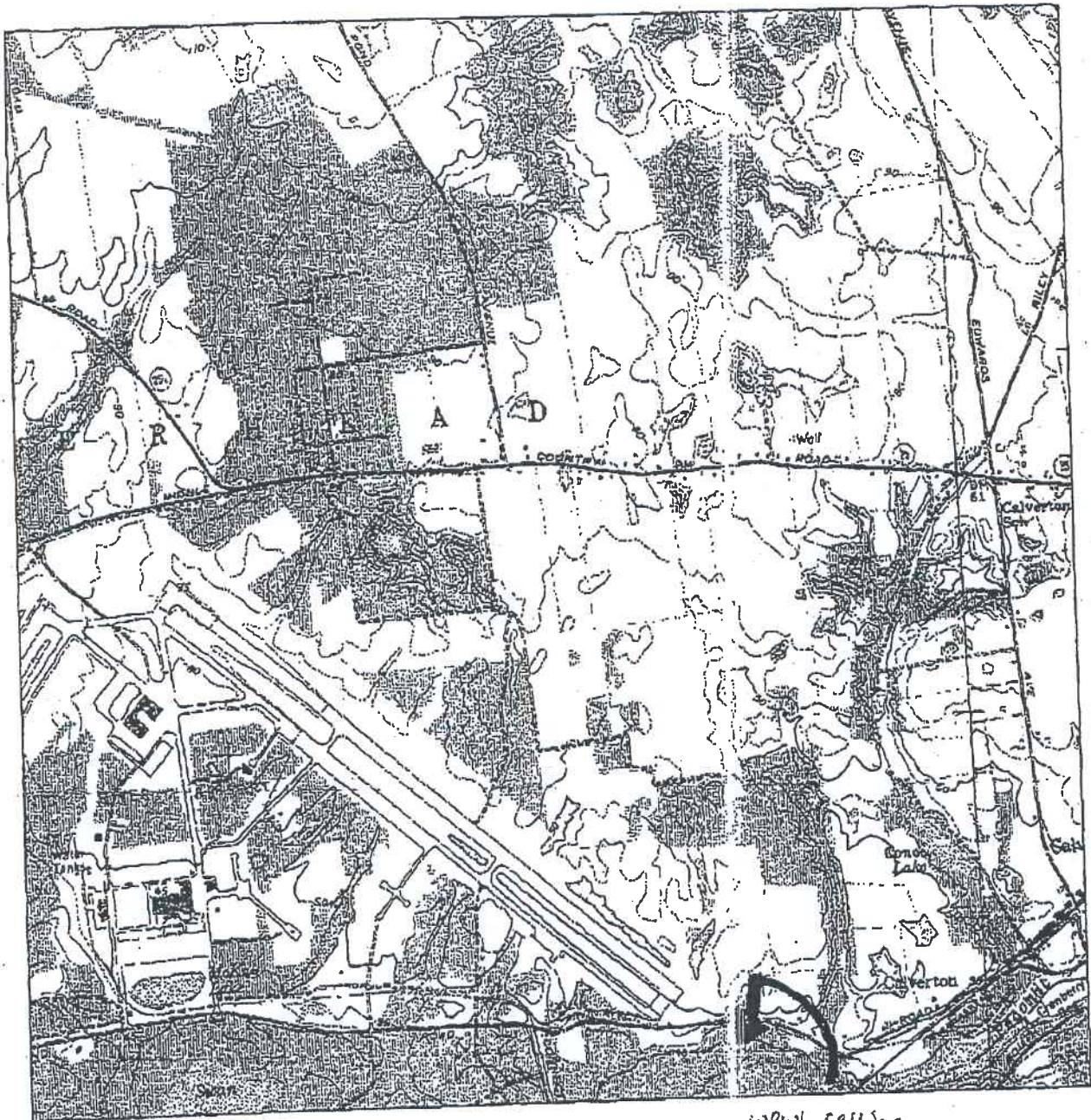
Black-capped Chickadee	Poecile atricapillus	FL	Confirmed	7 7 2001
Tufted Titmouse	Baeolophus bicolor	FY	Confirmed	6 21 2001
Carolina Wren	Thryothorus ludovicianus	T2	Probable	7 7 2001
House Wren	Troglodytes aedon	FL	Confirmed	6 29 2001
Blue-gray Gnatcatcher	Poliophtila caerulea	P2	Probable	6 29 2001
Eastern Bluebird	Sialia sialis	NE	Confirmed	5 16 2002
Veery	Catharus fuscescens	T2	Probable	7 15 2001
Hermit Thrush	Catharus guttatus	T2	Probable	5 15 2003
American Robin	Turdus migratorius	FL	Confirmed	7 7 2001
Gray Catbird	Dumetella carolinensis	FL	Confirmed	7 15 2001
Northern Mockingbird	Mimus polyglottos	FY	Confirmed	6 29 2001
Brown Thrasher	Toxostoma rufum	T2	Probable	7 15 2001
European Starling	Sturnus vulgaris	FY	Confirmed	5 16 2002
Cedar Waxwing	Bombycilla cedrorum	P2	Probable	6 16 2001
Blue-winged Warbler	Vermivora pinus	FL	Confirmed	6 30 2002
Yellow Warbler	Dendroica petechia	T2	Probable	6 29 2001
Pine Warbler	Dendroica pinus	T2	Probable	7 7 2001
Prairie Warbler	Dendroica discolor	FY	Confirmed	6 16 2001
Black-and-white Warbler	Mniotilta varia	T2	Probable	5 25 2002
Ovenbird	Selurus aurocapilla	T2	Probable	6 29 2001
Common Yellowthroat	Geothlypis trichas	FY	Confirmed	7 23 2001
Scarlet Tanager	Piranga olivacea	P2	Probable	6 29 2001
Eastern Towhee	Pipilo erythrophthalmus	FL	Confirmed	6 29 2001
Chipping Sparrow	Spizella passerina	FY	Confirmed	6 29 2001
Field Sparrow	Spizella pusilla	FY	Confirmed	6 29 2001
Vesper Sparrow	Poocetes gramineus	NE	Confirmed	6 16 2001
Savannah Sparrow	Passerculus sandwichensis	S2	Probable	6 16 2001
Grasshopper Sparrow	Ammodramus savannarum	FY	Confirmed	7 15 2001
Song Sparrow	Melospiza melodia	FY	Confirmed	6 29 2001
Swamp Sparrow	Melospiza georgiana	T2	Probable	7 23 2001
Northern Cardinal	Cardinalis cardinalis	FL	Confirmed	6 29 2001
Blue Grosbeak	Passerina caerulea	FY	Confirmed	6 30 2002
Indigo Bunting	Passerina cyanea	T2	Probable	7 7 2001
Red-winged Blackbird	Agelaius phoeniceus	FY	Confirmed	6 29 2001
Eastern Meadowlark	Sturnella magna	FY	Confirmed	7 15 2001
Common Grackle	Quiscalus quiscula	FL	Confirmed	6 16 2001
Brown-headed Cowbird	Molothrus ater	P2	Probable	6 16 2001
Orchard Oriole	Icterus spurius	ON	Confirmed	6 21 2001
Baltimore Oriole	Icterus galbula	FL	Confirmed	7 7 2001
House Finch	Carpodacus mexicanus	P2	Probable	7 7 2001
American Goldfinch	Carduelis tristis	P2	Probable	6 16 2001
House Sparrow	Passer domesticus	ON	Confirmed	7 7 2001

NYS Breeding Bird Atlas Data 2000-05 Block 6753D

Common Name	Scientific Name	Breeding Code	Breeding Category	Date
Canada Goose	<i>Branta canadensis</i>	NE	Confirmed	5 3 2003
Wood Duck	<i>Aix sponsa</i>	NE	Confirmed	5 28 2003
Mallard	<i>Anas platyrhynchos</i>	P2	Probable	5 25 2002
Wild Turkey	<i>Meleagris gallopavo</i>	P2	Probable	6 8 2002
Northern Bobwhite	<i>Colinus virginianus</i>	NY	Confirmed	9 30 2003
Green Heron	<i>Butorides virescens</i>	X1	Possible	5 25 2002
Northern Harrier	<i>Circus cyaneus</i>	T2	Probable	6 8 2002
Cooper's Hawk	<i>Accipiter cooperii</i>	NY	Confirmed	5 25 2004
Red-tailed Hawk	<i>Buteo jamaicensis</i>	T2	Probable	6 8 2002
American Kestrel	<i>Falco sparverius</i>	T2	Probable	5 25 2002
Virginia Rail	<i>Rallus limicola</i>	X1	Possible	6 16 2003
Killdeer	<i>Charadrius vociferus</i>	D2	Probable	6 8 2002
American Woodcock	<i>Scolopax minor</i>	D2	Probable	2 18 2002
Rock Pigeon	<i>Columba livia</i>	X1	Possible	7 1 2002
Mourning Dove	<i>Zenaida macroura</i>	FL	Confirmed	7 2 2005
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	FY	Confirmed	6 25 2003
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	T2	Probable	7 2 2005
Great Horned Owl	<i>Bubo virginianus</i>	T2	Probable	2 15 2002
Whip-poor-will	<i>Caprimulgus vociferus</i>	T2	Probable	5 15 2003
Chimney Swift	<i>Chaetura pelagica</i>	T2	Probable	6 14 2003
Belted Kingfisher	<i>Ceryle alcyon</i>	D2	Probable	3 25 2003
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	X1	Possible	5 4 2004
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	T2	Probable	5 15 2003
Downy Woodpecker	<i>Picoides pubescens</i>	FY	Confirmed	7 2 2005
Hairy Woodpecker	<i>Picoides villosus</i>	P2	Probable	5 2 2002
Northern Flicker	<i>Colaptes auratus</i>	S2	Probable	6 8 2002
Eastern Wood-Pewee	<i>Contopus virens</i>	T2	Probable	5 25 2002
Willow Flycatcher	<i>Empidonax traillii</i>	X1	Possible	6 14 2003
Eastern Phoebe	<i>Sayornis phoebe</i>	FY	Confirmed	5 27 2002
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	FY	Confirmed	7 2 2005
Eastern Kingbird	<i>Tyrannus tyrannus</i>	FL	Confirmed	7 2 2005
Yellow-throated Vireo	<i>Vireo flavifrons</i>	FL	Confirmed	7 2 2005
Red-eyed Vireo	<i>Vireo olivaceus</i>	S2	Probable	6 30 2002
Blue Jay	<i>Cyanocitta cristata</i>	FY	Confirmed	7 2 2005
American Crow	<i>Corvus brachyrhynchos</i>	FY	Confirmed	5 25 2002
Fish Crow	<i>Corvus ossifragus</i>	P2	Probable	3 23 2003
Horned Lark	<i>Eremophila alpestris</i>	P2	Probable	6 8 2002
Purple Martin	<i>Progne subis</i>	ON	Confirmed	5 25 2002
Tree Swallow	<i>Tachycineta bicolor</i>	NE	Confirmed	5 25 2002
Barn Swallow	<i>Hirundo rustica</i>	ON	Confirmed	6 30 2002
Black-capped Chickadee	<i>Poecile atricapillus</i>	FL	Confirmed	6 25 2003
Tufted Titmouse	<i>Baeolophus bicolor</i>	FL	Confirmed	7 2 2005
White-breasted Nuthatch	<i>Sitta carolinensis</i>	FL	Confirmed	5 25 2002
Carolina Wren	<i>Thryothorus ludovicianus</i>	X1	Possible	5 7 2002
House Wren	<i>Troglodytes aedon</i>	X1	Possible	5 25 2002
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	FY	Confirmed	6 14 2003

Eastern Bluebird	<i>Sialia sialis</i>	NY	Confirmed	5	7 2002
Hermit Thrush	<i>Catharus guttatus</i>	T2	Probable	5	3 2003
Wood Thrush	<i>Hylocichla mustelina</i>	T2	Probable	7	2 2005
American Robin	<i>Turdus migratorius</i>	FY	Confirmed	5	25 2002
Gray Catbird	<i>Dumetella carolinensis</i>	FY	Confirmed	6	25 2003
Northern Mockingbird	<i>Mimus polyglottos</i>	NE	Confirmed	5	25 2002
Brown Thrasher	<i>Toxostoma rufum</i>	FY	Confirmed	6	8 2002
European Starling	<i>Sturnus vulgaris</i>	ON	Confirmed	5	7 2002
Cedar Waxwing	<i>Bombycilla cedrorum</i>	NE	Confirmed	6	8 2002
Blue-winged Warbler	<i>Vermivora pinus</i>	T2	Probable	5	7 2002
Northern Parula	<i>Parula americana</i>	X1	Possible	6	7 2004
Pine Warbler	<i>Dendroica pinus</i>	FY	Confirmed	6	25 2003
Prairie Warbler	<i>Dendroica discolor</i>	S2	Probable	7	1 2002
Black-and-white Warbler	<i>Mniotilta varia</i>	X1	Possible	5	25 2002
Ovenbird	<i>Seiurus aurocapilla</i>	T2	Probable	5	25 2002
Common Yellowthroat	<i>Geothlypis trichas</i>	S2	Probable	6	14 2003
Scarlet Tanager	<i>Piranga olivacea</i>	T2	Probable	5	25 2002
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	FL	Confirmed	6	25 2003
Chipping Sparrow	<i>Spizella passerina</i>	FY	Confirmed	6	20 2002
Field Sparrow	<i>Spizella pusilla</i>	FY	Confirmed	6	20 2002
Vesper Sparrow	<i>Poocetes gramineus</i>	FY	Confirmed	6	20 2002
Savannah Sparrow	<i>Passerculus sandwichensis</i>	P2	Probable	5	15 2003
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	FY	Confirmed	6	30 2002
Song Sparrow	<i>Melospiza melodia</i>	T2	Probable	7	2 2005
Northern Cardinal	<i>Cardinalis cardinalis</i>	FL	Confirmed	6	14 2003
Indigo Bunting	<i>Passerina cyanea</i>	S2	Probable	6	30 2002
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	FY	Confirmed	6	14 2003
Eastern Meadowlark	<i>Sturnella magna</i>	T2	Probable	5	7 2002
Common Grackle	<i>Quiscalus quiscula</i>	FY	Confirmed	5	25 2002
Brown-headed Cowbird	<i>Molothrus ater</i>	FL	Confirmed	7	2 2005
Orchard Oriole	<i>Icterus spurius</i>	FY	Confirmed	7	2 2005
Baltimore Oriole	<i>Icterus galbula</i>	FY	Confirmed	7	2 2005
House Finch	<i>Carpodacus mexicanus</i>	P2	Probable	3	23 2002
American Goldfinch	<i>Carduelis tristis</i>	B2	Probable	7	2 2005
House Sparrow	<i>Passer domesticus</i>	ON	Confirmed	6	25 2003

Breeding Bird Atlas Block 6853C



1 Mile

Scale is approximately 1:25,000, but may vary as your perspective.

FEU-K-5203

WPWL 25 May 02

- NHP ✓ ESU

3284641907

(Describe the breeding behavior of the bird(s))

FEMALE HARRIER HUNTING OVER
WETLAND

(Provide additional comments or details about this observation)

List other observers (include address and phone number)

SUE FEUSTEL

Signature of Regional Coordinator supporting report: [Signature]

Region: 10

Date: 7/27/02

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FRI-6-3530

Date of Observation:

M M D D

Year

6 08 2002

Species Name (use common name, e.g. Ruddy Duck)

NORTHERN HARRIER

Breeding Code Block Number (e.g. 4891A)

(e.g.

T.FY)

62530

Observer name, address and phone number:

BERTA FORTZ

290 W 3RD ST.

DEER PARK NY 11750

Date form was completed:

9/16/02

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

County: SUFFOLK

Town: RIVERHEAD

GPS Coordinates (if available):

OLD BRUMMAN AIRPORT (WEST SIDE)

Provide a detailed habitat description.

GRASSY FIELDS BORDERING RUNWAYS OF AIRPORT

3284642907

Describe the breeding behavior of the bird(s).

FEMALE FORAGING OVER FIELDS.

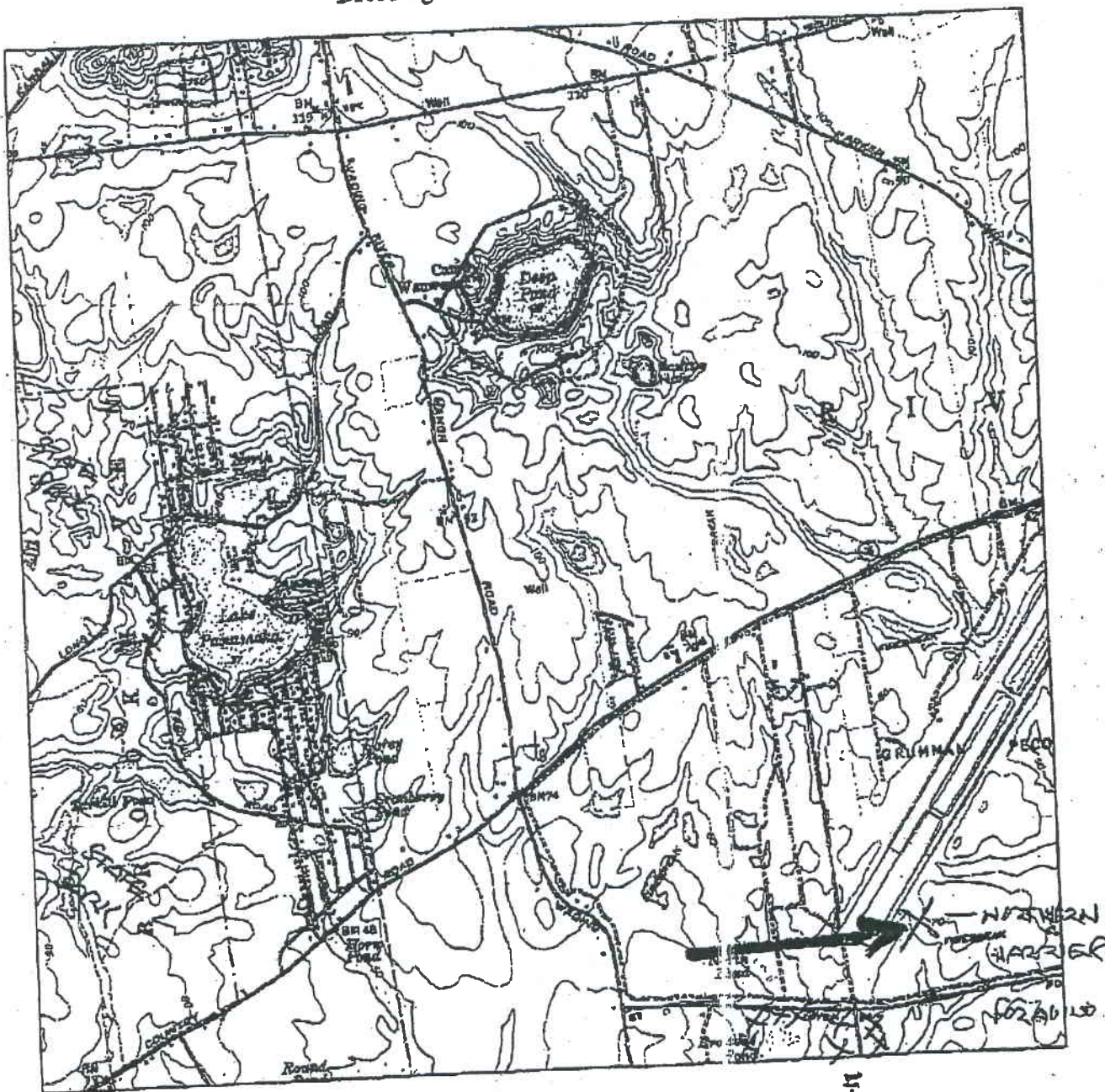
Provide additional comments or details about this observation.

List other observers (include address and phone number).

Signature of Regional Coordinator supporting report: *[Signature]*Region: 10Date: 9/16/02

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!

Breeding Bird Atlas Block 6753D



FRI-G-3530
NOHA 8 JUN 02
_NHO _ESL



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FEU-K-3020

Date of Observation:

M M D D

Year

6 20 200 2

Species Name (use common name, e.g. Ruddy Duck)

VESPER SPARROW

Breeding Code

Block Number (e.g. 4891A)

(e.g. FY T, FY)

6753D

Observer name, address and phone number:

Ken Feustel

10 41 Belton Rd.

Babylon, NY 11702

(631) 669-0951

Date form was completed:

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

County: SUFFOLK

Town: RIVERHEAD

GPS Coordinates (if available):

S/W CORNER OF INTERSECTION OF LING RD. & GRAMMAN BLVD.

Provide a detailed habitat description:

OLD FIELD HABITAT WITH ANDROPYRON GRASSES AND SCATTERED BLACK CHERRY SPRAWLS.

3284661907

Describe the breeding behavior of the bird(s).

ADULT WITH ADG FOR YOUNG.

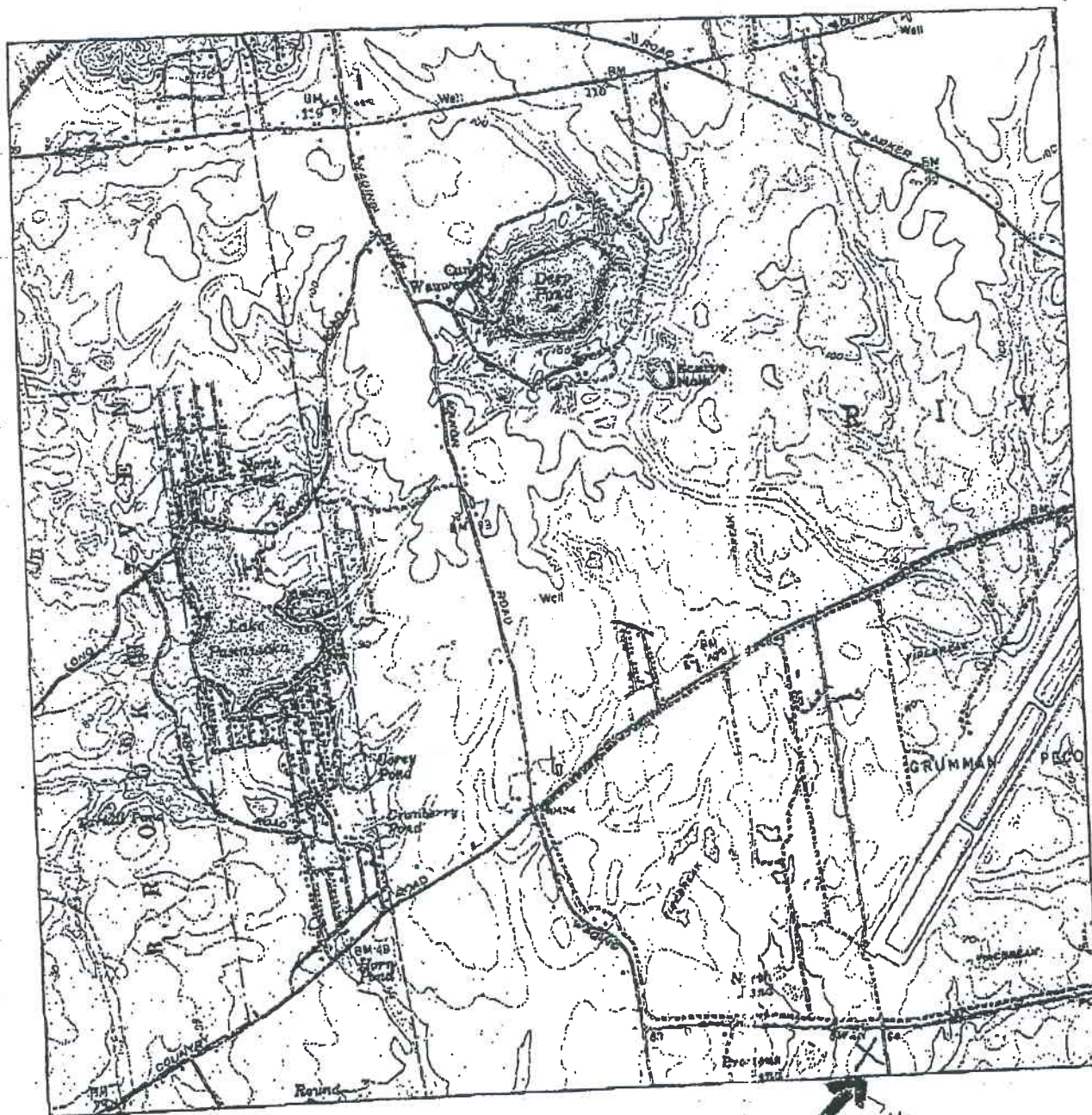
Provide additional comment or details about this observation.

List other observers (include address and phone number).

Signature of Regional Coordinator supporting report: *[Signature]*Region: 10Date: 10/30/02

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!

Breeding Bird Atlas Block 6753D



FEU-K-3020
VESP 20 Jun 02
✓ESU - NHP

Scale is approximately 1:25,000, but may vary on your printer.



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FEU - 12 - 5503

Date of Observation:

M M

D D

Year

5 15 200 3

Observer name, address and phone number:



Ken Feustel
41 Belton Road
Babylon, NY 11702

Species Name (use common name, e.g. Ruddy Duck)

WHIPPOORWILL

Breeding Code

Block Number (e.g. 489 LA)

1

6753D

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

BROOKHAVEN STATE PARK

GPS Coordinates (if available):

Provide a detailed habitat description:

PITCH PINE/ OAK WOODS

9880362613

Describe the breeding behavior of the birds:

CAJON BIRD

Provide additional comments or details about this observation.

List other observers (include address and phone number)

Signature of Regional Coordinator supporting report:



Date 7/23/08

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!

Breeding Bird Atlas Block 6753D



1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

FEU-K-5203

WPIW 15 May 03

-NHP ✓ESU



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

MAY - R - 9186

Date of Observation:

M M D D

Year

06 14 2001

Species Name (use common name, e.g. Ruddy Duck)

BLUE GROSBELK

Breeding Code Block Number (e.g. 4891A)

D T.FN 6853C

Observer name, address and phone number:

BOB MAY

49 PATCHOGUE DR.

TEL. (631) 744-3535

ROCKY POINT NY 11778

Date form was completed: OCT 5 2001

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

County: SUFFOLK

Town: CALVERTON TOWN OF RIVERHEAD

GPS Coordinates (if available):

NOTE: THIS IS THE SAME AREA WHERE THERE WAS DOCUMENTED BREEDING IN MAY/JUNE OF 1995. FOR DETAILS OF THAT BREEDING, REFER TO THE "KING BIRD" VOL. 49, NO. 3 - SEP. 1999 - BIROL, ORMAN, 1999, "THE FIRST DOCUMENTED BREEDING OF BLUE GROSBELK ON LONG ISLAND AND SURROUNDING NEW YORK STATE."

Provide a detailed habitat description:

THE AREA WHERE THE BIRDS WERE SEEN WAS BEHIND THE OLD M.P.J. WARR HOUSE ON RT. 25 IN CALVERTON, N.Y. TO THE EAST IS A SUB FARM FIELD AND AN AREA OF SHORT GRASSES USED BY MODEL AIR PLANE CLUBS. TO THE WEST IS A PLUMBO FARM FIELD. THE AREA IN BETWEEN, WHERE A MALE & FEMALE WERE OBSERVED, HAS A VARIETY OF FLORA: GRASSES, GOLDEN ROD, SOME RED CEDARS AND BLACK CHERRY AND PITCH PINE, MUGWORT, POISON IVY, BAY BERRY, AND OTHER SHORT PLANTS.

5939642906

3284641907

Describe the breeding behavior of the bird(s).

THE BIRDS WERE FLYING ABOUT THE AREA. THE MALE, WHEN FIRST SEEN, WAS CALLING FROM THE PERCH OF A PINE TREE. NO OTHER BEHAVIOR WAS NOTED ON THE TWO VISITS TO THE SITE.

I BELIEVE JIM CLINTON SAW THE BIRD(S) ON

Provide additional comments or details about this observation.

TWO VISITS WERE MADE TO THE SITE. ON THE FIRST VISIT, JUNE 14, 2001, THE MALE AND FEMALE WERE SEEN. ON VISIT TWO, JUNE 16, 2001, A MALE WAS SEEN IN SIMILAR HABITAT $\frac{1}{4}$ MILE WEST OF THE ORIGINAL SIGHTING.

OTHER BIRDS SEEN IN THE AREA WERE NESTING: CHESAPEAKE WAXWINGS, PLUS AMER. ROBIN, CHESAPEAKE SPARROW, VESPER SPARROW, GRACKLES, CATBIRD, COMMON YELLOUTHROAT, AMER. COLOFINCH, AND CALLING REDWINGS. ON VISIT TWO A PRAIRIE WARBLER WAS OBSERVED FEEDING A FLEDGLING IN SHORT GRASSES.

List other observers (include address and phone number).

JIM CLINTON - 1000 WEST, WADING RIVER, NY 11792-1237
TEL. (631) 529-8370
DAN HEDLAND - MAPLE RD., ROCKY POINT, NY 11775 (631) 744-6125

Signature of Regional Coordinator supporting report:

Region: 10

Date: 10/9/01

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FEB - 12 - 5 2003

Date of Observation:

MM DD Year

6 29 2002

Species Name (use common name, e.g. Ruddy Duck)

NORTHERN HARRIER

Breeding Code Block Number (e.g. 4891A)

(e.g.)
X T.FN 6853C

Observer name, address and phone number:



Ken Feustel
41 Belton Road
Babylon, NY 11702

Date form was completed:

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

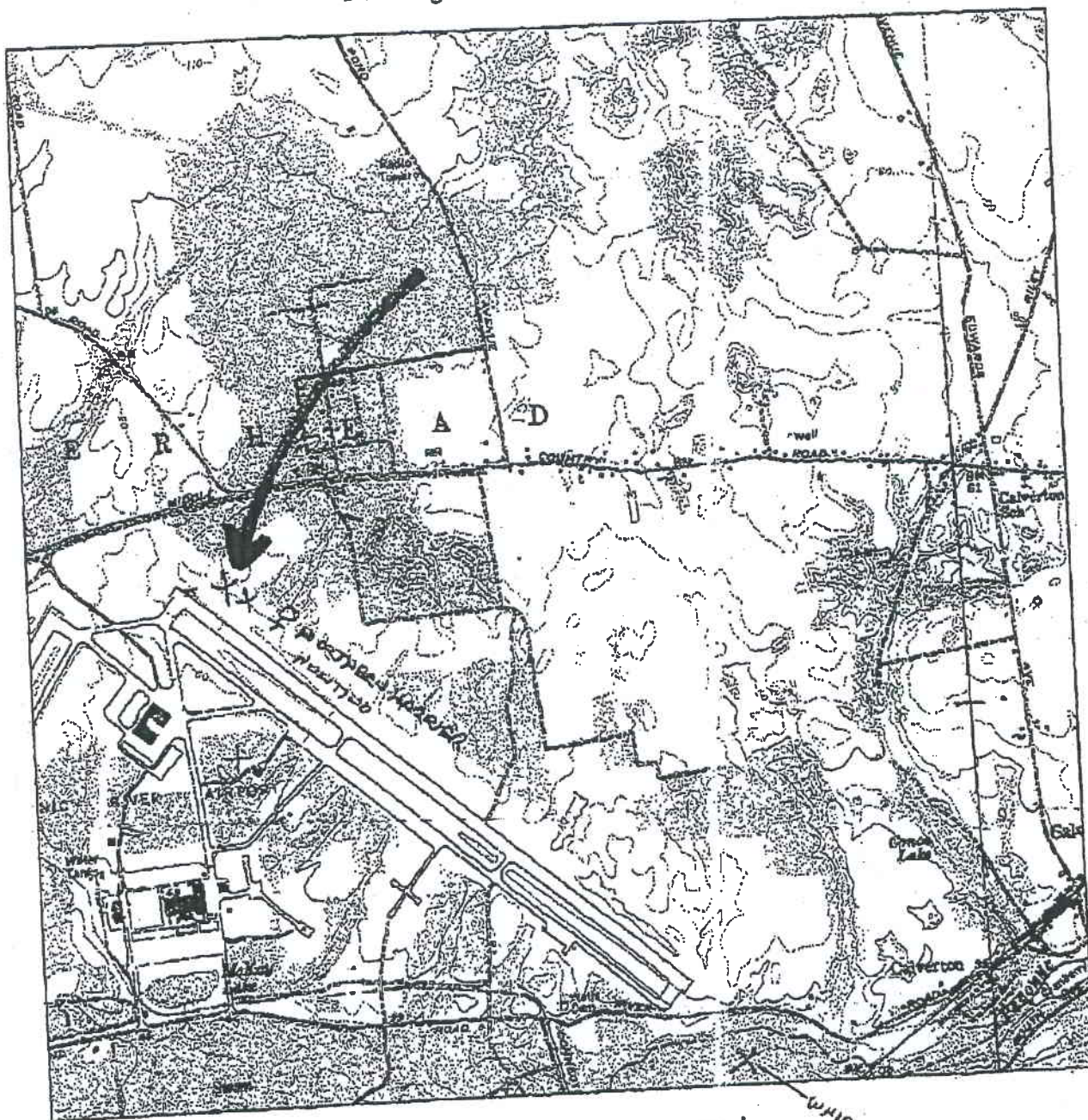
County: SUFFOLK Town: CALVERTON

GPS Coordinates (if available): _____

Provide a detailed habitat description:

GRASSLAND AT CLOSED AIRPORT (BROWN PROPERTY)

Breeding Bird Atlas Block 6853C



1 Mile
Scale is approximately 1:25,000, but may vary on your printer.

FEU-K-5203
29 June 02 NHTA
-NHTP LESU

WHIPPOREWILL
CALLING



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J1234)

FEU-11-5203

Date of Observation:

M M D D

Year

5 25 2002

Species Name (use common name, e.g. Ruddy Duck)

WHIPPOORWILL

Breeding Code Block Number (e.g. 4891A)

(e.g. T, FY) L853C

Observer name, address and phone number:



Ken Feustel
41 Belton Road
Babylon, NY 11702

Date form was completed:

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

County:

SUFFOLK

Town:

CALVERTON

GPS Coordinates (if available):

Provide a detailed habitat description

PITON PINE-OAK WOODS ADJACENT TO PECQUER RIVER.

3284641907

Describe the breeding behavior of the bird(s)

CALLING BIRD AT SUNRISE

Provide additional comments or details about this observation.

List other observers (include address and phone number)

SEE FEUTEL

Signature of Regional Coordinator supporting report: [Signature]

Region: 10

Date: 7/27/02

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FEU - K - 5 2 0 3

Date of Observation:

M M D D

Year

6 1 5 200 3

Species Name (use common name, e.g. Ruddy Duck)

COMMON NIGHTHAWK

Breeding Code Block Number (e.g. 4891A)

(e.g. T.FY) X 1 6 8 5 3 C

Observer name, address and phone number:

Ken Felstei
41 Belton Rd.
Babylon, NY 11702
(631) 669-0957

Date form was completed: July 03

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

County: _____ Town: _____

GPS Coordinates (if available): _____

Oh's Pine Preserve @ NE corner of intersection
of NYS Routes 25A and 25.

Provide a detailed habitat description:

DFS

3284641907

Describe the breeding behavior of the bird(s).

Provide additional comments or details about this observation.

List other observers (include address and phone number).

Signature of Regional Coordinator supporting report: _____

Region: _____ Date: _____

*Send this form and accompanying map to your Regional Coordinator.
THANK YOU!*



Notable Species Form

New York State Breeding Bird Atlas 2000

To ensure accuracy, please print in capital letters and avoid contact with the edge of the box. Do not use pencil, red ink or felt tip pen. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Volunteer ID (e.g. SMI-J-1234)

FED - R - 5203

Date of Observation:

Mo - M D - D Year

L 15 2003

Observer name, address and phone number:



Ken Faustel
41 Belton Road
Babylon, NY 11702

Species Name (use common name, e.g. Ruddy Duck)

COMMON NIGHT HAWK

Breeding Code Block Number (e.g. 4891A)

X 6853C

INSTRUCTIONS: Please submit this completed form and a map indicating the location of the observation to your Regional Coordinator. See attached page.

Site name and location:

OTIS PIKE COUNTY PRESERVE, LAWTON

GPS Coordinates (if available):

Provide a detailed habitat description:

OPEN FIELDS ADJACENT TO APEX 1000000

9880362613

Describe the breeding behavior of the bird(s).

BIRD FLYING AT DUSK

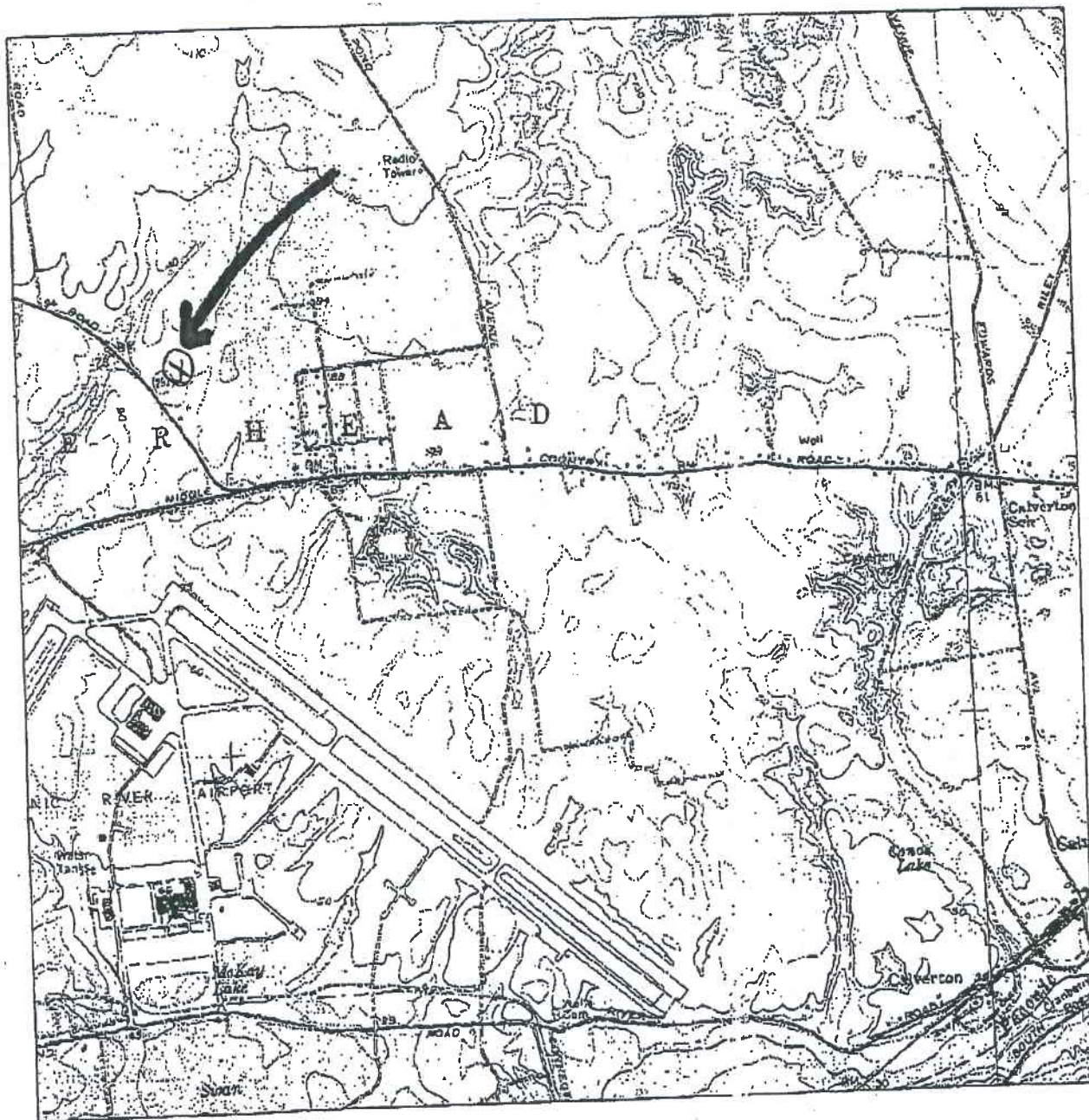
Provide additional comments or details about this observation.

List other observers (include address and phone number)

Signature of Regional Coordinator supporting report: [Signature] Date 7/28/02

Send this form and accompanying map to your Regional Coordinator.
THANK YOU!

Breeding Bird Atlas Block 6853C



1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

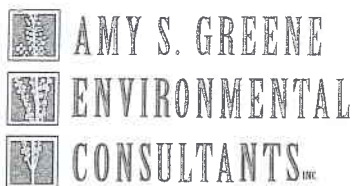
Feu-k-5203

CONI 15 Jun 03

✓ ESU — NHP

APPENDIX D

SURVEY DATA SHEETS



October 21, 2010

Riverhead Resorts, LLC
c/o Weber Law Group, LLP
201 North Service Road, Suite 300
Melville, NY 11747-3126
Attn: Mitchel Pally

VIA OVERNIGHT MAIL

RE: **Grassland Bird Survey Data Sheets**
Riverhead - EPCAL Grasslands
Calverton, NY
ASGECI Project # 2968

Dear Mr. Pally:

As requested enclosed please find three copies of the Grassland Breeding Bird Survey data sheets for your use.

In addition I have included the daily totals for my winter grassland bird survey work and a list of all species observed on the site while performing the both surveys.

During the breeding bird surveys protocols adapted from the May 14, 2008 letter from Dan Rosenblatt of the NYS Department of Environmental Conservation (NYDEC) to Mr Cardinal of the Town of Riverhead (Riverhead) were utilized. These methodologies are as follows:

- Although the NYDEC requested weekly breeding bird surveys to begin during March, Mr. Rosenblatt's letter was not provided by the NYDEC until May 14, 2008. At that time weekly surveys began and lasted throughout the requested period. Prior to the letter with the survey protocols surveys were conducted during optimal weather once a month (March and April).
- Count locations were plotted approximately 200 meters apart, totaling forty survey points throughout the site.
- Each survey location was assigned an identification number and passively searched utilizing auditory and visual methods for five minute periods. All bird species encountered will be documented with emphasis on the targeted grassland birds.
- Diurnal point counts included passive, auditory and visual surveys one hour before sunrise and continued until no later than 11:00 am (1100 hours).

- Nocturnal point counts conducted the night prior to the diurnal counts and utilized passive, auditory and visual surveys, one hour prior to sunset and continuing until all forty point counts were finished.
- If required, after the five minute period, survey techniques such as pishing, squeaking and whistling screech owl imitations will be utilized to confirm visually rare birds which are only heard by ear. All forms of identification will be utilized including visual, territorial male songs, call notes and chip notes.
- All surveys were conducted on days with optimal weather conditions (not during rain events or during strong winds).

Species Notes:

- ❖ The red-headed woodpecker that was observed on June 6, 2008 was thought to be from the small colony of red-headed woodpeckers located on a nearby golf course. The woodpecker was observed foraging on the ground and then flew up above the trees to the southeast toward the colony. No other red-headed wood peckers were observed during the study.
- ❖ Long-eared owls were heard calling from offsite along Grumman Boulevard (River Road) and was never observed on the site. These birds roost/nest in forested areas dominated by conifers, like the pitch pine trees which dominate the local forests. The long-eared owl utilizes open fields (early successional) and marshes along with the forests for foraging. No long-eared owls were observed utilizing the Riverhead Resorts section of EPCAL during both winter and breeding season surveys.
- ❖ Whip-poor-wills were heard from the forests surrounding the open fields and runways of EPCAL. High counts of seven singling males were heard on June 12 and June 23, 2008.
- ❖ Vesper sparrow was heard from survey point 3 on May 21, 2008 singing from an offsite field on the south side of Line Road. After the survey was complete on May 21 the field from which the vesper sparrow was singing was inspected. The bird continued to sing and was observed perched upon a shrub. The bird was never encountered again during the point count surveys although it was observed and heard in the field on the south side of Line Road during subsequent visits after point count surveys ended for the day.
- ❖ A male Blue Grosbeak was heard from numerous survey points on the western end of the site singing from the field on the south side of Line Road near its intersection with Grumman Boulevard on May 21, May 30 and June 6. This bird never entered the EPCAL site.
- ❖ Two pairs of upland plover with chicks were found on consecutive weeks, June 16 and June 24. The pair found on June 16 was leading a group of five approximately two week old chicks through the high grass. They were discovered when an adult was spooked and flew onto the runway. The second pair was discovered on the far eastern end of the site leading a set of seven approximately four day old chicks. This family group was communicating via "chuck" sounds; while the family found the week prior we silent except when the adult was spooked and flew onto the runway. There were no male upland sandpipers heard singing territorial songs on the Riverhead Resorts portion of the EPCAL site during any of the breeding season surveys.

- ❖ Grasshopper sparrow, Eastern meadowlark and Savannah sparrow were well represented on the EPCAL site. Estimates for number of pairs utilizing the site are as follows:
 - Grasshopper sparrow - 88 pairs
 - Savannah sparrow - 57 pairs
 - Eastern meadowlark- 79 pairs
- ❖ A male Northern harrier was observed foraging on the last survey of the study in mid-August. The bird was seen both during the first hour of the nocturnal survey and after sun up during the diurnal survey. Both sightings were of the same bird based upon coloration of the individual. This bird is thought to be an individual that may have been an early migrant or a male on a postnuptial flight.
- ❖ Birds that were not encountered although intensely listened and searched for during the breeding bird surveys include:
 - Bobolink
 - Sedge wren
 - Short-eared owl
 - Vesper sparrow
 - Dicksissel
 - Henslow's sparrow

The winter surveys documented that the site is being utilized by healthy winter populations of northern harrier with a high count of 17 observed on 3/26/2008; American kestrel with a high count of 14 observed on 2/28/2008; short-eared owl with a high count of 10 observed on 3/13/2008; horned lark with a high count of 21 observed on 2/28/2008; savannah sparrow with a high count of 16 observed on 2/27/2008 and eastern meadowlark with a high count of 114 observed on 3/14/2008.

Also observed during the winter surveys were rough-legged hawk with 3 being seen on 3/25/2008; long-eared owl with one being found on 3/5/2008 and a northern shrike found on 3/25/2008.

Please feel free to contact me with any comments or questions about this letter and/or the data sheets at your convenience at (908) 788-9676 (x22) or Tom Brodde, Project Director at extension 15.

Sincerely,
AMY S. GREENE ENVIRONMENTAL CONSULTANTS, INC.



Scott Angus
Project Manager/Wildlife Biologist

SA/tsb

APPENDIX E

COMPREHENSIVE LIST OF BIRD SPECIES OBSERVED

**BIRD SPECIES OBSERVED WHILE CONDUCTING AVIAN GRASSLAND BIRD
SURVEYS ON RIVERHEAD RESORTS, CALVERTON, LONG ISLAND, NY**

Scientific Name

Ardea herodias
Casmerodius albus
Egretta thula
Butorides striatus
Branta canadensis
Aix sponsa
Coragyps atratus
Cathartes aura
Pandion haliaetus
Haliaeetus leucocephalus
Circus cyaneus
Accipiter striatus
Accipiter Cooperii
Buteo platypterus
Buteo jamaicensis
Buteo lagopus
Falco sparverius
Falco columbarius
Falco peregrinus
Meleagris gallopavo
Charadrius vociferus
Bartramia longicauda
Philohela minor
Columba livia
Zenaida macroura
Coccyzus erythrophthalmus
Coccyzus americanus
Tyto alba
Otus asio
Bubo virginianus
Asio otus
Asio flammeus
Aegolius acadicus
Chordeiles minor
Caprimulgus carolinensis
Caprimulgus vociferus
Chaetura pelagica
Archilochus colubris
Ceryle alcyon
Melanerpes erythrocephalus
Melanerpes carolinus

Common Name

great blue heron
great egret
snowy egret
green-backed heron
Canada goose
wood duck
black vulture
turkey vulture
osprey
bald eagle
Northern harrier
sharp-shinned hawk
Cooper's hawk
broad-winged hawk
red-tailed hawk
rough-legged hawk
American kestrel
merlin
peregrine falcon
eastern wild turkey
killdeer
upland sandpiper
American woodcock
rock dove
mourning dove
black-billed cuckoo
yellow-billed cuckoo
common barn owl
eastern screech owl
great horned owl
long-eared owl
short-eared owl
northern saw-whet owl
common nighthawk
chuck-will's-widow
whip-poor-will
chimney swift
ruby-throated hummingbird
belted kingfisher
red-headed woodpecker
red-bellied woodpecker

LIST OF BIRD SPECIES - Continued

Scientific Name

Picoides pubescens
Picoides villosus
Colaptes auratus
Contopus virens
Empidonax traillii
Empidonax minimus
Sayornis phoebe
Myiarchus crinitus
Tyrannus Tyrannus
Eremophila alpestris
Progne subis
Tachycineta bicolor
Stelgidopteryx serripennis
Riparia riparia
Hirundo pyrrhonota
Hirundo rustica
Cyanocitta cristata
Corvus brachyrhynchos
Corvus ossifragus
Paues atricapillus
Parus bicolor
Sitta canadensis
Sitta carolinensis
Certhia americana
Thryothorus ludovicianus
Troglodytes aedon
Poliophtila caerulea
Sialia sialis
Catharus fuscescens
Catharus guttatus
Hylocichla mustelina
Turdus migratorius
Dumetella carolinensis
Mimus polyglottos
Toxostoma rufum
Bombycilla cedrorum
Sturnus vulgaris
Vireo griseus
Vireo gilvus
Vireo olivaceus
Vermivora pinus

Common Name

downy woodpecker
hairy woodpecker
yellow-shafted flicker
eastern wood pewee
willow flycatcher
least flycatcher
eastern phoebe
great crested flycatcher
eastern kingbird
horned lark
purple martin
tree swallow
northern rough-winged swallow
bank swallow
cliff swallow
barn swallow
blue jay
American crow
fish crow
black-capped chickadee
tufted titmouse
red-breasted nuthatch
white-breasted nuthatch
brown creeper
Carolina wren
house wren
blue-gray gnatcatcher
eastern bluebird
veery
hermit thrush
wood thrush
American robin
catbird
northern mockingbird
brown thrasher
cedar waxwing
European starling
white-eyed vireo
warbling vireo
red-eyed vireo
blue-winged warbler

LIST OF BIRD SPECIES - Continued

Scientific Name

Parula americana
Dendroica petechia
Dendroica pensylvanica
Dendroica pinus
Dendroica discolor
Miniotilta varia
Setophaga ruticilla
Seiurus aurocapillus
Geothlypis trichas
Icteria virens
Piranga olivacea
Cardinalis cardinalis
Pheucticus ludovicianus
Guiraca caerulea
Passerina cyanea
Pipilo erythrophthalmus
Spizella passerina
Spizella pusilla
Pooecetes gramineus
Passerculus sandwichensis
Ammodramus savannarum
Melospiza melodia
Melospiza georgiana
Agelaius phoeniceus
Sturnella magna
Quiscalus quiscula
Molothrus ater
Icterus spurius
Icterus galbula
Carpodacus mexicanus
Carduelis tristis
Passer domesticus

Common Name

northern parula
yellow warbler
chestnut-sided warbler
pine warbler
prairie warbler
black and white warbler
American redstart
ovenbird
common yellowthroat
yellow-breasted chat
scarlet tanager
northern cardinal
rose-breasted grosbeak
blue grosbeak
indigo bunting
rufous-sided towhee
chipping sparrow
field sparrow
vesper sparrow
Savannah sparrow
grasshopper sparrow
song sparrow
swamp sparrow
red-winged blackbird
eastern meadowlark
common grackle
brown-headed cowbird
orchard oriole
northern oriole
house finch
American goldfinch
house sparrow

APPENDIX F

RESUMES OF SURVEYORS AND PREPARER

YEARS OF EXPERIENCE: 19

EDUCATION:

Paul Smith's College of Arts and Science. Major: Ecology and Environmental Technology
Rutgers University/Cook College, New Brunswick, NJ; Continuing Professional Education Program

CERTIFICATIONS AND TRAINING: Threatened and Endangered Species of NJ, Cook College, 1998, 1999, 2000, 2001, 2003, 2004; Vegetation Identification for Wetland Delineation, Cook College, 1999; 2000 Identifying Grasses, Sedges and Rushes, Cook College; Winter Wetland Vegetation Identification, Cook College, 2004; Managing Multiple Projects, Objectives and Deadlines; Skillpath Seminar, 2006.

PROFESSIONAL AFFILIATIONS:

Project Bog Turtle – Northeast – *Charter Member*; New Jersey Conservation Corps Endangered and Non-game Species Volunteer; New Jersey Breeding Bird Atlas Project - *Northwest New Jersey Coordinator 1993-94*; New Jersey Breeding Bird Atlas Project – *Volunteer 1992-1998*; New Jersey Important Birding Areas Project – *Technical Committee*; New Jersey Audubon Society; NJ Audubon Society “World Series of Birding” - *Full State Champion 1992*; National Audubon Society; Cornell Laboratory of Ornithology; Coordinator and Compiler; National Audubon Society's Christmas Count, Sussex County, NJ; Pennsylvania Biodiversity Partnership; Pennsylvania Breeding Bird Atlas Project; Golden-Winged Warbler Distribution Project – Cornell Laboratory of Ornithology; *Northeast Partners for Amphibian and Reptile Conservation (NEPARC)*; NEPARC Committees: *Model Land Use Ordinances for Herptiles*; *Box Turtle Conservation*; Upper Mount Bethel Township, PA Environmental Commission - *Conservation Chairperson*; Friends of the Wallkill River National Wildlife Refuge – *Vice Chairperson - Charter Board Member*

RELEVANT TRAINING:

Rutgers University, Cook College, Professional Continuing Education; “New Jersey Threatened and Endangered Species, Entire State, 1998”; “New Jersey Threatened and Endangered Species, Southern NJ, 1999”; “New Jersey Threatened and Endangered Species, Northern NJ, 2000”; “New Jersey Threatened and Endangered Species, Southern NJ, 2001”; “New Jersey Threatened and Endangered Species, Northern NJ, 2002”; “New Jersey Threatened and Endangered Species, Southern NJ, 2003”; “New Jersey Threatened and Endangered Species, Southern NJ, 2004” *PAEP, SAME & SWEP Regulatory Update Program*; “How Pennsylvania Threatened and Endangered Species Affect Regulatory Permitting, 2002”; “Field Ornithology”, Paul Smith's College, 1987; *Northeast Partners for Amphibian and Reptile Conservation (NEPARC)*; “Regional Working Group Meeting, 2002”, “Regional Working Group Meeting, 2005”; *The Northeast Natural History Conference* – April 2006, Albany, NY; NJ Pinelands Special Plants Class – *Pinelands Preservation Alliance 2005*

PUBLICATIONS:

Breeding Birds of the Northern NJ Highlands, Records of NJ Birds, Vol. XVIII No. 2. New Jersey Audubon Society by John Benzinger and Scott Angus

Impacts Assessment of Bridge Construction Noise on the Behavior of Nesting Piping Plovers at Ocean City, Cape May County, New Jersey, to be published, NJDOT Trade Periodical, by Thomas Bosakowski, Scott Angus and Richard Radis of Amy S. Greene Environmental Consultants, Inc.

Grassland Bird Surveys Wantage, Vernon, and Pohatcong Townships, Sussex and Warren Counties, New Jersey, June 2004. Prepared for: The New Jersey Audubon Society; by Richard Radis and Scott Angus. Available on the web at the NJ Audubon Society Website.

Barred Owl observations in the vicinity of Ephemeral Wetlands and Vernal Pools, in progress, by Scott Angus.

KEY QUALIFICATIONS

Mr. Angus has performed numerous visual and auditory avian species surveys in the States of New Jersey, New York, Pennsylvania, Delaware, Maine, Vermont, Florida, Arizona and Maryland. Mr. Angus has extensive experience in evaluation and assessment of avian species habitats. Mr. Angus has the skills to identify nearly all North American birds by call notes and songs. Mr. Angus is skilled at identification of all North American birds visually. Mr. Angus has performed many volunteer services for the New Jersey Audubon Society, of which he has been a member since 1979. He has documented scores of threatened and endangered species breeding in NJ and provided this documentation to the NJ Endangered and Non-game Species Program and NJ Audubon Society. Mr. Angus has discovered numerous undocumented colonial waterbird nesting areas in NJ, Pennsylvania and New York. Mr. Angus was part of the winning team in NJ Audubon's World Series of Birding in 1992. Since that time Mr. Angus' teams have finished consistently in the top four or five teams and logging over 210 species of birds when he has participated in the event.

RELEVANT EXPERIENCE

NJ Endangered and Non-game Species Program, NJ Landscape Project, Woodland Raptor Surveys – Performed a four year woodland raptor survey throughout numerous northwestern New Jersey survey routes. Utilizing playback protocols, collected field data to establish GIS patch sizes of woodland raptor ranges for implementation into the NJ Landscape Project which establishes protocols for wetland resource classifications for NJ's Land Use Program.

NJ Endangered and Non-game Species Program, NJ Landscape Project, Grassland Bird Surveys - Performed grassland bird surveys throughout numerous northwestern New Jersey survey routes. Collected field data of presence/absence of grassland bird species, dominant vegetative species, natural community type and potential encroachment threats to each location.

NJ Endangered and Non-game Species Program, NJ Landscape Project, Breeding Bird Surveys - Performed breeding bird surveys throughout numerous northwestern New Jersey survey routes. Collected field data of presence/absence of breeding bird species, dominant vegetative species, natural community type and potential encroachment threats to each location.

NJ Endangered and Non-game Species Program, NJ Landscape Project, Bald Eagle Winter Population Surveys - Performed winter surveys for bald eagle throughout numerous New Jersey survey routes. Field data was utilized to determine distribution and population densities of bald eagles in NJ during the winter months and to identify potential early breeding activity.

NJ Endangered and Non-game Species Program, NJ Landscape Project, Bald Eagle Nest Site Surveys – During January 2003 performed surveys in search of potential and new nesting areas for bald eagles throughout northwestern New Jersey. Identified numerous pairs of eagles performing courtship flights, identified potential nesting areas for each pair. Discovered one unknown nest site.

Piping Plover Breeding Season/Nest and Construction Noise Monitoring, Ocean City-Longport Bridge, Atlantic and Cape May Counties, NJ - Conducted three year breeding season/nest monitoring of the federally threatened, state endangered piping plover during bridge construction adjacent to breeding colony. Coordinated with NJDOT, Parsons Brinkerhoff – FG, Inc., Federal Highway Administration, NJ Endangered and Non-game Species Program (ENSP) and the US Fish and Wildlife Service. This three year study was performed to determine if noise from pile driving activities for bridge construction would interfere with breeding productivity of the piping plover. In addition, gathered data for the ENSP on other colonial beach nesting birds utilizing the dunes in the area.

Colonial Waterbird Nest Survey Search and Habitat Evaluation, Port Ivory, Borough of Staten Island, Richmond County, NY - Conducted a nest survey of riparian corridors and scrub/shrub habitats in search of colonial waterbird rookeries for NY/NJ Port Authority and Hatch Mott McDonald. Provided a habitat evaluation of the site for the potential of colonial waterbirds utilizing the site for nesting and foraging.

Colonial Waterbird Nest Surveys and Visual Utilization Count Surveys, Route 52 Causeway Ocean City and Somers Point, Atlantic and Cape May Counties, NJ - Conducted an initial nest count survey of a Black and Yellow-crowned night heron (both listed species in NJ) rookery. Over 400 nests were counted. Conducted a three year breeding season survey of the rookery to provide a baseline count of both night heron species. Based upon survey results determined utilization of the rookery by the herons. All heron species were noted flying in the vicinity of the rookery. Counted the departure and arrival flights of night herons at dawn and dusk. Coordinated with NJDOT, Michael Baker Associates, and the NJ Endangered and Non-game Species Program (ENSP). The study was conducted to provide a baseline to determine if the population of night herons will be affected by the construction of the elevated causeway and the Ocean City Visitor Center.

Route 15 Construction Project, Tioga County, PA - Mr. Angus assisted with visual surveys for osprey nest locations and great blue heron rookeries in the vicinity of the project. Mr. Angus assisted with construction monitoring of the great blue heron rookery identified in the vicinity of the project.

Upland Sandpiper/Northern Harrier/Grassland Sparrow Breeding Season Presence/Absence Survey, Selinsgrove, Northumberland County, PA – Conducted surveys for Upland Sandpiper, Northern Harrier and Grassland Sparrows during the breeding season at a remediated ash fill site for Pennsylvania Power and Light. Per NEPA requirements, evaluated the site for the potential of it being utilized as a migratory stopover site for migratory shorebirds. No potential migratory shorebird habitat was noted.

Barred Owl/Cooper's Hawk Breeding Season Presence/Absence Surveys, Atlantic City International Airport, Atlantic County, NJ – Conducted surveys for Barred Owl and Cooper's Hawk utilizing playback survey protocols. Coordinated with FAA, South Jersey Transportation Authority, NJ Pinelands Commission, NJ Endangered and Non-game Species Program and the US Fish and Wildlife Service.

Upland Sandpiper/Northern Harrier/Grassland Sparrow Breeding Season Presence/Absence Surveys, Atlantic City International Airport, Atlantic County, NJ – Conducted surveys for Upland Sandpiper, Northern Harrier and Grassland Sparrows during the breeding season. Coordinated with FAA, South Jersey Transportation Authority, NJ Pinelands Commission, NJ Endangered and Non-game Species Program and the US Fish and Wildlife Service.

Bald Eagle Nest View-shed Survey, Lauxmont Farms, Lakeside West and Lakeside East Land Development Projects, Lower Windsor Township, York County, Pennsylvania – At the directive of the USFWS and the PA Game Commission, conducted an extensive bald eagle nest survey within the view-shed of the referenced project. Identified active Osprey, Long-eared and Great horned owl, Red-tailed and Cooper's Hawk nests within the search area.

Bald Eagle Nest Buffer and Grassland Bird Habitat Evaluation, Clean Harbors, Logan Township, Gloucester County, NJ – Performed an evaluation of Bald Eagle nest buffer and foraging area for the referenced project. In addition, conducted Grassland Bird habitat evaluation for project. Known habitat for NJ State listed grassland bird species identified on adjoining properties by NJDEP Landscape Mapping and similar grassland community types identified on the project via aerial mapping required the evaluation of the grassland bird habitat. A Bald Eagle was observed traversing the project boundary along the Raccoon Creek during the survey. The property was determined not be bald eagle habitat based upon the eagles relocating their nest a few miles down the river and the absence of suitable foraging and roosting habitat.

NJ Threatened, Endangered and Special Concern Grassland Bird Surveys, NJ Audubon Society, Wantage, Vernon, Frankford and Hardyston Townships, Sussex County and Pohatcong Township, Warren County, NJ – Conducted extensive grassland bird surveys for targeted NJ listed species. NJ threatened and endangered grassland bird species were documented utilizing grassland habitats of varying size. Provided the NJ Audubon Society with GPS coordinates, mapping and an encompassing report of findings including dominant vegetative species, natural community type and potential threats, if any, to the grassland community type.

Grasshopper Sparrow Critical Habitat Evaluation Survey, Robert A Miller Airpark, Berkley and Lacey Townships, Ocean County, NJ – At the directive of the NJ Pinelands Commission a Grasshopper Sparrow Critical Habitat evaluation was performed for the State Threatened Species for work being proposed at the airpark. Critical habitat for Grasshopper Sparrow was found within the park, but not within the proposed hanger area expansion.

Barred Owl, Cooper's Hawk and Red Headed Woodpecker Critical Habitat Evaluation Survey, Robert A Miller Airpark, Berkley and Lacey Townships, Ocean County, NJ – At the directive of the NJ Pinelands Commission a Critical Habitat evaluation was performed for work the Crosswinds Runway and tree topping activities for the airpark. Potential critical habitat for Barred Owl, Cooper's Hawk and Red-headed Woodpecker was identified. Consultation with the NJ Pinelands Commission has been initiated and the project is on going.

Barred Owl, Cooper's Hawk and Red Headed Woodpecker Call-back Surveys, Robert A Miller Airpark, Berkley and Lacey Townships, Ocean County, NJ – At the directive of the NJ Pinelands Commission and based upon the Critical Habitat evaluation performed at the airpark, call –back surveys were performed for Barred Owl, Cooper's Hawk and Red-headed Woodpecker. Barred Owls were documented utilizing the wetlands at this site. Cooper's hawks were not documented at the site and Red-headed woodpeckers did not respond to the call back surveys though they were noted at the site.

Bald Eagle Nest Buffer and Foraging Habitat Evaluation, Paulsboro Marine Terminal, Paulsboro Borough & West Deptford Township, Gloucester County, NJ – Sponsored by Gloucester County Improvement Authority - Performed an evaluation of Bald Eagle nest buffer and foraging area for the referenced project. Evaluated the entire site with concentration on 4 alternatives for the roadway and bridge. No bald eagle nesting areas were identified. Bald eagle foraging habitats were identified within the study area and on adjacent properties. Assisted client with the development of alternative which will least impact bald eagle foraging areas.

Red Headed Woodpecker Call Back Survey – Heather Properties/Adel Rifaat, Watchung Borough, Somerset County, New Jersey – Conducted a 4 month call back survey for the State-Threatened Red-headed Woodpecker following protocols approved by the New Jersey Endangered and Non-game Species Program.

Red-Shouldered Hawk Habitat Survey - South Jersey Technical Park/Pennioni Associates, Mantua and Harrison Townships, Gloucester County, New Jersey – Evaluated a 295+/- acre site to determine if the site could support NJ endangered red-shouldered hawk. Forested areas on the property were assessed for tree size and patch size.

Barred Owl/Cooper's Hawk Habitat Survey - The Marketplace at Smithville/Dixon Associates, Galloway Township, Atlantic County, New Jersey - Project manager of the evaluation of a 4 acre lot adjacent to a 300+/- acre forested property to determine if critical habitat for the species occurs within the project boundaries.

Barred Owl Call-back Survey - The Sal Garafalo Development, Wantage Township, Sussex County, New Jersey - Project manager of call-back surveys to determine if barred owls were utilizing the proposed development site for breeding. If the owls were determined to be breeding at the site then the wetland transition area adjacent to the onsite wetlands would be 150 feet. Documented barred owls on the site.

YEARS OF EXPERIENCE: 16

EDUCATION:

M.S., Environmental Education, Lesley University, Cambridge, Massachusetts, 1991.

B.S., Biology, Saint Andrews Presbyterian College, Laurinburg, North Carolina, 1987.

CERTIFICATIONS and TRAINING

40-Hour OSHA HAZWOPER, September 8, 2003. Threatened and Endangered Species of Northern New Jersey, Rutgers University, Cook College, NJ, 2003. Wetland Delineation Series: Methodology for Delineating Wetlands, Hydric Soils, Wetland Delineator Program, Rutgers University, Cook College, NJ, 2003. Transit/Rail Safety Training: MTA Metro-North Railroad, October 29, 2003 and October 26, 2005 and May 21, 2007; NJ Transit, November 11, 2003, April 5, 2005, April 18, 2006 and April 24, 2007; Conrail, December 9, 2003 and October 5, 2004; Amtrak, May 9, 2007. Threatened and Endangered Species of Southern New Jersey, Rutgers University, Cook College, NJ, 2004. OSHA HAZWOPER 8-Hour Refresher, March 1, 2004 March 29, 2005, March 28, 2006, April 13, 2007 and March 17, 2008.

KEY QUALIFICATIONS

Mr. DeVane has an extensive and varied background as a naturalist. As Project Manager and Environmental Scientist at ASGECI he performs wetland delineations, vegetation and wildlife surveys, including endangered and threatened species surveys, and prepares wetland and other environmental permit applications. He has organized and taught numerous courses at many levels, including teacher education and College courses. Topics Mr. DeVane has taught include: basic natural history and ecology, ornithology, nature writing, Delaware River natural and cultural history, water quality monitoring, and avian population surveying. Mr. DeVane has prepared lectures, power point presentations, slide shows and exhibits on wildlife for public meetings and seminars. Mr. DeVane has performed bird surveys extensively throughout the lower 48 United States.

EMPLOYMENT HISTORY

Bucks County Audubon Society, New Hope, PA. Program Coordinator for Adult Education, 1999-2002

Buxmont Academy, Sellersville, PA. High School Biology Teacher, 2000.

Audubon Expedition Institute, Belfast, ME. Faculty and Field Manager, 1995-2000.

Kern Environmental Education Program, Posey, CA. Teacher/Naturalist, 1993-1995.

Discover the Neuse, Arapahoe, NC. Teacher/Naturalist, 1991-1993.

RELEVANT EXPERIENCE

Ocean County Department of Planning/C&S Engineers, Inc. Robert J. Miller Airpark Runway 14-32 Construction. Berkeley Township, Ocean County, New Jersey. Environmental Scientist responsible for conducting grassland and woodland bird surveys for endangered and threatened species including Cooper's hawk, red-headed woodpecker, grasshopper sparrow, and savannah sparrow surveys. Also assisted in performance of surveys for the threatened species pine snake and Pine Barrens tree frog.

New Jersey Department of Transportation/The RBA Group. Route 1/Penn's Neck Sections 2S & 3J. West Windsor Township, Mercer County and Plainsboro Township, Middlesex County, New Jersey. Environmental Scientist responsible for conducting endangered and threatened species surveys according to state-approved protocol. Long-eared owl survey conducted winter 2004; additional surveys for wood turtle, freshwater mussels, Cooper's hawk, red-shouldered hawk and barred owl performed in Spring and Summer of 2005.

Adel Rifaat and Michael Finne, Heather Properties, Watchung Borough, Somerset County, New Jersey. Environmental Scientist responsible for performing red-headed woodpecker call-back surveys according to NJDEP Endangered and Non-game Species Program protocol. Review and edit report. NJDEP accepted the results of the survey and the Wetland buffer was reduced to 50 feet as a result of the survey findings.

New Jersey Department of Transportation/Michael Baker Jr., Inc., Route 52-Somers Point Circle, Ocean City, Cape May County and Somers Point, Atlantic County, New Jersey. Environmental Scientist responsible for writing protocol for Heron Rookery survey during nesting season, and performing the survey. Survey was required by NJDEP for inclusion in the EIS and the applications for CAFRA, Coastal Wetlands and Waterfront Development Permits for replacement of the Route 52 Causeway.

New Jersey Department of Transportation/Figg Bridge Engineers. Route 35, Sec 12T Victory Bridge Replacement. Environmental Scientist responsible for developing and conducting survey protocol for the state endangered peregrine falcon to comply with NJDEP Individual Wetlands Permit condition to protect the species during bridge demolition.

Ironwood Building Company, Whispering Woods II and Cobblestone Walk III Residential Development Projects, Vineland City, Cumberland County, New Jersey. Environmental Scientist responsible for conducting barred owl survey. Barred owl presence confirmed within one-half mile of site, in habitat contiguous with known habitat, confirming justification for Landscape mapping project.

New Jersey Department of Transportation/Parsons Brinckerhoff-F.G., Inc. South Region Bridge Scour Countermeasure Project - South; Atlantic, Burlington, Cape May, Cumberland, Gloucester and Salem Counties, New Jersey. Environmental Scientist responsible for communication with agencies, researching and documenting ecological resources, creating and updating checklists in preparation for field work. Performed wetland delineation and surveys for threatened and endangered species at the bridge sites. Identified permits required for each of the bridges that included NJDEP freshwater wetlands, stream encroachment, and waterfront development permits; USCOE 404 wetlands permits; and NJ Pinelands Commission PDA's. Prepared reports detailing ecological resources and anticipated permit requirements for each bridge.

Sal T. Garofalo, Rolling Hills Development. Wantage Township, Sussex County, New Jersey. Environmental Scientist responsible for identifying barred owl during survey. Call back survey performed according to NJDEP ENSP protocol.

Metro-North Commuter Railroad Co./Day Engineering, P.C. Harriman Norfolk Southern Site. City of Harriman, Orange County, New York. Performed wetland delineation including Global Positioning Satellite recording of wetland flags following preliminary site investigation. Performed bald eagle habitat assessment and wrote report of findings.

T & M Associates. Garden State Parkway Bridge over Mullica River. Bass River Township, Burlington County and Port Republic City, Atlantic County, New Jersey. Environmental Scientist responsible for conducting osprey surveys in the area of the Mullica River bridge in preparation for bridge reconstruction. Also, assisted in the removal of three osprey platforms to avoid construction conflicts with breeding osprey in the nesting season.



Metro-North Commuter Railroad Co./Day Engineering, P.C. Cortlandt Station Parking Expansion. City of Cortlandt, Westchester County, New York. Performed wetland delineation including Global Positioning Satellite recording of wetland flags following preliminary site investigation in preparation for state and federal permitting. Prepared habitat stabilization plan in accordance with ACOE recommendations following field meeting with Chris Mallory, ACOE enforcement officer. Performed habitat assessment and wrote report for bald eagle and Indiana bat.

THE Tunnel Partnership. Trans-Hudson Expressway (THE) Tunnel. Hudson County, New Jersey. Environmental Scientist responsible for delineating wetlands and coordinating with surveyor and engineers in preparation for a US Army Corps Jurisdictional Determination and NJDEP Waterfront Development Permit and Flood Hazard Area Individual Permit and LOI. Also perform threatened and endangered species survey for wafer ash and other listed species; confirm osprey nesting activity in vicinity.

New Jersey Department of Transportation/Arora Associates. Bridge Scour Countermeasure Project - Bergen, Morris, Passaic, and Sussex Counties, New Jersey. Environmental Scientist responsible for communicating with agencies, researching and documenting ecological resources, creating and updating checklists in preparation for field work. Performed wetland delineation and survey for threatened and endangered species at the bridge sites, including performance of Phase II bog turtle surveys. Prepare applications for NJDEP Freshwater Wetlands, Stream Encroachment and Waterfront Development Permits and USACOE Section 404 Wetlands Permit.

Metro-North Commuter Railroad Co./Day Engineering, P.C. MNR Harlem Line Proposed Substations. Cities of Mount Kisco and Pleasantville and Township of New Castle, Westchester County, New York. Performed wetland delineations in accordance with US Army Corps standards and wrote reports of findings for three separate proposed substations in preparation for permitting. Documented bog turtle habitat during Phase I habitat assessment and performed Phase II bog turtle survey.

Pennsylvania Breeding Bird Atlas Project. Performed point counts to determine breeding status of grassland and forest bird populations in central Bucks County in preparation for updates in the Second Edition of the *Atlas of Breeding Birds in Pennsylvania*.

Bucks County Audubon Society. Documented bird sightings throughout the year as baseline data for deer browse impact study. Performed point counts to determine breeding bird populations in grassland management areas.

National Audubon Society Christmas Bird Counts. Participated in numerous Christmas Bird Counts for over 20 years in Florida, California, Pennsylvania and New Jersey.

Great Backyard Bird Count. Trained teachers and students to document winter bird populations in preparation for the GBBC, a joint adventure of Bird Source, the National Audubon Society, and the Cornell Lab of Ornithology to document winter distributions of bird populations.

New Jersey Audubon Society in Conjunction with the Endangered and Non-Game Species Program. Volunteer documenter of grassland birds at Griggstown Grasslands, Franklin Township, Somerset County.



Proposed Redevelopment of EPCAL Property at Calverton

Hamlet of Calverton
Town of Riverhead
Suffolk County, New York

Prepared for: Town Board of the Town of Riverhead
Riverhead, New York

Prepared by:

 *Engineering, Surveying and Landscape Architecture, P.C.*
2150 Joshua's Path, Suite 300
Hauppauge, New York 11788



Table of Contents

1.0 Introduction	1
2.0 Existing Ecological Conditions.....	3
3.0 Habitat Protection Plan	14
4.0 Conclusions.....	20

List of Attachments

Attachment A	-	Figures
Figure 1	-	Site Location Map
Figure 2	-	Existing Ecological Communities
Figure 3	-	NWI Wetlands
Figure 4	-	NYSDEC Wetlands
Attachment B	-	<i>Habitat Protection Plan for Enterprise Park at Calverton</i>



1.0

Introduction

This Comprehensive Habitat Protection Plan (CHPP) has been prepared on behalf of the Town of Riverhead as part of the Draft Supplemental Generic Environmental Impact Statement (DSGEIS) for the 2,323.9-acre Enterprise Park at Calverton (EPCAL) property (hereinafter, the “subject property” or the “site”). The subject property is located in the hamlet of Calverton, Town of Riverhead, Suffolk County, and is bounded on the north by New York State Route 25 (Middle Country Road), industrial, agricultural and undeveloped/ wooded parcels to the east, Grumman Boulevard to the south and Wading River Manor Road and residential and undeveloped/ wooded properties to the west (Figure 1). The subject property surrounds the off-site Calverton Camelot Industrial Subdivision (formerly included in the Calverton NWIRP property) to the west, north and east. The subject property is designated on the Suffolk County Tax Map as: District 600-Section 135-Block 1 – Lots 7.1, 7.2, 7.33 and 7.4.

The subject property consists of portions of land formerly owned by the United States Department of the Navy (U.S. Navy) and known as the Naval Weapons Industrial Reserve Plant (NWIRP). During the U.S. Navy’s ownership of the NWIRP property (from 1954 to 1994) approximately 2,900 acres were leased to Northrop Grumman Corporation (Grumman) for airfield operations, including final airplane assembly and testing. In 1994, subsequent to Grumman’s announcement of its intention to vacate the property, the United States Congress authorized the Secretary of the U.S. Navy to convey approximately 2,900 acres of the NWIRP, inclusive of the 2,323.9-acre subject property, to the Town of Riverhead for the purpose of economic development. The U.S. Navy subsequently prepared a Draft Environmental Impact Statement (DEIS) and a Final Environmental Impact Statement (FEIS) in 1997¹ evaluating the disposition and potential future use of the EPCAL property. As a supplement to the 1997 FEIS, a DSGEIS has been prepared to evaluate the potential adverse impacts associated with creation of a master plan, zoning changes and the



¹THE DEIS and FEIS were prepared pursuant to the National Environmental Policy Act (and as a Generic Environmental Impact Statement [GEIS] for the purposes of the State Environmental Quality Review Act [SEQRA]).



subdivision of the EPCAL property into 50 lots, of which 42 lots would be for ultimate redevelopment with a mix of uses including, business (commercial and retail), industrial, government, residential, recreation and utilities (the “proposed action”).

This CHPP has been prepared in accordance with 6 NYCRR §182.2 (Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern; Incidental Take Permits) and the Final Scope for the DSGEIS issued by the Town Board of the Town of Riverhead to summarize the existing ecological resources at the site (e.g., existing ecological communities and rare species) and to detail the expected impacts to these resources as a result of the proposed action. The CHPP further details the habitat protection measures developed to mitigate these impacts, based upon consultations with the New York State Department of Environmental Conservation (NYSDEC).



2.0

Existing Ecological Conditions

Numerous investigations of the ecological communities, vegetation and wildlife of the subject property have been conducted and are summarized in the 1997 FEIS, 2001 Supplemental FEIS and 2005 Supplemental FEIS. In addition, several wildlife surveys have been conducted at the site in recent years, including the Coalition for Open Space EPCAL Herpetofauna and Avifauna Inventory Summary (the “COS Study” [2008]), the Amy S. Greene Environmental Consultants, Inc. study (the “ASG Study” [2008]) and the Nature Conservancy EPCAL Grassland Birds Summary (the “TNC Study” [2009]). Based upon these resources, as well as field inspections of the subject property conducted by VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB), a summary of existing habitat conditions at the subject property follows.

Upland Habitats

In order to describe and categorize existing upland habitats at the subject property, VHB consulted the New York Natural Heritage Program (NYNHP)² publication *Ecological Communities of New York State* (ECNYS)³, which provides detailed descriptions and rarity rankings for various ecological communities found throughout NYS, including those observed during field surveys of the subject property. Although the 1997 FEIS did not employ the ECNYS classification system, the descriptions of the various upland ecological communities contained in that document generally correspond to the following six ECNYS-defined communities observed during field surveys:

- Pitch Pine-Oak Forest
- Pitch Pine-Oak-Heath Woodland
- Pine/ Spruce/ Conifer Plantation
- Successional Old Field



² The NY Natural Heritage Program is a partnership between the New York State Department of Environmental Conservation and the State University of New York College of Environmental Science and Forestry.

³ Edinger, G.J., et al. (editors). 2002. *Ecological Communities of New York State*. Second Edition (Draft). New York Natural Heritage Program, NYSDEC.



- Successional Shrubland
- Paved Road/ Path.

The following provides a summary of each of the six ecological communities, based upon the field surveys and descriptions from the 1997 FEIS. The ecological community map (Figure 2) illustrates the general location(s) of each community.

Pitch Pine-Oak Forest

This ecological community is dominant throughout most of the area to the north of the western runway and in some areas to the north of the eastern runway. ECNYS describes the Pitch Pine-Oak Forest ecological community as follows:

“...a mixed forest that typically occurs on well-drained, sandy soils of glacial outwash plains or moraines; it also occurs on thin, rocky soils of ridge tops.

*The dominant trees are pitch pine (*Pinus rigida*) mixed with one or more of the following oaks: scarlet oak (*Quercus coccinea*), white oak (*Q. alba*), red oak (*Q. rubra*), or black oak (*Q. velutina*). The relative proportions of pines and oaks are quite variable within this community type. At one extreme are stands in which the pines are widely spaced amidst the oaks, in which case the pines are often emergent above the canopy of oak trees. At the other extreme are stands in which the pines form a nearly pure stand with only a few widely spaced oak trees.*

*The shrub layer is well-developed with scattered clumps of scrub oak (*Quercus ilicifolia*) and a nearly continuous cover of low heath shrubs such as blueberries (*Vaccinium pallidum*, *V. angustifolium*) and black huckleberry (*Gaylussacia baccata*).*

*The herbaceous layer is relatively sparse; characteristic species are bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), and Pennsylvania sedge (*Carex pensylvanica*).*”

Similar to the above description, a wide variation in the relative proportions of pines versus oaks exists within the Pitch Pine-Oak Forest observed across the subject property, presumably as a result of fire frequency and severity. Generally speaking, increased burn frequency and/ or severity results in dominance of pitch pine over tree oak species, while oaks dominate in areas with low burn frequency/ severity, and particularly in areas where fire has been historically suppressed. Other factors, including soil moisture, soil fertility and human disturbance are also relevant to community composition. Sandy, xeric (dry), low nutrient soils favor pitch pine, while mesic (moist), more nutrient-rich soils are needed to support most oaks and other hardwoods. The variants of the Pitch Pine-Oak Forest community type observed on the site include the following:



- Forests dominated by widely-spaced pitch pines, with only a few scattered oaks, a sparse, patchy shrub stratum consisting of heaths, bayberry (*Morella pensylvanica*) and/ or bearberry (*Arctostaphylos uva-ursi*) and a nearly continuous groundcover stratum dominated by sedges (e.g., Pennsylvania sedge) and grasses.
- Mixed oaks (i.e., white, scarlet and black oak) with scattered large (and often senescent) pitch pines and a low but relatively continuous heath stratum.
- Nearly pure stands of white oak, with few pitch pines and a dense, nearly continuous heath understory stratum.
- Intermediate variations of the three communities described above.

The community variants described above are consistent with the “Pitch Pine-Oak Woodlands” and “Oak-Pine Woodlands” community descriptions of the 1997 FEIS.

Large, contiguous blocks of the Pitch Pine-Oak Forest ecological community occupy the western portion of the subject property, the area to the north and south of the western runway and the northeastern portion of the site. Although present, this community is less prevalent in the vicinity of the eastern runway and exists as smaller and often non-contiguous habitat blocks interspersed with Pitch Pine-Oak-Heath Woodland, and Tree Plantation and Successional Shrubland communities, as described below. Additionally, a “high quality occurrence” of Pitch Pine-Oak Forest has been documented by the NYNHP to the south of the subject property, in the vicinity of Sandy Pond East.

The Pitch Pine-Oak Forest ecological community is ranked by the NYNHP as G4, S4. According to the NYNHP, G4 indicates a community that is considered “apparently secure globally, though it might be quite rare in parts of its range, especially at the periphery.” The S4 ranking denotes a community that is considered “apparently secure in New York State.”

Pitch Pine-Oak-Heath Woodland

The Pitch Pine-Oak-Heath Woodland community discussed here was described as “Pitch Pine-Shrub Oak Woodlands” in the 1997 FEIS. During the field surveys, it was observed that this community occurs in scattered pockets at the southeastern portion of the site, in the area to the north of the eastern runway. ECNYS describes Pitch Pine-Oak-Heath Woodland as follows:



“...a pine barrens community that occurs on well-drained, infertile, sandy soils in eastern Long Island (and possibly on sandy or rocky soils in upstate New York). The structure of this community is intermediate between a shrub-savanna and a woodland.”

Pitch pine and white oak are the most abundant trees, and these form an open canopy with 30 to 60% cover. Scarlet oak and black oak may also occur in the canopy.

The shrub layer is dominated by scrub oaks, and includes a few heath shrubs such as huckleberry and blueberry. The density of the shrub layer is inversely related to the tree canopy cover; where the trees are sparse, the shrubs form a dense thicket, and where the trees form a more closed canopy, the shrub layer may be relatively sparse. Stunted, multiple-stemmed white oaks may be present in the shrub layer if the site has burned regularly.

*Characteristic species of the groundcover include bearberry (*Arctostaphylos uva-ursi*), Pennsylvania sedge (*Carex pensylvanica*), golden heather (*Hudsonia ericoides*), beach heather (*Hudsonia tomentosa*), and pinweed (*Lechea villosa*).*

*Like other closely related pine barrens communities, the woodland provides habitat for buckmoth (*Hemileuca maia*) and prairie warbler (*Dendroica discolor*).*

This community is adapted to periodic fires; the fire frequency has not been documented, but it probably burns less frequently than pitch pine-scrub oak barrens (i.e., more than 15 years between fires).”

The 1997 FEIS described this community as occurring infrequently and in small scattered pockets, particularly at the southeast portion of the site. During the field surveys, scattered examples of Pitch Pine-Oak-Heath Woodland were observed in this area. Similar to the above description, these communities are characterized by an open canopy of pitch pine and white oak, with a dense understory shrub stratum dominated by scrub oak (*Quercus ilicifolia*) and scattered heath species. The main distinctions between Pitch Pine-Oak-Heath Woodland and the Pitch Pine-Oak Forest community described above are the open canopy, scrub-oak dominated shrub layer and the greater fire frequency needed to maintain the former community. As indicated in the ECNYS community description, Pitch Pine-Oak-Heath Woodland is adapted to periodic fires and requires a greater burn frequency than that which occurs within the various Pitch Pine-Oak Forest communities that comprise the forest cover over most of the subject property. According to the 1997 FEIS, “wildfires have been suppressed in the fenced area to protect buildings and agriculture,” with records existing for just two wildfires that occurred on the southwestern and eastern site areas “in the early 1980s.” Thus, the limited extent of Pitch Pine-Oak-Heath Woodland at the subject property and the historic paucity of this community from the site as a whole are most likely due to historic fire suppression.



Pitch Pine-Oak-Heath Woodland is ranked by the NYNHP as G3G4, S2S3. G3 indicates a community that is considered “*Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or vulnerable to extinction throughout its range because of other factors.*” The S2 ranking designates “*Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State*”, while S3 indicates “*Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State*”

Pine/Spruce/Conifer Plantation

Tree plantations were observed in several locations to the north of the eastern runway. Species observed within the plantations include various pines such as eastern white pine (*Pinus strobus*) red pine (*P. resinosa*) and other pines, spruces (*Picea* spp.) and larches (*Larix* spp.). Similarly, the 1997 FEIS indicates that “*several tracts in the fenced area, north and east of Runway 32-14 (the eastern runway) support plantations of white pine and spruce, established in the 1960s*” Based upon site observations, the tree plantations have not been actively managed for some time, and successional vegetation (i.e., herbaceous plants, shrubs and pioneering tree species) from surrounding wooded and grassland habitats is present-to-dominant amongst the planted trees. Tree plantations were not observed within the western portion of the site.

For the purposes of this summary, the Pine Plantation, Spruce Plantation and Conifer Plantation ECNYS ecological communities have been combined into a single community. In general, the ECNYS describes these tree plantations as:

“...a stand of softwoods planted for the cultivation and harvest of timber products, or to provide wildlife habitat, soil erosion control, windbreaks, or landscaping... These plantations may be monocultures, or they may be mixed stands with two or more co-dominant species.”

The Pine, Spruce and Conifer Plantation ecological communities are distributed throughout New York State and are ranked as G5, S5 by the NYNHP. G5 describes a community that is “*Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery,*” while S5 denotes a community that is considered “*Demonstrably secure in New York State.*”

Successional Old Field

The vast majority of the area immediately adjacent to the eastern and western runways currently supports grassland habitat. An additional grassland habitat block exists to the south of the eastern runway (Navy Parcel “B”), for a total of 646.2 acres of existing grasslands at the subject property. According to the TNC Study, this habitat is “*by far the largest remaining grassland on Long Island.*” As ECNYS does not include a grassland habitat description specific to the site or the Long Island region,



the onsite grasslands are best defined by the ECNYS Successional Old Field community description:

“...a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned... Shrubs may be present, but collectively they have less than 50% cover in the community.”

The Successional Old Field community represents the initial stage in the process of ecological succession, which is the process by which a cleared or otherwise disturbed habitat progresses by stages to a climax forest community over time. The disturbance that has maintained the subject property's grasslands and prevented succession to later ecological stages is maintenance of the runway adjacent areas in the form of mowing.

The 1997 FEIS classified the onsite grasslands as “Semi-Improved Vegetation”, indicating lands that are “...subject to annual, semiannual, or once in three- to four-year maintenance (mowing) operations... Examples of semi-improved vegetation include the clear zones required along the runways...”

The grasslands observed within the runway areas are dominated by several grass species, including broomsedge (*Andropogon virginicus*), fall witchgrass (*Digitaria cognatum*), fescue (*Festuca* spp.) foxtail (*Setaria* spp.), little blue stem (*Schizachyrium scoparium*), switchgrass (*Panicum virgatum*) and timothy (*Phleum pratense*), as well as many forbs such as sweet everlasting (*Pseudognaphalium obtusifolium*), common mullein (*Verbascum thapsus*), toadflax (*Linaria vulgaris*), horseweed (*Conyza canadensis*), and hawkweeds (*Hieracium* spp.). Vegetative cover is generally dense, however, sparsely-vegetated and unvegetated areas of exposed sandy soil are scattered throughout the grasslands. Observations indicate that vegetative cover and species composition are similar between the western and eastern runway areas.

The Successional Old Field ecological community is distributed throughout New York State and is ranked as G4, S4 by the NYNHP. Nevertheless, it should be noted that the extensive grasslands have also been recognized by COS, ASG and TNC studies as a regionally significant habitat for a diverse range of rare grassland bird species, as well as the largest remaining grassland community on Long Island. As indicated previously, the disturbance that has maintained these grasslands and prevented succession to later ecological stages has been historic maintenance of the runway areas in the form of periodic mowing. In the absence of this disturbance, colonization by shrub and tree species from surrounding wooded habitat communities would result in succession to later ecological stages (i.e., shrublands and forests) and the incremental loss of this habitat type from the subject property, thus rendering the site unsuitable as habitat for grassland specialist birds.



Successional Shrubland

The Successional Shrubland community represents the next stage in the process of ecological succession following Successional Old Field. ECNYS defines Successional Shrubland as:

“...a shrubland that occurs on sites that have been cleared (for farming, logging, development, etc.) or otherwise disturbed. This community has at least 50% cover of shrubs.”

Although this or a similarly-described ecological community was not noted in the 1997 FEIS, Successional Shrubland currently exists primarily within areas that were subject to historic disturbance, including portions of the former agricultural fields and tree plantations to the north of the eastern runway. According to the 1997 DEIS, some agricultural fields were still being actively farmed at that time, while other recently inactive agricultural fields appear to have been classified as “old field” and included under the “Semi-Improved Vegetation Category.” Thus, at that time it is likely that these locations supported little to no evidence of the shrub cover that has colonized the inactive agricultural fields on the site in the intervening years. Other areas of successional shrubs exist in border areas and clearings within the Tree Plantation communities described above.

Much of the shrub cover observed within the Successional Shrubland is comprised of colonizing tree saplings (e.g., pitch pine, oaks) and shrubs (e.g., heaths, bearberry, and bayberry) from adjacent forest and woodland habitats. However, in some areas, typical Successional Shrubland species are also present, including eastern red cedar (*Juniperus virginiana*), brambles (*Rubus* spp.), black cherry (*Prunus serotina*) saplings and non-native/ invasive multiflora rose (*Rosa multiflora*) shrubs.

The Successional Shrubland ecological community is distributed throughout New York State and is ranked as G4, S4 by the NYNHP.

Paved Road/Path

Runway and internal roadway areas are best described by the ECNYS Paved Road/ Path community profile:

“...a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface.”

As indicated in the above description the runways, taxiways and associated paved areas observed at the subject property support sparse vegetation in cracked areas, including typical “weedy” species, as well as grasses and forbs from the neighboring grasslands.

The Paved Road/ Path community is distributed throughout New York State and is ranked as G5, S5 by the NYNHP.



Wetland and Aquatic Habitats

Onsite wetland and aquatic habitats were characterized utilizing the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Cowardin Classification system. As depicted on Figure 3 the following NWI wetland habitat types are supported onsite:

- PUBH (Palustrine, Unconsolidated Bottom, Permanently Flooded)
- PUBHh (Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/ Impounded)
- PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)
- PF1O1C (Palustrine, Forested, Broad—Leaved Deciduous, Seasonally Flooded)
- PFO1Eh (Palustrine, Forested, Broad—Leaved Deciduous, Seasonally Flooded/ Saturated, Diked/ Impounded)
- PFO1FH (Palustrine, Forested, Broad—Leaved Deciduous, Semipermanently Flooded, Diked/ Impounded)
- PFO5E (Palustrine, Forested, Dead, Seasonally Flooded/ Saturated)
- PEM1Cx, (Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated)
- PEM1/ SS1Ax (Palustrine, Emergent, Persistent/ Palustrine Scrub-Shrub, Excavated)
- PSS1Eh (Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/ Saturated, Diked/ impounded).

In addition, there are six NYSDEC-regulated wetlands located entirely or partially within the overall boundaries of the subject property, including NYSDEC Wetland Nos. W-16, W-24 through W-27 and R-5 (Figure 4).

According to the NYNHP, the subject property or vicinity also supports a “high quality occurrence” of the rare Coastal Plain Pond community, which is ranked as G3G4, S2 in ECNYS. Although the location of the community was not provided in the NYNHP records, a pond community located at the northeastern portion of the subject property and identified as a tiger salamander breeding pond by the NYSDEC is characteristic of a Coastal Plain Pond.

Rare Species

Based upon a review of New York Natural Heritage Program (NYNHP) records, as well as the various ecological investigations listed above, 16 wildlife species and seven plant species listed by New York State as “Endangered,” “Threatened,” “Special Concern” or “Rare” have been documented as occurring at or in the vicinity of the subject property (Table 1). Pursuant to 6 NYCRR §182.2, New York State Endangered wildlife species are defined as “*any native species in imminent danger of extirpation or extinction in New York or any species listed as endangered by the United States Department of the Interior in the Code of the Federal Regulations (50 CFR part 17).*” New York State Threatened species are defined in 6 NYCRR §182.2 as “*any native*



species likely to become an endangered species within the foreseeable future in New York or any species listed as threatened by the U.S. Department of the Interior in the Code of the Federal Regulations (50 CFR part 17)." Finally, New York State Special Concern wildlife species are those that are *"at risk of becoming threatened in New York... Species of special concern do not qualify as either endangered or threatened...but have been determined by the department to require some measure of protection to ensure that the species does not become threatened."*

With respect to plants, pursuant to 6 NYCRR §193.3, New York State Endangered plants are those species *"in danger of extirpation throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction."* Threatened plants are defined in 6 NYCRR 193.3 as species *"that are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges within the state."* Finally, Rare plants are described as those species with *"20 to 35 extant sites or 3,000 to 5,000 individuals statewide."*

Table 1 – Summary of NYS Endangered, Threatened, Special Concern and Rare Species at the EPCAL Property and Vicinity

Faunal Group	Common Name	Scientific Name	NYS Status
Avian	short-eared owl	<i>Asio flammeus</i>	Endangered
Avian	northern harrier	<i>Circus cyaneus</i>	Threatened
Avian	upland sandpiper	<i>Bartramia longicauda</i>	Threatened
Avian	common nighthawk	<i>Chordeiles minor</i>	Special Concern
Avian	grasshopper sparrow	<i>Ammodramus savannarum</i>	Special Concern
Avian	horned lark	<i>Eremophila alpestris</i>	Special Concern
Avian	vesper sparrow	<i>Poocetes gramineus</i>	Special Concern
Avian	whip-poor-will	<i>Caprimulgus vociferus</i>	Special Concern
Amphibian	eastern tiger salamander	<i>Ambystoma tigrinum</i>	Endangered
Amphibian	marbled salamander	<i>Ambystoma opacum</i>	Special Concern
Amphibian	eastern spadefoot toad	<i>Scaphiopus holbrookii</i>	Special Concern
Reptile	spotted turtle	<i>Clemmys guttata</i>	Special Concern
Reptile	eastern box turtle	<i>Terrapene carolina</i>	Special Concern
Reptile	eastern hognose snake	<i>Heterodon platirhinos</i>	Special Concern
Fish	banded sunfish	<i>Enneacanthus obesus</i>	Threatened
Insect	coastal barrens buckmoth	<i>Hemileuca maia ssp.5</i>	Special Concern
Plant	coppery St. John's-wort	<i>Hypericum denticulatum</i>	Endangered
Plant	comb-leaved mermaid-weed	<i>Proserpinaca pectinata</i>	Threatened
Plant	small floating bladderwort	<i>Utricularia radiata</i>	Threatened
Plant	short-beaked beakrush	<i>Rhynchospora nitens</i>	Threatened
Plant	slender pinweed	<i>Lechea tenuifolia</i>	Threatened
Plant	rose coreopsis	<i>Coreopsis rosea</i>	Rare
Plant	Nuttall's lobelia	<i>Lobelia nuttallii</i>	Rare

The eight avian species listed in Table 1, including the NYS-Endangered short-eared owl (*Asio flammeus*) and NYS-Threatened northern harrier (*Circus cyaneus*), are grassland habitat specialists that have been observed utilizing the site grasslands as breeding and/ or non-breeding habitat. In addition, other grassland bird species,



including American kestrel (*Falco sparverius*), savannah sparrow (*Passerculus sandwichensis*) and eastern meadowlark (*Sturnella magna*), have also been documented onsite during the aforementioned studies.

With respect to rare herpetofauna (amphibians and reptiles), according to the NYSDEC, the NYS-Endangered eastern tiger salamander (*Ambystoma tigrinum*) has been documented as breeding within an unnamed pond at the northeastern portion of the subject property and at another unnamed located within the Calverton Camelot development lands to the south of the site. Onsite non-breeding (terrestrial) habitat for this species includes the Pitch Pine-Oak Forest communities located within 1,000 feet of the two breeding ponds. Similarly, the various wetland and aquatic communities detailed above and the surrounding uplands represent potential habitat for NYS-Special Concern marbled salamander (*Ambystoma opacum*), eastern spadefoot toad (*Scaphiopus holbrookii*) and spotted turtle (*Clemmys guttata*). Onsite habitat for NYS-Special Concern eastern box turtle (*Clemmys guttata*) and eastern hognose snake (*Heterodon platirhinos*) includes wooded and successional habitats, particularly those that are proximate to wetlands. Additionally, the NYS-Special Concern snake species eastern worm snake (*Carphophis amoenus*) has been documented in the vicinity of the subject property and may also occur at the site, particularly within moist forested areas near water features.

NYNHP records indicate that NYS-Threatened banded sunfish has been documented within a pond or ponds at or in the vicinity of the site.

Optimal onsite breeding, larval or adult habitat for the NYS-Special Concern coastal barrens buckmoth, which was documented at the site in 1987, is represented by the Pitch Pine-Oak-Heath woodland communities.

With respect to plants, onsite habitat for the NYS-Endangered coppery St. John's-wort (*Hypericum denticulatum*), NYS-Threatened comb-leaved mermaid-weed (*Proserpinaca pectinata*), small floating bladderwort (*Utricularia radiata*), short-beaked beakrush (*Rhynchospora nitens*) and rose coreopsis (*Coreopsis rosea*), as well as the NYS-Rare Nuttall's lobelia [*Lobelia nuttallii*] included includes wetland and aquatic communities. Onsite habitat for the remaining rare plant species, NYS-Threatened slender pinweed (*Lechea tenuifolia*) includes grassland habitats, as well as disturbed areas within the forested and successional communities.



3.0

Habitat Protection Plan

As detailed in Section 1.0, the proposed action would result in the ultimate subdivision of the EPCAL property into 50 lots, of which 42 lots would be redeveloped into a mixture of business, industrial, energy-related, residential and other uses. Based upon consultations with the NYSDEC, this CHPP has been designed to mitigate the impacts of the proposed action on the existing ecological habitats identified in Section 2.0 through the preservation, creation and management of key habitat areas for resident plant and wildlife species. Details of the habitat protection areas for the subject property are illustrated on the *Habitat Protection Plan for Enterprise Park at Calverton* (Attachment B). Specific details regarding habitat protection measures for each of the vegetated ecological communities identified in Section 2.0 are provided below.

Grasslands

As detailed in Section 2.0, the subject property's grasslands have been identified by the NYSDEC and the Nature Conservancy (TNC) as the largest remaining grassland habitat on Long Island and represent an important habitat for many declining grassland-dependent birds, including at least eight avian species that are listed as Endangered, Threatened or Special Concern species in New York State. The disturbance that has maintained these grasslands and prevented succession to later ecological stages has been historic maintenance of the runway areas in the form of periodic mowing. Currently, however, the grasslands are not actively managed, and there is no long-term management plan in place. In the absence of periodic management, colonization by shrub and tree species from surrounding wooded communities would result in succession to later ecological stages (i.e., shrubland and forest) and the incremental loss of grasslands from the subject property, thus rendering the site unsuitable as habitat for grassland specialist birds.

Implementation of the proposed action would result in the removal of 188.1 acres of the existing 646.2 acres of grassland habitat at the site, primarily in the area to the north of the runways. Given that development within these lots would likely occur in incremental stages over the course of multiple years, grassland habitat loss would also occur incrementally as well. In order to mitigate this habitat loss, this CHPP provides for the preservation and maintenance (as described below) of the remaining



458.1 acres of grassland habitat, representing 70 percent of the existing grasslands at the site. Furthermore, the proposed action would also result in the creation of an additional 138.3 acres of onsite grassland habitat, through the conversion of existing paved runway/ taxiway areas and wooded habitat to grasslands, which would also be maintained. This conversion would occur during the initial stages of the proposed action, thus ensuring that replacement habitat has been established before any clearing of grasslands occurs. In total, a net loss of 49.8 acres of grassland habitat would occur as a result of the proposed action. However, as a result of preservation of existing habitat and creation of new habitat, the CHPP provides for a total proposed grassland acreage of 596.4 acres. As, unlike in the existing condition, this grassland would be maintained (as opposed to developing into a shrubland and ultimately a woodland habitat through the process of ecological succession), implementation of the proposed action is expected to result in protection of grassland habitat on the site, which would not result if the proposed action were not implemented.

As detailed previously, periodic mowing has prevented the succession of grasslands into other ecological communities that occur on the site. Currently, no management plan for the maintenance of the onsite grassland habitat exists. As part of the proposed action, the total grassland acreage of 596.4 acres would be actively maintained as habitat for grassland bird species in accordance with Best Management Practices (BMPs) developed by New York Audubon⁴ and the NYSDEC⁵ for grassland bird habitat, as detailed below.

- In order to avoid disturbance during the grassland bird breeding season and the overwintering period for short-eared owl, northern harrier and other raptors, activities associated with the creation of 138.3 acres of grassland habitat (i.e., pavement removal, clearing of wooded habitat, tilling, seed planting, etc.) would occur between August 16 and October 31.
- In general, existing woody vegetation (i.e., trees, shrubs and vines) would be removed from the grassland habitat to the maximum extent practicable. Removal efforts would occur between August 16 and October 31 during the first year of management. If necessary, subsequent removal efforts would occur during the same time period.
- Management for perching species (e.g., upland sandpiper, vesper sparrow, eastern meadowlark), can be accomplished through maintenance of a limited



⁴ Morgan, M. and Burger, M. 2008. *A Plan for Conserving Grassland Birds in New York: Final Report to the New York State Department of Environmental Conservation under Contract No. C005137*. Audubon New York.

⁵ New York State Department of Environmental Conservation. 2014. *Best Management Practices for Grassland Birds*. Available online at: <http://www.dec.ny.gov/pubs/86582.html> Accessed March 27, 2014.



amount of scattered woody vegetation or the installation of fence posts within portions of the grassland.

- In general, mowing would occur every one-to-three years to attract and maintain habitat for different species. Habitat preferences, including vegetation height and thatch density, vary widely within the observed and expected avian species assemblage. However, given the large extent of grasslands at the subject property, the site can be managed to attract a variety of grassland birds by varying mowing frequencies across the site and thereby creating a diversity of habitat zones.
- Mowing or other mechanized activities would not occur within the grassland habitat during the breeding season (April 23 to August 15, inclusive).
- In order to avoid avian breeding season and to establish dominance of grasses over forbs (non-grassy herbaceous vegetation), mowing would occur as early as possible during the time period from August 16 to October 1.
- Should spring season mowing be necessary (e.g., to control invasive plant species), the mowing activity would occur no earlier than March 2 and no later than April 22.
- Disturbances, including mechanized activity and excessive noise, would be avoided or minimized to the maximum extent practicable during the overwintering season (November 1 to March 1).

It is anticipated that management of the onsite grasslands under the New York Audubon and NYSDEC BMPs detailed above would improve the overall quality of the grasslands as a habitat for avian species, including the eight NYS-Endangered, -Threatened and Special Concern bird species that have been reported at the subject property.

It is important to note that, in addition to preserving habitat for grassland birds and other wildlife, the total proposed grassland acreage of 596.4 acres would also contain expansive habitat area for the NYS-Threatened plant slender pinweed.

Pitch Pine-Oak Forest

The majority of existing habitat that would be zoned for ultimate development and subject to clearing as a result of the proposed action would occur in this community type. As detailed previously, this ecological community is considered to be “apparently secure” in New York State by the NYNHP and is common in the general surrounding area of the subject property. Furthermore, large contiguous blocks of this habitat would be preserved at the subject property to the north of the eastern runway, to the south of both runways and particularly within the lands comprising the Central Pine Barrens (CPB) Core Preservation Area at the western portion of the



site. It is also anticipated that additional Pitch Pine-Oak Forest habitat will occupy the site over time, as preserved areas supporting Tree Plantation and Successional Shrubland communities located to the north of the eastern runway develop into forested communities through the process of ecological succession.

Furthermore, the proposed action has been designed such that vegetated open space areas within the proposed lots would be contiguous with each other and with vegetated areas on adjacent parcels. The proposed lot layout has specifically been arranged such that areas of existing Pitch Pine-Oak Forest and other natural vegetation to remain are concentrated within the rear and side yards of the proposed lots, and contiguous to existing areas of Pitch Pine-Oak Forest on adjoining off-site properties. Additionally, all interior limits of natural vegetation to remain will be delineated by split-rail fence to act as a reference for future lot owners, and would assist in clearing limit enforcement.

The areas of Pitch Pine-Oak Forest to be preserved represent significant upland habitat area for herpetofauna, including the five NYS-Special Concern species that have been documented at the site. With respect to the NYS-Endangered eastern tiger salamander, as described below, Pitch Pine-Oak Forest communities occupy much of the upland area to be preserved within 1,000 feet of the two eastern tiger salamander breeding ponds identified by the NYSDEC. Finally, as slender pinweed may colonize disturbed areas within forested communities, protection of suitable habitat for this plant would also be accomplished by the preservation of Pitch Pine-Oak Forest habitat.

Pitch Pine-Oak-Heath Woodland

As detailed previously, the NYNHP ranks this fire-dependent community as “very vulnerable,” with few remaining acres remaining in New York State. The Pitch Pine-Oak-Heath Woodland community occurs within scattered pockets at the southeastern portion of the site, in the area to the north of the eastern runway. As this area would be preserved as open space under the CHPP, no significant adverse impacts to the onsite Pitch Pine-Oak-Heath Woodland habitat are anticipated as a result of the proposed action. The preservation of this community would also preserve the optimal onsite breeding, larval and adult habitat for the NYS-Special Concern coastal barrens buckmoth, as well as potential habitat for slender pinweed.

Pine/Spruce/Conifer Plantation

Portions of the tree plantation communities noted to the north of the eastern runway are located within Lots 40 through 43 and thus would be zoned for ultimate redevelopment and clearing as a result of the proposed action. However, other onsite examples of these communities would be preserved within the proposed open space areas to the north and south of these lots, including those within lands proposed for preservation. Similar to existing conditions, it is anticipated that colonization by successional vegetation from surrounding wooded and grassland habitats observed during the field inspections would continue within the preserved



tree plantations following implementation of the proposed action, resulting in the eventual conversion of these anthropogenic habitats to forested communities dominated by tree species from neighboring habitats (i.e., Pitch Pine-Oak Forest). However, as tree plantation communities are considered by the NYNHP to be “demonstrably secure” in New York State and are common regionally, no significant adverse impacts to this community type are anticipated as a result of the proposed action.

The protection of portions of the former tree plantation areas would provide additional upland habitat protection for the rare herpetofauna noted onsite, as well as potential habitat for slender pinweed.

Successional Shrubland

As indicated previously, the Successional Shrubland ecological community is represented in scattered locations at the subject property that have been subject to historic disturbance, including portions of the former agricultural fields and tree plantations to the north of the eastern runway. Some areas of this community occur within Lots 40 through 43 (as depicted on the *Habitat Protection Plan for Enterprise Park at Calverton* (see Attachment B), and therefore would be zoned for ultimate redevelopment and eventual clearing as a result of the proposed action. However, other onsite examples of Successional Shrubland would be preserved within the proposed open space areas to the north and south of these lots. Regardless of the proposed action, and in the absence of additional disturbance, it is anticipated that the process of ecological succession that is already underway will continue within the Successional Shrubland habitats, resulting in the eventual conversion to wooded communities. However, given that the Successional Shrubland community is by definition a dynamic, transitional habitat that is considered by the NYNHP to be “apparently secure” in New York State, no significant adverse impacts to this community type are anticipated as a result of the proposed action.

The preservation of portions of the Successional Shrubland would afford upland habitat protection for the rare herpetofauna species noted onsite, as well as potential habitat for slender pinweed.

Paved Road/Path

Removal of much of the existing paved areas at the subject property would occur as a result of the conversion of this habitat to grasslands. However, as this largely unvegetated habitat is of little overall ecological significance, no significant adverse impacts are anticipated.

Wetland and Aquatic Habitats

As detailed previously, various wetland and aquatic resources are located within or partially within the subject property boundaries, including ten NWI-designated habitats and six NYSDEC-regulated wetland areas. The CHPP has been specifically



developed to avoid the loss of wetland and aquatic habitats, and to minimize development-related disturbance to these resources. Accordingly, as detailed on the *Habitat Protection Plan for Enterprise Park at Calverton* (see Attachment B), a key element of the CHPP is the preservation of all onsite wetland and aquatic habitats and avoidance of development within 1,000 feet of any of these resources. The preservation of wetland and aquatic features would also afford protection for the Coastal Plain Pond community, reported by the NYNHP as occurring at or in the vicinity of the subject property. Based upon the foregoing, no significant adverse impacts are anticipated for the eastern tiger salamander as a result of the proposed action.

The protection afforded to onsite wetland and aquatic habitats by the CHPP would also preserve all known breeding and non-breeding habitat for the NYS-Endangered eastern tiger salamander. Pursuant to the NYSDEC *Guidance for Land Cover Set Asides for Conservation of the Eastern Tiger Salamander and Suggested Methods to Avoid, Minimize and Mitigate Impacts*, it is recommended that 100 percent of existing upland forest habitat within 535 feet of breeding ponds and a minimum of 50 percent of adjacent upland habitat within 1,000 feet of breeding ponds be preserved. In accordance with this guidance document, the lots proposed for future development have been situated a minimum of 1,000 feet from the two tiger salamander breeding ponds identified by the NYSDEC at the northeastern portion of the subject property and proximate to the south of the site. As such, no loss of, or physical disturbance to, the two aforementioned breeding ponds would occur, and surrounding upland habitat for eastern tiger salamander would be preserved as well. Therefore, no significant adverse impacts are anticipated for the eastern tiger salamander as a result of the proposed action.

As the CHPP provides for the preservation of all wetland and aquatic habitats and adjacent upland areas located at the site, protection of breeding and non-breeding habitat for three other NYS Special Concern amphibian or reptile species documented at the subject property (marbled salamander, eastern spadefoot toad and spotted turtle) would also be accomplished. Additionally, the NYS Special Concern snake species eastern worm snake has been documented in the vicinity of the subject property and may also occur at the site, particularly within moist forested areas near water features. If present at the site, potential onsite habitat for this species would also be afforded by the CHPP through the preservation of wetlands and adjacent habitats.

Finally, by preserving all onsite wetland/ aquatic habitats, the CHPP would also preserve existing habitat for the six rare wetland plants for which onsite records exist (coppery St. John's-wort, comb-leaved mermaid-weed, small floating bladderwort, short-beaked beakrush, rose coreopsis and Nuttall's lobelia).



4.0

Conclusions

The EPCAL site supports six distinct upland communities and ten National Wetland inventory (NWI) wetland/ aquatic habitat categories. A total of 16 wildlife species and seven plant species listed by New York State as “Endangered,” “Threatened,” “Special Concern” or “Rare” have been documented as occurring at or in the vicinity of the site. Based upon consultations with the NYSDEC, this CHPP has been prepared by VHB in order to mitigate impacts to the six aforementioned habitats related to the subdivision of the subject property into 50 lots, of which 42 lots would be for ultimate mixed-use redevelopment.

In order to mitigate for the proposed removal of 188.1 acres of grassland habitat (which is currently not maintained and is subject to succession), the CHPP provides for the preservation of the remaining 458.1 acres of grasslands and the creation of an additional 138.3 acres of onsite grassland habitat, all of which would be maintained. The grasslands would be managed under NY Audubon/ NYSDEC BMPS as a habitat for grassland birds, including the NYS-Endangered short-eared owl, the NYS-Threatened northern harrier and six other rare grassland species that have been documented at the site.

Combined with the grassland preserve, the preservation of large contiguous blocks of the Pitch Pine-Oak Forest, Pitch Pine-Oak-Heath Woodland, Pine/ Spruce/ Conifer Plantation and Successional Shrubland communities as described in the CHPP would also preserve habitat for the five aforementioned rare herpetofauna species, as well as slender pinweed.

The protection afforded to onsite wetland and aquatic habitats by the CHPP would also preserve all known onsite breeding and non-breeding habitat for the NYS-Endangered eastern tiger salamander and other rare amphibians and reptiles, in accordance with NYSDEC standards. Habitat preservation for six rare wetland plant species would also occur as a result.



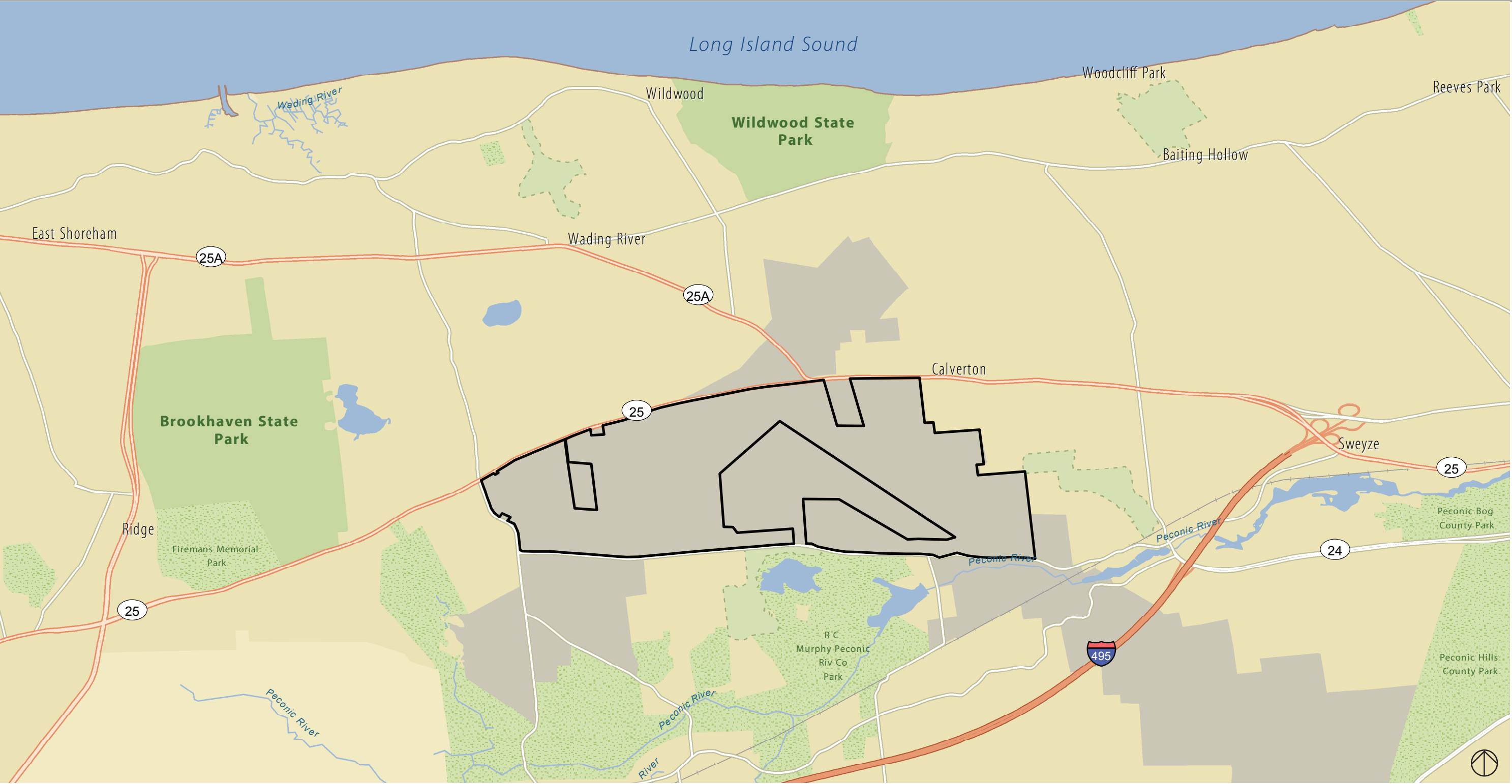
Based upon the foregoing, the CHPP provides for protection of significant habitat area for 23 rare wildlife and plant species through the preservation of large, contiguous blocks of all existing upland and wetland/ aquatic habitats at the subject property. The CHPP further provides for the management of much of the site as a habitat preserve for grassland bird species. Accordingly, it is anticipated that management of the onsite grasslands under the New York Audubon and NYSDEC BMPs detailed in this CHPP would improve the overall quality of the grasslands as a habitat for avian species, including the eight NYS-Endangered, -Threatened and Special Concern bird species that have been reported at the subject property.

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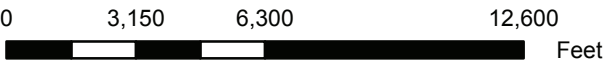


Engineering, Surveying and Landscape Architecture, P.C.

Attachment A



LEGEND
[Black Outline] EPCAL Property

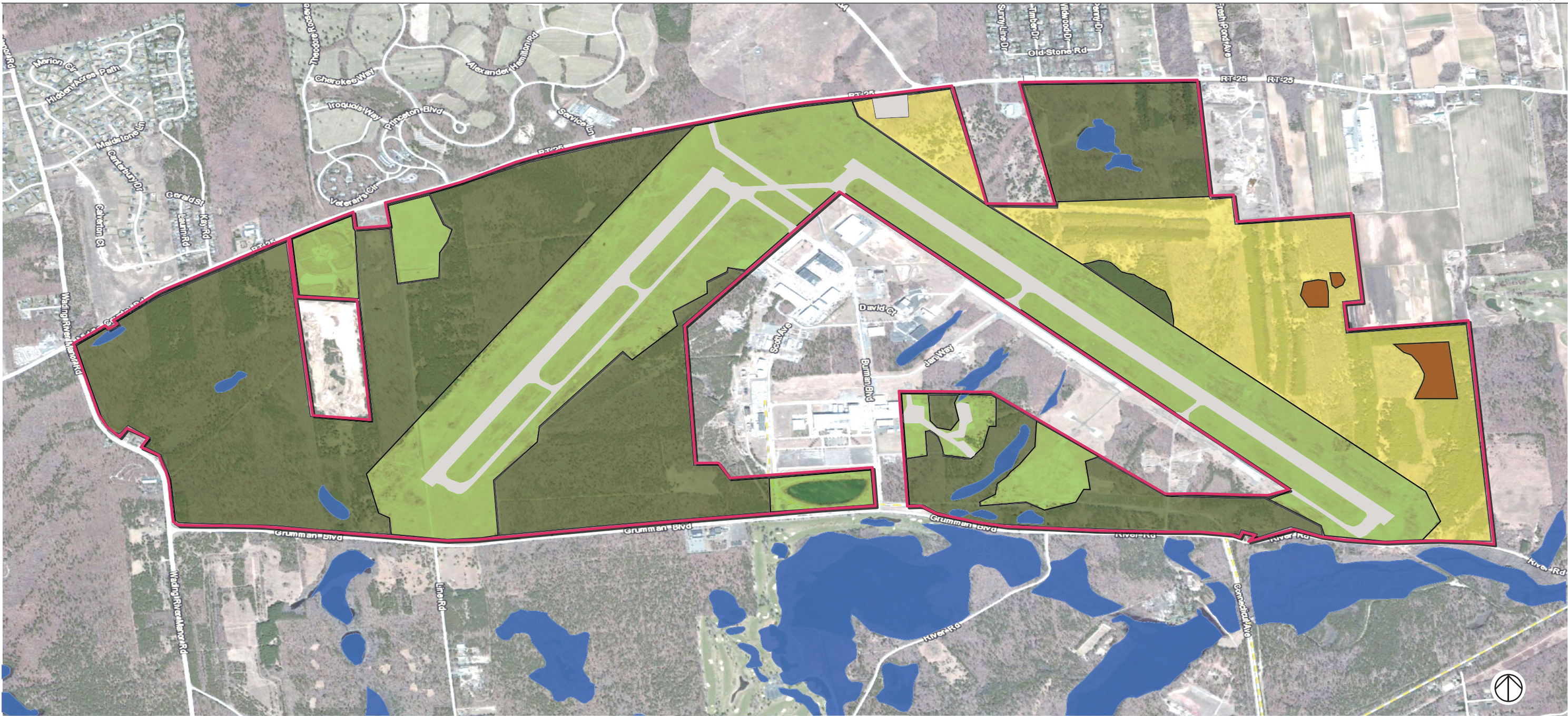


Source: Town of Riverhead GIS



PROPOSED SUBDIVISION OF EPCAL PROPERTY
DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT
COMPREHENSIVE HABITAT PROTECTION PLAN
Calverton, New York

Site Location



LEGEND

-  EPCAL Property
-  Pitch Pine-Oak Forest
-  Pitch Pine-Oak-Heath Woodland
-  Tree Plantation/Successional Shrubland
-  Successional Old Field
-  Paved Road/Path
-  Surface Water/Wetland

0 1,250 2,500 5,000 Feet

Source: VHB



PROPOSED SUBDIVISION OF EPCAL PROPERTY
DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT
COMPREHENSIVE HABITAT PROTECTION PLAN
Calverton, New York

Ecological Communities



Figure
2



LEGEND

- EPCAL Property
- NWI Wetland

0 1,250 2,500 5,000
Feet

Source: Town of Riverhead GIS; U.S. Fish and Wildlife Service National Wetlands Inventory Wetland Mapper <http://www.fws.gov/wetlands/Data/mapper.html>. October 31, 2011

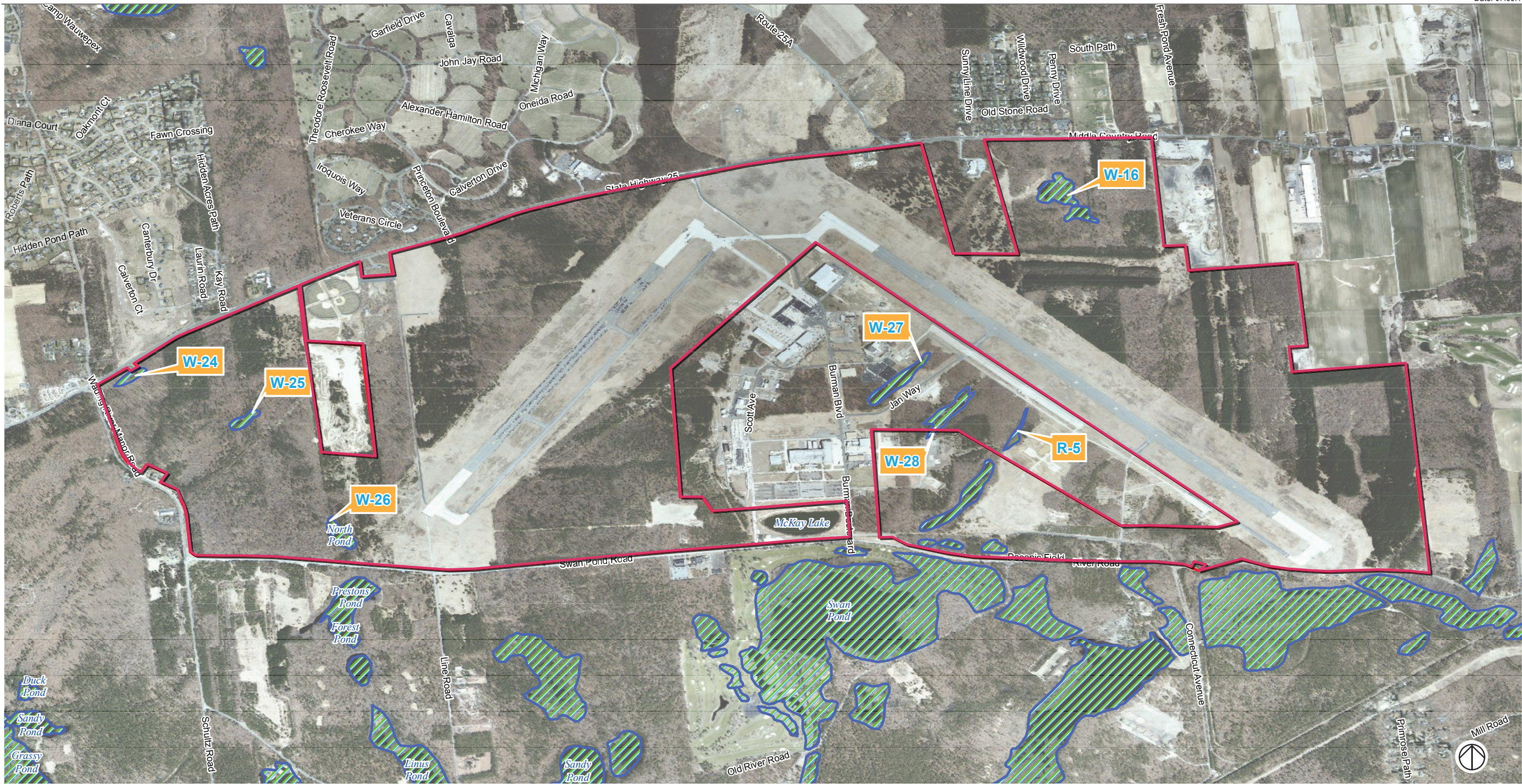


PROPOSED SUBDIVISION OF EPCAL PROPERTY
DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT
COMPREHENSIVE HABITAT PROTECTION PLAN
Calverton, New York



NWI Wetlands

Figure
3



LEGEND

-  EPCAL Property
-  NYSDEC Freshwater Wetlands
-  NYSDEC Wetland ID

0 1,250 2,500 5,000 Feet

Source: NYS Regulatory Freshwater Wetlands for Suffolk County, NYSDEC, July 2013; 2013 NYS Digital Ortho-imagery, NYSITS, October 2013; Tax map parcel linework from Town of Riverhead GIS S.R.P.T.A. 2008



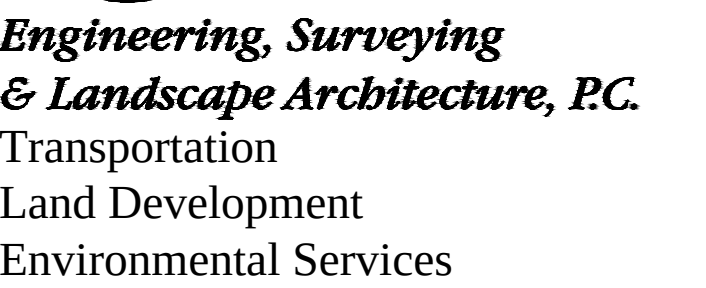
PROPOSED SUBDIVISION OF EPCAL PROPERTY
DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT
COMPREHENSIVE HABITAT PROTECTION PLAN
Calverton, New York

NYSDEC Freshwater

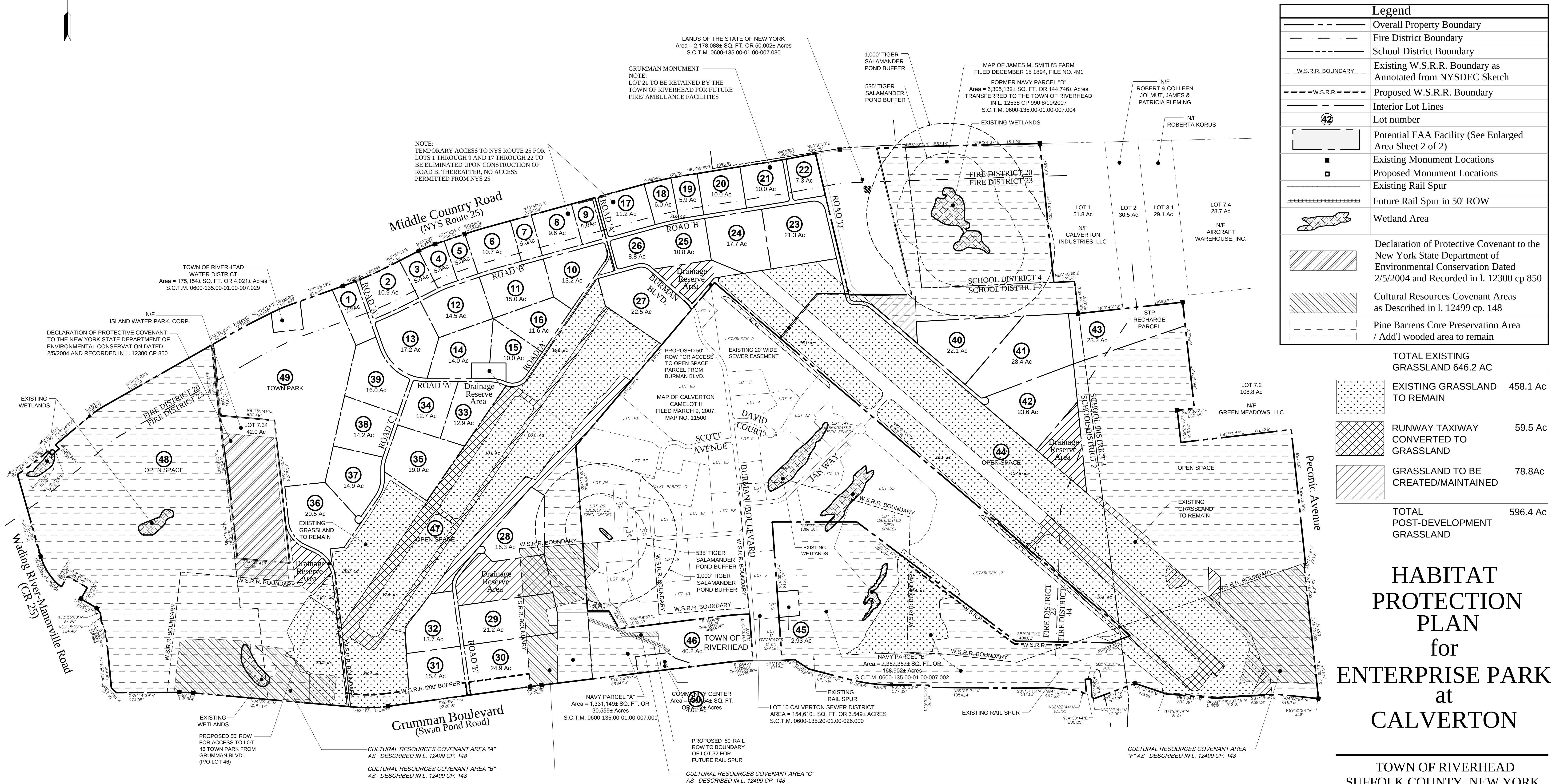
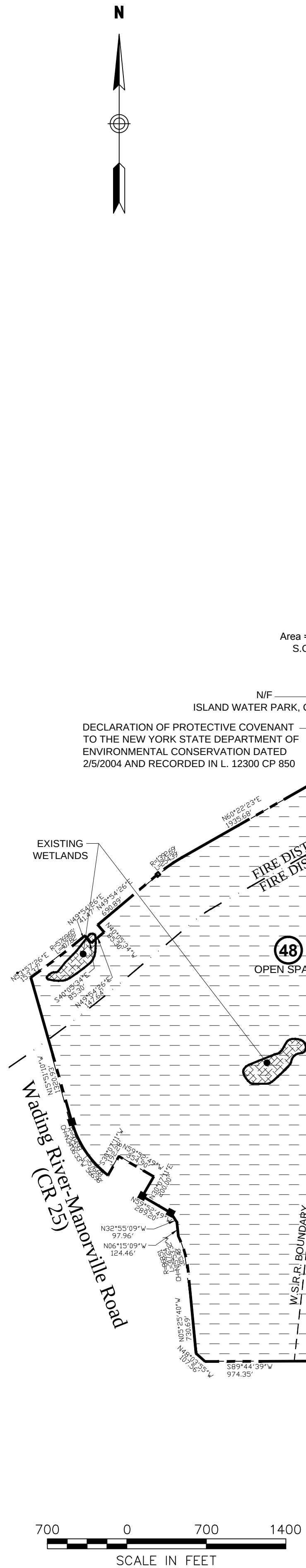


Figure
4

Attachment B



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631.234.3444 • FAX 631.234.3477



HABITAT PROTECTION PLAN for ENTERPRISE PARK at CALVERTON

TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK
June 3, 2014
District 0600; Section 135; Block 1;
Lots 7.1, 7.2, , 7.33 & 7.4