Chapter IV – Airport Noise and Access Management

A. Introduction

The Towns of East Hampton and Southampton have an unusual confluence of circumstances that necessitates an in depth review of aircraft related noise impact and potential proprietary controls.

Both communities are exceptionally quiet areas primarily composed of small villages and population centers. The majority of homes outside the village centers are on relatively large lots. There are limited noise sources, few trains, primarily low speed roads, and limited trucking. Essentially, both communities are on a dead end peninsula, a seasonal destination and not on the way to any other population centers. Local neighborhood noises are assiduously controlled via local ordinances. Noise monitoring studies included as Appendix C confirm the prevailing low background noise levels on residential sites in both Towns.

During the summer months, the area is predominantly a recreational community. While there is a stable year round population, total population triples during the summer season when vacationers from throughout the country visit, many by air. Thus, peak population and peak airport noise impact coincide by season. Further since the Hamptons are a weekend destination for many, airport noise impacts peak on weekend summer days. Air traffic levels on a given weekend summer day may be four times greater than occur during a two week period during the cooler months. Approximately half of total annual traffic occurs during the three summer months.

For these reasons, adverse reactions to aircraft noise tend to be widespread throughout the airport vicinity since virtually every summer weekend day is accompanied by frequent aircraft related noise events.

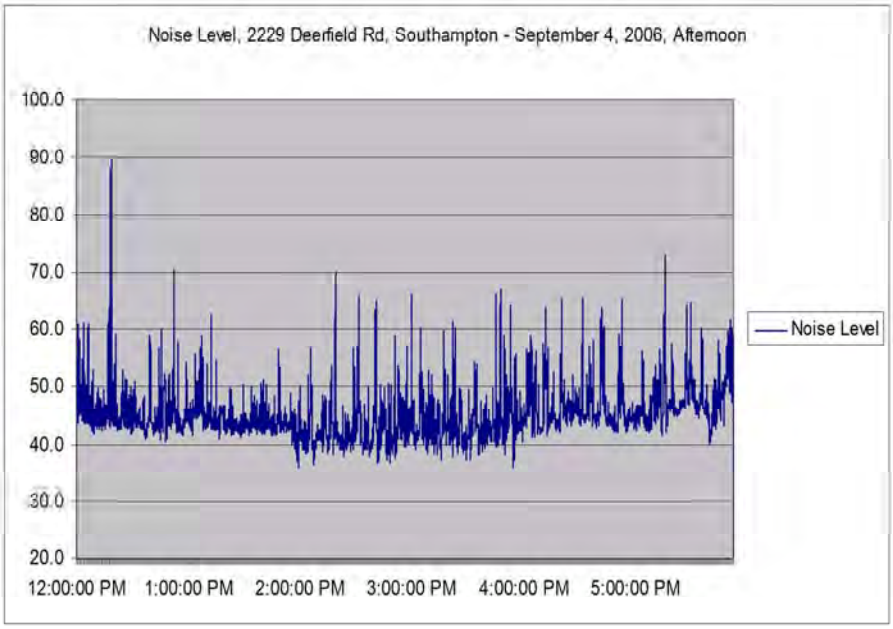
Under these circumstances, the annual average day, the normal basis for aircraft noise impact determinations, is an inadequate stand alone descriptor. A supplementary analysis is included for a specific peak summer weekend day in order to better understand the nature of the human reactions during the summer season. It is this specific set of conditions that, in the main, have resulted in continuing community concerns over aircraft traffic and the means available to the Town, acting in the role of airport proprietor, to reduce adverse effects.

B. Noise Measurement

1. Single Event Noise

Community noise levels were extensively monitored in 2003 and in 2006. The results obtained are discussed in detail in II.A.3 presented earlier in this report. Generally, all these exercises showed relatively low background noise levels throughout the airport vicinity. Figure IV-56 illustrates the circumstances as they were recorded on Labor Day, Monday, September 4, 2006. The background noise level during this monitoring period as measured by the L90 statistic was found to be 40.8 dB. This measure indicates that 90 percent of the sample measurements obtained were at or above this level. Even for a rural residential site, this is a quiet environment. During this period approximately 16 noise events occurred, one above 90 dB and the remainder in the 60 to 70 dB range or about 20 to 30 dB above the background noise level. During outdoor activities these events are noticeable and intrusive. It is for this reason that aircraft noise is considered disruptive. Similar results were found at virtually all monitoring sites.

FIGURE 4-56



Source: Young Environmental Sciences

2. Single Event Noise Contours

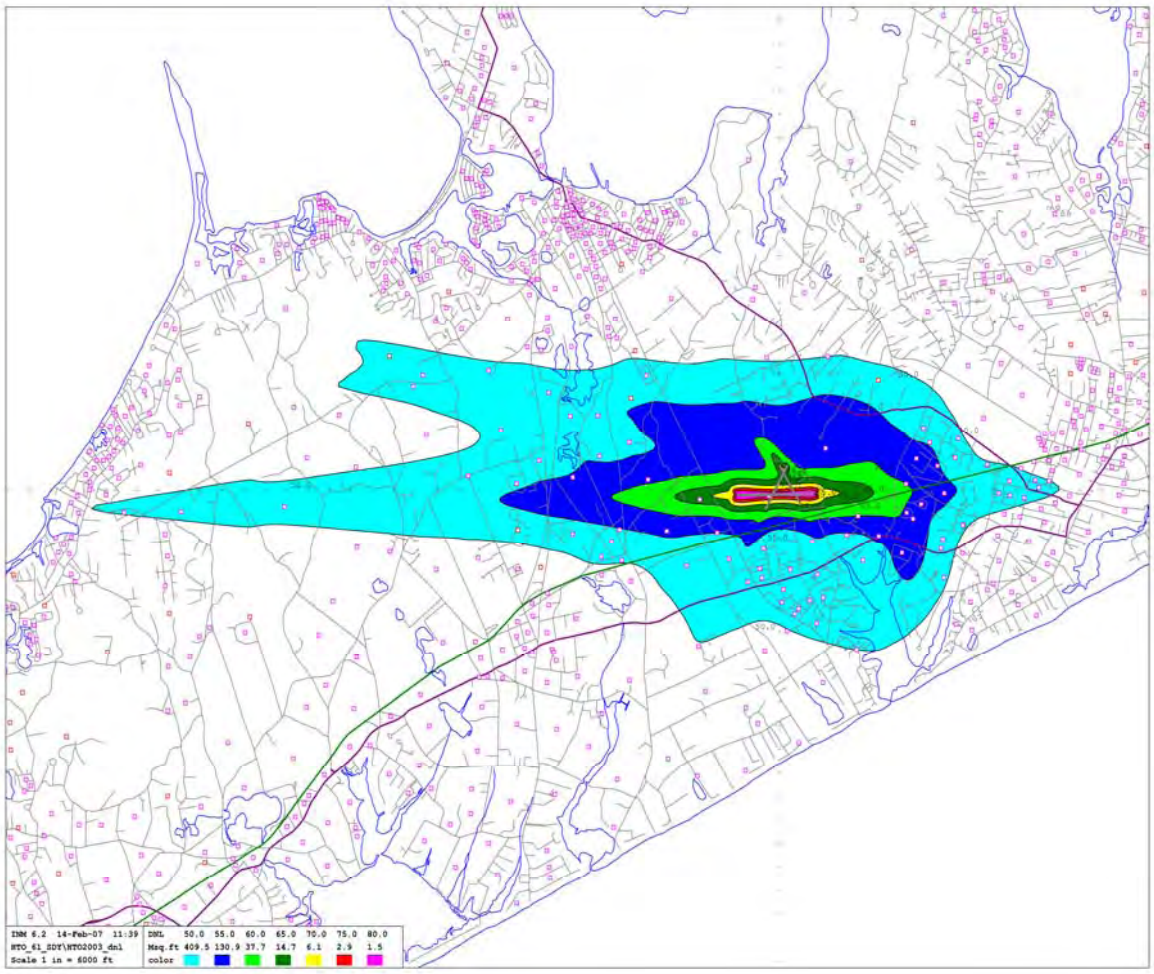
Appendix D presents single event noise contours, i.e., a landing and a takeoff from east to west on a hot day, for 35 general aviation aircraft contained in the database of the Integrated Noise Model (INM) or generated manually for helicopters. These plots are not actual depictions of the expected pattern of operation at the airport, but provide an index of the relative noisiness of the aircraft that may regularly use East Hampton Airport. The contours show peak audible noise levels from 65 dB to 85 dB in 5 dB increments. As can be seen from inspection, most aircraft will produce off airport noise levels in excess of 65 dB, the current noise limit in both East Hampton and Southampton established by local ordinance. Some aircraft, particularly older jet powered aircraft such as the Lear 25 series, and helicopters, due to relatively low cruising altitudes, produce widespread areas exposed to noise levels that exceed local limits.

It is the combination of low background noise levels, the relatively high amplitude of most aircraft noise events and the expectations of local and seasonal residents that produces adverse responses to aircraft noise.

3. Cumulative Annual Average Noise Contours

Annual average day noise contours, usually determined using the FAA's Integrated Noise Model (INM), are the starting point for determining cumulative noise impacts at airports. Procedures for doing so are codified in Federal Aviation Regulations Part 150, Appendix A. The results of computer noise modeling are a series of nested contours at progressively higher cumulative levels around the runway complex using the Day/Night Average Sound Level (DNL or Ldn) methodology, the single system defined for use at both civilian and military airports throughout the United States. The details provided below define the information utilized by the INM for Calendar Year 2006. This exercise is based on the determination provided by HMMH for Calendar Year 2003 (shown below as Figure IV-57). That exercise included aircraft noise definitions for helicopters developed for the East Hampton case, and detailed approach and departure tracks based on long term observations. Several changes have occurred since that exercise including the temporary closure of Runway 4/22, the definition of specific approach and departure tracks for helicopters, reductions in night period activity, and significant changes to the fleet mix of aircraft serving the airport.

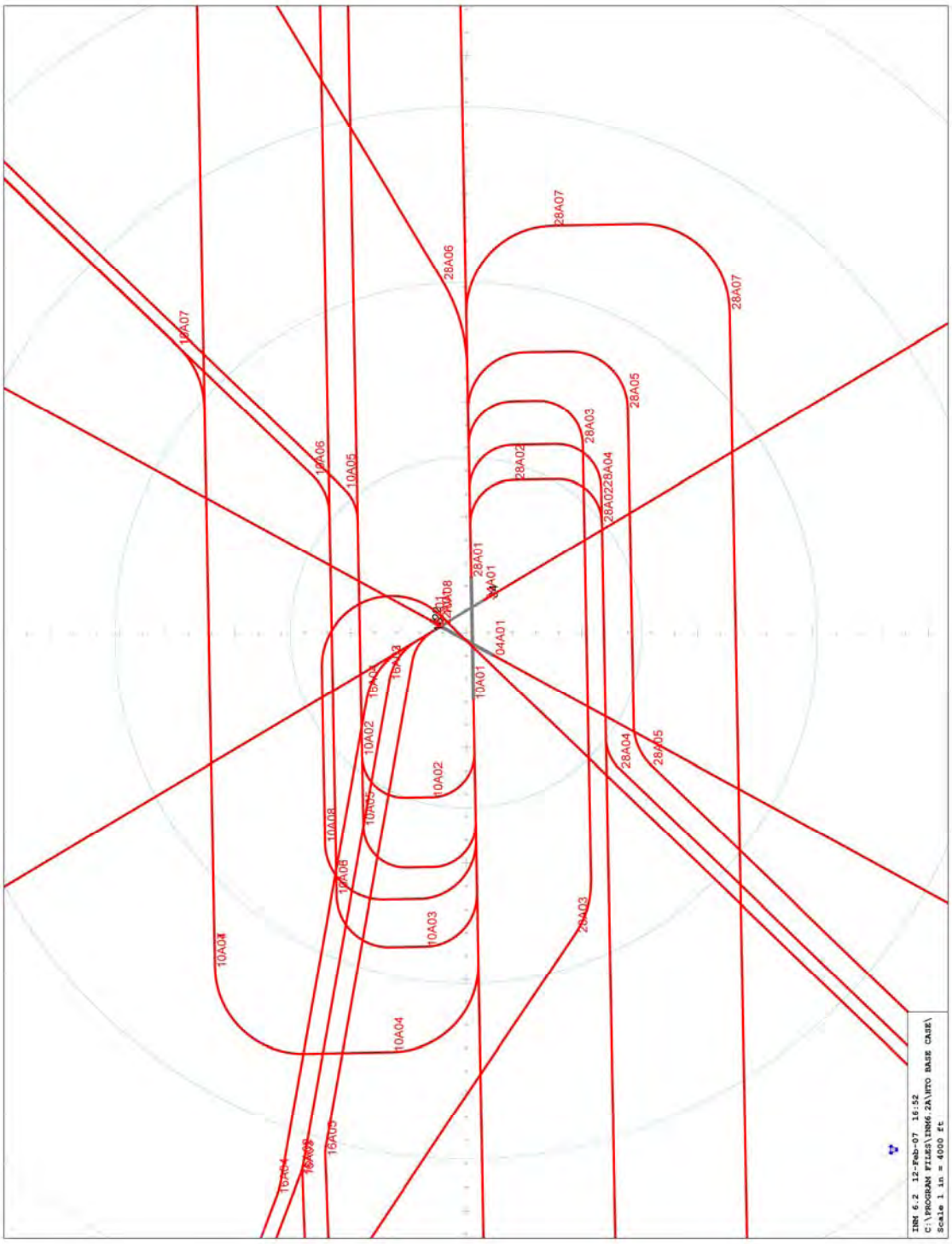
FIGURE IV-57
ANNUAL AVERAGE NOISE CONTOURS 2003



Source: HMMH

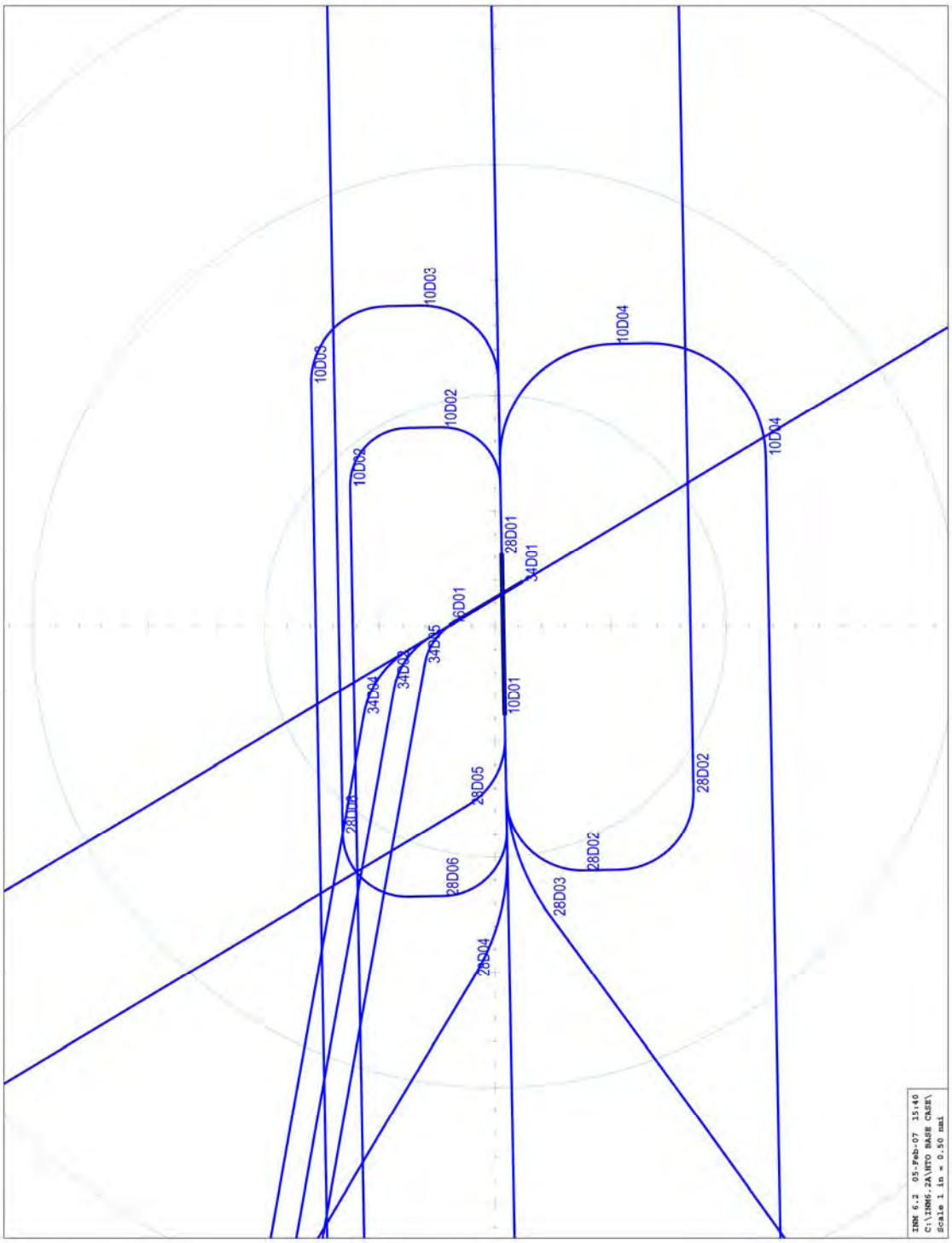
As input to the INM, the following data is required. First, the airport runways are defined. Approach, departure and touch and go flight tracks are determined based on the pattern of approaches and departures from each runway end. The approach and departure flight tracks are shown as Figures IV-58 and IV-59.

FIGURE IV-58
ARRIVAL TRACKS



Source: Young Environmental Sciences

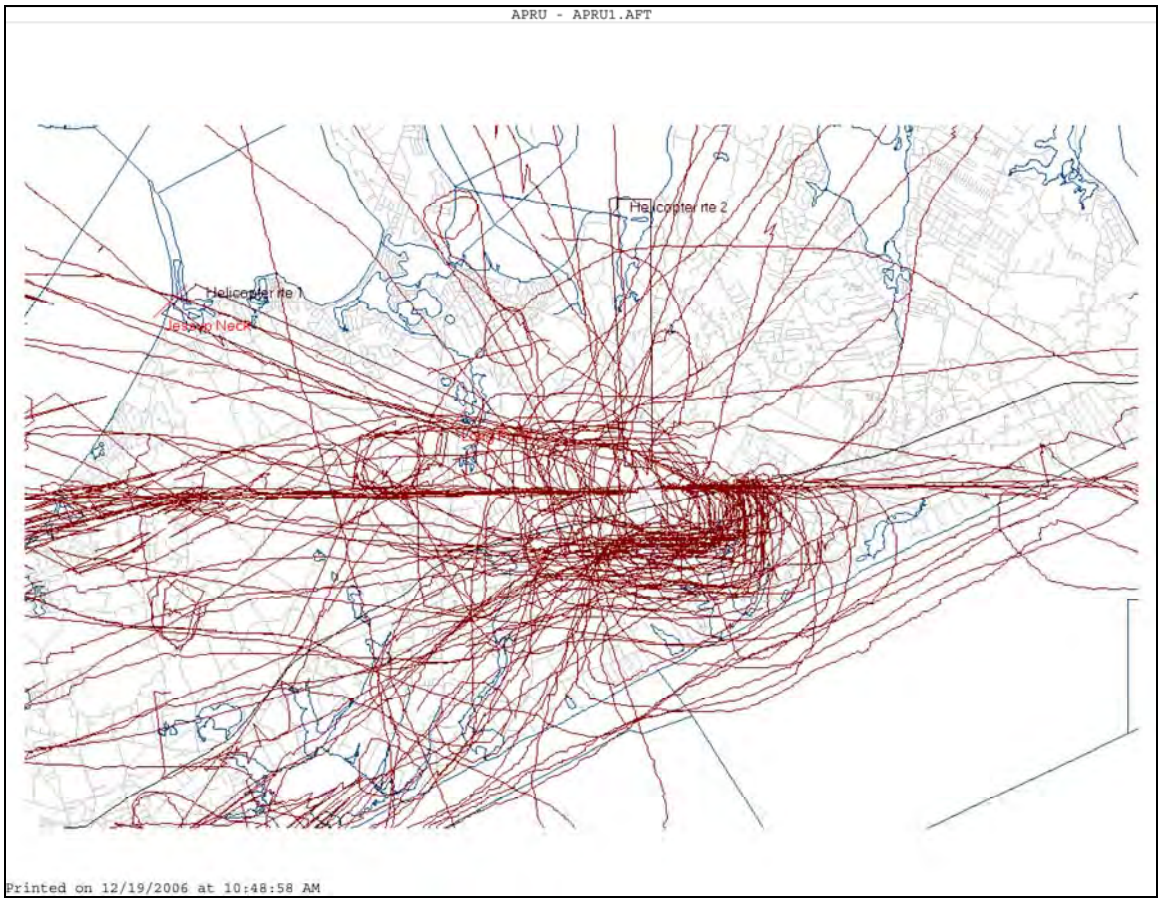
FIGURE IV-59
DEPARTURE TRACKS



Source: Young Environmental Sciences

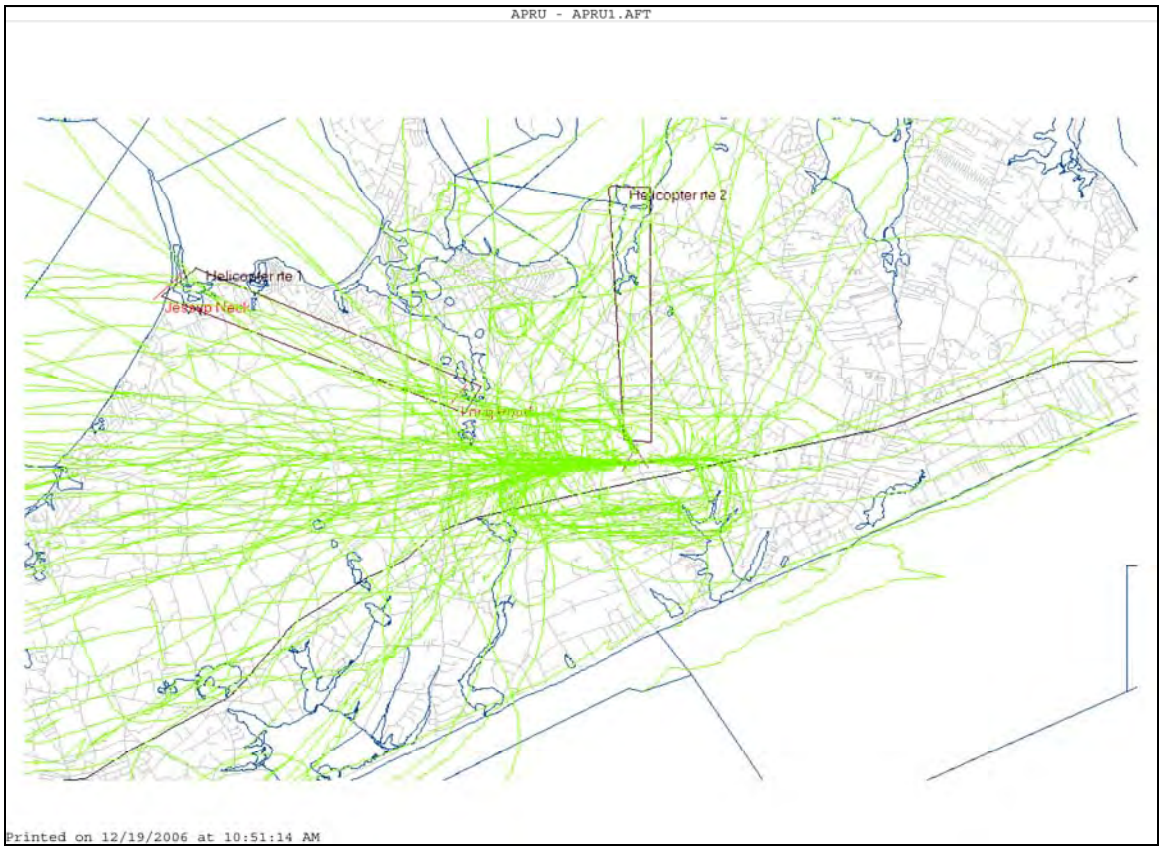
These tracks were verified through the use of the AirScene aircraft monitoring system installed in 2005. Plots of activity recorded by the AirScene system were retrieved for approaches and departures as they occurred during four separate periods in 2006, one week during February, May, August and November. Figures IV-60, IV-61, IV-62, IV-63, IV-64, and IV-65 show the results of two periods. Figures IV-60 and IV-61 are approaches and departures for the week of February 4 through 11.

FIGURE IV-60
FLIGHT TRACKS-ARRIVALS FEBRUARY 4-11TH 2006



Source: Young Environmental Sciences

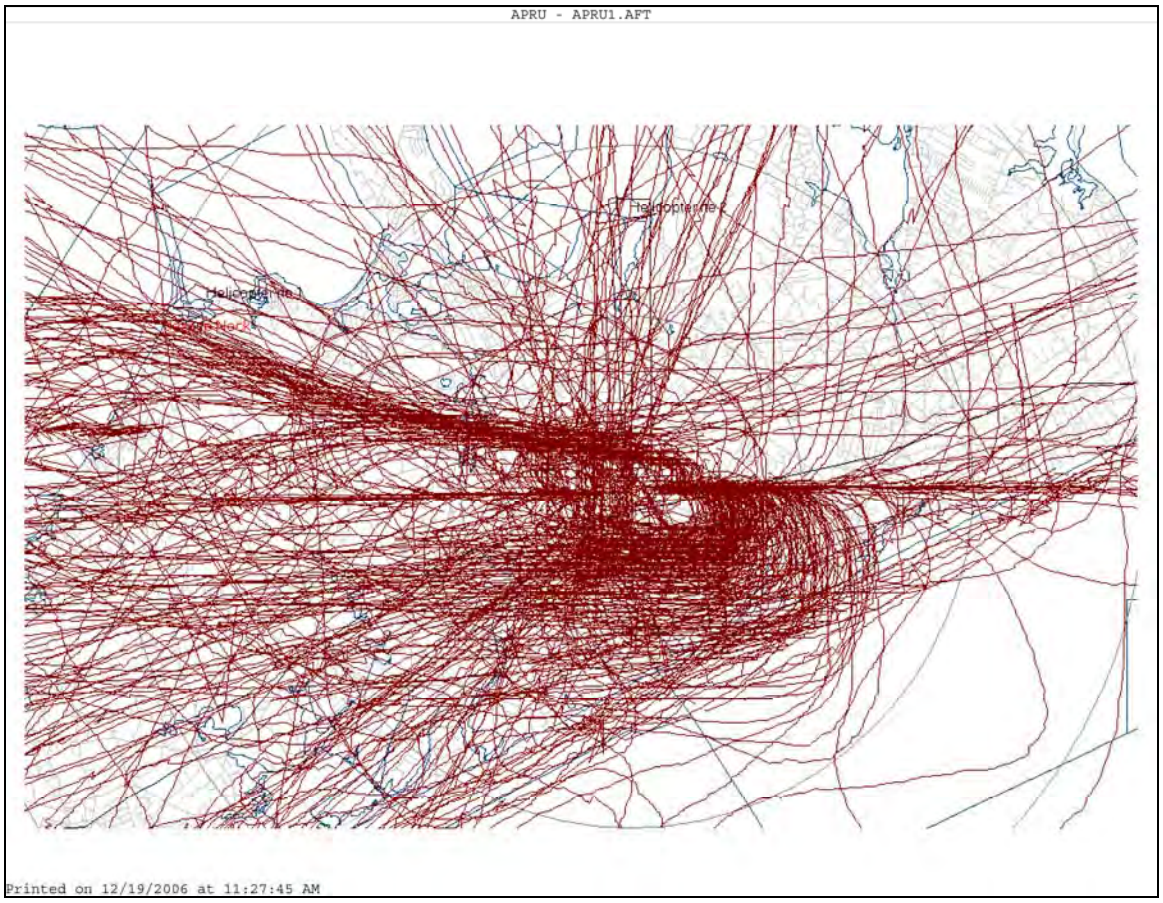
FIGURE IV-61
FLIGHT TRACKS-DEPARTURES FEBRUARY 4-11TH 2006



Source: Young Environmental Sciences

Figures IV-62 and IV-63 show activity for the weekend of August 11, 12 and 13. Inspection of the flight track diagrams reveals the general pattern of movements in the airport vicinity. During the February sample, relatively little traffic occurred. Flight movement data was found to be generally consistent with the previously determined INM tracks.

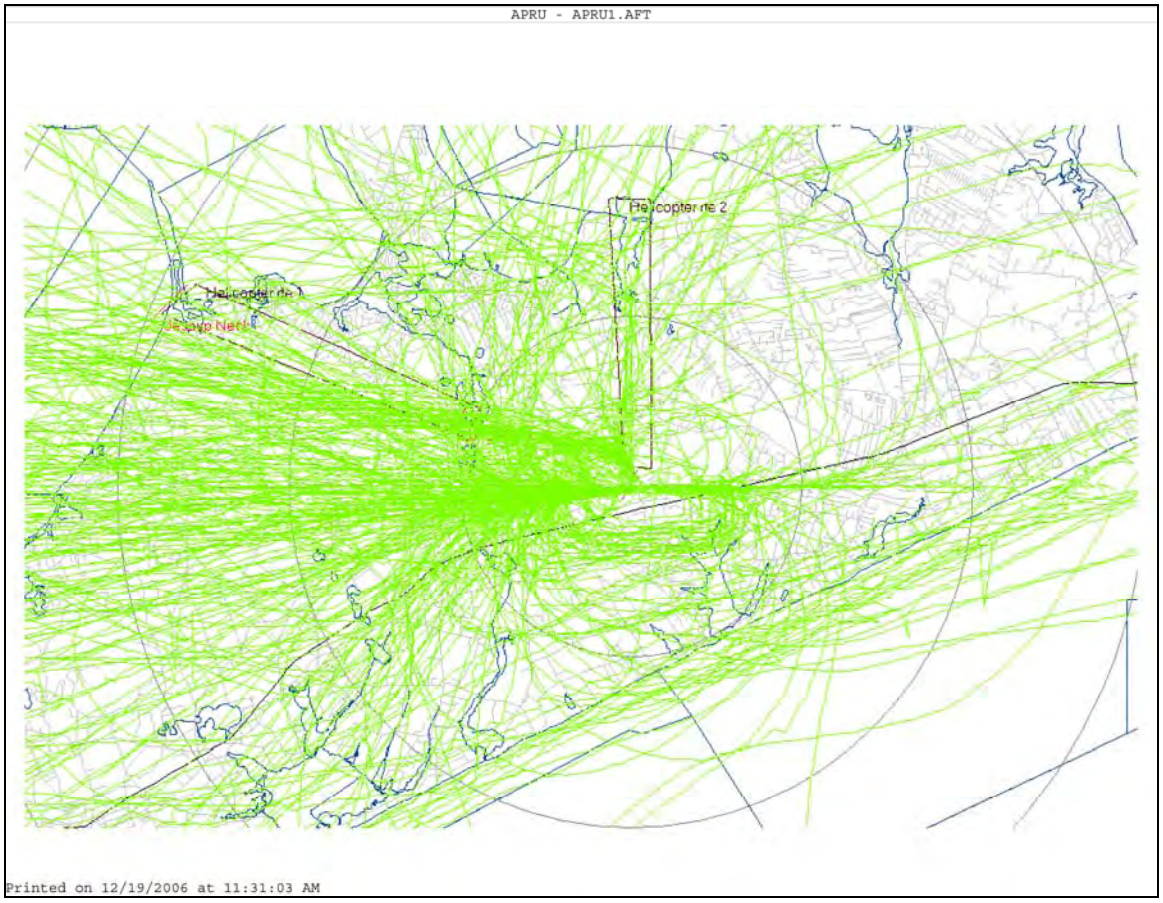
FIGURE IV-62
FLIGHT TRACKS-ARRIVALS AUGUST 11-13TH 2006



Source: Young Environmental Sciences

FIGURE IV-63

FLIGHT TRACKS-DEPARTURES AUGUST 11-13TH 2006

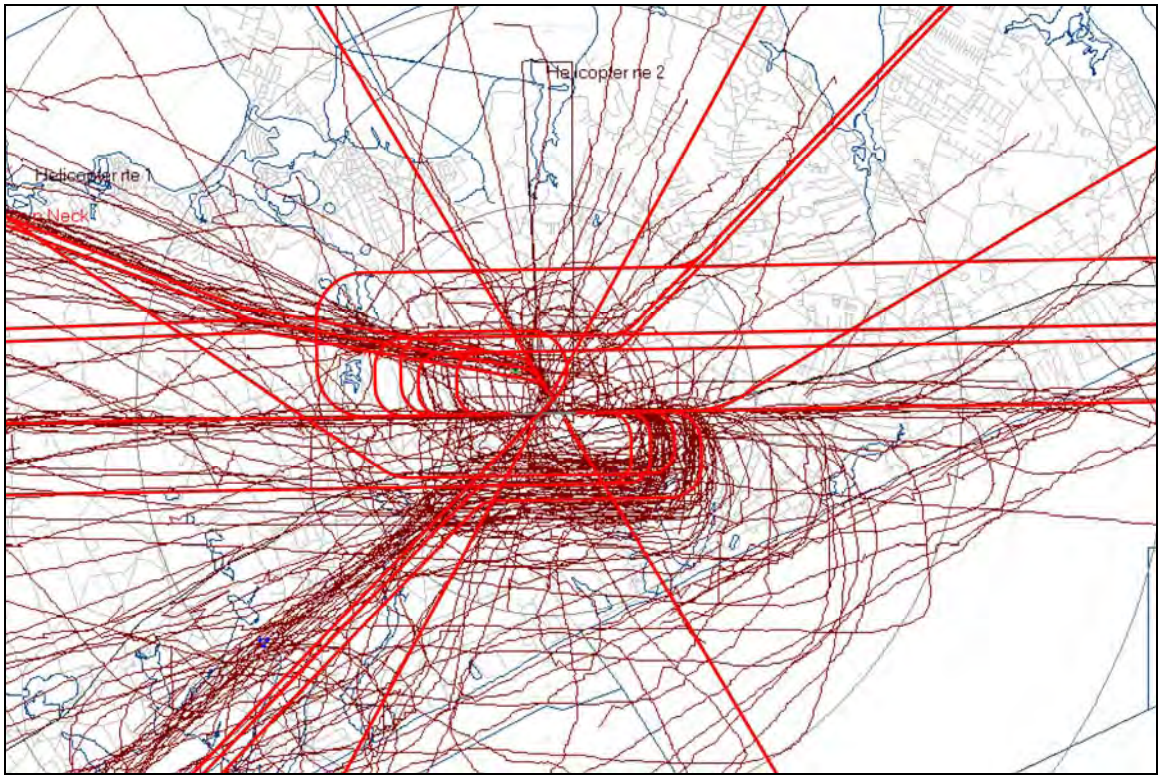


Source: Young Environmental Sciences

Figures IV-64 and IV-65 show the INM flight tracks overlaid on the AirScene flight tracks displays for November 5-11, 2006. However, there is some divergence from the nominal flight tracks. The August weekend sample shows much high traffic levels for both approaches and departures consistent with the substantially high demand levels that occur during the summer months. Divergence from the nominal flight tracks reveals the fact that most of the area around the airport is over flown on a busy day.

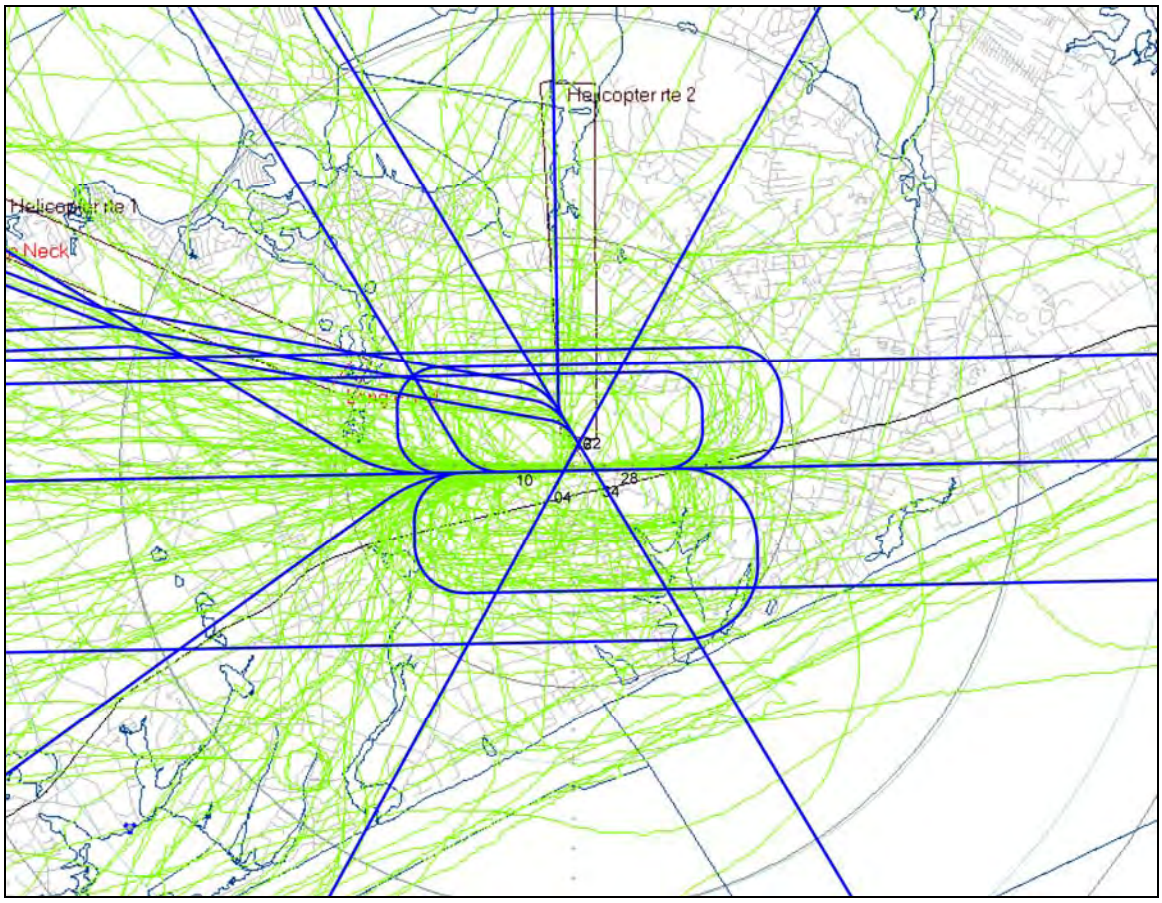
FIGURE IV-64

FLIGHT TRACKS-ARRIVALS NOVEMBER 5-11TH 2006



Source: Young Environmental Sciences

FIGURE IV-65
FLIGHT TRACKS-DEPARTURES NOVEMBER 5-11TH 2006



Source: Young Environmental Sciences

The INM requires a definition of the fleet mix of aircraft using the airport. The annual volume of overall aircraft operations is provided in Table IV-31. A total of 31,562 total aircraft operations were recorded in 2006. These annual numbers were adjusted to account for unknown aircraft recorded by the AirScene system and divided by 365 to obtain the daily average volumes by overall category. Each category of aircraft was further defined by INM equivalent type.

Jet powered aircraft were divided into 11 separate types corresponding to the range of aircraft known to use the airport in 2006. This included two older Stage 2 aircraft, the Gulfstream II and the Lear 25. These are both older noisier types as can be seen by reviewing the Single Event Noise Contours in Appendix D. The remaining nine jet powered aircraft are all modern Stage III, turbofan powered aircraft. These aircraft included the Gulfstream V, a large intercontinental range business jet aircraft; the Falcon 20 and 90, both medium sized aircraft; the Lear 35, a small common business jet; the Beechjet, a small common business jet; three representative Cessna Citation series aircraft, small, medium and large; and the Challenger, a medium sized business jet.

TABLE IV-31

ANNUAL TRAFFIC

OPERATIONS	
Jets	3,537
Turbo	1,186
Twin	2,371
Single	17,986
Helicopters	6,482
TOTAL	31,562

Source: Young Environmental Sciences

Propeller driven twin engine aircraft were divided between turboprops and piston powered twins. Turboprops included the Cessna 441, equivalent to the Piper Cheyenne, and the DHC6, the Twin Otter, which is the equivalent to the Beech King Air, a popular twin turboprop powered business aircraft. Twin engine, piston powered aircraft are represented by the Beech Baron and the Piper Aztec, both popular piston twins.

Single engine aircraft are represented by the GASPF, or the generic fixed pitch general aviation single engine aircraft and the GASPV, or the generic variable pitch single engine aircraft.

Helicopters were represented by the Sikorsky S-76, a popular twin engine helicopter, and the Eurocopter Twinstar, a smaller lighter twin engine turbine powered helicopter.

All these aircraft are included in the single event contours appendix where comparisons of the individual noise impacts can be clearly seen.

The complete list of aircraft with their corresponding daily average volumes is shown in Table IV-32. The table includes only arrivals, takeoffs are exactly the same. Table IV-33 shows the assignments to track.

TABLE IV-32
ANNUAL TRAFFIC

TRACK SPLITS ARRIVALS:

RUNWAY 10	10A01	10A02	10A03	10A04	10A05	10A06	10A07	10A08
JETS	52%	3%	9%	9%	3%	9%	9%	6%
ALL OTHER AIRCRAFT	41%	9%	15%	3%	9%	16%	3%	5%

RUNWAY 28	28A01	28A02	28A03	28A04	28A05	28A06
JETS	50%	4%	13%	4%	16%	13%
ALL OTHER AIRCRAFT	27%	13%	19%	15%	16%	11%

RUNWAY 16	16A01	16A02	16A03	16A04	16A05
HELICOPTERS		41%	41%	11%	7%
ALL OTHER AIRCRAFT	100%				

**NO JETS ARRIVING ON RNWY 16*

RUNWAY 34	34A01
HELICOPTERS	100%
ALL OTHER AIRCRAFT	100%

**NO JETS ARRIVING ON RNWY 34*

TRACK SPLITS DEPARTURES:

RUNWAY 10	10D01	10D02	10D03	10D04
JETS	14%	14%	14%	57%
ALL OTHER AIRCRAFT	24%	29%	35%	12%

RUNWAY 28	28D01	28D02	28D03	28D04	28D05	28D06
JETS	86%	7%	7%			
ALL OTHER AIRCRAFT	52%	8%	7%	9%	15%	9%

RUNWAY 16	16D01
*ALL AIRCRAFT	100%
**NO JETS DEPARTING ON RNWY 16*	

RUNWAY 34	34D01	34D02	34D03	34D04	34D05
*ALL AIRCRAFT	7%	36%	36%	14%	7%
**NO JETS DEPARTING ON RNWY 34*					

Source: Young Environmental Sciences

TABLE IV-33
2006 AVERAGE DAY ARRIVING TRAFFIC

JETS

INM TYPE	AIRCRAFT	DAY	NIGHT
GV	Gulfstream V	0.1993	0.0041
GIIB	Gulfstream IIB	0.0498	0.0010
FAL90	Falcon 90	0.6583	0.0134
FAL20	Falcon 20	0.6583	0.0134
LEAR35	Lear 35	0.5331	0.0109
MU3001	Beech 400	1.1104	0.0227
CNA500	Cessna Citation 2	0.6737	0.0137
CNA55B	Cessna 550	0.6737	0.0137
CNA750	Cessna 750	0.6737	0.0137
LEAR25	Lear 25	0.0589	0.0012
CL601	Challenger	0.1715	0.0035

TURBO

INM TYPE	AIRCRAFT	DAY	NIGHT
CNA441	Cessna 441	0.9153	0.0187
DHC6	King Air	0.9153	0.0187

TWIN

INM TYPE	AIRCRAFT	DAY	NIGHT
BE58P	Beech Baron	1.8306	0.0374
PA31	Piper Aztec	1.8306	0.0374

SINGLE

INM TYPE	AIRCRAFT	DAY	NIGHT
GASPV	GASPV	8.0206	0.1637
GASPF	GASPF	16.0412	0.3274

HELICOPTER

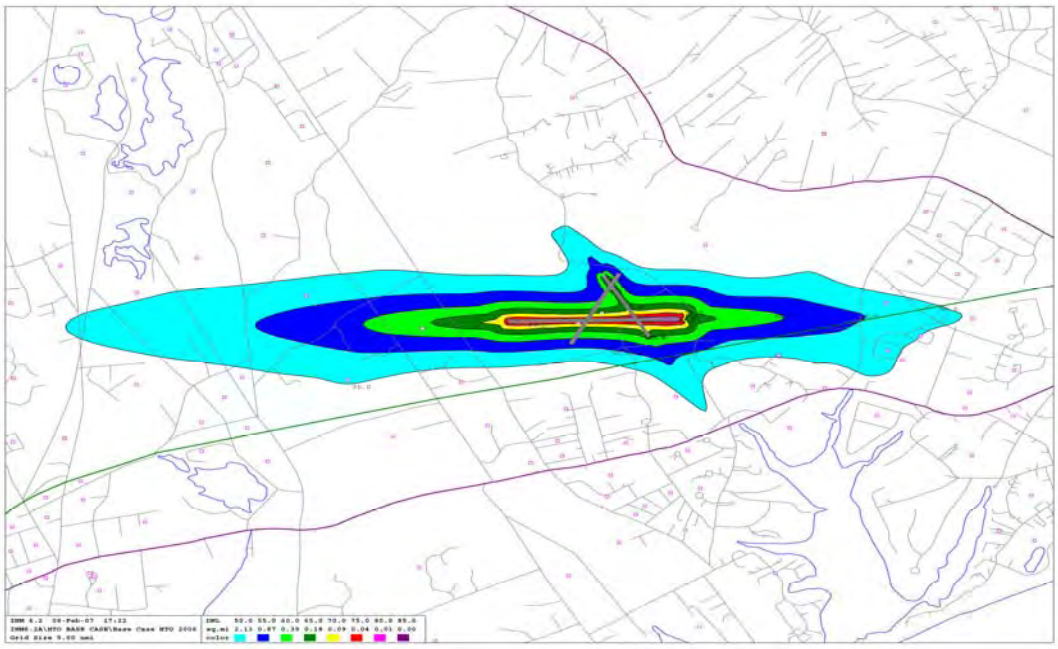
INM TYPE	AIRCRAFT	DAY	NIGHT
S76	Sikorsky 76	6.6643	0.1360
SA355F	Eurocopter AS355 Twinstar	3.3321	0.0680

Source: Young Environmental Sciences

Inspection of Table IV-32 shows that each aircraft type volume was split into two groups, day and night. In the DNL system, night period operations are weighted by a factor of ten (10) and therefore contribute disproportionately to the contour areas. In this case, the night period split is two (2) percent of total operations. These figures are verified by the AirScene system. In the 2003 determination, the night period split was six (6) percent, about three times greater.

Runway and flight track use are the remaining specifications. The AirScene system allows summary statistics. This provided the overall split on runway use. The most frequently used runway is Runway 28 with sixty (60) percent of overall traffic. Runway 10 showed twenty four (24) percent of overall traffic. Runway 16 had ten (10) percent of total traffic while the remaining six (6) percent was on Runway 34. Jet powered aircraft used Runways 10 and 28 exclusively. Runway 4/22 had no traffic due its temporary closure. This input data was run on the highest refinement settings available in the INM. The resulting plot of the annual average noise contours in DNL is shown as Figure IV-64. This plot shows a series of nested contours beginning at 50 DNL and increasing in 5 dB increments to DNL 85.

FIGURE IV-64
BASE 2006 CONTOURS



Source: Young Environmental Sciences

The land use compatibly determinations associated with the DNL system assert that all land use exposed to 65 DNL or lower levels are considered nominally compatible. In this case, the DNL 65 contour is essentially confined to airport owned land with the exception of a small projection westward along the extended centerline of Runway 28 and caused by the preference for this runway by departing jet aircraft.

At general aviation airports, land use incompatibilities in the sense of adverse reaction can be anticipated to occur throughout the airport vicinity due to divergence from the nominal flight tracks. The areas and population exposed at the eight differing levels of impact are shown in Table IV-34.

TABLE IV-34
AREA /POPULATION TOTALS & ANNUAL AVERAGE NOISE CONTOURS 2006

DNL Level	Total Area Square Miles	Total Area Acres	Cumulative Population Exposure
85	0.005	8	0
80	0.032	20	0
75	0.109	70	73
70	0.231	148	73
65	0.473	303	73
60	1.011	647	74
55	2.264	1,149	74
50	5.504	3,523	180

Source: Young Environmental Sciences

4. Busy Day Cumulative Noise Contours

A second exercise was performed based on the level of traffic occurring on Sunday, August 13, 2006. In this determination, flight tracks and assignments to track utilize the same percentages as in the Annual Average Case above. However, runway use, aircraft volumes and the day night split were developed directly from the AirScene data and Landing Fee Logs for that specific day. Total operational volumes are presented in Table IV-35. Note that these are actual daily volumes and not averages. Since this was a

Sunday, departures greatly outnumber arrivals. Assignments of traffic to runway follow precisely the data in the AirScene system. Assignments to track follow the percentage splits used in the annual average determination. Helicopters were assigned to the appropriate arrival tracks on the designated route; helicopter departures were assigned half to the current designated north bound departure route and half to the northwest approach/departure corridor.

TABLE IV-35
BUSY DAY OPERATIONS-AUGUST 13, 2006

Arrivals			
Aircraft Name	**INM Equiv. or Type**	**Day**	**Night**
Jets			
Gulfstream V	GV	0.76	0.08
Gulfstream IIB	GIIB	0.19	0.02
Lear 35	LEAR35	4.55	0.5
Falcon 20	FAL20	2.51	0.27
Beechjet 400	MU3001	4.24	0.46
Cessna Citation	CNA500	2.57	0.28
Cessna Citation	CNA55B	2.57	0.28
Cessna Citation	CNA750	2.57	0.28
Lear 25	LEAR25	0.22	0.02
Canadaire Challenger	CL601	0.65	0.07
Turbo Props			
Cessna 441	CNA441	13.15	1.43
Beech King Air	DHC6	13.15	1.43
Piston Twins			
Beech Baron	BE58P	5.44	0.59
Piper Aztec	PA31	5.44	0.59
Single Engine			
Single Engine Variable Prop	GASPV	22.14	2.42
Single Engine Fixed Prop	GASPF	23.68	4.87
Helicopters			
Sikorsky S-76	S76	26.57	2.9
Eurocopter Twinstar	SA355F	13.28	1.45
	Total Arrivals	**143.69**	**17.97**

Source: Young Environmental Sciences

TABLE IV-35 CONT.
BUSY DAY OPERATIONS-AUGUST 13, 2006

Departures			
Aircraft Name	**INM Equiv. or Type**	**Day**	**Night**
Jets			
Gulfstream V	GV	0.97	0.1
Gulfstream IIB	GIIB	0.24	0.03
Lear 35	LEAR35	5.82	0.6
Falcon 20	FAL20	3.22	0.33
Beechjet 400	CNA500	3.29	0.34
Cessna Citation	CNA55B	3.29	0.34
Cessna Citation	CNA750	3.29	0.34
Cessna Citation	LEAR25	0.29	0.03
Lear 25	MU3001	5.43	0.56
Canadaire Challenger	CL601	0.84	0.09
Turboprops			
Cessna 441	CNA441	18.56	1.91
Beech King Air	DHC6	18.56	1.91
Piston Twins			
Beech Baron	BE58P	7.68	0.79
Piper Aztec	PA31	7.68	0.79
Single Engine			
Single Engine Variable Prop	GASPV	31.26	3.22
Single Engine Fixed Prop	GASPF	42.09	6.5
Helicopters			
Sikorsky S-76	S76	37.52	3.86
Eurocopter Twinstar	SA355F	18.76	1.93
	Total Departures	**208.82**	**23.67**
Touch and Goes			
Single Engine Fixed	GASPF	21	0

Source: Young Environmental Sciences

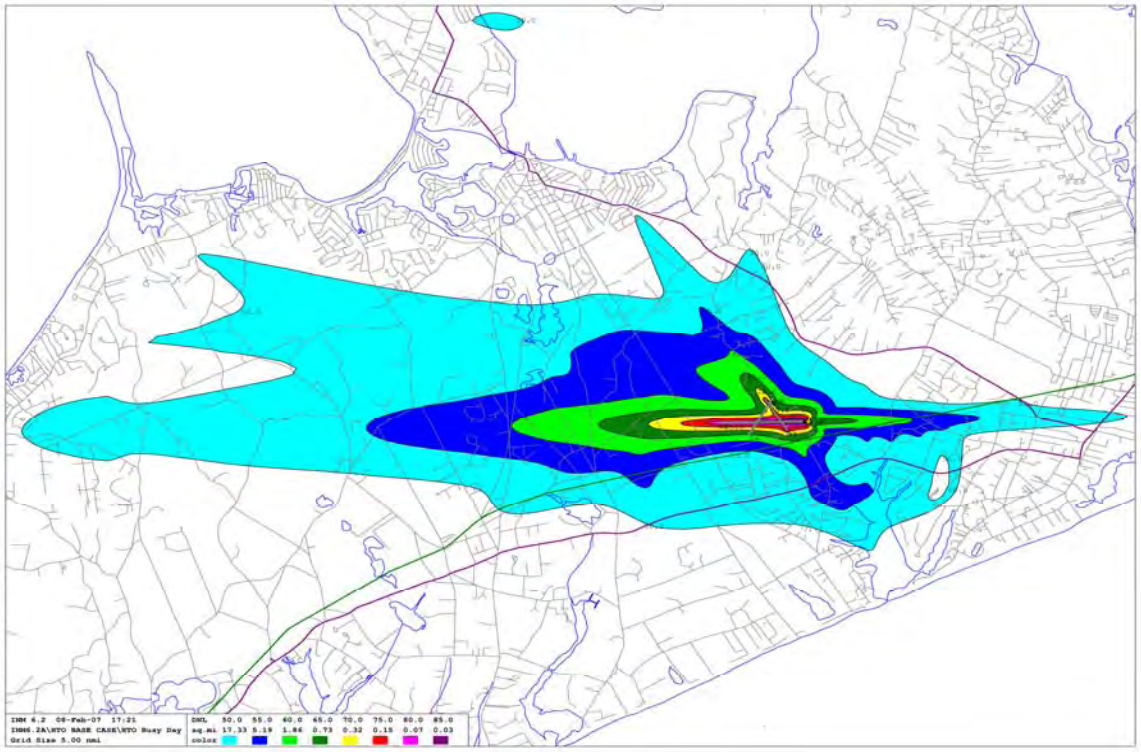
The resulting noise contour determination is shown as Figure IV-65. Area and population figures are shown in Table IV-36. As can be seen from inspection, noise area impact expands on the order of three to eight times the annual average day conditions.

TABLE IV-36
AREA AND POPULATION TOTALS
& BUSY DAY NOISE CONTOURS 2006

DNL Level	Total Area Square Miles	Total Area Acres	Cumulative Population Exposure	Percentage Increase Over Annual Average
85	0.028	18	0	560%
80	0.072	46	73	600%
75	0.154	99	73	367%
70	0.322	206	74	362%
65	0.731	468	74	399%
60	1.859	1,190	157	477%
55	5.192	3,323	721	594%
50	17.33	11,091	2,907	816%

Source: Young Environmental Sciences

FIGURE IV-65
BUSY DAY CONTOURS 2006



Source: Young Environmental Sciences

C. Noise Abatement Measures Fixed Wing Aircraft

1. Limitations by Noise Level-Part 161

Federal Aviation Regulations Part 161 is the administrative law that determines procedures for regulating jet powered aircraft including helicopters. Jet powered fixed wing aircraft are grouped by the FAA into four differing stage classes, Stages 1, 2, 3, and 4. The oldest and noisiest aircraft are classed as Stage 1. These aircraft are no longer present in the general aviation fleet in large numbers. Powered by turbojet engines, these were the earliest manufactured and, in addition to being exceptionally noisy, are relatively fuel inefficient and have substantial air pollutant emissions. Stage 2 turbine powered aircraft are also older fuel inefficient types that have largely been withdrawn from service or upgraded via hush kits or re-engining to Stage 3. Stage 3 aircraft are relatively modern, powered by turbofan engines and constitute the majority of the civil general aviation fleet. Stage 4 was recently instituted, primarily to enable distinction between aircraft converted to Stage 3 from those that were originally manufactured to Stage 3 standards. Most aircraft in production today meet Stage 4 standards.

Part 161 is most often considered in the context of eliminating Stage 2 aircraft from accessing airports or regulation by time of day or other means to reduce overall noise impact. Compliance with this regulation requires the performance of a cost/benefit analysis and notifications to potential airport users. While the proportion of Stage 2 fixed wing aircraft at East Hampton has diminished to the point where such a compliance effort might no longer be justifiable, helicopters are also classed as Stage 2 aircraft. Helicopters are a major source of adverse reactions due to their relatively low cruising altitudes, distinguishable noise signature and frequent summer use. Limitations on helicopters such as by time of day restriction may justify the use of the procedures available under Part 161.

2. Limitations by Single Event Noise

The single most effective means to curtail airport noise impact is by instituting single event noise levels, usually measured at the approach and departure measurement points specified in Federal Aviation Regulations Part 36. Virtually every aircraft in service has an identifiable noise level on approach and departure via measurements made during certification, the introduction of the aircraft into production. Only aircraft made prior to the institution of FAR Part 36 are exceptions.

Through the use of portable noise monitors, approach and departure noise levels can be systematically measured. Through examination of the specific aircraft types that use the airport, review of their certified noise levels and identifying in-service noise levels that can be measured through noise monitoring, reasonable specifications for permissible noise levels can be made. Over time and with appropriate notification, the performance standards could be employed to reduce overall noise impact.

Single event noise level limits, especially when these can be enforced through noise monitoring are the fairest and most reliable way to impose limitations on cumulative aircraft noise impact.

3. Limitations by Weight

Runway weight limits are common at airports nationwide. Weight limits are used to protect the service life of runway, taxiway and apron pavement.

Generally, within specific comparable aircraft types using similar propulsion technology, greater weight usually means higher noise levels. Thus, instituting a maximum limit on aircraft weight may have a collateral consequence of limiting noise both peak and cumulative noise levels.

Historically, the weight limit at East Hampton Airport has been 12,500 pounds. This is a sensible specification at general aviation airports generally because this level is a "bright

line" in the aircraft regulatory environment. Aircraft with a maximum weight above 12,500 pounds are developed to more stringent standards defined by the FAA. Most, although not all, jet powered aircraft weigh more than 12,500 pounds. East Hampton Airport had a 12,500 pound weight limit until runway reconstruction increased that figure substantially in the 1990's, accounting, in part, for the continuing controversy concerning airport affairs.

While it is generally inappropriate to use runway weight limits to control access and cumulative noise levels and establishing a weight limit does not mean that it is impermissible to operate a heavier aircraft on such pavement, it tends to curtail use by larger aircraft. Further, the establishment of a specific weight limit has a variety of consequences including reduced landing fees since these are usually based on vehicle weight, lower volumes of fuel sold, increased pavement life and therefore reduced maintenance costs, and potentially reduced need for fire fighting equipment. Most importantly, the establishment of a weight limit specification, whether a return to 12,500 pounds or a differing figure, signals to the user community the type of facility the proprietor intends to provide.

4. Seasonal Rules

Since the annual average noise impact at the East Hampton Airport is relatively modest in comparison to the peak summer period, many of the available noise abatement measures are most desirable during this period. Further, the busy summer season may necessitate air traffic control which in turn makes structuring and directing aircraft traffic more feasible. Seasonal controls present a lesser degree of conflict with federal priorities, may have lesser overall financial consequences, and maybe easier to implement and administer. Thus, it may be helpful to consider such restrictions as limitation by time of day, noise level limits, alternative routing procedures, differential landing fees, flipping the touch and go pattern or limitations on flight training only during the more sensitive summer season.

5. Touch and Go Training Operations

For residents situated under the standard traffic pattern for each runway, touch and go training operations can be especially annoying despite the fact that most training is accomplished with relatively small aircraft with limited noise emissions. In this case, the repetitive flyovers and not the cumulative noise impact is driving the annoyance level. There are three ways to reduce these impacts. Flipping the touch and go pattern to keep aircraft over the airport will reduce annoyance levels in areas around the airport. However, since this results in a non standard traffic pattern, its practicality is contingent on having a control tower. Second, training operations could be prohibited seasonally and presumably conducted at other available airports. This increases training costs and creates additional impact elsewhere. Finally, voluntary or mandatory limitations on the frequency of training flights or the times of day or days of the week might be partial solutions. For example, prohibiting training operations on summer weekends would provide a respite for airport neighbors during summer weekends.

6. Landing Fee Adjustments

Landing fees are set by the airport proprietor in order to recover costs of staffing and maintaining the airport. While significant regulatory concerns may result from the establishment of punitively large landing fees, the proprietor may have some discretion in establishing a reasonable fee structure to discourage unwanted activity. Higher landing fees during the night period, higher landing fees based on aircraft noise level, or other differentials may be considered. The disadvantage of this administrative approach is that landing fees are typically a small component of total aircraft operating costs. Raising landing fees may increase revenue, but unless raised drastically are unlikely to cause substantial shifts in total activity levels or totally eliminate, for example, night period usage.

7. Noise Abatement Measures Rotary Winged Aircraft

Rotary winged aircraft, helicopters, are a disproportionate source of annoyance in airport adjacent neighborhoods and under the approach and departure flight tracks or designated routes. Raising the minimum cruise level for helicopters to 2,000 feet has already been implemented. Designated approach and departure corridors have been established.

Since East Hampton Airport is surrounded by sensitive land uses, there are limited possibilities to reduce impact by rerouting approach/departure paths. In Chapter 3, several differing approach paths were studied. With one exception, none were found to have significantly lower population exposure.

One approach and departure corridor was found to be substantially better than the existing routes. This approach/departure path would branch off from the offshore helicopter route. On approach, helicopters would over-fly Georgica Pond and thence over the currently undeveloped land adjacent to the Runway 34 threshold and then land in the terminal area. This is the minimum sound track, avoids overflight of areas in Southampton, and adds little if any flying distance and flight time. It would, however, expose residents in this area of high value real estate to much greater noise levels than currently exist.

Another occasionally used noise abatement technique for helicopters is the spiral decent. In essence this procedure calls for an arriving helicopter to remain at cruise altitude until over the airport and then initiate a circling descent to land. Extensive modeling of this procedure applied to the East Hampton Airport failed to reveal any advantage. The circling procedure exposes areas adjacent to the airport to higher levels of noise than would otherwise occur with a straight in approach. A larger total number of individuals would be adversely affected. Therefore, this noise abatement strategy is not recommended.

Finally, since helicopters do not require a large landing site, one partial strategy for reducing noise impact would be the establishment of one or more shoreline heliports. While an extensive survey of available candidate sites is beyond the scope of this

investigation, there may be one or more sites with over the water approaches that could be established as alternative landing sites. While this strategy has clear potential for reducing overflights of areas around the airport, it would almost certainly be unwanted and probably opposed by adjacent shoreline residents.

8. Voluntary Measures

For noise abatement measures that involve avoidance of specific areas, specific times of the day, or specific aircraft, an alternative administrative approach involves voluntary limitations by operators.

Generally, such voluntary measures are more effective with based aircraft operators than with transients. Thus, voluntary measures are, at best, a partial solution. The most commonly used voluntary measure, restraints on night period flying would logically not create much change in East Hampton since night period activity on average is very low, about two percent. However, the night period fraction is greater during the summer season and, as can be seen in the busy day noise contours, can be much greater on a summer weekend. Thus, voluntary restraint by airport users might substantially reduce annoyance levels during busy periods even if only partially effective overall.

The aircraft using the airport may be candidates for voluntary measures as well. As mentioned above, hushkits or re-engining can reduce the noise emission levels of older noisier aircraft. Propeller driven aircraft can be fitted with multi-blade propellers designed to reduce noise emissions. These measures impose costs which may not appear worthwhile to aircraft owners and operators in the absence of encouragement and the knowledge that they could ultimately become mandatory requirements.

Quiet flying procedures for both jet powered aircraft and piston powered aircraft have been defined by the National Business Aircraft Association and the Aircraft Owners and Pilots Association. These are all voluntary procedures that have been found helpful in reducing noise impact.

Generally, voluntary measures are an initial means of achieving improved noise reduction performance and do not involve regulatory conflicts as do mandatory measures. Thus, they recommend themselves as the starting point in noise abatement.

9. Alternative Demand Accommodation

Restrictions of any type on airport access do nothing to reduce demand levels for transportation services. For example, shifting fixed wing passenger traffic to helicopters is likely to worsen rather than improve overall noise impact. However, a new series of Very Light Jets, small (four to six passenger) single or twin engine aircraft will soon be available in significant numbers. All anticipated models are less than 12,500 pounds. These provide a realistic alternative for accommodating passenger demand. These aircraft will begin entering service over the next several years. Initial information indicates these may be among the quietest aircraft available, will easily operate on short runways and are relatively inexpensive to acquire and operate. To the extent practicable, adapting and, if necessary, expanding facilities to efficiently handle this new class of aircraft may be the easiest way of reducing noise impact while continuing to satisfy transportation demand.

10. Management Improvements, Staffing and Record Keeping

Generally, annoyance levels from aircraft diminish when there is a shared realization that all reasonable means to reduce noise impact have been adopted. Such activities as noise monitoring, reporting, responding to complaints and other sensible administrative responses to adverse reactions can be expected, over time, to reduce the annoyance levels. The perception of accountability is the essential step.

For this reason, regular reporting of activity levels, periodic reporting of cumulative noise levels, regular deployment of noise monitors, and continuation of data acquisition through the AirScene system are recommended. This has the further benefit of tracking improvement or deterioration in the overall situation, and highlighting problem areas for increased attention. These are essential activities despite the fact that they impose

additional costs. Larger general aviation airports use elaborate and expensive fixed point monitoring systems which, in the case of East Hampton, are not warranted at this time. However, those airports that do utilize these systems have found them to be helpful in improving community relations.

Thus, regular surveillance combined with reporting of results and, ultimately, accountability in the sense of curtailment of specific problems can be expected to achieve favorable results. As a generalization, when the local noise exposed population becomes convinced that their concerns have been adequately adjudicated and the residual impacts minimized, the noise sensitivity of local residents may diminish by as much as 10 decibels on the DNL scale even if actual cumulative noise levels remain the same. Thus, more time, attention and resources devoted to noise abatement generally yield measurable benefits in terms of reduced annoyance levels.

Chapter V- Alternative Analysis

Chapters 1 through 4 of this report provide a basis for evaluating airside and landside suggestions that consider the interests of the residents of the Town of East Hampton, while safely and economically servicing aircraft traffic. Chapter 1 gave an in depth description of the existing facilities and the conditions that are currently present at the Airport. Chapter 2 went on to describe the complex background of the Airport and the need to properly define its role within the community. Chapter 3 developed specific objectives for the Airport that were then tied to several different alternatives based on the varied perspectives of airport stakeholders. Finally, Chapter 4 provided analysis of airport noise and environmental concerns.

This chapter attempts to find a proper balance between community impact and aeronautical needs. Previous chapters addressed important issues and concerns facing the Airport and the community. Chapter 3 is the primary source of information and provides an explanation of the development of the chosen concepts or options. Chapter 3 studied individual and specific components that make up the airport. Each component was analyzed, evaluated and suggestions were made to satisfy the intent of each alternative. A tabulation of this analysis was provided in Chapter 3. Chapter 5 is a compilation of that analysis and provides a comprehensive plan of the entire airport for each of the alternatives.

a. No Action- preserves the Airport in its existing condition. No projects or changes would occur.
b. Alternative 1- modifies the Airport such that airport facilities are decreased in scale and environmental effects are reduced without regard to operational impact.
c. Alternative 2- modifies the Airport by maximizing use of the existing facilities, satisfying safety standards, fulfilling operational demands, and addressing community impacts.
d. Alternative 3- modifies the airport so the facilities are expanded to meet unrestricted operational forecasted demand.

A description of the *intent, major work items, design standards, and effect upon current traffic* associated with each alternative is provided on the following pages. The second portion of this chapter outlines the methodology used to evaluate the alternatives. Upon completing the evaluations, a preferred alternative will either be selected or a separate alternative may be developed as a result of a combination of alternatives, should it prove to be the most beneficial option

Principles used to evaluate each alternative included the following;

1. Safety: Alternatives were evaluated on the extent to which they meet safety standards.
2. Environmental: Alternatives were evaluated in terms of their potential impacts upon the environment.
3. Satisfaction of Demand: Alternatives were evaluated against how well they would serve the operational demand of the Airport.
4. Revenue: Alternatives were evaluated based on Airport revenue loss/gain potential.
5. Effect upon community: Alternatives were evaluated based on their potential effect on the residents of East Hampton and adjacent communities.

PART ONE

A. No Action Alternative

Intent

The intent of the No Action Alternative is to maintain the Airport in its current state without any modifications.

Description of Major Work Items

There are no projects proposed under this Alternative. The airport facilities would remain in its present configuration and only maintenance activities would occur, preserving the condition of the airport.

Design Standards

The Twin Otter (ARC A-II) from the previously adopted 1989 Master Plan would remain as the Design Aircraft. Design standards associated with an ARC of A-II will be used for all three runways. Under the present condition, the airport would continue to remain non-compliant with a number of FAA standards. The following is a listing of standards associated with runway clearance requirements at East Hampton and current compliance issues:

Runway 28:

- Approach Surface- Runway 28 approach surface now exists in a non-standard condition. A vehicle on Daniel's Hole Road is considered an obstruction to the approach surface to Runway 28 as per FAR Part 77 "Objects Affecting Navigable Airspace". This is based upon the runway's use as a non-precision instrument runway with minimums greater than three-fourths of a statute mile.

Runway 4:

- Runway Protection Zone: The RPZ currently meets land use requirements; however a small portion, approximately 0.3 acres, of the RPZ exists outside of the airport property boundary. It is recommended that the airport control the entire RPZ in order to ensure land use requirements continue to be met.

Runway 22:

- Runway Safety Area: The current RSA is non-standard due to the location of Daniels Hole Road. The standard RSA dimension for this alternative is 150 ft wide and extends 300 ft beyond the end of the runway. Daniel's Hole Road is located within the RSA.

- Runway Object Free Area: The current ROFA is non-standard due to the location of Daniels Hole Road. The standard ROFA dimension for this alternative is 500 ft wide and extends 300 ft beyond the end of the runway. Daniel's Hole Road is located within the ROFA.

- Runway Protection Zone: The RPZ currently meets land use requirements; however a small portion, approximately 1.32 acres, is located outside of the current airport property line. It is recommended that the airport control the entire RPZ or that it exists within the airport boundary in order to ensure land use requirements continue to be met.

Runway 16:

- Runway Safety Area: The current RSA is non-standard due to the location of Daniels Hole Road. The standard RSA dimension for this alternative is 150 ft wide and extends 300 ft beyond the end of the runway. Daniel's Hole Road is located within the RSA.

- Runway Object Free Area: The current ROFA is non-standard due to the location of Daniels Hole Road. The standard ROFA dimension for this alternative is 500 ft wide and extends 300 ft beyond the end of the runway. Daniel's Hole Road is located within the ROFA.

Runway 34:

- Runway Safety Area: The current RSA is non-standard due to the location of Industrial Road. The standard RSA dimension for this alternative is 150 ft wide and extends 300 ft beyond the end of the runway. Industrial Road is located within the RSA.

- Runway Object Free Area: The current ROFA is non-standard due to the location of Industrial Road. The standard ROFA dimension for this alternative is 500 ft wide and extends 300 ft beyond the end of the runway. Industrial Road is located within the ROFA.

- Runway Protection Zone: The RPZ currently meets land use requirements; however a large portion, approximately 4.14 acres, of the RPZ exists outside of the airport property boundary. It is recommended that the airport control the entire RPZ in order to ensure land use requirements continue to be met.

It is important to note that the above design standards apply to the theoretical design aircraft from 1989 (Twin Otter). Obviously, this design aircraft is less demanding than the actual type of aircraft presently using East Hampton Airport. The design standards that apply to this outdated design aircraft are less stringent than the requirements of the current fleet mix presently using the airport. As a result, the continued use of the airfield with design standards based on the Twin Otter, while servicing more demanding aircraft, would be considered inappropriate and should be addressed.

Effect upon Current Traffic

The No Action Alternative does not have a specific operational impact upon the current traffic, the users of the Airport, passengers, and the revenue generated by the Airport. Conditions merely continue to remain the same.

Existing airplanes will continue to use the airport while applying inappropriate safety standards. High performance aircraft will continue to make operational adjustments, such as applying aircraft weight limitations to use the facilities at East Hampton. This operational scenario is not desirable from an aviation standpoint, while having a potential adverse impact upon the community.

The drawing on the following page depicts the No Action Alternative at East Hampton Airport:

NO ACTION

N

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

LAND TO BE ACQUIRED
OR CONTROLLED
1.32 ACRES

LAND TO BE ACQUIRED
OR CONTROLLED
0.30 ACRES

LAND TO BE ACQUIRED
OR CONTROLLED
4.14 ACRES

RUNWAY 10-28 (4,255' x 100') ARC A-II

RUNWAY 4-22 (2,522' x 75') ARC A-II

TAXIWAY A

ARP

AWOS

DANIELS HOLE ROAD

INDUSTRIAL ROAD

WAINSCOTT NW ROAD

TOWN LINE ROAD

LONG ISLAND RAIL ROAD

DEBRAS WAY

LEGEND

- EXISTING PAVEMENT
- RUNWAY SAFETY AREA (RSA)
- RUNWAY OBJECT FREE AREA (ROFA)
- RUNWAY PROTECTION ZONE (RPZ)
- EXISTING PROPERTY LINE
- NON STANDARD AREA

B. Alternative 1

Intent

The intent of Alternative 1 is to provide facilities at the Airport that would have the least impact on the environment. The current physical layout of the Airport would be down scaled, such that environmental effects are reduced without regard to operational impact. No regard was made to operational adequacy in terms of the airports availability to the current mix of traffic. The designation of the Design Aircraft was minimized to the greatest extent possible. As such, the Beech Baron with an ARC of B-I was chosen as the Design Aircraft. The standards associated with this aircraft are less than those required of the Twin Otter, the current design aircraft. The airfield configuration and landside layout for this alternative was developed with the understanding of reducing impacts and using standards that would be applicable to an aircraft category that included only small aircraft.

Description of Major Work Items

Major work items included in this Alternative include:

1. **Design Aircraft**- the Beech Baron (ARC B-I) was selected as the critical aircraft.

2. **Runways**
    a. Runway 10-28 would be reduced by 1,805 ft. to a total length of 2,450 ft. to satisfy the runway length requirements of the Beech Baron. Two Hundred (200) feet of the Runway 28 approach end would be removed. A pavement reduction of 1,605 ft would take place on the Runway 10 approach end. The majority of the runway removed is the portion that is located southwest from the terminal area. This would provide greater accessibility to airport facilities and services. The width of the runway would be decreased from 100 ft. to 60 ft.

    b. Runway 4-22 would be closed and converted into a 35 ft wide taxiway.

c. Runway 16-34 would be reduced to a length of 2,218 ft. Runway 16 approach end would be shortened by 5 ft. This would bring the RSA and ROFA in compliance. The Runway 16 threshold would be displaced 60 ft from the runway end to mitigate a penetration to FAR Part 77 Imaginary Approach Surface. FAR Part 77 assumes an imaginary approach surface at the ends of runways that should be protected. No objects should be of a greater height than this imaginary surface. Vehicles on Daniel's Hole Road penetrate the current approach surface and would be considered an obstruction to the runway. The displacement of the runway, for landing purposes would mitigate this obstruction, without relocating the road.

The 106 ft displacement of the Runway 34 threshold would remain, since tree removal is not considered in Alternative 1.

The width would be reduced from 75 ft to 60 ft.

3. **Taxiways -** A partial parallel taxiway (parallel to Runway 16-34) would be constructed at the ends of this runway. This taxiway would be connected to the existing Taxiway E and would continue across the Terminal Apron, thereby providing a full length parallel taxiway to Runway 16-34. A taxiway from the T-Hangars located in the Southwest corner of the airport would be constructed to the taxiway created from Runway 4-22.

4. **Tree Removal -** Under this alternative, trees on airport property that are FAR Part 77 obstructions would not be removed.

5. **Installation of an AWOS -** Installation of an AWOS would enhance pilot safety by providing accurate weather conditions at East Hampton Airport. This would allow pilots to make a determination if they can land, further away from the airport. This will reduce missed approaches during low visibility conditions and improve safety.

6. **Construction of an Air Traffic Control Tower** - The Air Traffic Control would be located upon an elevated section of the Terminal Building. This location would provide an air traffic controller a clear line of sight to the entire airfield.

7. **Improvements to the Fuel Farm -** Improvements to the fuel farm would be adjacent to the existing fueling facilities. It would provide additional storage capacity with an upgrade in automation

8. **Modifications to Airport Parking Lot -** The modifications to the vehicle lot includes fencing and a system to isolate non-airport users from airport users.

9. **Industrial Area-** Not Applicable.

10. **Actions to Promote Conservation and Recreation –** Approximately 203 acres of area bordering the north and east side of the airport would be designated for Conservation and Recreation as determined by the Town of East Hampton.

11. **Actions to Preserve Endangered Species -** Provisions will be made to locate and preserve suitable habitat for threatened and endangered species listed on federal environmental listings.

12. **Development of Emergency Preparation and Plans -** The airport management will coordinate with the local police and fire department, special provisions and procedures to respond to airport emergencies. Specific issues to be addressed will include communication procedures and emergency access routes for expedited response times.

13. **Consideration of Groundwater Sources -** All stormwater management facilities will be reviewed to control the discharge of any hazardous fluids into existing water bodies or into the groundwater. Operational guidelines will be developed and circulated to all tenants. These provisions would be included within the airports Minimum Standards and Operational Manual.

14. **Augmentation of Deer Control Fencing -** All portions of the airport perimeter, which are not currently and appropriately fenced, would be fenced. This important project will protect the flying public from the potential for wildlife strikes on the airport.

Design Standards

Under this alternative, all runways would meet design and safety standards (RSA, ROFA, RPZ, approach surfaces).

Terminal Apron A taxiway, parallel to Runway 16-34 would be constructed. It would need to be at least 150 ft from Runway 16-34. This is the minimum separation distance for the runway centerline to taxiway centerline for a runway designed in the B-I category for small aircraft (under 12,500lbs). Otherwise, it would need to be located 225 ft from Runway 16-34. If the parallel taxiway is placed in line with existing Taxiway E, it would be 240 ft from Runway 16-34. This is how it is depicted in the drawing for Alternative 1. With Runway 16-34 open, the Terminal Apron would be need to be reconfigured to ensure an adequate Runway Object Free Area (ROFA), runway/taxiway(taxilane) separation distance and a clear taxiway/taxilane OFA. The current taxilane located on the terminal ramp is 100 ft from Runway 16-34 (centerline to centerline) and is not in compliance.

Runway 34 RPZ The Runway 34 RPZ currently meets land use requirements. However, a large portion, approximately 4.14 areas, of the RPZ exists outside of the airport property boundary. It is recommended that the airport control the entire RPZ in order to ensure land use requirements continue to be met.

Effect upon Current Traffic

Implementation of Alternative 1 will effectively reduce the Airport to a point where certain types of aircraft that currently utilize the Airport could no longer land or takeoff on Runway 10-28. The Airport use would be limited to only small aircraft like the Beech Baron. Furthermore, the main clientele who require use of business jet transportation would be severely affected and would be forced to find alternative means of transportation. This could lead to a potential increase in helicopter traffic at the Airport (helicopters currently account for the majority of the noise complaints) as well as an increase in vehicular traffic on the already congested roads in the area.

With Runway 16-34 open, parking on the Terminal Apron will be restricted, resulting in less available aircraft parking. The drawing on the following page depicts Alternative 1 at East Hampton Airport:

ALTERNATIVE 1

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

RUNWAY 16 END TO BE SHORTENED BY 5'

TAXIWAY PAVEMENT TO BE REMOVED

UPGRADE FUEL FARM

TAXILANES AND PARKING POSITIONS TO BE MODIFIED TO COMPLY TO RUNWAY SEPARATION STANDARD

NEW AIR TRAFFIC CONTROL TOWER

MODIFY VEHICLE PARKING

PROPOSED PARALLEL TAXIWAY EXTENSION

TAXIWAY TO BE REMOVED

ADDITIONAL DEER FENCELINE

RUNWAY 4-22 CONVERTED TO 25' TAXIWAY

NEW AUTOMATED WEATHER OBSERVATION SYSTEM

AWOS

TAXIWAY TO BE REMOVED

RUNWAY TO BE REMOVED

RUNWAY TO BE SHORTENED BY 1,805'

ARP

ARFF

NEW TAXIWAY CONNECTION

LAND TO BE ACQUIRED OR CONTROLLED
4.14 ACRES

DANIELS HOLE ROAD

INDUSTRIAL ROAD

WAINSCOTT NW ROAD

TOWN LINE ROAD

LONG ISLAND RAIL ROAD

DEBRAS WAY

BRL

TAXIWAY A

TAXIWAY B

TAXIWAY C

TAXIWAY D

TAXIWAY E

TAXIWAY G

RUNWAY 10-28 (2,450' x 60') ARC B-I

RUNWAY 4-22 (2,805' x 75') ARC B-I

LEGEND

- EXISTING PAVEMENT
- RUNWAY SAFETY AREA (RSA)
- RUNWAY OBJECT FREE AREA (ROFA)
- RUNWAY PROTECTION ZONE (RPZ)
- EXISTING PROPERTY LINE
- NON STANDARD AREA

NOTES:

1. GPS INSTRUMENT APPROACHES TO BE ENHANCE

2. ENVIROMENTAL CONSERVATION AND PRESERVATION PRACTICES WILL BE IMPLEMENTED

C. Alternative 2

Intent

The intent of Alternative 2 is to maintain facilities at the Airport to the greatest extent possible while increasing safety, controlling the impact upon the surrounding community, and maintaining availability to airport users. This alternative would maximize use of the Airport's current attributes, meet current design and safety standards, without creating additional adverse impacts to the environment or the surrounding community. Alterations to the existing airfield will be kept to a minimum, while operational adequacy in terms of the Airport's availability to the flying public will be maintained.

Description of Major Work Items

Major work items included in this Alternative include:

1. **Design Aircraft**- The Cessna Citation V (ARC B-II) was selected as the critical aircraft for Runway 10-28 and the airfield, with the exception to Runway 4-22. The Citation is the most demanding aircraft currently using the airport that meets the definition of a Design Aircraft (at least 500 operations per year). Higher performing aircraft than the Citation will occasionally use East Hampton Airport, but not at the operational level that would justify identifying them as the design aircraft currently. The Beech Baron (ARC-BI) was selected as the design aircraft for Runway 4-22. The Beech Baron is within a smaller airplane category than the Twin otter, the existing design aircraft.

2. **Runways**
   a. Runway 10-28 would be maintained at 4,255 ft. A displaced threshold of 150 ft. would be required on the Runway 28 approach end. An assumed vehicle (with a height of 15 ft) on Daniel's Hole Road would be considered an obstruction to FAR Part 77's approach surface to Runway 28. The approach slope for Runway 28 is 34:1 for a non-precision instrument runway. The displacement of the threshold for aircraft landing

on Runway 28 would mitigate the obstruction without relocating Daniel's Hole Road.

b. Runway 4-22 would be rehabilitated to 2,375 ft. in length by 60 ft. in width. This would be 126 feet shorter than its original length to bring the RSA and ROFA within compliance, such that Daniel's Hole Road is not within these areas. The Runway 22 threshold would be displaced 60 ft. An assumed vehicle (with a height of 15 ft) on Daniel's Hole Road would be considered an obstruction to FAR Part 77's approach surface to Runway 22. The approach slope is 20:1 for visual runways. The displacement of the threshold for aircraft landing on Runway 22 would mitigate the obstruction without relocating Daniel's Hole Road.

c. Runway 16-34 would be closed and converted into a 35 ft. taxiway, maximizing the usage of aircraft parking on the terminal apron while honoring the required clearances for parked aircraft.

3. **Taxiways-** Taxiway A would be extended to meet with Taxiway D, to provide a full length parallel taxiway to Runway 10-28. This adjustment provides a safe and efficient taxiway system to allow aircraft access to any part of the field. The addition of this missing portion of the taxiway eliminates the need for an airplane to "back taxi" on active runways, which would be considered unsafe.

4. **Tree Removal-** Under this alternative, trees on airport property that are FAR Part 77 obstructions would be removed.

5. **Installation of an AWOS-** Installation of an AWOS would enhance pilot safety by providing accurate weather conditions at East Hampton Airport. This would allow pilots to make a determination if they can land, further away from the airport. This will reduce missed approaches during low visibility conditions and improve safety.

6. **Construction of an Air Traffic Control Tower-** The Air Traffic Control Tower would be located along the south portion of the airfield. The location would take into account the necessary clearance requirements, and would provide an air traffic controller a clear line of sight to the entire airfield.

Additional site work will be provided as part of this project, including an access road, parking, utilities and site grading.

7. **Improvements to the Fuel Farm-** Improvements to the fuel farm would be adjacent to the existing fueling facilities. It would provide additional storage capacity with an upgrade in automation

8. **Modifications to Airport Parking Lot-** The modifications to the vehicle lot includes fencing and a system to isolate non-airport users from airport users.

9. **Industrial Area-** An area on the north side of the airport was designated for future industrial use to provide an additional source of revenue to the Airport without further increasing air traffic. This area would not be used for aviation related business.

10. **Actions to Promote Conservation and Recreation-** Approximately 203 acres of area bordering the north and east side of the airport would be designated for Conservation and Recreation as determined by the Town of East Hampton.

11. **Actions to Preserve Endangered Species-** Provisions will be made to locate and preserve suitable habitat for threatened and endangered species listed on federal environmental listings.

12. **Development of Emergency Preparation and Plans-** The airport management will coordinate with the local police and fire department, special provisions and procedures to respond to airport emergencies. Specific issues to be addressed will include communication procedures and emergency access routes for expedited response times.

13. **Consideration of Groundwater Sources-** All stormwater management facilities will be reviewed to control the discharge of any hazardous fluids into existing water bodies or into the groundwater. Operational guidelines will also be developed and circulated to all tenants. These would be included within the airports Minimum Standards and Operational Manual.

14. **Augmentation of Deer Control Fencing-** All portions of the airport perimeter, which are not currently and appropriately fenced, would be fenced. This important project will protect the flying public from the potential for wildlife strikes on the airport.

15. **Landside Development-** This alternative assumes no growth in air traffic but does consider providing an industrial site to enhance revenue generation on the airport. The lands, located within the northwest portion of the field, are vacant, with available road side frontage along Daniel's Hole Road.

Design Standards

All runways would meet design and safety standards (RSA, ROFA, and approach surfaces). There are small amounts of the RPZ for both ends of Runway 10-28 and Runway 4-22 that exist outside of the airport property line. There as follows:

Runway 10- approximately 0.03 acres
Runway 28- approximately 0.17
Runway 4- approximately 0.3 acres
Runway 22- approximately 0.21 acres

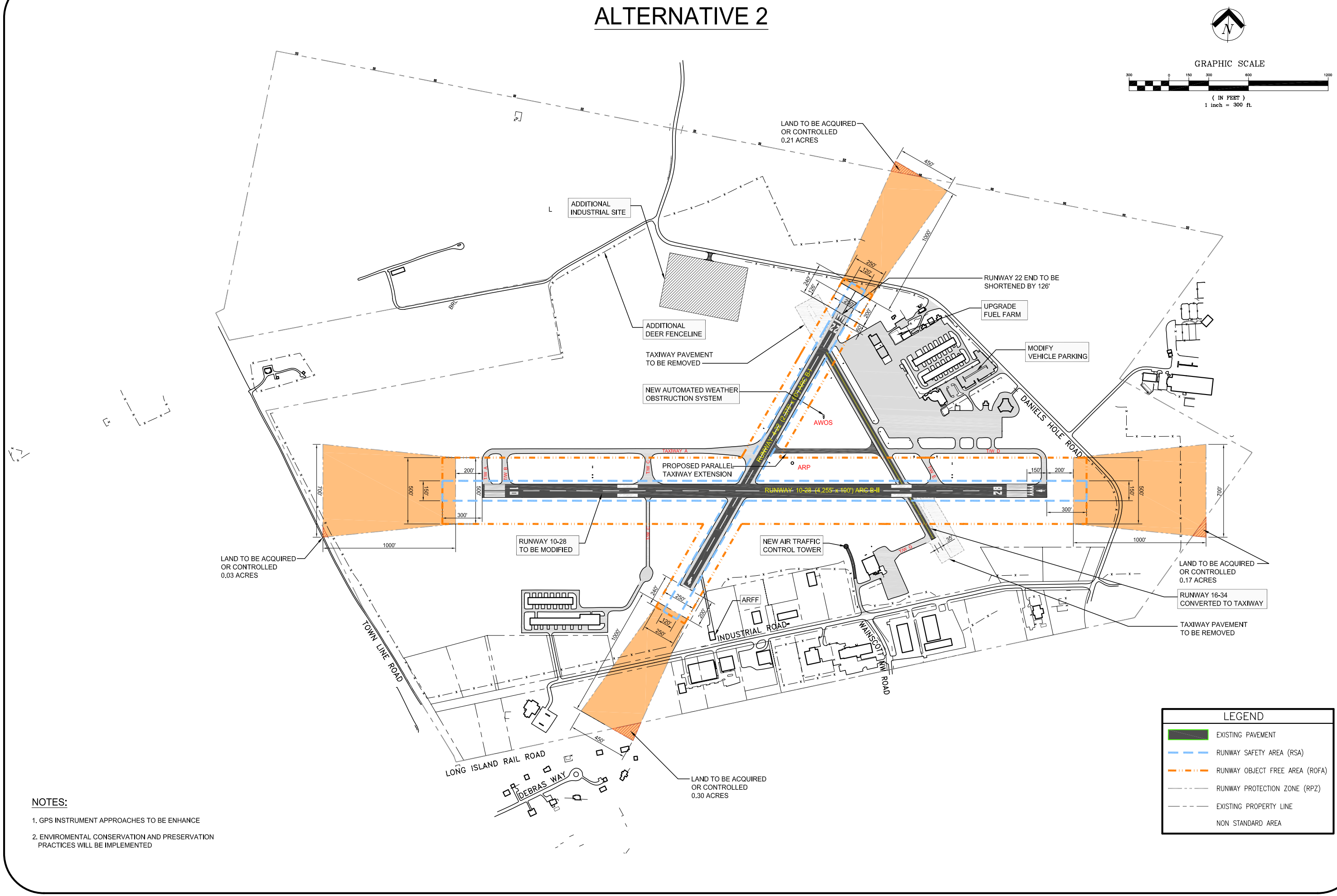
With Runway 16-34 closed, aircraft parking on the Terminal Apron would not be affected. There would be no reduction in available aircraft parking.

Effect upon Current Traffic

Implementation of Alternative 2 will maintain the ability of East Hampton Airport to accommodate existing traffic while meeting all required design and safety standards. The proper safety standards associated with actual traffic at East Hampton would be applied. It will not encourage future growth in operations nor promote use by more demanding aircraft. The Airport will continue to serve the primary users and their clientele. Essentially, there will be no effect on traffic.

The drawing on the following page depicts the Alternative 2 at East Hampton Airport:

ALTERNATIVE 2



NOTES:

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

D. Alternative 3

Intent

The intent of Alternative 3 is to increase facilities at the Airport to the extent necessary to accommodate the most physically demanding aircraft that use the Airport, regardless of its frequency of operation. Essentially, this alternative would attempt to add to the Airports current facilities without regard to potential impacts to the environment or the surrounding community.

Description of Major Work Items

Major work items included in this Alternative include:

1. **Design Aircraft**-The Bombardier Challenger 604 (ARC C-II) was selected as the critical aircraft. The Challenger is one of the largest aircraft to operate at East Hampton Airport. Its presence is infrequent and it does not meet the operational requirements that traditionally define the Design Aircraft (500 annual operations). The standards associated with this aircraft are significantly more demanding than those required of the Twin Otter, the current design aircraft.

   Planes similar to this aircraft have been forecasted for future use at East Hampton Airport. Studies supporting this forecast have been presented to the Township, but never properly accepted.

   The Beech Baron with an ARC of B-I and its associated design standards were chosen for Runway 16-34 and 4-22.

2. **Runways**
   a. Runway 10-28 would require an extension of 2,445 ft. resulting in a total length of 6,700 ft. This would be the length required of a Challenger to properly operate at East Hampton. The width would remain at 100 ft. The extension would take place on the Runway 28 (east) end. The extension to the East was chosen due to the limited amount of land owned by East Hampton to the west. Daniel's Hole

Road would require significant relocation to ensure that it remains outside of all required setbacks and obstruction surfaces. Additionally, the extensive land acquisition program would be necessary for the purposes of construction and control of the RPZ.

b. Runway 4-22 would realize the full length of the existing pavement, without any displacements. Daniel's Hole Road would be relocated to ensure that it provides the necessary setbacks, as outlined in FAA standards.

c. Runway 16-34 would also make full use of the pavement without any threshold displacements. Industrial Road to the south and Daniels Hole Road to the north would be relocated to ensure that they provide the necessary setbacks, as outlined in FAA standards.

3. **Taxiways-** This alternative proposes to provide full parallel taxiways to all three runway ends. This could include extending the parallel taxiway to Runway 10-28, to service the Runway 28 extension. A portion of the parallel taxiway system to Runway 10-28 can be salvaged. The remainder of the parallel taxiway system would be new. The taxiway system is a necessary component to insure safe circulation for ground traffic on the airfield.

4. **Tree Removal**- Under this alternative, trees on airport property that are obstructions would be removed.

5. **Installation of an AWOS-** Installation of an AWOS would enhance pilot safety by providing accurate weather conditions at East Hampton Airport. This would allow pilots to make a determination if they can land, further away from the airport. This will reduce missed approaches during low visibility conditions and improve safety.

6. **Construction of an Air Traffic Control Tower-** The Air Traffic Control would be located upon an elevated section of the Terminal Building. This location would provide an air traffic controller a clear line of sight to the entire airfield.

7. **Improvements to the Fuel Farm-** Improvements to the fuel farm would be adjacent to the existing fueling facilities. It would provide additional storage capacity with an upgrade in automation

8. **Modifications to Airport Parking Lot-** The modifications to the vehicle lot include fencing and a system to isolate non-airport users from airport users.

9. **Industrial Area-** An area on the north side of the airport was designated for future industrial use to promote the further financial and operational development of the Airport. This proposal is unconstrained and would provide facilities for both air and landside use in anticipation of aviation related growth.

10. **Actions to Promote Conservation and Recreation-** Approximately 203 acres of area bordering the north and east side of the airport would be designated for Conservation and Recreation as determined by the Town of East Hampton.

11. **Actions to Preserve Endangered Species-** Provisions will be made to locate and preserve suitable habitat for threatened and endangered species listed on federal environmental listings.

12. **Development of Emergency Preparation and Plans-** The airport management will coordinate with the local police and fire department, special provisions and procedures to respond to airport emergencies. Specific issues to be addressed will include communication procedures and emergency access routes for expedited response times.

13. **Consideration of Groundwater Sources-** All stormwater management facilities will be reviewed to control the discharge of any hazardous fluids into existing water bodies or into the groundwater. Operational guidelines will also be developed and circulated to all tenants. These would be included within the airports Minimum Standards and Operational Manual.

14. **Augmentation of Deer Control Fencing-** All portions of the airport perimeter, which are not currently and appropriately fenced, would be fenced.

This important project will protect the flying public from the potential for wildlife strikes on the airport.

15. **Landside Aviation Related facilities-** Alternative 3 anticipates growth and provides landside development to service traffic, as well as commercial/industrial needs. The location of this development is proposed within the northwest portion of the airport.

Design Standards

Under this alternative, all runways would meet design and safety standards (RSA, ROFA, and approach surfaces). There are small amounts of the RPZ for both ends of Runway 10-28 and Runway 4-22 that exist outside of the airport property line. Approximately 0.3 acres for Runway 4, 1.32 acres for Runway 22, and 12.63 acres for Runway 10. The total amount of land that must be acquired for Runway 10-28 is 65.77 acres outside of the current airport property line.

Effect upon Current Traffic

Implementation of Alternative 3 will increase the length of Runway 10-28 by more than 50%. This would enable this runway to accommodate larger and more demanding aircraft. There is a potential that traffic may significantly increase as a result.

The addition of parallel taxiways will allow for more efficient and safe traversing of the airport. It will greatly reduce back taxiing and thereby increase safety.

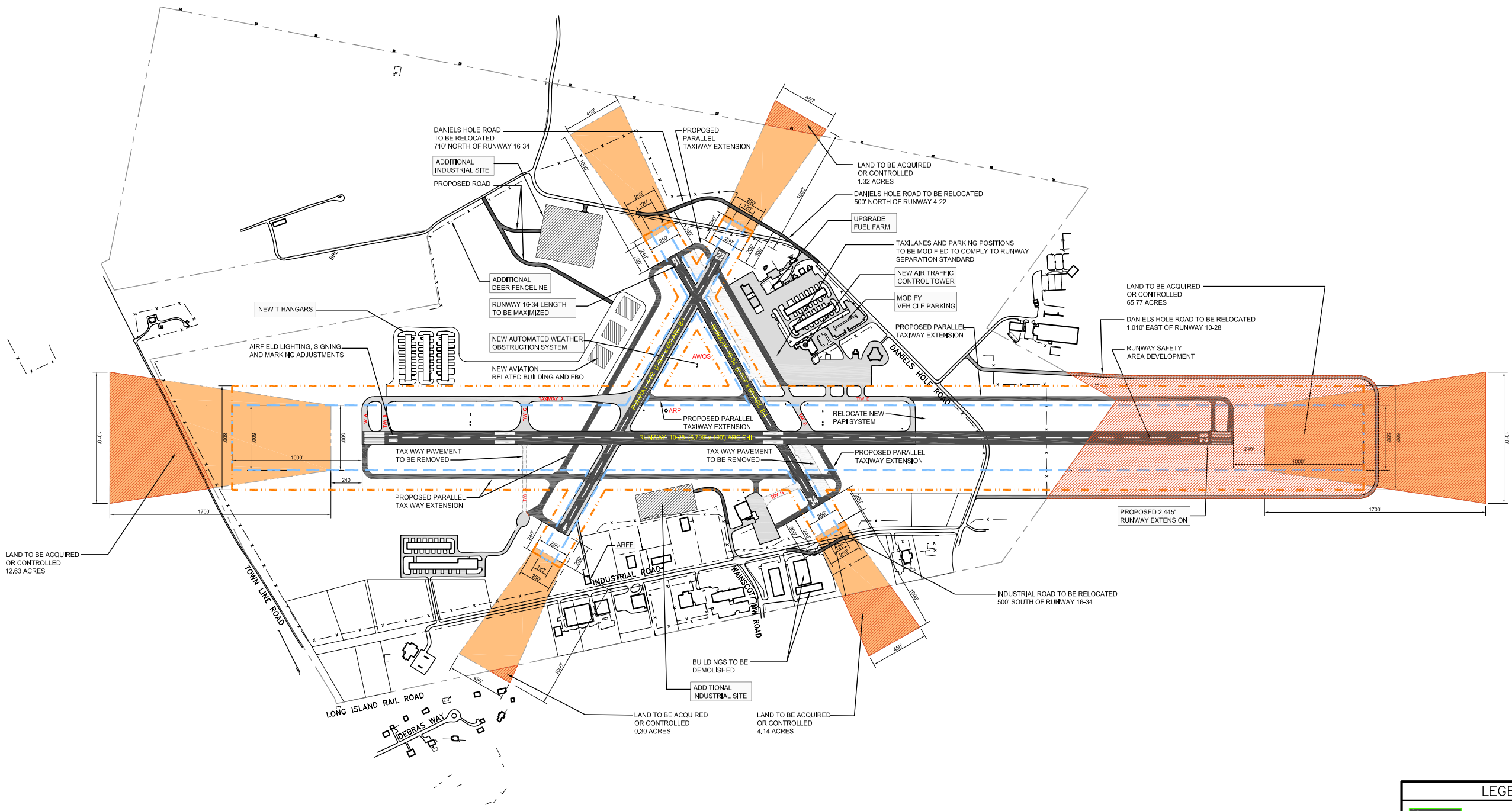
The drawing on the following page depicts the Alternative 3 at East Hampton Airport:

ALTERNATIVE 3

GRAPHIC SCALE

400 0 200 400 800 1600

(IN FEET)
1 inch = 400 ft.



LEGEND

- EXISTING PAVEMENT
- RUNWAY SAFETY AREA (RSA)
- RUNWAY OBJECT FREE AREA (ROFA)
- RUNWAY PROTECTION ZONE (RPZ)
- EXISTING PROPERTY LINE
- NON STANDARD AREA

NOTES:

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

PART TWO

E. Comparison, Contrast & Evaluation of Alternatives

This section consists of a review and an analysis of the four alternatives from a variety of perspectives. Each alternative has a very different and very specific intent that is related to the airport role concept. The principles used to evaluate the success of each Alternative include:

- Safety: Each alternative was evaluated from a safety perspective.
    a. Compliance with FAA Design and Safety Standards
    b. Airfield Circulation

- Environmental: Each alternative was evaluated in terms of their impacts upon the environment.
    a. Noise
    b. Air Pollutants
    c. Preservation
    d. Threatened and Endangered Species
    e. Wetlands
    f. Other Significant Categories

- Satisfaction of Demand: Each alternative was analyzed on its capability to meet the operational demand of the Airport.
    a. Ability to accommodate some or most of existing traffic
    b. Ability to accommodate all of existing traffic
    c. Ability to accommodate future traffic

- Revenue: Each alternative was evaluated to consider a potential loss or gain of revenue that might be experienced by the Airport. Factors that affected this analysis included capital improvement costs for projects, maintenance costs, operational costs and current revenue. It should be noted that the cash flow associated with each of the alternatives would be greatly affected by a decision to accept/reject future FAA funding for capital improvements.

- Effect upon community: Alternatives were based on the assumed Airport roles. The potential effects on the residents of East Hampton and adjacent communities were identified. Community concerns are well documented at East Hampton Airport. This portion of the report addresses how these alternatives may have an effect upon past community concerns.

Safety

An evaluation of the level of safety of each particular alternative was conducted. Major issues of consideration were passenger transport, aircraft operation, and preservation of persons and property on the ground. The concepts presented in Alternatives 1, 2 and 3 provide all the necessary setbacks and meet all FAA standards related to safety. The No Action Alternative does not maintain the Airport in a standard condition.

The following explanation describes the thought process used in making these assumptions. Major components were analyzed such as design aircraft and runway configuration are presented.

No Action: This alternative allows for existing conditions, which fall short of several FAA safety and design standards, to remain in effect. It can be presumed that maintaining the obsolete Twin Otter as the design aircraft would be a potential safety concern as it does not present an accurate representation of the types of aircraft currently using the Airport. Standards required by an appropriate Design Aircraft, meeting the prescribed 500 operations criteria, should be used.

Alternative 1: Although all design standards would be met for ARC B-I aircraft, the use of the airport by aircraft in this category is not realistic. Inappropriate standards would be applied to East Hampton Airport, similar to the current situation. There may be potential for some aircraft to attempt to land on a runway shorter than what is required for a particular aircraft.

Additionally, an increase in helicopter traffic may become a byproduct of this alternative. Increased rotorcraft traffic may result in additional helicopters traversing the preferred entry and exit routes. This type of traffic is a safety issue that is not easily maintained at uncontrolled airports

Alternative 2: This alternative meets all safety objectives and design standards for ARC B-II. The current activity level of the Citation V at the East Hampton Airport meets the criteria for a Design Aircraft. The airport safety and design standards for the most prominent user of the Airport would be provided. The Airport would continue to successfully function as it does today while making modifications to meet the required standards. The existing runway length, which would be maintained under this alternative, satisfies the Cessna Citation runway take-off and landing length requirements for Runway 10-28.

Under this alternative, Runway 16-34 would be converted to a taxiway. This would improve safety by allowing all parked aircraft on the Terminal Apron to not violate Runway/Taxilane separation standards as they currently do. Also it would improve circulation and increase safety by reducing the level of back taxiing that currently takes place at East Hampton Airport.

Alternative 3: This alternative meets all safety objectives and design standards for the Challenger. Runway lengths proposed under this alternative would be more than sufficient for the largest aircraft currently operating at the airport.

Conclusion - Safety

Alternatives 1, 2 and 3 were developed to meet safety objectives for their respective design aircraft. The "No Action" Alternative is not in compliance with several safety requirements. Although Alternative 1 meets the FAA requirements related to safety, the Beech Baron design aircraft standards would not be applicable to current users of the airport. Alternatives 2 and 3 satisfy all safety requirements for their respective design aircraft.

Environmental

The purpose of this section is to describe the affected environment and discuss the potential effects of the proposed concepts on specific resources.

The following categories were considered for each alternative as they would have the greatest impact to the community: Noise, Air Pollutants, Preservation, Threatened and Endangered Species, Wetlands, and possible other significant categories such as Water Quality.

The following analysis will be completed for development projects as proposed in the alternatives as previously discussed.

No Action: This alternative will not alter the current configuration of the airport and will remain as is; therefore, the above categories will have no significant impact to the environment.

Alternative 1: This alternative proposes the development as depicted in Figure V-66. This alternative is designed to result in minimal environmental impact and would reduce fixed wing aircraft noise impact in the following ways. Runway 10-28 would be reduced in length. A number of larger business jet types could no longer regularly utilize the airport. Thus, fixed wing aircraft traffic by aircraft over 12,500 pounds would decline. Very Light Jets, however, could be an offsetting factor in activity levels, but would cause limited cumulative noise impact. Helicopter traffic will increase since runway length has no effect on rotary winged aircraft. The reduction in runway length will likely increase helicopter traffic at a greater rate than the present growth. Peak noise impacts would also be reduced especially to the west since the landing threshold for Runway 10 would move eastward and a quieter overall fleet would use the main runway.

The following projects are proposed and will have no impact to the environment as they involve either having minor repairs or modifications, or are being developed in existing buildings or areas that have been previously disturbed:

- Air Traffic Control Tower
- Installation of an AWOS
- Installation of additional deer fence
- Modify existing vehicle parking
- Land acquisition for RPZ

The existing fuel farm currently has tanks that are below the ground. A more detailed study will have to be completed to see the impact to groundwater when removing the tanks. The new fuel system will include above-ground tanks with secondary containment, integral pump and filter system. This new system will help to preserve the groundwater by diminishing the consequences of potential leaks from the tanks.

This alternative minimizes the impacts to noise, air pollutant emissions, and protecting the surrounding environment. There are no wetlands located on the airport, resulting in no impact to this category.

Alternative 2: This alternative is to maintain the airfield for the current conditions. Alternative 2 would reduce noise impact on the Runway 16-34 orientation by eliminating that runway. Runway length on all other runways would remain essentially the same, i.e. no growth induced by facility improvements, but some natural growth would occur. The noise impacts would remain the same as current conditions for Runways 10-28 and 4-22. Fixed wing turbine powered aircraft would increase slightly due to user demand. Helicopter traffic would likely continue to increase moderately.

The projects that are proposed for this alternative, and their locations, are the same as listed in Alternative 1, except for the air traffic control tower, which will be a stand alone building located directly south of Runway 10-28. Also, a full parallel Taxiway A is proposed to allow for full use of the taxiway.

An additional industrial site is proposed and will be located directly west of Runway 22. The development will be restricted to commercial or light industrial type businesses only. This site will not have a significant impact to the community and its environs. The impacts to the environment will be very minimal as described in Alternative 1.

Alternative 3: This alternative would increase off airport noise impact in two ways. First, extending the main runway would bring the eastern threshold of Runway 28 closer to residential and urban areas to the east. The airport could accommodate larger aircraft and heavier weights expanding the range of heavier aircraft that could conveniently use the airport. Therefore, additional impact would likely occur in areas to the west since Runway 28 is the most frequently used departure runway. Light aircraft traffic would be distributed to all runways. Helicopter traffic would likely continue to increase. This alternative clearly has the greatest potential for increased impact both on the annual average as well as during peak period conditions.

This alternative proposes some major development. In addition to the projects listed in Alternatives 1 and 2, there will be an additional industrial site, T-hangar and aviation/FBO building areas, road relocations, buildings to be demolished and the construction of parallel taxiways for Runway 4-22 and 10-28.

The extension of Runway 10-28 will require land acquisition. Once acquired, an environmental assessment will be required to determine the impacts for the construction of this extension. The most important categories that will have to be focused on will be wetlands, threatened and endangered species, biotic communities, noise, air quality, and water quality, as there may be a significant impact to one or more of these categories.

The impacts to the environment will be quite significant due to the proposed development. There is no possibility of preserving the land, and as a result of the expansion of the airport, more traffic will be generated affecting noise and air quality.

Conclusion - Environmental

Alternative 2 would have a very minimal impact to the environment and would meet the demands of the airport. Alternative 1 would have the least impact to the environment, and Alternative 3 would have the most impact, which would not meet the goals of the community to preserve and maintain the areas surrounding the airport.

Satisfaction of Demand

No Action: No effect can be expected on traffic at the airport should no action be taken. Larger and higher performing aircraft will continue to use the airport, designed for a less demanding aircraft (the Twin Otter)

The No Action Alternative designates the Twin Otter as the Design Aircraft. This aircraft no longer operates at the Airport. Larger and faster jet aircraft are an important component of the airport's customer base. The designation of Design Aircraft should reflect the most demanding aircraft the airport currently serves regularly. As such, maintaining standards based on the Twin Otter would fall short of those that are currently required by today's aircraft.

Alternative 1: If the runways were reduced significantly, as suggested in this alternative, it could be expected that a considerable portion of the existing traffic would choose to not use East Hampton Airport. The traffic at the airport would be reduced to small single and twin engine aircraft. Past history indicates that airplanes that are not designed for the runway lengths will still attempt to use the runway by applying weight adjustments.

It can be anticipated that a drastic increase in helicopter traffic would occur, should the runways be shortened. Traffic patterns would be affected and may create an impact upon the surrounding communities.

This alternative would only satisfy a portion of the current demand of aircraft at East Hampton. Because the facilities would no longer be available, users of the airport would be forced to find alternate means of accessing the East Hampton vicinity.

Alternative 2: Alternative 2 would have limited effect upon the existing traffic. It can be anticipated that no additional, or more demanding traffic would use the airport as a result of this configuration. The design standards applied would be appropriate for current aircraft and would not promote any additional traffic.

Alternative 2 would accommodate all of the existing traffic in a safe environment.

Alternative 3: Alternative 3 has the potential of increasing traffic at the airport. The lengthening of Runway 10-28 provides adequate facilities for airplanes in a higher category than the design standards applied presently at East Hampton Airport. Socio-economic and demographic factors can support an argument that higher performing aircraft could use East Hampton Airport in the future. This alternative would potentially promote usage by an entire "family" of more demanding aircraft.

This alternative would satisfy the demand of all existing traffic as well as additionally forecasted traffic.

Satisfaction of Demand - Conclusion-

The No Action Alternative as well as Alternative 2 would have minimal effect on current demand. Alternative 1 would not meet the demands placed upon the airport. Alternative 3 would satisfy current demand and allow for future growth.

Revenue

In order to provide an accurate financial projection and analysis, it would require an extensive study of expenditures and revenues that would be assumed by each of the alternatives. This section provides a broad description of financial impacts for each of the alternatives.

An important input into this analysis is the use of FAA grants to absorb 90-95% of the cost of capital improvements at the airport. A detailed financial analysis would involve a financial pro forma schedule. The need to fund these projects without federal participation would have an overwhelming effect on the cash flow at East Hampton. Without detailed analysis of the revenues generated at the airport, it could be assumed that the airport would not be financially self sustaining without FAA funding. An exception to this assumption may be the no action alternative, being that capital cost may be reduced.

No Action: Since there is no change associated with the No Action Alternative, we can assume that the revenue potential of the Airport will remain as it is today.

Alternative 1: This alternative severely reduced the facilties provided by the Airport. This would result in a drastic reduction in the size of aircraft that could operate in and out of the Airport. Essentially, the majority of the higher end traffic would no longer be present and the Airport would suffer a loss in revenue from a variety of sources, namely fuel, landing fees, parking fees, rent, etc.

There is the potential for added helicopter traffic and may result in added Jet-fuel revenue. The nature and characteristics of a helicopter would not be great enough to offset the revenues lost to jet traffic at East Hampton Airport.

The Capital Improvement Plan for Alternative 1 would involve a substantial amount of construction costs to adjust, modify and reduce the facilities to accommodate less demanding aircraft. These costs would have a significant impact on the airport's cash flow annually.

It should be noted, the possibility of the FAA approving a plan that does not address current or projected traffic, such as Alternative 1 is unlikely. It could be assumed that FAA funding would not be available for this concept.

Revenues from small GA traffic would remain constant, but is considered minor in comparison to revenues generated from the higher end traffic.

It should be anticipated that the airport would experience a negative financial impact under Alternative 1.

Alternative 2: This Alternative maintains the existing positive revenue stream. This alternative focuses on maintaining the current operating levels while implementing certain improvements. Selecting the Citation as the design aircraft enables the Airport to plan and provide the necessary facilities for this type of aircraft.

The intent of maximizing the use of existing facilities results in lower construction costs than alternatives 1 and 3. FAA funding would likely be available for this program, therefore minimizing the financial burden upon the airport, as a result of construction costs.

This alternative also suggests the construction of facilities that may result in additional revenue generation. Alternative 2 includes the construction of a commercial industrial site. Projects of this nature have a history of providing profits to the airport.

Based upon minimal construction plans, increased revenues and the availability of FAA funding, Alternative 2 would have a positive financial impact.

Alternative 3: Increasing the facilities to serve larger aircraft, such as the Challenger, would likely enable the airport to serve a broader spectrum of aircraft. More traffic equates to more revenue. However, it must be noted that this alternative also requires major and very costly modifications to the airfield. Major capital projects would include the extension of Runway 10-28, land acquisition, extensive taxiway additions and modifications. The cost for these capital projects would be considerable; however FAA funding would likely be available via a long term plan.

Similar to Alternative 2, Alternative 3 also proposes to construct revenue generating facilities. This alternative recognizes growth in aviation activity and includes projects such as business hangars, storage hangars and fuel facilities.

The costs to construct this alternative are substantial and would shadow the added revenue generated at the airport. Alternative 3 would have an overall negative financial impact

Conclusion - Revenue

The No Action Alternative would result in no change to the current financial situation. Alternative 1 would result in a loss of revenue. Although Alternative 3 is a potential revenue generator, its associated cost of implementation could make this a less acceptable option. Overall, Alternative 2 is the best-case scenario based on financial feasibility.

Potential for Community Related Impacts

No Action: Since there is no change associated with the No Action Alternative, we can assume that community related impacts will remain as they are today. Community concerns regarding safety areas and noise impacts would remain unanswered.

Alternative 1: This alternative minimizes the physical impact of the airport by shortening the runways and reducing the traffic load. However, there are potentially negative by-products of this approach. By eliminating jets from the mix, the customer/client base will be forced to find alternate means of traveling to and from the Town of East Hampton. This could potentially increase the amount of vehicular and/or helicopter traffic and inconvenience the community, as well as the users of the airport that were previously accustomed to the accessibility of the area.

Alternative 2: This alternative limits community impacts. It maintains current operating levels, honors safety standards for an accurate representation of the Airport's design aircraft, minimizes financial burden upon the community and does not promote or attract more demanding aircraft. Noise levels are below acceptable levels for the land uses that surround the airport

Alternative 3: This alternative provides for significant change and expansion to the airport. Impacts to the community would be excessive. An increase in the size of aircraft, that would use the airport, would have an effect upon the community. The combination of the change in aircraft type as well as the extension of Runway 28 toward residential land uses would result in a significant increase in noise levels.

In addition, the extensive capital program to develop this concept will have the greatest environmental and financial impact upon the community.

Conclusion - Community Related Impacts

Alternative 2 best answers community concerns on various issues. All other options reviewed negatively affect the community or would remain a negative impact upon the community, as in the case of the "No Action" Alternative.

(Alternative Selection to be written upon comments and meeting with Town)