EAST HAMPTON AIRPORT

FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT

Prepared for the
Town of East Hampton

Submitted by

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In Association with

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August 2010

FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR THE TOWN OF EAST HAMPTON AIRPORT MASTER PLAN

August 2010

Proposed Action: **Adoption of the East Hampton Town Master Plan Report Prepared for the Town of East Hampton April 2007**

Location: **Town of East Hampton, Suffolk County, New York**

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EXECUTIVE SUMMARY

This Generic Environmental Impact Statement (GEIS) has been prepared in accordance with New York State's Environmental Quality Review Act (SEQRA) and the National Environmental Policy Act (NEPA) to address environmental effects of proposed development at the East Hampton Airport.

The proposed projects comprise a consensus plan for airport improvement tailored to support essential activities. It is based on a planning study conducted between 2004 and 2007 that evaluated several alternative plans. The GEIS completes the review and decision-making process and allows for continued citizen input. A Draft GEIS was prepared in July 2009 and made available to the public. A public hearing was held on September 17, 2009. In addition to oral comments, numerous written comments were submitted. A complete response to comments is included as Appendix I and, as necessary, text was revised or sections added in this Final GEIS. This GEIS may be supplemented as required after finalization of the Airport Layout Plan.

A total of 14 proposed projects at East Hampton Airport are analyzed in this GEIS. They reflect a modest plan that concentrated on improved safety, efficiency and compliance with current design standards. None of these projects were found to have a significant impact on the environment based on State and Federal requirements.

Purpose and Need – The purpose of this Proposed Action is to improve the safety, efficiency, and economic viability of the East Hampton Airport. The proposed projects minimize alterations to the existing airfield and achieve compliance with FAA design standards.

Alternatives Analysis – The East Hampton Airport Master Plan Report considered various alternatives for each of the proposed projects, including the No Action alternative. Three potential runway configuration alternatives were considered, 1) retain Runway 16/34, 2) close Runway 16/34 and rehabilitate Runway 4/22, or 3) retain both runways. It was determined that rehabilitating Runway 4/22 and converting existing Runway 16/34 to a taxiway was less disruptive, more consistent with the layout and function of the airport and more cost effective.

Forecasts of Aviation Demand – The methodology employed for this study takes the most recent based aircraft data set (2008) and applies the FAA growth rates anticipated for the industry to each individual category, which are then combined to arrive at the Airport's total

forecast of annual operations through the year 2029 (see table below). In general, there is limited growth forecasted over the next five years, with a greater increase over the 20 year period, particularly for jet and helicopter traffic.

Twenty Year Forecast for East Hampton Airport Using FAA Forecast Table						
	2009 Actual	2010	2014	2019	2024	2029
Single Engine GA	14,296	13,753	14,311	15,071	15,997	16,980
Multi Engine GA	2,182	2,134	1,980	1,891	1,872	1,853
Helicopters	5,859	6,011	6,746	7,897	9,066	10,408
Jets	2,693	2,917	3,684	5,477	7,364	9,901
Total	**25,030**	**24,815**	**26,721**	**30,335**	**34,299**	**39,143**

Source: YES, Inc.; FAA Terminal Area Forecast Table 28 (2009-2030)

Environmental Impacts – None of the proposed projects is expected to cause significant environmental impacts. This GEIS analyzed existing conditions and expected environmental impacts for all required impact categories, including air quality, water quality, wetlands, endangered species of flora and fauna, and historic and cultural resources.

Noise impacts are a major concern at East Hampton; therefore, an extensive analysis of existing and expected future impacts was performed. For both the average day and the busy day in the forecast year 2013, all areas at the annual average DNL 65 level and above are entirely on airport. The same is true for the average day in the forecast year 2029, with the exception of a small area on the western border of the Airport. No structures are expected to be enclosed by the contour.

Mitigating Measures – The proposed development is deliberately limited in scope, avoids growth inducing measures, avoids wetland areas and avoids the need for extensive mitigation actions. This concept is consistent with a variety of Town practices, policies and procedures which form the administrative context for the Airport.

Design measures in the airfield design will mitigate air pollutant emissions by reducing taxiing distances and potential delays to arriving and departing aircraft. Airport management practices will prevent contamination of the groundwater and allow for bird and wildlife sustenance during breeding seasons. Construction practices and timing will reduce erosion and sedimentation and incorporate appropriate stormwater management.

EAST HAMPTON AIRPORT
FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT

1.0 Introduction

East Hampton Airport has been working to develop a Master Plan that is acceptable to the Town and surrounding community for nearly two decades. Issues with noise and concern for environmental resources require detailed analysis of the impacts from any proposed development.

A planning study conducted between 2004 and 2007 pointed to several alternative plans and management schemes culminating in a consensus plan for airport improvement tailored to support essential activities without triggering unwanted and uncontrollable growth. At the time of submission, the consensus recommendation from the planning team was the reactivation and repaving of Runway 4/22, with Runway 10/28 continuing in approximately its current configuration, and the closure of Runway 16/34 and its conversion to a taxiway. See Appendix A for summary of comments from a public hearing in July 2007. In order to fully consider environmental impacts associated with all proposed developments and opportunities on the Airport, an environmental impact statement is required, in accordance with New York State's Environmental Quality Review Act (SEQRA). This will provide the Town additional information for further vetting of the desired objective.

Thus, a Generic Environmental Impact Statement (GEIS) has been prepared. This document can then be used to complete review and decision-making within the Town, allow for continued citizen input, and resolve land use issues and environmental issues on airport. It may then be readily supplemented as required after finalization of the Airport Layout Plan. This GEIS summarizes environmental concerns to date, discusses and resolves remaining on airport land use issues, resolves the integration of portions of the airport tract into conservation land, and provides for a final public review and airing of concerns.

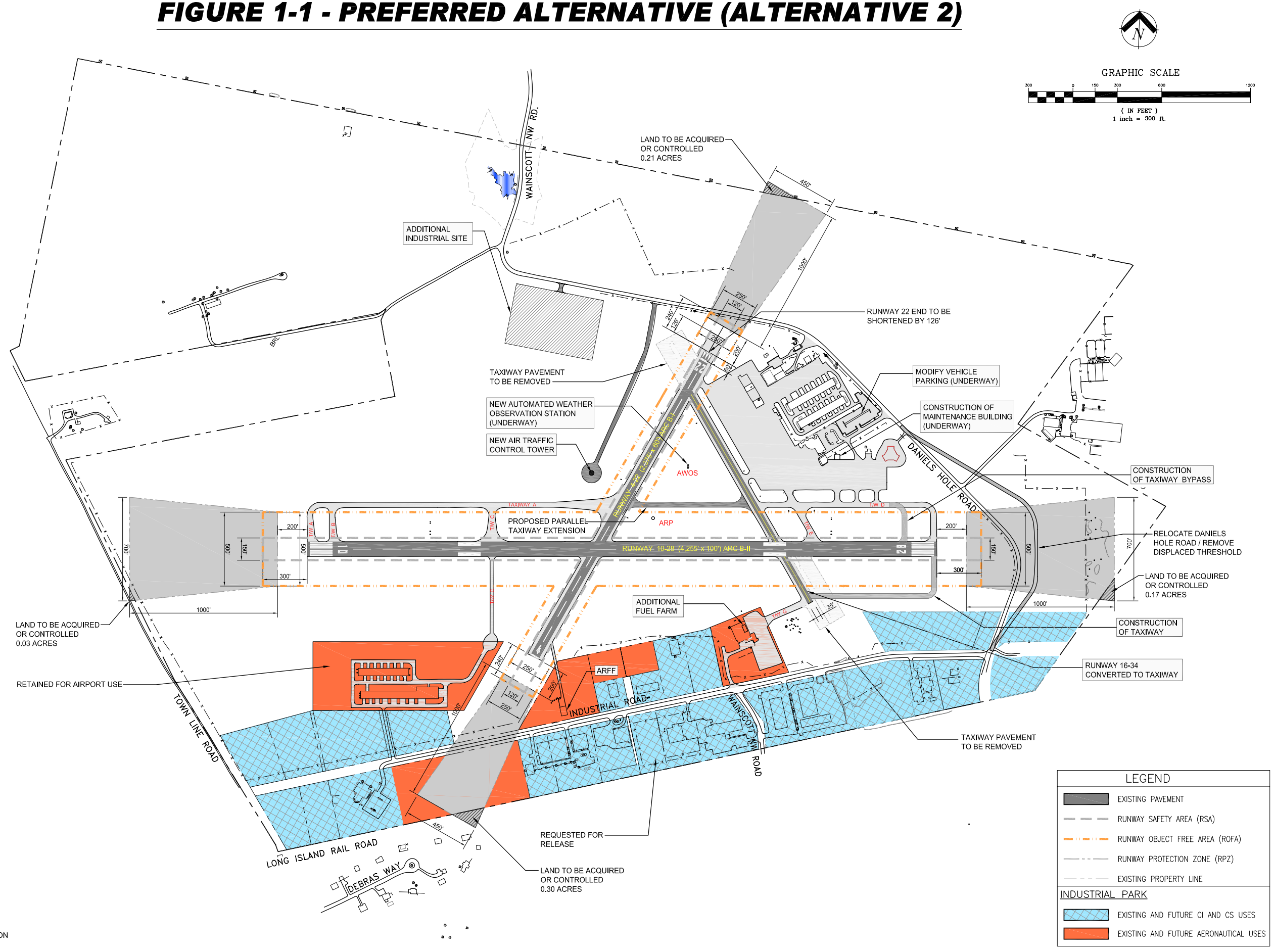
The following proposed projects at East Hampton Airport are analyzed in this GEIS (see Table 1-1 and Figure 1-1):

- Rehabilitate Runway 4/22 and reactivate (currently closed)
  - Shorten by 126 feet at Runway 22 end and institute displaced land threshold of 60 feet to comply with FAA standards
  - Trim any trees that penetrate the approach surface at the Runway 22 end, per FAR Part 77
- Convert Runway 16/34 to taxiway; remove pavement at both ends
- Relocate Daniel's Hole Road at Runway 28 to comply with FAA safety standards and allow full use of Runway 10/28
- Improve taxiway system
  - Add bypass taxiway at the Runway 28 end
  - Extend Taxiway G to Runway 28 end
  - Complete parallel taxiway north of Runway 10/28 through midfield
- Construct additional Fuel Farm near Taxiway G to serve southern Fixed Base Operator (12,000 gallon above ground storage tank for Jet A fuel)
- Modify Vehicle Parking near Terminal Building; add paved parking spots for rental cars and employees
- Construct Maintenance Building south of Terminal Building
- Install Automated Weather Observation Station (AWOS) in midfield
- Install Seasonal Control Tower in north or south corner of Runways 4/22 and 10/28 intersection (a trailer with full surround windows); construct Access Road from Daniel's Hole Road
- Acquire or control land use through easement in Runway Protection Zones (4 ends, total of 0.71 acres)
- Release sites along Industrial Road in southern portion of site for non-aeronautical development
- Reserve site off of Daniel's Hole Road in northern portion of Airport as future Industrial Site

Table 1-1: Description of Proposed Projects		
Project	**Activity**	**Dimensions**
Reactivate Runway 4/22 in compliance with FAA standards	- Rehabilitate existing pavement (shortened by 126 feet) - Mark pavement with displaced landing threshold of 60 feet - Relocate runway end and edge lights - Remove or trim trees that penetrate the approach surface at Runway 22 end	- 2,375 feet long x minimum 60 feet wide - Remove 9.75 acres of trees; trim 4.7 acres of trees
Convert Runway 16/34 to taxiway	- Modify pavement marking - Remove pavement at both ends (*if required*)	
Allow full use of Runway 10/28 in compliance with FAA safety standards	- Relocate Daniel's Hole Road at Runway 28	- Construct 2,000 feet x 25 feet of asphalt pavement - Remove 1,800 feet x 25 feet of original road
Add bypass taxiway at the Runway 28 end	- Construct asphalt pavement - Install taxiway edge lights	240 feet x 40 feet
Extend Taxiway G to Runway 28 end	- Construct asphalt pavement - Install taxiway edge lights	1,100 feet x 40 feet
Complete parallel taxiway north of Runway 10/28 through midfield	- Construct asphalt pavement - Install taxiway edge lights	850 feet x 40 feet
Install additional Fuel Farm near Taxiway G to serve southern FBO		12,000 gallon above ground storage tank for Jet A fuel
Modify Vehicle Parking near Terminal Building	- Pave turfed area along southern margin for rental cars - Pave turfed area along north side for employees	- 670 square yards - 930 square yards
Construct Maintenance Building south of Terminal Building	- Construct building on existing foundation - Connect with electricity and water	- 1,800 square feet
Install AWOS in midfield	- Connect with electricity	

Table 1-1: Description of Proposed Projects (continued)		
Project	**Activity**	**Dimensions**
Install Seasonal Control Tower in north or south corner of Runways 4/22 and 10/28 intersection	- Install trailer with full surround windows - Connect with electricity and water - Construct access road to Daniel's Hole Road (*north location only*)	- 1,200 feet x 25 feet
Control Runway Protection Zones	Acquire or control land use through easement	- 0.03 acres (RW 10) - 0.30 acres (RW 4) - 0.17 acres (RW 28) - 0.21 acres (RW 22)
Release sites along Industrial Road in southern portion of site	Request for release for non-aeronautical development	26 lots on approximately 60 acres
Additional Industrial Site off of Daniel's Hole Road in northern portion of Airport	Reserve site as future industrial site	Approximately 5.5 acres

FIGURE 1-1 - PREFERRED ALTERNATIVE (ALTERNATIVE 2)



NOTES:

1. GPS INSTRUMENT APPROACHES TO BE ENHANCE
2. ENVIROMENTAL CONSERVATION AND PRESERVATION PRACTICES WILL BE IMPLEMENTED

1.1 Purpose and Need

The purpose of this Proposed Action is to improve the safety, efficiency, and economic viability of the East Hampton Airport so that it can continue to serve the recreational, tourism, and commercial aviation community in the area, while providing limited disruption to neighboring residential areas and positive economic benefit to the Town of East Hampton. The Proposed Action (see list of projects above and Figure 1-1) minimizes alterations to the existing airfield, while complying with the appropriate FAA standards. Each of the individual projects that make up the Proposed Action is needed because:

- East Hampton Airport requires a runway configuration that provides adequate wind coverage, conforms to FAA standards, encourages efficient and safe aircraft movement, and maintains the existing aircraft storage space at the airport. Repaving Runway 4/22 and converting Runway 16/34 to a taxiway would provide a cross-wind runway that would serve smaller general aviation aircraft and conform to FAA design standards without removing a significant amount of existing aircraft parking apron from use.

- Runway 4/22 is currently closed due to poor pavement conditions. In addition, based on the existing pavement ends, the Runway Safety Area (RSA) at the Runway 22 end is penetrated by Daniel's Hole Road. FAA standards require the RSA (extending 300' beyond the end of the runway and 150' wide) be clear of all objects and graded to support an aircraft that overruns the runway during landing. If the runway is shortened by 126' and repaved at a length of 2,375' and width of 60' it would meet FAA standards and still provide adequate runway length to accommodate single engine and small twin engine aircraft.

    - The Runway 4/22 layout would still not provide sufficient clearance over Daniel's Hole Road to allow for cars and trucks to traverse without penetrating the landing threshold, per FAR Part 77. In addition, trees currently penetrate the approach surface, resulting in obstructions to air navigation. Removal or trimming of trees that penetrate the approach surface and displacement of the Runway 22 threshold by 60' will ensure conformance with FAA standards and safe use of the runway.

- The current Runway 10/28 layout does not provide sufficient clearance over Daniel's Hole Road at the 28 end to allow for cars and trucks to traverse without penetrating the landing

threshold. Conformance with FAA standards would require displacement of the threshold by 150'. The current Runway 10/28 configuration has design standards for a smaller aircraft (Twin Otter, ARC A-II) that does not represent the types of aircraft that actually use the runway. Larger and more demanding airplanes make up the majority of the fleet mix at the Airport. The existing runway length of 4,255' is adequate to support operations of the B-II design aircraft, Citation 560. In order to conform to FAR Part 77 and maintain the existing full length of Runway 10/28 to serve the current fleet mix at East Hampton Airport, Daniel's Hole Road must be relocated.

- The current taxiway system at East Hampton Airport does not adhere to FAA design principles that each runway be provided with a parallel taxiway or the equivalent capability, that there be bypass capability or multiple access to runway ends, and that runway crossings are minimized.

  - Runway 10/28 has two sections of parallel taxiway that connect to the two runway ends and runs to the north of the runway (Taxiway "A" and "D"); however, the taxiway does not run the entire length of the runway, missing a section in the middle through the infield triangle. This results in inefficient aircraft movement and unsafe conditions as aircraft must sometimes taxi on an active runway. Constructing a full length parallel taxiway to Runway 10/28 will shorten taxiing distances (thereby reducing fuel consumption and air emissions) and improve safety.

  - There is only one access taxiway to the Runway 28 end, via Taxiway "D", resulting in congestion and delays when a departing aircraft awaiting clearance blocks the taxiway from other departing aircraft. Construction of a short by-pass taxiway to Runway 28, just west of the runway end, will reduce delays and idling time (thereby reducing fuel consumption and air emissions).

  - The only current access to the southern FBO is via Runway 16/34 (to be converted to a taxiway) and Taxiway "G". Aircraft from the southern FBO using the Runway 28 end must either cross Runway 10/28 and taxi on Runway "D" or back-taxi along a significant length of Runway 10/28 itself. Construction of a new taxiway connecting the Runway 28 end to the southern FBO will improve safety and the efficiency of aircraft movement at the Airport.

- Full control of the Runway Protection Zone (RPZ) by the Airport is recommended by the FAA to ensure that no objects that can have an adverse effect on the airport operations are placed within the area. Obstructions to air navigation or incompatible uses such as fuel handling and storage facilities or wildlife attractants would compromise the protection of people and property on the ground. Small portions of each of the four RPZs, at the end of each active runway, are not currently located on airport property. Obtaining control of all of the RPZs (a total 0.71 acres) through acquisition or other land use control would ensure continued protection of people and property.

- The current uncontrolled airport environment does not allow for proper flight management (i.e., assignment of aircraft and helicopters to the most appropriate flight tracks) and prevents full, controlled adherence to noise abatement procedures that the Airport has implemented. A seasonal aircraft control tower will ensure safe, efficient aircraft movement that minimizes noise impacts to nearby residential areas. To be fully effective, the aircraft control tower must be located such that there is a clear line of sight to all traffic patterns, the final approaches to all runways, all runway structural pavement, and other operational surfaces.

- Users of East Hampton Airport must currently retrieve weather data from Francis S. Gabreski Airport in Westhampton Beach, NY, 27 miles away. The proximity to the ocean results in dramatically changing weather conditions in and around East Hampton. The absence of an on-site Automated Weather Observation Station (AWOS) results in a higher potential for approaching aircraft to encounter low visibility conditions that prevent landing and result in a potentially unsafe situation that produces additional noise. An on-site AWOS will reduce diversions and enable pilots to make their decision to land or not land much further from the airport.

- There are two fixed based operators (FBO) at East Hampton Airport, yet only one fuel storage facility, managed by the Town of East Hampton. The existing fuel storage facility is located in the northern section of the Airport, near one FBO. Fuel must be transported via fueling truck to the second FBO, located in the southern portion of the property. During the summer months, daily deliveries of Jet A fuel to the Airport are required to meet demand. Installation of a second 12,000 gallon Jet A fuel storage tank near the southern FBO would increase reserves to a level more consistent with industry standards. Moreover, having two fueling facilities would enable the Town to lease or sell the fuel facilities to the two FBOs

operating at the Airport, thus reducing liability, expense and inefficiencies in Airport operations.

- During the summer months the parking lot near the terminal building is often at capacity, requiring rental cars to be parked on a grassy area adjacent to the parking lot and some visitors to park along Daniel's Hole Road. Constructing two additional parking areas south and north of the existing parking lot for spots dedicated to rental cars and employees will alleviate overcrowding and provide convenient access to the terminal building.

- Airport maintenance facilities are at capacity at East Hampton Airport. A new maintenance building located south of the terminal building will provide the required space for storage of equipment and supplies that is convenient to the majority of activity at the Airport.

- In order to meet aviation as well as non-aviation Town needs, excess land on the Airport property will be leased for non-aeronautical use. The Town has been developing an industrial park in the area south of the Airport for more than 20 years and filed a subdivision "Map of the East Hampton Industrial Park" on April 17, 1998. The southern portion of the Airport property, along Industrial Road, has several sites currently developed for non-aeronautical use. The land is not needed for future projected Airport needs; however, a more active effort to develop the land will enable the Airport to ensure the non-aeronautical uses are compatible with the Airport and that tenants are charged fair market value for the land, providing revenue to the Airport allowing and promoting self-sufficiency.

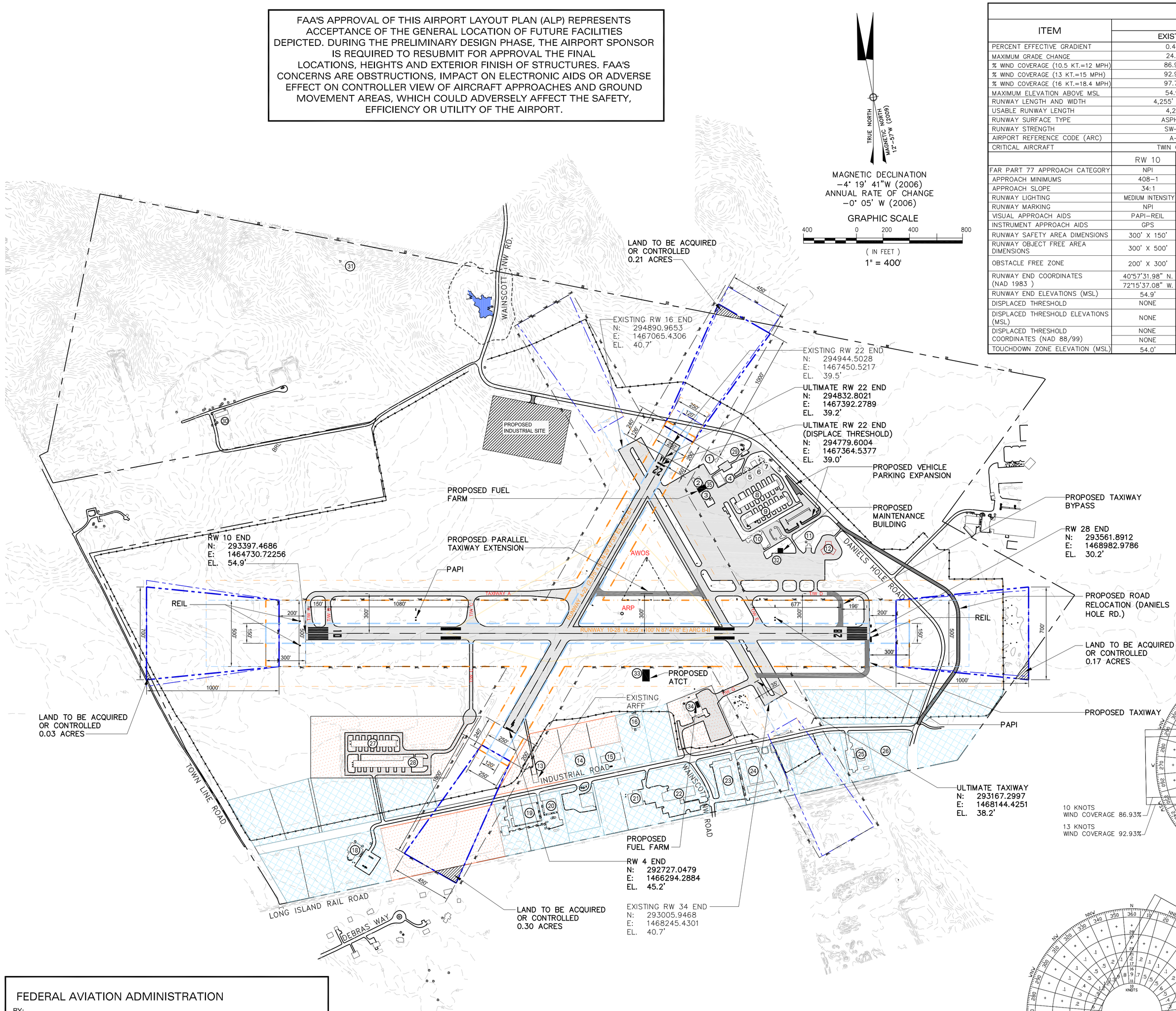
- Similarly an additional industrial site northwest of the runways, off of Daniel's Hole Road, should be reserved for potential future development to meet future demand and serve as a source of additional revenue for the Airport.

1.2 Airport Layout Plan and Grant Assurances

Figure 1-2 shows the draft Proposed Airport Layout Plan. It is a technical diagram conforming to the standards and requirements of the FAA. It includes the 14 proposals shown in Figure 1-1 and all other material facilities on the Airport.

The filing of an up-to-date Airport Layout Plan (ALP) is a requirement for inclusion into the National Plan of Integrated Airport Systems. The current Airport Layout Plan dates from 1989,

FAA'S APPROVAL OF THIS AIRPORT LAYOUT PLAN (ALP) REPRESENTS ACCEPTANCE OF THE GENERAL LOCATION OF FUTURE FACILITIES DEPICTED. DURING THE PRELIMINARY DESIGN PHASE, THE AIRPORT SPONSOR IS REQUIRED TO RESUBMIT FOR APPROVAL THE FINAL LOCATIONS, HEIGHTS AND EXTERIOR FINISH OF STRUCTURES. FAA'S CONCERNS ARE OBSTRUCTIONS, IMPACT ON ELECTRONIC AIDS OR ADVERSE EFFECT ON CONTROLLER VIEW OF AIRCRAFT APPROACHES AND GROUND MOVEMENT AREAS, WHICH COULD ADVERSELY AFFECT THE SAFETY, EFFICIENCY OR UTILITY OF THE AIRPORT.



RUNWAY DATA

ITEM	RUNWAY 10-28				RUNWAY 4-22				RUNWAY 16-34			
	EXISTING		ULTIMATE		EXISTING		ULTIMATE		EXISTING		ULTIMATE	
PERCENT EFFECTIVE GRADIENT	0.4%		0.4%		CLOSED		0.3%		0.3%		–	
MAXIMUM GRADE CHANGE	24.7		SAME		5.7		6.2		0.0		–	
% WIND COVERAGE (10.5 KT.=12 MPH)	86.93		–		87.02		–		87.58		–	
% WIND COVERAGE (13 KT.=15 MPH)	92.93		–		92.03		–		92.93		–	
% WIND COVERAGE (16 KT.=18.4 MPH)	97.70		–		96.58		–		97.98		–	
MAXIMUM ELEVATION ABOVE MSL	54.9'		–		SAME		–		–		–	
RUNWAY LENGTH AND WIDTH	4,255' X 100'		4,255' X 75'		2,501' X 100'		2,375' X 60'		2,060' X 75'		CLOSED	
USABLE RUNWAY LENGTH	4,255'		4,255'		CLOSED		2,375'		2,060'		CLOSED	
RUNWAY SURFACE TYPE	ASPHALT		SAME		CLOSED		ASPHALT		ASPHALT		CLOSED	
RUNWAY STRENGTH	SW–60		SAME		CLOSED		SW–12		SW–8.0		CLOSED	
AIRPORT REFERENCE CODE (ARC)	A–II		B–II		CLOSED		B–1		A–II		CLOSED	
CRITICAL AIRCRAFT	TWIN OTTER		C–560		CLOSED		BEECH BARON		TWIN OTTER		CLOSED	
	RW 10	RW 28	RW 10	RW 28	RW 4	RW 22	RW 4	RW 22	RW 16	RW 34	RW 16	RW 34
FAR PART 77 APPROACH CATEGORY	NPI	NPI	SAME	SAME	–	–	V	V	V	V	NONE	NONE
APPROACH MINIMUMS	408–1	440–1	SAME	SAME	–	–	–	–	–	–	–	–
APPROACH SLOPE	34:1	34:1	SAME	SAME	–	–	20:1	20:1	20:1	20:1	–	–
RUNWAY LIGHTING	MEDIUM INTENSITY	MEDIUM INTENSITY	SAME	SAME	–	–	NONE	NONE	NONE	NONE	–	–
RUNWAY MARKING	NPI	NPI	SAME	SAME	–	–	VISUAL	VISUAL	VISUAL	VISUAL	–	–
VISUAL APPROACH AIDS	PAPI–REIL	PAPI–REIL	SAME	SAME	–	–	BASIC	BASIC	BASIC	BASIC	–	–
INSTRUMENT APPROACH AIDS	GPS	GPS	SAME	SAME	–	–	VOR–A	VOR–A	VOR–A	VOR–A	–	–
RUNWAY SAFETY AREA DIMENSIONS	300' X 150'	300' X 150'	SAME	SAME	–	–	240' X 120'	240' X 120'	300' X 150'	300' X 150'	–	–
RUNWAY OBJECT FREE AREA DIMENSIONS	300' X 500'	300' X 500'	SAME	SAME	–	–	240' X 400'	240' X 400'	300' X 500'	300' X 500'	–	–
OBSTACLE FREE ZONE	200' X 300'	200' X 300'	SAME	SAME	–	–	200' X 120'	200' X 120'	200' X 300'	200' X 300'	–	–
RUNWAY END COORDINATES (NAD 1983)	40°57'31.98" N. 72°15'37.08" W.	40°57'32.77" N. 72°14'41.62" W.	40°57'31.98" N. 72°15'37.08" W.	40°57'32.77" N. 72°14'41.62" W.	–	–	40°57'25.05" N. 72°15'16.88" W.	40°57'45.64" N. 72°15'02.02" W.	40°57'46.27" N. 72°15'06.27" W.	40°57'27.42" N. 72°15'51.38" W.	–	–
RUNWAY END ELEVATIONS (MSL)	54.9'	30.2'	SAME	SAME	–	–	45.2'	39.2'	28.7'	40.7'	–	–
DISPLACED THRESHOLD	NONE	NONE	NONE	NONE	–	–	NONE	60.0'	57.0'	106.0'	–	–
DISPLACED THRESHOLD ELEVATIONS (MSL)	NONE	NONE	NONE	NONE	–	–	NONE	39.0'	38.0'	30.0'	–	–
DISPLACED THRESHOLD COORDINATES (NAD 88/99)	NONE NONE	NONE NONE	NONE NONE	NONE NONE	– –	– –	NONE NONE	40°57'45.12" N. 72°15'02.39" W.	40°57'45.79" N. 72°15'05.87" W.	40°57'28.32" N. 72°15'52.09" W.	– –	– –
TOUCHDOWN ZONE ELEVATION (MSL)	54.0'	30.0'	SAME	SAME	–	–	–	–	–	–	–	–

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		AIRPORT REFERENCE POINT (ARP)
		PROPERTY LINE
		BUILDING RESTRICTION LINE
		PAVED SURFACES
		FENCE
		RUNWAY PROTECTION ZONE (RPZ)
		RUNWAY SAFETY AREA (RSA)
		RUNWAY OBJECT FREE AREA (ROFA)
		RUNWAY OBJECT FREE ZONE (ROFZ)
		RUNWAY VISIBILITY ZONE (RVZ)
		BUILDING
		COMMERCIAL/ INDUSTRIAL USES
		AERONAUTICAL USES
		WETLANDS
		WETLANDS BUFFER

AIRPORT DATA

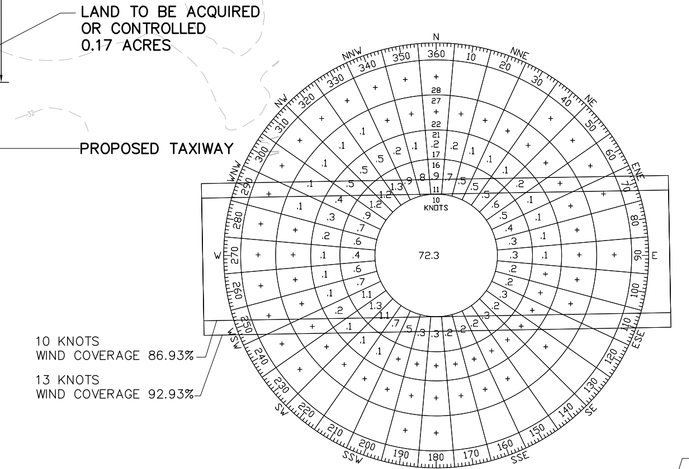
ITEM	EXISTING	ULTIMATE
AIRPORT ELEVATION (MSL) (NGVD 88)	55'	SAME
AIRPORT REFERENCE POINT (ARP) (NAD 83/99):		
LATITUDE	40°57'33.90" N.	40°57'33.90" N.
LONGITUDE	72°15'06.00" W.	72°15'06.00" W.
AIRPORT AND TERMINAL NAVAIDS	NDB/GPS/VOR–A	NDB/GPS/VOR–A
MEAN MAXIMUM TEMPERATURE	91.0° F	91.0° F
AIRPORT REFERENCE CODE (ARC):	A–II	B–II
DESIGN AIRCRAFT:	TWIN OTTER	C–560
AIRPORT ACREAGE:	610 AC.	610 AC.
MAGNETIC VARIATION:	−4° 19'41"W(2006)	−4° 19'41"W(2006)
NPIAS SERVICE LEVEL:	NGVY	NGVY
WIND COVERAGE CROSSWIND COMPONENT (ALL WEATHER):		
% WIND COVERAGE (10.5 KT = 12 MPH)	96.25	94.50
% WIND COVERAGE (13 KT = 15 MPH)	98.97	97.62
% WIND COVERAGE (16 KT = 18.4 MPH)	99.78	99.19

BUILDING DATA TABLE

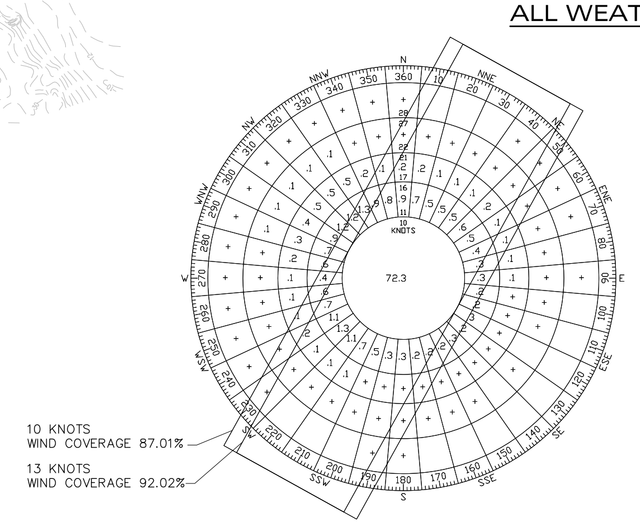
EXISTING	FUTURE	BUILDINGS	ELEVATION
1	1	FLIGHT SCHOOL BUILDING	N/A
2	2	HANGAR – SOUND AIRCRAFT SERVICES	N/A
3	3	HANGAR – SOUND AIRCRAFT SERVICES	N/A
4	4	HANGAR – MYERS AERO SERVICE	N/A
5	5	HANGAR – PEGASUS TRANSFER	N/A
6	6	HANGAR – MUNSON/RYAN	N/A
7	7	HANGAR – JAY ANDREASSI	N/A
8	8	HANGAR – HAMPTON HANGARS, INC.	N/A
9	9	HANGAR – HAMPTON HANGARS, INC.	N/A
10	10	TERMINAL BUILDING	N/A
11	11	HANGAR – HAMPTON TRANSFER	N/A
12	12	HANGAR – EAST HAMPTON HANGAR CONDOMINIUM, INC.	N/A
13	13	AIRCRAFT RESCUE FIRE FIGHTING BUILDING	N/A
14	14	RON SULLIVAN – NON AVIATION	N/A
15	15	GT POWER SYSTEMS – NON AVIATION	N/A
16	16	MAPEASY – NON AVIATION	N/A
17	17	HANGAR – EAST HAMPTON EXECUTIVE TERMINAL	N/A

BUILDING DATA TABLE

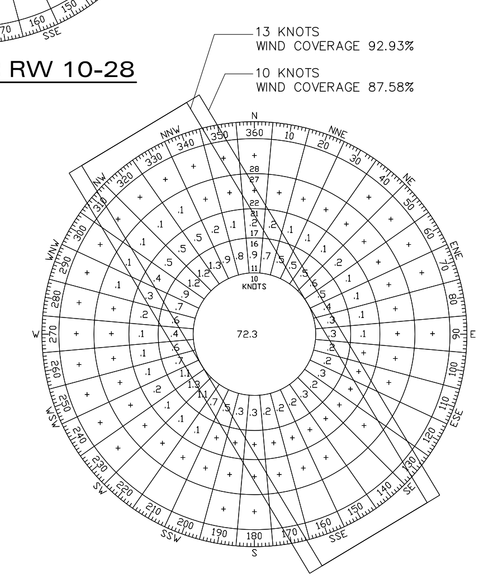
EXISTING	FUTURE	BUILDINGS	ELEVATION
18	18	A.A.P.L.E., INC. BUILDING	N/A
19	19	PINEWOOD STUDIOS BUILDING	N/A
20	20	LOCAL TELEVISION, INC. BUILDING	N/A
21	21	EAST HAMPTON POLICE AND EAST HAMPTON FIRE DEPARTMENT BUILDING	N/A
22	22	EAST HAMPTON POLICE AND EAST HAMPTON FIRE DEPARTMENT BUILDING	N/A
23	23	39 INDUSTRIAL ROAD, LLC BUILDING	N/A
24	24	41 INDUSTRIAL ROAD, LLC BUILDING	N/A
25	25	THE COUNTRY SCHOOL BUILDING	N/A
26	26	JANE LAPPAN D/B/A WAINSCOTT FARMS, INC. BUILDING	N/A
27	27	HANGAR – EAST END HANGARS	N/A
28	28	HANGAR – EAST END HANGARS	N/A
29	–	AIRPORT FUEL FARM	N/A
30	30	MAIDSTONE FIRE ARMS	N/A
31	31	AT&T CELL TOWER	N/A
–	32	MAINTENANCE BUILDING	N/A
–	33	ATCT	N/A
–	34	SOUTHERN FUEL FARM	N/A
–	35	NORTHERN FUEL FARM	N/A



ALL WEATHER RW 10-28



ALL WEATHER RW 4-22



ALL WEATHER RW 16-34

FEDERAL AVIATION ADMINISTRATION

BY: _____

TITLE: _____ DATE: _____

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

BY: _____

TITLE: _____ DATE: _____

TOWN OF EAST HAMPTON

BY: _____

TITLE: _____ DATE: _____

DRAFT

NO.	REVISION	BY	APP.	DATE

EAST HAMPTON AIRPORT

SUFFOLK COUNTY, NEW YORK

PROPOSED AIRPORT LAYOUT PLAN

FIGURE 1-2

DRAWN:	CHKD:	DATE:	PROJECT NO.	FILE NAME
		06/29/2010		

DY Consultants
DY CONSULTANTS
PLANNERS & ENGINEERS
1 EXPRESSWAY PLAZA, SUITE 208, ROSLYN HEIGHTS, NY 11577
Tel No. (516) 625-9800 Fax No. (516)625-9816

SHEET 1 OF 1

G:\EAST HAMPTON\DY 402.03 ALP Update\DESIGN\DRAWINGS\ 04 PROPOSED ALP.dwg Jul 07, 2010 – 2:11pm kalesius

the last time a fully reviewed and vetted plan was adopted by the Town. This document is not current as required by federal regulations and therefore a new ALP must be filed.

The ALP is a quasi-legal document which entitles an airport to apply for grants in aid from the FAA for development of projects depicted there on. It does not require that such applications be filed nor does it require the FAA to fund such projects, but it is a prerequisite to such applications for funding or grant offers. There is a strong incentive for obtaining federal financing since 97.5 percent of project costs are offset by the combined federal and state share. Other actions such as approval of the Seasonal Control Tower, the associated change in airspace designation and assignment of radio communication frequencies require that the Airport have a valid ALP on file. The filing of an ALP and its conditional approval by the FAA is categorically excluded from environmental review mandated by the National Environmental Policy Act via FAA Order 1050.1E 307p. This does not mean that the projects depicted on the ALP are all categorically excluded from environmental review. The environmental impacts of the various projects are reviewed elsewhere in this document and, typically, are environmentally reviewed in greater detail during the engineering and design phase for each specific project.

Acceptance of grant funds which has occurred in the past at East Hampton is accompanied by assurances from the airport owner and proprietor known as the Sponsor's Assurances or grant agreements. These assurances spell out the obligations of the airport proprietor incurred as a condition of accepting federal funds. The complete current text of these assurances, which are a form of contractual obligations, is shown in Appendix B. There are a total of 39 specific provisions. These assurances are primarily intended to implement federal law and policy on the local level and guarantee the availability and safety of the facility to users and the travelling public. Careful inspection will reveal requirements for consistency with local plans, preventative maintenance, compatible land use and a variety of additional provisions. These assurances last for 20 years from the date of an airport grant for construction, 10 years from the award of financial assistance for planning activities. Violations of these agreements are grounds for withholding grant monies.

Of these assurances one of the more difficult is the right of access to the airport for all types, kinds and classes of aircraft without unjust discrimination, Provision 22. In effect, as it is currently interpreted by the administering agency, the proprietor has no control over source noise emission levels of aircraft nor can they regulate by excluding specific aircraft nor by establishing limits, for example by time of day. Only in cases where there are clear conflicts between this

assurance and others assurances can the Airport justifiably refuse to comply without eventual ramifications. For example, airports do not necessarily have to accept aircraft that are heavier than the design strength of the pavement since to do so would conflict with the responsibility to maintain that pavement in good condition. Few other clear examples exist. Provision 22, especially in the wake of the Airport Noise Control and Capacity Act of 1990, frustrates many airport neighbors throughout the country who may experience considerable noise related annoyance.

Historically, the East Hampton Airport has experienced considerable controversy with respect to airport access provisions, especially regarding Stage 2 fixed wing aircraft which are comparatively noisy, helicopters which are also classed as Stage 2 aircraft, hours of operation, i.e., night period operations, and the management of peak summer weekend traffic. Due to several factors including the proximity to New York City, the popularity of East Hampton as a summer recreation area and presence of an affluent segment of the population, summer weekend access especially by helicopters distinguishes East Hampton Airport from most other aviation facilities. Predictably, considerable and continuing efforts to reduce or eliminate these sources of annoyance has characterized the last two decades.

These concerns materialized as concerted legal action which was settled in January 2005. As a consequence of an agreement between a local citizen's group and the federal Department of Transportation, Grant Assurances 22.a, 22.h, 29.a and 29.b shall expire on December 31, 2014. The remaining provisions will remain in force until 2021. This will change should the Town receive a grant offer and accept further grant money, but will not change as a direct consequence of the filing of an Airport Layout Plan.

2.0 Forecasts of Aviation Demand

Typically, aviation demand forecasts play a major role in the planning of an airport's future. Forecast projections are used to determine the type, size and timing of the design and development of the various components of an airport in a manner that minimizes errors. It also allows the initiation of long term development projects, which may take several years to complete, to proceed and become available when needed. Many forecasts include a presumption of continuing growth since generally both population and economic activity normally grow through time.

At East Hampton Airport forecasts predicting increasing demand have historically been unreliable. In the case of three prior development plans, forecasts over predicted the extent of demand increases. Therefore, the 2007 Master Plan Report and subject GEIS include orthodox forecast projections, but incorporates them as one of several perspectives in developing the Plan and quantifying environmental impacts.

The methodology employed for this study takes the traffic flow data and based aircraft data set (2008) and applies the FAA growth rates anticipated for the industry to each individual category, which are then combined to arrive at the Airport's total forecast of based aircraft through the year 2013. This is developed in Sections 2.1 and 2.4. Sections 2.5 and 2.6 provide updated traffic figures for 2009 and use the 2010 updated FAA Aerospace Forecast to provide a 20 year long term projection.

2.1 Review of Previous Forecast

2007 Airport Master Plan Report

The 2007 East Hampton Airport Master Plan Report projected 120 based aircraft for the year 2025. This number was developed by using historic trend information provided by airport management, augmented by information taken from the FAA's Terminal Area Forecast (Years 2006-2025), Airport Master Records, and the 1998 New York Aviation System Plan.

Table 2-1. 2007 Master Plan Report Based Aircraft Forecast					
YEAR	TOTAL	SINGLE ENGINE	MULTI-ENGINE	JET	HELICOPTERS
2006	101	62	30	5	4
2007	102	62	30	6	4
2008	103	63	30	6	4
2009	104	63	30	7	4
2010	105	63	30	7	5
2011	105	63	30	7	5
2012	106	63	30	8	5
2013	107	64	30	8	5
2014	107	64	30	8	5
2015	108	64	30	9	5
2016	109	64	30	10	5
2017	110	64	30	10	6
2018	111	64	30	11	6
2019	112	65	30	11	6
2020	113	65	30	12	6
2021	114	65	30	13	6
2022	116	65	31	14	6
2023	117	65	31	14	7
2024	118	65	31	15	7
2025	120	66	31	16	7

Source: 2007 East Hampton Airport Master Plan Report

Table 2-2. 2007 Master Plan Report Aircraft Operations					
	FORECAST				
ITEM	2006	2010	2015	2020	2025
Based Aircraft Mix					
Single Engine	62	63	64	65	66
Multi Engine	30	30	30	30	31
Jet	5	7	9	12	16
Rotor	4	5	5	6	7
TOTAL BASED AIRCRAFT	**101**	**105**	**108**	**113**	**120**
Annual Aircraft Operations					
Single Engine	16,059	16,761	17,240	18,038	19,156
Multi Engine	3,176	3,286	3,880	3,537	3,756
Jet	3,158	3,286	3,880	3,537	3,756
Rotor	5,787	6,573	6,761	7,074	7,512
Other AirScene	3,382	3,382	3,382	3,382	3,382
TOTAL ANNUAL OPERATIONS	**31,562**	**33,288**	**35,143**	**35,568**	**37,562**

Source: 2007 East Hampton Airport Master Plan Report

The 2008 FAA Terminal Area Forecast (2009-2012)

The FAA Terminal Area Forecast provides forecast information for airports. The TAF is developed by the Statistics and Forecast Branch of the FAA Office of Aviation Policy and Plans. The TAF provides data for enplanements, airport operations, instrument operations, and based aircraft.

For East Hampton Airport, the TAF projects no growth between 2005 and 2025. Specifically, a based aircraft count of 132 and an annual operations total of 54,250 are forecast to remain constant throughout this period.

2.1.1 Based Aircraft

Based aircraft are active aircraft that are stationed at an airport on a permanent basis. Based aircraft, as opposed to transient aircraft, are the primary tenant and user of the Airport's facilities. Therefore, based aircraft forecasts are an excellent indicator of the operational demands on an airport's facilities in the future.

To begin the forecasting effort, data were collected and analyzed from three sources to identify possible trends in based aircraft at the Airport (see Table 2-3):

(1) Airport Manager's Records
(2) Forecasts from the previous Master Plan Report (2007)
(3) The 2008 FAA's Terminal Area Forecast

Table 2-3. Based Aircraft

YEAR	BASED AIRCRAFT
1992	99
1993	100
1994	100
1995	100
1996	100
1997	100
1998	100
1999	100
2000	100
2001	100
2002	100
2003	100
2004	100
2005	101
2006	101
2008	101
2009	101

Source: DY Consultants, East Hampton Airport Management Records

Independent Forecast Models

Two different types of forecast models were used to predict based aircraft activity. The independent forecast models are:

HISTORIC TREND MODEL: Future number of based aircraft is predicted based on the continuation of historical trends at the Airport.

FAA TAF MODEL: FAA reported aircraft activity data for East Hampton Airport is correlated with aircraft activity data for the region (FAA Eastern Region).

Historic Trend Model

Historical information concerning the based aircraft count at East Hampton Airport was obtained from the 2007 East Hampton Master Plan Report. It is usually possible to see general trends in based aircraft volume using this historical data.

While historical data exists for East Hampton's annual operations, the corresponding based aircraft data is unavailable, except for the planning assumption, that based aircraft totals have remained stagnant since 1992 at approximately 100 aircraft. This trend analysis will therefore use years 1992 to 2009 as being representative of the actual trend (see Table 2-4).

Table 2-4. Trend Analysis: Based Aircraft

1992-2009	
2009	101
1992	99
Change in 17 years	2
Average Annual Growth	**0.1%**

Source: DY Consultants

Using this trend, projections for the forecast period were developed. The average annual growth rate reflected in this trend is 0.1%. Table 2-5 identifies the based aircraft forecasts generated by applying this Annual Growth Rate.

Table 2-5. Based Aircraft Forecast

Year	2009-2013
2009	101
2010	101
2011	101
2012	101
2013	101

Source: DY Consultants

Based on a trend of actual recorded numbers, this model shows no growth.

FAA TAF Model

This information is derived from the 2008 FAA's Terminal Area Forecast Summary. A ratio is determined by dividing the current number of based aircraft at East Hampton Airport by the total number of aircraft based within the Eastern Region. The base year 2009 is chosen as representative of the historical relationship between the based aircraft at the Airport and the regions total. Applying this ratio of 0.009 to the regional forecast yields the estimate for East Hampton, shown in the table below.

Table 2-6. FAA TAF

ITEM	2009	2010	2011	2012	2013
FAA Eastern Region Based Aircraft	33,000	33,000	33,000	33,000	33,000
Aircraft Ratio	.009	.009	.009	.009	.009
Forecast	**132**	**132**	**132**	**132**	**132**

Source: 2008 FAA Terminal Area Forecast

Based on Regional/Industry airport trends, which incorporate multiple economic and social indicators, this FAA TAF model reflects no growth.

Recommended Forecast

As no method can be identified as more accurate than the other, a combination of the two forecasting methods was recommended for East Hampton Airport. The forecasts are recommended because they incorporate local, state, and regional trends and provide a reasonable expectation of based aircraft. Table 2-7 summarizes the combined forecast for East Hampton Airport.

Table 2-7. Based Aircraft Forecast Synopsis						
Forecast Method/Model	**2009**	**2010**	**2011**	**2012**	**2013**	**Avg. Annual Growth**
Historic Trend Model	101	101	101	101	101	0%
FAA TAF	132	132	132	132	132	0%
Average	**117**	**117**	**117**	**117**	**117**	**0%**

Source: DY Consultants

The 117 average based aircraft was projected to remain the same from 2009 to 2013.

2.1.2 Based Aircraft Indicator

An average of 350 annual operations per each aircraft based at East Hampton Airport is a FAA NPIAS Order 5090.3C general guideline as it is consistent with the airport role and typical for the type of general aviation activity at the Airport.

Applying the Based Aircraft Indicator

The average of 350 operations per based aircraft is applied to the recommended forecast. Table 2-8 illustrates the predicted annual aircraft operations to the year 2013.

Table 2-8. Annual Airport Operation Forecasting Using Ratio					
FORECAST					
ITEM	2009	2010	2011	2012	2013
Based Aircraft	117	117	117	117	117
Based Aircraft Operations Ratio	350	350	350	350	350
Total Annual Operations	40,950	40,950	40,950	40,950	40,950

Source: DY Consultants, FAA NPIAS Order 5090.3C

Projected annual operations obtained using the based aircraft predictor can be analyzed further to estimate the proportion of based aircraft to itinerant aircraft.

2.1.3 Itinerant vs. Local Operations

Distinguishing between anticipated Itinerant and Local Operations is also a useful concept in the forecasting process. Using the forecasted annual airport operations from Table 2-8, we can apply some basic principles to determine this information. Based on airport operations records we can accept that approximately 40% of all operations are itinerant. The remaining 60% are local operations. The following table applies these principles to the forecast of operations.

Table 2-9. Annual Aircraft Operations Forecast

ITEM	2009	2010	2011	2012	2013
Total Annual Operations	40,950	40,950	40,950	40,950	40,950
Total Itinerant Operations (40%)	16,380	16,380	16,380	16,380	16,380
Total Local Operations (60%)	24,570	24,570	24,570	24,570	24,570

Source: DY Consultants

2.1.4 Annual Instrument Operations & Forecast

A valuable tool in determining the need for improved and/or new navigational and landing aids for the future is the expected amount of instrument operations to be conducted at an airport. Based upon past history of general aviation airports similar to East Hampton Airport, assumptions can be made when forecasting specific operational categories. It is estimated that the projected level of instrument operations will equal 15% of itinerant operations and instrument approaches will equal 6.5% of itinerant operations. Table 2-10 illustrates the forecasts of instrument operations at the Airport.

Table 2-10. Annual Instrument Operations & Approach Forecast		
YEAR	**ANNUAL INSTRUMENT OPERATIONS**	**ANNUAL INSTRUMENT APPROACHES**
2009	2,457	1,065
2010	2,457	1,065
2011	2,457	1,065
2012	2,457	1,065
2013	2,457	1,065

Source: DY Consultants

2.1.5 Aircraft Mix

An aircraft mix is the physical characteristics of a population of aircraft. Aircraft can be fixed wing or rotorcraft, be large (more than 12,500 lbs) or small (12,500 lbs or less) and have one or more engines and/or types. The aircraft mix and operations forecast are generated by analyzing previous based aircraft mix trends and discussions with Airport management. This information is used to determine a ratio which will be used to project future based aircraft mix and operations. The following table presents the current aircraft mix for the Airport.

Table 2-11. 2008 Aircraft Mix			
Type	**# of Based Aircraft (101)**	**Fleet Composition (%)**	**Annual Operations (29,220)**
Single Engine	62	61	17,824
Multi Engine	30	30	8,766
Jet	5	5	1,461
Rotor	4	4	1,169

Source: Airport Manager's Office, FAA TAF FY2007-2020; DY Consultants.

Establishing the fleet composition in terms of percentages will allow us to use the previously estimate annual forecast to determine future fleet composition. It is reasonable to assume that the current fleet mix will remain the same. Table 2-12 presents the forecasted aircraft mix for the Airport over the forecast period.

Table 2-12. 2009-2013 Aircraft Mix Forecast			
2009-2013			
Type	# of Based Aircraft (117)	Fleet Composition (%)	Annual Operations (40,950)
Single Engine	71	61	24.980
Multi Engine	35	30	10,285
Jet	6	5	2,047
Rotor	5	4	1,638

Source: Airport Manager's Office; FAA TAF, DY Consultants.

2.1.6 Peaking Characteristics

It is necessary to know the amount of operations that will occur during the busiest or peak periods in order to assess maximum noise levels on summer weekend days.

The East Hampton Airport Noise Program uses the AirScene system for monitoring, reporting, managing and displaying noise and flight track data. This system allows airport management to keep an accurate number of aircraft operations including helicopters.

Table 2-13. 2008 AirScene Peaking Characteristics		
TIME FRAME	TOTAL OPERATIONS	HELICOPTER OPERATIONS
Total Operations	29,220	6,066
Peak Month (August)	6,076	1,519
Average Day/Peak Month	196	49
Peak Hour	33	8

Source: Airport Management – 2008 Annual Operations

Generally accepted aviation planning practices calculate the peak-month as 10 percent of the yearly total; however, the 2008 Airscene peaking characteristics drive the peak month up to 21% of the total operations of which 25% represents the helicopter activity. These demand characteristics were added to the forecasted operations figures:

- Peak Month = 21% of annual activity
- Average Day/Peak Month = Peak Month divided by 31 days
- Peak Hour (Total Operations) = 17% of Average Day/Peak Month activity
- Peak Hour (Helicopter) = 25% of Peak Hour (Total Operations)

The peaking factors derived from the 2008 Annual Operations records, as described above, were applied to existing and forecasted operation figures. The results are illustrated in Table 2-14.

Table 2-14. Peaking Characteristics Forecast

YEAR	PEAK MONTH OPERATIONS	AVG. DAY/PEAK OPERATIONS	PEAK HOUR TOTAL OPERATIONS	PEAK HOUR HELICOPTER OPERATIONS
2009	8,600	277	47	12
2010	8,600	277	47	12
2011	8,600	277	47	12
2012	8,600	277	47	12
2013	8,600	277	47	12

Source: DY Consultants

2.2 Market Trends

Statistical analyses presume, in part, that the past is predictive of the future. At this time, economic circumstances since late 2007 show a continuing national recession or contraction in the market place followed by a more recent modest recovery. Thus, statistical measures such as the Terminal Area Forecast as discussed above need to be interpreted in light of current events.

Among the recent factors that have affected aviation activity are higher fuel prices, general declines in real and perceived prosperity nationwide, and the bankruptcy of one key aircraft manufacturer. An especially sharp decline in the financial services sector and financial markets in New York City has also occurred which may continue to affect East Hampton summer traffic levels as it appeared to do in 2009. All of these negative forces combined, resulting in lowered near term expectations for overall growth and the possibility of significant further near term declines in traffic. However, both financial markets and aviation generally are “prompt” markets

which contract rapidly early in a recessionary period, but which may also rebound rapidly when economic conditions improve.

2.3 2009 FAA Forecast

The most recent FAA detailed forecast was released on April 1, 2009, the FAA Aerospace Forecast, Fiscal Years 2009 – 2025. This document presents an annual assessment of airline and to a lesser extent, general aviation projections. General aviation activity levels are expressed in Tables 27 in terms of total aircraft in the active general aviation fleet and Table 28 in terms of annual hours flown. Both of these sources consider discrete categories of aircraft with differing expectations depending on aircraft category. In both tables there are expectations of a decline in light single and twin engine aircraft, but modest increases for jet aircraft and for turbine powered helicopters through the end of 2010. For the 2010 to 2020 period, light single engine aircraft are expected to stabilize, but multi engine propeller driven aircraft volumes are expected to decline. Jet powered general aviation aircraft and turbine powered helicopters are expected to show continued growth, but at a diminished rate. Details are show in Table 2-15 below.

Table 2-15. FAA Forecast Growth Rates

Table 27 FAA Forecast		
	2008-2010	**2011-2020**
Single Engine GA	-0.6%	0.0%
Multi Engine GA	-0.9%	-1.0%
Helicopters	4.0%	2.5%
Jets	7.4%	4.8%
Table 28 FAA Forecast		
	2008-2010	**2011-2020**
Single Engine GA	-1.4%	0.3%
Multi Engine GA	-2.2%	-2.1%
Helicopters	2.6%	2.8%
Jets	8.3%	5.1%

Table 2-16 shows the five year history of operations at East Hampton based on the airport logs of activity as well as the AirScene system.

Table 2-16. East Hampton Airport Data from AirScene (2004-2008)					
History of Recent Traffic Operations					
	2004	2005	2006	2007	2008
Single Engine GA	13,090	8,988	16,059	19,008	17,204
Multi Engine GA	10,696	11,154	3,176	3,076	2,796
Helicopters	4,754	5,074	5,787	6,788	6,066
Jets	3,294	3,400	3,158	3,599	3,154
Total	**31,834**	**28,616**	**28,180**	**32,471**	**29,220**

Annual operations have varied over the last five years from 28,180 operations to 32,471 operations and averaged 30,064 operations. Single engine GA aircraft have predominated throughout the period. Twin engined aircraft have steadily diminished. Helicopter activity generally increased through the five year period, peaking in 2007 and dropping during 2008. Jet powered aircraft activity has remained relatively constant, but reaching a small peak during 2007. Generally, activity for all aircraft categories declined in 2008 as national economic conditions worsened.

The results of applying the forecast numbers provided by the FAA in their current forecasts for the five year future period are shown below in Tables 2-17 and 2-18.

Table 2-17. Five-Year Forecast for East Hampton Airport Using FAA Forecast Table 27					
From Table 27 - Active General Aviation Aircraft					
	2009	**2010**	**2011**	**2012**	**2013**
Single Engine GA	17,101	16,998	16,998	16,998	16,998
Multi Engine GA	2,771	2,746	2,718	2,691	2,664
Helicopters	6,309	6,561	6,725	6,893	7,065
Jets	3,387	3,638	3,813	3,996	4,187
Total	**29,568**	**29,943**	**30,254**	**30,578**	**30,915**

Table 2-18. Five Year Forecast for East Hampton Airport Using FAA Forecast Table 28					
From Table 28 - General Aviation Aircraft Hours Flown					
	2009	**2010**	**2011**	**2012**	**2013**
Single Engine GA	16,963	16,726	16,776	16,826	16,877
Multi Engine GA	2,734	2,674	2,618	2,563	2,509
Helicopters	6,224	6,386	6,564	6,748	6,937
Jets	3,416	3,699	3,888	4,086	4,295
Total	**29,337**	**29,485**	**29,846**	**30,224**	**30,618**

Similar overall estimates of annual volumes result from the application of the growth rate figures. Both estimates correspond well with the five year history of activity. The principal difference between the two methods is in the mix of the aircraft categories.

2.4 Reconciliation of Forecast Annual Airport Operations

The traditional Terminal Area Forecast approach shows and has shown in previous years a stable volume of activity through the 20 year future period. Due to the base figures used in these

calculations, the expected volume, 31,612 total annual operations is in excess of historical volumes, and exceeds the current volume by approximately 6,000 annual operations. This is apparently caused by differences that exist between East Hampton Airport demand and activity levels and other airports which have more typical profiles of traffic from which the underlying statistical multiplier has been derived.

Both the traditional bottom up approach used in the Terminal Area Forecast, the five year record of operations and the application of the latest FAA Forecast factors agree on the central point: no growth or strictly limited growth is forecasted. The TAF figures do not yield any insight onto changes in the mix of differing aircraft categories.

Projections based on the hours flown table (2-17) show a lesser volume of jet aircraft operations than the census table (2-18), whereas helicopter volumes are greater in Table 2-17. Overall Table 2-17 shows slightly larger volumes. In East Hampton, helicopter traffic tends to be a principal driver of environmental impact and is more likely to show growth should a vibrant financial recovery take place. It is thus the preferred basis for projecting future traffic levels and environmental impact.

2.5 Calendar Year 2009 Traffic Levels

The discussion above reflects calendar year 2008 traffic as the base year. An increase of 1.2 percent was forecast for 2009. Actual results for 2009 showed a continued drop in every category of activity to 25,030 total annual operations, a 14.34 percent decrease. Results from early 2010 indicate a modest rebound, total operations increased by 9.1 percent in the first three months of the year.

2.6 Long Term Forecast

The 2010 FAA Aerospace Forecast projected rates for Active General Aviation and Air Taxi Hours Flown were similar to those shown for 2009. A comparison is shown in Table 2-19.

Table 2-19. Comparison of Growth Rates for 2008 and 2009			
Table 28 FAA Forecast Hours Flown – 2008			
	2008-2010	**2011-2020**	**2007-2025**
Single Engine GA	-1.4%	0.3%	1.0%
Multi Engine GA	-2.2%	-2.1%	-1.2%
Helicopters	2.6%	2.8%	2.2%
Jets	8.3%	5.1%	7.7%
Table 28 FAA Forecast Hours Flown – 2009			
	2008-2010	**2011-2020**	**2007-2025**
Single Engine GA	-3.8%	1.0%	1.2%
Multi Engine GA	-1.3%	-1.1%	-0.2%
Helicopters	0.6%	3.3%	2.8%
Jets	0.1%	8.8%	6.1%

Applying these factors to the 2009 annual traffic volumes results in the projection shown below in Table 2-20.

Table 2-20. Twenty Year Forecast for East Hampton Airport Using FAA Forecast Table						
From Table 28 - General Aviation Aircraft Hours Flown						
	2009 Actual	**2010**	**2014**	**2019**	**2024**	**2029**
Single Engine GA	14,296	13,753	14,311	15,071	15,997	16,980
Multi Engine GA	2,182	2,134	1,980	1,891	1,872	1,853
Helicopters	5,859	6,011	6,746	7,897	9,066	10,408
Jets	2,693	2,917	3,684	5,477	7,364	9,901
Total	**25,030**	**24,815**	**26,721**	**30,335**	**34,299**	**39,143**

These figures show slightly less traffic for the five year future than the earlier projection, 26,721 annual operations for 2014 versus the previous projected total of 30,618 for 2013. These

projections show helicopter traffic nearly doubling and fixed wing jet traffic more than tripling in the 20 year future. The 2029 projection shown above is 19 percent greater than the current 31,612 total annual operations listed in the December 2009 Terminal Area Forecast for East Hampton.

3.0 Existing Conditions

3.1 Noise

3.1.1 Introduction

Aircraft noise is a persistent concern at all airports. The sections that follow describe the history and nature of the problems evidenced at East Hampton Airport. It summarizes the circumstances that existed in 2006 and provides a description of the levels of impact during 2008 and 2009. The discussion also includes details of helicopter approach and departure paths, consideration of recent noise complaints and the adherence to voluntary measures. Projections of the future noise impacts for the years 2013 and 2029, based on the expected changes in traffic, are presented in Section 5.1.

There are several circumstances in the East Hampton situation that exacerbate the perception of noise impact and its adverse effects. Unlike most airports, traffic levels at East Hampton Airport increase dramatically during the summer months especially on the weekend days. Much of this seasonal demand is met through chartered helicopters originating in Manhattan. Helicopters generally overfly surrounding areas at relatively low cruising altitudes causing noise events distant from the Airport under the current access routes. During the summer, the resident population triples due to summer vacationers who may have heightened expectations for quiet. Due to the absence of industrial noise sources, relatively low population densities, and a rural roadway network, areas in East Hampton and in the neighboring community of Southampton are atypically quiet which accentuates the perception of noise both in terms of peak levels and the duration of the events themselves.

Noise impact has been studied numerous times during the last decade including East Hampton Airport Environmental Assessments (2000 and 2002), the HMMH Study of 2004, the Master Plan Report of 2007, and the information reported here.

3.1.1.1 Day Night Average Sound Level Methodology

With the exception of California, the Day Night Average Sound Level Methodology (DNL, Ldn) is the standard way to describe noise impact around airports in the USA. The mechanics of the process is described in Understanding Aircraft Sound which is appended to this report as Appendix C.

The fundamental unit of measurement is the decibel (dB) which is the logarithmic equivalent of a measured pressure level divided by a standard reference level that corresponds to the threshold of hearing. Each ten decibel increase or decrease is the equivalent of an order of magnitude change (times 10) in the sound pressure level. If the sound is measured over 24 hours, for example at one measurement per second, averaging these values by the total seconds in one day results in the sound equivalent level (Leq). DNL is the same measure, but penalizes all sound between 10:00 PM and 7:00 AM by 10 decibels.

When applied to aircraft, an individual aircraft flyby can be described in a single number (SEL or Sound Exposure Level) which is the condensation of all noise generated by the aircraft at a specific location mathematically condensed into a single representative decibel value with a standard duration of one second. By adding together a series of events so described over a 24 hour period and adding 10 decibels to each event during the night period, then dividing by the number of seconds with no aircraft noise, the equivalent sound level in DNL for aircraft is specified.

Although this process can be done manually for a given set of readings at a specific location, the process is usually done via a computer model. In this case, the FAA's Integrated Noise Model (INM) is used. The INM has a variety of capabilities and applications. Typically, it displays a series of nested contours around the runway system of an airport that correspond to the annual average noise exposure.

The INM contains a database of information about a wide range of existing aircraft types based on data collected in the field. This is stored as a series of distance versus noise level tables. It also contains standard data on the aircraft performance profiles for takeoff and landing. The model also contains information for the runway systems at most major public airports in the USA. The operator provides input data that includes a representative fleet mix of aircraft used at a specific airport, a description of the flight tracks the aircraft fly, the annual average level of activity by flight track and by day and night split as well as additional information about temperature and airport elevation. This data is then combined to determine the noise level at an array of points. The INM then plots the location of a contour, i.e., a line of equal noise level around the runway system. The annual average noise contour for East Hampton Airport for 2006 was presented in the Master Plan Report along with a second contour representing an actual busy day in July of that year.

The INM has a variety of ancillary capabilities as well as additional applications. For example, the INM can be used to describe a single takeoff and landing. A complete set of all general aviation aircraft that are in the INM was provided as an Appendix to the Master Plan Report. The INM may also produce a variety of differing noise metrics. It can account for such activities as touch and go training, taxiing operations or engine runups conducted as part of maintenance.

The DNL system is associated with a set of land use compatibility guidelines for areas that are exposed to aircraft noise. These federal guidelines are found in Federal Aviation Regulations Part 150, Appendix A. Generally, under these guidelines, residential uses are compatible up to the DNL 65 level, commercial uses up to DNL 70 and industrial uses up to DNL 75. Certain other uses such as agriculture and parklands my also be compatible up to DNL 75. Areas exposed to a cumulative noise burden above 75 DNL are eligible for acquisition as part of the airport. Adverse effects, however, do not cease at DNL 65. At general aviation airports particularly in quiet non urban areas, adverse effects such as annoyance may occur to at least the DNL 55 level and below. The cause of this is typically a quiet environment found in rural areas and the prominence of the aircraft noise events themselves and not the cumulative burden. Even at low cumulative levels of aircraft sound, the aircraft noise component may be greater than all other sources combined.

3.1.1.2 Background Noise Levels

Extensive noise monitoring was conducted by HMMH in 2003 at a total of 10 sites in various neighborhoods around the East Hampton Airport. Results of these exercises were reported in technical memoranda on September 5 and October 28, 2003. Follow up noise monitoring was accomplished using East Hampton Airport equipment in the summer of 2006. These results were summarized in the East Hampton Airport Master Plan Report on pages II-76 through II-83.

Several more sites have been monitored during 2007 and 2008. All the monitoring data indicates a quiet background noise level, generally in the 30 to 40 dB range. This means that aircraft noise events seem longer, affect wider areas and therefore more individuals. Even when individual events do not rise to the level of 75 dB which is the threshold for objective consideration of an event being loud, the low background noise level emphasizes both the peak level and the duration of the event.

3.1.1.3 High Terrain Areas

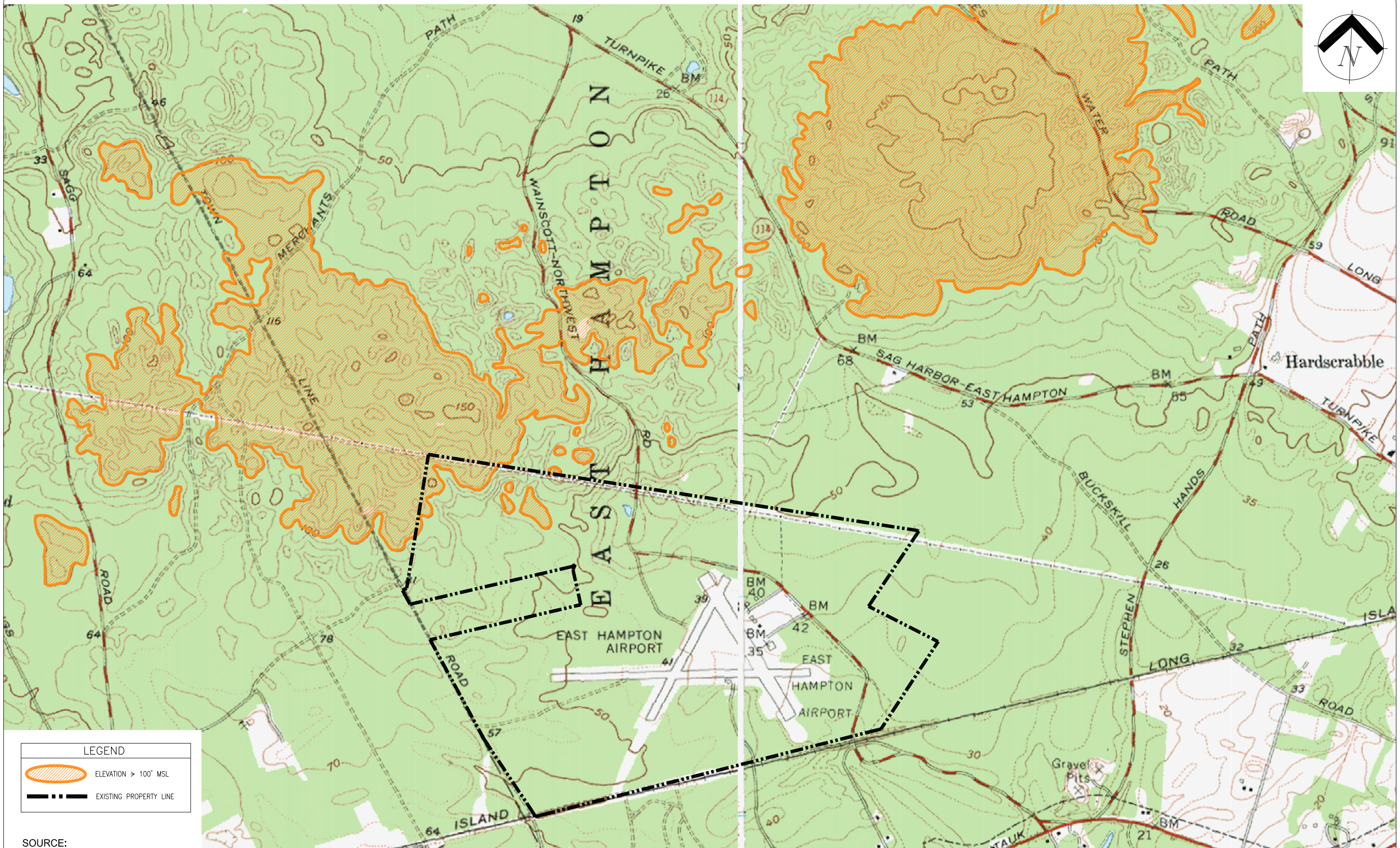
High terrain accentuates the impact from overflying aircraft. Source to receiver distances are marginally reduced. An elevated vantage point makes visual observation periods longer and the noise event may be prolonged. Figure 3-1, High Terrain Map, shows areas in the vicinity of East Hampton Airport that are 100 feet or more above Airport elevation. Areas directly north of the Airport, close to the Runway 16 threshold, are especially prone to the noise impact from helicopters arriving on the Northwest Creek Route. The Jessup's Neck Departure Route similarly overflies areas of high terrain.

The map itself is derived from two USGS 7.5 minute topographical maps. These maps are updated relatively infrequently and, in this case, depict conditions existing as long as 34 years ago when the Airport vicinity was essentially devoid of residential development. There was, at that time, no opportunity for widespread noise impact or complaint. More recent data including a comprehensive recent aerial photograph as well as land use and other mapping included in this report show a much differing situation exists today. Residential use predominates throughout the airport vicinity. Some, although by no means all, of these residents are users of air transportation. This accounts for the deterioration of relations between the Airport as an institution and the residential community in the recent decades, i.e., increasing proximate population to the Airport and its approach and departure corridors and increased demand for transportation services. A similar course of events have overtaken airports throughout Long Island and in the metropolitan region as a whole.

3.1.2 Annual Average Noise Contour - 2008

Annual traffic figures for East Hampton Airport for the last five years are presented in the Forecasts of Aviation Demand Section (2.0). Traffic peaked at 32,471 operations in 2007 and dropped to 29,220 in 2008. During the early months of 2009, the decline in total traffic continued. Table 3-1 shows the annual average volume broken out by INM equivalent types. Table 3-2 shows annual average daily volumes by INM equivalent type. The aircraft listing shown there is consistent with earlier determinations. Note: The volume of Stage 2 aircraft which includes two types, the Gulfstream IIB and the Lear 25, has declined substantially in comparison to prior years.

In the modeling exercise, the applicable approach and departure flight tracks for fixed wing aircraft are the same as previously used in the 2006 noise contour determination on page IV-207 of the Master Plan Report. Sample flight tracks, as revealed through the AirScene system, follow those illustrations.



SOURCE:

NYSDOT/ USGS, UTM ZONE 18, NAD 27
PUBLICATION DATE 1976.

FIGURE 3-1 - ELEVATION SURROUNDING AIRPORT PROPERTY

Table 3-1. East Hampton Base Case 2008 – Annual Average Volume		
Annual Traffic Volumes By Type		
INM Type	**Aircraft**	**Landings**
Jets		
GV	Gulfstream V	77
GIIB	Gulfstream IIB	11
CL600	Canadair Bombardier Challenger CL600	197
LEAR25	Lear 25	4
LEAR35	Lear 35	256
MU3001	Beechjet 400	128
CNA55B	Cessna Citation Bravo 550	767
IAI1125	Astra Jet 1125	102
Turbo		
CNA441	Cessna Conquest 441	208
DHC6	Twin Otter DHC-6	325
Twin		
BE58P	Beech Baron BE58P	686
PA31	Piper Navajo Chieftain PA-31	686
Single		
GASEPF	Single Engine, Fixed pitch	4,490
GASEPV	Single Engine, Variable pitch	3,800
Helicopter		
S76	Sikorsky S-76 Spirit	1,497
SA355	Aerospatiale SA-355 Twin Star	1,497
Includes allowance for unknowns.		
	Total Annual Takeoffs	**14,728**
	Total Annual Operations	**29,456**

Table 3-2. East Hampton Base Case 2008 – Average Daily Volume Average Daily Volumes by Type		
INM Type	**Aircraft**	**Landings**
Jets		
GV	Gulfstream V	0.21
GIIB	Gulfstream IIB	0.03
CL600	Canadair Bombardier Challenger CL600	0.54
LEAR25	Lear 25	0.01
LEAR35	Lear 35	0.70
MU3001	Beechjet 400	0.35
CNA55B	Cessna Citation Bravo 550	2.1
IAI1125	Astra Jet 1125	0.28
Turbo		
CNA441	Cessna Conquest 441	0.57
DHC6	Twin Otter DHC-6	0.89
Twin		
BE58P	Beech Baron BE58P	1.88
PA31	Piper Navajo Chieftain PA-31	1.88
Single		
GASEPF	Single Engine, Fixed pitch	12.3
GASEPV	Single Engine, Variable pitch	10.41
Helicopter		
S76	Sikorsky S-76 Spirit	4.1
SA355	Aerospatiale SA-355 Twin Star	4.1
Includes allowance for unknowns.		
	Total Daily Takeoffs	**45.35**
	Total Daily Operations	**80.7**

The AirScene system allows around the clock surveillance of aircraft equipped with transponders. Based on this data, only two (2) percent of total traffic occurs during the night period, a smaller fraction than estimated in previous years.

Figure 3-2 shows the Annual Average Noise Contours for 2008. The contours are shown down to DNL 50. This is consistent with previous noise contour determinations. However, DNL 50 is very low. Many urbanized sites throughout the country have background noise levels above this level. Due to the exceptionally low background noise levels that persist throughout East Hampton, this represents a reasonable boundary for estimating adverse reactions from local residents especially during the summer months when considerable time may be spent outdoors.

Examination of the 2008 annual average contours reveals that all areas affected by DNL 65 and higher cumulative noise levels are entirely within the Airport land holdings. At the DNL 60 level a small portion of the contour lobe projecting west and associated with usage of Runway 28 is off the Airport. Portions of the DNL 50 and 55 contours include areas outside of current land holdings. Portions of these areas, especially to the north, appear to result from helicopter usage. Details on helicopter noise impact are discussed in greater detail in Section 3.1.6 below.

3.1.3 Busy Summer Day 2008

During the busy summer season, both the population and air traffic peak in East Hampton. Noise impacts vastly greater than the annual average occur. For this reason a busy summer day contour is shown below as Figure 3-3. In this case a specific day, Friday, July 25, 2008 was selected for analysis. The traffic volumes are shown in Table 3-3. A total of 321 operations occurred. This is approximately four times the volume of an average day. These levels are typical for a clear weather weekend summer day and this circumstance can be expected to occur on most weekends during July and August.

The resulting contours are shown in Figure 3-3. Flight tracks, track usage, aircraft mix, and the day/night split are consistent with the annual average. Overall, the noise impact area is approximately four times greater than the average day.

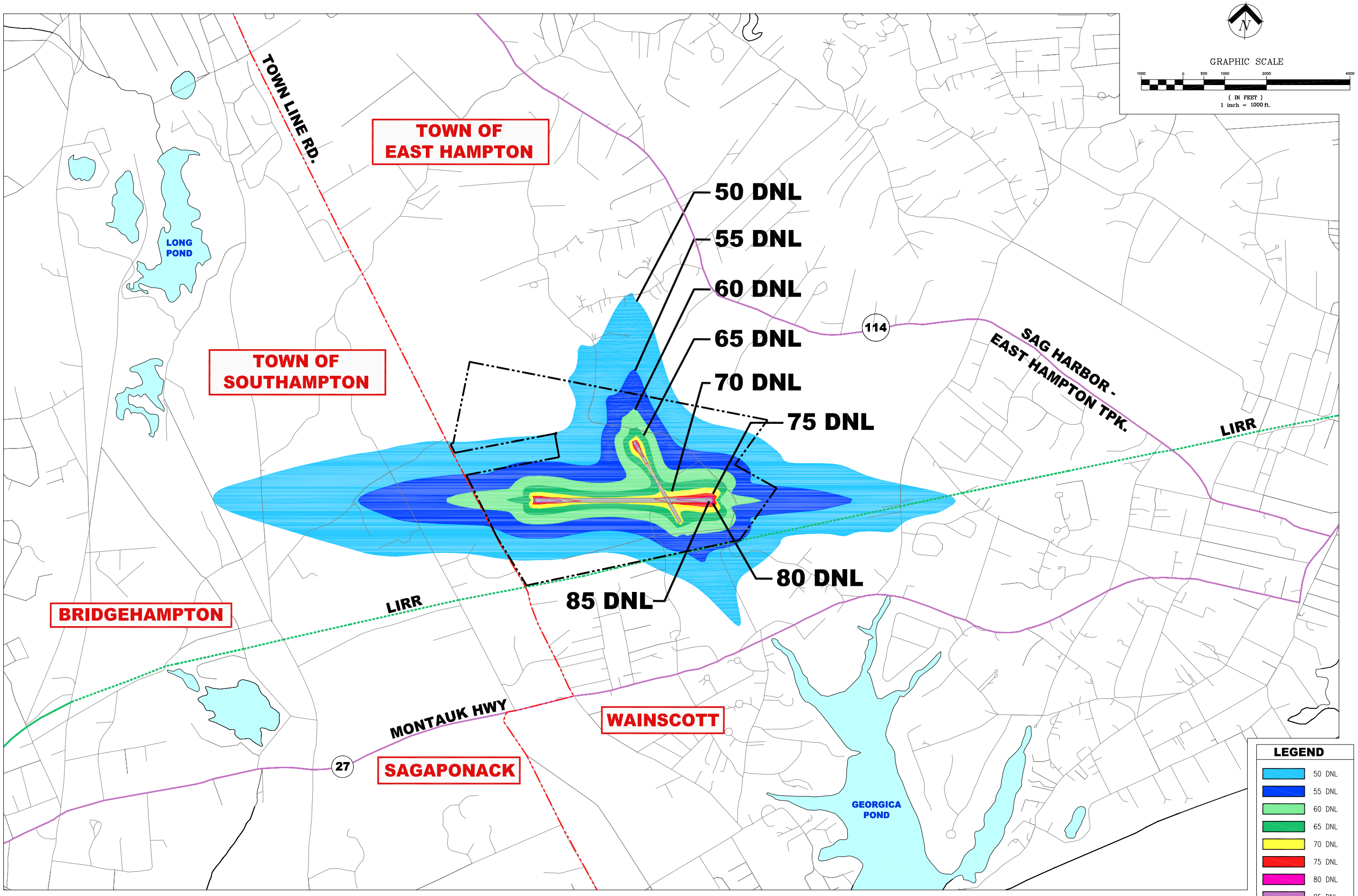


FIGURE 3-2 - AVERAGE DAY (2008) NOISE CONTOURS

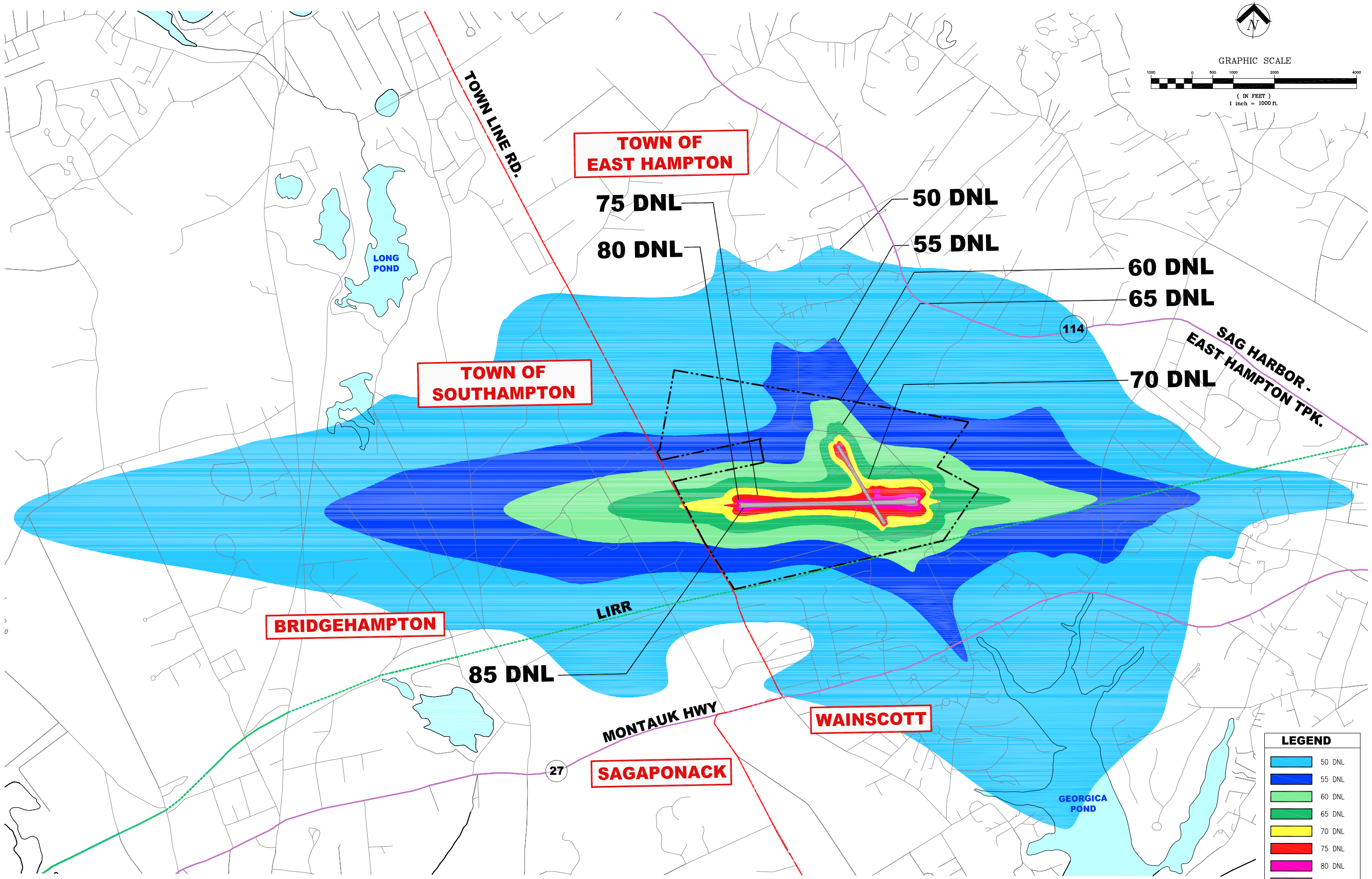


FIGURE 3-3 - BUSY DAY (2008) NOISE CONTOURS

Table 3-3. East Hampton Busy Day Volume By Type (2008)		
INM Type	**Aircraft**	**Takeoffs**
Jets		
GV	Gulfstream V	1.56
GIIB	Gulfstream IIB	0.22
CL600	Canadair Bombardier Challenger CL600	1.37
LEAR25	Lear 25	0.06
LEAR35	Lear 35	7.09
MU3001	Beechjet 400	2.54
CNA55B	Cessna Citation Bravo 550	14.71
IAI1125	Astra Jet 1125	1.47
Turbo		
CNA441	Cessna Conquest 441	2.41
DHC6	Twin Otter DHC-6	3.77
Twin		
BE58P	Beech Baron BE58P	7.92
PA31	Piper Navajo Chieftain PA-31	7.92
*****Single***		
GASEPF	Single Engine, Fixed pitch	35.00
GASEPV	Single Engine, Variable pitch	35.00
Helicopter		
S76	Sikorsky S-76 Spirit	19.75
SA355	Aerospatiale SA-355 Twin Star	19.75
	Total Takeoffs	**160.51**
	Total Operations	**321**

3.1.4 Historical Comparisons

To provide perspective on the 2008 average day and busy day contours, Table 3-4 provides a summary of noise contour determinations since 2000. In the 2000 average day case only the DNL 65 and above areas were calculated. The DNL 65 contour was calculated at 0.426 square miles. This is entirely within the Airport property. In the 2003 determination, the busy day DNL 65 contour was found to enclose a greater area, 0.526 square miles. In 2006 the average day DNL 65 area was approximately the same as in 2000, 0.473 square miles while the busy day case showed greater impact than determined for 2003, 0.731 square miles. The current contours based on 2008 data show that the average day impact was reduced substantially from the average day calculated for 2000 or 2006. Similarly, the busy day 2008 contour was smaller, about half the area, found in the 2003 and 2006 busy day contours.

Noise impact has trended downward since 2006 in terms of both the average day and the busy day. This is a consequence of the diminishment of Stage 2 fixed wing aircraft operations and a smaller fraction of traffic during the night period.

Table 3-4. Comparative Noise Contour Areas at East Hampton Airport

	Year 2000 Average Day	Year 2003 Busy Day	Year 2006 Average Day	Year 2006 Busy Day	Year 2008 Average Day	Year 2008 Busy Day
(All Values in Square Miles)						
DNL 50		14.69	5.50	17.33	1.68	7.66
DNL 55		4.70	2.26	5.19	0.67	2.40
DNL 60		1.35	1.01	1.86	0.29	0.94
DNL 65	0.43	0.53	0.47	0.73	0.14	0.41
DNL 70	0.19	0.22	0.23	0.32	0.06	0.18
DNL 75	0.09	0.11	0.11	0.15	0.02	0.09

3.1.5 2009 Activity Levels

Total traffic at East Hampton declined during 2009 from the previous year. Overall, a decrease of over 14 percent to a total of 25,030 was registered. All categories of activity declined, including jets and helicopters. Traffic was lower during each month. Touch and go movements decreased as did night period activity. Table 3-5 shows a comparison of 2008 versus 2009.

Table 3.5. 2008 versus 2009 Traffic Comparison				
	2008 Annual	**2009 Annual**	**Decrease**	**Percent Change**
Twins	2,796	2,182	614	-21.96%
Singles	15,503	13,106	2,397	-15.46%
Helicopters	6,066	5,371	695	-11.46%
Jets	3,154	2,693	461	-14.62%
Total Movements	29,220	25,030	4,190	-14.34%

Since traffic continues to decline and operational circumstances remain similar, cumulative noise impact was reduced during 2009. An analysis using the Area Equivalent Method indicated that the DNL 65 area was reduced by 9.7 percent, the DNL 60 contour by 12 percent, the DNL 55 contour by 15.1 percent and the DNL 50 contour by 16.8 percent.

Altitude compliance for helicopters, i.e., 2,500 feet or above enroute, was checked on four summer weekends. Compliance rates varied from 73 percent to 87 percent.

3.1.6 Helicopter Noise

Noise from helicopters is a source of annoyance in many residential areas of Long Island for the following reasons: Although no noisier than many fixed wing aircraft currently in service that have similar weight and power, helicopters have a distinctive pulsating noise signature that is easily distinguishable even at low amplitude or amid other competing sounds. In terms of federal regulation, helicopters are classed as Stage 2 aircraft under FAR Part 36 criteria. All fixed wing aircraft now being manufactured meet the stricter Stage 3 or 4 federal noise emission criteria. Helicopter noise is directional, i.e., may be louder than average in one specific direction. Helicopters may also generate strong vibrations that may shake houses and rattle windows. Occasionally, blade slap, an impulsive noise generated when one blade overtakes the turbulent wake of another blade, may occur.

Helicopters typically travel at relatively low cruising altitudes often below 1,000 feet above terrain. They are not required by federal regulation to maintain any specific altitude over populated areas. For this reason, helicopters may often fly below fixed wing aircraft traffic or on

designated airways or below airport dedicated airspace. Helicopters are also more efficient at lower altitudes than at higher altitudes. For these reasons, the standard flight profiles for all helicopters in the INM specify a default cruise altitude of 1,000 feet.

Helicopters are a comparatively slow aircraft and are comparatively expensive to operate. For these reasons, helicopter operators prefer the shortest possible routes, regardless of land use compatibility. For these same cost reasons, helicopters tend to be used primarily by the military, for civilian medivac, by businesses, or by the affluent only when vertical lift is required. However, these vehicles may be seen by some as an exclusive form of transportation occasionally engendering resentment as well as adverse reactions to noise emissions.

This is especially the case in East Hampton where weekend commuting results in a concentration of helicopter activity on summer weekends when passengers are shuttled to East Hampton and to other weekend destinations from Manhattan. In recent years, complaints concerning helicopter operations exceed those of fixed wing aircraft traffic by a factor of ten although these figures have historically included complaints from throughout Long Island and not exclusively from East Hampton and its surrounding communities.

As a consequence of the increasing volume of helicopter operations, resulting complaints as well as enroute safety concerns, helicopter routes into and out of East Hampton Airport have been expanded from one to three in recent years. The traditional route known as Jessup's Neck overflies areas of Southampton and East Hampton on an east west alignment. This was originally a two way track used by both in bound and out bound helicopters. A second route known as Northwest Creek was instituted in 2006. This route is primarily over water, skirting Sag Harbor and Shelter Island before turning south toward East Hampton Airport. This is now the primary arrival route with Jessup's Neck accommodating departures to the west. These two routes are associated with the North Shore Route which parallels the northern coast of Long Island. A third route was recently instituted, the Georgica Route. Helicopter traffic remains over the Atlantic Ocean on the southern route paralleling the south shore of Long Island until abeam East Hampton Airport. A left turn to the north brings traffic over the Airport. A circular descent on the north side of the Airport is followed by a landing from the east to a point south of the Terminal Area. This is a two way track which at this time is used infrequently. However, pilots are encouraged to use this route since it results in the least over flight of populated areas. These routes and the recommended procedures are detailed in Appendix D.

In terms of the annual average noise contours as shown above, helicopter traffic is a sufficiently small component of the overall mix of aircraft that the noise burden that may trigger helicopter complaints is not revealed. To better understand the area wide impact of helicopter movements, two single event helicopter noise contours were prepared. These are both S-76 helicopters using an identical approach track. Figure 3-4 shows a single S-76 helicopter on the Northwest Creek approach at a cruising altitude of 1,000 feet above sea level. The contours represent areas exposed to peak noise levels of 60, 65, 70, 75, 80 and 85 dB. In the portion of the contours near Shelter Island and Sag Harbor, instantaneous noise levels of 60, 65, and 70 dB are predicted to occur. In Figure 3-5 the same aircraft and flight track is shown but at a cruising altitude of 2,500 feet. In this case the maximum expected peak level is below 65 dB. Under current procedures all helicopters are expected to maintain 2,500 feet or greater overflight altitudes. Tracking data shows good compliance rates with the minimum recommended altitude of 2,500 feet or higher.

Population estimates made with the INM confirm the improvement. At 1,000 feet cruise altitude, 337 residents are exposed to peak noise levels above 65 dB. This is reduced by more than one-third to 212 residents when the altitude is increased to 2,500 feet. Both the routes specified as well as the minimum altitude requirement have been instituted in the last several years as a consequence of determined efforts to reduce the level of adverse noise effect on East Hampton and neighboring communities.

3.1.6.1 Comparative Impacts of Differing Helicopters and Routes

Appendix E shows single event noise contours for all civilian turbine powered helicopters at the standard cruising altitude of 1,000 feet. A total of ten differing types are included. Each aircraft is shown approaching the East Hampton Airport on the Northwest Creek Route and departing on the Jessup's Neck Route. The noisiest type included in the array is the S-76 which is a medium twin engine helicopter. It is nosier than the remaining types, but comparable to other vehicles of this size. The least noisy helicopter is EC-130, a much smaller aircraft seating a maximum of five passengers, approximately half the capacity of the S-76. Both were selected for analysis.

Figures 3-6 through 3-11 show comparisons between the three existing routes. Each helicopter is shown landing on each of the three tracks. Unlike fixed wing aircraft, helicopters are noisier on landing. The Jessup's Neck route is used exclusively for departures, but in this illustrative case a landing is depicted in order to be consistent with the other two cases. Population exposure figures are shown in Tables 3-6 and 3-7.

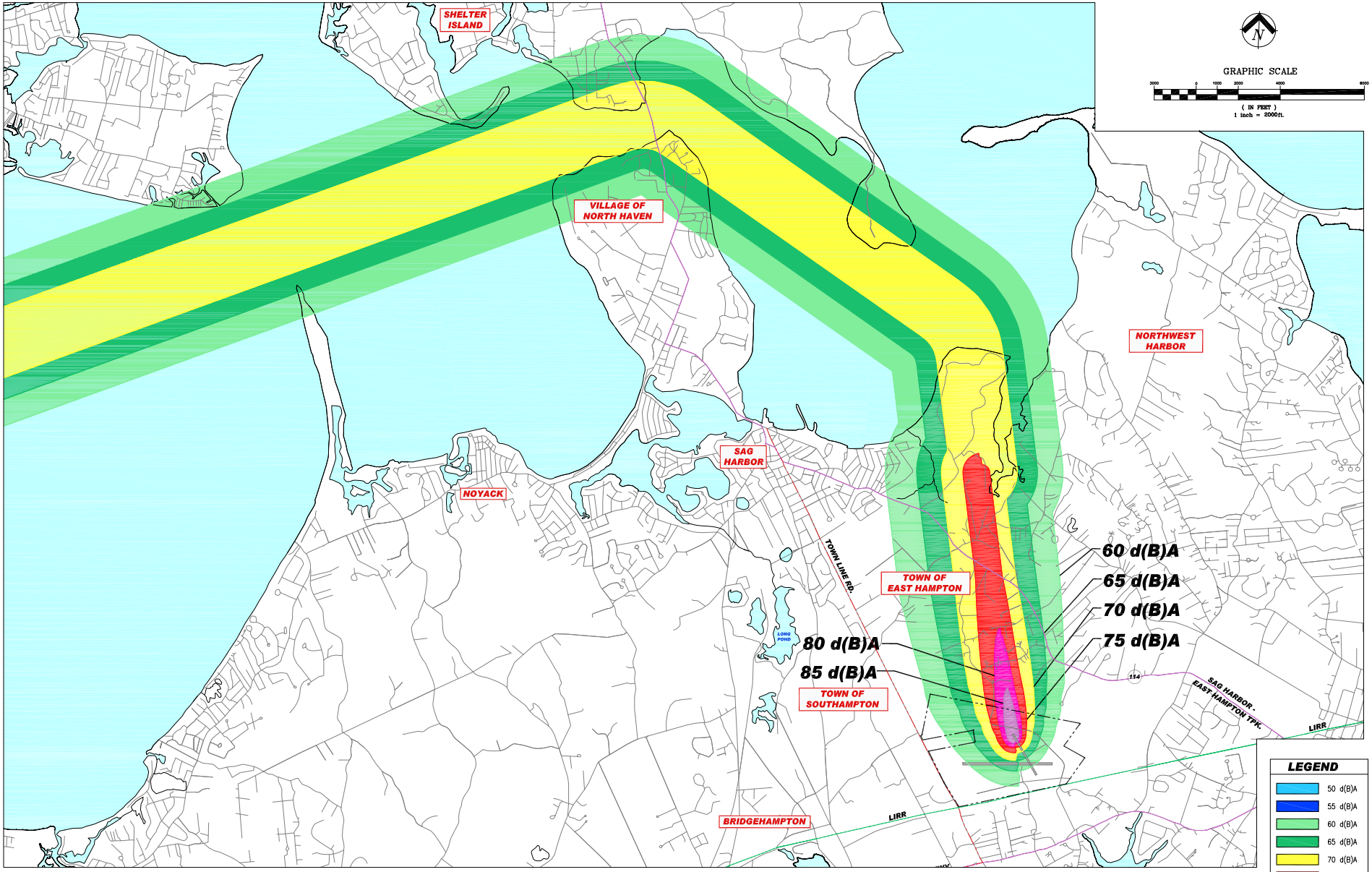


FIGURE 3-4 - HELICOPTER S-76 AT 1,000 FT. NOISE CONTOURS

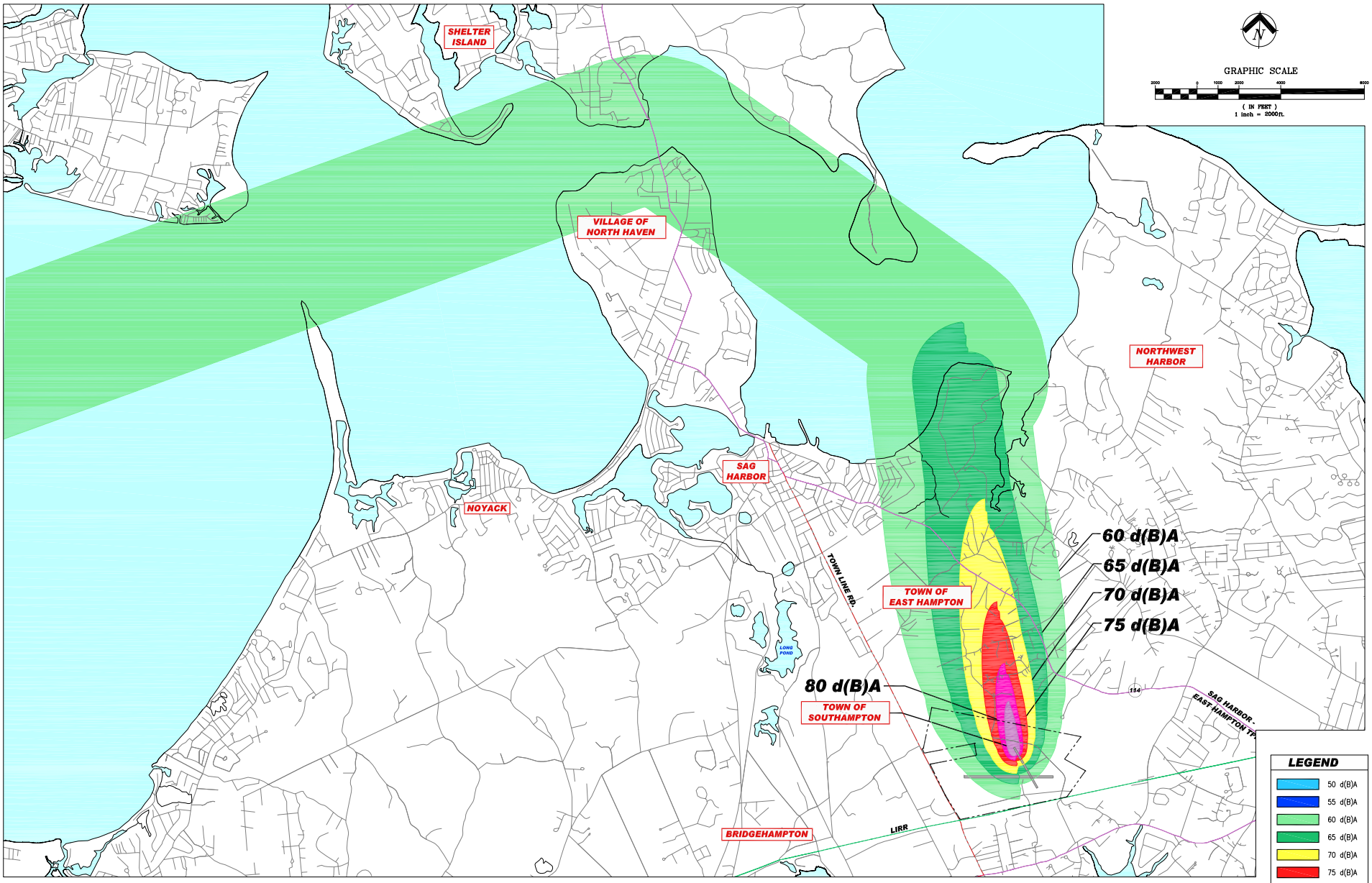


FIGURE 3-5 - HELICOPTER S-76 AT 2,500 FT. NOISE CONTOURS

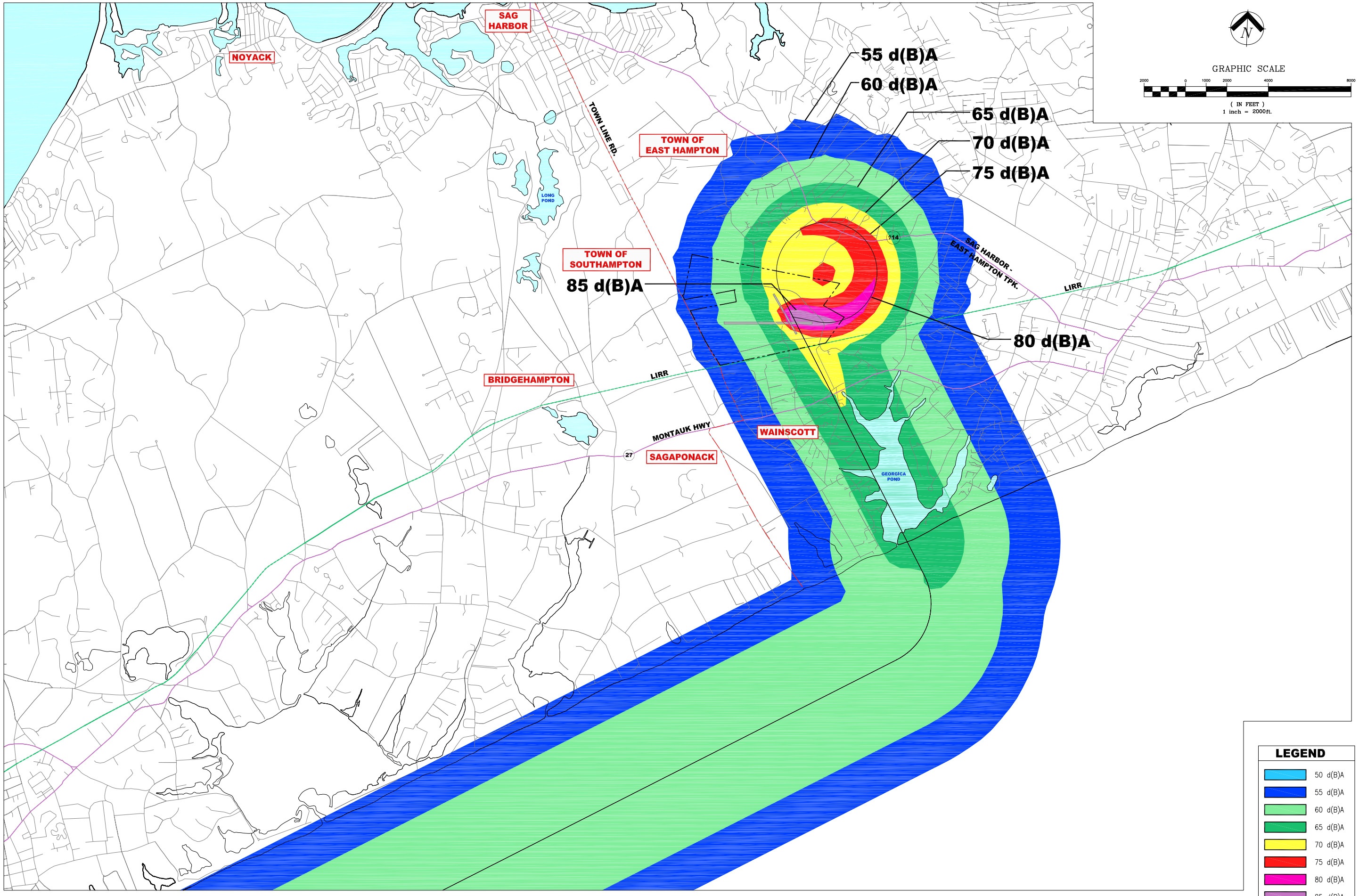


FIGURE 3-6 - HELICOPTER S-76 AT GEORGICA POND ROUTE NOISE CONTOURS

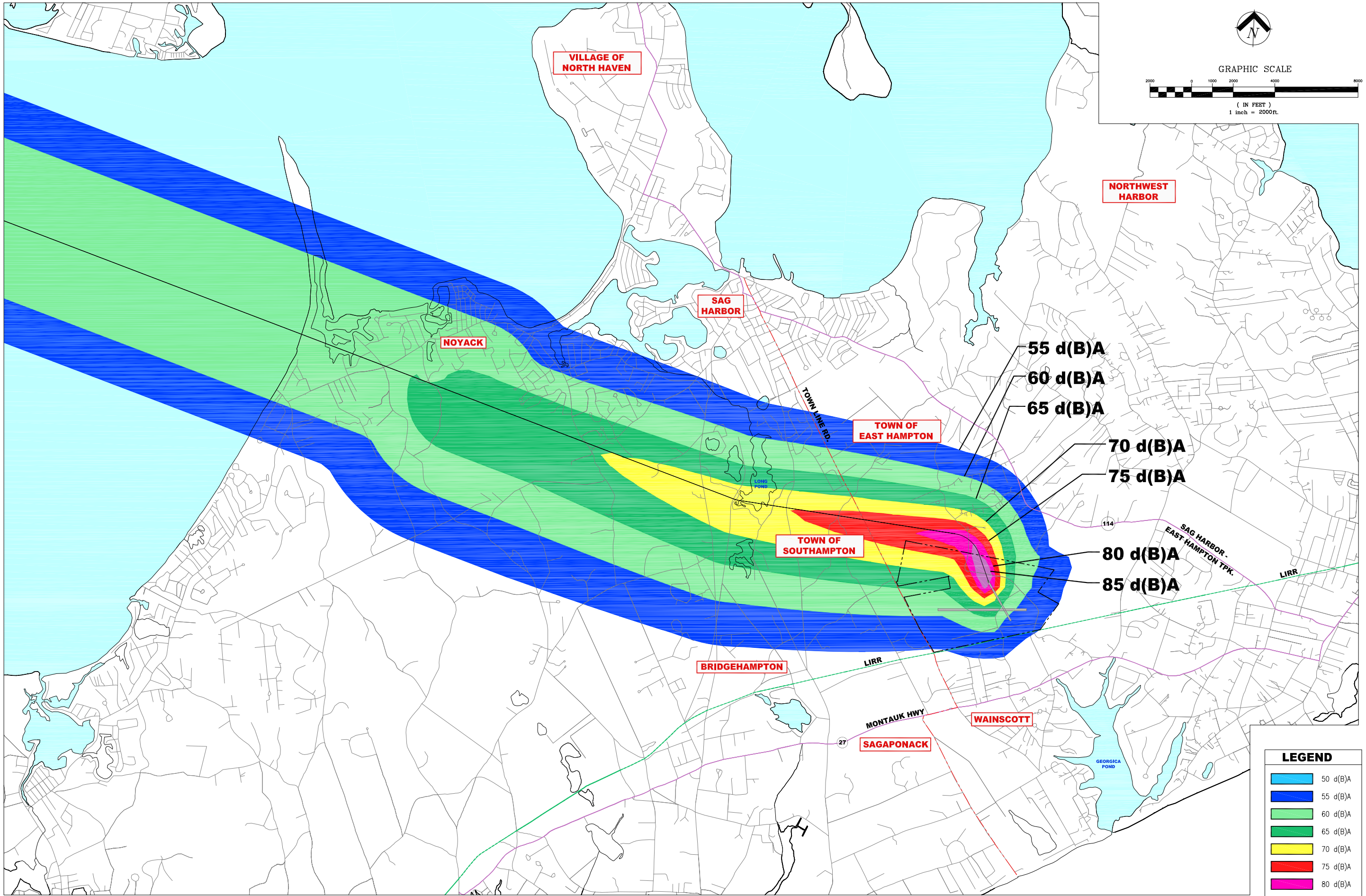


FIGURE 3-7 - HELICOPTER S-76 AT JESSUP'S NECK ROUTE NOISE CONTOURS

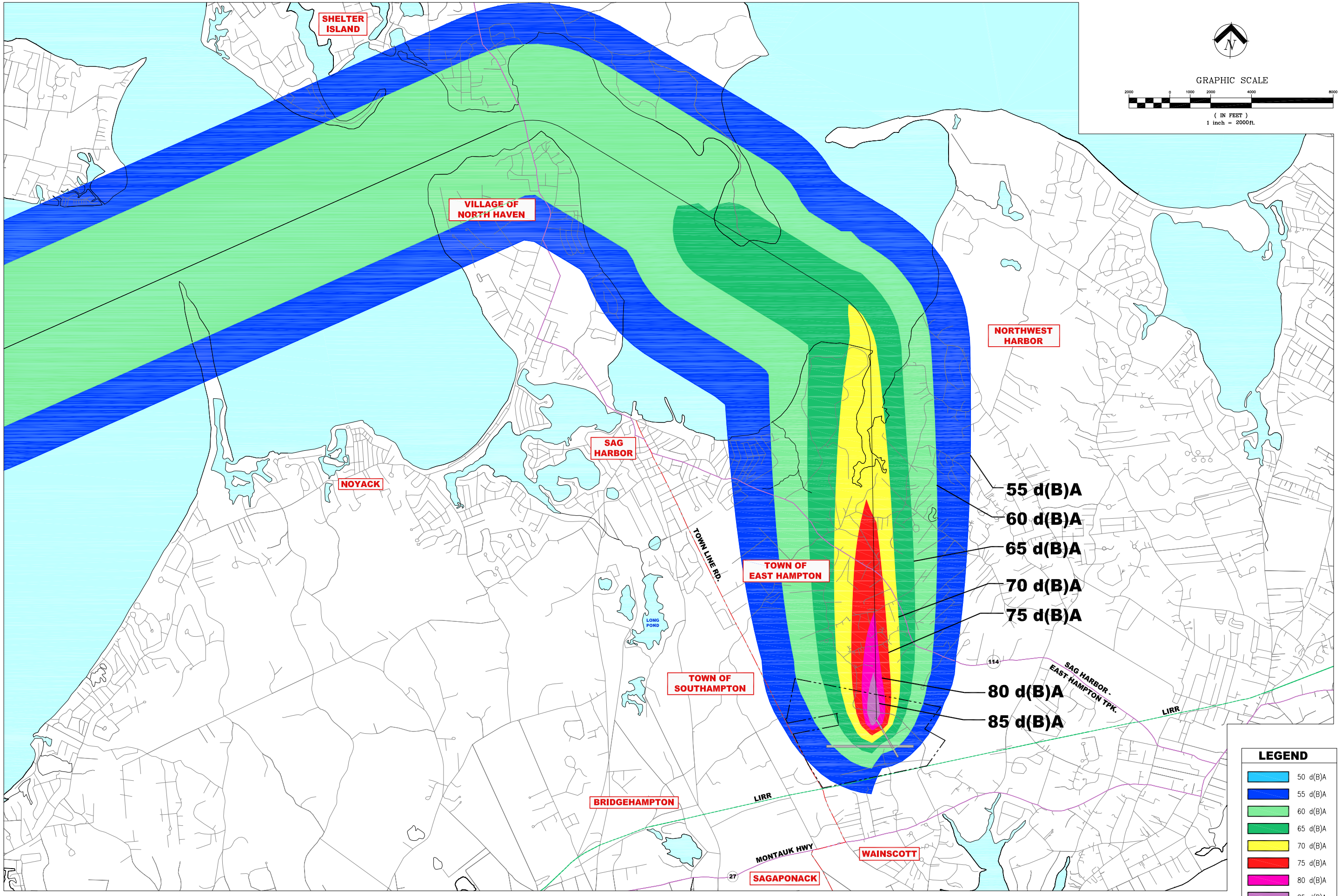


FIGURE 3-8 - HELICOPTER S-76 AT NW CREEK ROUTE NOISE CONTOURS

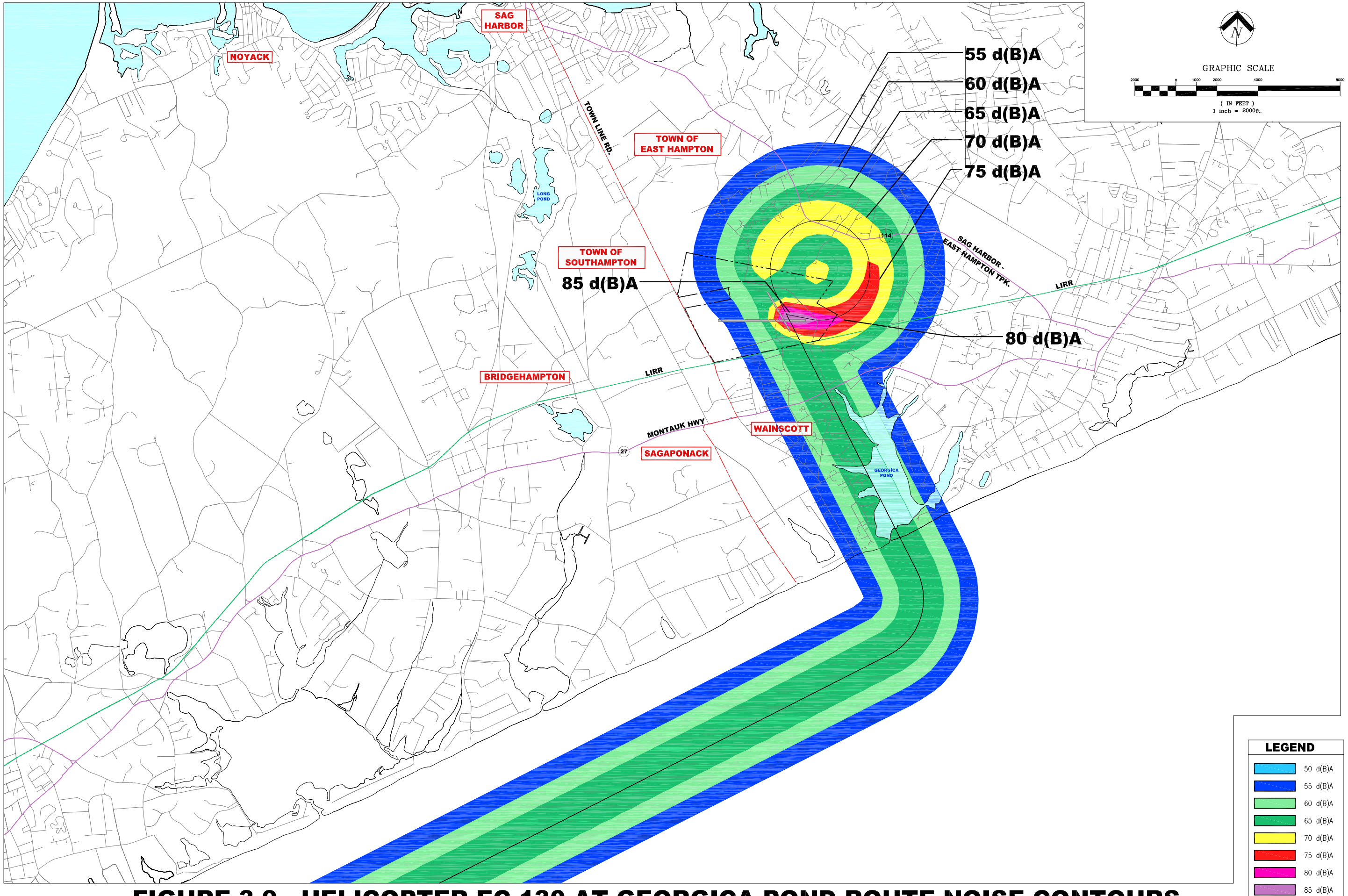


FIGURE 3-9 - HELICOPTER EC-130 AT GEORGICA POND ROUTE NOISE CONTOURS

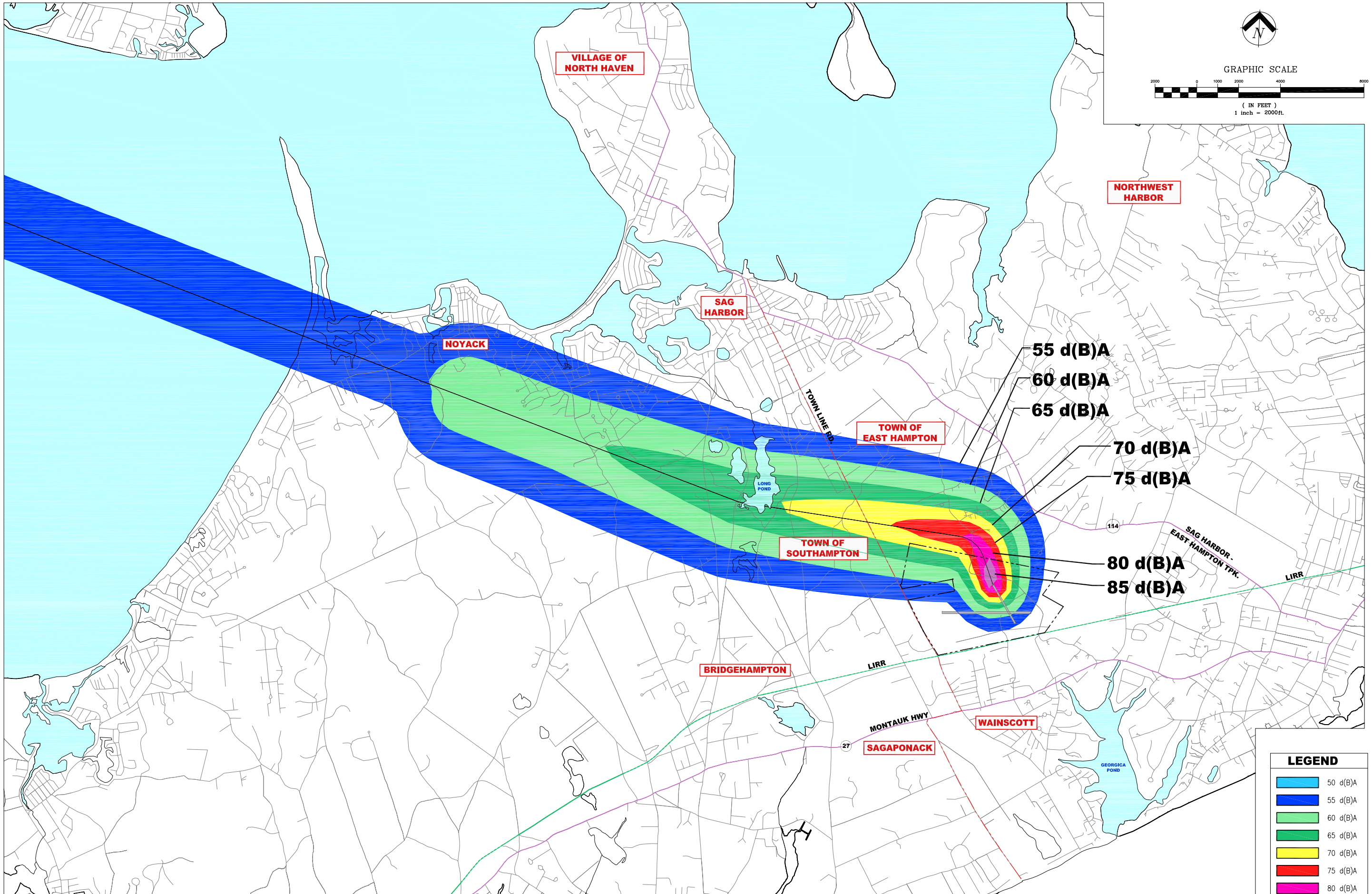


FIGURE 3-10 - HELICOPTER EC-130 AT JESSUP'S NECK ROUTE NOISE CONTOURS

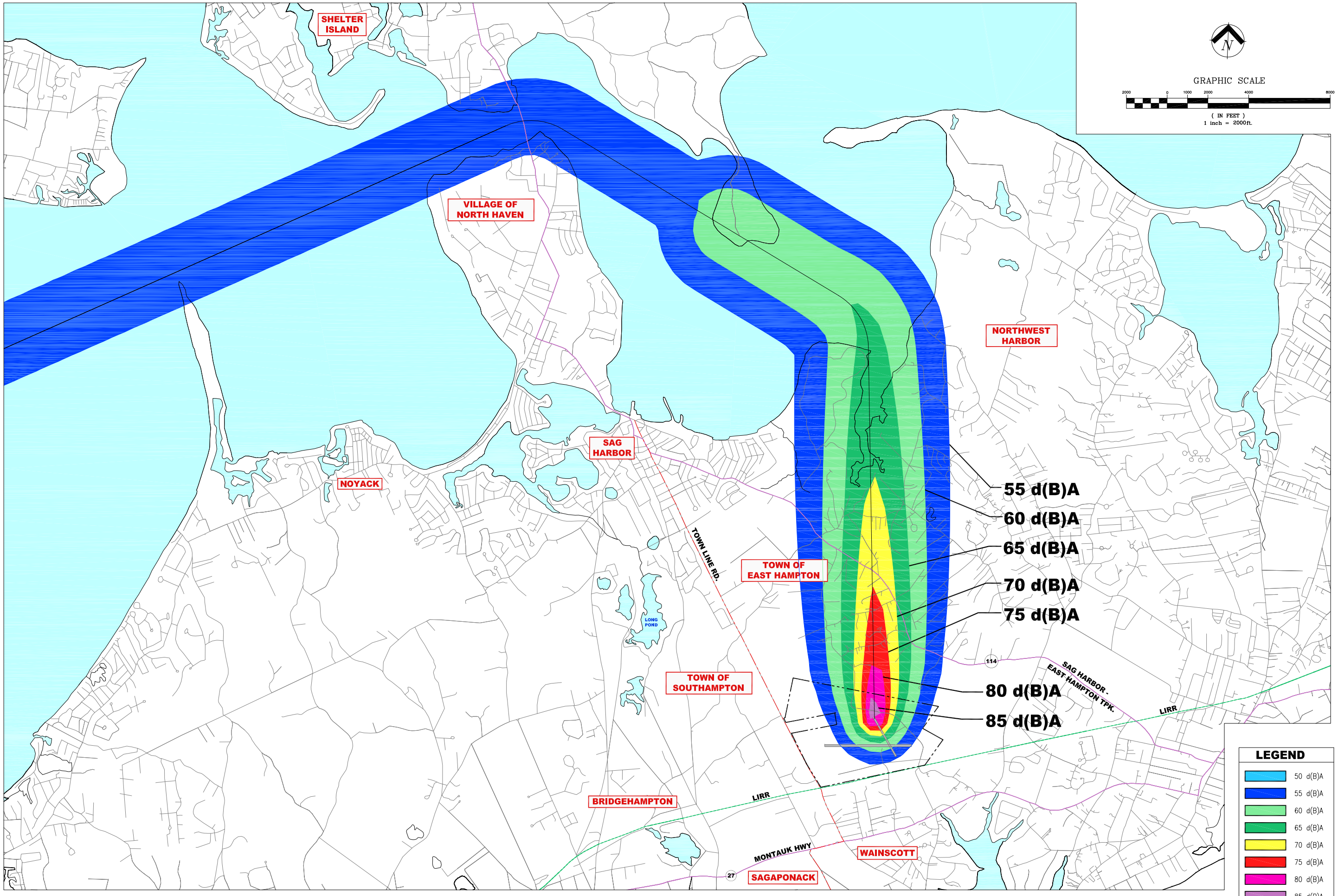


FIGURE 3-11 - HELICOPTER EC-130 AT NW CREEK ROUTE NOISE CONTOURS

Table 3-6. Population Exposure by Single Event Helicopter Noise Levels					
Aircraft	**LMAX 55**	**LMAX 60**	**LMAX 65**	**LMAX 70**	**LMAX 75**
A109	4,200	2,095	488	239	69
B206L	2,447	623	139	69	0
B222	4,215	2,382	239	90	69
B407	2,312	1,215	249	90	69
BO105	3,897	2,237	358	69	0
EC130	1,144	312	190	69	0
S76	4,501	2,720	312	139	69
SA350D	2,834	551	190	69	0
SA355	3,305	1,305	190	69	0
SA365	2,941	508	239	190	69

Table 3-7. Comparison of Population Impact of Alternative Routes			
EC-130			
LMAX Level	Georgica	Jessup	NW Creek
55	740	2215	378
60	493	968	312
65	57	228	190
70	0	103	69
75	0	0	0
S-76			
LMAX Level	Georgica	Jessup	NW Creek
55	1,268	3,414	1,198
60	711	1,760	674
65	192	880	312
70	0	202	139
75	0	0	69

Inspection of the single event plots shows a central difference between the routes. The Jessup's Neck Route primarily affects areas in Southampton. The Northwest Creek route affects Sag

Harbor, North Haven and Shelter Island as well as areas in East Hampton north of the Airport. The Georgica Pond Route is entirely over East Hampton. In terms of population, the greatest number of people affected occurs along the Jessup's Neck Route. The Northwest Creek Route generally has fewer people affected than occurs in the Jessup's Neck route. The Georgica Pond Route has the lowest net impact in terms of exposed population. The impact along this could be reduced further if the existing track that overflies the Airport were replaced by a straight in route to Runway 34. However, at this time there are unresolved safety issues that recommend against this change.

Helicopter noise along the Jessup's Neck Route was monitored in September of 2008. A total 20 overflight events were tracked by the AirScene system and monitored on the ground. Plots of these events are shown as Appendix F. Overall, during the four full days, the Leq, average sound level, was 53.8 dB. The Day Night Average Sound Level was 55.4. The minimum one second long sample was 28.6 dB and the maximum was 96.3 dB which was not associated with an aircraft. The L90 level which is typically cited as the background noise level was 38.0 dB. Helicopter noise events showed peak overflight noise levels ranging from a high of 70.4 dB to a low of 56.8 dB. Altitude compliance showed a majority of overflights, 13 out of 20, at or above 2,500 feet.

3.1.6.2 Effects of Helicopter Noise on Wildlife

Two species of special concern, the least tern and the piping plover, exist in shoreline areas around the South Fork peninsula. Helicopters approaching or departing East Hampton Airport overfly the beach nesting habitat of both species. The Town actively monitors the nesting and breeding success of these species. The Northwest Harbor County Park lies under the Northwest Creek arrival route. The portion of this route that crosses the shoreline was sited over the park area to minimize the overflight of residential areas along the northern shore.

Noise monitoring was conducted within the Park on Barcelona's Neck on September 17 through 21, 2008. The site selected was on the western side of the Barcelona's Neck inlet. No houses or commercial areas are in the vicinity of this shoreline site. Helicopter overflights were determined through the AirScene system and coordinated with the noise data obtained. A total of 22 separate events were isolated. Appendix F provides plots of all these events.

The maximum noise level during the period was 79.7 dB and the minimum was 21.9 dB which is at or near the lower limit of the sound level meter's range. The L90, which is normally used as the index of background noise levels, was 44.72 dB for the full noise monitoring period. The quietest day produced an L90 of 27 dB while the noisiest day was 50.5 dB. The average sound level for the monitoring site was 57.22 dB and the Day Night Average Sound Level for the full measurement period was 63.02 dB.

A total of 22 noise events were recorded and identified. The lowest peak was 60.5 dB and the highest recorded sample was 77.5 dB. The majority of the events recorded were in the mid 70 dB range.

Published literature and experiments concerning noise effects on wildlife are common, but involve many differing species and noise sources. The difficulties encountered in such studies include the following. Animals have hearing ranges that may differ from human hearing. Thus, the effects of ultrasound and infrasound cannot be easily assessed. Most studies involve observations in the wild and thus conditions cannot be controlled. Noise is not readily measured in the wild nor can equipment be easily deployed among the target population. Responses to noise may differ depending on whether the animal in question is a predator or prey species. There can be differences in sensitivity by season or by circumstance. For example, behavioral patterns may differ depending on whether the animals are in groups or isolated. There can be observable differences between wild animals and domestic animals. The sudden onset of aircraft noise may cause surprise or a startled response which may or may not change based on habituation. Animals may tend to habituate to noise if they determine through repeat exposure that no threat exists. There may be differences in reaction depending on stress levels within the population. Animals are exposed to a variety of sounds in nature some of which can be high amplitude. Thus, noise exposure overall can be greater in animals than in humans. What conclusions may emerge are based on observed behavioral modifications as opposed to systematic measurements.

The FAA has published a summary, the Effects of Noise on Wild and Domestic Animals, as part of the document "Aviation Noise Effects." In that discussion, a summary of responses to noise from 11 differing bird species at the Arkansas National Wildlife Refuge was reviewed. Responses varied from none to total intolerance. Of those bird species that showed a measured response, behavioral changes were found to occur more frequently from noises above 75 dB with increasing response as sound levels increased. The document concluded that aviation noise has

a minimal impact on animals.

The above information does not directly address least terns or piping plovers which are of special interest in the Town of East Hampton. Surveys of nesting pairs and fledge rates for both bird communities were reviewed for the last ten years at the Northwest Harbor Park and the Georgica Pond Beach. Generally, total population and nesting success peaked between 2003 and 2005. There were several data gaps. Although a generalization, total bird numbers and fledge rates appeared slightly better at the Georgica Pond site. However, no trends emerged from the data other than a general similarity of the pattern of reproductive success at both sites. While this does not support a conclusion that helicopter overflights have had no effects on these species, it appears that others factors either in isolation or in combination with aircraft noise are influencing bird nesting preferences and success rates. Further observations may provide more insight, but the data reviewed suggests aircraft noise is not a primary influencing factor in breeding success. Since aircraft including helicopters pose no direct threat to nesting birds, at least a degree of habituation seems likely in view of the relatively low amplitude of the noise events that occur.

3.1.7 Noise Complaints

Tables 3-8 and 3-9 present the tally of telephone registered noise complaints at East Hampton Airport on the dedicated phone line during 2007 and 2008. Total complaints increased in 2008 to 8,383 compared to 2007's total, 6,995, despite a small decline in total traffic in 2008.

Table 3-8. Noise Complaint Summary – East Hampton Airport 2007

Month	Helicopter	Plane	Aircraft	Jet	Total	Percentages
January	55	44	2	0	101	1.4%
February	103	8	0	3	114	1.6%
March	131	5	7	3	146	2.1%
April	251	33	0	6	290	4.1%
May	564	117	0	36	717	10.3%
June	738	11	0	32	781	11.2%
July	1,514	60	0	180	1,754	25.1%
August	1,614	85	0	215	1,914	27.4%
September	637	57	0	20	714	10.2%

Table 3-8. Noise Complaint Summary – East Hampton Airport 2007 (continued)						
Month	**Helicopter**	**Plane**	**Aircraft**	**Jet**	**Total**	**Percentages**
October	222	51	0	13	286	4.1%
November	97	13	19	7	136	1.9%
December	24	6	11	1	42	0.6%
Totals	5,950	490	39	516	6,995	
Percentages	85.1%	7.0%	0.6%	7.4%	100.0%	

Table 3-9. Noise Complaint Summary – East Hampton Airport 2008						
Month	**Helicopter**	**Plane**	**Aircraft**	**Jet**	**Total**	**Percentages**
January	59	0	16	6	81	1.0%
February	99	0	39	7	145	1.7%
March	116	0	23	1	140	1.7%
April	261	0	91	13	365	4.4%
May	707	80	110	20	917	10.9%
June	513	170	121	29	833	9.9%
July	1,815	356	258	115	2,544	30.3%
August	1,869	255	0	152	2,276	27.2%
September	391	54	0	27	472	5.6%
October	248	61	0	30	339	4.0%
November	141	27	0	7	175	2.1%
December	38	58	0	0	96	1.1%
Totals	6,257	1,061	658	407	8,383	
Percentages	74.6%	12.7%	7.8%	4.9%	100.0%	

Monthly totals reflect the busy summer traffic peak in both years. July and August of both years showed the highest monthly totals in each year. The totals for the months of June, July, August and September accounted for 84% of the total complaints received in each year.

In each table complaints are categorized based on the information reported by the respondent. Helicopters account for the vast majority of noise complaints in both years, 85.1% in 2007 and 74.6% in 2008. Helicopter noise has been influenced by more than the volume and routing of helicopters. Concerns about helicopter noise are region wide since the majority of traffic originates in Manhattan traversing over the North Shore Route portions of Long Island. The majority of helicopter noise complaints are registered by individuals living direct below or adjacent to the helicopter flight tracks in East Hampton, Southampton, Sag Harbor, and Shelter Island. The helicopter noise issue has become sufficiently widespread to trigger inquiries from several legislative representatives on the national level. In the course of this inquiry, the noise complaint phone number at East Hampton Airport was published region wide. Noise complaints were received from areas throughout Long Island and not simply from East Hampton and Southampton. During late 2008, the automated response on the noise complaint line was amended to directed callers to register complaints directly with the Eastern Region Helicopter Council if they were not residents of the two local municipalities.

In the second data column of both tables, labeled “plane”, noise complaints that are able to be identified as relating to fixed wing propeller driven aircraft are tallied. Some of these complaints are caused by touch and go training activity. Airport management actively discourages training operations during the more sensitive times of the day and the peak months of the year.

The third column of data represents complaints that cannot be assigned to a specific aircraft type, i.e., the caller simply identified the complaint as aircraft related. Due to differences between counting procedures by different individuals there can be significant differences in the volume of calls assigned to this general category. Further, as the volume of complaints has increased greater attention has been applied to tracking and assigning aircraft to other totals. This accounts for the sharp drop in volume shown during the later months of 2008.

The fourth column represents complaints that are directly associated with the operation of business jet aircraft. The volumes have dropped substantially, about a 20 percent reduction, from 2007 to 2008. This change appears related to two factors. First, the noisier fraction of the jet aircraft user fleet, Stage 2 aircraft, has declined since these aircraft have comparatively high

fuel consumption and are approaching the end of their economic life cycle. Second, night period activity has declined. These reductions in jet aircraft noise complaints are remarkable since during 2008 less than five percent of total complaints related to turbine powered fixed wing aircraft.

Based on the information available, airport staff follows up on registered complaints by matching the complaint to the aircraft that caused it. Operators will be contacted if the responsible aircraft did not adhere to voluntary measures. Repeated complaints concerning the same aircraft may result in a letter notification or direct contact with the operator or chief pilot in the case of fleet operator.

3.1.7.1 Noise Complaints 2009

Noise complaints in 2009 showed sharp reductions because the complaint procedures now being followed exclude complaints from communities other than those near East Hampton. Previously, complaints were included from communities along the existing North Shore route. For 2009, the total dropped 41 percent from the 2008 total. The distribution of complaints followed the previous patterns. The majority of complaints were registered during the four summer months (68 percent). Helicopters remained the most numerous cause of complaints at 76 percent. Details are shown in Table 3-10.

3.1.8 Voluntary Restraints

Generally, noise abatement procedures at airports are voluntary. The pilot in command has ultimate authority for the safe flight of the aircraft and such factors as weather, avoidance of other aircraft, emergency, or malfunction may cause justifiable deviations from voluntary noise abatement procedures.

Currently there are four specific voluntary procedures in place. For helicopters there are recommended flight tracks and minimum recommended cruise altitude of 2,500 feet or greater above sea level. For all aircraft, operators are requested to avoid takeoffs or landings between 11:00 PM and 7:00 AM. Training operations are discouraged during the busy summer season. Finally departing jet powered aircraft are advised to use noise abatement procedures recommended by the National Business Aircraft Association and adhere to a 1,500 feet minimum pattern altitude.

Table 3-10. Noise Complaint Summary – East Hampton Airport 2009					
Month	Helicopter	Plane	Jet	Total	Percentages
January	49	9	2	60	1.3%
February	86	36	7	129	2.7%
March	42	26	7	75	1.6%
April	190	50	5	245	5.1%
May	387	73	41	501	10.4%
June	553	95	41	689	14.4%
July	706	125	86	917	19.1%
August	816	238	110	1,164	24.3%
September	392	51	44	487	10.2%
October	225	29	15	269	5.6%
November	138	33	12	183	3.8%
December	71	7	1	79	1.6%
Totals	3,655	772	371	4,798	
Percentages	76.18%	16.09%	7.73%		

Although these voluntary measures cannot be made mandatory, compliance with these objectives is monitored by airport staff. Primary attention is focused on helicopter routes and altitudes since these are the main source of complaints. For the month of April 2008, 77% of helicopters adhered to the recommended routes and 59% were at 2,500 feet or above in altitude. Altitude recommendations do not achieve as high a compliance rate as routes. Recommended altitudes cannot be maintained in poor visibility or under low cloud ceilings since pilots must retain good visibility. Route compliance is much easier to achieve and results from good ground visibility and situational awareness.

Similarly, over the Memorial Day weekend of 2008, route compliance was 77% and altitude compliance was 59%. For Labor Day weekend 2008 track compliance was 85% and altitude compliance was 74%. Helicopter operations show increasing adherence to recommended procedures.

These figures are reported officially to elected officials concerned with helicopter operations on Long Island on a regular basis. A sample copy of the report for the July 4 weekend is attached as Appendix G.

Night period restraints have also shown good compliance rates reflected by diminishing night period traffic. During 2008, only two (2) percent of total traffic occurred during the voluntary restraint period.

Touch and go training operations have been reduced by relocating to other facilities during the most sensitive months of the year.

While there is no practical way to measure compliance with noise abatement thrust management procedures, the decline in noise complaints associated with turbine powered fixed wing aircraft implies improvement.

3.2 Land Use and Zoning

The East Hampton Airport property consists of approximately 610 acres, including 56 acres of industrial uses along Industrial Road to the south. Recreational/open space along the north and eastern boundary of the property consists of approximately 96 acres. This area represents the Town's largest block of intact Pine Barrens Woodlands. The remainder of the property includes airside facilities, including three runways and a series of connecting taxiways, and landside facilities (terminal building, aircraft hangars, aircraft parking aprons, vehicle parking, etc.). The property is bound by Long Island Rail Road tracks to the south and Town Line Road to the west (provides the border between the towns of East Hampton and Southampton). Daniel's Hole Road, Wainscott-NW Road, and Industrial Road traverse the property. See Figure 3-12 for an aerial photograph of the airport and surrounding area.

The East Hampton Airport is located within the CI, Commercial Industrial District, for light industry and commercial operations (see Figure 3-13 for a zoning map of the area). The northwestern corner of the property is zoned PC, Park and Conservation. The area to the west, within the Town of Southampton, is zoned for low density residential development (minimum lot size of 80,000 to 120,000 square feet). The residential development immediately south of the Airport is zone for higher densities (minimum lot sizes of 20,000 to 40,000 square feet). To the north and east the land is zone for a mixture of low density residential (A5 indicates a minimum

Figure 3-12.
Aerial Photograph of East Hampton Airport and Surrounding Area

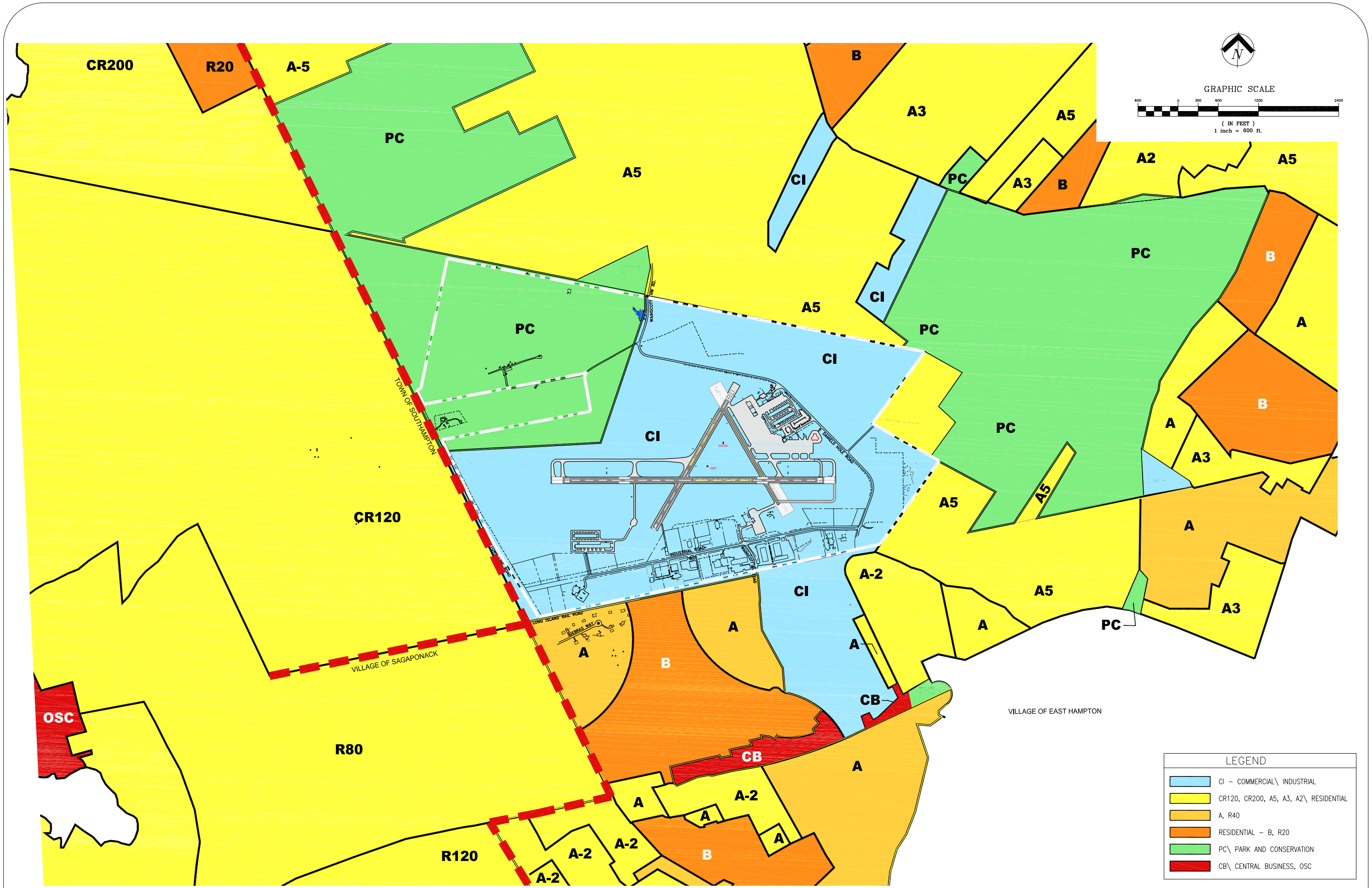


FIGURE 3-13 - ZONING MAP

lot size of 200,000 square feet) and PC. Additional areas of CI zoning are located to the north and south of the Airport.

Suffolk County prepared a land use map in 2007 (see Figure 3-14 for the areas surrounding the East Hampton Airport). To the north, west, and east of the Airport is a significant amount of vacant land and protected open space. Immediately south of the property is the largest tract of industrial land use in the area, adjacent to relatively dense residential development. The areas to the west of the Airport, in Southampton, are primarily low density residential, vacant land, recreational open space or agricultural. To the far north along the northern shore is the most dense residential communities, including Sag Harbor.

Figure 3-15 presents the existing on-Airport land use. The primary use is Transportation with a significant area identified as Conservation/Open Space. A shooting range occupies a small section in the northwest corner of the property. Along Industrial Road to the south there is a mixture of vacant lots and those used for various Light Industrial or Commercial uses.

3.2.1 Community Protection and Risk Assessment

A continuing concern to residents close to airports and especially those close to the takeoff and landing thresholds is the risk potential associated with the structures and to the occupants of the structures. The text below provides an assessment of these concerns.

Federal safety criteria are met through several means. First, runway protection zones are required for each runway end. These areas generally are clear of structures, obstructions, places of human congregation and potential hazards to aircraft operation. Likewise federal regulations address tall structures and other obstructions to flightways through enforcement of the FAR Part 77 imaginary surfaces. East Hampton Airport will be fully compliant with federal regulations when all runway protection areas are acquired or controlled and either Daniel's Hole Road or the landing threshold for Runway 28 is relocated. These projects are addressed by the proposed Airport Layout Plan.

There are a host of compatibility recommendations that address off airport land use. In addition to the formal federal criteria, considerations such a noise sensitivity, density of development, avoiding congregations of people, storage of flammable materials, emissions of smoke and dust,

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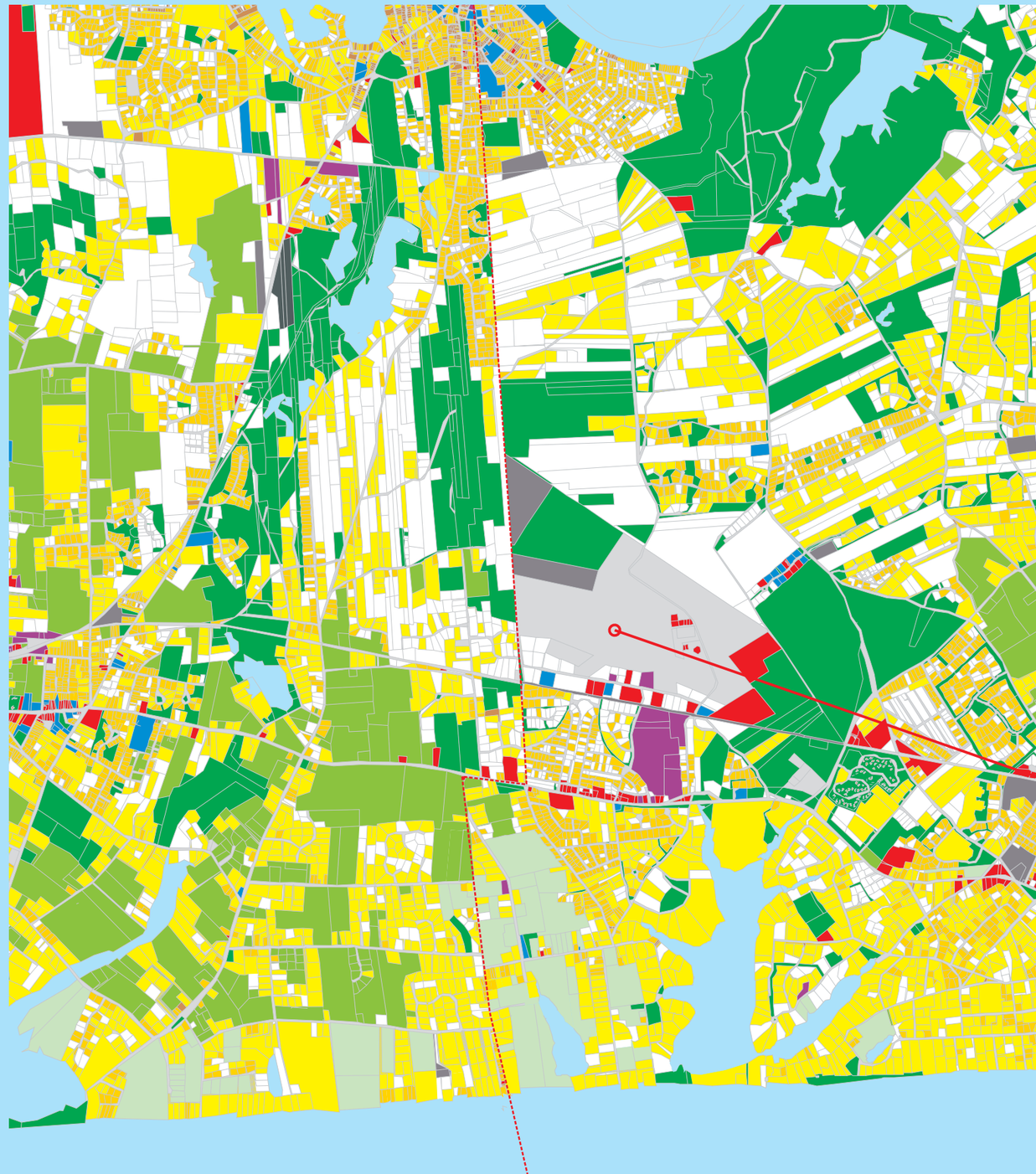
*excerpted from (F.O.I.L.) the provisions of the Freedom of Information Law [Public Officers Law Article 6 Section 84-90] by section 87.2 g

Map is subject to revision. This map is not to be used for surveying, conveyance of land or other precise purposes.
Tax map base provided courtesy of Real Property Tax Service Agency.

TOWN OF SOUTHAMPTON

TOWN OF EASTHAMPTON



LAND USE

Town of East Hampton
Suffolk County, New York

... LEGEND ...

- Low Density Res.
- Med Density Res.
- High Density Res.
- Commercial
- Industrial
- Institutional
- Rec Open Space
- Agriculture
- Vacant
- Transportation
- Utilities
- Waste Handling & Mgt.
- Underwater Land

Scale: 1 inch = 1.5 miles

LOCATION MAP

Figure 3-14.
Surrounding Land Use

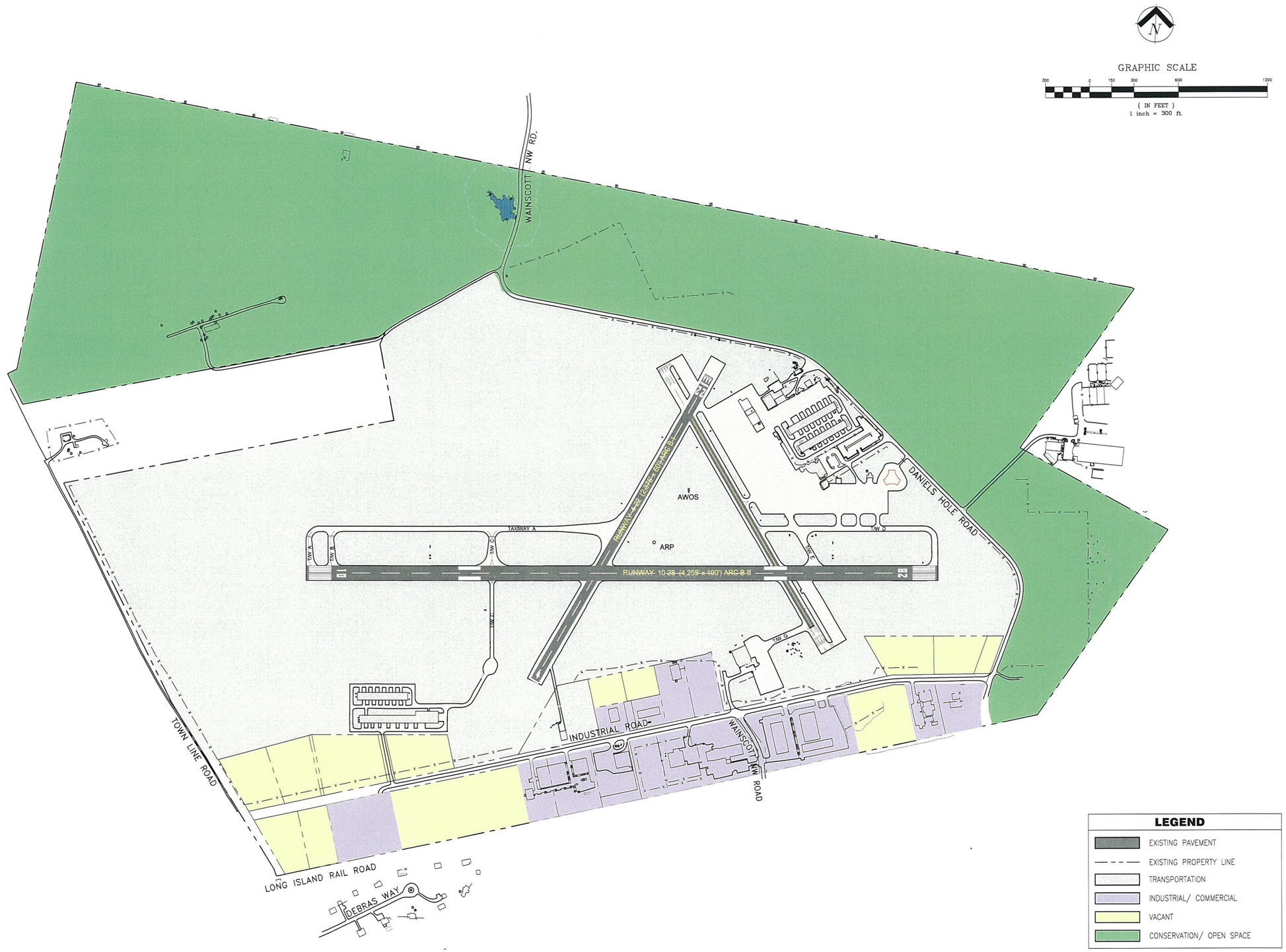


FIGURE 3-15 - AIRPORT LAND USE

and discouragement of wildlife concentrations such as through avoidance of landfills in the airport vicinity apply. These recommendations stem from the need to protect aircraft and their occupants. East Hampton Airport complies with these generic recommendations. Most areas around East Hampton Airport are in relatively low density development.

Aircraft accidents can also occur due to mechanical failure of either the engine or airframe, pilot error or incapacitation, adverse weather conditions including winds and poor visibility, and a variety of relatively unpredictable factors such as bird strike, collision with other aircraft, or fuel exhaustion. These are important considerations in maintaining control of the aircraft and therefore the safety of operation and occupants.

According to National Transportation and Safety Board records, a total of six accidents have occurred at or in the vicinity of East Hampton Airport from 1990 to 2010. There were a total of four fatalities to aircraft occupants and no damage to third parties or structures. At Montauk Airport a total of eight accidents occurred during the last ten years with three fatalities to aircraft occupants and no damage to third parties or structures in the vicinity of the Airport.

The question of concern to residents in the vicinity of the Airport is assessment of risk to third parties uninvolved with the use and operation of an aircraft. There is a distinction in statistics between air carrier aircraft and the airports that accommodate them and general aviation aircraft operating at general aviation airports. In this case, the focus is exclusively on general aviation aircraft. There are two predominant methods for assessing risk to airport neighbors, proximity to the runway ends and statistical mortality rates to third parties.

Geographical analysis is based on the fact that aircraft accidents occur most frequently on landing and takeoff. The majority of these occur on the airport, close to the runway ends. This is assessed in detail in the California Airport Land Use Planning Handbook. Chapters 8 and 9 deal in detail with accident patterns at airports. In this case, the recommended set of geographical overlays for general aviation VFR runways under 4,000 feet with less than 2,000 annual operations consists of five differing zones. Zone 1 is the Runway Protection Zone. Zones 2 and 3 are formed by a 60 degree arc the apex of which is 1,000 feet from the runway end with 3,000 foot sides to form a pie shaped area around the runway end. Zone 4 and 5 are formed as a rectangle each side of which is 500 feet offset from the runway centerline and extends 3,500 feet from the runway threshold and along the sides of the runway. The total area of the safety zones is approximately 142.5 acres. A total of 21 homes are included within the boundaries of

the safety zones associated with Runway 4 at East Hampton Airport, the worst case among the four future runway ends.

Guidelines for land use within safety zones recommend a density of no greater than four homes per acre. In the case of Runway 4, the homes show a density, based on inspection of aerial photographs, of approximately one dwelling unit for each two acres. Not all of the designated safety zone area includes residentially developed areas. The majority of the area is on the Airport. Measuring the total area which is residentially developed and is within the safety zones yields a 60 acre area which accommodates 21 homes or approximately one house for each three acres including streets. The guideline recommendations for development density are therefore met.

The evaluation standards are intended to minimize the possibility of an aircraft striking a structure. This helps protect the aircraft and its occupants. Every occurrence of an aircraft striking a structure off airport does not necessarily result in fatalities or injuries to bystanders or occupants. Over the period of 1964 through 1982, an average of 3.1 accidents that resulted in fatal or serious injuries to individuals per year occurred annually at all airports nationwide. Many of these incidents include aircraft larger than are expected to use Runway 4. Smaller, lighter aircraft have lesser potential to damage structures, reducing risk potential. Statistically, these circumstances are such that overall risk is reduced to a level comparable with a variety of natural and social hazards. While nothing prevents an accident from happening at a certain time and place, the likelihood of harm to residents in the vicinity of East Hampton Airport and Runway 4 is small, i.e., not significantly greater than the risk to structures in other locations near this or other airports or under established flightways.

3.3 Air Quality

3.3.1 Introduction

Federal and State law establishes Ambient Air Quality Standards for sulfur dioxide, carbon monoxide, ozone, hydrocarbons (NYS only), nitrogen dioxide, lead (US only), fine particulate matter (US only), inhalable particulates (US only) and total suspended particulates. These standards are expressed in terms of concentrations which are routinely measured through statewide monitoring networks.

In terms of airport adjacent areas, aircraft have relatively limited impact in comparison to strictly ground level stationary or mobile sources since they emit most pollutants at high altitudes and dilute those emissions in large volumes of air limiting the potential to create high ground level concentrations.

Federal and State of New York Ambient Air Quality Standards can be found at http://www.dec.ny.gov/chemical/8542.html. Generally, proposed projects must demonstrate conformity with these standards, i.e., maintain compliance with these standards. The ambient air quality monitoring net work determines the levels of the six criteria air pollutants shown. Projected additional air pollutant emissions from a proposed project should not cause violations of these standards.

At airports, air quality evaluations are outlined in "Air Quality Procedures for Civilian Airport and Air Force Bases," FAA, September, 1997 and its "Addendum," September 2004. These documents indicate that the generation of volatile organic compounds and nitrogen dioxides are the primary pollutants of concern at airports. It further establishes *de minimis* annual emission levels for all six criteria air pollutants.

3.3.2 Ambient Air Quality

Generally, East Hampton has several natural and geographical advantages that tend to reduce the potential for high concentrations of air pollutants. The Town, situated on a peninsula, is essentially surrounded by open water. There are no major air pollutant emitting industries nor major highways nor intense concentrations of homes or businesses. There are no mountains or other landforms that deflect or interfere with the free movement of air. The Town is relatively distant from major urban areas.

The nearest air quality monitoring station is located in the Town of Riverhead and maintained by NYSDEC. Records for this station as well as others indicate that the region is in compliance with the standards shown for sulfur dioxide, an acrid, corrosive poisonous gas that can cause breathing difficulty and chronic coughing.

The region also generally complies with NAAQS for carbon monoxide, a colorless, odorless, poisonous gas that can be fatally toxic.

Ozone is a component of photochemical smog, a molecule composed of three atoms of oxygen. It is produced by photochemical means in the atmosphere from a variety of precursors (volatile organic compounds), byproducts of evaporation or combustion. Ozone is a reactive chemical that predominantly occurs during the warm sunny months. It causes breathing difficulties especially for those with impaired breathing function and damages a variety of living plants and organic materials such as rubber. All of Long Island, as well as most of the northeastern states, is a moderate non attainment area for ozone. This standard changed in 2008 and two more years of record will be required to determine compliance/noncompliance. However, a review of the 2006 through 2008 years indicates recurring violations although the exceedences recorded were small excesses of the standards applicable at that time.

Hydrocarbons, compounds of water and carbon, are divided into volatile and non volatile groups. These chemicals are precursors of photochemical smog. These chemicals are not currently monitored on Long Island.

Nitrogen dioxide is produced by high temperature combustion and industrial processes. Oxides of nitrogen are components of photochemical smog and irritate the eyes and nose, and may produce pulmonary edema, bronchitis or pneumonia. The Long Island region is in compliance for these chemicals.

Lead is a heavy metal which can attack the nervous system. The region is in compliance with standards for lead.

Particulate matter is composed of three groups, Total Suspended Particulates, Inhalable Particulates and Fine Particulate matter. This is dust of various differing sizes and compositions. These materials are soiling, may affect the respiratory tract and depending on their composition may lead to various chronic respiratory diseases. Fine particulate matter ($PM_{2.5}$) is of concern because, due to the fineness of the particles, they may reside in the lungs for extended periods. Suffolk County has been designated as a $PM_{2.5}$ nonattainment area by the U.S. EPA. This pollutant is not monitored in Riverhead.

Thus, the region is generally in compliance with all air quality standards except ozone and the $PM_{2.5}$ standards.

3.3.3 Air Pollutant Sources

Air pollutant sources associated with general aviation activity include aircraft engine emissions, ground vehicle emissions from delivery trucks, employees as well as travelers, construction impacts, space heating of hangar and office spaces, venting from fuel storage facilities and operation of ground service vehicles.

3.4 Water Quality, Water Courses, and Subsurface Water

Groundwater protection is a significant issue for the East Hampton community. The entire Airport property is located within a Special Groundwater Protection Area (SPGA) (see Figure 3-16). This is a designation of New York State and the Long Island Regional Planning Board prepared a comprehensive plan to protect the designated areas.[1] The Airport is within the South Fork SGPA. The north and eastern portions of the Airport property are within a Priority Groundwater Protection Area.

With the exception of the industrial park, the property is covered by the Town of East Hampton's Water Recharge Overlay District. This provides a system of additional regulations for properties located in areas where disproportionately large quantities of rainwater are recharged into and stored in the underground aquifer in order to help ensure the continued sufficiency and purity of the Town's irreplaceable groundwater supply and sole source of drinking water. Lands within the district are declared to be critical areas of environmental concern and any activity or use is subject to conditions against overclearing of land, landscaping, the use of fertilizers, the manner of disposing of waste materials or any other reasonable condition or restriction necessary to ensure continued integrity of the Town's groundwater. In addition, to the extent practicable, clearing and grading of natural vegetation and disturbance of the natural contours of lands within the overlay district should be minimized.

The property is within the 5-foot glacial aquifer contour.[2] This has been identified as the primary groundwater recharge area within which the existing Suffolk County Water Authority wells are located and within which future water supply development should take place. In addition, East Hampton is located on the Nassau-Suffolk Sole Source Aquifer, a Federal designation that is

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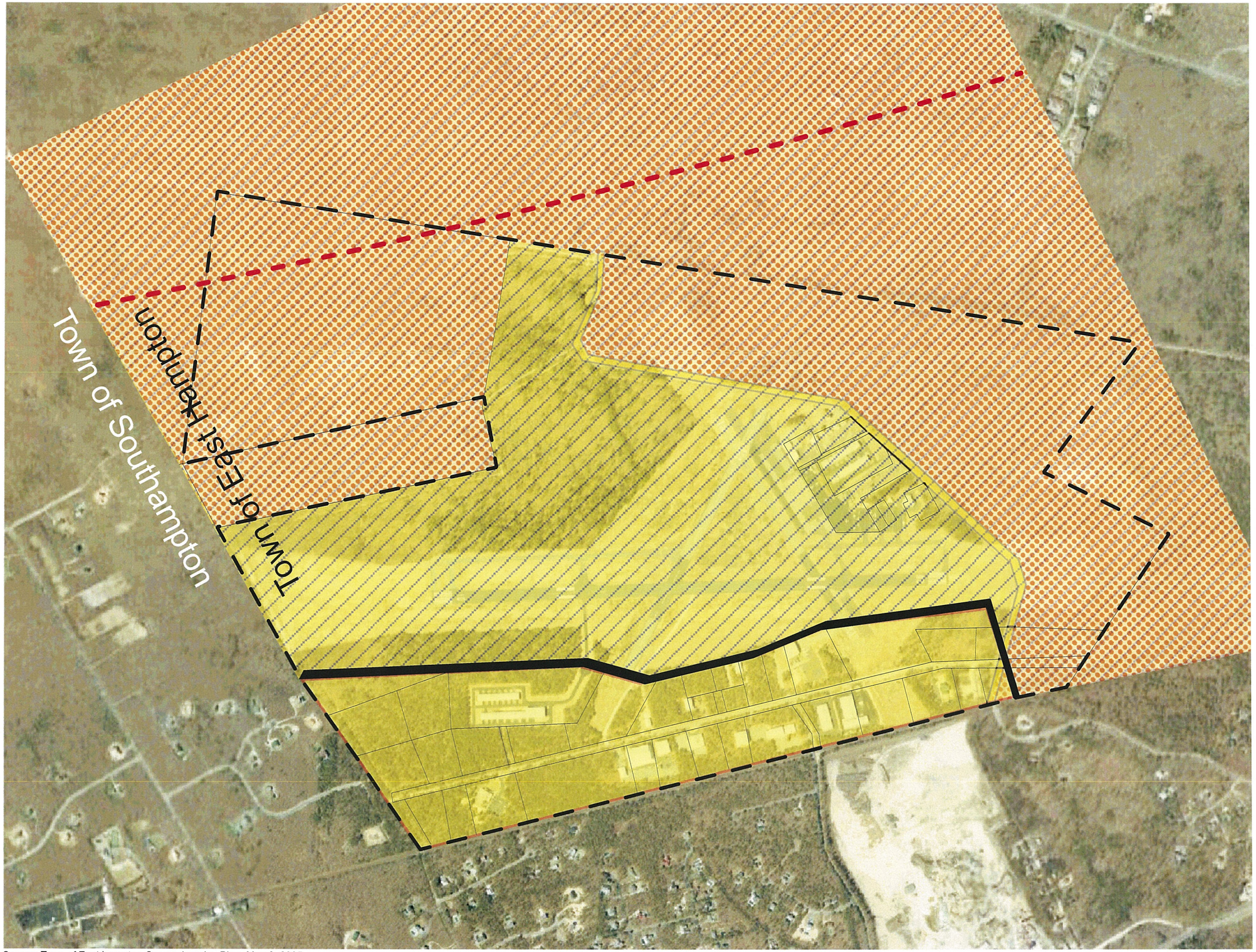
[1] Koppelman, et al, Long Island Comprehensive Special Groundwater Protection Area Plan, 1992.

[2] From "USGS Water Resources Investigation Report 1997"



Town of East Hampton Groundwater Protection Zone

West Section

- Inferred Glacial Aquifer Divide
- Special Groundwater Protection Area
- Water Recharge Overlay District
- Priority Groundwater Protection Areas
- Airport Property line

Figure 3-16. Groundwater Protection Areas

Source: Town of East hampton Comprehensive Plan, May 6, 2005

regulated by the U.S. Environmental Protection Agency. Since a sole source aquifer is a major source of a safe drinking water, it is important that the quality of this water is maintained and that the aquifer is adequately recharged to maintain water supply.

The East Hampton Zoning Map and code has been revised to incorporate measures that protect the groundwater (i.e., 5-acres and other low-density residential zoning classifications). Protected open space provides the highest quality groundwater recharge and the lowest potential for future contamination of groundwater resources.[3] For commercial lots within the Water Recharge Overlay District, the total area which may be cleared of indigenous natural vegetation shall not exceed 10,000 square feet or 50% of the lot area, whichever is greater. No new landfills or private dumping or disposal areas utilized for, but not limited to, disposal of waste and septage shall be permitted in the overlay district.

At the East Hampton Airport, buildings are served by individual septic systems. Potable water to the Airport terminal building is supplied by the Suffolk County Water Authority (water consumption for 2008 was 83,776 gallons). Additional ground wells supply water to the hangars. There have been no issues meeting the demand for potable water.

3.5 Historic, Architectural, Archaeological, and Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP) within the National Park Service (NPS). Section 106 requires Federal agencies to consider the effects of their undertakings on properties on or eligible for inclusion in the NRHP. Compliance with section 106 requires consultation with the ACHP and the State Historic Preservation Officer (SHPO).

The National Register of Historic Places website indicates that there are no Historic Properties on the Airport property. Previous communication with the New York State Office of Parks, Recreation and Historic Preservation indicated that proposed on-Airport development would not have effects upon cultural resources in or eligible for inclusion in the National Register of Historic Places.

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[3] Town of East Hampton Comprehensive Plan, May 6th 2005.

The Airport is not within any of the Town's historic district overlays – Amagansett, Bluff Road, Springs, or Montauk Association. In addition, previous consultation with the Town of East Hampton's Planning Department indicated that the Airport was in a non-sensitive area regarding historic resources.

3.6 Biotic Communities

Figure 3-17 broadly divides the Airport land holdings into three distinct areas – forested areas, cleared land and airport maintenance areas.

Forested lands are portions of the pine barrens which includes Pitch Pine Forest and the Coastal Oak-Heath forest. These areas are stable, protect underlying water resources, provide habitat for native species, resist erosion and are otherwise sustainable. Given these benefits, minimal site disruption will best serve the long term environmental interests and will minimize maintenance costs.

Cleared areas are classed as cut and fill land. Generally, these are sandy sub soils, the top soil having been removed during construction of the facility. It has limited moisture holding capacity, relatively low fertility and cannot support sufficient plant life to fully cover the ground for the majority of the year. Passive management to encourage the growth of native species that are adapted to this harsh environment is the preferred management practice. This involves limiting further site disturbance, infrequent mowing, and preservation of the existing plant cover to the extent feasible. Careful management practices to encourage wildlife and breeding success for small birds and mammals are recommended. Although biologic limitations occur, these areas should be naturalized to the extent feasible.

Airport maintenance lands include the terminal area, FBO areas, and areas adjacent to runways and taxiways that need to be actively maintained. The maintenance includes more frequent mowing to maintain visibility, discourage animal habitation and improve appearance. Development of a maintenance plan and procurement of sufficient equipment to execute that plan will improve safety and create an attractive in field landscape that makes use of native plant species and discourages invasive plants.

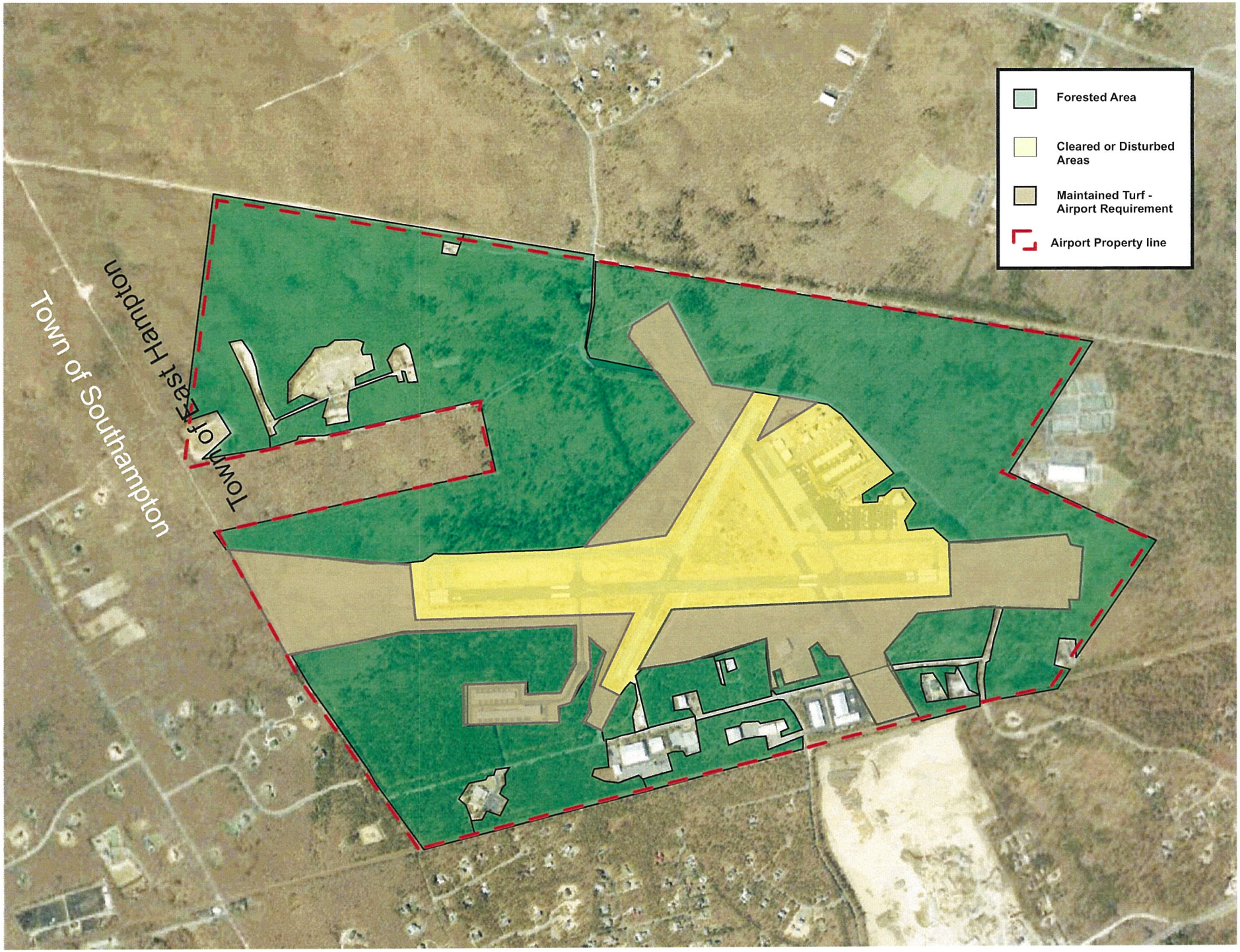


Figure 3-17. Biotic Communities

3.7 Endangered Species of Flora and Fauna

Extensive surveys the flora and fauna found at the East Hampton Airport have been conducted over the last 25 years. These are summarized and documented in Chapter Three of the *Environmental Assessment for East Hampton Airport* (Draft November 15, 2002). In that document, no rare or endangered species protected on the federal level were found to occur at the Airport. The report concluded that the projects reviewed, including the proposed parallel taxiway to Runway 10/28 and the rehabilitation of Runway 4/22, would not adversely impact any species of concern.

The flora and fauna found at the Airport were reviewed in the East Hampton Airport Master Plan Report. Three plant species of concern were noted including the Pine Barren Sandwort (*Minuartia caroliniana*), the Bird's Foot Violet (*Viola pedata*), and a *Spiranthes* orchid. Two bird species of concern were also noted, Grasshopper Sparrows (*Ammodramus savannarum*) and Eastern Bluebirds (*Sialia sialis*). The Pine Barren Sandwort is classified as a rare native plant and is protected. The Bird's Foot Violet is considered exploitably vulnerable and is similarly protected. The two bird species noted are not restricted to airport land, but are experiencing decline. The Eastern Bluebird is being actively cultivated on the Airport with nesting boxes along the periphery of the forested areas. Neither of these species represents a threat to aircraft operations.

Cleared areas at the East Hampton Airport are essentially open sandy subsoil which has limited ability to support vegetation during the dry months of the year to those hardy native species that are adapted to such environments.

3.8 Wetlands

Freshwater wetlands are highly productive natural areas which are necessary to the survival or many species of fish, birds, amphibians, reptiles, and mammals. They provide flood and stormwater control and help to maintain surface water flow and preserve water quality. The only wetlands located on the Airport property is a small (approximately 2 acres), isolated, freshwater wetland located in the northern portion of the site, just west of Daniel's Hole Road/ Wainscott-NW Road (see Figure 3-18). There are no tidal wetlands in the vicinity of the Airport.

The wetlands are regulated under both State and local law. The wetland is classified as Class II under the New York State Freshwater Wetlands Act, indicating it provides the second highest

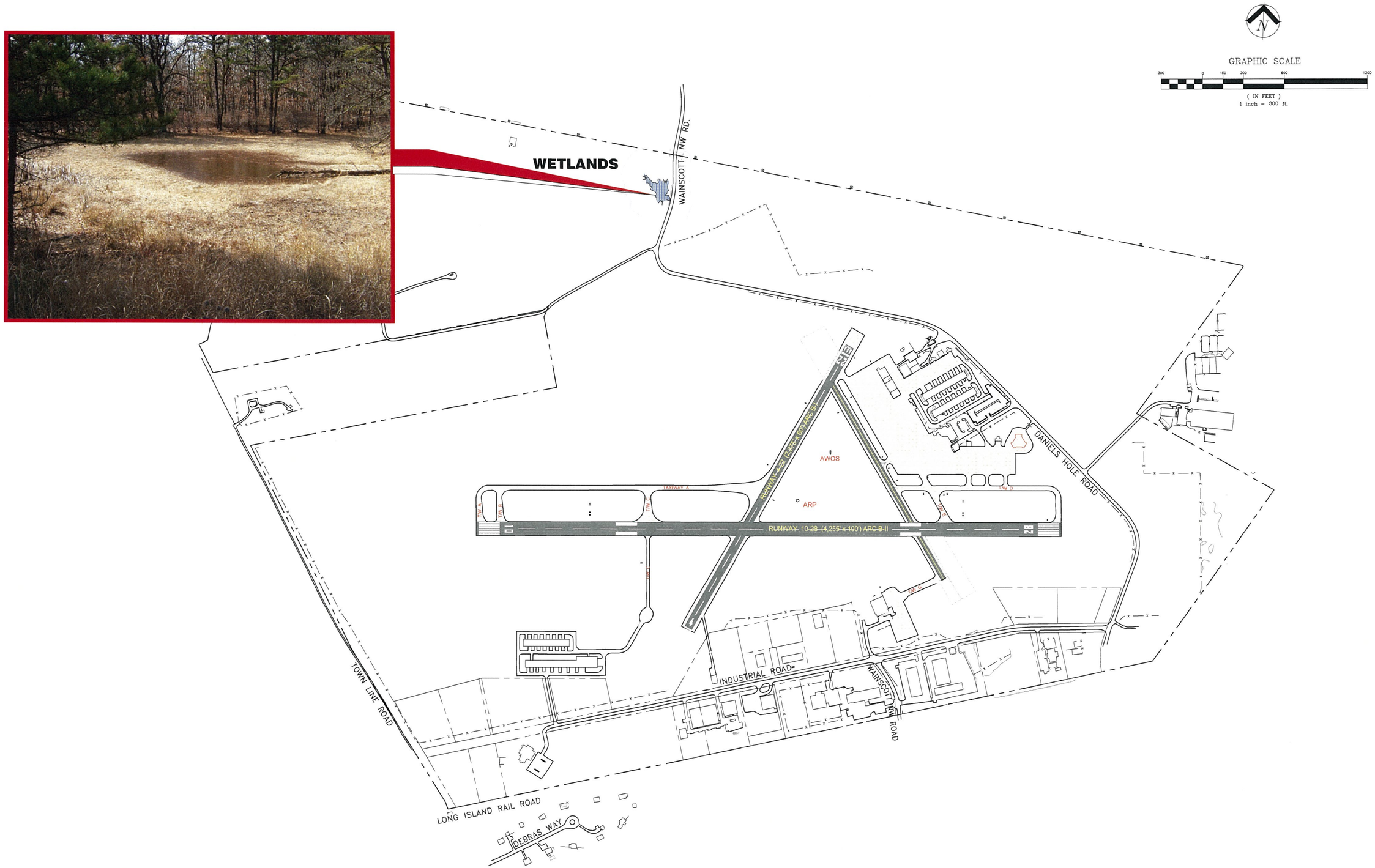


FIGURE 3-18 - FRESHWATER WETLANDS

level of benefits. The wetland is not a known habitat for a threatened or endangered plant or animal species. It is not a tributary to a body of water or adjacent to a reservoir or body of water and has no archaeological or paleontological significance as a wetland. However, it may be hydrologically connected to an aquifer which has been identified by a government agency as a potentially useful water supply; therefore it is categorized as Class II. In order to better protect the wetland against surrounding disturbance, the "adjacent area" (considered within 100 feet of the wetland boundary) is also subject to regulation.

A permit from NYSDEC is required for certain activities within the wetland or adjacent areas. Class II wetlands provide important wetland benefits, the loss of which is acceptable only in very limited circumstances. A permit shall be issued only if it is determined that the proposed activity satisfies a pressing economic or social need that clearly outweighs the loss of or detriment to the benefit(s) of the Class II wetland. Ordinary maintenance and repair of existing functional structures, facilities or improved areas, including roads, is permitted, but expanding or substantially modifying existing functional structures or facilities and any draining, filling, grading, clear-cutting or dredging would not be permitted.

Pursuant to Chapter 255-4-30 of the Code of the Town of East Hampton, construction is prohibited within wetlands (including enlargement or reconstruction of a building or structure). No sewage disposal device or structure shall be constructed, placed, or installed within 150 feet of the upland boundary of a wetland. In addition, no building or other structure shall be erected, constructed, placed, enlarged, or installed within 100 feet of the upland boundary of a wetland. No clearing of vegetation or the establishment of turf, lawn, or landscaping may occur within 50 feet of the wetland boundary. Pursuant to Chapter 255-4-20 of the Code of the Town of East Hampton, a Natural Resources Special Permit is required for any filling or altering of a wetlands and for certain activities within 150 feet of any wetland boundary (clearing or grading, digging dredging, or excavating land, or depositing fill or other material upon land, building, constructing, erecting, reconstructing, enlarging, altering, or placing any structure or other improvement in or upon the land). Within 200 feet of any boundary, a Natural Resources Special Permit is required for the following activities: constructing or installing any cesspool, septic tank, or other structure, system, or device for the disposal of sewage or other liquid wastes, constructing or installing any structure, system, or device for the receipt or storage of fuel or any other liquid except water.

3.9 Energy Supply and Natural Resources

The following table presents an inventory of the energy resources consumed on the Airport property during 2008.

Table 3-11. East Hampton Airport Energy and Natural Resource Consumption (2008)		
Electricity (LIPA)	214,729 kilowatt hours	
Propane	2,233 gallons	Terminal Building
	975 gallons	Myers Aero Service
Aviation Fuel	48,736 gallons	AvGas
	693,006 gallons	Jet A

Since there have not been any significant changes to the East Hampton Airport for the past ten years, it can be assumed that these values reflect the typical annual rate of consumption. There have been no shortfalls or issues meeting energy demand. No deficiencies or substandard practices are observed, with the exception of aircraft fuel storage. During the summer months, daily deliveries of Jet A fuel are necessary to satisfy demand. Currently, the only fuel farm on the Airport contains an 8,000 gallon tank for Avgas and a 12,000 gallon tank for Jet A fuel. An additional 12,000 gallon storage tank for Jet A fuel would increase fuel reserves to a more acceptable level.

3.10 Light Emissions

The Town of East Hampton's Code incorporates provisions "that are intended to control and regulate exterior lighting through the Town to promote public safety on the Town's roads and highways, protect residential land owners from the intrusive effects of glare and light trespass, preserve the rural character of the Town, and maintain and restore the beauty of the night sky."

The general lighting standards in Chapter 255-1-83 of the Code do allow for "airport lighting that is specifically regulated by federal law."

The current sources of light emissions on the Airport include the medium intensity runway lights along edges and ends of the runways. These do not emit light that will disturb the surrounding community. Most of the taxiways have edge lights; however, these generate very limited emissions and would not impact off-Airport areas. The occupied buildings and parking areas – main terminal, Myers Aero Service, businesses along Industrial Road – would emit minor light from typical fixtures that will occasionally be utilized during nighttime hours. Due to the buffer provided by the surrounding forest, it is unlikely that the emissions can be viewed off-property.

3.11 Solid Waste

Solid waste generated on the Airport property is removed by the Town of East Hampton. There are no known deficiencies or substandard practices.

3.12 Other Environmental Concerns

3.12.1 U.S. Department of Transportation Act, Section 4(f)

Per FAA Order 1050.1E, "Section 4(f) of the DOT Act, which is codified and renumbered as Section 303(c) of 49 U.S.C., provides that the Secretary of Transportation will not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, State or local significance or land from an historic site of national, State, or local significance, as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."

There is no Section 4(f) land on or near the Airport.

3.12.2 Floodplains

The Flood Insurance Rate Map (FIRM) developed by the Federal Emergency Management Agency for Suffolk County identified the area of the Airport as in Zone X, areas determined to be outside 500-year floodplain (dated May 4, 1998).

3.12.3 Coastal Zone Management and Coastal Barriers

In 1972, Congress passed the Coastal Zone Management Act to conserve, develop and protect the nation's coastal resources. Program development funds were granted to coastal states for the preparation of state coastal management programs. The Coastal Barriers Resources Act of 1982 prohibits, with some exceptions, Federal financial assistance for development within Coastal Barrier Resources System, which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts.

The Coastal Erosion Hazard Areas Act empowers the New York State Department of Environmental Conservation (NYSDEC) to identify and map coastal erosion hazard areas and to adopt regulations to control certain activities and development in those areas. The backbone of these regulations is a permitting system aimed specifically at all proposed construction in erosion hazard areas. The Airport is not situated within the Coastal Zone or Coastal Barrier Resources System.

In addition, the Town of East Hampton has four coastal erosion overlay zones to regulate projects which are designed to control or prevent flooding and erosion of the coastline and adjacent upland areas or which may impact coastal resources:

- Zone 1: Ocean littoral zone, including bluffs, dunes, beaches and nearshore areas. This zone is predominantly free of erosion control structures.
- Zone 2: Bay littoral zone, including bluffs, dunes, beaches, and nearshore areas, which is predominantly free of erosion control structures.
- Zone 3: Bay littoral zone, including bluffs, dunes, beaches, and nearshore areas, which contains erosion control structures which are isolated and discontinuous, or which have no substantial flooding or erosion protection function.
- Zone 4: Bay littoral zone, including bluffs, dunes, beaches, and nearshore areas, which contains numerous erosion control structures. Within this zone the loss of natural resources and features such as bluffs, dunes, and beaches mean that in many cases erosion control structures provide the only remaining protection against flooding and erosion.

The East Hampton Airport is not in the vicinity of any of these coastal erosion overlay zones.

3.12.4 Wild and Scenic Rivers

Per FAA Order 1050.1E, "The President's 1979 Environmental Message Directive on Wild and Scenic Rivers (August 2, 1979) directs Federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory as having potential for designation under the Wild and Scenic Rives Act." According to the New York State Wild, Scenic, and Recreational River System Map (NYSDEC), there are no designated wild or scenic rivers in the vicinity of the Airport.

3.12.5 Prime or Unique Farmland

The Farmland Protection Policy Act (FPPA) regulates Federal actions with the potential to convert farmland to non-agricultural uses. The purpose is to preserve land considered to be prime, unique, or statewide or locally important farmland.

The East Hampton Airport is not on or contiguous to agricultural land. The property has been operating as an airport since 1936 and the proposed projects would not involve the conversion of farmland to non-agricultural uses. The FPPA does not apply.

3.12.6 Hazardous Materials Disposal

Although the activities at the Airport require the use of some hazardous materials, the Town of East Hampton Code regulates the use of hazardous materials at the Airport (75-29).

"No person shall store, keep, handle, use, dispense or transport any hazardous materials at the airport unless said act is done in accordance with the laws, rules, and regulations of the federal government, the New York State Uniform Fire Prevention and Building Code, the New York State Department of Environmental Conservation, the New York State Department of Transportation and the Suffolk County Department of Health Services, in particular Article 12 of the Suffolk County Sanitary Code.... Notification of any hazardous spill or emergency shall be made immediately to the East Hampton Fire Department and the airport manager. Upon receiving notification, the airport manager shall immediately notify the Town Fire Marshal and the Town Natural Resources Department...[Any] corrective action shall be in accordance with the applicable federal, state, and local laws, rules and regulations."

New York State's Hazardous Waste Management Regulations (the Part 370 series) can be found in 6 NYCRR Parts 370, 371, 372, 373, 374 and 376.

The East Hampton Airport incorporates these regulations in daily operations, ensuring hazardous waste is disposed of properly, spillage of petroleum products and other hazardous products is minimized, and, if spills do occur, that they are handled appropriately.

3.12.7 Environmental Justice

In 1997, Presidential Executive Order 12898 was issued which highlighted the need to consider the effects on minority and low income populations. These Environmental Justice issues are defined in FAA Order 5050.4B. The goal of an Environmental Justice analysis is to determine whether a potential disproportionately high and adverse affect to minority and low income populations will occur as a result of any anticipated action by a federally funded public benefit project.

There are no areas in proximity to the Airport which have significant populations of minority or low income individuals.

4.0 Alternatives Analysis

4.1 Plan Development

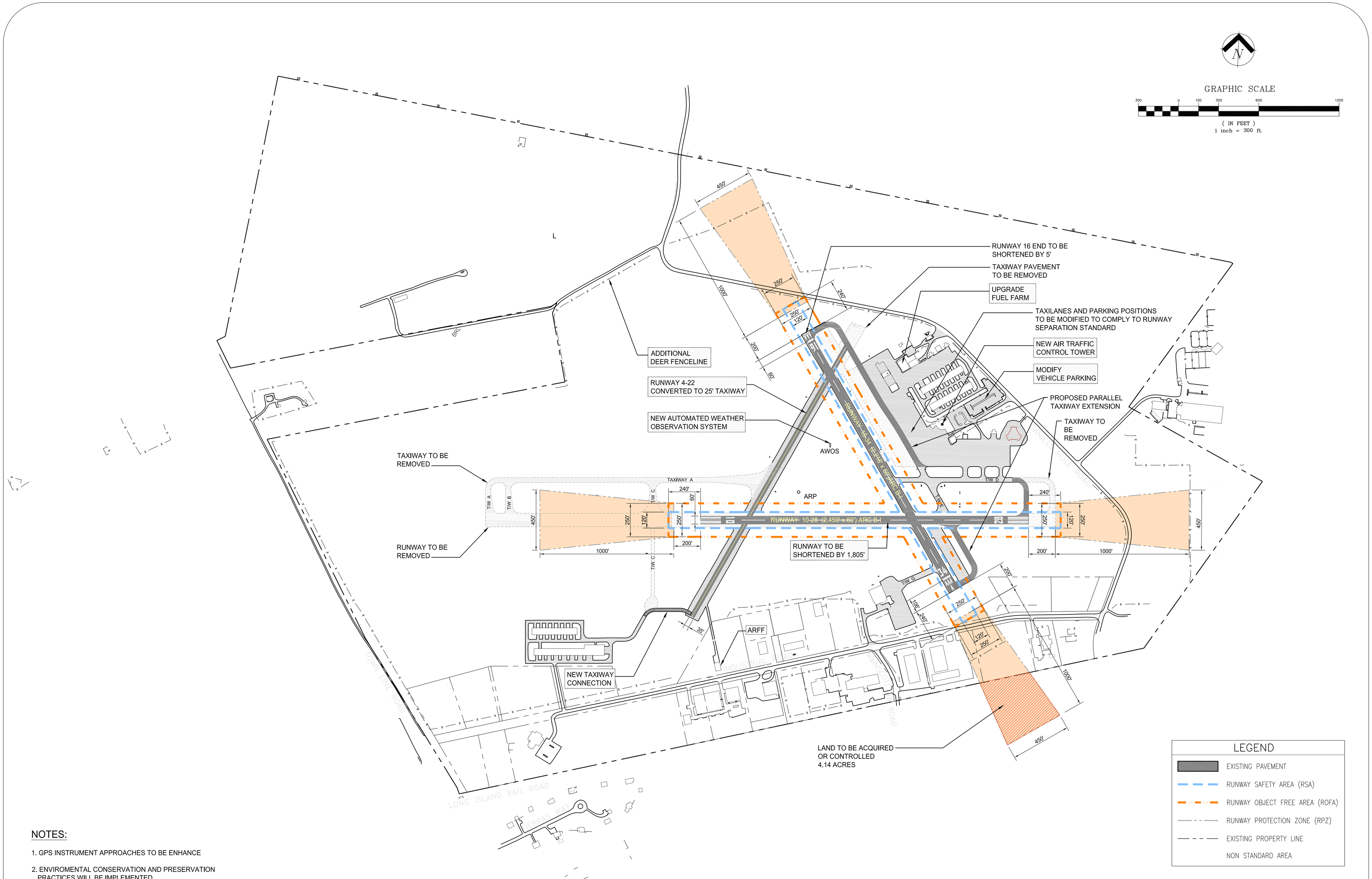
The East Hampton Airport Master Plan Report considered four broadly differing alternative future concepts. These included 1) the no action alternative, 2) a modest plan that concentrated on improved safety, efficiency and compliance with current design standards, 3) a reduction in capability and 4) an expansion program designed to fully accommodate the largest prospective aircraft forecast to use the facility. The Town considered all these alternatives and selected, after soliciting public comments, alternative 2 which was then subject to further refinement during a twelve month review period and then further consultation with the planning team. Consideration of a full range of future airport configurations was therefore integral to the process from the outset. Detailed consideration of the selected design and the alternatives considered are detailed below.

4.2 Runway Configuration Alternatives

East Hampton Airport originally had a three runway configuration with each runway 100 feet wide. A central question in the preceding study, the East Hampton Airport Master Plan Report, concerned the need to retain all three runways. The determination made in that investigation was that, in accordance with appropriate wind coverage criteria, either Runway 4/22 or Runway 16/34 in combination with the longer Runway 10/28 would provide adequate wind coverage.

Currently, Runway 4/22 is closed due to poor pavement condition and Runway 16/34 remains in service. There are three potential alternatives for the future configuration, 1) retain Runway 16/34 (No Action; see Figure 4-1), 2) close Runway 16/34 and rehabilitate Runway 4/22 (Proposed Action; see Figure 1-1), or 3) retain both runways (see Figure 4-2). This choice was considered at length including public hearings, other public input especially from the airport user community and in depth consideration by the Town of East Hampton.

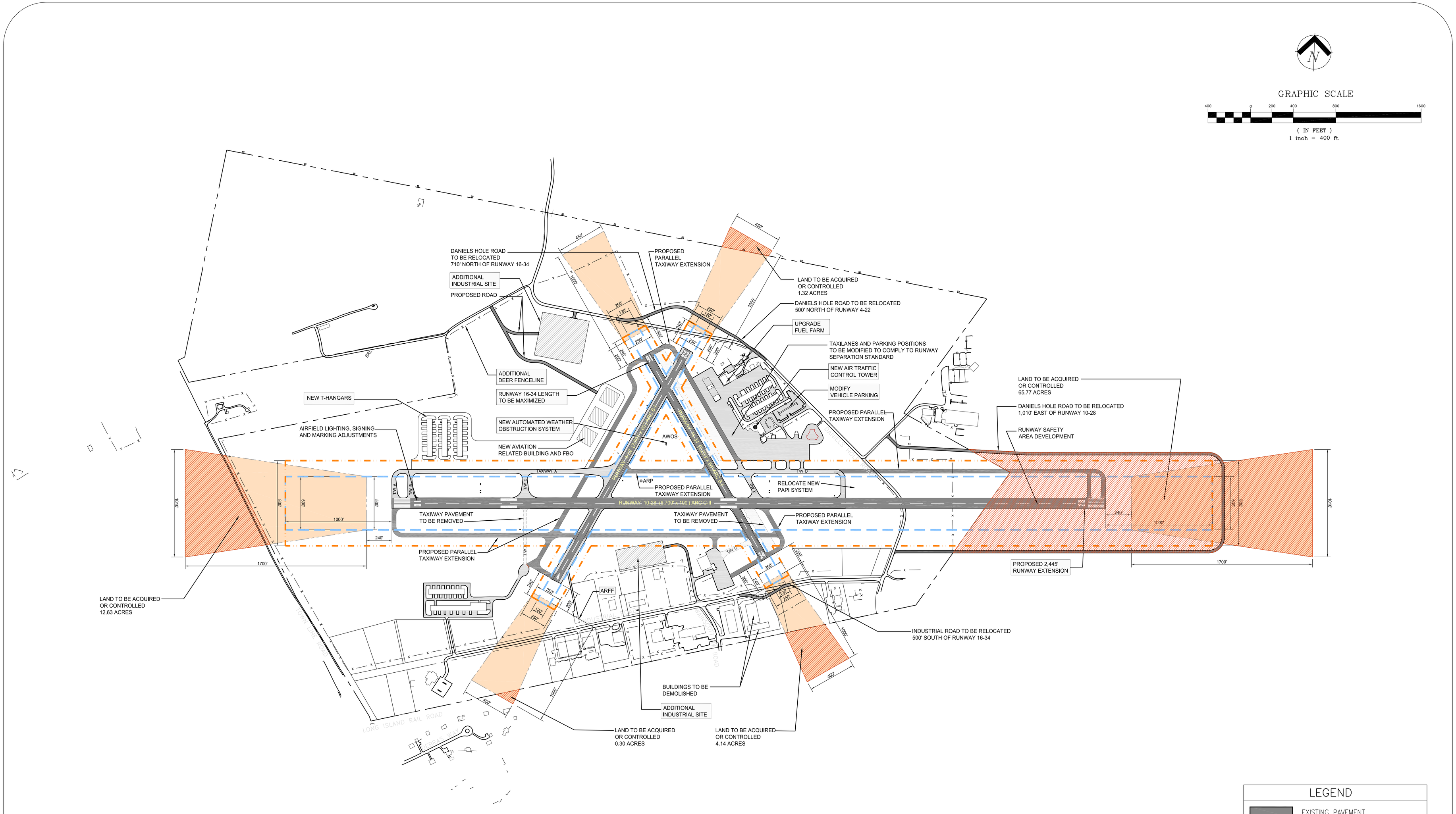
Runway 16/34 is better aligned with wind velocities in winter while Runway 4/22 provides better coverage during the spring, summer and fall. One other principal difference between the two runway orientations is the land use adjacent to the runway ends. The area along the extended runway centerline of Runway 4/22 is in forest land to the northeast, but is developed in



NOTES:

1. GPS INSTRUMENT APPROACHES TO BE ENHANCE
2. ENVIROMENTAL CONSERVATION AND PRESERVATION PRACTICES WILL BE IMPLEMENTED

FIGURE 4-1 - RETAIN RUNWAY 16/34 (ALTERNATIVE 1)



NOTES:

1. GPS INSTRUMENT APPROACHES TO BE ENHANCE
2. ENVIROMENTAL CONSERVATION AND PRESERVATION PRACTICES WILL BE IMPLEMENTED

FIGURE 4-2 - RETAIN RUNWAY 16/34 AND 4/22 (ALTERNATIVE 3)

commercial, industrial and residential uses to the southwest. The Runway 16/34 extended centerline is similarly in forest and open land to the northwest but disturbed land used in the past for industrial mining to the southeast. The preliminary decision, strongly influenced by the more compatible land use, was to retain Runway 16/34 and continue the closure of Runway 4/22.

As a consequence of this decision, Runway 16/34 was examined in detail to determine its adequacy with respect to current FAA design standards. Under the No Action alternative, Runway 16/34 would be retained with no incorporation of a taxiway, which violates existing FAA design standards, promotes unsafe conditions and allows aircraft to park too close to an active runway. Providing a parallel taxiway to Runway 16/34, a design necessity now lacking, was found to have a series of key disadvantages. A taxiway to the west of the runway would not allow convenient access to the current Terminal Area. A taxiway to the east of Runway 16/34 would need to be routed through the existing terminal ramp and aircraft parking area. Alternative layouts to the existing ramp, or supplementing the current paved area by paving additional space would not yield sufficient space to offset the loss that would occur by adding the parallel taxiway without rearranging the Terminal Area. Further, although the existing design aircraft is a small business jet, the Airport frequently accommodates much larger business jet aircraft which, if two were parked in front of the existing terminal, would block the proposed taxiway.

One potential remedy is the relocation of Runway 16/34 sufficiently to avoid placing the necessary parallel taxiway within the Terminal Area. There is insufficient Airport property to shift Runway 16/34 to the southeast due to an existing roadway and elevated train right of way. Similarly, there is insufficient airport land to accommodate relocating Runway 16/34 to the northwest. Thus, were the needed taxiway emplaced with Runway 16/34 remaining at its current location, the terminal building and some of the associated vehicular parking would need to be relocated further to the northeast in order to obtain sufficient ramp space in front of the terminal. This might also entail relocating portions of Daniel's Hole Road. Alternatively, the entire Terminal Area would need to be relocated elsewhere on the Airport. The situation is further complicated by existing FBO and aircraft parking areas some of which might also require elimination or relocation should Runway16/34 be retained.

As a consequence of these detailed considerations, it was determined that rehabilitating Runway 4/22 to a minimum width of 60 feet was less disruptive, more consistent with the layout and function of the Airport and also inherently more cost effective. The existing Runway 16/34 is

proposed to be used as a taxiway. These decisions formed the basis of the current preferred alternative shown as Figure 1-1 and the Proposed Airport Layout Plan in Figure 1-2.

4.2.1 Terminal Area Alternatives

A potential variant on runway selection that overcomes some of the difficulties caused by the emplacement of the parallel taxiway on Runway 16/34 is shown on Figure 4-3. This professionally prepared design was submitted in recognition of the better land use compatibility to the southeast of the Airport. The full discussion of this proposal is included in Appendix I.

The key concept is a reconfiguration of the Terminal Area and the segregation of small light aircraft on the northern portion of the Terminal Area and larger turbine powered aircraft on southern portion. This segregation permits the construction of the necessary parallel taxiway much closer to Runway 16/34 in the northern portion of the ramp since it would need to accommodate smaller aircraft. The proposal also includes demolishing the existing hangar north of the Terminal Building and a replacement structure constructed on the southern section to accommodate larger turbine powered aircraft. Additional tie down parking positions would be constructed to the north in the area now occupied by the northeast end of Runway 4/22. This proposal is feasible and allows retaining Runway 16/34 and the permanent abandonment of Runway 4/22.

This proposed layout has a series of disadvantages. It requires the FBO that currently occupies the site to voluntarily relocate out of their current leasehold. The proposal to construct a new hangar will require permitting from planning and zoning boards. Circulation problems for larger aircraft may occur during peak traffic periods since there may be lesser net available Terminal Area space. Construction will occur in the Terminal Area during times when the Airport must remain in operation. Construction equipment, i.e., trucks, cranes, etc. must be operated in the vicinity of parked and circulating aircraft. Finally, the layout is not conveniently expandable beyond the area to the northeast of Runway 16/34. The recommended demolition of all or portions of Runway 4/22 will prevent any future use.

The key advantage of the Runway 4/22 reactivation proposal is the potential for development of apron and hangar space to the west of Runway 4/22. Although not shown in these diagrams, a parallel taxiway to Runway 4/22 would create substantial airside frontage for future apron and

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LEGEND

- POTENTIAL MARKINGS
- POTENTIAL BUILDINGS & HANGARS
- POTENTIAL PAVEMENT
- BUILDINGS TO BE REMOVED
- PAVEMENT TO BE REMOVED

- Gulfstream V
- Falcon 900
- LearJet 40
- Citation V, Encore
- Beech King Air
- Cessna Caravan

Concept Highlights

Cost Saving:

- Keep Runway 4-22 Closed; Retain other Runways As Is
- Minimize New Development
- Eliminate Surplus Pavement

For Safety:

- Provide Full Parallel Taxiway for Runway 10-28
- Provide Full Parallel Taxilane/Taxiway for Runway 16-34
- Reposition All Large Aircraft to the Southern Apron
- Eliminate Non-Standard Tie-Downs Positions
- Consolidate Small Aircraft Tie-Downs on Northern Apron

Accommodate Existing Needs:

- Enable Construction of Replacement FBO Hangar
- Replace Eliminated Tie-Downs
- Improve Auto Parking (pave gravel/dirt parking)

NEW MARKINGS
REPLACE LOST TIEDOWNS
HANGAR TO BE REMOVED
RELOCATED HANGAR
25'
16
44.5'
150'
12.5'
SMALL AIRCRAFT
PAVE/IMPROVE PARKING
FBO HANGAR 20,000 S.F.
RELOCATED SEGMENTED CIRCLE
AWOS
ITINERANT AIRCRAFT
LARGE AIRCRAFT
RELOCATE HANGAR
REPLACEMENT HANGAR
57.5'
17.5'
40'
T/W "D"
FULL PARALLEL TAXIWAY
WIDEN TAXIWAY
REMOVE TAXIWAYS
T/W "E"
28
150'
35'
DISPLACED THRESHOLD
EXTEND TAXIWAYS
34
T/W "G"

N

0 200 400
Scale in feet

Drawing Copyright © 2009

QED Airport & Aviation Consultants

CHA

Figure 4-3.

ALTERNATIVE DEVELOPMENT CONCEPT

PROJECT NO.

DATE: SEPT. 2009

hangar development which would avoid disruption of the existing Terminal Area. It is for this reason that the project as proposed appears to be superior from a design standpoint.

4.2.2 Taxiway Pavement to Be Removed

Abandonment of Runway 16/34 and conversion into a taxiway leaves two areas of pavement on each runway end that are no longer functional. These areas are marked for removal on the proposed airport plan. The area to the northwest is composed of 23,000 square feet of concrete with approximately 1,000 square feet in a fillet connecting the existing runway surface to an adjacent deteriorated pavement area of 21,000 square feet. These areas total slightly more than one acre. If these areas are entirely removed, approximately 800 cubic yards of concrete and asphalt would require disposal and a similar volume of fill would be needed to re-contour the area.

On the southeastern end, a similar situation exists. This area consists of nearly 14,000 square feet of concrete pavement, another 1,000 square foot area in a filleted taxiway and nearly 41,000 square feet of deteriorated adjacent asphalt pavement. The resulting total is approximately 1.3 acres of total pavement area yielding at least 1,000 cubic yards of excavated pavement.

Pavement removal involves the labor required to breakup the pavement and load the remains into suitable trucks for relocation to a disposal site, which has yet to be determined. This could generate in excess of 100 truck loads and necessitate a similar volume of replacement fill. This could be avoided by simply leaving the pavement in place. This was the previous decision that resulted in the existing deteriorated pavement adjacent to Runway 16/34. The No Action alternative, leaving the unused pavement in place, would appear advantageous since it avoids the costs and environmental impact of the removal process.

4.2.3 Runway 4/22 Design/Operational Alternatives

Reactivation of Runway 4/22 will increase noise impact in areas to the southwest of the Airport in Wainscott although only from small piston-engined aircraft. In comparison to the other areas around East Hampton Airport, this is the most significant residential concentration of homes. The closest residence is less than one quarter mile from the Runway 4/22 runway end on a straight out heading.

Currently, the threshold markings on Runway 22 are painted 380 feet from the physical end of the pavement. This displacement is the result of obstructions, primarily tall trees in the approach. By removing and topping some trees in the approach, the preferred alternative, as depicted on Figure 1-1 diminishes the displacement of Runway 22 from 380 feet to 126 feet from the current end of the pavement. The 126 feet of displacement is still required in order to prevent encroachment of the Runway Safety Area and the Runway Object Free Area onto Daniel's Hole Road. In order to provide sufficient clearance over Daniel's Hole Road for landings, an additional 60 foot landing threshold displacement (translating into a total displaced threshold of 186 feet) will be required. Some tree clearing will be required to eliminate tall trees in the approach. In sum, compared to existing markings and past usage, the available length of Runway 22 for takeoff and landings will be effectively increased, contributing to increased safety with little or no added impacts.

A detailed analysis of the potential benefits to noise abatement through extending Runway 22 threshold 500 feet to the northeast was considered. This analysis is presented under the Mitigating Measures discussion. The analysis showed that the benefits in terms of noise reduction were insufficient to offset the costs and impact of encroaching on the forest preserve which is proposed for the area north and east of Daniel's Hole Road. Therefore, the most appropriate noise abatement management alternative is placing as much departure traffic as appropriate on Runway 28 and using Runway 22 only when winds require its use. The proposed noise abatement turn for Runway 22 takeoffs, which turns aircraft to the 280 degree heading before crossing the Airport boundary, should be recommended as a voluntary procedure for the smaller and lighter aircraft using the Airport. Extending Runway 22 to the northeast beyond Daniel's Hole Road does not appear to be justified.

Runway 4/22 was originally 100 feet wide while the current proposal calls for a 60 width in conformance with FAA guidance. This pavement is currently used as a taxiway. It accommodates aircraft as large as a Gulfstream V. Although this use will be reduced or eliminated by completion of the full length taxiway to Runway 10/28, it may be advantageous to maintain the current historical width. In any case, pavement strength should be designed to withstand the weight of a 100,000 pound taxiing aircraft.

Under the No Action alternative, Runway 4/22 would remain closed. There would be no rehabilitation of the pavement and no removal or topping of trees that are obstructions to the

Runway 4/22 approach. This alternative would have no direct environmental impact, but has logistical implications as discussed above.

4.2.4 Runway 28 Modifications

Runway 10/28 serves as the primary and longest runway at East Hampton Airport. It is proposed to meet criteria associated with Airport Reference Code B-II with a length of 4,255 feet as currently exists and a width of 75 feet, a reduction of 25 feet. This reduction in width would require moving the runway edge lights, runway end lights and Runway End Indicator Lights. Other modifications proposed include eliminating the current displaced landing threshold on Runway 28 via relocation of a segment of Daniel's Hole Road to increase clearance for vehicles, particularly trucks, using that portion of the road; providing a full length parallel taxiway on the north via connecting a straight segment between the existing Taxiway A and Taxiway D; constructing a bypass taxiway on the Runway 28 end; and constructing a new taxiway connecting Taxiway G and the southern FBO area with the Runway 28 threshold. Each action and its alternatives are discussed in greater detail below.

4.2.5 Eliminate Displaced Landing Threshold on Runway 28

Although currently not shown via runway markings, there should be a 150 foot displaced landing threshold on Runway 28 due to insufficient clearance over Daniel's Hole Road in accordance with current FAA design standards. This displaced threshold would not be necessary if Daniel's Hole Road were relocated further eastward to increase clearance under the approach slope. The proposed new alignment of the road shown on Figure 1-1 is the minimum linear distance. It is longer than the existing right of way resulting in slightly increased travel distances, transit times and therefore greater fuel consumption and air pollutant emissions for ground vehicles. Alternative routings are possible, but would result in higher construction costs and increased travel distances. Making no change (i.e., the No Action alternative) will result in non-conformance with FAA regulations, decrease margins of safety, or result in the marking of the displaced landing threshold on Runway 28. A displaced landing threshold would reduce available landing length for arriving aircraft on Runway 28 but there would be no change in the overall ability to accommodate the same type of aircraft. Substantial costs might ensue, depending on the needed relocation of runway lighting.

4.3 Provide Full Length Taxiway for Runway 10/28

Providing a center link between the two existing taxiways for Runway 10/28 will result in a full length taxiway on the north side of Runway 10/28. This will shorten taxiing distances for arriving and departing aircraft using this runway reducing fuel consumption, air pollutant emissions and operating times for aircraft on the main runway. There is no reasonable alternative location since the extension must connect existing Taxiways A and D or taxiing on Runway 4/22 or Runway 10/28 will be required for aircraft to access the Terminal Area. The No Action alternative will require aircraft to continue to backtaxi on the existing runway pavement which is not a recommended procedure or to use Runway 4/22 to access the Terminal Area and associated parking in FBO leaseholds. Use of Runway 4/22 by the largest aircraft contributes to excessive pavement deterioration.

4.4 Construct Bypass Taxiway on the Runway 28 End

The proposed bypass taxiway on the Runway 28 end of Runway 10/28 provides access to departing aircraft when the existing taxiway is blocked by a departing aircraft awaiting clearance for an instrument departure. It is similar in size and location to the existing bypass taxiway at the Runway 10 threshold. This will avoid delays to departing aircraft, reduce idling time on the ground and decrease associated fuel consumption and air pollution. There is no feasible alternative location and the No Action alternative, deleting this proposed improvement, will preserve existing inefficiencies. There would be no additional impervious surface or construction related emissions; however, delays and excessive idling time and fuel consumption would continue.

4.5 Construct Taxiway on South Side of Runway 10/28

A short taxiway connecting the existing FBO on the south side of the Airport will permit access to the main runway for departing aircraft using Runway 28 which now must taxi on the runway itself to access the Runway 28 threshold. This proposal reduces taxiing distance and decreases runway occupancy time, improving overall flow. In addition, it prevents unsafe conditions caused by crossing or taxiing on an active runway. There is no reasonable alternative configuration and the No Action alternative will result in increased costs and decreased margins of safety than the proposal due to the additional taxiing and runway occupancy.

4.6 Seasonal Aircraft Control Tower

A seasonal control tower is proposed for use during the May through October period. This will permit appropriate assignment of aircraft and helicopters to the most appropriate flight tracks improving adherence to noise abatement and other procedures.

Two sites are under consideration. The north site is near the intersection of Runway 10/28 and Runway 4/22. That site would be linked to Daniel's Hole Road by a proposed driveway accessing the site. As shown on Figure 1-1, the proposed driveway is routed to avoid areas currently forested. A second potential site lies south of Runway 10/28 (see Proposed ALP in Figure 1-2). The seasonal tower is actually a mobile unit and not a fixed structure.

Both proposals do not involve site clearing or significant grading or filling and no tree removal will be required in either location. The determination of the preferred site is dependent on the preferences of the company that will staff and operate the facility.

The alternative to establishing a seasonal control tower is no action, resulting in a continuation of uncontrolled airport use with attendant difficulties in enforcing appropriate flight management including adherence to noise abatement management techniques. Under No Action there would be no installation of a building on the Airport and no direct increase in employment at the Airport.

4.7 Automated Weather Observation Station

The AWOS is a weather observation unit that transmits current weather data directly to aircraft. It is currently being established at the location shown of Figure 1-1. In order to provide representative information unaffected by structures or trees which could deflect the overall wind pattern, its preferred location is the center of the Airport tract surrounded by an open area. This also eliminates the potential for interference with the broadcast signal. Since it must be powered through an underground cable, the most cost effective location is adjacent to the Terminal Area. While other sites may be feasible, the several criteria are most efficiently satisfied by the current site, centered in the triangle bounded by Runways 10/28, 4/22 and Terminal Area. Alternative sites are feasible should this location potentially interfere with future Airport improvements.

The No Action alternative would have no AWOS installation, increasing the potential for aircraft approaching the Airport in low visibility conditions when landings are not feasible resulting in additional noise events and prevent the potential reclassification of the airspace environment.

4.8 FBO Improvements

The southern FBO area is proposed to be improved with a fuel storage facility to eliminate the need for trucking fuel from the existing facility located on the north side of the Terminal Area. This reduces fuel consumption by trucks, and speeds fueling operations. It may be advantageous to install a second fuel farm area for the northern FBO and eliminate the existing Town operated facility. This would eliminate the Town's role as the "middle man" in operating and financing the fuel farm and procuring adequate fuel stocks. Under the No Action alternative, the existing northern fuel farm would remain the only fuel facility on the Airport. Fuel trucks would continue to serve the southern FBO.

The northern FBO area includes two older large hangars that are proposed for replacement and enlargement, but plans are not shown on Figure 1-1 since the proposal is in the early phase of preparation. This proposal is stimulated by the fact that the existing structures are antiquated, and insufficient under roof space is available to handle some aircraft already on the Airport. Any such proposal will be evaluated under current Town government consensus on avoiding growth inducing expansion proposals (see Decision-Making Model in Appendix H).

4.9 Terminal Area Improvements

Two projects are proposed for the terminal area and are already underway. A maintenance building will be constructed on a site fronting on the terminal ramp south and east of the terminal building. The site is cleared and the foundation is already in place. The No Action alternative would result in no construction of the maintenance building.

The parking area that serves the main terminal building is being expanded. The currently turfed area along the southern margin is being paved to provide dedicated spaces for rental cars. A second turfed area on the north side of the existing parking area is being paved for additional employee parking. Alternative locations would require construction of parking outside of the current Terminal Area which would be less convenient for airport users. Under the No Action

alternative, the existing parking area would be maintained at current capacity, with no additional spaces to accommodate visitors or employees during peak summer months.

Although not currently planned, programmed or included on the list of proposals, security fencing may be required by federal regulators. Similarly, fencing to discourage wildlife, particularly deer, may be required to adhere to necessary standards of safe operation.

4.10 Industrial Development Request for Release

A series of tracts located along Industrial Road on the south side of the Airport are proposed to be released from aeronautically exclusive use, i.e., may be used for general industrial, commercial, or institutional uses. This would expand the potential market for the currently undeveloped sites.

Several of these sites are already developed under lease to a variety of uses including a broadcast studio, school and other non-aviation commercial or institutional purposes. The proposed plan seeks to obtain releases from the FAA for these parcels so that they may support additional lease development or sale and provide revenue to the Airport. No plans or specifications have been created. Portions of these sites which are currently forested would be cleared. Potential site development would be subject to the conditions of the Ground Water Overlay Protection Zone and other Town of East Hampton ordinances. The No Action alternative is the continuation of the current status which makes marketing and financing of proposed additional uses more difficult and/or impractical. The existing developed sites would continue to be used for various non-aviation uses and undeveloped sites would remain vacant, providing no revenue to the Airport.

A second potential industrial development site is proposed on the northern side of the Airport tract adjacent to Daniel's Hole Road. It is reserved for aviation related use which, depending on the exact location and configuration, could include airside access such as for eventual hangar development. This area, as shown on Figure 1-1, is approximately 5.5 acres, is entirely wooded with a mix of evergreen and deciduous vegetation. The proposal is a long term future proposal which at an undetermined future point, would be made available for additional aviation related development when the current areas on the south side are completely utilized or if a larger site than any currently available is required. Further detailed environmental approvals would precede development and the process would be governed by the Town Zoning ordinance.

Alternative sites would have less convenient access to Daniel's Hole Road, require longer utility lines, greater linear driving distances or would utilize other areas reserved for environmental protection. Under the No Action alternative, the site would remain forested and undeveloped.

4.11 Runway Protection Zone Compliance

All areas included as part of the Runway Protection Zones which are located at the end of each active runway should be owned or the land uses controlled by the Airport. All four Runway Protection Zones have portions off the Airport. A total of 0.71 acres or 30,928 square feet are included in these four small parcels. These areas are recommended for acquisition or alternative form of land use control. The alternative to doing so would either be the No Action alternative resulting in non compliance with required safety criteria or shortening each runway to draw these areas back onto land currently owned by the Airport.

4.12 Further Environmental Review

All projects discussed in the Purpose and Need section of this GEIS, when carried out in conformance with these plans, can proceed in compliance with SEQRA with no further environmental review required with the following exceptions and conditions.

Release of industrial sites is a change in the status of these lands. Any proposed development projects will proceed only after compliance with Town regulations including further environmental review, compliance with zoning code requirements, and site plan review as would occur if these sites were located elsewhere in East Hampton.

The designated future development area on the north side of the airport will similarly be subject to Town environmental and planning and zoning requirements and other local laws prior to any site alteration including land clearing.

Other provisions of Town, county and state regulations may apply to projects reviewed within this document. This includes, for example, fuel farm design, development and operation.

5.0 Expected Environmental Impacts

5.1 Noise

5.1.1 Introduction

Assessment of future noise impact is based on the five and twenty year forecast of operations. This projection shows little growth, consistent with the last several years of record. Twin engined aircraft volumes are expected to trend downward while single engined and jet aircraft and helicopters operations are expected to increase.

Noise contours for both the average day and the busy day are presented for the existing conditions or the no action alternative (see Section 3.1). These assume the existing runway configuration (Runways 10/28 and 16/34 in operation and Runway 4/22 closed) and current operation volumes and fleet mix. Busy day volumes in 2013 are expected to be the same as the busy day volumes for 2008.

The major change depicted is the consequence of the closure of Runway 16/34 and the rehabilitation of Runway 4/22. This change shifts some noise exposure away from open areas and toward the adjacent sections of Wainscott southeast of the Airport. Consideration of noise abatement design and operational measures are discussed under the Alternatives Analysis (Section 4.0).

5.1.2 Future Noise Contours Average Day 2013

Figure 5-1 presents the 2013 projected noise contours from DNL 50 to DNL 80. The contours are similar in shape and size to the existing conditions determination with the exception of the elimination of the contour lobes associated with Runway 16/34 which is expected to be converted into a taxiway and the shift of that activity to Runway 4/22. As a consequence the outer contour projects southwestward into Wainscott.

Forecast average day traffic levels on an annual and a daily basis are shown in Tables 5-1 and 5-2. Total areas included within the contours include 1.776 square miles within DN 50, 0.715 sq. mi. in DNL 55, 0.323 sq. mi. within DNL 60, 0.149 sq. mi. within DNL 65, 0.065 within DNL 70 and 0.021 within DNL 75. All areas at the DNL 65 level and above are entirely within Airport land holdings.

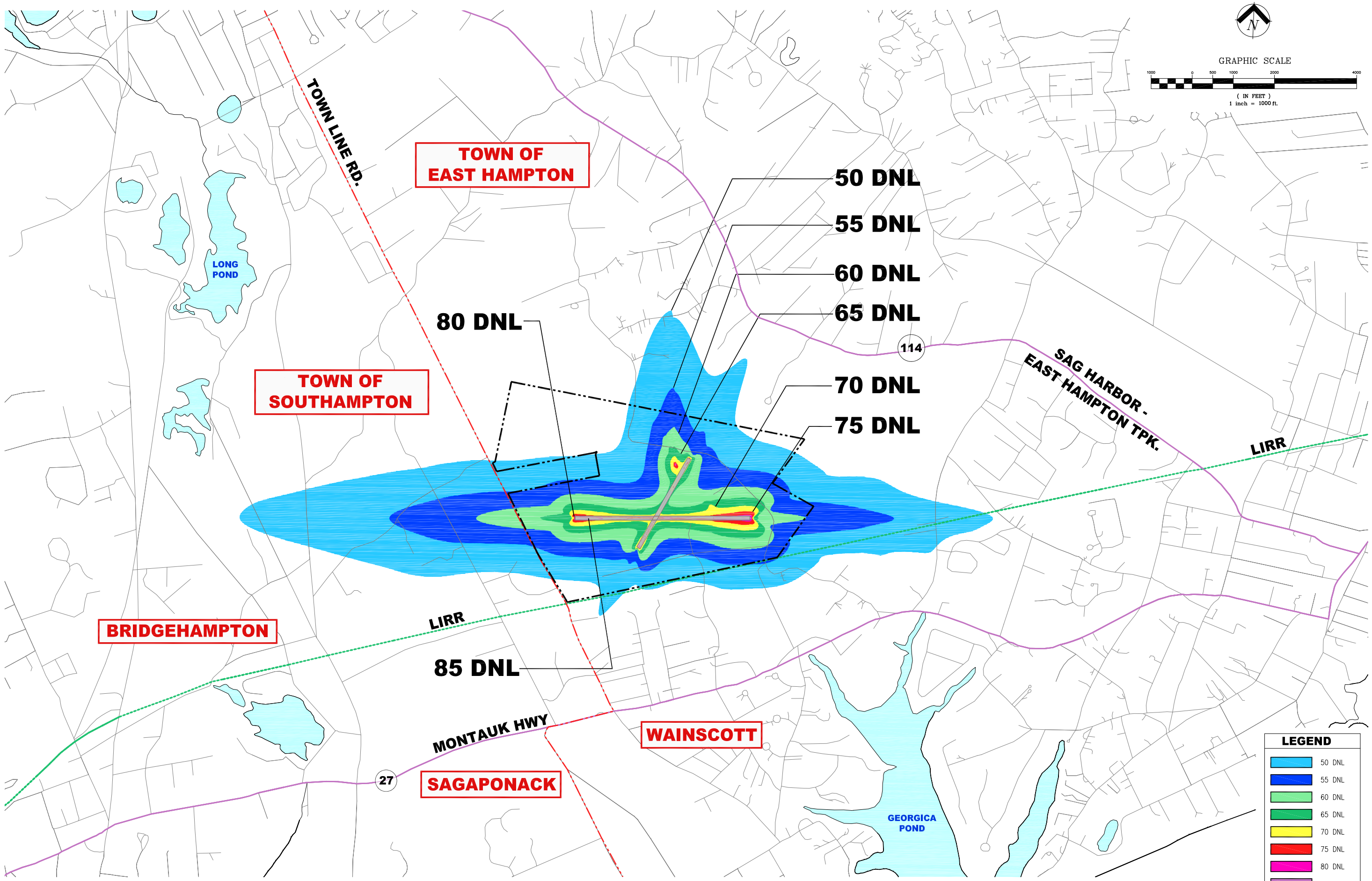

FIGURE 5-1 - AVERAGE DAY (2013) NOISE CONTOURS

Table 5-1. East Hampton Airport Future Case Forecast (2013)		
Annual Volumes by Type		
INM Type	**Aircraft**	**Annual Volumes**
Jets		
GV	Gulfstream V	106
GIIB	Gulfstream IIB	15
CL600	Canadair Bombardier Challenger CL600	268
LEAR25	Lear 25	4
LEAR35	Lear 35	348
MU3001	Beechjet 400	173
CNA55B	Cessna Citation Bravo 550	1,039
IAI1125	Astra Jet 1125	141
Turbo		
CNA441	Cessna Conquest 441	228
DHC6	Twin Otter DHC-6	146
Twin		
BE58P	Beech Baron BE58P	479
PA31	Piper Navajo Chieftain PA-31	479
Single		
GASEPF	Single Engine, Fixed pitch	4,625
GASEPV	Single Engine, Variable pitch	3,875
Helicopter		
S76	Sikorsky S-76 Spirit	1,766
SA355	Aerospatiale SA-355 Twin Star	1,766
	Total Landings	**15,458**
	Total Annual Operations	**30,916**

Table 5-2. East Hampton Airport Future Case Forecast (2013)		
Daily Volumes by Type		
INM Type	**Aircraft**	**Daily Landings**
Jets		
GV	Gulfstream V	0.29
GIIB	Gulfstream IIB	0.04
CL600	Canadair Bombardier Challenger CL600	0.73
LEAR25	Lear 25	0.01
LEAR35	Lear 35	0.95
MU3001	Beechjet 400	0.47
CNA55B	Cessna Citation Bravo 550	2.85
IAI1125	Astra Jet 1125	0.39
Turbo		
CNA441	Cessna Conquest 441	0.62
DHC6	Twin Otter DHC-6	0.40
Twin		
BE58P	Beech Baron BE58P	1.31
PA31	Piper Navajo Chieftain PA-31	1.31
Single		
GASEPF	Single Engine, Fixed pitch	12.67
GASEPV	Single Engine, Variable pitch	10.62
Helicopter		
S76	Sikorsky S-76 Spirit	4.84
SA355	Aerospatiale SA-355 Twin Star	4.84
	Total Daily Landings	**42.35**
	Total Daily Operations	**83.88**

Table 5-3 shows a comparison of the reported area values and population for 2008 and 2013. Slight growth in the contours was found to occur. However, these areas remain below the levels reported for 2006 and earlier years. The DNL 65 contour remains on the Airport in both the

2008 and 2013 annual average cases. Cumulative noise impacts of the current magnitude are now below those that prevailed in the 1990s.

Population figures are essentially the same. The number shown in the DNL 70 line is caused by an aspect of the INM calculation process. Specifically, the INM counts population through the enclosure of "centroids" or bundles of individuals. Centroids are placed arbitrarily at specific locations based on the accumulations of the population counted in the 2000 Census. In this case, one centroid is located directly in the middle of Runway 10/28 resulting in the 73 or 74 people shown exposed to DNL 60 and higher noise contours. In actuality, no homes or residents are located on the Airport.

Table 5-3. Comparison of 2008 and 2013 Annual Average Noise Contours

Noise Contour Areas and Population				
(All Areas in Square Miles)				
	2008 Area	**Estimated Population**	**2013 Area**	**Estimated Population**
DNL 50	1.683	91	1.776	91
DNL 55	0.669	74	0.715	74
DNL 60	0.294	73*	0.323	73*
DNL 65	0.137	73*	0.149	73*
DNL 70	0.060	0	0.065	73*
DNL 75	0.017	0	0.021	0
DNL 80	0.005	0	0.003	0

* These population values are a result of the use of "centroids" placed arbitrarily at locations. One centroid is located directly in the middle of Runway 10/28 when in actuality no homes or residents are located on the Airport.

5.1.3 Future Noise Contours Average Day 2029

Figure 5-2 presents the 2029 projected noise contours from DNL 50 to DNL 80 based on the extended forecast shown in Section 2.0. The contours show a similar configuration to previous yearly determinations because the underlying assumptions concerning runway and flight track use remain the same as in prior cases. Overall traffic volumes are expected to increase by 26.6 percent from the expected volume in 2013, by 32.9 percent from 2008 volumes and by 36.1 percent from 2009 volumes. Details of the projected aircraft mix and volume are shown in Tables 5-4 and 5-5. All jet powered fixed wing aircraft are Stage 3 compliant.

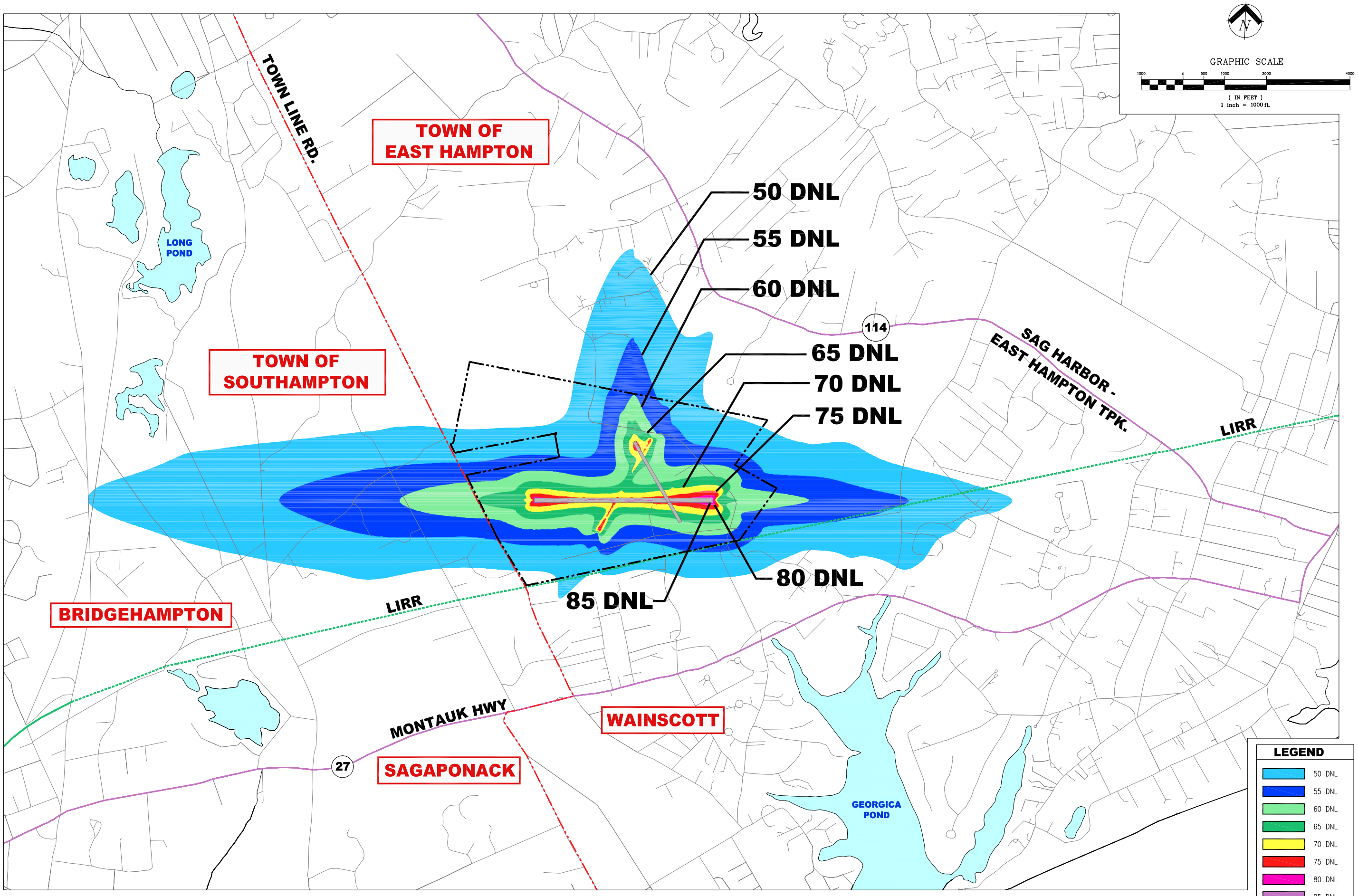

FIGURE 5-2 - AVERAGE DAY (2029) NOISE CONTOURS

Table 5-4. East Hampton Airport Future Case Forecast (2029)		
Annual Traffic Volumes By Type		
INM Type	**Aircraft**	**Annual Volume**
Jets		
CL600	Canadair Bombardier Challenger	248
CNA55B	Cessna 550 Citation Bravo	2,475
CNA510	Cessna Mustang	51
ECLIPSE500	Eclipse 500	51
GIV	Gulfstream IV	314
LEAR 35	Learjet 45	1,238
MU3001	Beechjet 400	548
Turbo		
CNA441	Cessna Conquest 441	131
DHC6	Twin Otter DHC-6	131
Twin		
BE58P	Beech Baron BE58P	334
PA31	Piper Navajo Chieftain PA-31	334
****Single***		
GASEPF	Single Engine, Fixed pitch	4,256
GASEPV	Single Engine, Variable pitch	4,256
Helicopter		
S76	Sikorsky S-76 Spirit	2,602
SA355	Aerospatiale SA-355 Twin Star	2,602
***Single-engine annual numbers include Touch and Go takeoffs*		
	Total Daily Landings	**19,571.33**
	Total Daily Operations	**39,143**

Table 5-5. East Hampton Airport Future Case Forecast (2029)		
Daily Volumes by Type		
INM Type	**Aircraft**	**Landing Volume**
Jets		
CL600	Canadair Bombardier Challenger	0.68
CNA55B	Cessna 550 Citation Bravo	6.78
CNA510	Cessna Mustang	0.14
ECLIPSE500	Eclipse 500	0.14
GIV	Gulfstream IV	0.86
LEAR 35	Learjet 45	3.39
MU3001	Beechjet 400	1.50
Turbo		
CNA441	Cessna Conquest 441	0.36
DHC6	Twin Otter DHC-6	0.36
Twin		
BE58P	Beech Baron BE58P	0.91
PA31	Piper Navajo Chieftain PA-31	0.91
*****Single***		
GASEPF	Single Engine, Fixed pitch	11.66
GASEPV	Single Engine, Variable pitch	11.66
Helicopter		
S76	Sikorsky S-76 Spirit	7.13
SA355	Aerospatiale SA-355 Twin Star	7.13
***Single-engine annual numbers include Touch and Go takeoffs*		
	Total Daily Landings	**53.62**
	Total Daily Operations	**107.24**

Total areas within the contours include 2.546 square miles within DNL 50, a 43 percent increase of the area shown for 2013; 1.011 square miles within DNL 55, a 41 percent increase; 0.436 square miles within DNL 60, a 35 percent increase; 0.2 square miles within DNL 65, a 35

percent increase; 0.031 square miles within DNL 70, a 41 percent increase; and 0.031 square miles within DNL 75, a 48 percent increase. All areas exposed to DNL 65 and above are within the airport boundary with the exception of a small area, less than one acre, that crosses Townline Road on the western border of the Airport. No structures are expected to be enclosed by the contour. Population exposure figures remain the same with the exception of an additional 78 persons within DNL 50.

5.1.4 Busy Day Noise Contours 2013

Figure 5-3 shows the Busy Day Contour for 2013. It is similar to the 2008 Busy Day Contour and uses the same volumes. The shift of activity from Runway 16/34 to Runway 4/22 can be readily discerned.

Table 5-6 shows a comparison of the area and population counts as determined by the INM. The counts are identical with the exception of a projected increase of 163 people at the DNL 50 level. This is a consequence of the greater population in the Wainscott area near the threshold of Runway 4.

Table 5-6. Comparison of 2008 and 2013 Busy Day Noise Contours

Noise Contour Areas and Population				
(All Areas in Square Miles)				
	2008 Area	**Estimated Population**	**2013 Area**	**Estimated Population**
DNL 50	7.656	798	7.841	961
DNL 55	2.397	159	2.41	159
DNL 60	0.940	74	0.947	74
DNL 65	0.407	74*	0.418	74*
DNL 70	0.184	73*	0.189	73*
DNL 75	0.085	73*	0.087	73*
DNL 80	0.032	0	0.031	0

* These population values are a result of the use of “centroids” placed arbitrarily at locations. One centroid is located directly in the middle of Runway 10/28 when in actuality no homes or residents are located on the Airport.

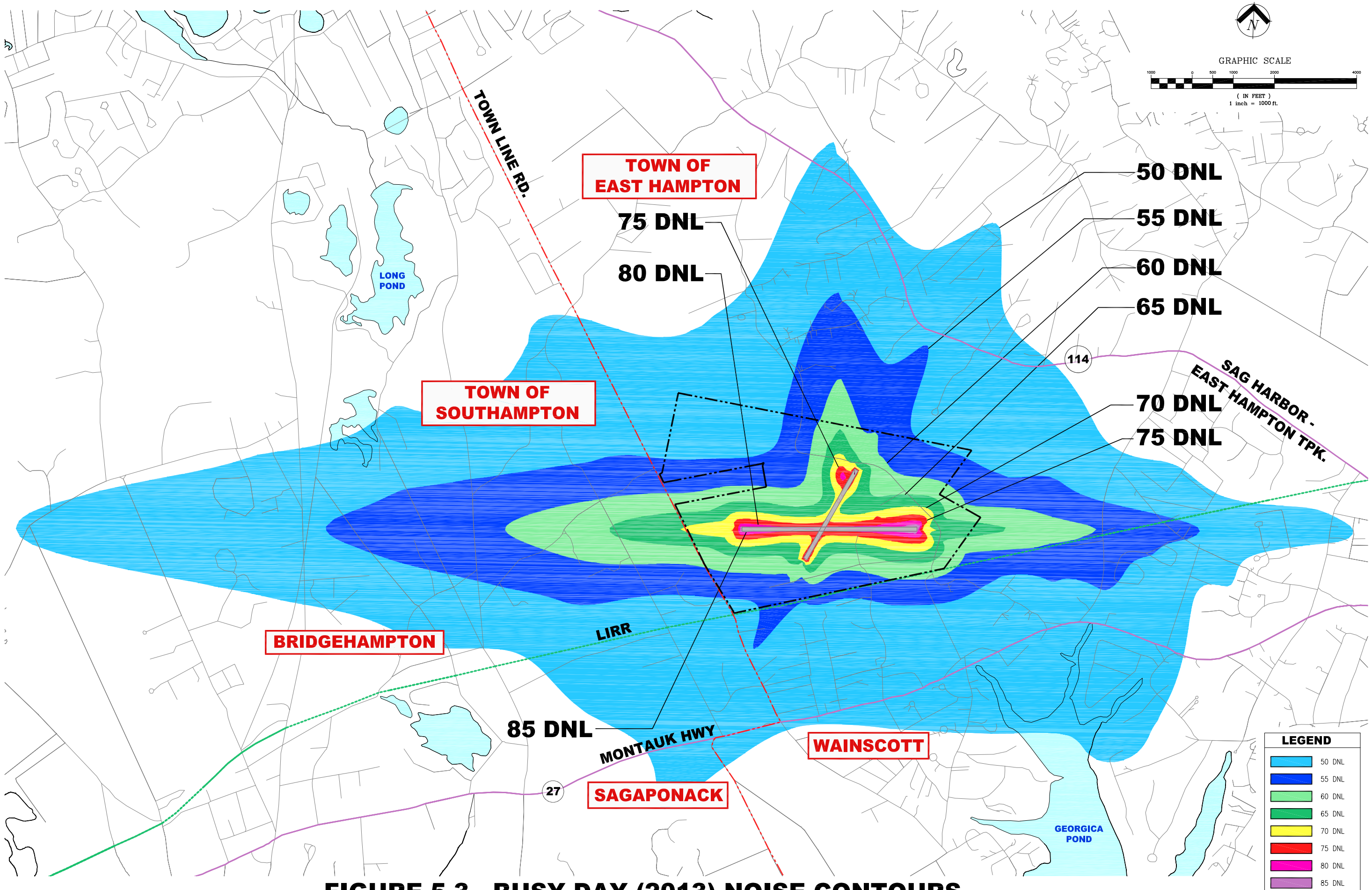

FIGURE 5-3 - BUSY DAY (2013) NOISE CONTOURS

5.1.5 Flight Clearances and Single Event Noise

The proposed layout will include four runways, 10, 28, 4, and 22. Table 5-7 shows the distance from the edge of the pavement to the closest house on a straight in bound flight track, the approximate altitude of the overflying aircraft and the expected peak noise level at the location defined.

Table 5-7. Flight Clearances and Noise Levels

Runway	Distance to Closest House (ft)	Altitude Above Structure (ft)	Peak Noise Level (dB)
4	1,403	74	75
22	4,291	225	70
10	2,930	154	85
28	4,736	248	85

Peak noise levels shown reflect a business jet aircraft utilizing runways 10 and 28 and a single engine general aviation aircraft on runways 4 and 22. The lowest overflight altitude occurs in a residential area on the extended centerline of Runway 4. The predicted peak noise level shown is about five (5) dB greater than occurs on the opposite runway end. Noise levels are greater for turbine powered aircraft than for light single engine aircraft and therefore the greatest overall exposure occurs at that orientation.

In terms of overall operation, Runway 28 has the highest expected utilization. Clearances on this approach are better than occur in the case of Runway 10. For Runway 4/22, approaches on 22 have clearances nearly as great as occur on the Runway 28 approach. Runway 4 has the lowest overflight altitude, but also has low expected activity levels and is utilized exclusively by aircraft under 12,500 pounds. Takeoffs on Runway 22, which would affect that same area, are expected to turn out to the west before overflying this location.

5.2 Air Quality

5.2.1 Air Pollutant Sources

Air pollutant sources associated with general aviation activity include aircraft engine emissions, ground vehicle emissions from employees as well as travelers, construction impacts, venting of

fuel tanks, and space heating of hangars, terminal and office space, and ground service vehicle operation.

The primary pollutant of concern and the only one showing recent violations of the New York State and Federal Ambient Air Quality Standards is ozone. Ozone is produced by photochemical reactions in the atmosphere typically on sunny summer days. These reactions typically consume sufficient time that the manifestation of the pollutant may be many miles from the emission sources. Therefore, in East Hampton the precursor components of ozone that may be emitted will normally materialize as ozone in off shore areas driven by prevailing winds.

5.2.2 Aircraft Operations

Assessment of air quality impacts normally accomplished in accordance with FAA procedures. These are defined in "Air Quality Procedures for Civilian Airports and Air Force Bases, April 1997." East Hampton Airport hosted 29,220 total operations during 2008 or 14,610 Landing Takeoff Cycles (LTOs). The threshold of analysis identified on page 20 of that document indicates that no air quality analysis is needed for projects at airports showing less than 180,000 annual (LTOs). Conformity with air quality maintenance goals is assumed. Traffic levels at East Hampton are approximately eight (8) percent of the threshold triggering detailed analysis. This situation remains essentially unchanged for the five year and twenty year future.

Although not regulated under ambient air quality standards, odors from fueling of aircraft have been reported at some airports. None have been reported in East Hampton since the operational areas are well separated from residential areas.

5.2.3 Ground Vehicle Operations

Modest increases in arriving and departing passenger vehicles may occur as a result of a changing future mix of aircraft. The increase is less than 10 percent of existing trip generation. Generally, intersections that allow for airport access are free flowing since the area has low population densities. Daily peak periods support significant vehicle flows, but these are not related to airport generated traffic. Further, area roadways tend to be narrow preventing the congregation of sufficient numbers of vehicles to create carbon monoxide hotspots.

5.2.4 Ground Service Vehicles

Ground services consist primarily of fueling trucks, management vehicles, and tugs. These are insufficiently used to create significant air quality impacts.

5.2.5 Construction Impacts

Reactivation of Runway 4/22 will require repaving (2,375' x minimum 60'). This will cause air pollutant emissions from the importation of asphalt and the equipment used to spread and compact the material. It is the approximate equivalent of repaving one mile of roadway.

Similarly, the relocation of Daniel's Hole Road and the construction of the various taxiways will cause air pollutant emissions from the grading and paving process. Approximately 2,000 linear feet of pavement, 25 feet wide will be required for the new section of Daniel's Hole Road (subject to full design and adherence to local and State transportation safety requirements).The completion of the parallel taxiway to Runway 10/28 will require 850' x 40' of pavement. The bypass taxiway at the Runway 28 end will be approximately 240' long and 40' wide and the extension of Taxiway G will be approximately 1,100' long by 40' wide. These projects are assumed to occur at different points in time and emissions will cease after construction.

The remaining projects included in the proposed plan – modification of vehicle parking, construction of maintenance building, installation of AWOS, and installation of seasonal control tower – are not substantial with regard to construction efforts; therefore, air quality impacts can be assumed to be negligible. There are potential impacts from the development of the northern industrial site, depending on the extent of construction that will occur. These are expected to be minor and temporary.

5.2.6 Findings and Conclusions

The proposed plan is below the threshold for analysis with respect to all categories of air pollutants under state and federal criteria. There is no potential for substantial additional impact in comparison to other major projects either already in operation or under construction. Air quality in the project vicinity is in compliance with the exception of ozone. The area is unobstructed in terms of air flow and is adjacent to large water bodies with essentially no air pollutant sources.

Under the No Action alternative, air quality emissions would remain at their current levels from existing aircraft and maintenance operations and regular ground vehicles. There would be no construction; therefore, no emissions from construction vehicles, asphalt or dust.

5.3 Water Related Impacts

The proposed development plan at the Airport took into consideration the potential impacts to groundwater and will be consistent with the existing land use provisions enacted by the *Town of East Hampton Comprehensive Plan*. The areas north and east of Daniel's Hole Road (107 acres) will be retained for parks and conservation and clearing of the land will be limited to the extent necessary for continued safety at the Airport. Reactivation of Runway 4/22 will require the removal and trimming of trees within this area, in order to adhere to FAA requirements (9.75 acres of trees to be removed and 4.7 acres to be trimmed). Removal of trees will be minimized to the extent possible. Even in areas where trees are to be removed, shrubs and understory vegetation will be maintained as long as they do not penetrate any obstruction surface, stumps will be cut to the ground, and root systems will be left in place. Alternatively, to the extent feasible, the area will be revegetated with native low-growing plants with mature heights below any obstruction surface. This will reduce erosion impacts and ensure the continued integrity of the Town's groundwater. In addition, the relocation of Daniel's Hole Road further east of its existing layout will require minimal clearing of trees and will accommodate the increased stormwater within the design. The total amount of clearing will be within the limits of the Water Recharge Overlay District (not to exceed 10,000 square feet or 50% of the lot area, whichever is greater). No new commercial or industrial uses will be located within this conservation area so that it will remain part of the core groundwater protection areas for the Town.

No irrigation system exists or is proposed for the Airport; therefore, manual irrigation will continue at a minimal rate, limiting the impact to groundwater and drinking water resources. No fertilizers, pesticides, or herbicides will be used at the Airport. Increased impervious surfaces (from relocation of Daniel's Hole Road, completion of parallel taxiway to Runway 10/28, bypass taxiway at Runway 28 end, extension of Taxiway G, modification of vehicle parking, and installation of seasonal control tower) will not impact stormwater through the use of existing drywells. The sandy soil results in minimal stormwater impacts. As necessary, drainage systems will incorporate oil/water separators to prevent petroleum products from entering the groundwater.

Since operations are forecast to remain steady in the near future, water consumption is not expected to increase at the Airport. Facilities are currently served by individual septic systems. Only the maintenance building and seasonal control tower will result in an additional need for water, producing only minimal demand.

With the exception of Daniel's Hole Road/Wainscott-NW Road, there is no development within 150 feet of the on-site wetland and no development or activity is proposed; therefore, there would be no impact to wetlands from any of the proposed projects.

5.4 Historic, Architectural, Archaeological, and Cultural Resources

Since there are no Historic Properties on the Airport property and no indication that the Airport is within an area sensitive to historic or cultural resource, there would be no impact to historic, architectural, archaeological, and cultural resources from any of the proposed projects.

5.5 Energy Supply Impacts

The proposed projects will not result in an increase in operations or activity at the Airport. There would be only a negligible increase in consumption of electricity from the installation of new facilities, including the maintenance building, AWOS, and seasonal control tower. The current shortfall in fuel supply during the peak summer months will be addressed through the installation of a second Jet A fuel tank. The remaining projects would have no impact on energy supply.

5.6 Solid Waste Impacts

Per FAA Order 5050.4B, "airport actions which relate to airfield developments (runways, taxiways and related items) will not normally include any direct relationship to solid waste collection, control, or disposal other than that associated with the construction itself." As part of the reactivation of Runway 4/22, trees north of the runway end must be removed or trimmed generating a limited amount of vegetative waste. A minor amount of clearing will be required for the relocation of Daniel's Hole Road and the original portion of the road must be removed (approximately 5,000 SY). This waste can be disposed of locally or recycled, if of appropriate quality. The remaining construction projects are not expected to generate a significant amount of debris which can be accommodated by the Town of East Hampton.

5.7 Biotic Impacts

None of the specified projects is sufficient in scale to fundamentally alter or degrade the existing land cover. Almost all construction projects will occur in areas already used for airport and aviation related purposes. Existing development regulations will allow eventual development while minimizing on-site disruption and preserving subsurface water resources. Any revegetation required for Airport projects will be planted with native grassland species which are adapted to the soil and droughty conditions of the site. To prevent alien seed species being imported to the site, topsoil for construction projects will be obtained from elsewhere on the Airport property. In addition, the current mowing schedule (once per year) will be implemented to maintain the grassland areas of the Airport and to avoid impacting ground-nesting birds.

Removal or trimming of trees within the approach to Runway 4/22 will be minimized to the extent possible (9.75 acres of trees will be removed and 4.7 acres of trees will be trimmed). Even in areas where trees are to be removed, shrubs and understory vegetation will be maintained as long as they do not penetrate any obstruction surface, and stumps will be cut to the ground and root systems will be left in place. Alternatively, to the extent feasible, the area will be revegetated with native low-growing plants with mature heights below any obstruction surface. This will preserve the land cover and reduce erosion impacts. The relocation of Daniel's Hole Road will result in only a small amount of clearing. The potential future development of the industrial site in the north of the Airport property may result in clearing of up by 5.7 acres of land; however, that amount of clearing would not significantly impact the biotic communities on or in the vicinity of the Airport. No other projects would result in an impact to biotic communities.

5.8 Impacts to Endangered Species

There are no federally designated rare or endangered species found on the Airport. Five species of concern have been identified; three plant species and two bird species.

Only two projects have the potential for impacting the plant species of concern, the completion of the parallel taxiway to Runway 10/28 and the reactivation of Runway 4/22.

There is a small population of the Pine Barren Sandwort found in the area where the proposed taxiway segment will be constructed. This plant species is relatively common in shoreline areas

through the Mid Atlantic States, but suitable areas for it are relatively uncommon in New York. The loss of these plants is not significant, but could be entirely avoided if they were moved during the dormant season to other areas.

The Bird's Foot Violet occurs in the areas along Daniel's Hole Road in the vicinity of the Runway 4 and Runway 16 thresholds. Impacting these plants can be avoided by limiting disturbance of adjacent areas during construction and the rehabilitation of Runway 4/22.

Avoiding construction during the sensitive times of the year for bird and animal reproduction is recommended. Construction practices should minimize disruption to adjacent areas since revegetation of disturbed areas may be difficult given the constraints of the soils. Finally, any required fill should be obtained from designated borrow pits on the Airport to avoid introduction of unwanted plant species.

5.9 Construction Impacts

As described in the Air Quality section (5.2.5), several of the proposed projects will have some construction impacts, although most will be minor. It is anticipated that the projects will be constructed individually, with only limited overlap, thereby, minimizing any impacts. The projects with the most significant construction scope include the rehabilitation of Runway 4-22, the relocation of Daniel's Hole Road, and the construction of the various taxiway sections. To a lesser degree, modification of the vehicle parking, construction of the maintenance building, installation of the AWOS, and installation of the seasonal control tower will result in construction impacts as well.

Construction impacts are usually short-term and occur only during the construction period when the contractors, personnel and equipment are operating at the Airport. An increase in noise level and dust can be expected as a result of equipment in the area. However, these impacts can be minimized by using universally accepted construction methods for airports.

Contractors will be required to implement dust and erosion control procedures such as wetting the soil in active work areas and seeding with fast growing grass in work areas that are temporarily inactive. These procedures are standard bid items under the FAA standard specification Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.* This specification also contains several other control options such as prohibition of

burning on the site and the requirement that trucks transporting loose material be covered. In addition, any controls set forth by the Suffolk County Soil & Water Conservation District will be initiated and maintained throughout all construction phases.

In addition, in an effort to promote construction procedures which will protect, enhance and preserve a favorable environment, pre-construction meetings will be mandatory with each selected contractor prior to breaking ground for each project. These meetings will serve to inform and instruct the contractor of the techniques and procedures discussed in FAA AC 150/5370-10, *Standards for Specifying Construction of Airports.* These specifications and control measures will be maintained by the contractor during the life of the contract. Because of the above efforts, construction impacts will be minimized and, because they are only temporary, they are not anticipated to cause long-term significant impacts.

5.10 Other Environmental Impacts

DOT Section (f) Land – Since there is no DOT Act Section 4(f) land on or near the airport and no proposed project at the Airport would require the use of any Section 4(f) land, there would be no impact to Section 4(f) lands from any of the proposed projects.

Floodplains – The Airport has been identified as an area outside the 500-year floodplain; therefore, no proposed project would impact floodplains.

Coastal Zone Management and Coastal Barriers – The East Hampton Airport is not situated within the Coastal Zone or Coastal Barrier Resources System, or in the vicinity of any local coastal erosion overlay zones. Therefore, there would be no impacts to coastal resources from the proposed projects.

Wild and Scenic Rivers – According to the New York State Wild, Scenic, and Recreational River System Map (NYSDEC), there are no designated wild or scenic rivers in the vicinity of the Airport; therefore, the proposed projects would not affect wild and scenic rivers.

Prime or Unique Farmland – Since the East Hampton Airport is not on or contiguous to agricultural land and the proposed projects would not involve the conversion of farmland to non-agricultural uses, the Farmland Protection Policy Act (FPPA) does not apply and the proposed projects would not affect farmland.

Hazardous Materials Disposal – There would be no change in the type and amounts of hazardous materials on Airport property from any of the proposed projects. The Airport has procedures in place to ensure that hazardous materials are disposed of properly and there is no significant impact.

Environmental Justice – There are no areas in proximity to the Airport which have significant populations of minority or low income individuals. In addition, the proposed projects would not create additional aircraft operations and no project would extend beyond the Airport property. Therefore, there would be no impact to environmental justice.

5.11 Cumulative Impacts

Cumulative impacts are the impacts on the environment that result from the incremental effects of the proposed projects when added to other past, present, and reasonably foreseeable future actions to be taken a the site. Cumulative impacts can result from individually minor, but collectively significant sets of actions taken over time.

For the past ten years there has been very little activity at the Airport, as far as new construction or improvements. The aircraft parking apron in the front of the terminal building was rehabilitated in 2001 and other facilities have been maintained, but no other projects have been undertaken. It has been over ten years since Runway 10-28 was rehabilitated (in the mid-1990's). The impacts from those projects were primarily limited to temporary construction impacts and would not contribute to the significance of present or future actions. This GEIS encompasses all of the current and reasonably foreseeable future actions to be taken at the Airport; therefore, the impacts from the proposed projects reflects the cumulative impacts.

5.12 Summary

Table 5-8 provides a summary of the impacts from each of the proposed projects across all the impact categories. Overall, none of the proposed projects has the potential to cause significant impacts.

Table 5-8. Summary of Impacts

Project	Noise	Land Use	Air Quality	Water Quality	Historic, Architectural, Archaeological, and Cultural Resources	Biotic Communities	Endangered Species	Wetlands	Energy Supply and Natural Resources	Light Emissions	Solid Waste	Other Env. Concerns[1]
Rehabilitate RW 4/22; obstruction removal at 22 end	Change in noise contours; no significant impact to sensitive land uses.	Consistent with current Airport use; no significant impact to surrounding community.	No significant change in operations; temporary impacts from construction	No significant impact to groundwater or stormwater; clearing within limits of Water Recharge Overlay District requirements	No impact.	Minor impact from removal and trimming of trees in RW 22 approach; shrubs and understory vegetation to remain in place.	No impact.	No impact.	No significant change in demand.	No significant increase.	No significant change.	No impact.
Convert RW 16/34 to Taxiway	Reduced noise over RW 16/34 approaches	Consistent with current Airport use.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No significant change in demand.	Decrease in emissions from approach lights.	No significant change.	No impact.
Relocate Daniel's Hole Road	Temporary increase during construction.	Maintained within Airport property.	Temporary impacts from construction.	No significant impact to groundwater or stormwater; clearing within limits of Water Recharge Overlay District requirements	No impact.	Minor impact from clearing of small amount of trees.	No impact.	No impact.	No impact.	No impact.	Disposal of original road section is a minor increase, to be accommodated by existing facilities.	No impact.
Complete Parallel Taxiway to RW 10/28	Temporary increase during construction.	Consistent with current Airport use.	Decreased emissions from improved circulation; temporary impacts from construction	No significant impact to groundwater or stormwater	No impact.	No significant impact; area currently cleared.	No significant impact.	No impact.	Reduced fuel consumption from improved circulation.	Minor increase from taxiway lights.	No significant change.	No impact.
Bypass Taxiway at RW 28 end	Temporary increase during construction.	Consistent with current Airport use.	Decreased emissions from reduced idling times; temporary impacts from construction.	No significant impact to groundwater or stormwater	No impact.	No impact; area currently cleared.	No impact.	No impact.	Reduced fuel consumption from reduced idling times.	Minor increase from taxiway lights.	No significant change.	No impact.
Extend TW G at RW 28 end	Temporary increase during construction.	Consistent with current Airport use.	Decreased emissions from improved circulation; temporary impacts from construction.	No significant impact to groundwater or stormwater	No impact.	No impact; area is currently cleared.	No impact.	No impact.	Reduced fuel consumption from improved circulation.	Minor increase from taxiway lights.	No significant change.	No impact.
Additional Fuel Farm	No impact.	Maintained within Airport property.	Decreased emissions from reduced number of fuel transfers.	No significant impact to groundwater; fuel tanks are above-ground and would adhere to spill prevention regulations	No impact.	No impact.	No impact.	No impact.	Improved fuel capacity to meet peak summer demand.	No impact.		No impact.
Modify Vehicle Parking	Temporary increase during construction.	No change in current use.	Temporary impacts from construction.	No significant impact to groundwater or stormwater.	No impact.	No impact; area is currently cleared.	No impact.	No impact.	No significant change in demand.	No impact.	No impact.	No impact.

[1] Includes U.S. DOT Act Section 4(f), Floodplains, Coastal Management and Coastal Barriers, Wild and Scenic Rivers, Prime or Unique Farmland, Hazardous Material Disposal, and Environmental Justice.

Table 5-8. Summary of Impacts (continued)

Project	Noise	Land Use	Air Quality	Water Quality	Historic, Architectural, Archaeological, and Cultural Resources	Biotic Communities	Endangered Species	Wetlands	Energy Supply and Natural Resources	Light Emissions	Solid Waste	Other Env. Concerns[2]
Construct Maintenance Building	Temporary increase during construction.	Maintained within Airport property.	Temporary impacts from construction.	No impact; no increased impervious surface.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.
Install AWOS	Reduced from fewer number of missed approaches; temporary increase during construction.	Consistent with current Airport use.	Temporary impacts from construction.	No significant impact to groundwater or stormwater.	No impact.	No impact; area is currently cleared.	No impact.	No impact.	No significant change in demand.	No significant increase.	No impact.	No impact.
Install Seasonal Control Tower	Reduced from improved flight management and enforcement of noise abatement procedures; temporary increase during construction.	Consistent with current Airport use.	Temporary impacts from construction.	No significant impact to groundwater or stormwater.	No impact.	No impact; area is currently cleared.	No impact.	No impact.	No significant change in demand.	No significant increase.	No significant change.	No impact.
Acquire or Control RPZs	No impact.	No change in land use.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.
Release sites along Industrial Rd.	No impact.	Compatible with Airport land use and adjacent industrial uses.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.	No impact.
Reserve Future Industrial Site	No impact.	Compatible with Airport land use.	Temporary impacts from construction.	No significant impact to groundwater or stormwater; clearing within limits of Water Recharge Overlay District requirements	Site well outside wetland buffer.	Potential minor impact from clearing of up to 5.7 acres of trees.	No impact.	No impact.	No significant change in demand.	No significant increase; maintained within Airport property.	No significant change.	No impact.

[2] Includes U.S. DOT Act Section 4(f), Floodplains, Coastal Management and Coastal Barriers, Wild and Scenic Rivers, Prime or Unique Farmland, Hazardous Material Disposal, and Environmental Justice.

6.0 Mitigating Measures

6.1 Introduction

The proposed development is the product of an extensive consideration of options that was undertaken during the development of the Master Plan Report. That document included consideration of four differing future concepts or alternatives including 1) no action, 2) a reduction in capability, 3) a preservation of existing capability with improvements to satisfy safety requirements, efficiency, and reducing community impacts and 4) an expansion program to accommodate the largest facilities triggered by existing and future need. After consideration of all alternatives, the Town determined that a limited program focusing on improving the Airport in terms of safety, efficiency and reduction of impact from operations would best serve the community's needs. The plan is deliberately limited in scope, avoids growth inducing measures, avoids wetland areas and avoids the need for extensive mitigation actions.

This concept is consistent with a variety of Town practices, policies and procedures which form the administrative context for the Airport. These are detailed below accompanying specific mitigating measures considered for implementation resulting from the adoption of the plan itself.

6.2 Runway 22 Extension

Reactivation of Runway 4/22, as detailed in the Alternatives Analysis, is required to meet adequate wind coverage standards. Runway 16/34 cannot easily or economically be improved to accommodate a parallel taxiway which is a design requirement.

However, reactivation of Runway 4/22 will increase noise impact in areas to the southwest of the Airport in Wainscott although only from small piston engined aircraft. In comparison to the other areas around East Hampton Airport, this area has the greatest concentration of single family residences. The closest residence is less than one quarter mile from the Runway 4 end on a straight out heading.

This area is under the approach to Runway 4 and under the straight out takeoff track for Runway 22. There is no convenient remedy to reduce landing noise for aircraft using Runway 4. Potential mitigating measures for Runway 22 takeoff noise are discussed below.

To examine the differences in noise impact that might result from either physical changes to Runway 22 or to recommended noise abatement flight tracks or other measures, single event grid point noise analysis using the Integrated Noise Model were prepared for the following four distinct alternatives:

- A straight out departure on Runway 22 as proposed,
- A straight out departure with the Runway 22 takeoff threshold moved 500 feet to the northeast,
- A noise abatement flight track via a low altitude turn to the 28 heading before reaching the Airport boundary, and
- A straight out departure on Runway 28 as an alternative to using Runway 22.

Two receptor sites were chosen, the closest residence to the southwest in Wainscott on the extended centerline of Runway 22 and the closest house to the Airport property line south of the extended centerline of Runway 28 in Southampton. Two alternative aircraft were selected for analysis, the Beech Baron, a twin engined piston powered aircraft, and a Cessna 172, a common single engined aircraft.

Table 6-1 below provides the numerical comparisons of these alternatives.

Table 6-1. Comparison of Peak Noise Levels – Closest House in Wainscott and Southampton			
Proposed Runway Threshold on Runway 22			
(All Values in decibels)			
	22 Straight Track	**22 Noise Abatement Turn**	**28 Departure**
BEC58P, Beech Baron (Twin Engine)			
Wainscott - House 1	92.6	89.4	69.6
Southampton - House 2	69.1	79.8	79.7
	22 Straight Track	**22 Noise Abatement Turn**	**28 Departure**
CNA172, Cessna Skyhawk (Single Engine)			
Wainscott - House 1	77.4	81	55.3
Southampton - House 2	67.3	55.7	67.1
Extend Runway 22 500 feet to the Northeast			
	22 Straight Track	**22 Noise Abatement Turn**	**28 Departure**
BEC58P, Beech Baron (Twin Engine)			
Wainscott - House 1	91.1	84.4	69.6
Southampton - House 2	70.0	83.8	79.7
	22 Straight Track	**22 Noise Abatement Turn**	**28 Departure**
CNA172, Cessna Skyhawk (Single Engine)			
Wainscott - House 1	79.9	72.5	55.3
Southampton - House 2	56.2	72.4	67.1

Straight Out Heading on Runway 22 versus Runway 22 with a 500 Foot Extension – This comparison showed a difference of 1.5 dB at the closest house to the southwest in Wainscott in the case of the Beech Baron and a 1.1 dB difference from a Cessna 172. In both cases, these differences are less than three decibels and therefore probably not distinguishable at the location selected for analysis. Further Runway 22 has historically been used for only about 5 percent of departures. The runway extension is logically unjustified.

Noise Abatement Flight Track - Turning the aircraft to a westbound heading before crossing the Airport property line on a Runway 22 takeoff would avoid overflying Wainscott. In this case,

the peak noise level in the Wainscott house would be reduced by 3.2 dB in the case of the Beech Baron and 3.6 dB in the case of the Cessna 172. This is an audible difference, but just barely noticeable. There are two disadvantages. This track would raise the noise level at the selected house in Southampton by 4.0 dB and 5.1 dB in the case of the Beech Baron and Cessna 172 respectively although peak levels at this location would remain about five decibels lower overall than in Wainscott. The second disadvantage is the noise abatement turn would take place at a relatively low altitude, less than 300 feet above runway elevation. Margins of safety are reduced in such circumstances and the proposed noise abatement turn would logically be a voluntary procedure.

Combining proposed runway threshold relocation and the noise abatement flight track reduces peak noise levels by about five decibels at the point selected in Wainscott, but raises them by nearly the same amount at the house selected near the western Airport boundary line. However, this improvement in Wainscott is dependent on the turn altitude, i.e., the degree of improvement is greater in the Wainscott area as the turn altitude is lowered. However, the turn point remains uncomfortably low from an operational view point.

Straight Out Departure on Runway 28 – Results from the proposed noise abatement turn show that peak noise levels compared with a straight out departure on the main runway, Runway 28, show improvement in the Wainscott area and similar improvement in the house to the west in Southampton versus any alternative use of Runway 22.

This proposed mitigating measure provides insufficient noise reduction to merit its inclusion in the plan. A voluntary noise abatement turn for light aircraft is recommended under conditions when this can be safely executed. Larger twin engined aircraft should utilize Runway 10/28 in preference to Runway 22 for departures when wind conditions permit.

6.3 Design Measures – Runway System

Two design measures, provisions for a full parallel taxiway for Runway 10/28 and a bypass taxiway for the Runway 28 threshold, mitigate air pollutant emissions by reducing taxiing distances and potential delays to arriving and departing aircraft.

6.4 Aircraft Noise Abatement Options

Noise abatement options at airports are customarily evaluated through a planning study. These are commonly called Part 150 studies for Federal Aviation Regulations Part 150. Such studies are frequently, although not always, sponsored by the FAA. The circumstances in East Hampton do not, at this time, suggest that a formal FAA study is applicable since the Airport now complies with the federal land use compatibility guidelines that are typically applied. For this reason, a federal noise/land use compatibility program could not meaningfully address land use compatibility issues off airport which are normally a significant study element. The discussion below broadly outlines the options available for further study.

In considering noise abatement, the use of restrictions either by aircraft type or by time of day are often the first recommendations that emerge from community residents. Generally, these are prohibited by the Aircraft Noise and Capacity Act passed in 1990. These regulations were codified under FAR Part 161 and still govern the approval process. There has been only one airport in the United States that has successfully used this means to restrict airport access. This case was in Naples, Florida. The process was prolonged, expensive and involved extensive litigation. It was successful in excluding Stage 2 turbine powered fixed wing aircraft. In the case of East Hampton, there are very few Stage 2 fixed wing aircraft that use the airport (a total of 22 during all of 2009). Although helicopters are also Stage 2 aircraft which implies they are eligible for restriction, there are no Stage 3 helicopters which can be substituted.

More recently, in the case of the Part 161 analysis produced for Bob Hope Airport in Burbank, California, the FAA generally considered restrictions justified only when the airport in question was not in compliance with federal guidelines for land use compatibility. This position essentially means that from a regulatory perspective, noise abatement is not reasonable if the federal criteria are already being met. Since East Hampton currently complies with relevant federal land use compatibility guidelines, from the federal perspective, further noise relief is not justified given the economic and social benefits of air transportation. Thus, federal procedures do not provide significant opportunities for further noise abatement. Federal resistance to traffic restrictions is primarily about permanent, overall restrictions. In the case of East Hampton, reported adverse effects are seasonal as opposed to year round concerns. In light of that the following options could be further explored.

First, operational goals for noise abatement can occur through voluntary measures. These have shown relatively good compliance rates at East Hampton. An extension of this concept is that further improvements can be brought about through agreement among the airport users. These techniques are frequently used for specific aspects of airport operations. Currently, East Hampton Airport uses voluntary restraints on night period activity and minimum altitudes on helicopter routes.

Noise impact is fundamentally addressed by either reducing noise at the source, by increasing the distance between the source and the receiver or by protecting the receiver. The third means, protecting the receiver has limited application in the East Hampton case because the primary adverse reactions occur during the warmer months when outdoor living most often occurs. The predominant strategy, noise insulation, may be useful in certain areas especially areas which are subject to noise such as train or automobile noise in addition to aircraft.

Increasing distance can be used to place noise over less densely populated areas. The essential advantage of the Georgica Pond/Southern helicopter route is that the majority of noise is emitted over the ocean. Increased use of this route will tend to distributed impacts more evenly throughout the area. In the mitigating measures section, noise abatement departure benefits from early turn outs of aircraft departing Runway 22 are outlined. This procedure essentially voluntarily limits overflghts of the Wainscott area.

There may be other opportunities to reduce noise impact through encouragement of quieter aircraft. For example, general aviation light propeller driven aircraft may be fitted with low noise propellers; increasing the number of propeller blades from two to three serves to reduce tip speeds and therefore overall noise emissions.

Reducing noise impact through source noise control is preempted. The Airport cannot control the source noise levels. These are regulated by the FAA. This is enforced through the Grant Agreements or sponsor assurances, particularly Assurance 22 (see Appendix B).

Certain reductions in volume may be able to be achieved through the general or by the seasonal rules established by the proprietor. Temporary diversions of activity such as the discouragement of training operations on summer weekends are already in place. The disadvantage to these techniques is the noise is not eliminated, but relocated to differing facilities which may also be noise sensitive.

The placement of noise impact can be effected by certain other measures that generally occur when airport traffic is actively controlled via a control tower. While the primary duty of control tower personnel is the separation of aircraft for safety reasons and the expediting of flow during busy periods, their function may also include such techniques as preferential runway and flight track use and recommendations for noise abatement arrival and departure procedures. Active control may also permit the use of differing approach paths or the relocation of helicopter landing areas which cannot be safely accomplished without positive control of overall flows. Seasonal rules or other temporary measures may be developed that can lead to reduced noise and/or a better overall distribution of impact.

NAVAIDS such as the currently operating AWOS can be helpful in reducing noise impact. The AWOS is intended to inform pilots of current weather conditions so that users will not attempt to land in adverse conditions. Likewise, airspace changes such as the addition of GPS approach or departure tracks can be used to relocate flight tracks to more favorable locations.

At this time, given the declines in volumes and the seasonality of traffic, five specific efforts are recommended. First, helicopter noise is being addressed by the elected representatives. Cooperation with this effort may yield further noise abatement gains such as increased enroute altitudes, restrictions on land areas overflown and a balance of activity between the northern and southern routes. Second, continue monitoring and encouraging feasible voluntary measures. Three, increase fees for helicopter access to match the levels charged at the originating heliport. Four, establish the seasonal control tower. The seasonal control tower is primarily a safety related improvement, but through structuring traffic may have opportunities to institute noise abatement measures. Fifth, based on the accumulation of experience, a structured program of special rules applied exclusively to peak summer weekends and based on traditional proprietary powers may be the most effective long term noise management approach.

6.5 Helicopter Routing

Impacts resulting from helicopter noise have been partially mitigated through two strategies. Overflight altitudes have been raised to 2,500 feet above ground level. Two additional helicopter routes have been provided, one to the north over Northwest Creek and one from the south over Georgica Pond. This divides traffic and both routes have shorter segments over populated areas.

6.6 Management Practices

East Hampton Airport and much of the area north and east of the Airport is situated above the largest source of ground water in the Town. A variety of management practices have been instituted to prevent contamination of this irreplaceable resource. These considerations are detailed in the Town of East Hampton Comprehensive Plan issued in May, 2005. The Plan includes designation of part of the northeastern Airport tract as a forest preserve adjoining other critical areas. All areas north and east of Daniel's Hole Road will remain forested and undeveloped, except as required to support the existing Airport use (i.e., removal and trimming of trees to maintain Runway approaches and relocation of road at Runway 28 end to comply with FAA standards). At the Runway 22 end, the removal of tree obstructions will be minimized to the extent possible. Impacts to the ground cover will be reduced by maintaining shrubs and understory vegetation that do not penetrate any obstruction surface. Stumps will be cut to the ground and root systems will be left in place to reduce erosion and protect the integrity of the Town's groundwater. Alternatively, to the extent feasible, the area will be revegetated with native low-growing plants with mature heights below any obstruction surface. Areas designated for future industrial or commercial development are subject to local development regulations that are designed to prevent ground water contamination.

A management plan for open areas of the Airport tract should be considered including protecting and promoting stable, sustainable ground cover, proper mowing and maintenance practices allowing for bird and wildlife sustenance during breeding seasons. Applications of materials, particularly hazardous chemicals, determined to be detrimental to ground water quality will be avoided. Preservation of the Pine Barrens ecosystem, of which the Airport is a part will be enforced and expanded where practical.

6.7 Construction Practices and Timing

All development of areas within the Airport is expected to incorporate measures to reduce or eliminate the potential for erosion and sedimentation. Construction should occur during the summer, fall and winter months so as to limit impact to wildlife during the breeding season. Any future provisions for storm drainage system for ramps and parking areas will incorporate oil/water separators. Adequate stocks of absorbent materials will be available in the event of spillage of petroleum products. Above ground storage of petroleum, fuel, and waste liquids are preferred.

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