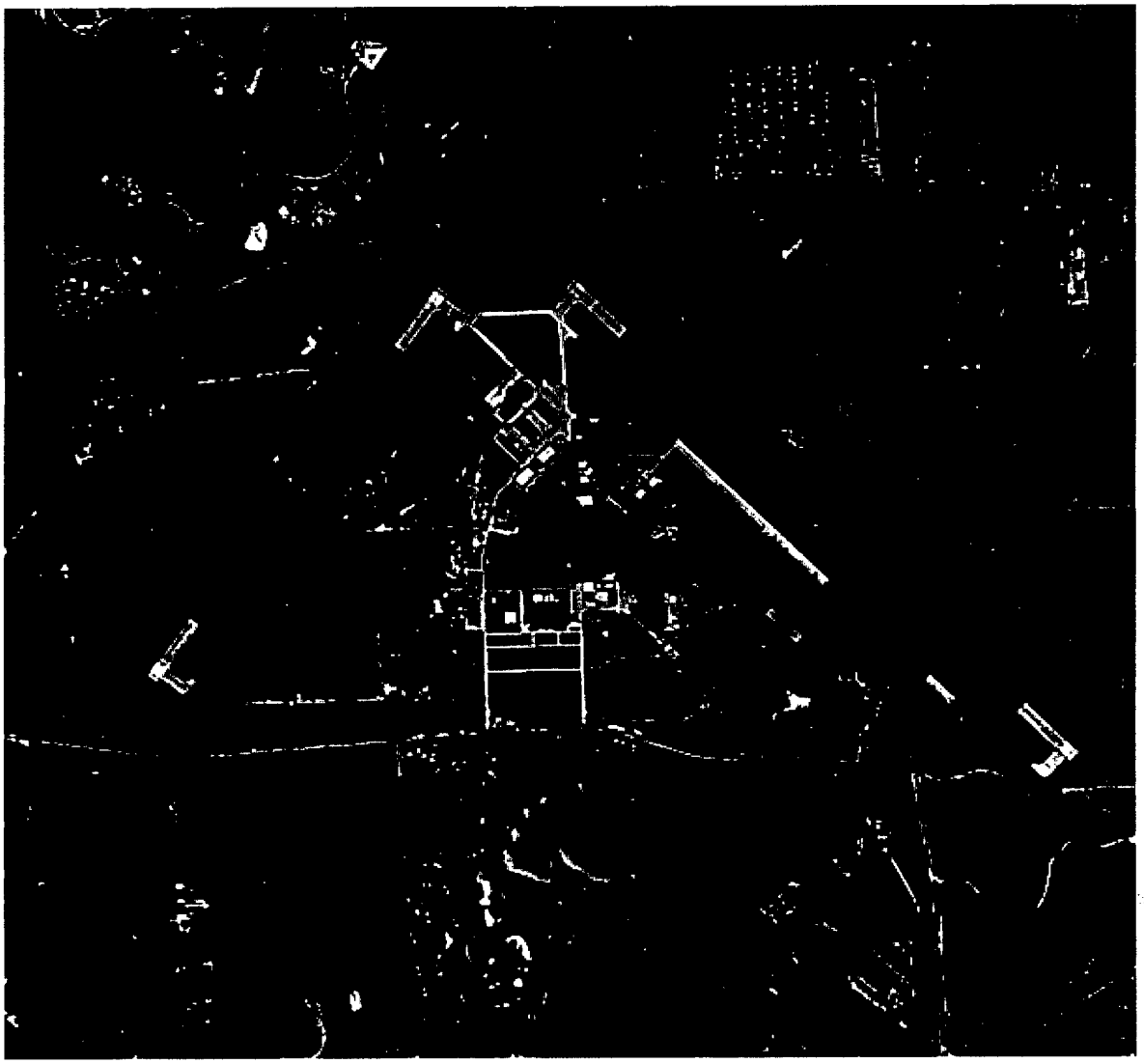
# Final Environmental Impact Statement

## Transfer and Reuse
## Naval Weapons Industrial Reserve Plant
## Calverton, New York



**Department of the Navy**
**December 1997**

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**DEPARTMENT OF THE NAVY**

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TO: ALL INTERESTED OFFICIALS, GOVERNMENT AGENCIES, SPECIAL INTEREST GROUPS, AND CONCERNED INDIVIDUALS

Enclosed is the Final Environmental Impact Statement (FEIS) for the transfer and reuse of the Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York. The FEIS has been prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations implementing NEPA (40 CFR 1500-1508) and the Chief of Naval Operations Instruction OPNAVINST 5090.1B. The FEIS addresses the environmental consequences of the proposed Reuse Plan as developed by the Town of Riverhead Community Development Agency. It also addresses all of the comment received on the Draft EIS published in February, 1997.

Additional copies of the FEIS have been placed in the Riverhead Library, 330 Court Street, Riverhead.

Prepared for
Department of the Navy
Commander, Naval Air Systems Command

in accordance with
Chief of Naval Operations Instruction 5090.1B

pursuant to
National Environmental
Policy Act Section 102(2)(C)

# Final Environmental Impact Statement

# Transfer and Reuse of Naval Weapons Industrial Reserve Plant Calverton, New York

December 1997

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Please contact the following person
with comments and questions.

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# EXECUTIVE SUMMARY

The Executive Summary of this Final Environmental Impact Statement (FEIS) summarizes all of the pertinent data associated with the Proposed Action and alternatives, including impacts. Any portions of the Draft Environmental Impact Statement (DEIS) that have been altered to prepare this FEIS have been highlighted by markings in the left hand column (as in this paragraph). In this way, the reader can readily identify data that have been modified or supplemented as a result of the public review process.

## S.1 Purpose and Need

As a result of Northrop Grumman Corporation's decision to vacate the site, the US Navy has determined that it will consider disposal of the Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, located in the towns of Riverhead and Brookhaven on Long Island, New York, by transferring the facility to the town of Riverhead's Community Development Agency (CDA).

The transfer of this property has been authorized by special legislation (Public Law 103-C337). The 2,923 acres (1,169 hectares) lying within the fence and in the town of Riverhead, where aircraft assembly and testing facilities once operated, may be transferred to the town. It is estimated that approximately 238 acres (96 hectares) will not be transferred at the time of disposal. These lands are presently undergoing investigation and cleanup as part of the Navy's Installation Restoration Program. Special legislation has also been developed for the potential transfer of the 3,137 acres (1,255 hectares) outside the fence, once consisting of flight operations buffer zones, to the New York State Department of Environmental Conservation (NYSDEC). These lands are legislatively mandated to remain in their natural state. The Department of Veterans Affairs will receive 150 acres (61 hectares) of land, also located outside the fence, via special legislation (Public Law 104-106).

The proposed transfer of NWIRP Calverton is considered a major federal action; therefore, an Environmental Impact Statement (EIS) has been prepared to satisfy the requirements of the National Environmental Policy Act (NEPA). This EIS addresses the potential impacts of reuse related to NWIRP Calverton's transfer. In order for land to be transferred out of the federal government, a Record of Decision (ROD) and a finding of suitability to transfer (FOST) must be signed. The ROD and FOST are separate documents developed from independent but parallel processes. The ROD is the EIS/transfer decision document that results from the NEPA process. The FOST is a document that results from a Department of Defense (DoD) memorandum (1 June 1994, Section III C) implementing the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The FOST identifies that the land to be transferred is uncontaminated as defined in CERCLA as amended by the Community Environmental Response Facilitation Act (CERFA). The environmental remediation program at the site has been ongoing. Because it will continue for some time into the future, the ROD will likely precede the FOST for NWIRP Calverton.

The town of Riverhead created the Calverton Air Facility Joint Planning and Redevelopment Commission (Planning Commission) to develop likely reuse scenarios. The Planning Commission's goals were to attract private investment; maximize job creation; increase base taxes; and enhance regional quality of life. Based on the general themes of industrial reuse, commercial tourism, and residential development, three scenarios were developed. The preferred alternative identified by the Town Board is called the Calverton Enterprise Park Reuse Plan (Reuse Plan). Two other alternatives considered by the Town Board are called the Calverton Enterprise Park/Raceway and the Peconic Village alternatives. This EIS has been prepared to comply with the requisite analyses under NEPA and the New York State Environmental Quality Review Act (SEQRA). The Navy, as a Federal Agency, is not required to comply with SEQRA. This document is a Generic EIS under SEQRA since the town of Riverhead will use it to implement zoning for the site. A Generic EIS is appropriate where the effects of projects are to be developed in phases over time; where separate actions have generic or common impacts; and/or, where there are a sequence of actions contemplated by an agency. A Generic EIS is appropriate because details concerning future phases of the reuse plan are available only in general terms. The Generic EIS analysis is used to identify constraints in the natural and man-made environment that should be considered in determining appropriate conditions to be placed on the individual land uses as they are developed. Supplemental EISs would be prepared by applicants for future development components assuming that the individual actions trigger SEQRA requirements. Additionally, permits for site redevelopment would be obtained and processed by the CDA, as appropriate. Identification of these permitting requirements will be detailed once transfer has taken place and specific development choices have been made.

Public input has been solicited and a public scoping meeting was held in April 1996 to identify significant issues that would be addressed in the EIS. These issues centered on extent and remediation of contamination at the facility; future growth effects on wetlands, Long Island Pine Barrens, surface and ground waters, and community character; and potential traffic, noise, infrastructure, and economic impacts of reuse.

## S.2 Description of the Proposed Action and Alternatives

Council on Environmental Quality (CEQ) regulations direct that reasonable alternatives to the proposed action be evaluated, even if these alternatives are not within the jurisdiction of the agency. This EIS considers three locally developed alternatives for the 2,923 acres (1,169 hectares) within the fence of NWIRP Calverton. The transfer of 3,137 acres (1,255 hectares) outside the fence is a component of each of the three reuse alternatives; it is not a component of the no action alternative.

The alternatives in this EIS represent a reasonable range of alternative development intensities and resulting impacts that could occur with reuse. The EIS also addresses the no action alternative, presented and developed as the future baseline condition against which the impacts of the three action alternatives are compared.

## S.2.1 Calverton Enterprise Park Reuse Plan - the Preferred Alternative

Figure S-1 (Calverton Enterprise Park Reuse Plan) depicts the conceptual site plan for the alternative's major land use elements: an industrial business park; a theme park, aviation/aircraft use; commercial recreation; public golf course; open space; and infrastructure acreage. Table S-1 reflects these land uses and their associated sizes, summarized as follows:

- The **industrial business park** of 887,500 square feet (sq ft) (82,538 square meters [sq m]) would be a combination of existing industrial facilities and newly constructed buildings on 282 acres (114 hectares), with a passive recreation area near the center.
- The **theme park** (approximately 434 acres [176 hectares]) proposed for the northwest portion of the site could consist of a single park or a set of attractions, with parking, a campground, and a 63-acre (26-hectare) hotel/conference center area planned as complementing facilities. A 32-acre (13-hectare) service retail area of about 100,000 sq ft (9,300 sq m) is also envisioned.
- The **aviation use** (a limited industrial air park with several flights per day) is consistent with the community's long-term vision for the Reuse Plan. The aviation use would encompass approximately 853 acres (346 hectares), or 29 percent of the lands within the fence.
- A 191-acre (67-hectare) parcel in the northeastern portion of the site would accommodate such **commercial recreational** facilities as a family entertainment center, skating rinks, and sports stadium. Approximately 6,000 - 8,000 seats are planned for the sports stadium, which would require 54 acres (22 hectares). An 18-hole **pubic golf course** just south of the hotel/conference center and opposite the theme park is proposed on an estimated 166 acres (67 hectares).
- About 32 percent of the area within the fence has been designated the **open space component**, approximately 884 acres (358 hectares), an estimated 166 of which comprise the public golf course. These acres, proposed for a wide range of active and passive recreational uses, would accommodate a 438-acre (177-hectare) Pine Barrens Core Preservation Area; 137 acres (55 hectares) of natural undisturbed lands; a 183-acre (74-hectare) Community Park; a 150-ft (48-m) buffer (24 acres or ten hectares) along NYS 25; the 27-acre (18-hectare) passive recreational park at the center of the industrial core; and a 27-acre (11-hectare) natural area in the northeast sector to serve as an endangered species habitat.

A 20-year development timeframe is anticipated and it is estimated that successful implementation of the Reuse Plan could generate the equivalent of about 2,980 full-time, direct jobs. Total construction costs (on and off-site improvements) would be about $484 million (1995$).

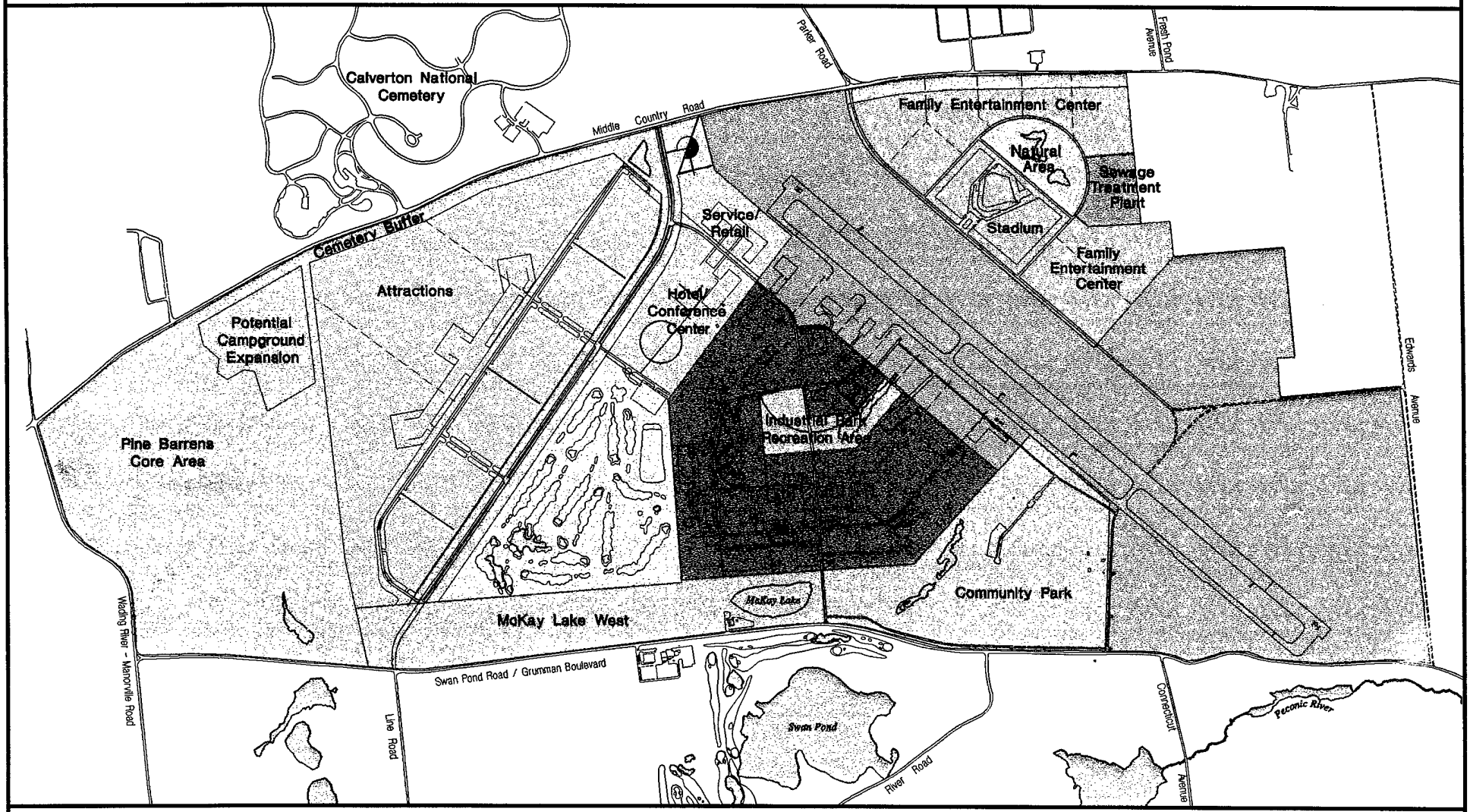
Table S-1

Calverton Enterprise Park Reuse Plan Land Uses

| Land Use | Land Coverage | | Amount of Development |
|---|---|---|---|
| | Acres | Hectares | Units of Measure[2] |
| Industrial Business Park | 282 | 114 | 887,500 sq ft (82,538 sq m) |
| Theme Park | | | |
| Attractions | 434 | 176 | 2.5 million visitors/year |
| Hotel/Conference Center | 63 | 26 | 400 rooms |
| Service Retail | 32 | 13 | 100,000 sq ft (9,300 sq m) |
| Subtotal | 529 | 214 | |
| Aviation/Aircraft Use | 853 | 346 | several flights/day (a); 200,000 sq ft (18,600 sq m) (a) |
| Commercial Recreation | | | |
| Stadium | 54 | 22 | 6,000 - 8000 spectators/event |
| Family Entertainment Center | 137 | 55 | 300,000 visitors/year |
| Subtotal | 191 | 77 | |
| Public Golf Course | 166 | 67 | 18 holes |
| Open Space (Designated) | | | |
| Pine Barrens Core | 438 | 177 | |
| McKay Lake (west) | 137 | 55 | |
| Community Park | 183 | 74 | |
| National Cemetery Buffer | 24 | 10 | |
| Industrial Park Recreation Area | 27 | 11 | |
| Natural Area | 27 | 11 | |
| Other Open Space | 48 | 19 | |
| Subtotal | 884 | 358 | (na) |
| Infrastructure - Sewage Treatment Plant | 18 | 7 | (na) |
| Totals | 2,923 | 1,184 | |

Notes: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable. [2]Units of measure - sq ft = square feet; sq m = square meters.
Source: Adapted from HR&A, 1996.

# Calverton Enterprise Park Reuse Plan




**Industrial Business Park**
**Theme Park**
**Aviation/Aircraft Use**
**Commercial/Recreation**
**Public Golf Course**
**Natural Area/Open Space**
**Infrastructure**
**Existing Building**

2000 0 2000
Scale in Feet
500 0 500
Scale in Meters

N

**Figure S-1**

## S.2.2 Calverton Enterprise Park/Raceway Alternative

The Calverton Enterprise Park/Raceway Alternative (Figure S-2, Calverton Enterprise Park/Raceway Alternative) would retain many of the Calverton Enterprise Park's land uses, differing primarily in that an automobile raceway replaces the aviation and aircraft uses. To accommodate the raceway, the service retail area and the industrial park recreational area may be eliminated, and the industrial business park area is reduced to approximately 217 acres (88 hectares) from 282 acres (114 hectares). Table S-2 reflects the primary land use components of this alternative.

The raceway complex would occupy about 808 acres (324 hectares) within the existing fence line of NWIRP Calverton, encompassing much of the site's eastern side, including the existing 10,000-ft (3,048-m) runway, adjacent open areas, and lands east of the runway. The race circuit itself would be about 3.5 mi (six km) in length. Approximately 69,000 sq ft (6,417 sq m) and 73,400 sq ft (6,826 sq m) would be dedicated to manufacturing/warehouse space and office space, respectively. The manufacturing/warehouse space would include about 21,000 sq ft (2,018 sq m) for a driving school and race car preparation area.

## S.2.3 Peconic Village Alternative

Peconic Village (Figure S-3, Peconic Village Alternative) is designed as a planned mixed-use community, incorporating the following land use elements: industrial business park; hotel/conference center; commercial/retail; residential; public golf course; civic facilities; open space; and infrastructure. These land uses are reflected in Table S-3.

This alternative differs from the Calverton Enterprise Park Reuse Plan in that its focus is residential. The residences, both senior housing and assisted living units, would be for people 55 and above, situated on the eastern and western sides of the site.

The industrial business park would be smaller than under the Reuse Plan (about 185 acres [75 hectares] as opposed to 282 acres [114 hectares]), but the uses would be similar to those previously described.

## S.2.4 No Action Alternative

The no action alternative is presented and developed as the future baseline condition against which the impacts of the proposed action and its alternatives are measured. This EIS defines the no action alternative as the retention of NWIRP Calverton by the US government in a caretaker status. No reuse or redevelopment would occur at the facility. Continued federal ownership of NWIRP Calverton would have no benefit to the Navy, as the Navy would incur continued liability for an asset

Table S-2

Calverton Enterprise Park/Raceway Alternative Land Uses

| Land Use | Land Coverage | | Amount of Development |
|---|---|---|---|
| | Acres | Hectares | Units of Measure[2] |
| Industrial Business Park | 217 | 88 | 682,900 sq ft (63,510 sq m) |
| Theme Park | | | |
| Attractions | 434 | 176 | 2.5 million visitors/year |
| Hotel/Conference Center | 63 | 26 | 400 rooms |
| Subtotal | 497 | 201 | |
| Automobile Raceway | 808 | 324 | racing event - 21,000 spectators/day (a); 142,400 sq ft (13,243 sq m) |
| Commercial Recreation | | | |
| Stadium | 54 | 22 | 6000 - 8000 spectators/event |
| Family Entertainment Center | 137 | 55 | 300,000 visitors/year |
| Subtotal | 191 | 77 | |
| Public Golf Course | 166 | 67 | 18 holes |
| Open Space (Designated) | | | |
| Pine Barrens Core | 438 | 177 | |
| McKay Lake (west) | 137 | 55 | |
| Community Park | 183 | 74 | |
| National Cemetery Buffer | 24 | 10 | |
| Industrial Park Recreation Area | 27 | 11 | |
| Natural Area | 27 | 11 | |
| Other Open Space | 190 | 77 | (na) |
| Subtotal | 999 | 405 | |
| Infrastructure - Sewage Treatment Plant | 18 | 7 | (na) |
| Total | 2,923 | 1,184 | |

Notes: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable. [2]Units of measure - sq ft = square feet; sq m = square meters.
Sources: Adapted from HR&A, 1996; Project Calverton, Inc. 1995.

# Calverton Enterprise Park / Raceway Alternative

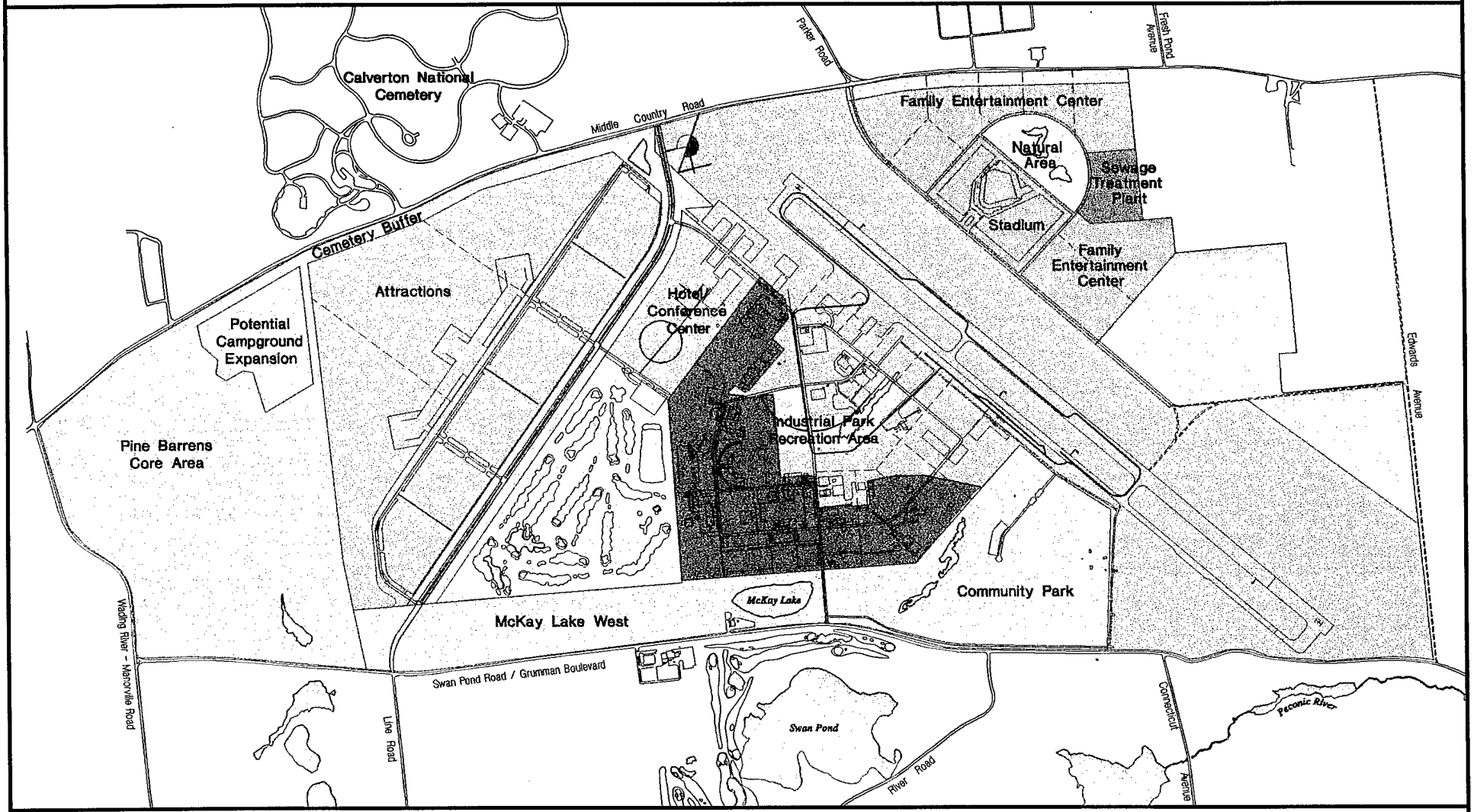



**Figure S-2**

# Peconic Village Alternative

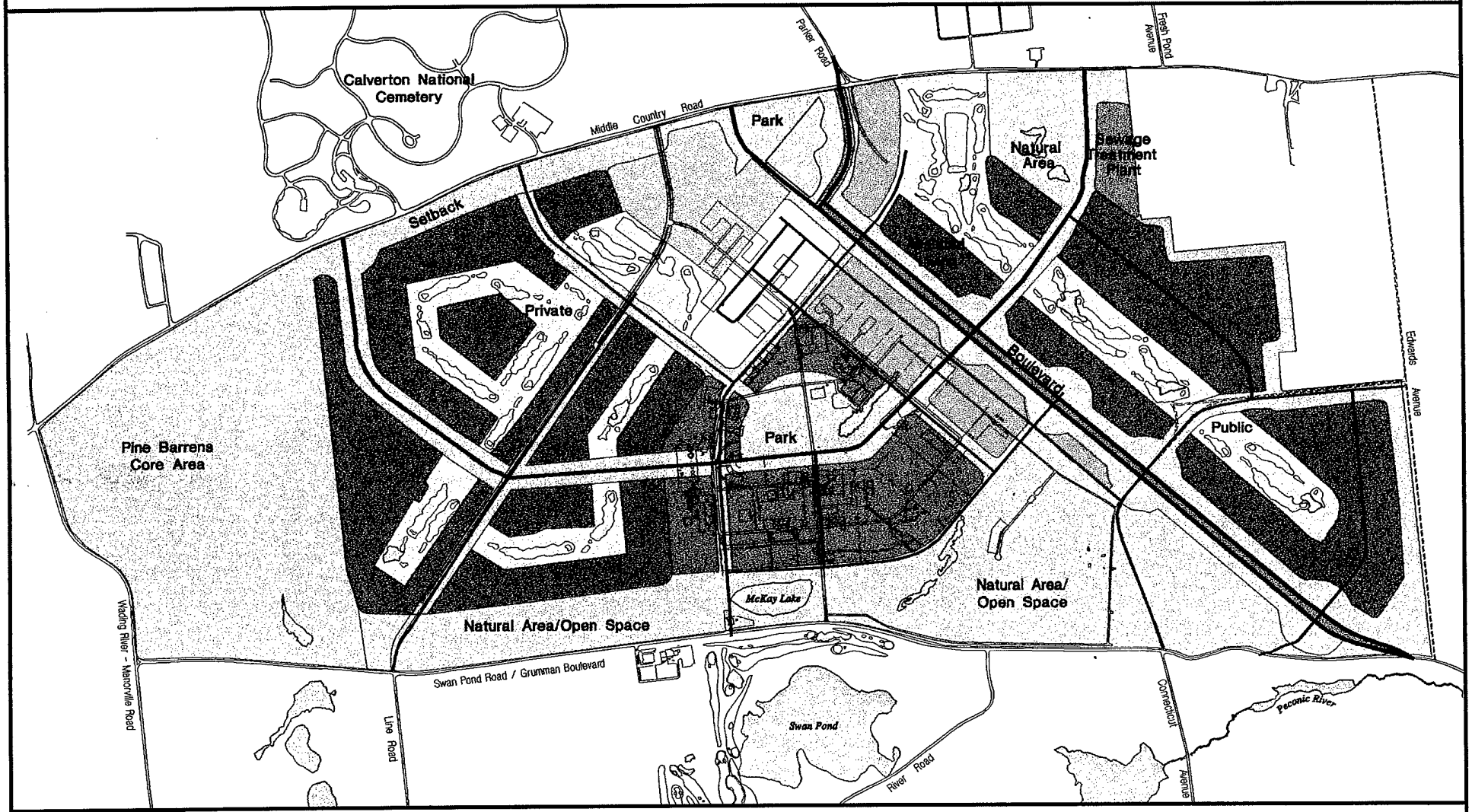



**Figure S-3**

Table S-3

Peconic Village Alternative Land Uses

| Land Use | Land Coverage | | Amount of Development |
|---|---|---|---|
| | Acres | Hectares | Units of Measure[2] |
| Industrial Business Park | 185 | 75 | 582,000 sq ft (54,126 sq m)(a) |
| Hotel/Conference Center | 75 | 30 | 400 rooms |
| Commercial/Retail | 105 | 43 | 190,000 sq ft (17,763 sq m) |
| Residential | | | |
| Assisted Living | 40 | 16 | 688 units |
| Senior Housing | 618 | 250 | 1,350 units |
| Private Golf Course | 192 | 78 | 18 holes |
| Subtotal | 850 | 344 | |
| Public Golf Course | 168 | 68 | 18 holes |
| Civic Facilities | 55 | 22 | 50,000 sq ft (4,650 sq m) (a) |
| Open Space (Designated) | | | |
| Parks | 90 | 37 | |
| Natural Area/Open Space | 865 | 350 | |
| Pine Barrens Core | 438 | 177 | |
| Setback | 35 | 14 | |
| Subtotal | 1,428 | 578 | (na) |
| Infrastructure | | | |
| Sewage Treatment Plant | 18 | 7 | |
| Boulevard and Roads | 39 | 16 | |
| Subtotal | 57 | 23 | (na) |
| Total | 2,923 | 1,184 | |

Note: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable. [2]Units of measure - sq ft = square feet; sq m = square meters.
Source: Adapted from HR&A, 1996.

that has been defined as having no functional, operational, or strategic value, or to the community or region, since such ownership would prevent any possibility of a viable, productive (re)use of the land.

Furthermore, because of the special legislation for transfer of NWIRP Calverton to the town of Riverhead, the no action alternative is considered impracticable for the Navy to implement.

## S.3 Affected Environment, Impacts of Proposed Action and Alternatives, and Mitigation

### S.3.1 Land Use and Zoning

NWIRP Calverton is situated primarily in the town of Riverhead and in the town of Brookhaven, Suffolk County, New York. The property can be divided into two broad land use areas: the 2,923 acres (1,184 hectares) "within the fence" formerly leased by Northrop Grumman Corporation (Grumman) for mission-related activities, and the undeveloped 3,137 acres (1,271 hectares) "outside the fence" that were originally buffers associated with aircraft testing operations and currently used for recreation, agricultural, and conservation purposes under a Cooperative Agreement between the Navy and the New York State Department of Conservation (NYSDEC).

The 73 government-owned structures within the fence are concentrated in the central and southern part of the site, bounded by the two concrete aircraft runways on the northeast and northwest. The western, northeastern, and northwestern areas of the site within the fence remain essentially undeveloped as fields or forested land.

There are three buffer zones outside the fence totaling 3,137 acres (1,255 hectares). The north buffer zone (610 acres or 244 hectares) contains agricultural land leased to a local farmer; the combined southeast and southwest buffer zones (2,527 acres [1,011 hectares]) are predominantly forested. With the exception of the outleased land, these acres are part of the Cooperative Agreement. A northwest buffer area was transferred to the Veteran's Administration in December 1977 for use as a national cemetery.

Lands around NWIRP Calverton are generally sparsely settled, reflecting the presence of the buffers and the area's historical agricultural economy. Existing housing close to the site is single-family, centered primarily along Route 25 (Middle Country Road). The regional population centers of Wading River, Wildwood, and Riverhead are some distance away.

Although as a federal property, NWIRP Calverton is exempt from local zoning, future private reuse of "within the fence " portions of the site would be subject to land use and zoning restrictions of the town of Riverhead. The buffer zones will be transferred to NYSDEC under the aforementioned

special legislation and will remain undeveloped natural areas exempt from local zoning in both Riverhead and Brookhaven.

The Central Pine Barrens is a 100,000-acre (40,000-hectare) area in central and eastern Long Island that includes the towns of Riverhead, Brookhaven, and Southampton (Central Pine Barrens Joint Planning and Policy Commission [CPBJ&PC], 1995). The Central Pine Barrens Comprehensive Land Use Plan was prepared to establish a set of policies, programs, and standards to protect, preserve, and enhance the functional integrity of the "Central Pine Barrens" ecosystem of Long Island. Within the 100,000 acres (40,000 hectares), there are two zones with different protection goals:

- Core Preservation Area (CPA) - Comprised of 52,500 acres (21,000 hectares), the core area is designed to protect and preserve the ecologic and hydrologic functions of the Pine Barrens by minimizing impacts by prohibiting or redirecting new development.

- Compatible Growth Area (CGA) - The Pine Barrens Plan designated this 47,500-acre (19,000-hectare) area to discourage piecemeal and scattered development and to encourage appropriate patterns of compatible residential, commercial, agricultural, and industrial development.

Most of the fenced area of NWIRP Calverton is designated as CGA. Approximately 438 acres (177 hectares) in the western portion of the site have been designated as part of the CPA. The southeast and southwest buffer zones are part of the CPA; the northern buffer is part of the CGA.

**No Action Alternative**

Under the no action alternative (representing future baseline conditions), NWIRP Calverton would be retained in ownership by the federal government. No reuse or redevelopment would occur at the facility. Land and facilities within the fence would be vacated and closed in accordance with *Base Realignment and Closure Facility Layaway and Caretaker Standards* (Naval Facilities Engineering Command, September, 1994). Buffer zones outside the fence would also remain in federal ownership; transfer to the NYSDEC would not occur. It is assumed that the Cooperative Agreement between the Navy and the NYSDEC pertaining to the buffer zones would be maintained and that the land would continue to be used for conservation, recreation, and education.

**Calverton Enterprise Park Reuse Plan**

Implementation of the Calverton Enterprise Park Reuse Plan for NWIRP Calverton would result in the development of a multi-use enterprise park with a core industrial complex and a limited industrial air park, with other uses including a theme park and attractions; commercial recreation family entertainment center; stadium; golf course; and a variety of open spaces. The buffer zones would remain in their existing natural (undeveloped) state and would be transferred to the NYSDEC.

Current town "Defense Institutional" zoning that allows agriculture, national cemetery, and Naval weapons testing facility uses has no specifications for such development issues as density, floor area ratios (FARs), setbacks, etc. Therefore, implementation of the Reuse Plan would require that the Townof Riverhead prepare and adopt new zoning for the site, or portions thereof, based on the uses adopted as part of the Reuse Plan. In 1994, the Comprehensive Economic Development Task Force, a body created by the town of Riverhead to identify issues of significance relating to the reuse of NWIRP Calverton recommended that a Planned Unit Development (PUD) District be the operative zoning district for the property pursuant to Section 263 of the town law. Implementation of the PUD would be based on a Comprehensive Development Plan for the site and through the adoption of a PUD District into the town of Riverhead Zoning Ordinance. Once transfer of the buffer zones to the NYSDEC is complete, it is assumed that the town of Riverhead and Brookhaven would appropriately rezone these lands.

The town of Riverhead has adopted a Pine Barrens Overlay District that prescribes allowable uses and intensities and that effectively renders the CPA designation inapplicable in the town. However, the Reuse Plan has designated these western lands as Pine Barrens CPA, consistent with the Pine Barrens Plan. The remaining lands within the fence (2,485 acres or 1,006 hectares) are designated CGA. Wording of the local Overlay District document indicates that the industrial and aviation uses of the Reuse Plan would likely be allowed as pre-existing uses within the CGA. Modifications to these facilities as part of the Reuse Plan would need to be done in compliance with the Overlay District development standards for the CGA.

**Calverton Enterprise Park/Raceway Alternative**

This alternative would retain many of the land uses of the Reuse Plan, and land use effects for those uses would be essentially the same as the ones described in the foregoing subchapter. The most significant difference between this alternative and the Reuse Plan is that an automobile raceway complex of approximately 808 acres (324 hectares) would replace the aviation use (835 acres [346 hectares]). The automobile raceway would occupy much of the same terrain as the airport proposed in the Reuse Plan. This alternative retains the industrial business park use and the existing 10,000-ft (3,048-m) runway.

Although there is no explicit land use incompatibility between the raceway and the industrial park, noise would affect the adjacent properties in the industrial core during race events. Based on the noise analysis (Subchapter 4.6.3), it is estimated that there would be significant but short-term noise levels experienced both within and outside the fence during the scheduled racing events. During these events, these estimated noise levels would exceed the town of Riverhead's maximum permissible levels for residential, commercial, and industrial land uses.

**Peconic Village Alternative**

Although this alternative includes some of the land use features of the other two (the industrial business park, hotel conference center, golf course(s), and open space), the site would be developed primarily as an age-restricted residential community containing an estimated 688 units of assisted living and 1,350 units of senior housing to accommodate a total of 2,889 residents (688 in assisted living and 2,201 in senior housing).

Approximately 260 acres (105 hectares) of new building and paved areas would be expected. Combined with the existing development, it is estimated that a total of 690 acres (280 hectares) would be developed as buildings and/or paved areas. Any new development in the 438 acres (177 hectares) designated Pine Barrens CPA or in the adjacent CGA would be consistent with the Pine Barrens Plan. Open spaces (all land excluding buildings and parking areas) would comprise a total of 2,233 acres (904 hectares) or about 76 percent of the site. It is assumed that, as with the Reuse Plan, the town would adopt a new PUD zone for implementation if this alternative were to be developed.

## S.3.2 Socioeconomics

Socioeconomic data are presented in Chapter 3 for the towns of Riverhead, Brookhaven, and Southampton, and for the larger context of Suffolk County (Figure S-4, Major Municipalities of Long Island). Population growth in Suffolk County has been modest from 1990 to 1995. Brookhaven, with 86 percent of the population of the three municipalities, experienced the greatest growth during this period. Brookhaven also has a much younger demographic profile than Riverhead or Southampton, though in general the county is experiencing a gradual aging of the population.

Median household and family incomes in the three municipalities are lower and the percentage of persons in poverty is higher than the county as a whole. Housing in the study area is primarily single-family detached homes, and mean household size is declining there. Employment in Services is greatest, followed by Retail Trade and Manufacturing. Unemployment in Riverhead and Southampton is slightly lower than in the county as a whole, and in Brookhaven slightly higher.

**No Action Alternative**

Under the no action alternative, the Navy would vacate and close NWIRP Calverton. There would be no permanent maintenance staff, and no redevelopment of the site, hence there would be no demographic impacts and no new income or taxes generated.

### Calverton Enterprise Park Reuse Plan

There would be no direct demographic impacts from the Reuse Plan since the plan has no residential component. The estimated increase of 2,980 direct jobs under the Reuse Plan represents less than 0.5 percent of the 1995 Suffolk County resident labor force and would be unlikely to cause a significant in-migration of new workers. Total projected annual earnings in 1995 dollars is $75.1 million in year 20. Total direct and indirect employment for the alternative is estimated at 6,220 jobs, with indirect employment representing 52 percent, or approximately 3,240 jobs. Total earnings are projected at $139.3 million.

In addition to permanent jobs, temporary jobs associated with construction activity and indirect employment resulting from earnings circulating in the region would be generated. Based on estimated construction costs of $484 million, an average of 4,865 direct construction jobs with an estimated $307 million in total earnings would be created. Further analysis suggests that an additional 5,785 jobs would be created in other industries, thus generating a total of 10,650 direct and indirect jobs from construction.

Substantial fiscal benefits would be derived from development of the site under the Reuse Plan. This development would be newly entered onto the tax rolls for either property taxes or payments in lieu of taxes (PILOT). Estimated new revenue totals $3.8 million in property taxes, $12.8 million in sales taxes, and $2.6 million in income taxes. Total annual estimated tax revenues at full build-out in year 20 are $19.2 million (rounded).

### Calverton Enterprise Park/Raceway Alternative

Similar to the Reuse Plan, there would be no direct demographic impacts from this alternative since there is no residential component. The estimated increase of 2,199 jobs represents less than 0.5 percent of the 1995 Suffolk County resident labor force and would be unlikely to cause a significant in-migration of new workers. Total projected annual earnings in 1995 dollars is $53.6 million in year 20. Total direct and indirect employment for the Enterprise Park/Raceway Alternative is estimated at 4,612 jobs, with indirect employment representing about 52 percent, or 2,413 jobs. Total earnings are projected at $102 million. Compared to the Reuse Plan, this alternative would create an estimated 780 fewer direct jobs and would be about $52 million dollars less expensive to construct.

In addition to permanent jobs, temporary jobs associated with construction activity and indirect employment resulting from earnings circulating in the region would be generated. Based on estimated construction costs of $432 million, it is possible to predict that an average of 4,344 direct construction jobs with an estimated $274 million in total earnings would be created with implementation of this alternative; further analysis suggests that an additional 5,165 jobs would be created in other industries, thus generating a total of 9,509 direct and indirect jobs from construction.

Fiscal benefits from the Enterprise Park/Raceway Alternative would be substantial, as with the Reuse Plan. Projections of annual real property, sales, and income taxes for this alternative are $3.4 million, $12.9 million, and $1.9 million (rounded), respectively.

**Peconic Village Alternative**

This alternative is would directly introduce new residents to the site and to the region. The estimate is for a total of 2,889 residents aged 55 and older, 688 residents in 688 units of assisted living and 2,201 in 1,350 units of senior housing. The estimated total number of employees at the site would be 1,923, less than both the Reuse Plan and the Enterprise Park/Raceway Alternative. The non-residential components of this alternative would not be expected to induce significant new resident in-migration to the region.

Total projected annual earnings for the proposed 1,923 jobs in 1995 dollars is $49.4 million at full build-out in year 20. Total direct and indirect employment for the Peconic Village Alternative is estimated at 3,809 jobs, with indirect employment representing 49.5 percent, or 1,886 jobs. Total earnings are projected at $90.7 million.

In addition to permanent jobs, temporary jobs associated with construction activity and indirect employment resulting from earnings circulating in the region would be generated. Based on estimated construction costs of $406.8 million (again less than both the Reuse Plan and Enterprise Park/Raceway Alternative), 4,089 direct construction jobs and 5,165 indirect jobs would be created with implementation of this alternative, with an estimated $245 million in total earnings ($132 million for direct and $113 million for indirect employment).

Annual fiscal benefits from the Peconic Village Alternative are projected to be $8.3 million (rounded) in real property taxes, $2.3 million (rounded) in sales taxes, and $1.7 million in income taxes.

Table S-4 reflects a comparison of the major socioeconomic impacts among the three action alternatives.

## S.3.3 Community Facilities and Services

The area surrounding NWIRP Calverton is served by a number of school systems, health care facilities, and public safety and emergency services, though none is located in the one-mi (1.6-km) community facilities study area itself. There is one park, the Robert Cushman Murphy County Park, within the study area, and four others close to the site. Three private facilities, a golf club, the Peconic River Sportsmen's Club, and the Nassau County Boy Scout facility, are located immediately to the south and north of NWIRP Calverton, respectively.

### No Action Alternative

Under the no action alternative there would be no new development at NWIRP Calverton and therefore no new demand for community services.

### Calverton Enterprise Park Reuse Plan

No new housing units would be developed under this alternative and no significant new residential development is likely to be induced; therefore there would be little or no effect upon services focused on a residential population, namely schools and health services.

Emergency services of police, fire and ambulance would likely see additional demands. These demands would relate to the new developments on site and to the visitors drawn to them, although the probability that a fully developed Enterprise Park would have its own security force would present minimal increases in demand on town of Riverhead and Suffolk County Police (Grattan, and Michael, June 17 and June 20, 1996). The substantial new tax revenues anticipated over the 20-year development period would assist in covering costs of any expanded service requirements.

The Reuse Plan proposes development of substantial designated open space, park, and recreational facilities, totaling 884 acres (358 hectares). The theme park attractions would provide a major regional recreational facility. In addition, a commercial recreation center at the northeastern portion of the site would provide a family entertainment center, skating rink, and a sports stadium, all representing a major increment to existing recreational facilities in the region.

The buffer lands outside the fence (3,137 acres [1,241 hectares]) to be given to NYSDEC would be legislatively mandated to remain in their natural state for conservation and recreational purposes (the Department of Veterans Affairs will receive 150 of these acres (61 hectares) via special legislation (Public Law 104-106)).

### Calverton Enterprise Park/Raceway Alternative

Regarding services associated with residential populations, no direct or indirect impacts on school services are anticipated because there would be no new residents on the site and no significant new induced population is anticipated. Because the raceway would attract an estimated increase of 500,000 visitors to the site per year, there is the potential for an increased demand on health services. However, the available health facilities and services would be adequate to cope with the temporary visitor population and workers at the site.

# Major Municipalities of Long Island

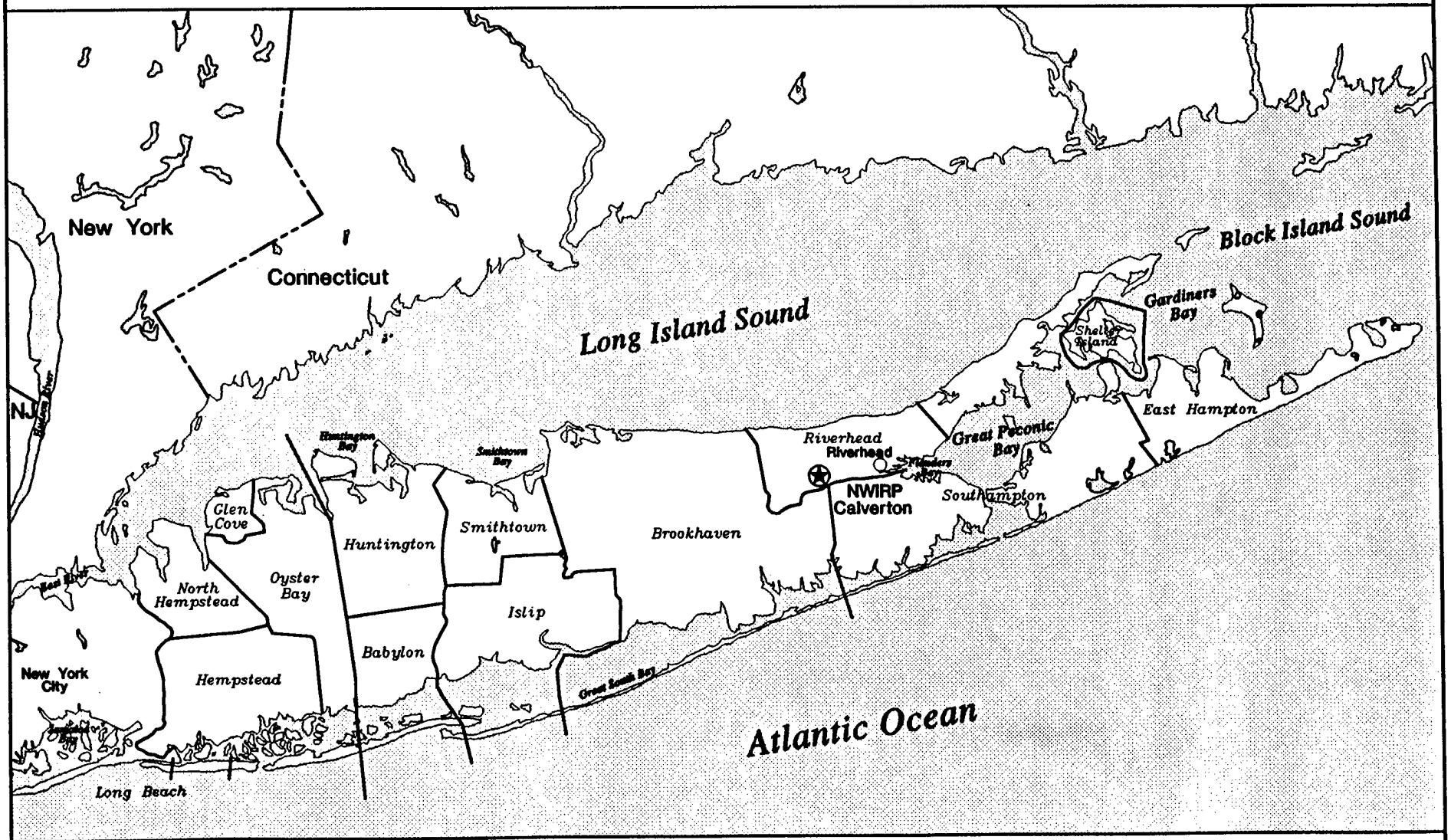



Figure S-4

Table S-4

Comparison of Economic and Fiscal Impacts Among the Three Action Alternatives

| Category | Calverton Enterprise Park Reuse Plan | Calverton Enterprise Park/ Raceway Alternative | Peconic Village Alternative |
|---|---|---|---|
| Employment Impacts | | | |
| Permanent | | | |
| Direct Employment | 2,978 | 2,199 | 1,923 |
| Direct Annual Earnings | $75.1 million | $53.6 million | $49.4 million |
| Indirect Employment | 3,242 | 2,413 | 1,886 |
| Indirect Annual Earnings | $64.4 million | $48.4 million | $41.3 |
| Temporary Construction* | | | |
| Direct Annual ConstructionEmployment | 243 | 217 | 204 |
| Direct Annual ConstructionEarnings | $7.9 million | $7.0 million | $6.6 million |
| Indirect Annual Employment | 289 | 258 | 243 |
| Indirect Annual Earnings | $7.5 million | $6.7 million | $5.7 million |
| Fiscal Impacts | | | |
| Wage/Sales Tax Revenue | $15.4 million | $14.8 million | $4.0 million |
| Real Property Tax Revenue | $3.8 million | $3.4 million | $8.3 million |
| Subtotal | $19.2 million | $18.2 million | $12.3 million |
| Note *: Economic and fiscal impacts are estimates based on long-term (20-year) alternative development plans that are subject to change. Construction activity is assumed to occur over 20 years. | | | |

As with the Reuse Plan, provision of private security and emergency services on site under the Enterprise Park/Raceway Alternative, together with the increased local tax base resulting from development of NWIRP Calverton, would support the small increments in public safety and emergency service capacity that may be required.

This alternative would provide a major increase in the availability of parks and recreation facilities in the region, including an increment of 1,026 acres (416 hectares) of designated new open space, park, and recreation land. The theme park attractions and the commercial recreation area described under Reuse Plan would remain the same, augmented by the raceway. Most of the buffer lands, as previously pointed out, would go to NYSDEC and remain in their natural state.

**Peconic Village Alternative**

This alternative is the only alternative that introduces a residential component with a total resident population of 2,889. Schools, however, would not be impacted, as residents would be aged 55 and over, and new employment (1,923 jobs) would not be likely to induce significant numbers of new residents of other age groups to the area. Anticipated impacts to health care services, particularly geriatric services, would be greater than for either the Reuse Plan or Enterprise Park/Raceway Alternative. Although no plans for cooperative arrangements with area hospitals have been developed, no significant impacts on health care facilities are expected due to declining demand for hospital beds, the scale of existing area health care facilities, and the small increment this new population represents relative to the overall regional population.

No major problems are anticipated regarding public safety and emergency services. This alternative adds a small number of new residents to the area, but only 61 percent of the employment anticipated under the Reuse Plan. Further, large numbers of seasonal and event visitors to the site would be eliminated because the land use components attracting them are eliminated. Increases in the local tax base would be expected to support increments in services that may be required.

The Peconic Village Alternative would also substantially increase parkland recreation facilities in the area, providing a total of 1,428 acres (578 hectares) of open space, parkland, and two golf courses.

## S.3.4 Transportation

The project site is located on Long Island in Suffolk County, New York, approximately 80 miles east of mid-town Manhattan and over 50 miles west of Montauk Point. Regional access to the site is provided by NYS Route 495 (Long Island Expressway), which runs east-west. Local roadway circulation is provided through several rural arterials that surround the site. Key study area roadways include Middle Country Road (Route 25), Manorville/Wading River/Schultz Road, Edwards Avenue, and William Floyd Parkway (Route 46).

The quality of traffic flow through an intersection is described by the intersection's level of service (LOS). Traffic data were collected at seven locations for this analysis (Figure S-5, Traffic Count Locations). Each intersection was also inventoried to determine the capacity of the intersection and its approaches, as specified by the Transportation Research Board's *Highway Capacity Manual* (HCM), 1994. Capacity analyses were performed at all seven locations.

Vehicle trips generated under each alternative were developed based on trip generation rates in *Trip Generation* (ITE, 1991) and a number of other sources and assumptions. Table S-5 reflects trips generated during am and pm peak periods and total daily trips for each action alternative and for NWIRP Calverton at the time the decision was made to close the facility.

Table S-5

Generated Vehicle Trips

| Time Period | NWIRP Calverton[1] | Calverton Enterprise Park Reuse Plan | Calverton Enterprise Park/Raceway Alternative | Peconic Village Alternative |
|---|---|---|---|---|
| Weekday | | | | |
| AM | 1410 | 2,588 | 2,096 | 1,885 |
| PM | 1410 | 4,068 | 3,707 | 2,038 |
| Daily Trips | 2820 | 42,216 | 38,553 | 19,919 |
| Saturday | | | | |
| Peak Hour Enter | 60 | 1,679 | 4,061 | 776 |
| Peak Hour Exit | 60 | 3,087 | 3,399 | 739 |
| Daily Trips | 150 | 33,096 | 46,498 | 14,213 |

[1]Note: Trips estimated for NWIRP Calverton at time of decision to close (1994).

## No Action Alternative

The future baseline traffic network uses existing (1996) volumes as a baseline, provides 2.5 percent per year background growth (provided by NYSDOT [Thornwell, June 7, 1996]), and adds trips to account for the specific developments in Riverhead and Brookhaven.

The significant background traffic growth, along with traffic generated by the future developments in Riverhead and Brookhaven, would result in most of the signalized intersections operating at or above capacity under the future no action conditions. Extensive delays and congestion would result. Operations at the unsignalized intersections at Schultz Road-Long Island Expressway and River Road-Edwards Avenue would remain at acceptable levels. Analysis of weekend conditions indicates that the signalized intersections would operate at or near capacity.

### Calverton Enterprise Park Reuse Plan

The Reuse Plan would generate considerable additional trips, creating a dramatic increase in congestion levels that would significantly impact all of the study area intersections during both weekday and weekend analysis conditions.

Mitigation, including widening of approaches, provision of turn lanes, and signalization changes, has been suggested for three intersections: Middle Country Road and Edwards Avenue (Location 2); Middle Country Road and North Country Road (Location 3); and Middle Country Road and Manorville Road (Location 4). The mitigated conditions result in operation at levels similar to future baseline conditions.

### Calverton Enterprise Park/Raceway Alternative

The Calverton Enterprise Park/Raceway Alternative would generate fewer weekday vehicle trips than the Reuse Plan. In spite of the fact that weekday traffic impacts to the study area intersection are less than the Reuse Plan, continued poor operation at the study area intersections is expected, although the volume to capacity (v/c) ratios are marginally improved compared to the Reuse Plan for weekdays. The racetrack component of this alternative and the scheduled weekend events result in a substantially greater impact on the Saturday peak than the Reuse Plan. Extensive delays and congestion can be expected as racetrack-, stadium-, and theme park-generated traffic simultaneously travel to and from the site.

Mitigative measures for this alternative are recommended and they result in conditions similar to the Reuse Plan. Mitigation is the responsibility of others (e.g., local/state governments, private applicants, etc.) as the Reuse Plan is implemented over time.

### Peconic Village Alternative

Although this alternative generates fewer trips and operations are somewhat improved over the Reuse Plan, poor operations are expected to continue under this alternative similar to the future baseline condition. Operation at the study area intersections remains poor, with most lane group movements operating at LOS "F,"even though the v/c ratios are marginally improved in comparison to the Reuse Plan.

Mitigative measures for this alternative are recommended and they result in conditions similar to the Reuse Plan. Transporation mitigation is the responsibility of others as development proceeds.

# Traffic Count Locations

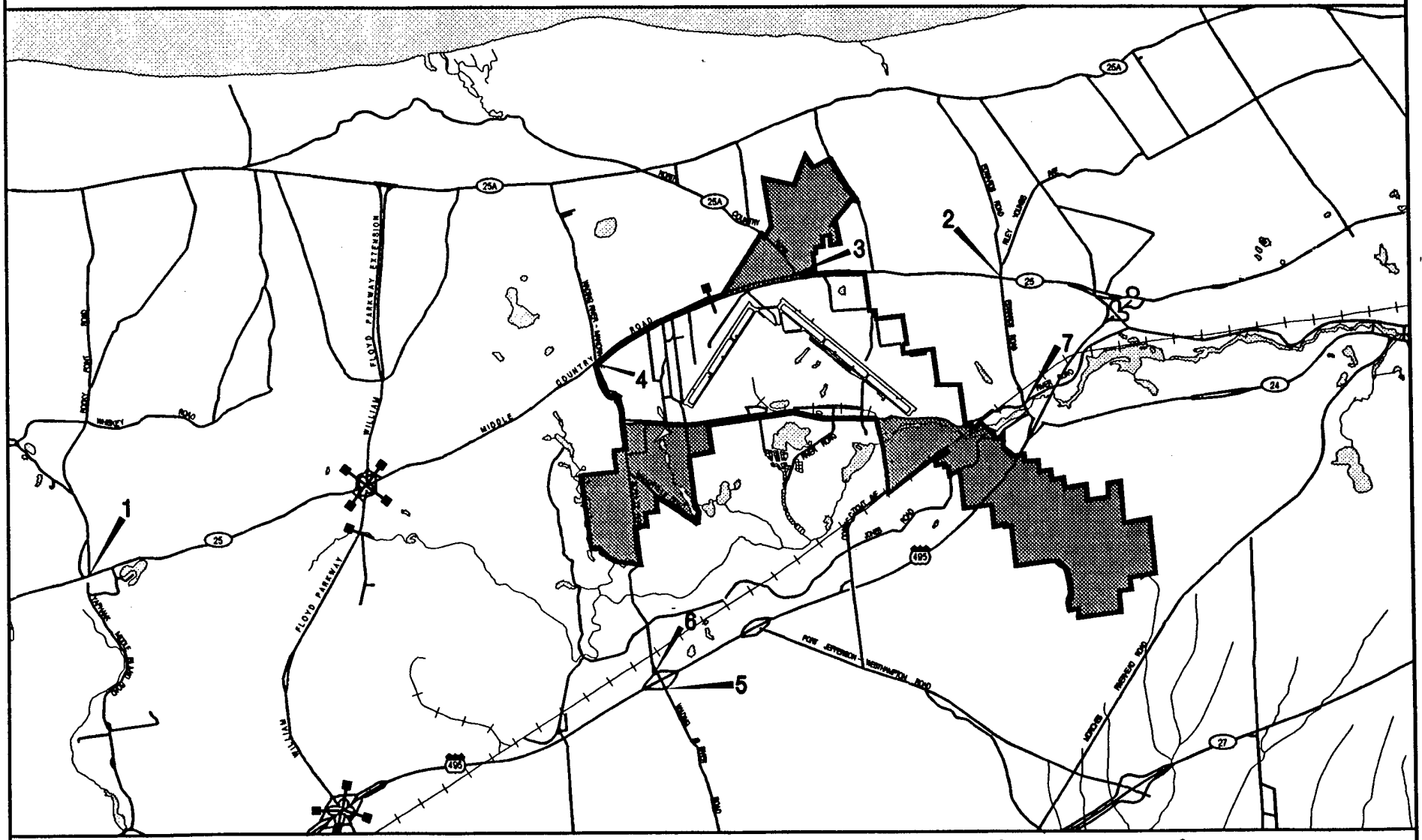



Figure S-5

## S.3.5 Air Quality

The US Environmental Protection Agency (USEPA), under the requirements of the 1970 Clean Air Act (CAA) as amended in 1977 and 1990, established primary and secondary standards known as the National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide (CO); sulfur dioxide ($SO_2$); nitrogen dioxide ($NO_2$); ozone ($O_3$); particulate matter (dust, dirt, soot, smoke, and liquid droplets); and lead (Pb). Suffolk County is in attainment for all criteria pollutants, except for ozone. Suffolk County is presently designated by USEPA as a severe nonattainment area (i.e., not meeting the NAAQS) for ozone.

The air quality analysis includes estimates of CO concentrations since vehicle emissions at street level would occur and data on street level CO concentrations are not available. In contrast, nitrogen oxides ($NO_x$) including $NO_2$, and volatile organic compounds (VOCs), the precursors of ozone, are not analyzed on a project by project basis since they are of regional concern.

### No Action Alternative

Average hourly CO concentrations were predicted for the peak am and pm one-hour traffic periods. Results show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm for either the am or pm peak periods under the no action alternative. Further, under this alternative all currently operational functions at NWIRP Calverton would be stopped. Therefore, there would be no stationary source emissions.

### Calverton Enterprise Park Reuse Plan

Results of the microscale air quality analysis for the Reuse Plan show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm. Stationary source emissions would result from the use of boilers in existing and newly constructed buildings on the site. The Reuse Plan anticipates that the currently permitted steam plant on base would be used for the industrial business park. Any individual emissions source built to meet specific future facility requirements would need to be built in compliance with CAA-related air permitting regulations to ensure that no adverse air quality impact would occur.

Preventive measures such as use of water to control dust during demolition and construction would be used to minimize fugitive dust from on-site construction activities. Mobile source emissions generated from construction-related vehicles and equipment would not be significant and would be short-term in nature.

### Calverton Enterprise Park/Raceway Alternative

Results of the microscale air quality analysis for the Calverton Enterprise Park/Raceway Alternative also show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm. Impacts from stationary sources and construction activities in this alternative would be similar to the Reuse Plan.

### Peconic Village Alternative

The CO modeling for two representative intersections that would be affected by implementation of the Peconic Village Alternative shows no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm. Since this alternative is primarily residential in nature, major land use components such as a theme park, an airport, etc., would not be part of this plan. Therefore, impacts from the stationary sources and construction activities related to this alternative would be less than those associated with the other two action alternatives.

## S.3.6 Noise

The methodology for predicting future noise levels from mobile sources is based on the assumption that existing noise levels are dominated by, and are a function of, existing traffic volumes, and that future noise levels can be determined based on the proportional increase in traffic (on a logarithmic basis) associated with a project. Aviation noise levels are measured in a similar fashion.

A noise measurement survey was conducted in the study area (Figure S-6, Noise Monitoring Locations). Receptors were selected based on noise sensitivity, such as residential and open space use. All receptors were adjacent to streets where there could be increased in traffic due to implementation of the Reuse Plan. At all monitoring locations, the predominant source of noise is vehicular traffic. The measured noise levels are common for residential areas, reflecting the level of vehicular traffic present.

### No Action Alternative

Because of both anticipated annual traffic growth and specific developments planned in the vicinity of the study area that would also increase traffic volume, there would be increases in peak hour noise levels from existing conditions to the future no action condition. These increases are predicted to range from two to seven dBA at the six study sites. The corresponding 24-hour equivalent noise level ($L_{eq}[24]$) and day-night noise level ($L_{dn}$) would range from zero to five dBA.

# Noise Monitoring Locations

Figure S-6

**Calverton Enterprise Park Reuse Plan**

Peak hour $L_{eq}$ shows that at only three sites, Sites 2, 4, and 5, the increase in noise levels due to traffic would be greater than three dBA (the level at which sound becomes perceptible to most people) compared to the no action condition on weekdays. At Sites 2, 3, 4, 5, and 6, the largest increase in weekday noise levels would be between 11 pm and 12 midnight because of vehicles departing the theme attractions. On weekends, the sites that would experience increases in noise levels greater than three dBA would be Sites 2, 4, and 5. The peak hour $L_{eq}$ at Site 3 is two dBA. At Sites 2, 3, 4, and 5, the largest increase in noise levels during a weekend would be between 11 pm and 12 midnight.

The DEIS initially evaluated a more intensive cargo/general aviation use than is presented in this FEIS. The DEIS assessed the effects of operating an air facility with 242 flights a day. The Federal Aviation Administration (FAA)-preferred computer model, Integrated Noise Model (INM, version 5.0), was utilized to predict the aircraft noise impact. Aircraft noise levels are typically expressed in terms of decibels. In general, residential land uses are not normally compatible with outdoor Day-Night Average Sound Level (DNL) above 65 dBA. The DEIS noise analyses indicated that almost all areas with noise levels above 65 dBA were contained within the fence.

At the request of the town of Riverhead, the aviation use was substantially modified. Called a limited industrial air park, the FEIS assesses the effects of operating several flights each weekday and one flight each weekend day. Based on a comparison to the number of flights evaluated in the DEIS, no land area outside the fence would be expected to exceed the FAA standard of 65 dBA.

Increased noise levels during construction would vary widely depending on the specific activities, and would be greatest though short-lived during the early stages of construction. Noise levels from such mechanical equipment at the site under the Reuse Plan are not anticipated be significant.

**Calverton Enterprise Park/Raceway Alternative**

Peak hour $L_{eq}$ analysis for this alternative shows that only at Sites 2, 4, and 5, would increases in noise levels from vehicular traffic be greater than 3 decibels over the course of the day and night. At Sites 2, 3, 4, and 5, the largest increase in noise levels during a weekday would be between 11 pm and 12 midnight, an hour when many vehicles would depart from the theme attractions and family entertainment center. On weekends, the increase in noise levels due to traffic would be greater than 3 dBA at Sites 2, 4, and 5. At Sites 2, 3, 4, and 5, the largest increase in noise levels during a weekend would be between 11 pm and 12 midnight.

The noise levels near the racetrack can be expected to increase 20 dB or more, considered a significant increase in noise level. However, these predicted noise impacts are based on a set of very conservative assumptions that represent a peak hour operational scenario and do not incorporate potential noise attenuation derived from the presence of barriers, berms, vegetation and trees, building

walls, etc. Based on the current anticipated racing schedule, the total number of racing event hours over an entire year would be 108 hours, or 1.2 percent of the year. Therefore, race event noise impact, though significant with respect to generated noise levels, would be of short duration and infrequent occurrence. Finally, races would be restricted to the daytime by the town of Riverhead when noise impacts are generally less disruptive than at night.

**Peconic Village Alternative**

The peak hour $L_{eq}$ analysis shows at Sites 4 and 5, increases in noise levels greater than three dBA from increased traffic would take place over the course of day and nighttime hours. On weekends, noise levels at Sites 4 and 5 would be greater than three dBA. The USHUD criteria for acceptable noise levels at housing developments is an $L_{dn}$ of 65 dBA, which would be exceeded at Sites 4 and 5 under this alternative.

## S.3.7 Infrastructure

Infrastructure involves such systems as water supply, storm drainage, sanitary sewer, electricity, gas, and steam distribution.

**No Action Alternative**

Under the no action alternative, there would be limited demand for utilities since the facility would be closed and no permanent maintenance staff would be retained; however, a small security force would remain. All unused existing utility systems would be abandoned in place and permanently closed.

**Calverton Enterprise Park Reuse Plan, Enterprise Park/Raceway, and Peconic Village Alternatives**

Projected impacts on infrastructure elements for the three action alternatives are summarized as follows:

- Water supply - Total projected water use in all cases would be less than existing permit limits. Ultimately according to the Reuse Plan, to meet the full demands of reuse, the town of Riverhead Water District would eventually be extended to serve the site and the extension would be integrated with the existing water distribution network.

- Storm drainage - Development of areas that are currently unpaved would result in an increase in the amount of on-site impervious surfaces for all alternatives, which would

in turn increase the total volume and rate of stormwater discharge and would require new storm sewer construction, including recharge basins. Incremental construction would require State General Stormwater Discharge Permits to address stormwater runoff from industrial uses, including a plan for minimizing pollutants in runoff.

- Sanitary Sewer - Future sanitary flow is expected to exceed historic volumes of wastewater treated via the existing Sewage Treatment Plant (STP) and septic system. Improvements and additions to the existing sanitary sewer system would be expected to provide adequate capacity for all alternatives.

- Electricity - Electricity would be provided to the site by LILCO or PASNY for all three alternatives.

- Gas - Although there is a four-in (ten-cm) cut and capped gas main extending onto NWIRP Calverton that presumably could provide gas to the site, none of the alternatives specifically indicate this possibility. Natural gas would be available, if necessary, to supply energy to on-site facilities under any of the alternatives.

- Steam Distribution - Steam would continue to be supplied to buildings in the industrial core from an existing steam plant currently undergoing a major boiler replacement. It is anticipated that there would be ample steam available for future heating and industrial use.

## S.3.8 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) provides that federal agencies take into account the effect of their actions on any district, site, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP).

The cultural resources survey conducted at NWIRP Calverton (TAMS and Historical Perspectives, Inc., 1996) identified three structures built within the past 50 years that could be considered eligible for the National Register of Historic Places:

- Plant 6 and Plant 7 (built in 1952), were considered potentially exceptionally significant for their association with the production of airplanes critical to to the NAVY's conduct of the Cold War; and

- The Anechoic Chamber, a prototypical research, development, testing, and evaluation facility (built in 1968) was considered exceptionally significant for its role in the testing of Cold War-era aircraft electronic and radar systems.

In addition, five areas (comprising about 240 acres [97 hectares]) within the fence at NWIRP Calverton were identified as areas of high potential for finding archaeological resources.

In accordance with the NHPA, and as the New York State Historic Preservation Office has concurred with the above findings of eligibility and sensitivity, these resources are considered eligible for the NRHP.

**No Action Alternative**

Under future baseline (no action) conditions, there would be no new construction or alteration in the area of the historic buildings. Closure of NWIRP Calverton would follow the standards and procedures for mothballing facilities published in *Base Realignment and Closure Facility Layaway and Caretaker Maintenance Standards* (Naval Facilities Engineering Command, September 1994), thus there should be no adverse effect on the historic structures.

**Calverton Enterprise Park Reuse Plan**

Both Buildings 6 and 7 would be part of the industrial park, and assuming that any exterior renovations are made in accordance with the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, there would be no adverse effect on these structures. The interior of the Anechoic Chamber is intrinsic to its significance; if renovations to either the interior or exterior of the Anechoic Chamber are carried out according to the aforementioned standards and guidelines, there would be no adverse effect on the chamber either. Under the Reuse Plan, archaeological resources of high sensitivity may be disturbed in the area of the industrial business park and the commercial recreation area.

The Navy, NYSHPO, and the ACHP have agreed to terms of a Memorandum of Agreement (MOA) that will ensure the protection of National Register-eligible structures and archaeological resources after transfer. The MOA includes deed covenants to protect these resources.

**Calverton Enterprise Park/Raceway Alternative**

Exactly the same considerations relate to exterior and interior renovations of Buildings 6 and 7 and the Anechoic Chamber as were detailed under the Reuse Plan.

Future development in the industrial business park would likely differ from the Reuse Plan.

**Peconic Village Alternative**

The same considerations for exterior and interior renovation apply to Buildings 6 and 7 as under the prior two alternatives, as they are proposed for use in the industrial business park and civic facilities, respectively. Under this alternative the Anechoic Chamber would be demolished to accommodate

the senior citizen assisted living housing. This action would have an adverse effect because it involves the physical destruction, damage, or alteration of all or part of the property (36 CFR 800.9[b]1). The Navy, the NYSHPO, and the ACHP have agreed to terms of a MOA that includes a covenant on National Register-eligible structures that will ensure proper mitigation for impacts on these resources.

Archaeological resources of high sensitivity in the areas of assisted living housing, commercial use adjacent to the east runway, the senior housing area directly east of the industrial core, and in the area of the STP, may be impacted. This action would have an adverse effect because it involves the physical destruction, damage, or alteration of all or part of the property (36 CFR 800.9[b]1). The Navy, the NYSHPO, and the ACHP have agreed to terms of a MOA that includes a covenant on National Register-eligible archaeological areas of sensitivity that will ensure proper mitigation for impacts on these resources.

## S.3.9 Topography, Geology, and Soils

Given the gently sloping relief of the NWIRP fenced-in area, none of the action alternatives would significantly affect existing topography. Construction of the proposed uses within each alternative would not likely require extensive regrading, excavation, or filling. Further, because no deep excavations would be required, no direct impacts to geologic resources are anticipated.

NWIRP Calverton lies within two soil associations: the Haven-Riverhead association and the Plymouth-Carver association (USDA, 1975). Approximately three-quarters of the fenced-in area and the northern buffer zone fall within the Haven-Riverhead association, containing soils that are typically deep, nearly level to gently sloping, and well-drained. Development as proposed in the alternatives is generally considered compatible with the soils association, because of its good drainage and the ease of excavation. In places where there may be a high water table or where soils are on steep slopes, construction procedures to reduce effects on groundwater and on soils would need to be implemented. A soil erosion and sediment control plan would be prepared prior to construction to address these issues.

The Pine Barrens Plan (Volume 1, Chapter 5, CPBJP&PC, 1995) defines a set of standards and guidelines for land use that would be applicable to all of the alternatives. The lands proposed for development for each alternative are within the CGA of the Central Pine Barrens.

## S.3.10 Water Quality and Hydrology

Most of NWIRP Calverton is located within the Peconic River drainage basin. The Peconic River is the largest stream in Suffolk County and lies just south of NWIRP Calverton. Surface water on the site generally moves in a southerly direction towards the Peconic River. Most of the bodies of

water on NWIRP Calverton are a combination of a pond and wetland, ranging in size from about one-quarter to ten acres (one-tenth to four hectares).

Segments of the Peconic River and three of its tributaries near NWIRP Calverton are designated "scenic" under the New York State Wild, Scenic and Recreational Rivers System Act (Title 27 of Article 15 of the Environmental Conservation Law). For each river under the Act, a river area width, or "scenic corridor," delineated from either river bank is subject to regulation. Within the regulated area of this scenic corridor, new multiple-family dwellings, commercial, and industrial uses are not permitted. The Peconic Estuary also falls under the purview of the National Estuary Program (NEP), designed to promote long-term planning and management in nationally significant estuaries that are threatened by pollution, development, or overuse (LIRPB, 1993).

Three major aquifers underlie NWIRP Calverton. From nearest the ground surface in descending order, these are the Upper Glacial Formation, Magothy, and Lloyd Sand aquifers. The water table beneath NWIRP Calverton lies within the Upper Glacial Formation Aquifer. Groundwater serves as the source of drinking water for population residing within a four-mi (6.4-km) radius of NWIRP Calverton (Halliburton NUS, 1992). The U.S. Environmental Protection Agency (USEPA) has designated the groundwater of Suffolk and Nassau County as a Sole Source Aquifer.

NWIRP Calverton lies completely within one of the nine Special Groundwater Protection Areas (SPGAs) established by the Long Island Regional Planning Board (LIRPB). SPGAs are considered critical environmental areas (CEAs) pursuant to SEQR and carry specific requirements for land use activities and groundwater protection. No part of the NWIRP Calverton fenced area where actual reuse is proposed lies within the 100-year floodplain of any river or stream.

**No Action Alternative**

Under the no action alternative, water quality and hydrologic resources would not be adversely affected. The existing Calverton Sewage Treatment Plant (STP) would not be operating; therefore discharges would be eliminated. Further, additional stormwater runoff would not be produced, nor would recharge to underground aquifers be affected, because there would be no changes to the amount or type of impervious surfaces at the site.

**Calverton Enterprise Park Reuse Plan**

The Reuse Plan, as well as the other alternatives, would be subject to SPDES regulations for control of stormwater and for the existing and future new STP. Specific impacts of the Reuse Plan on surface waters would depend on site-specific development for each of the major land use categories (e.g., industrial business park, commercial recreation area, theme park, etc.). Construction activities associated with development of the Reuse Plan would be subject to the State construction site general permit issued under the SPDES program.

Stormwater pollution prevention plans (SWP3s) would need to be prepared prior to a formal approval for general permit coverage. Given the scope of potential redevelopment at NWIRP Calverton, it is likely that areas of ten acres (four hectares) or more would be disturbed (an estimated potential increase in impervious surfaces would be about 320 acres [130 hectares] at full build-out). Therefore, temporary or permanent sediment basins would need to be provided until final site stabilization. However, use of alternative natural recharge areas and/or drainage systems that would cause less disturbance of the site may be encouraged per the Pine Barrens Plan. Those alternatives include, but are not limited to, the use of natural swales and depressions and/or the installation of perforated pipe, vertical drains or dry wells.

With regard to groundwater, the industrial business park, airport, and commercial uses have the potential for accidental pollution of groundwater (and surface water) or endangerment of public health. These uses would be required to prepare Spill Contingency Plans. Nitrates from fertilizers that would be used on the golf course of the Reuse Plan are also of potential concern. Nitrate leaching lends itself to control by best management practices (BMPs), including applying slow release nitrogen sources, reducing the total yearly amount of nitrogen fertilizer applied, and other similar controls.

A portion of the Peconic River scenic corridor traverses the site; it is estimated that approximately 526 acres (213 hectares) of land within the fence would be restricted from development. Redevelopment of these lands would be inconsistent with the scenic corridor regulations and could not be developed as proposed.

The portion of the Peconic River Scenic Corridor on NWIRP Calverton was specifically discussed in the Pine Barrens Commission Findings Statement for the Central Pine Barrens Plan, essentially stating that the Commission would support and recommend that the northerly boundary of the scenic river area within the CGA of NWIRP Calverton be moved to a point coterminous with the Core Preservation Area boundary line, under certain conditions (compliance with Pine Barrens Plan and improvement of the Calverton STP, [Subchapter 4.10.2]). If the conditions were met, the scenic corridor could be relocated outside the fenced-in area and would therefore pose no restriction to Reuse Plan implementation. However, any proposal to relocate the Peconic River Scenic Corridor boundary would also be subject to review under SEQRA.

In the future,estimated wastewater treatment demands of the Reuse Plan would require a new STP (probably groundwater-discharging), as proposed for the northern area of the site. The Peconic Estuary Program's Comprehensive Conservation and Management Plan (CCMP) recommends that new groundwater-discharging STPs be avoided in the Peconic River area, and considered only 1) if best available denitrification technology is used; 2) if the project is associated with significant, natural resources, and/or surface water quality benefits; and 3) if additional analysis shows that impacts on the Peconic River would be negligible.

The Final Pine Barrens Comprehensive Land Use Plan also addresses the issue of wastewater discharges. Based on the proposed location of the new STP, flow from the STP discharge would be to the north/northeast, away from the Pine Barrens, and thus compatible with the Plan's requirement that STP discharges "shall be outside and down gradient of the Central Pine Barrens...where deemed practical."

**Calverton Enterprise Park/Raceway Alternative**

Specific impacts of the Enterprise Park/Raceway alternative on surface waters would depend on site-specific development within each of the major land use categories, as for the Reuse Plan. Development would need to be designed to meet all surface water regulations of the town of Riverhead, the County of Suffolk, and NYSDEC for water quality, industrial waste discharges, sewage discharges, and stormwater.

Because many of the land uses are similar to the Reuse Plan, issues concerning potential groundwater effects would be similar. The standards and guidelines of the Pine Barrens Plan, BMPs identified for the Reuse Plan, and protective measures and policies defined in the SGPA Plan requiring compliance would be applicable to this alternative as they are for the Reuse Plan. The same constraints regarding the Peconic River scenic corridor and the new STP would also apply.

**Peconic Village Alternative**

Senior housing is the primary land use in this alternative. Because the industrial park, commercial uses, golf course(s), and infrastructure (STP) remain as land use components, however, potential for impacts to the groundwater would exist for this alternative. The industrial business park user(s) would be required to prepare spill plan(s) for review and approval by NYSDEC. The Pine Barrens Plan, BMPs, and SGPA protective measures and policies would also apply.

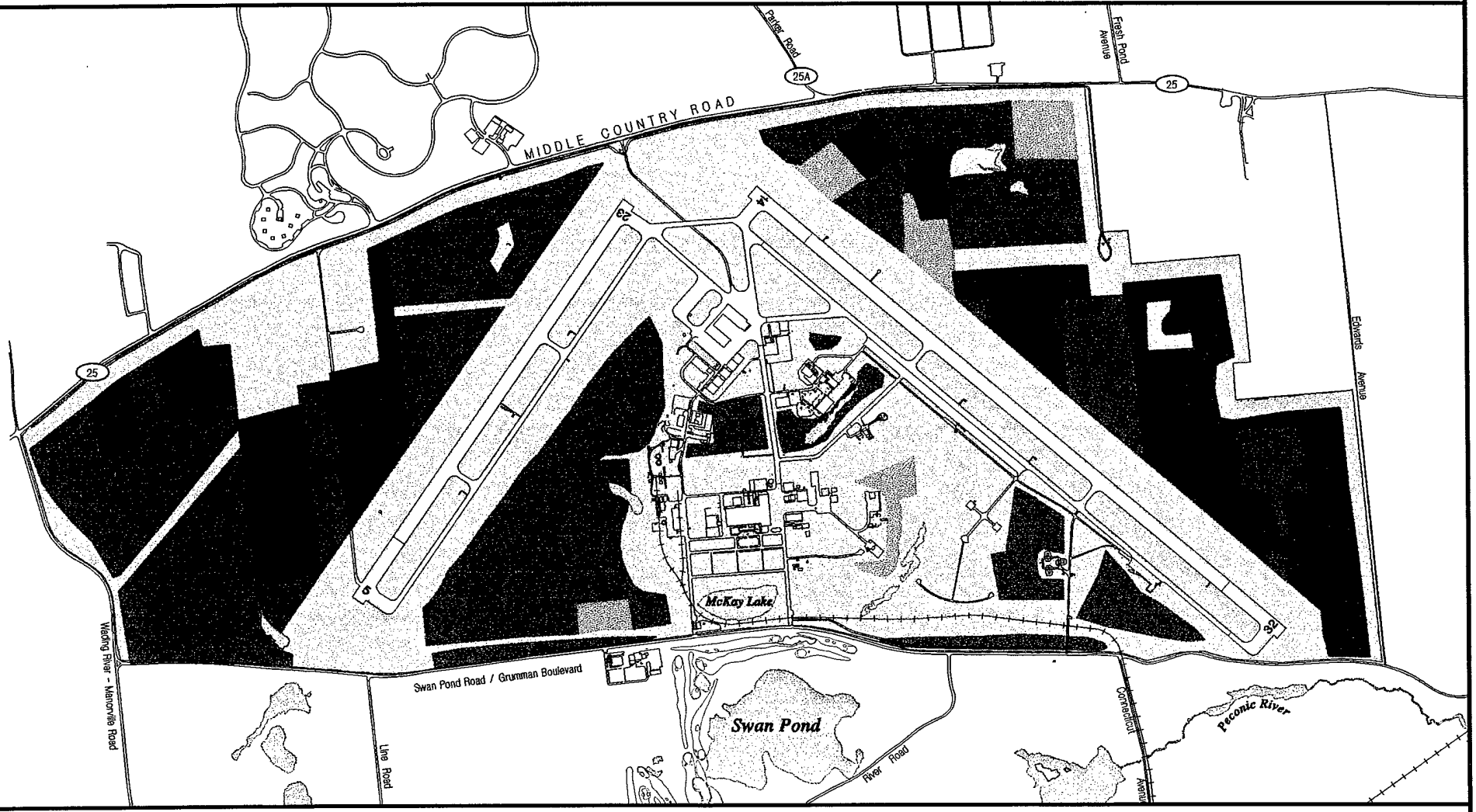
The constraints regarding the scenic corridor and the required new STP that applied to the other two alternatives are also applicable to the Peconic Village Alternative.

## S.3.11 Terrestrial and Aquatic Environment

NWIRP Calverton, located within the Long Island Pine Barrens, is home to many plant and animal species, some of which are classified as endangered or threatened by New York State (Central Pine Barrens Joint Planning and Policy Commission [CPBJP&PC], 1995). The buffer areas outside the fence provide habitat for many plants and animals.

Most of NWIRP Calverton, other than the developed lands within the fenced area and the agricultural areas in the buffer zones, supports forest dominated by pitch pine and upland oaks (Figure S-7,

# Generalized Vegetation Cover




Source: CF Braun Engineering Corp., 1995.

Figure S-7

Generalized Vegetation Cover). Vegetation exists in three categories: improved; semi-improved; and unimproved.

Twenty-five wetlands, wetland complexes, and deep water habitats totaling 251 acres (102 hectares) have been identified on NWIRP Calverton property (Figure S-8, Wetlands) (Myers and Gaffney, 1989). TAMS identified two additional potential wetlands during their field reconnaissance in May 1996. An impounded stretch of the Peconic River is the only one lacustrine (lake)-type deep water habitat.

Terrestrial wildlife on NWIRP Calverton includes a large population of whitetail deer, ring-necked pheasants, bobwhite, quail, cottontail rabbits, woodchucks, gray squirrels, raccoon, red fox, opossum and weasel occur (Myers and Gaffney, 1989), and a variety of songbirds. The Peconic River, McKay Lake, and seven pond/wetlands are known to support fisheries (Myers and Gaffney, 1989).

As of 1991, no federally listed threatened or endangered species were known to reside within a four-mi (six-km) radius of NWIRP Calverton (Halliburton NUS, 1995, as cited in CF Braun, 1995). However, several plants, amphibians, insects, fish and birds listed by the State of New York as threatened, endangered, rare, or of special concern do occur on the site. Of the 52 species identified as threatened, endangered, or species of concern on NWIRP Calverton by the New York Natural Heritage Program, six species (three plant and three animal) are located within the fenced area (O'Neill, 1996).

**No Action Alternative**

Under this alternative, the maintained and semi-maintained management areas would no longer be maintained and would soon become successional old field, with the encroachment of woody vegetation resulting in a gradual loss of grassland habitat. There would likely be the continued overpopulation of deer. If this alternative were selected, a deer management program should be set up to determine the appropriate herd size for the available food sources on site and the herd should be culled accordingly. Also, if the existing on-site grasslands were not maintained, this habitat would be lost over time to grassland birds.

**Calverton Enterprise Park Reuse Plan**

Approximately two-thirds of the 856 improved and semi-improved acres (342 hectares) within the fence would be developed under this alternative. The remaining one-third will be either parkland or conserved as natural area. Three conservation areas totaling 580 acres (232 hectares) would not be impacted by the proposed development (Myers and Gaffney, 1989). The greatest impact vegetatively

would be the destruction of tracts of forest land that, although not highly diverse, do provide habitat for a large portion of the wildlife that exists on site, including three State-listed threatened and endangered animal species. Grassland habitat would also be lost to redevelopement

Seven distinct wetland areas are located within the main development footprint of the Reuse Plan, between the two runways (Wetlands 4, 5, 6, 7, 8, 10, and 27; Figure S-8). In addition, two wetlands (Wetlands 2 and 3) are located in the northeastern corner of the site, in the vicinity of the proposed 27-acre (11-hectare) natural area.

All disturbances to wetlands with an area of at least 12.4 acres (five hectares), or smaller if they have unusual local importance as determined by NYSDEC, require a state permit. All disturbances to wetlands are regulated by the US Army Corps of Engineers (COE), regardless of size. Although all potentially impacted wetlands are less than 12.4 acres (five hectares), NYSDEC has jurisdiction over four of the seven wetlands within the core area (Wetlands 4, 5, 6, and 8) and the two wetlands (2 and 3) in the vicinity of the proposed natural area (Figure 3.11-2). Therefore, coordination with both NYSDEC and the COE is anticipated.

Analysis for any proposed project under the Reuse Plan that would affect wetlands must consider avoiding impacts to wetlands as described in the *Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines.*

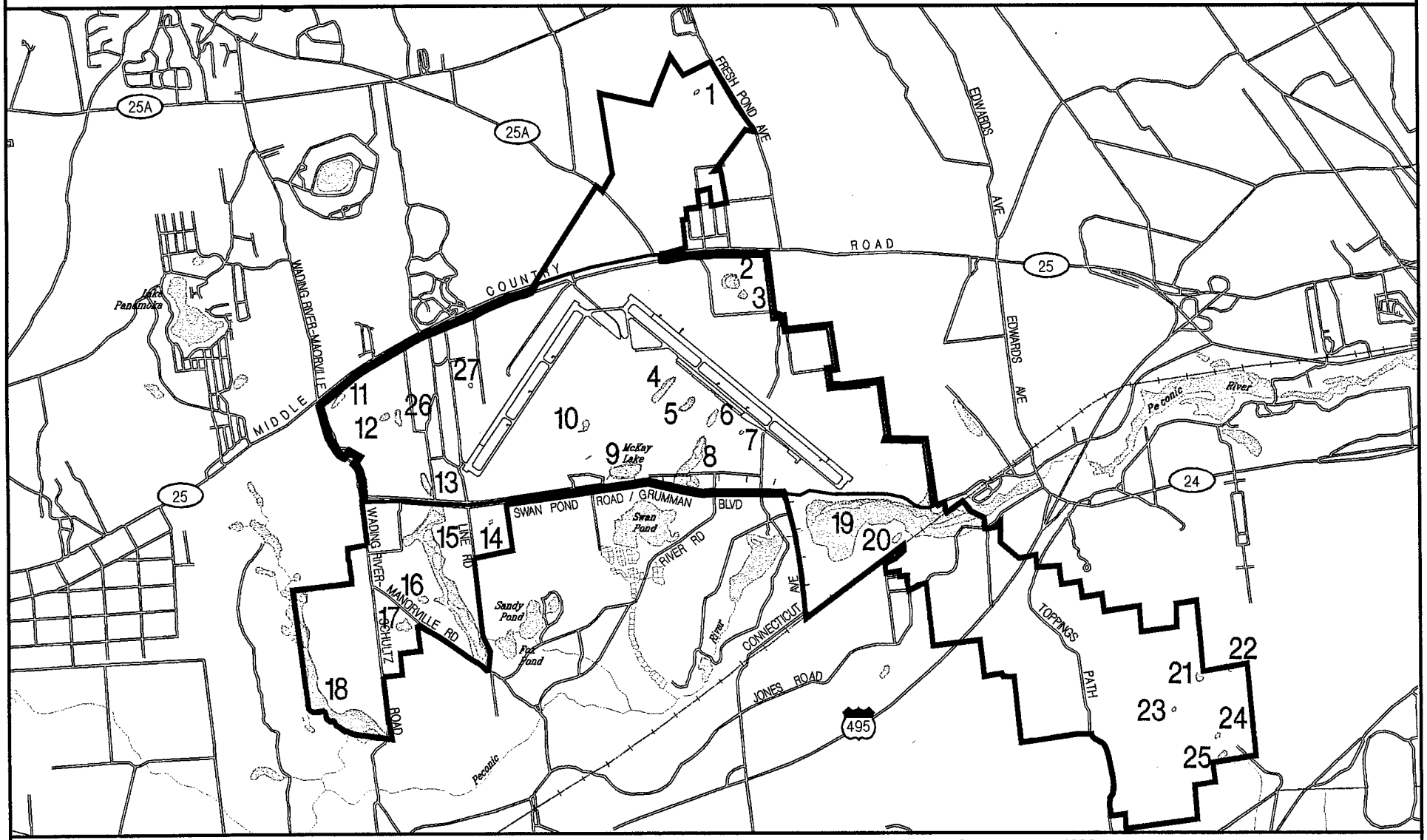
The amount of vegetation lost directly correlates to the amount of habitat lost to bird, mammal, fish, amphibian and insect populations. The surrounding woodland and grassland communities can potentially absorb some of the additional vacating population, but there would still be a loss of wildlife due to road crossing and the inability to move during construction phases.

Four of the six locations of state-listed threatened and endangered species are in the Pine Barrens Core Area and would not be directly impacted by development. One of the remaining two locations is within the area planned for a community park, and the last location is in the northeast portion of the site, where commercial and recreational uses are planned around a natural area. The ultimate recipient of the property would have to consult with the NYSDEC regarding locations for any significant construction activity potentially affecting the habitats.

**Calverton Enterprise Park/Raceway Alternative**

The raceway component of this alternative would include fencing, removable concrete barriers, tire walls, semi-permanent bleachers, and parking by cars on existing vegetation. This would result in a greater impact to the surrounding habitat than the aviation use, particularly with respect to adjacent grassland bird habitat. The remaining impacts from this alternative, including the impacts from the theme park, golf course, and the commercial recreation, are similar to those discussed for the Calverton Enterprise Park Reuse Plan.

# Wetlands




**Wetlands**

**Open Water**

**Property Boundary**

**Fenceline**

4000 0 4000
Scale in Feet

1000 0 1000
Scale in Meters

N

**Figure S-8**

The same wetland areas described for the Reuse Plan are located within the core area of this alternative. The 27-acre (11-hectare) industrial park recreation area would have a greater impact on the 2.2-acre (0.9-hectare) wetland present (Wetland 4), than the Reuse Plan, if the wetland were not properly protected. All disturbances to wetlands would require a permit from the COE and possibly from the NYSDEC.

**Peconic Village Alternative**

The development acreage for this alternative is less than for the other two alternatives; however, although the overall footprint of development would have less impact on the forests in the northeastern section of the development, there would be more impact on the central and southeastern portions of the site. More designated open space and natural areas remain overall under this alternative.

## S.3.12 Petroleum and Hazardous Materials

NWIRP Calverton ceased operations in February 1996. Hence, no hazardous waste is currently being generated by the Navy or Grumman. During its operation from 1952 to 1996, NWIRP Calverton generated wastes classified as hazardous under federal and New York State regulations from aircraft maintenance, assembly and support operations throughout the installation. The waste was collected, stored, and periodically transported to the permitted hazardous waste storage facility where it was consolidated and prepared for shipment to a permitted Treatment, Storage and Disposal (TSD) facility. Prior to construction of the industrial wastewater treatment plant, all such materials were stored in a series of on-site holding tanks that were pumped to trucks and hauled daily to Bethpage for disposal.

A series of studies conducted to evaluate past disposal sites and practices at NWIRP Calverton has resulted in identification of a number of sites with environmental concerns. Surface soil, sediment, groundwater, and surface water contamination by such contaminants as metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polyaromatic hydrocarbons (PAHs), phthalates, and polychlorinated biphenyls (PCBs) were found in varying degrees and combinations at the sites. Groundwater investigations resulted in removal of two wells from service because of volatile organic contamination. Well service was reinstated after the Northrop Grumann Corporation installed an activated carbon treatment system to address the VOC contamination (US Navy, August 1995). Service of these wells was reinstated after the Grumman Corporation installed an activated carbon treatment system to address the VOC contamination.

The town of Riverhead's Community Development Agency (CDA) was given authority to receive title to NWIRP Calverton from the US Navy via Public Law 103-c337. A Finding of Suitability to Transfer (FOST) must be issued before property transfer, involving identification of uncontaminated

property as defined by the Community Environmental Response Facilitation Act (CERFA). If release or disposal of hazardous substances, hazardous wastes, and/or petroleum products is confirmed in an area, Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and/or RCRA requirements must be met prior to property transfer.

The majority (99 percent) of the NWIRP Calverton land surface is uncontaminated property. The extent of groundwater contamination is being investigated as part of the Navy's Installation Restoration (IR) Program. Most of the areas of concern are located in the fenced area (Zone I) (Figure S-9, Environmental Baseline Survey Zones) where the majority of maintenance and operation activities occurred. Investigations and corrective actions for these areas are ongoing. Zones II, III, and V include several small areas where additional evaluation is required, and Zone V contains one area where hazardous substances or petroleum products have been stored, but no release has occurred. Since NWIRP Calverton ceased operations in February 1996, no additional areas of concern are anticipated.

**No Action Alternative**

Under the no action alternative the US Government would retain ownership of NWIRP Calverton in a caretaker status. The Navy would continue to provide for cleanup of contaminated sites as identified in the EBS (US Navy, October 1995) and the *Phase II Field Sampling Plan* (US Navy, 1996). Use of hazardous materials would cease, with the exception of maintenance operations, due to the cessation of all mission-related activities.

**Calverton Enterprise Park Reuse Plan**

Under this alternative, some hazardous substances would be generated by operation and maintenance activities of theme park, aviation/aircraft operations, and the industrial business park. Herbicides and pesticides would be used for grounds maintenance, particularly for the golf course. The amount of hazardous substances that might be generated cannot be quantified at this time as the specific nature of the industries is not yet known. Hazardous substances users would be subject to inspection by the Suffolk County Department of Health Services and would be required to file information on hazardous material usage with Suffolk County Department of Health Services and NYSDEC.

Volatile organic contaminants have been detected in the production wells at concentrations above drinking water standards. A groundwater treatment system has been installed and has been operating for several years. Water quality would be monitored to ensure contaminants are removed from the system prior to use. Any reuse, modification, renovation, and/or demolition of buildings would have to address the issues of lead-based paint and asbestos.

# Environmental Baseline Survey Zones

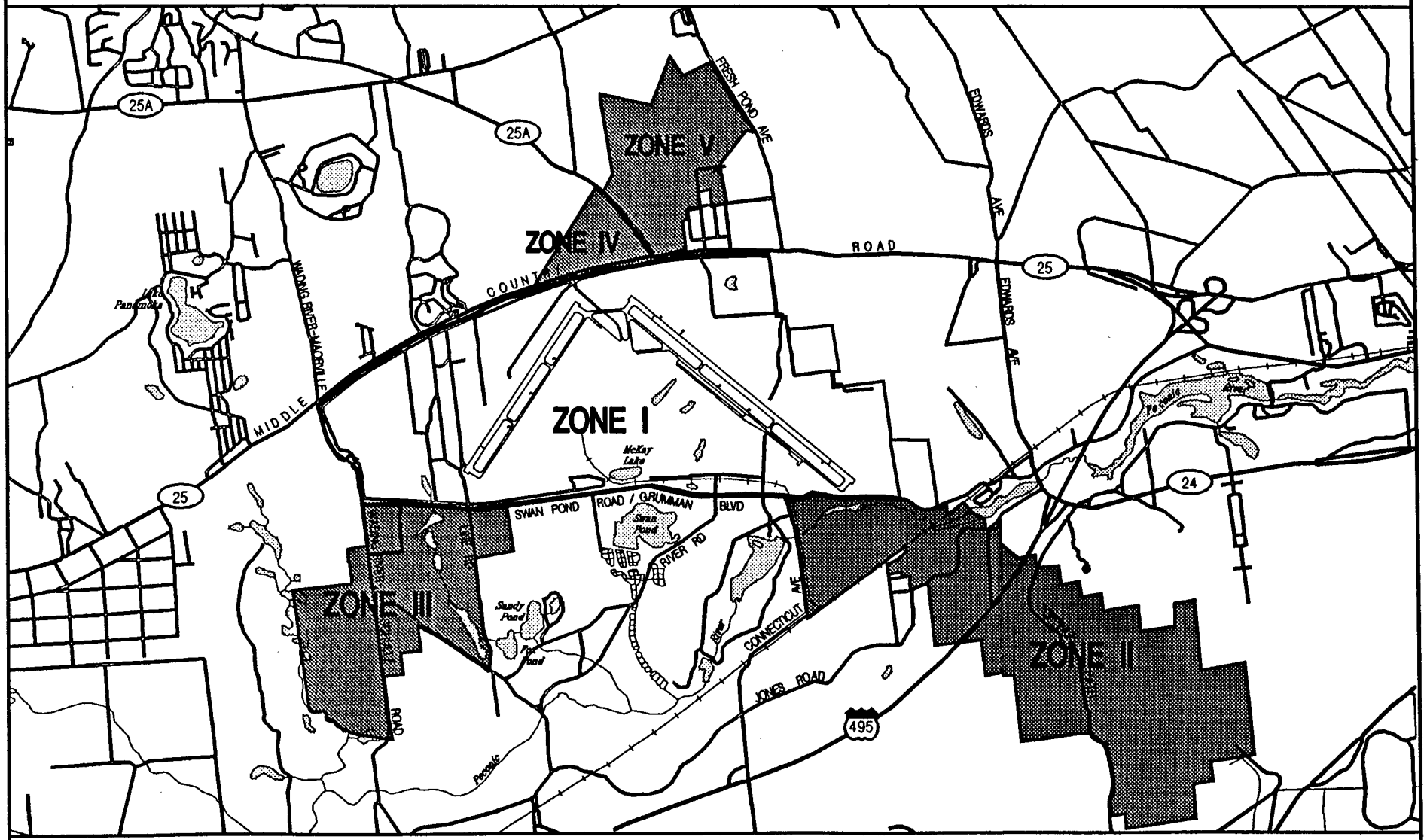



Figure S-9

**Calverton Enterprise Park/Raceway Alternative**

The Calverton Enterprise Park and Automobile Raceway alternative would have hazardous waste generation related to the operation and maintenance of park components similar to that of the Calverton Enterprise Park alternative. Operation of a raceway would generate petroleum substances during routine maintenance and operation. Associated raceway uses in the industrial business park would also use such materials as solvents and degreasers and would generate petroleum-based waste products.

**Peconic Village Alternative**

The hazardous waste generated under this alternative would be limited to that which is generated by operation and maintenance of the facilities and herbicides/pesticides for maintenance of the grounds and golf courses.

## S.3.13 Cumulative Impacts of the Preferred Action

The preferred action, the Calverton Enterprise Park Reuse Plan, would mean development of 2,923 acres (1,184 hectares) to accommodate six major land use elements and their supporting infrastructure. Cumulative impacts upon the study area as a result of this development over the 20-year build-out period would include the following:

- Substantial fiscal benefits: total annual estimated tax revenues would be $19.4 million (rounded);
- Significant increase in recreational facilities: substantial designated open space, park, and recreational facilities (theme park and commercial recreation center) would represent a major increment to existing recreational facilities in the region;
- Increases in traffic: additional vehicular trips at full build-out would create a dramatic increase in congestion levels at area intersections that could be somewhat mitigated by selective lane widening, installation of turn lanes, and signalization changes; and
- Development of formerly improved and semi-improved areas and related impacts to terrestrial environment: approximately two-thirds of 856 acres (342 hectares) of land within the fence would be developed under this alternative, resulting in loss of habitat and the need to protect identified wetlands.

There would be little cumulative impact on area demographics; community facilities and services such as health services and fire and police protection; air quality; topography, geology, and soils; and

water quality and hydrology. Cumulative impacts due to increases in noise levels resulting from increased traffic would occur.

## S.4 Relationship of Proposed Action to Federal, State, and Local Plans, Policies, and Controls

As presently envisioned, the Reuse Plan conflicts with the existing Peconic River scenic corridor boundary; proposed development would not be permitted within the currently defined corridor. The proposed action is generally consistent with other relevant federal, state, and local plans, policies, and controls, assuming that remaining remediation of site contamination at NWIRP Calverton occurs as planned, historic mitigation is performed in accordance with applicable guidance and standards, and wetlands are appropriately protected. The Reuse Plan would not cause adverse environmental or economic impacts specific to any groups or individuals from minority or low-income populations; additionally, no persons would be displaced with the proposed transfer and reuse.

## S.5 Unavoidable Adverse Effects, Relationship Between Local Short-term Uses, and Enhancement of Long-term Productivity, and Irreversible and Irretrievable Commitments of Resources

The additional vehicular traffic generated by the preferred alternative at full build-out in 20 years would create dramatic increases in congestion at all study area intersections within the vicinity of NWIRP Calverton. Potential mitigation measures for these impacts would include approach widening, installation of turn lanes, and signal modifications. Development of acreage for some of the land use elements would result in loss of habitat, including grasslands, and the need to protect wetlands and threatened and endangered species.

Short-term construction and demolition-related effects on traffic levels, air quality and noise would be unavoidable, but impacts could be diminished by phasing of construction, limiting hours of construction, and similar measures. There are no other unavoidable adverse effects as a consequence of the proposed reuse of the property.

Irreversible and irretrievable commitments of resources would be made in terms of added quantities of debris to disposal sites as a result of demolition, the commitment of resources (construction materials and land) to the proposed site uses, and the long-term use of resources, such as energy, water, sewage treatment, landfill capacity, and road use. On balance, proposed reuse of the property is considered a productive use of the property that does not negatively impact long-term productivity.

## S.6 Summary Statement of Environmental Significance

Implementation of the proposed Reuse Plan for NWIRP Calverton is considered to have significant environmental impacts with respect to traffic conditions. The additional vehicular traffic generated by the preferred alternative would create considerable traffic delays at intersections within the vicinity of the site. A summary impact matrix for the proposed Reuse Plan and its alternatives is presented in Table S-6.

## Table S-6

### Summary Impact Matrix - Transfer and Reuse Alternatives for NWIRP Calverton

| Evaluation Parameter | Calverton Enterprise Park Reuse Plan | Calverton Enterprise Park/Raceway Alternative | Peconic Village Alternative |
|---|---|---|---|
| Land Use and Zoning | Industrial and aviation land uses are compatible with existing zoning. The town of Riverhead would need to adopt a Planned Unit Development District (PUD) for implementation of the Reuse Plan. | It is assumed that the town of Riverhead would adopt a Planned Unit Development District (PUD) for implementation of this alternative, as with the Reuse Plan. | It is assumed that the town of Riverhead would adopt a Planned Unit Development District (PUD) for implementation of this alternative, as with the Reuse Plan. |
| Socioeconomics | - Creation of 2,978 direct jobs and 3,242 indirect jobs.<br>- Total earnings (direct and indirect) are projected to be $139 million. | - Creation of 2,199 direct jobs and 2,413 indirect jobs.<br>- Total earnings (direct and indirect) are projected to be $102 million. | - This is the only alternative that would introduce new housing and new residents: 2,889 residents in 688 units of assisted living and 1,350 units of senior housing<br>- Creation of 1,923 direct jobs and 1,886 indirect jobs.<br>- Total earnings (direct and indirect) are projected to be $90.7 million. |
| Community Facilities | No major adverse impacts foreseen in meeting anticipated growth in demand for services. Benefits would be derived in region from increased employment and income. | | |
| Transportation | Additional vehicular trips generated by Reuse Plan would worsen the future no action condition, where traffic conditions are expected to deteriorate due to projected growth in the area. Roadway improvements, to be developed by others, would be required to mitigate these impacts. | Weekend peak traffic due to raceway events would be substantially greater than the Reuse Plan under this alternative. Otherwise, impacts would be similar to those described for the Reuse Plan. | This alternative has less impact than either of the other two alternatives, particularly on the weekends. |
| Air Quality | No violations of federal or State standards for 1-hour and 8-hour averaging periods. | | |
| Noise | Increases in noise from vehicular traffic would exceed FHWA standards at certain locations. | Increases in noise from vehicles would exceed FHWA standards at certain locations, and increased noise from the raceway events would exceed town of Riverhead standards. | Increases in noise from vehicles would exceed FHWA standards at certain locations. |

Table S-6

Summary Impact Matrix - Transfer and Reuse Alternatives for NWIRP Calverton

| Evaluation Parameter | Calverton Enterprise Park Reuse Plan | Calverton Enterprise Park/Raceway Alternative | Peconic Village Alternative |
|---|---|---|---|
| Infrastructure | A new sewage treatment plant (STP) is proposed for all alternatives. The town of Riverhead would extend its water supply to the site to meet potable water needs. All other infrastructure elements are assumed to be adequate. | | |
| Cultural Resources | Three structures potentially eligible for the National Register of Historic Places could be altered or renovated. Adherence to appropriate standards and guidelines will result in findings of no effect. The Navy NYSHPO, and the ACHP have agreed to terms of a MOA that will protect National Register- eligible resources by restrictive deed covenants. If areas of high archaeological sensitivity are developed in the future, the Navy's conveyance document will include covenants to protect any National Register-eligible resources. | The same considerations and mitigations apply to the Enterprise Park/Raceway Alternative as to the Reuse Plan. | The same considerations and mitigations apply to the three buildings and to the archaeological sites as under the Reuse Plan. The restrictive deed covenant would require, at a minimum, recordation of a National Register-eligible building prior to its demolition. |
| Natural Resources | There would be a loss of vegetation and habitat under all alternatives. Wetlands could be impacted and would have to be protected under all alternatives. Any proposed project must consider the avoidance of wetland impacts; only after impacts have been avoided to the greatest extent practicable would other mitigative measures be considered and implemented. | | |
| Petroleum and Hazardous Substances | - Industrial users may generate hazardous materials - amounts cannot be quantified as the nature of those users is unknown.<br>- If used, groundwater would be treated prior to usage to prevent adverse health effects from volatile organic contaminants. | - Similar hazardous waste generation would occur under this alternative as under the Reuse Plan.<br>- Operation of the raceway and associated functions would use and generate petroleum substances and use of degreasers and solvents. | - Hazardous waste generated under this alternative would be limited to that generated by operation and maintenance of the facilities and herbicides/pesticides for maintenance of grounds and golf course. |
| Cumulative Impacts of the Preferred Action | Cumulative impacts include substantial fiscal benefits to the area; significant increases in recreational facilities and open/parkland space; increases in traffic; loss of vegetation and habitat; and potential impacts to wetlands. | | |
| Note: Estimates are based on long-term (20-year) alternative reuse plans that are subject to change. | | | |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| 1 | PURPOSE AND NEED | 1-1 |
| 1.1 | Transfer Legislation | 1-1 |
| 1.2 | Transfer Procedures | 1-2 |
| 1.3 | Public Involvement | 1-2 |
| 2 | DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES | 2-1 |
| 2.1 | NWIRP Calverton | 2-1 |
| 2.2 | Development of Reuse Alternatives | 2-2 |
| 2.3 | Calverton Enterprise Park Reuse Plan | 2-4 |
| 2.3.1 | Industrial Business Park | 2-4 |
| 2.3.2 | Theme Park | 2-6 |
| 2.3.3 | Aviation/Aircraft Use | 2-7 |
| 2.3.4 | Commercial Recreational | 2-12 |
| 2.3.5 | Public Golf Course | 2-13 |
| 2.3.6 | Open Space | 2-13 |
| 2.3.7 | Infrastructure | 2-14 |
| 2.4 | Calverton Enterprise Park/Raceway Alternative | 2-14 |
| 2.4.1 | Industrial Business Park | 2-14 |
| 2.4.2 | Theme Park | 2-15 |
| 2.4.3 | Automobile Raceway | 2-15 |
| 2.4.4 | Commercial Recreation | 2-17 |
| 2.4.5 | Public Golf Course | 2-17 |
| 2.4.6 | Open Space | 2-17 |
| 2.4.7 | Infrastructure | 2-18 |
| 2.5 | Peconic Village Alternative | 2-18 |
| 2.5.1 | Industrial Business Park | 2-18 |
| 2.5.2 | Hotel/Conference Center | 2-18 |
| 2.5.3 | Commercial/Retail | 2-18 |
| 2.5.4 | Residential | 2-20 |
| 2.5.5 | Public Golf Course | 2-20 |
| 2.5.6 | Civic Facilities | 2-20 |
| 2.5.7 | Open Space | 2-20 |
| 2.5.8 | Infrastructure | 2-21 |
| 2.6 | No Action Alternative | 2-21 |
| 3 | AFFECTED ENVIRONMENT | 3.1-1 |
| 3.1 | Land Use and Zoning | 3.1-1 |
| 3.1.1 | Land Use at NWIRP Calverton | 3.1-1 |
| 3.1.2 | Land Use in the Surrounding Vicinity | 3.1-3 |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| | 3.1.3 Zoning | 3.1-4 |
| | 3.1.4 Central Pine Barrens Comprehensive Land Use Plan | 3.1-5 |
| 3.2 | Socioeconomics | 3.2-1 |
| | 3.2.1 Population | 3.2-1 |
| | 3.2.2 Income | 3.2-3 |
| | 3.2.3 Housing | 3.2-3 |
| | 3.2.4 Employment | 3.2-5 |
| 3.3 | Community Facilities and Services | 3.3-1 |
| | 3.3.1 Education | 3.3-1 |
| | 3.3.2 Health Care | 3.3-1 |
| | 3.3.3 Public Safety and Emergency Services | 3.3-3 |
| 3.4 | Transportation | 3.4-1 |
| | 3.4.1 Traffic | 3.4-1 |
| | 3.4.2 Public Transportation | 3.4-8 |
| 3.5 | Air Quality | 3.5-1 |
| | 3.5.1 National Ambient Air Quality Standards | 3.5-1 |
| | 3.5.2 Mobile Sources | 3.5-3 |
| | 3.5.3 Stationary Sources | 3.5-6 |
| | 3.5.4 Clean Air Act Conformity | 3.5-6 |
| 3.6 | Noise | 3.6-1 |
| | 3.6.1 Noise Fundamentals and Methodology | 3.6-1 |
| | 3.6.2 Noise Standards and Criteria | 3.6-2 |
| | 3.6.3 Noise Monitoring | 3.6-5 |
| | 3.6.4 Existing Noise Levels | 3.6-6 |
| 3.7 | Infrastructure | 3.7-1 |
| | 3.7.1 Water Supply | 3.7-1 |
| | 3.7.2 Sewage System | 3.7-2 |
| | 3.7.3 Other Utility Systems | 3.7-4 |
| 3.8 | Cultural Resources | 3.8-1 |
| | 3.8.1 Overview of Prehistoric and Historic Periods | 3.8-1 |
| | 3.8.2 Intensive Level Historic Resources Survey | 3.8-6 |
| | 3.8.3 Phase IA Archaeological Survey | 3.8-9 |
| 3.9 | Topography, Geology, and Soils | 3.9-1 |
| | 3.9.1 Topography | 3.9-1 |
| | 3.9.2 Geology | 3.9-1 |
| | 3.9.3 Soils | 3.9-2 |
| 3.10 | Water Quality and Hydrology | 3.10-1 |
| | 3.10.1 Surface Water | 3.10-1 |
| | 3.10.2 Groundwater | 3.10-4 |
| | 3.10.3 Floodplains | 3.10-7 |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| 3.11 | Terrestrial and Aquatic Environment | 3.11-1 |
| 3.11.1 | Vegetation | 3.11-1 |
| 3.11.2 | Wildlife | 3.11-12 |
| 3.11.3 | Threatened, Endangered, and Rare Species | 3.11-15 |
| 3.11.4 | Natural Resource Management | 3.11-19 |
| 3.12 | Petroleum and Hazardous Materials | 3.12-1 |
| 3.12.1 | Hazardous Waste Generation | 3.12-1 |
| 3.12.2 | Hazardous Waste Storage | 3.12-1 |
| 3.12.3 | Previous Hazardous Waste Investigations | 3.12-2 |
| 3.12.4 | Compliance Program Status | 3.12-9 |
| 3.12.5 | Summary | 3.12-10 |
| 4 | IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES | 3.12-1 |
| 4.1 | Land Use and Zoning | 4.1-2 |
| 4.1.1 | No Action Alternative | 4.1-2 |
| 4.1.2 | Calverton Enterprise Park Reuse Plan | 4.1-2 |
| 4.1.3 | Calverton Enterprise Park/Raceway Alternative | 4.1-5 |
| 4.1.4 | Peconic Village Alternative | 4.1-6 |
| 4.2 | Socioeconomics | 4.2-1 |
| 4.2.1 | No Action Alternative | 4.2-1 |
| 4.2.2 | Calverton Enterprise Park Reuse Plan | 4.2-1 |
| 4.2.3 | Calverton Enterprise Park/Raceway Alternative | 4.2-8 |
| 4.2.4 | Peconic Village Alternative | 4.2-13 |
| 4.3 | Community Services | 4.3-1 |
| 4.3.1 | No Action Alternative | 4.3-1 |
| 4.3.2 | Calverton Enterprise Park Reuse Plan | 4.3-1 |
| 4.3.3 | Calverton Enterprise Park/Raceway Alternative | 4.3-3 |
| 4.3.4 | Peconic Village Alternative | 4.3-4 |
| 4.4 | Transportation | 4.4-1 |
| 4.4.1 | Future Baseline Conditions | 4.4-1 |
| 4.4.2 | Calverton Enterprise Park Reuse Plan | 4.4-4 |
| 4.4.3 | Calverton Enterprise Park/Raceway Alternative | 4.4-10 |
| 4.4.4 | Peconic Village Alternative | 4.4-15 |
| 4.5 | Air Quality | 4.5-1 |
| 4.5.1 | No Action Alternative | 4.5-1 |
| 4.5.2 | Calverton Enterprise Park Reuse Plan | 4.5-1 |
| 4.5.3 | Calverton Enterprise Park/Raceway Alternative | 4.5-3 |
| 4.5.4 | Peconic Village Alternative | 4.5-5 |
| 4.6 | Noise | 4.6-1 |
| 4.6.1 | No Action Alternative | 4.6-1 |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| | 4.6.2 Calverton Enterprise Park Reuse Plan | 4.6-2 |
| | 4.6.3 Calverton Enterprise Park/Raceway Alternative | 4.6-13 |
| | 4.6.4 Peconic Village Alternative | 4.6-24 |
| 4.7 | Infrastructure | 4.7-1 |
| | 4.7.1 No Action Alternative | 4.7-1 |
| | 4.7.2 Calverton Enterprise Park Reuse Plan | 4.7-1 |
| | 4.7.3 Calverton Enterprise Park/Raceway Alternative | 4.7-8 |
| | 4.7.4 Peconic Village Alternative | 4.7-11 |
| 4.8 | Cultural Resources | 4.8-1 |
| | 4.8.1 No Action Alternative | 4.8-5 |
| | 4.8.3 Calverton Enterprise Park/Raceway Alternative | 4.8-6 |
| | 4.8.4 Peconic Village Alternative | 4.8-7 |
| 4.9 | Topography, Geology and Soils | 4.9-1 |
| 4.10 | Water Quality and Hydrology | 4-10-1 |
| | 4.10.1 No Action Alternative | 4-10-1 |
| | 4.10.2 Calverton Enterprise Park Reuse Plan | 4-10-1 |
| | 4.10.3 Calverton Enterprise Park/Raceway Alternative | 4-10-9 |
| | 4.10.4 Peconic Village Alternative | 4.10-10 |
| 4.11 | Terrestrial Environment | 4.11-1 |
| | 4.11.1 No Action Alternative | 4.11-1 |
| | 4.11.2 Calverton Enterprise Park Reuse Plan | 4.11-2 |
| | 4.11.3 Calverton Enterprise Park/Raceway Alternative | 4.11-5 |
| | 4.11.4 Peconic Village Alterative | 4.11-6 |
| 4.12 | Petroleum and Hazardous Substances | 4.12-1 |
| | 4.12.1 No Action Alternative | 4.12-1 |
| | 4.12.2 Calverton Enterprise Park Reuse Plan | 4.12-2 |
| | 4.12.4 Peconic Village Alternative | 4.12-5 |
| 4.13 | Cumulative Impacts | 4.13-1 |
| | 4.13.1 Calverton Enterprise Park Reuse Plan | 4.13-1 |
| | 4.13.2 Calverton Enterprise Park/Raceway Alternative | 4.13-4 |
| | 4.11.4 Peconic Village Alternative | 4.13-5 |
| 5 | MITIGATION MEASURES | 5-1 |
| 5.1 | Calverton Enterprise Park Reuse Plan | 5-1 |
| | 5.1.1 Land Use and Zoning | 5-1 |
| | 5.1.2 Socioeconomics | 5-1 |
| | 5.1.3 Community Facilities and Services | 5-1 |
| | 5.1.4 Transportation | 5-1 |
| | 5.1.5 Air Quality | 5-6 |
| | 5.1.6 Noise | 5-6 |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| | 5.1.7 Infrastructure | 5-6 |
| | 5.1.8 Cultural Resources | 5-6 |
| | 5.1.9 Topography, Geology and Soils | 5-7 |
| | 5.1.10 Water Quality and Hydrology | 5-7 |
| | 5.1.11 Terrestrial and Aquatic Resources | 5-7 |
| | 5.1.12 Petroleum and Hazardous Substances | 5-8 |
| | 5.2 Calverton Enterprise Park/Raceway Alternative | 5-8 |
| | 5.2.1 Noise | 5-9 |
| | 5.2.2 Terrestrial and Aquatic Environment | 5-10 |
| | 5.3 Peconic Village Alternative | 5-10 |
| | 5.3.1 Land Use and Zoning | 5-10 |
| | 5.3.2 Traffic | 5-12 |
| | 5.3.3 Noise | 5-12 |
| | 5.3.4 Terrestrial and Aquatic Environment | 5-12 |
| 6 | RELATIONSHIP OF THE PROPOSED ACTION TO FEDERAL, STATE, AND LOCAL PLANS, POLICIES, AND CONTROLS | 6-1 |
| | 6.1 Federal Plans and Policies | 6-1 |
| | 6.1.1 National Environmental Policy Act (NEPA) | 6-1 |
| | 6.1.2 RCRA, CERCLA, SARA, and CERFA | 6-2 |
| | 6.1.3 Clean Water Act | 6-2 |
| | 6.1.4 Clean Air Act | 6-3 |
| | 6.1.5 Endangered Species Act | 6-3 |
| | 6.1.6 National Historic Preservation Act | 6-4 |
| | 6.1.7 Coastal Zone Management Act | 6-4 |
| | 6.1.8 Toxic Substances Control Act | 6-4 |
| | 6.1.9 Executive Order 11990, Protection of Wetlands | 6-5 |
| | 6.1.10 Executive Order 11988, Floodplain Management | 6-5 |
| | 6.1.11 Executive Order 12898, Environmental Justice | 6-5 |
| | 6.2 State and Local Plans and Policies | 6-6 |
| | 6.2.1 State Environmental Quality Review Act | 6-6 |
| | 6.2.2 New York State Wild, Scenic and Recreational River System Act | 6-6 |
| | 6.2.3 New York State Freshwater Wetlands Act | 6-7 |
| | 6.2.4 Central Pine Barrens Comprehensive Land Use Plan | 6-7 |
| | 6.2.5 Peconic Estuary Program | 6-8 |
| | 6.2.6 Special Groundwater Protection Area | 6-9 |
| | 6.2.7 Suffolk County Sanitary Code | 6-10 |
| | 6.2.8 Riverhead Noise Ordinance | 6-10 |

## TABLE OF CONTENTS


| Section | Title | Page |
|---|---|---|
| 7 | UNAVOIDABLE ADVERSE EFFECTS | 7-1 |
| | 7.1 Transportation | 7-1 |
| | 7.2 Terrestrial and Aquatic Environment | 7-1 |
| 8 | RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY | 8-1 |
| 9 | IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES | 9-1 |
| 10 | PUBLIC REVIEW PROCESS AND RESPONSE TO COMMENTS | 10-1 |
| | 10.1 Public Review Process | 10-1 |
| | 10.1.1 Filing and Distribution of the Draft Environmental Impact Statement | 10-1 |
| | 10.1.2 Public Review Period and Public Hearings | 10-1 |
| | 10.2 Receipt of Comments | 10-2 |
| | 10.2.1 Identification of Comments | 10-2 |
| | 10.2.2 Locating Response to Comments | 10-3 |
| | ACRONYMS | 11-1 |
| | REFERENCES | 12-1 |
| | LIST OF PREPARERS | 13-1 |
| | APPENDICES | |
| | Appendix A - Distribution List | A-1 |
| | Appendix B - Correspondence | B-1 |
| | Appendix C - Traffic Analyses | C-1 |
| | Appendix D - Noise Analyses | D-1 |

## LIST OF FIGURES


| Number | Title | Following Page |
|---|---|---|
| 1-1 | NWIRP Calverton Location | 1-2 |
| 1-2 | Major Municipalities of Long Island | 1-2 |
| 2-1 | NWIRP Calverton | 2-2 |
| 2-2 | Core Area of NWIRP Calverton | 2-2 |
| 2-3 | Calverton Enterprise Park Reuse Plan | 2-4 |
| 2-4 | Calverton Enterprise Park/Raceway Alternative | 2-12 |
| 2-5 | Peconic Village Alternative | 2-14 |
| 3.1-1 | Generalized Land Use | 3.1-2 |
| 3.1-2 | Generalized Zoning | 3.1-4 |
| 3.1-3 | Central Pine Barrens Land Use Areas | 3.1-6 |
| 3.4-1 | Traffic Count Locations | 3.4-2 |
| 3.4-2 | Intersection Diagrams: Location 1 - 4 | 3.4-4 |
| 3.4-3 | Intersection Diagrams: Location 5 - 7 | 3.4-4 |
| 3.5-1 | Air Modeling Locations | 3.5-4 |
| 3.6-1 | Noise Monitoring Locations | 3.6-6 |
| 3.7-1 | Infrastructure | 3.7-2 |
| 3.8-1 | National Register Eligible Properties | 3.8-8 |
| 3.8-2 | Prehistoric Sensitivity Areas | 3.8-12 |
| 3.8-3 | Historic Sensitivity Areas | 3.8-12 |
| 3.10-1 | Surface Water Features | 3.10-2 |
| 3.10-2 | Groundwater Divide | 3.10-4 |
| 3.10-3 | 100-Year Floodplain | 3.10-8 |
| 3.11-1 | Generalized Vegetation Cover | 3.11-2 |
| 3.11-2 | Wetlands | 3.11-8 |
| 3.12-1 | Initial Assessment Study Sites | 3.12-2 |
| 3.12-2 | Environmental Baseline Survey Zones | 3.12-6 |
| 3.12-3 | Classification of EBS Program Areas | 3.12-12 |
| 4.4-1 | Vehicle Trip Distribution | 4.4-8 |
| 4.6-1 | Flight Tracks | 4.6-10 |
| 4.6-2 | DNL Contours for Calverton Enterprise Park Reuse Plan (Medium-Range) | 4.6-10 |
| 4.6-3 | 1991 Historic Noise Contours | 4.6-10 |
| 4.6-4 | LEQ Contours for Calverton Enterprise Park/Raceway Alternative | 4.6-22 |

## LIST OF TABLES


| Number | Title | Page |
|---|---|---|
| 2-1 | Calverton Enterprise Park Reuse Plan Land Uses | 2-5 |
| 2-2 | Calverton Enterprise Park/Raceway Alternative Land Uses | 2-15 |
| 2-3 | Peconic Village Alternative Land Uses | 2-17 |
| 3.2-1 | Population Growth and Estimates | 3.2-2 |
| 3.2-2 | Age and Ethnic Characteristics | 3.2-2 |
| 3.2-3 | Income and Poverty Status | 3.2-2 |
| 3.2.4 | Housing and Households | 3.2-4 |
| 3.2-5 | Housing Characteristics | 3.2-4 |
| 3.2-6 | Resident Employment Characteristics by Industry | 3.2-6 |
| 3.2-7 | Civilian Labor Force and Employment 1995 (Annual Average) | 3.2-7 |
| 3.2-8 | Suffolk County Employment 1990-1995 (Annual Averages) | 3.2-7 |
| 3.2-9 | Suffolk County Income and Employment 1990-93 | 3.2-9 |
| 3.3-1 | Educational Facilities and Enrollment, 1995-96 | 3.3-2 |
| 3.3.2 | Hospitals in Proximity to NWIRP 1996 | 3.3-3 |
| 3.4-1 | Traffic Level of Service Definitions for Signalized Intersections | 3.4-3 |
| 3.4-2 | Level of Service Criteria for Stop-Controlled Intersections | 3.4-4 |
| 3.4-3 | Summary of LOS Analysis - Peak Period Existing Conditions | 3.4-5 |
| 3.5-1 | Federal and New York State Ambient Air Quality Standards | 3.5-2 |
| 3.5-2 | Weekday Existing Carbon Monoxide Levels | 3.5-5 |
| 3.5-3 | Weekend Existing Carbon Monoxide Levels | 3.5-5 |
| 3.5-4 | Permitted Air Emission Sources at NWIRP | 3.5-7 |
| 3.5-5 | Potential Emissions from Stationary Sources | 3.5-8 |
| 3.5-6 | Historical Emissions from Stationary Sources | 3.5-8 |
| 3.6-1 | FHWA Noise Abatement Criteria | 3.6-3 |
| 3.6-2 | HUD Site Acceptability Standards | 3.6-3 |
| 3.6-3 | Maximum Permissible A-Weighted Pressure Levels (dBA) by Receiving Property Category at the Town of Riverhead | 3.6-5 |
| 3.6-4 | Existing Sound Levels - Weekdays Sites 1 through 6 | 3.6-7 |
| 3.6-5 | Existing Sound Levels - Saturdays Sites 1 through 6 | 3.6-7 |
| 3.7-1 | Water Supply - NWIRP Calverton | 3.7-1 |
| 3.7-2 | Stormwater Discharges - NWIRP Calverton | 3.7-3 |
| 3.7-3 | SPDES Permits - NWIRP Calverton | 3.7-4 |
| 3.8-1 | Criteria for Historic Significance | 3.8-8 |
| 3.8-2 | Integrity Aspects Defined | 3.8-9 |

## LIST OF TABLES


| Number | Title | Page |
|---|---|---|
| 3.11-1 | Approximate Acreage of Vegetation by Management Categories | 3.11-2 |
| 3.11-2 | Improved Vegetation Category Plant Taxa | 3.11-4 |
| 3.11-3 | Semi-Improved Vegetation Category Plant Taxa | 3.11-4 |
| 3.11-4 | Unimproved Vegetation Category Plant Taxa | 3.11-5 |
| 3.11-5 | Wetland and Deepwater Habitats | 3.11-9 |
| 3.11-6 | On-Site Birds | 3.11-14 |
| 3.11-7 | On-Site Birds of Special Concern - Observed and Expected | 3.11-15 |
| 3.11-8 | Common Terrestrial Mammal Species | 3.11-17 |
| 3.11-9 | Anticipated Herpetofauna | 3.11-17 |
| 3.11-10 | Peconic River Fish Species | 3.11-19 |
| 3.11-11 | New York State Threatened, Endangered, and Special-Concern Plants | 3.11-21 |
| 3.11-12 | New York State Threatened, Endangered, and Special-Concern Animals | 3.11-22 |
| 3.12-1 | Potential Human Health and Ecological Risks at NWIRP Calverton | 3.12-5 |
| 3.12-2 | Description of EBS Zones at NWIRP Calverton | 3.12-8 |
| 3.12-3 | Areas of Potential Environmental Concern Included in the Phase II Field Sampling Plan | 3.12-9 |
| 3.12-4 | Environmental Condition Categories | 3.12-12 |
| 4.2-1 | Reuse Plan Phasing of Direct Employment | 4.2-3 |
| 4.2-2 | Reuse Plan Estimated Direct Employment and Earnings | 4.2-3 |
| 4.2-3 | Reuse Plan Estimated Direct and Indirect Employment & Earnings | 4.2-4 |
| 4.2-4 | Reuse Plan Estimated Construction Costs | 4.2-4 |
| 4.2-5 | Reuse Plan Projected Tax Revenues | 4.2-6 |
| 4.2-6 | Enterprise Park/Raceway Alternative Estimated Direct Employment and Earnings | 4.2-8 |
| 4.2-7 | Enterprise Park/Raceway Alternative Estimated Direct and Indirect Employment & Earnings | 4.2-9 |
| 4.2-8 | Enterprise Park/Raceway Alternative Estimated Construction Costs | 4.2-11 |
| 4.2-9 | Enterprise Park/Raceway Alternative Estimated Tax Revenues | 4.2-11 |
| 4.2-10 | Peconic Village Estimated Direct Employment and Earnings | 4.2-12 |
| 4.2-11 | Peconic Village Estimated Direct and Indirect Employment and Earnings | 4.2-14 |
| 4.2-12 | Peconic Village Alternative Estimated Construction Costs | 4.2-14 |
| 4.4-1 | Summary of Overall LOS Analysis - Future Baseline Conditions | 4.4-2 |
| 4.4-2 | Generated Vehicle Trips Calverton Enterprise Park Reuse Plan | 4.4-4 |
| 4.4-3 | Calverton Enterprise Park Reuse Plan - Weekend 24-Hour Volumes | 4.4-8 |
| 4.4-4 | Summary of Overall LOS Analysis - Calverton Enterprise Park Reuse Plan | 4.4-9 |
| 4.4-5 | Generated Vehicle Trips Calverton Enterprise Park/Raceway Alternative | 4.4-11 |
| 4.4-6 | Calverton Enterprise Park/Raceway Alternative - Weekend 24-Hour Volumes | 4.4-13 |
| 4.4-7 | Summary of Overall LOS Analysis - Calverton Enterprise Park/Raceway Alternative | 4.4-14 |

## LIST OF TABLES


| Number | Title | Page |
|---|---|---|
| 4.4-8 | Generated Vehicle Trips Peconic Village Alternative - Weekday | 4.4-16 |
| 4.4-9 | Summary of Overall LOS Analysis - Peconic Village Alternative | 4.4-18 |
| 4.5-1 | Comparison of Worst Case Projected Weekday Peak Carbon Monoxide Levels for No Action Alternative and Calverton Enterprise Park Reuse Plan (Year 2017) | 4.5-2 |
| 4.5-2 | Comparison of Worst Case Projected Weekend Peak Carbon Monoxide Levels for No Action Alternative and Calverton Enterprise Park Reuse Plan (Year 2017) | 4.5-2 |
| 4.5-3 | Comparison of Worst Case Projected Weekday Peak Carbon Monoxide Levels for No Action Alternative and Calverton Enterprise Park/Raceway Alternative (Year 2017) | 4.5-4 |
| 4.5-4 | Comparison of Worst Case Projected Weekend Peak Carbon Monoxide Levels for No Action Alternative and Calverton Enterprise Park/Raceway Alternative (Year 2017) | 4.5-4 |
| 4.5-5 | Comparison of Worst Case Projected Weekday Peak Carbon Monoxide Levels for No Action Alternative and Peconic Village Alternative (Year 2017) | 4.5-6 |
| 4.5-6 | Comparison of Worst Case Projected Weekend Peak Carbon Monoxide Levels for No Action Alternative and Peconic Village Alternative (Year 2017) | 4.5-6 |
| 4.6-1 | Average Ability to Perceive Changes in Noise Levels | 4.6-1 |
| 4.6-2 | Predicted Weekday Noise Levels for the No Action and Calverton Enterprise Park Reuse Plan | 4.6-3 |
| 4.6-3 | Predicted Weekend Noise Levels for the No Action and Calverton Enterprise Park Reuse Plan | 4.6-5 |
| 4.6-4 | Typical Noise Emission Levels for Construction Equipment | 4.6-13 |
| 4.6-5 | Predicted Weekday Noise Levels for the No Action and Calverton Enterprise Park/Raceway Alternative | 4.6-14 |
| 4.6-6 | Predicted Weekend Noise Levels for the No Action and Calverton Enterprise Park/Raceway Alternative | 4.6-18 |
| 4.6-7 | General Racing Specifications | 4.6-20 |
| 4.6-8 | Race Event Peak Hour Noise Levels | 4.6-22 |
| 4.6-9 | Predicted Weekday Noise Levels for the No Action and the Peconic Village Alternative | 4.6-24 |
| 4.6-10 | Predicted Weekend Noise Levels for the No Action and the Peconic Village Alternative | 4.6-27 |
| 4.7-1 | Typical Per Capita Water Use Rates | 4.7-2 |
| 4.7-2 | Calverton Enterprise Park Reuse Plan Daily Water Use | 4.7-3 |
| 4.7-3 | Calverton Enterprise Park/ Raceway Alternative Daily Water Use | 4.7-6 |

## LIST OF TABLES


| Number | Title | Page |
|---|---|---|
| 4.7-4 | Peconic Village Alternative Daily Water Use | 4.7-9 |
| 4.8-1 | Criteria of Effect and Adverse Effect | 4.8-2 |
| 5.1-1 | Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan | 5-2 |
| 5.2-1 | Comparison of Noise Barrier (15 ft and 30 ft) Effectiveness at Automobile Race Event Peak Hour Noise Levels | 5-9 |
| 5.3-1 | Central Pine Barrens Residential Clearance Standards | 5-11 |
| 10-1 | Comment Response Index | 10-5 |

# 1 PURPOSE AND NEED

The Naval Weapons Industrial Reserve Plant (NWIRP) Calverton is situated on approximately 6,060 acres (2,424 hectares) on the eastern end of Long Island, New York (Figure 1-1, NWIRP Calverton Location). NWIRP Calverton was a Government Owned Contractor Operated (GOCO) facility where the Grumman Corporation (Grumman) assembled and tested military aircraft to accomplish the plant's mission. The overall property consists of two main land use areas:

- Approximately 2,923 acres (1,184 hectares) "within the fence" (totally within the Town of Riverhead) where the infrastructure and facilities to assemble and test aircraft were constructed and operated; and

- Approximately 3,137 acres (1,255 hectares) "outside the fence" (lying in both Riverhead and the town of Brookhaven) where several buffer zones were established to minimize encroaching development and to reduce impacts of flight testing operations on the surrounding communities; the Department of Veterans Affairs will receive 150 of these acres (61 hectares) as part of the Calverton National Cemetery.

Figure 1-2 (Major Municipalities of Long Island) shows the location of the site with reference to the major municipalities of eastern Long Island. The Naval Air Systems Command may dispose of the "within the fence" property to Riverhead and transfer the "outside the fence" property to the NYSDEC. The purpose of this Environmental Impact Statement (EIS) is to evaluate the potential effects of transfer and reuse of NWIRP Calverton. Reuse alternatives were developed locally.

## 1.1 Transfer Legislation

If the transfer of lands within the fence at NWIRP Calverton occurs, it will be accomplished via special legislation (Public Law 103-c337). This special legislation specifies that transfer shall be to the town of Riverhead. Other special legislation has also been developed for the disposal of lands outside the fence (buffer zones) at NWIRP Calverton to the New York State Department of Environmental Conservation (NYSDEC) and the Department of Veterans Affairs.

The transfer of NWIRP Calverton is considered a major federal action; therefore, an Environmental Impact Statement (EIS) has been prepared. This Final Environmental Impact Statement (FEIS) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality (CEQ) Regulations on Implementing NEPA Procedures (40 CFR 1500-1508); and the Environmental and Natural Resources Program Manual, Chief of Naval Operations Instruction (OPNAVINST) 5090.1B. The Navy, as a Federal Agency, is not required to comply with the New York State Environmental Quality Review Act (SEQRA - 6 NYCRR Part 617).

This EIS has also been prepared pursuant to SEQRA The analysis in this FEIS has been developed as a Generic EIS under SEQRA since the town of Riverhead will use it to implement zoning for the site. A Generic EIS is appropriate in such instances where the effects of projects are to be developed in phases over time; where separate actions have generic or common impacts; and/or, where there are a sequence of actions contemplated by an agency. A Generic EIS is appropriate because details concerning future phases of the reuse plan are available only in general terms. The Generic EIS analysis is used to identify constraints in the natural and man-made environment that should be considered in determining appropriate conditions to be placed on the individual land uses as they are developed. Supplemental EISs, prepared by the applicant, would be developed for future development components assuming the individual actions trigger SEQRA requirements.

## 1.2 Transfer Procedures

The essential difference in the transfer of NWIRP Calverton compared to other BRAC actions is the specific transfer of the property directly to the Riverhead CDA that may occur without consideration. Since conveyance of the property is being done outside of the Base Closure and Realignment Act (BRAC), all of those rules, regulations, and customs do not apply; however, some of the procedures remain essentially the same and are listed below:

- First, the Navy has prepared this EIS to assess the effects of transfer and reuse.
- Following publication and review of the DEIS, the Navy has prepared this Final EIS for public review and comment.
- Based on the analysis in the FEIS, the Secretary of the Navy may issue a Record of Decision (ROD).
- Property that has been identified as contaminated (about 238 acres [96 hectares]) will continue to undergo clean-up as part of the Navy's Installation Restoration (IR) program. Preparation of a Finding of Suitability to transfer (FOST) must precede the conveyance of this area following remediation.

## 1.3 Public Involvement

On March 26, 1996, the Navy published a Notice of Intent (NOI) in the Federal Register officially announcing that it would prepare an EIS in accordance with NEPA to study the impacts of disposal and reuse of the former NWIRP Calverton. On April 10, 1996, the Navy hosted a public scoping meeting at the Ramada Inn - East End, on Route 25 in Riverhead, NY. The purpose of the meeting

# NWIRP Calverton Location

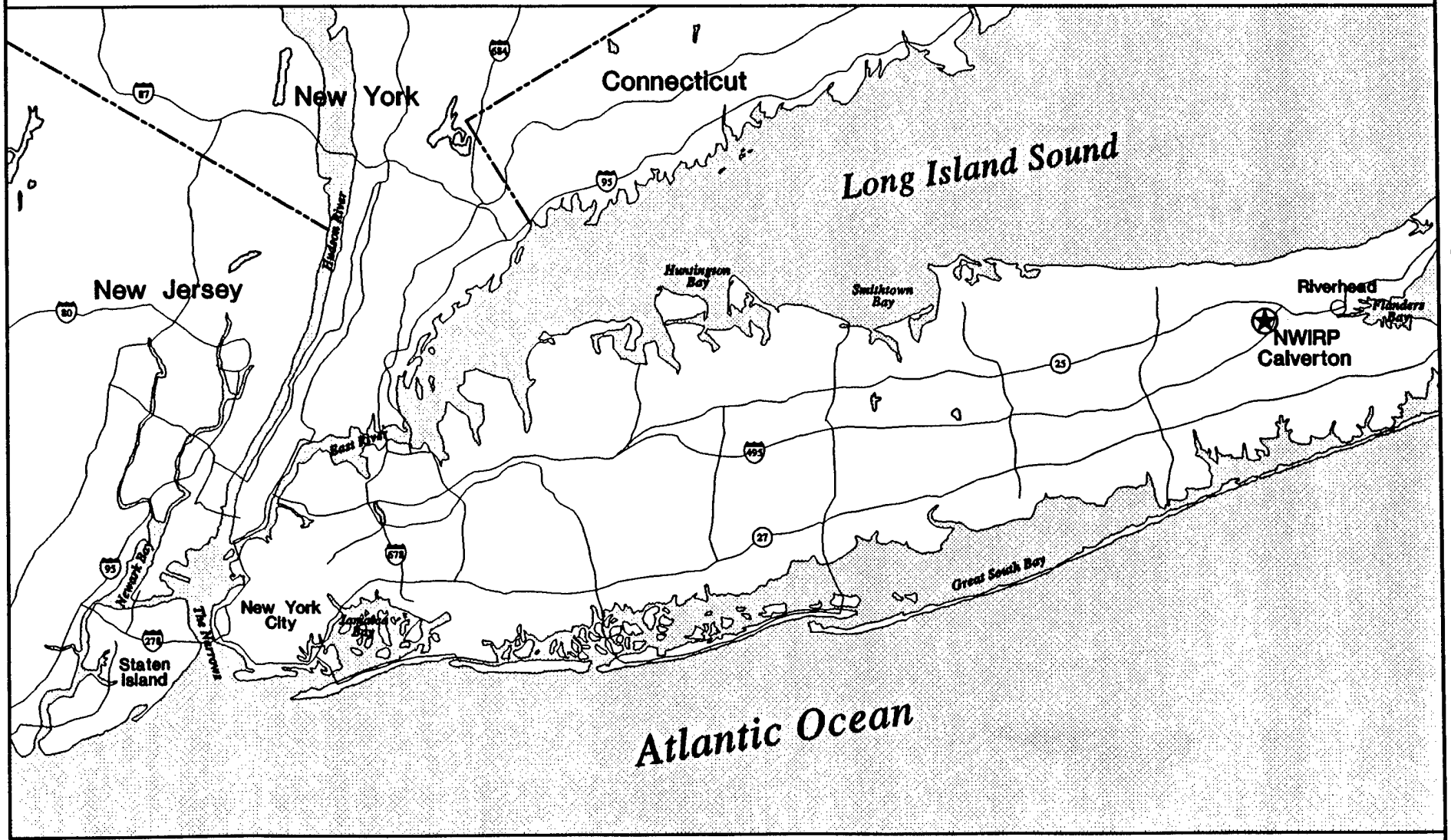



Figure 1-1

# Major Municipalities of Long Island

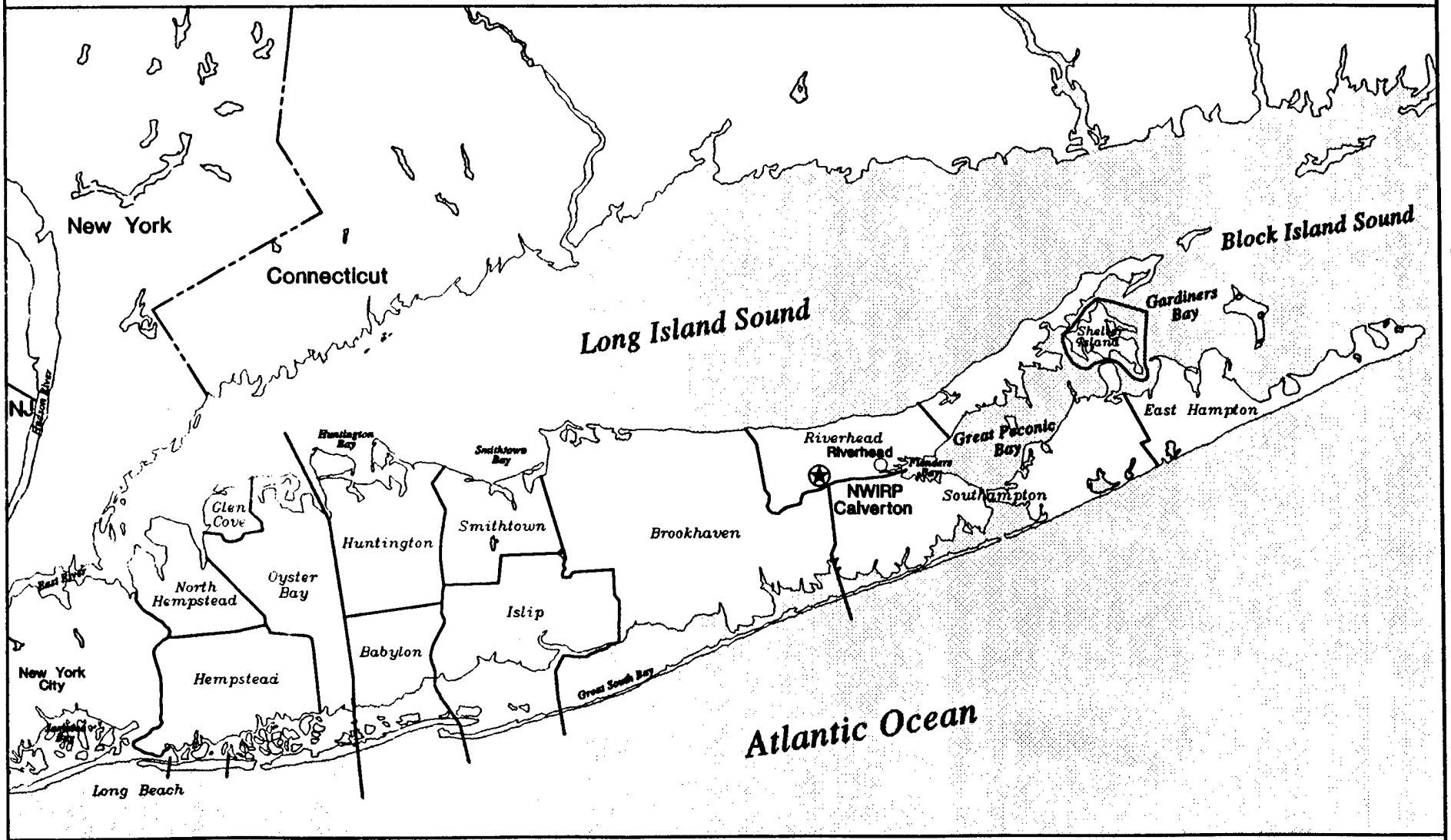



Figure 1-2

was to solicit public input on significant issues related to the Reuse Plan that should be addressed in the EIS. The meeting was advertised in the Federal Register as part of the NOI and in two local papers (*Newsday* [Nassau and Suffolk editions] on March 27, 1996 and *Suffolk County Life* on April 3 and April 10, 1996). At the public meeting, Navy personnel presented a briefing about the EIS process and the schedule for completing the study. The following known areas of concern were identified:

- Effects of NWIRP Calverton disposal and reuse on the natural environment including wetlands, surface and groundwater, noise, and pine barrens ecology;
- Responsibility for the cleanup of hazardous waste on the site;
- Effects of future growth on community facilities, infrastructure, and transportation systems; and
- Effects of reuse on potential historic structures.

Commentors at the scoping meeting of April 10, 1996 expressed concerns on the following issues:

- Remediation and extent of contamination at the facility;
- Future growth effects on wetlands, pine barrens, surface and ground waters, and community character;
- Traffic impacts of the Reuse Plan;
- Noise impacts of Reuse Plan;
- Future infrastructure requirement for Reuse Plan; and
- Economic impacts of the Reuse Plan.

All scoping comments were accepted from the NOI through the scoping meeting and up to May 1, 1996 (correspondence was to be postmarked by that date). The comments were used to refine the issues and analyses conducted as part of this EIS.

Beginning on March 17, 1997, the DEIS was distributed to agencies and officials of federal, state, and local governments, citizen groups and associations, and other interested parties. A public hearing, held in accordance with NEPA and SEQRA was held on April 17, 1997 in Riverhead, NY.

The notice was published in the *Federal Register* on April 1, 1997. The notice was also published in local newspapers - *Newsday* (Nassau and Suffolk editions, April 1 and April 15, 1997) and *Suffolk County Life* (April 2, 1997). The public review and comment period on the DEIS occurred through May 9, 1997.

# 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter provides a detailed description of the proposed action and its alternatives. The proposed action is the transfer of NWIRP Calverton by the US Navy. The EIS considers three scenarios for reuse of the 2,923-acre (1,169-hectare) site within the fence that were developed locally. The preferred alternative is called the Calverton Enterprise Park (Subchapter 2.3) and was developed by the town of Riverhead's Reuse Planning Commission. The two other locally developed alternatives evaluated are:

- the Calverton Enterprise Park/Raceway; and
- the Peconic Village.

These action alternatives provide a range of development (land uses and intensities) that result in impacts that could occur with transfer and reuse of NWIRP Calverton. The mixture of different land uses and development intensities in the alternatives allow for an impact analysis that would encompass the most likely long-range reuse plans as envisioned by the local community.

Each of the three action alternatives includes the transfer of 3,137 acres (1,255 hectares) outside the fence. These parcels are primarily wooded and used for a variety of outdoor recreational purposes (some of these lands are in agricultural use). These lands are legislatively mandated to remain in their current state.

This EIS also addresses the no action alternative in Subchapter 2.6. The no action alternative is the retention of NWIRP Calverton by the US government in a caretaker status. No reuse or redevelopment would occur at the facility under this scenario.

## 2.1 NWIRP Calverton

NWIRP Calverton is in the towns of Riverhead and Brookhaven. The focus of the reuse planning process is the area "within the fence," found about seven miles (mi) (11 kilometers [km]) west of Riverhead's downtown. The original site, acquired in 1952, was 4,500 acres (1823 hectares). The site, mainly farming and some residential, was chosen for its large size and its proximity to Bethpage, where sub-assembly of planes was already being done by Grumman.

By the time Grumman signed the Navy lease in 1954, the acquisition of a buffer zone was anticipated. In 1960, after two years of condemnation proceedings and litigation with the surrounding community, additional property was condemned for the buffer zone acquisition. NWIRP Calverton presently has a total of approximately 6,061 acres (2,455 hectares). Figure 2-1 (NWIRP Calverton) shows the

shape of the buffer zones in relation to the core area within the fence.

When first built, the government-financed $23.5 million facility included two runways, two large manufacturing buildings and five additional support buildings with 611,000 square feet (sq ft) (56,823 square meters [sq m]). Several structures were added over the next four decades to meet changing technology needs for testing increasingly sophisticated electronic systems in the aircraft and changing demands in the defense industry for new products and research and development. NWIRP Calverton was the first facility in the United States built primarily for assembly and testing of jet aircraft.

There are presently about 1,100,000 sq ft (102,300 sq m) of industrial, office, and support facilities on site. Based on data from the US Navy, NWIRP Calverton presently contains a total of 84 government-owned buildings (73 within the fence; 11 outside the fence). Within the fence the site includes these primary facilities:

- final assembly and manufacturing center;
- numerous hangar facilities;
- 10,000-ft (3,048-m) runway;
- auxiliary 7,000-foot (ft) (2,134 m) runway;
- secondary sewage treatment system;
- water distribution system and fire prevention system; and
- central steam plant.

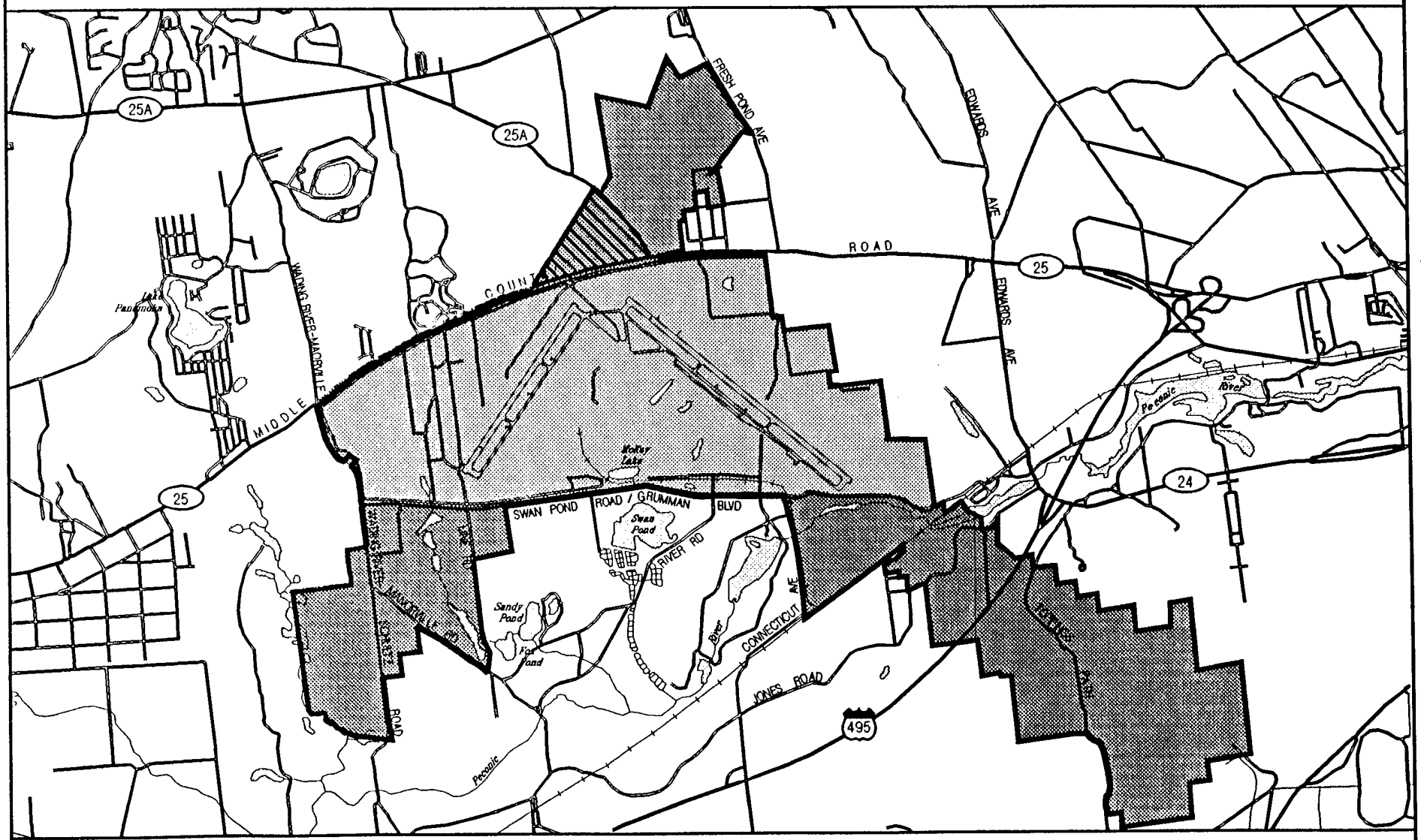
These facilities are contained within the core area of the site (Figure 2-2, Core Area of NWIRP Calverton).

In 1987, Grumman had a total of 23,000 employees on Long Island; by 1994, the number had shrunk to 9,500 with 1,500 employed at Calverton (Bernstein, 1994). Grumman was still the largest employer in Riverhead at the time and the annual tax revenues to the town were approximately $1.5 million. However, by July 1992, only one aircraft, the E2-C Hawkeye, remained in production. NWIRP Calverton officially closed February 15, 1996.

## 2.2 Development of Reuse Alternatives

As described in Chapter 1, the town of Riverhead CDA was given authority to receive title to NWIRP Calverton from the US Navy via Public Law 103-c337. The CDA is empowered to foster local economic development under the New York State General Municipal Law. The Riverhead Town Board created the Calverton Air Facility Joint Planning and Redevelopment Commission (Planning Commission) to assist and advise the Town Board on the reuse of NWIRP Calverton. The Planning Commission includes representatives from the town of Riverhead, surrounding towns, Suffolk County, New York State, the First Congressional District, and the US Navy.

# NWIRP Calverton




Property (within the fence)

Buffer Zones (outside of fence)

Property Transfer to Department of Veterans Affairs

4000 0 4000
Scale in Feet

1000 0 1000
Scale in Meters

N

**Figure 2-1**

# Core Area of NWIRP Calverton

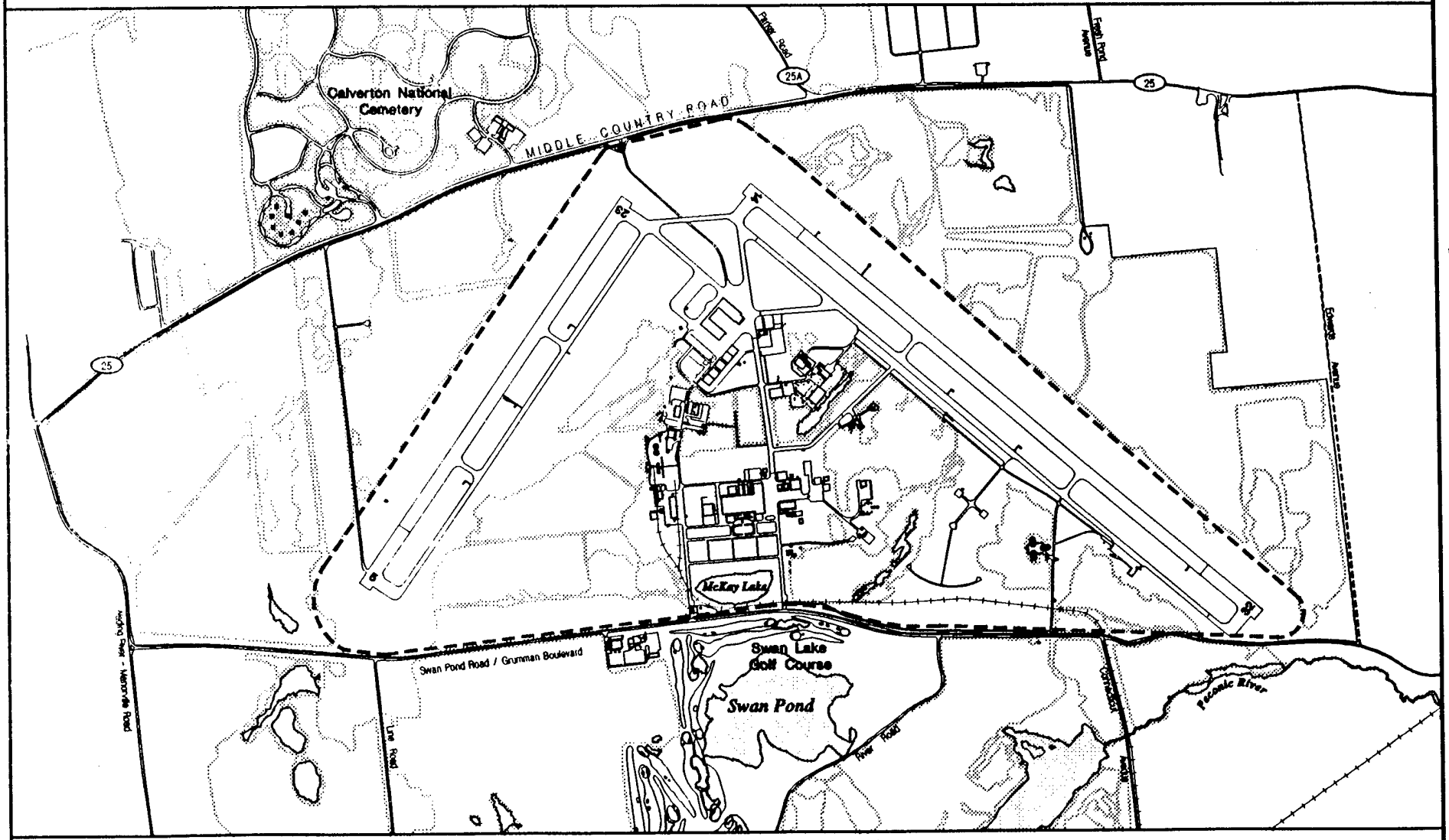



Figure 2-2

The alternatives were developed for the Reuse Planning Commission by Hamilton, Rabinovitz & Alschuler, Inc. (HR&A). Under contract to the town of Riverhead, HR&A prepared a report that developed, identified, and evaluated alternative reuse plans. The study was funded with financial support from the Office of Economic Adjustment - Department of Defense, and the New York State Department of Economic Development.

The process of preparing the alternative reuse scenarios, as they are called in the reuse strategy report, started in October 1995 at a set of public forums. Goals for the study were established by the Reuse Planning Commission and included:

- Attract private investment;
- Maximize job creation;
- Increase tax base; and
- Enhance regional quality of life.

Combined with the local meetings, several themes emerged that suggested to HR&A and the CDA several possible reuse scenarios:

- Industrial reuse;
- Commercial tourism; and
- Residential development.

Based on these broad themes, land uses were then identified and preliminary site plans were prepared and reviewed with the Planning Commission in November 1995. Based on the ideas from this meeting, three reuse scenarios were developed and refined. Certain elements of particular alternatives were also subject to further discussion with and modification by the Reuse Planning Commission.

In February 1996, the alternative reuse plans were presented to the Reuse Planning Commission for review. Based on their recommendation, the Riverhead Town Board was formally to approve, disapprove, and/or modify the recommended reuse plan. The Town Board has tentatively identified the Calverton Enterprise Park Reuse Plan (Reuse Plan) as its preferred alternative. Although no final decision has been made, the Town Board will make its final decision as to the preferred development scenario subsequent to the review of all factors, including data on the alternatives as presented in the HR&A report (HR&A, 1996). Upon determination of the preferred development scenario, the Town Board will formally amend the Master Plan of the town and will adopt zoning regulations to implement such amendment.

For the purposes of preparing the impact analysis in Chapter 4, certain assumptions and modifications have been made to the alternatives as defined in the HR&A report. These changes are described under the appropriate section of each alternative. Acreages of the proposed land uses within each alternative have been calculated so that the area within the fence totals to 2,923 acres (1,184 hectares) for all alternatives. The amount of proposed development, where specifically identified in

the Reuse Plan, (e.g., 887,500 sq ft 82,536 sq m), has been used as the basis for the impact analysis. Where the amount of development was not specifically identified, necessary and appropriate assumptions were made about development intensity generally consistent with the Riverhead zoning ordinance or an accepted professional standard.

## 2.3 Calverton Enterprise Park Reuse Plan

This alternative has been identified by the town of Riverhead as its preferred alternative reuse plan; it was designed to:

- create a marketable image for the site;
- establish a flexible blueprint for implementation; and
- provide a basis for investment.

The main land use elements and associated size of the Calverton Enterprise Park are listed in Table 2-1. The Reuse Plan is shown in Figure 2-3 (Calverton Enterprise Park Reuse Plan).

The reuse plan as described in this EIS assumes that an aviation and aircraft use will be the ultimate use (over a 20-year timeframe) of the eastern runway; it supplants the use of the same acreage for sports-oriented event grounds as defined by HR&A. The sports-oriented grounds had been considered a potential viable use in the short-term (five to ten years) and the limited aviation use was considered a potentially long-term viable future use (10 to 20 years) for the runway.

Should the Calverton Enterprise Park be implemented, it could have the capacity to generate the equivalent of approximately 2,980 full-time jobs within the 20-year timeframe. It is also estimated that total construction costs (on and off-site improvements) for this alternative would be about $484 million (1995 dollars ($)). As part of this cost off-site improvements for the road system surrounding the site and for improved access to the Long Island Expressway (LIE) have been estimated to be approximately $33 million (HR&A, 1996).

### 2.3.1 Industrial Business Park

The industrial business park component of the Reuse Plan incorporates the use of the existing industrial facilities on the site as well as the construction of new industrial facilities on 282 acres (114 hectares). To accommodate the aviation use (and associated facilities) in this alternative, 65 acres (26 hectares) of the industrial core, as originally conceived in the Reuse Plan, were incorporated into the aviation component. There would be a total of approximately 887,500 sq ft (82,538 sq m) of space in the industrial business park. In the future, expansion of industrial activity would be accomplished by assigning land within and next to the core to a mixed-use industrial reuse

# Calverton Enterprise Park Reuse Plan

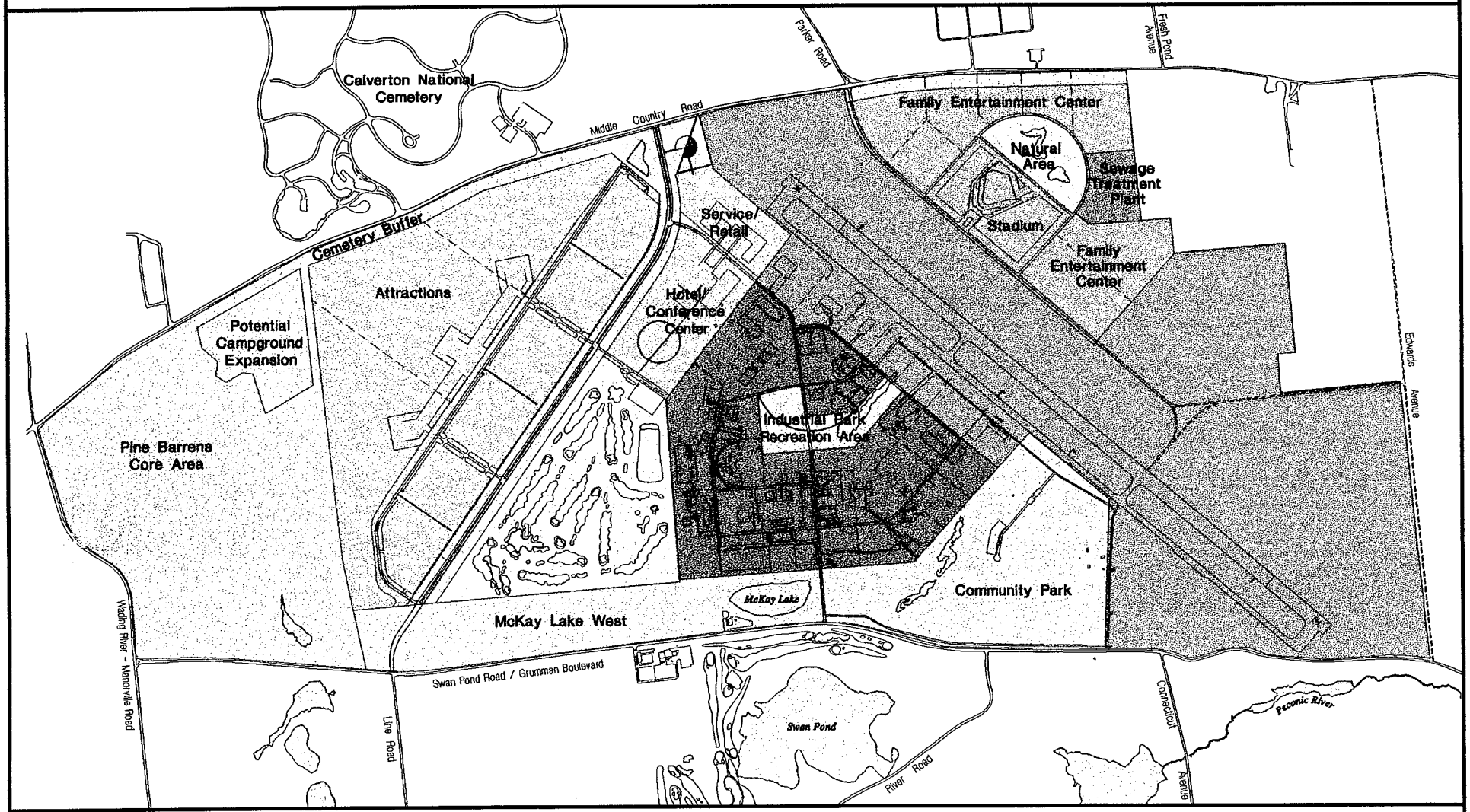



**Figure 2-3**

Table 2-1

Calverton Enterprise Park Reuse Plan Land Uses

| Land Use | Land Coverage | | Amount of development[1] |
|---|---|---|---|
| | Acres | Hectares | |
| Industrial Business Park | 282 | 114 | 887,500 sq ft (82,538 sq m) |
| Theme Park | | | |
| Attractions | 434 | 176 | 2.5 million visitors/year |
| Hotel/Conference Center | 63 | 26 | 400 rooms |
| Service Retail | 32 | 13 | 100,000 sq ft (9,300 sq m) |
| Subtotal | 529 | 214 | |
| Aviation/Aircraft Use | 853 | 346 | Several flights/day (a); 200,000 sq ft (18,600 sq m) (a) |
| Commercial Recreation | | | |
| Stadium | 54 | 22 | 6,000 - 8000 spectators/event |
| Family Entertainment Center | 137 | 55 | 300,000 visitors/year |
| Subtotal | 191 | 77 | |
| Public Golf Course | 166 | 67 | 18 holes |
| Open Space | | | |
| Pine Barrens Core | 438 | 177 | |
| McKay Lake (west) | 137 | 55 | |
| Community Park | 183 | 74 | |
| National Cemetery Buffer | 24 | 10 | |
| Industrial Park Recreation Area | 27 | 11 | |
| Natural Area | 27 | 11 | |
| Other Open Space | 48 | 19 | |
| Subtotal | 884 | 358 | (na) |
| Infrastructure - Sewage Treatment Plant | 18 | 7 | (na) |
| Totals | 2,923 | 1,184 | |

Notes: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable.
Source: Adapted from HR&A, 1996.

classification. It is assumed that half the total space would be housed within existing structures; the other half would be new infill development. Figure 2-3 shows the parcelization of the industrial core to locate existing buildings and provide services to vacant land for the new infill development. Parcel sizes generally range from five to 15 acres (two to six hectares). The industrial core could initially be serviced by the existing utilities. However, ultimately new and/or upgraded utilities would likely be needed. Access to the industrial core from the north would be provided via a new north-south connector. From the south, access from Swan Pond/Grumman Boulevard is moved to the east of McKay Lake. Presently, access to the site from the south is just to the west of McKay Lake.

A 27-acre (11-hectare) passive recreation area is proposed near the center of the industrial core. It would surround the existing pond near Plant 7.

## 2.3.2 Theme Park

The theme park portion of the Reuse Plan is approximately 529 acres (214 hectares) in the northwest portion of the site. The overall notion is a regional theme park such as Universal Studios or Six Flags with a potential attendance of 2.5 million visitors per year (HR&A, 1996).

### Attractions

The theme park (434 acres or 176 hectares) could consist of a single park or set of attractions, for example, an animal preserve and amusement rides. It could include major nighttime entertainment uses such as concerts and fireworks. An open-air concert facility would be compatible with this development. The Reuse Plan also envisions some form of temporary campgrounds to accommodate visitors to the park. As displayed in Figure 2-3, the site may be divided to accommodate a set of attractions, such as several smaller amusement parks or a recreation vehicle (RV) campground, although specifics have not been developed in the Reuse Plan.

Visitor parking would be contained within this district and would be found along the existing 7,000-ft (2,134-m) runway. Parking for 8,000 to 10,000 automobiles would be available to respond to the demands of the attractions.

Access to this area would be from NYS Route 25 via the proposed north-south connector that would link NYS Route 25 to Swan Pond/Grumman Boulevard. A secondary means of access from NYS Route 25 is proposed, about one mile east of the intersection of NYS Route 25/Wading River Road.

### Hotel/Conference Center

This 63-acre (26-hectare) area is designed to complement the development of the destination attractions and is situated near the northern gateway to the site. The Reuse Plan calls for a 400-room

facility and ultimately, that the hotel/conference center operators would likely want substantial control of, or access to, the proposed public golf course (Subchapter 2.3.5).

**Service Retail**

As a complementary use, future development in the service retail area would include such uses as convenience stores and business services. Setback from NYS Route 25, this 32-acre (13 hectares) area would contain about 100,000 sq ft (9,300 sq m) of space.

## 2.3.3 Aviation/Aircraft Use

An aviation use is considered as the ultimate reuse of lands (853 acres or 345 hectares) associated with the 10,000 ft (3,048 m) runway within the 20-year planning horizon consistent with the community's long-term vision for the Calverton Enterprise Park. The interim (one-year to ten-year timeframe) sports-oriented event grounds are not evaluated in this EIS as part of the Reuse Plan. The aviation activities for NWIRP Calverton are projected to require approximately 853 acres (345 hectares), or 29 percent of the lands within the fence. Of that amount, about 65 acres (26 hectares) next to the runway in the industrial business core would be used for these aviation-related facilities:

- Corporate development center; and
- Hangar and tie down storage area.

The DEIS initially evaluated a more intensive cargo/general aviation use than is presented in this FEIS. The DEIS assessed the effects of operating an air facility that would have included about 3 - 4 cargo flights each night and 242 general aviation flights each day. At the request of the town of Riverhead, the aviation use, herein called a limited industrial air park, has been substantially modified. The airpark is considered to be a use ancillary to the industrial business park for the use of turbo prop or small corporate jets only. The FEIS assesses the effects of operating such an airpark with several flights each week day and one flight (one departure and one landing) each weekend day.

As an air park, the existing runway would be viewed as a major amenity for attracting potential business users who have their own aircraft or have need for immediate access to an aircraft. There is sufficient runway length to operate any corporate jet as well as most commercial aircraft used for corporate purposes. There is also available land on site to accommodate corporate aircraft hangars, if required. However, the existence of a runway outside of an airport environment that has support activities such as fuel, maintenance and other services would have limited appeal.

### Type of Business Using Aviation

The retention of the 10,000 ft (3,048 m) runway as an amenity for the air park increases the potential for tenants that may have an aircraft or be part of a larger corporation that has an aircraft or would view having occasional access to a runway as a benefit. As a site for certain types of business, the adjacent runway would provide for quicker arrivals and departures that might prove most cost effective for that business. Additionally, many businesses that do not own or operate aircraft could perceive the existence of a runway as a benefit under special circumstances.

### Types of Flights

As an air park, the aviation use would be limited to those tenants who operate aircraft or have occasional use for aircraft. This would include tenants who may:

- Base their aircraft at the air park;
- Base their aircraft at nearby airports, arriving and departing from the air park carrying company personnel or their clients;
- Use of the runway for accommodating company flights traveling from other airports;
- Use of the runway for accommodating flights carrying special material, i.e., a type of special, limited cargo use;
- Use by businesses that do not own or operate aircraft but would have the flexibility of chartering aircraft from the air park for occasional use.

### Operational Scenarios - Frequency and Aircraft Type

For the airpark, the assumption of occasional use by the year 2017 has been defined as 24 operations per week; and one takeoff and landing each weekend day. Operations include flights attracted to the air park due to the businesses that would locate there. Such flights would include trips generated by another of that company's aircraft, a client's aircraft or the local trip of an aircraft based at a nearby airport coming to the airpark for pickup of passengers.

Air activity of this nature may typically have a high percentage of operations occurring during a peak hour. In this case, a very high peak hour percentage of 50 percent is assumed, i.e., 2 operations in the peak hour in 2017; the peak hour is assumed to occur in the morning, typically 7:00 - 8:00 AM.

The typical aircraft anticipated to operate at the airpark are corporate jet and turboprops. No commercial jets operations are assumed as part of the anticipated fleet that would operate at the airpark.

Some other adjacent land uses of the Calverton Enterprise Park are considered generally compatible with limited industrial airpark (Figure 2-3) with the following limitations:

- The proposed stadium (in the northwest portion of the site) would be limited to about 160 ft (49 m) in height, given its proposed location on the site;
- All new buildings paralleling the runway on its western edge (near the industrial business center) would be limited in height to approximately 70 ft (21 m); and
- Buildings in the service retail area at the northwest end of the 10,000 ft (3,048 m) runway would be limited in height to about 20 ft (6 m), given the general proposed location.

## 2.3.4 Commercial Recreational

### Family Entertainment Center

The Commercial Recreation District is in the northeastern portion of the site, fronting NYS Route 25. The 191-acre (77-hectare) area would accommodate such activities as a family entertainment center, skating rinks, and a sports stadium. Figure 2-3 shows several conceptual parcelization of the family entertainment center around the stadium; parcels range from approximately eight acres (three hectares) to 29 acres (12 hectares) in size.

### Stadium

The sports stadium depicted in Figure 2-3 would seat approximately 6,000 - 8,000 spectators on 54 acres (22 hectares) of property. This use was proposed as complementary to and synergistic with the theme park district in the western part of the site. It is assumed for this EIS that the development of the stadium occurs within the 20-year timeframe.

NYS Route 25, directly across from Parker Road (NYS Route 25A), would be the primary access road to this district. The new access road would end at a point southeast of the commercial recreation area. From its end, gravel access is proposed to continue to Peconic Avenue to the east and across the runway to the Community Park to the southwest (Figure 2-3) (HR&A, 1996).

## 2.3.5 Public Golf Course

A 18-hole public golf course is proposed in the western portion of the site, just to the south of the hotel/conference use and opposite the theme park attractions on the other side of the new north-south connector road. The golf course would occupy an estimated 166 acres (67 hectares) and can also be considered part of the open space component.

## 2.3.6 Open Space

As shown on Table 2-1, the open space component is listed as 884 acres (358 hectares); however, including the public golf course there would be approximately 1,052 acres (426 hectares) of open space at NWIRP Calverton, which is 36 percent of the area within the fence. These open space/natural areas are proposed for a wide range of active and passive recreational uses:

- 438 acres (177 hectares) of Pine Barrens Core Preservation Area;
- 137 acres (55 hectares) of natural undisturbed lands to the north of Grumman Boulevard and west of McKay Lake;
- 183-acre (74-hectare) active Community Park south of the industrial core and fronting on Swan Pond/Grumman Boulevard;
- 150-ft (46-m) buffer (24 acres or 10 hectares) on-site along NYS 25 for one mile opposite the Calverton National Cemetery;
- 27 acres (11 hectares) of a passive recreational park sited in the industrial core;
- 27 acres (11 hectares) of natural area in the northeast sector of the site to serve as endangered species habitat; and
- 48 acres (19 hectares) of miscellaneous open space.

Most of open space area encompasses that portion of the site that provides groundwater recharge to both shallow and deep underlying aquifers (HR&A, 1996).

## 2.3.7 Infrastructure

Portions of the site are presently served by a wastewater treatment system. A new and expanded wastewater treatment facility requiring 18 acres (7 hectares) of land would be constructed to eliminate the existing surface water discharge to McKay Lake that flows into the Peconic River. The groundwater discharge of the new sewage treatment plant (STP) would be on the northern groundwater divide of the property, where flow is toward Long Island Sound and away from the Peconic River system. This action would eliminate this source of nutrient loading to the Peconic Estuary.

Ultimately, the town of Riverhead Water District would be extended to provide water to the site.

## 2.4 Calverton Enterprise Park/RacewayAlternative

This alternative retains many Calverton Enterprise Park land uses; however, a permanent automobile raceway replaces the aviation and aircraft use. To accommodate the raceway option, some other land uses are modified:

- The service retail use (32 acres or 13 hectares) in the northern portion of the site and the industrial park recreation area (27 acres or 11 hectares) near the center of the site may be eliminated; and
- The industrial business park area is reduced from 282 acres (114 hectares) to approximately 217 acres (88 hectares).

The primary land use components of this alternative are presented in Table 2-2. The physical layout of the reuse alternative is displayed on Figure 2-4 (Calverton Enterprise Park/Raceway Alternative).

It is estimated that direct employment over the 20-year planning horizon would be 2,199 with full achievement. The total construction costs are estimated to be $432 million (1995 $).

### 2.4.1 Industrial Business Park

The industrial business park of this alternative incorporates the use of the existing industrial facilities and infill development on the site. Based on the acreage available within the industrial park with the raceway present, it is estimated that there would be about 682,900 sq ft (63,510 sq m) of space developed (217 acres developed at comparable density as the reuse plan - 3,147 sq ft/acre). As described in the raceway component later in Subchapter 2.4.3, there would be additional industrial, specialized, and commercial use, but it would be associated primarily with the racing activities.

### 2.4.2 Theme Park

The theme park is essentially the same as described previously for the Calverton Enterprise Park Reuse Plan. The hotel/conference center remains. However, the service retail district (32 acres or 13 hectares) and its 100,000 sq ft (9,300 sq m) of retail space in the north central portion of the site would be eliminated.

## 2.4.3 Automobile Raceway

The race circuit and race industry complex as presented in this EIS is generally based on information provided to the town of Riverhead by Project Calverton, Inc. and general data on racing and racing venues.

The motor racing complex would occupy about 808 acres (324 hectares) within the existing fence line of the site. The area would include much of the eastern side of the site, including the runway and adjacent open areas, and lands to the east of the runway. The boundary of the lands to be developed as the raceway was modified for analysis in the EIS; about 135 acres (55 hectares) were eliminated in the western part of the raceway to retain the community park as identified in the Calverton Enterprise Park Reuse Plan. Comparable acreage was added to the east of the runway.

The race circuit would be about 3.5 mi (six km) in length. The proposal also envisions the lease of approximately 69,000 sq ft (6,417 sq m) of manufacturing/warehouse space and 73,400 sq ft (6,826 sq m) of office space. The bulk of the space would be rented out to satellite businesses associated with racing and automobiles.

The road circuit would encompass the area around the northern end of Runway 32-14 and an adjacent area to the east and south. Fencing, removable concrete barriers, and tire walls would be added for race car and spectator safety. Semi-permanent bleachers holding approximately 12,000 spectators would be constructed at strategic viewing points around the race circuit. Additional temporary seating would be brought in for the major events.

During the year, the road course would be the site of six major weekend events centering on the four major road racing sanctioning bodies:

- Championship Auto Racing Teams (CART/Indy Cars);
- Sports Car Club of America (SCCA);
- International Motorsports Association (IMSA); and
- National Association of Stock Car Auto Racing (NASCAR).

Local amateur racing events would fill out the racing schedule weekends, about 32 weekends each year. The season would run from late March through early November. Driving schools and community service programs would use the road course on weekdays.

The race complex component would also include a driving school and associated race car preparation uses. It is estimated that these uses would require about 21,700 sq ft (2,018 sq m) of the 69,000 sq ft (6,417 sq m) of manufacturing/warehouse space.

# Calverton Enterprise Park / Raceway Alternative

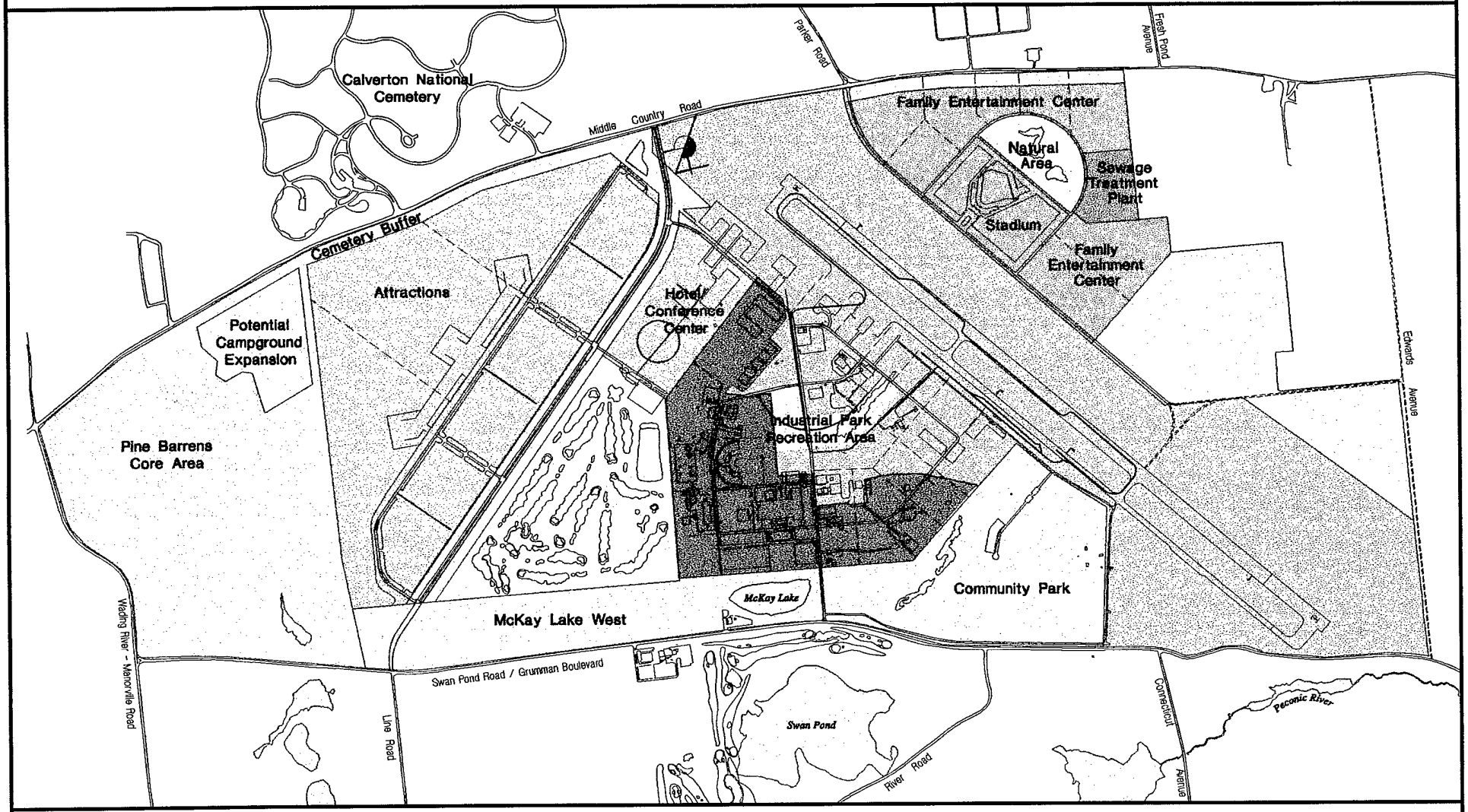



**Figure 2-4**

### 2.4.4 Commercial Recreation

This district of 191 acres (77 hectares) located in the northwest corner of the site and just west of the raceway would remain the same as previously described in the Reuse Plan. The stadium (54 acres or 22 hectares) and family entertainment center uses (137 acres or 55 hectares) within this district are shown on Figure 2-4.

### 2.4.5 Public Golf Course

Located on the western side of the site, the 18-hole public golf course would remain as described in the Reuse Plan (Subchapter 2.3.5).

### 2.4.6 Open Space

Designated open spaces comprise a total of 809 acres (328 hectares) under this alternative. As noted previously, the industrial park recreation area (45 acres or 18 hectares) near the center of the industrial core would be eliminated to incorporate the raceway use.

### 2.4.7 Infrastructure

As in the Reuse Plan, a new and expanded wastewater treatment facility on 18 acres (seven hectares) would be constructed in the northwestern portion of the site.

## 2.5 Peconic Village Alternative

Peconic Village is designed to be a planned mixed-use residential community on the East End of Long Island. Figure 2-5 (Peconic Village Alternative) shows the conceptual layout of the land uses that comprise this plan. Table 2-3 lists these main land uses, their associated size in acres and hectares and the amount of proposed development (in sq ft and sq m). Because it is planned for residential use, the following land uses that were components of the other alternatives would not be part of this one: a theme park; airport; an automobile raceway; and, commercial recreation (a stadium and family entertainment center).

It is estimated that full achievement of this alternative over the 20-year planning horizon would create 1,923 direct jobs. The total estimated construction cost is estimated to be $407 million.

## 2.5.1 Industrial Business Park

The industrial park in this alterative would occupy about 185 acres (75 hectares) and it is assumed that uses would be similar to those described for the Calverton Enterprise Park Reuse Plan and Enterprise Park/Raceway Alternative. It is estimated that there would be approximately 582,000 sq ft (54,126 sq m) of mixed use/industrial space developed as part of this alternative.

## 2.5.2 Hotel/Conference Center

The hotel/conference center use would also be similar to that in the other alternatives, although the site would occupy more acreage (a total of 75 acres or 30 hectares). For purposes of the analysis, a 400-room facility was envisioned in the same general location of the site as in the other alternatives. As noted previously, the theme park would be eliminated.

## 2.5.3 Commercial/Retail

Commercial retail uses occupying about 105 acres (43 hectares) would be developed in two locations on site: along NYS Route 25 near Parker Road (NYS Route 25A) and in the center of the site along the new north/south boulevard. Data from the local reuse planning process did not include an estimate of how much commercial/retail space was to be developed for this alternative. Based on the amount proposed in the Reuse Plan, it has been assumed that there would be a total of about 190,000 sq ft (17,763 sq m) of space developed, 63,000 sq ft (5,859 sq m) along NYS Route 25 and 127,000 sq ft (11,811 sq m) near the center of the site.

## 2.5.4 Residential

The homes at Peconic Village would be for retirement use and residents would be 55 years and older. As shown in Table 2-3, housing would consist of senior housing units and assisted living units. Together, it is estimated that there would be 688 units of assisted living on 40 acres (16 hectares) and 1,350 units of senior housing on 618 acres. (250 hectares) The main areas of housing are in the eastern and western sides of the site (Figure 2-5). A private golf course of 192 acres (78 hectares) is planned for the community.

## 2.5.5 Public Golf Course

A public golf course in the eastern portion of the site would be developed. The 168-acre (68-hectare) facility would be in addition to the private golf course in the western portion of the site.

# Peconic Village Alternative

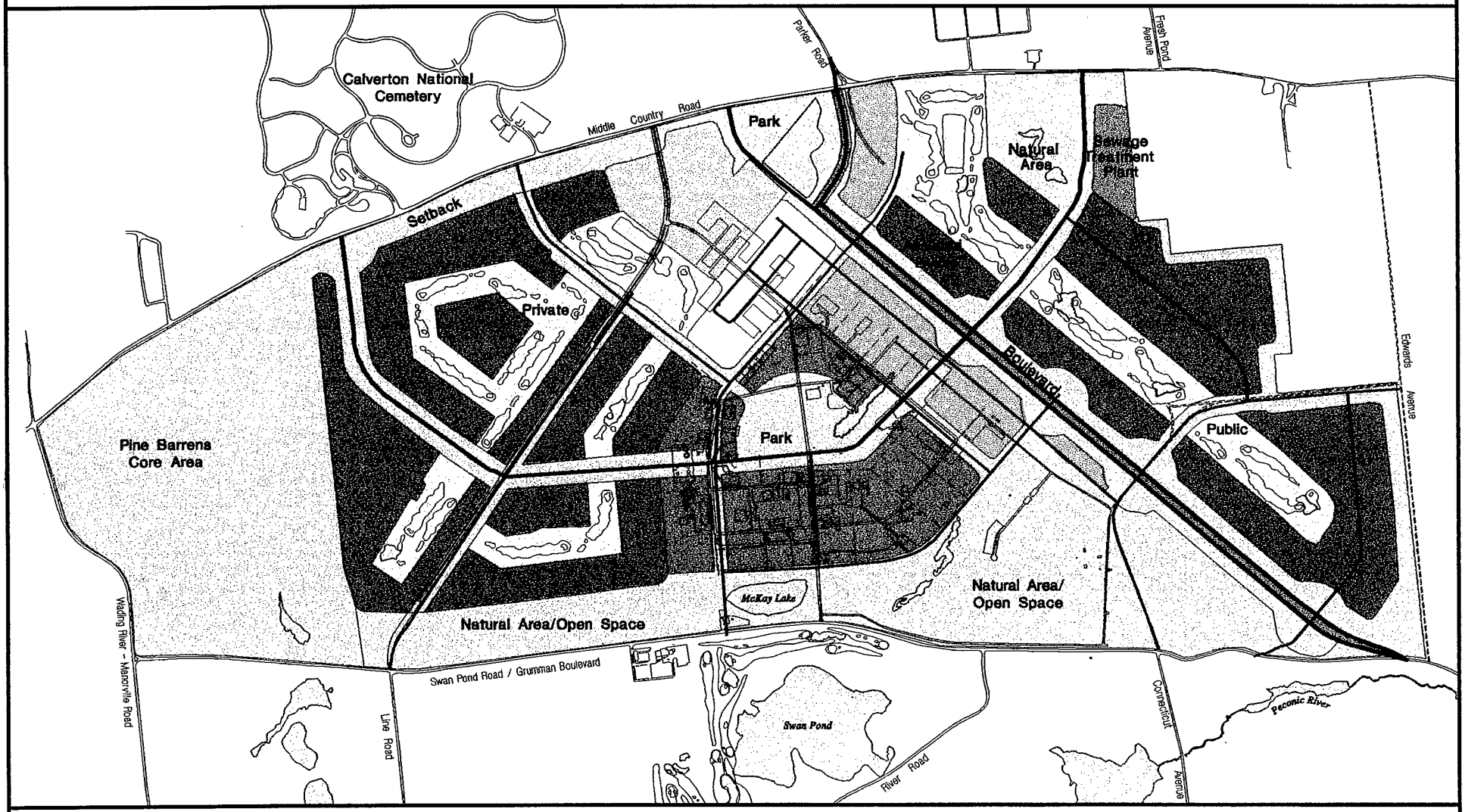



Figure 2-5

Table 2-2

Calverton Enterprise Park/Raceway Alternative Land Uses

| Land Use | Land Coverage | | Amount of Development[1] |
|---|---|---|---|
| | Acres | Hectares | |
| Industrial Business Park | 217 | 88 | 682,900 sq ft (63,510 sq m) |
| Theme Park | | | |
| Attractions | 434 | 176 | 2.5 million visitors/year |
| Hotel/Conference Center | 63 | 26 | 400 rooms |
| Subtotal | 497 | 201 | |
| Automobile Raceway | 808 | 324 | racing event - 21,000 spectators/day (a); 142,400 sq ft (13,243 sq m) |
| Commercial Recreation | | | |
| Stadium | 54 | 22 | 6000 - 8000 spectators/event |
| Family Entertainment Center | 137 | 55 | 300,000 visitors/year |
| Subtotal | 191 | 77 | |
| Public Golf Course | 166 | 67 | 18 holes |
| Open Space | | | |
| Pine Barrens Core | 438 | 177 | |
| McKay Lake (west) | 137 | 55 | |
| Community Park | 183 | 74 | |
| National Cemetery Buffer | 24 | 10 | |
| Industrial Park Recreation Area | 27 | 11 | |
| Natural Area | 27 | 11 | |
| Other Open Space | 190 | 77 | (na) |
| Subtotal | 999 | 405 | |
| Infrastructure - Sewage Treatment Plant | 18 | 7 | (na) |
| Total | 2,923 | 1,184 | |

Notes: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable.
Source: Adapted from HR&A, 1996; Project Calverton, Inc. 1995.

### 2.5.6 Civic Facilities

A variety of civic facilities are planned near the center of the site. Occupying about 55 acres (22 hectares) and 50,000 sq ft (4,650 sq m) of space, facilities would include such uses as a community club house, church, post office, and similar civic and service-related functions.

### 2.5.7 Open Space

Open space uses would comprise approximately 1,428 acres (578 hectares) as listed in Table 2-3. With the two golf courses, open spaces would account for a total of 1,788 acres (724 hectares), or about 61 percent of the site.

### 2.5.8 Infrastructure

A new wastewater treatment facility on 18 acres (seven hectares) would be constructed in the northeast portion of the site. A new north/south boulevard would encompass about 39 acres (16 hectares) of property. The road would provide access to all portions of the site and connect Swan Pond Road/Grumman Boulevard on the south with NYS Route 25 to the north.

As in the other alternatives the town of Riverhead Water District would ultimately be extended to provide water to the site.

## 2.6 No Action Alternative

The no action alternative is the retention of NWIRP Calverton by the US government in a caretaker status. No reuse or redevelopment would occur at the facility.

Continued government ownership of the property would have no benefit to the US Navy, as the Navy would incur continued liability for an asset defined as having no functional, operational, or strategic value. Continued federal ownership would also provide no benefit to the local community or region since such ownership would prevent any possibility of a viable, productive (re)use of the land. Consequently, for the purposes of this EIS, the no action alternative is presented and developed as the future baseline condition against which the impacts of the proposed action are measured.

Because of the special legislation which may result in the disposal of NWIRP Calverton to the town of Riverhead, the no action alternative is considered impracticable for the Navy to carry out.

Table 2-3

Peconic Village Alternative Land Uses

| Land Use | Land Coverage | | Amount of Development[1] |
|---|---|---|---|
| | Acres | Hectares | |
| Industrial Business Park | 185 | 75 | 582,000 sq ft (54,126 sq m) (a) |
| Hotel/Conference Center | 75 | 30 | 400 rooms |
| Commercial/Retail | 105 | 43 | 190,000 sq ft (17,763 sq m) |
| Residential | | | |
| Assisted Living | 40 | 16 | 688 units |
| Senior Housing | 618 | 250 | 1,350 units |
| Private Golf Course | 192 | 78 | 18 holes |
| Subtotal | 850 | 344 | |
| Public Golf Course | 168 | 68 | 18 holes |
| Civic Facilities | 55 | 22 | 50,000 sq ft (4,650 sq m) (a) |
| Open Space | | | |
| Parks | 90 | 37 | |
| Natural Area/Open Space | 865 | 350 | |
| Pine Barrens Core | 438 | 177 | |
| Setback | 35 | 14 | |
| Subtotal | 1,428 | 578 | (na) |
| Infrastructure | | | |
| Sewage Treatment Plant | 18 | 7 | |
| Boulevard and Roads | 39 | 16 | |
| Subtotal | 57 | 23 | (na) |
| Total | 2,923 | 1,184 | |

Note: Land use acreage and amount of development are approximate based on estimates made for a long-term (20-year) development plan that is subject to change. Numbers may not total exactly due to rounding and metric conversions. [1]Scale of development as defined in the Reuse Plan; where scale of development was not defined in the Reuse Plan, (nd) means not defined; where assumptions were necessary for analysis and were made, (a) means assumed; (na) means not applicable.
Source: Adapted from HR&A, 1996.

# 3 AFFECTED ENVIRONMENT

## 3.1 Land Use and Zoning

### 3.1.1 Land Use at NWIRP Calverton

NWIRP Calverton is situated primarily in the town of Riverhead and in the town of Brookhaven, Suffolk County, New York. It is approximately 80 mi (129 km) east of New York City, 50 mi (80 km) west of Montauk Point, and seven mi (11 km) west of Riverhead's downtown.

NWIRP Calverton encompasses approximately 6,061 acres (2,455 hectares) (Myers and Gaffney 1990). The property can be divided into two broad land use areas:

- "Within the fence" - approximately 2,923 acres (1,184 hectares) in size, this is the central contiguous area leased and operated by Northrop Grumman Corporation (Grumman; formerly Grumman Aerospace Corporation) to perform all mission-related activities;

- "Outside the fence" - three separate parcels (known as the north, southeast, and southwest buffer zones) comprising a total of 3,137 acres (1,271 hectares) were originally purchased as buffers associated with the aircraft testing operations and to minimize encroaching development; these lands are undeveloped and used for recreation, agricultural, and conservation purposes by the New York State Department of Environmental Conservation (NYSDEC) through a cooperative agreement with the US Navy. The north buffer zone contains agricultural land leased to a local farmer; the southwest and southeast buffer zones are predominantly forested.

Figures 2-1 and 2-2 display the relationship of these lands to one another. In Figure 3.1-1 (General Land Use), general categories of land use are shown for an area of about one mi (1.6 km) around the fenced-in portion of NWIRP Calverton.

**NWIRP Calverton Land Use Within the Fence**

Presently, NWIRP Calverton contains 73 government-owned structures. The total amount of building space is about 1,100,000 sq ft or 100,000 sq m, including assembly hangars, testing facilities, support services, and administration buildings. In general, the buildings are concentrated in the central and southern parts of the site and are bounded by the two concrete aircraft runways on the northeast and northwest (Figure 2-2). All of these facilities supported the plant's mission - the final assembly and flight acceptance testing of military aircraft. The western, northeastern, and

northwestern areas of the site within the fence remain essentially undeveloped as fields or forested land.

The fenced-in portion of the site is accessed via a single main gate located about midway along Grumman Boulevard (or Swan Pond Road), the southern boundary of the fenced-in portion of NWIRP Calverton. A spur of the Long Island Railroad (LIRR) that is no longer in use runs along the site's southern perimeter (in the eastern portion of the site) parallel to Grumman Boulevard before it turns north into the center of the activity above the main gate.

**NWIRP Calverton Land Use Outside the Fence**

Much of the land immediately surrounding the fenced-in area of NWIRP Calverton is part of three buffer zones that are essentially extensions of the runways and total 3,137 acres (1,255 hectares). (Figure 2-1). Most of a former buffer zone located northwest of the fenced-in area was transferred to the Veteran's Administration for a national cemetery in December 1977. According to the US Navy there are 11 structures in the buffer zones.

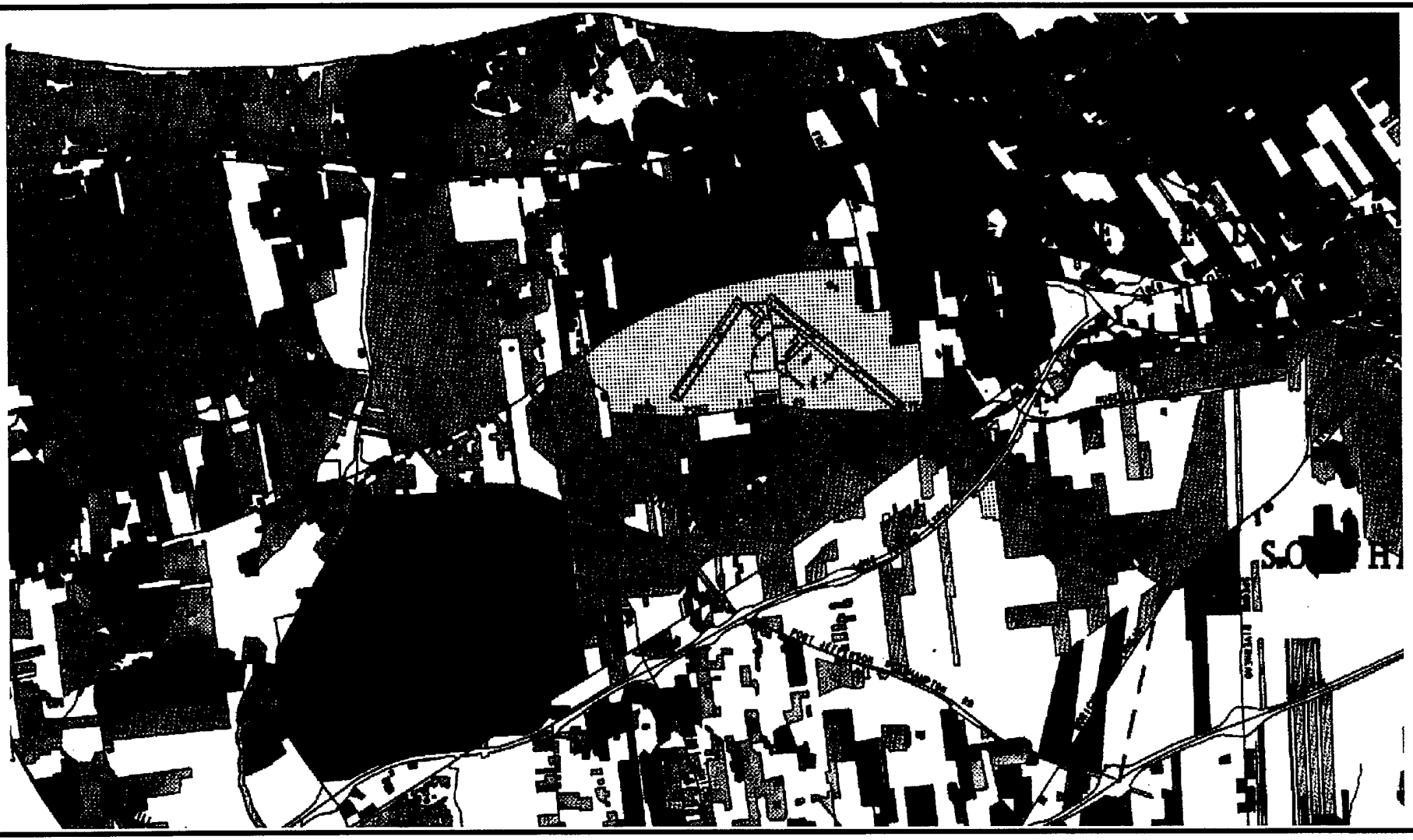
The north buffer zone (610 acres or 244 hectares) contains agricultural land formerly outleased to a local farmer. Agricultural outleases are issued for one-year periods with options for four additional annual extensions. At the end of each five-year period, the use of the farmland is re-advertised and competitively bid for the next leasing period (Myers and Gaffney, 1989). The leases cover only the tillable or agriculturally productive portion of the land. These lands have been outleased since 1969. The Federal Aviation Administration (FAA) maintains a Visual Omnidirection Range Tactical Air Control (VORTAC) station in this zone. The VORTAC serves as an aid to general aviation (Myers and Gaffney, 1989).

The southeast and southwest buffer zones comprise 2,527 acres (1,011 hectares) and are predominantly forested. In 1965 the US Navy entered into a Cooperative Agreement with NYSDEC for public recreational use of most of the buffer zone land for hunting, fishing, trapping, dog training, and dog field trials. With the exception of the lands outleased to local farmers, all buffer zone land is covered under the Cooperative Agreement.

Under the existing Cooperative Agreement, NYSDEC has prepared a long-range (ten-year) wildlife management plan to identify development and habitat improvements to be undertaken in the buffer zones. This plan is compatible with the Navy's Forest Resource Management Plan. The plan can be changed or terminated by the parties to the agreement (Myers and Gaffney, 1989).

A substantial amount of use for hunting and fishing in the buffer zones occurs in the spring and fall of the year. The greatest use is during hunting season, usually from October through February. There are seasons for waterfowl, pheasant, quail, grouse, rabbit, squirrel, deer, and woodcock. Deer hunting has both an archery and shotgun season (Myers and Gaffney, 1989).

# Generalized Land Use



Agri.,Gen Open,Golf,Cemetery
Park/Open Space (Town,County,State)
Utilities
Vacant
Underwater Lands
Airport Lands

Residential - Estates,Low & Med Density
Residential - High Density
Commercial
Institutional
Industrial

Note: "Airport Lands" in legend equates to NWIRP Calverton's fenced-in area
Source: Koppelman, et. al., 1993.

**Figure 3.1-1**

## 3.1.2 Land Use in the Surrounding Vicinity

When originally sited, NWIRP Calverton was in an area of about two-thirds open space and one-third farmland, based on a review of 1947 aerial photography. The undeveloped portion of the site was forested and featured small streams, wetlands, and several ponds (NEESA, 1986).

The lands surrounding NWIRP Calverton are generally sparsely settled, reflecting the presence of the buffers and the area's historical agricultural economy (Figure 3.1-1). Regional population centers are located some distance from the site, with settlement situated primarily near the coast (e.g., Wading River, Wildwood) and the Peconic River (e.g., downtown Riverhead).

Single-family houses are scattered around the perimeter of the fenced-in area of the site, primarily along Route 25 (Middle Country Road), the northern boundary. Two more densely settled areas of single-family residences are also located off of Route 25: Kay Road on the western side of the site and Timber Drive along the eastern portion of the site.

Other land uses immediately adjacent to the site along Route 25 (from west to east) include:

- Turf farm (for sale at the time of field reconnaissance);
- Motel;
- Calverton National Cemetery of the Veterans Administration;
- FAA radar installation;
- Commercial office park;
- Two restaurants; and
- Poultry farm.

East of the site along Route 25 there are scattered residences, farms, a warehousing operation, and a gas station.

Development along Swan Pond/Grumman Boulevard is minimal because (1) the undeveloped southern buffer zones encompass a substantial amount of the land along the road; (2) Swan Lake Golf Course, another open space element, is located opposite the site; and (3) Grumman Boulevard is not a major east-west thoroughfare like Route 25. The Peconic River and its tributary streams that contain numerous ponds and wetlands are located south of the site. The Peconic River flows in an easterly direction and lies in close proximity to Grumman Boulevard near the western portion of the site.

South of the site, off of Swan Pond/Grumman Boulevard along the eastern side of Line Road (off of Grumman Boulevard), there are a few commercial/industrial establishments. Along Connecticut Avenue (also south of the site off of Grumman Boulevard), lands on either side of the road are wooded and undeveloped. The property to the east is part of the southeastern buffer zone. The

Peconic River Sportsman's Club holds lands on the western side of Connecticut Road in the vicinity of the site.

Opposite the site to the west along Manorville Road, there are several residences and a commercial business. South of Manorville Road's intersection with Swan Pond/Grumman Boulevard, development is again limited and open space predominates because of the southwestern buffer area that is part of the NYSDEC Cooperative Wildlife Management Area.

The eastern boundary of the fenced-in area of NWIRP Calverton is not defined by a roadway, unlike the three other compass directions. Lands to the east of the site are primarily in agricultural use. Edwards Avenue, about 0.4 mi (0.6 km) east of the site's easternmost boundary, has a variety of adjacent uses including a golf course, sod farm, oil storage and distribution facility, and several commercial operations. Calverton, a small community of residences and businesses, is located around the intersection of Edwards Avenue and River Road just east of the site.

## 3.1.3 Zoning

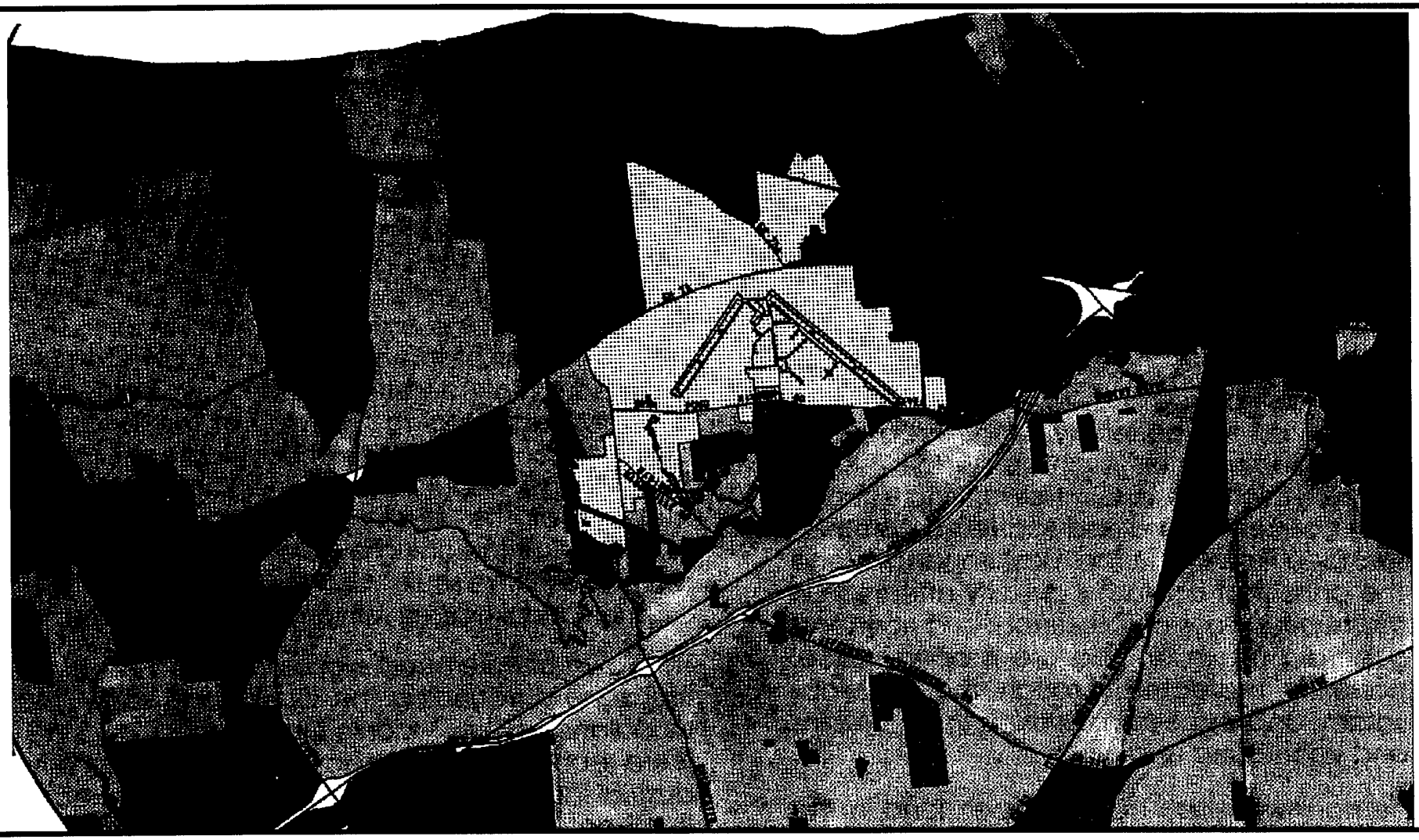
As federal property, NWIRP Calverton is exempt from local zoning. However, the future reuse of the property with private uses would be subject to the land use and zoning restrictions of the town of Riverhead. As described in Chapter 2, all of the buffer zones in the towns of Riverhead and Brookhaven may be transferred to the NYSDEC and no development will occur on them - they will remain in use for conservation, recreation, and agricultural use. Consequently, as state property managed by the NYSDEC, these buffer lands will remain exempt from local zoning in both Riverhead and Brookhaven. Figure 3.1-2 (General Zoning) displays general categories of zoning for an area about one mi (1.6 km) from the fenced-in area of NWIRP Calverton.

### Town of Riverhead

The zoning map of the town of Riverhead shows NWIRP Calverton as "Defense Institutional" land. This designation essentially "grandfathered" and allowed the past use of the site as an aircraft testing and assembly facility. The only permitted uses are agriculture, national cemetery, and naval weapons testing facility. As special uses, airports and utility structures and/or utility rights-of-way are permitted. The site has never been zoned in the traditional sense of defining allowable uses, setbacks, densities, etc.

A variety of zoning districts are present adjacent to the site that reflect and consolidate existing land uses. Along Route 25 to the north of the site the following zoning districts are present (from west to east): Residence A, Residence C, Open Space Conservation, Industrial B (General Industry), Residence C, Business CR (Rural Neighborhood Business), and Industrial A (Light Industry). To the south of the site along Grumman Boulevard, the following zoning districts are present (from west

# Generalized Zoning



Residential
Low : <1 Unit Per Acre
Med : 1 Unit Per Acre
High : >1 Unit Per Acre
Commercial
Industrial
Defense Institutional
Open Space
Incorporated Village
Underwater Lands

Source: Koppelman, et. al., 1993.

**Figure 3.1-2**

to east): Defense Institutional, Office/Service, Open Space Conservation, Natural Resources Protection, and Open Space Conservation. On the western boundary along Manorville Road, the zoning is for Natural Resources Protection. Adjacent to the site on its eastern border, these zones are present (from north to south): Business CR (Rural Neighborhood Business), Industrial B (General Industry), and Industrial A (Light Industry).

**Town of Brookhaven**

In the town of Brookhaven, the buffer lands are zoned for residential uses.

## 3.1.4 Central Pine Barrens Comprehensive Land Use Plan

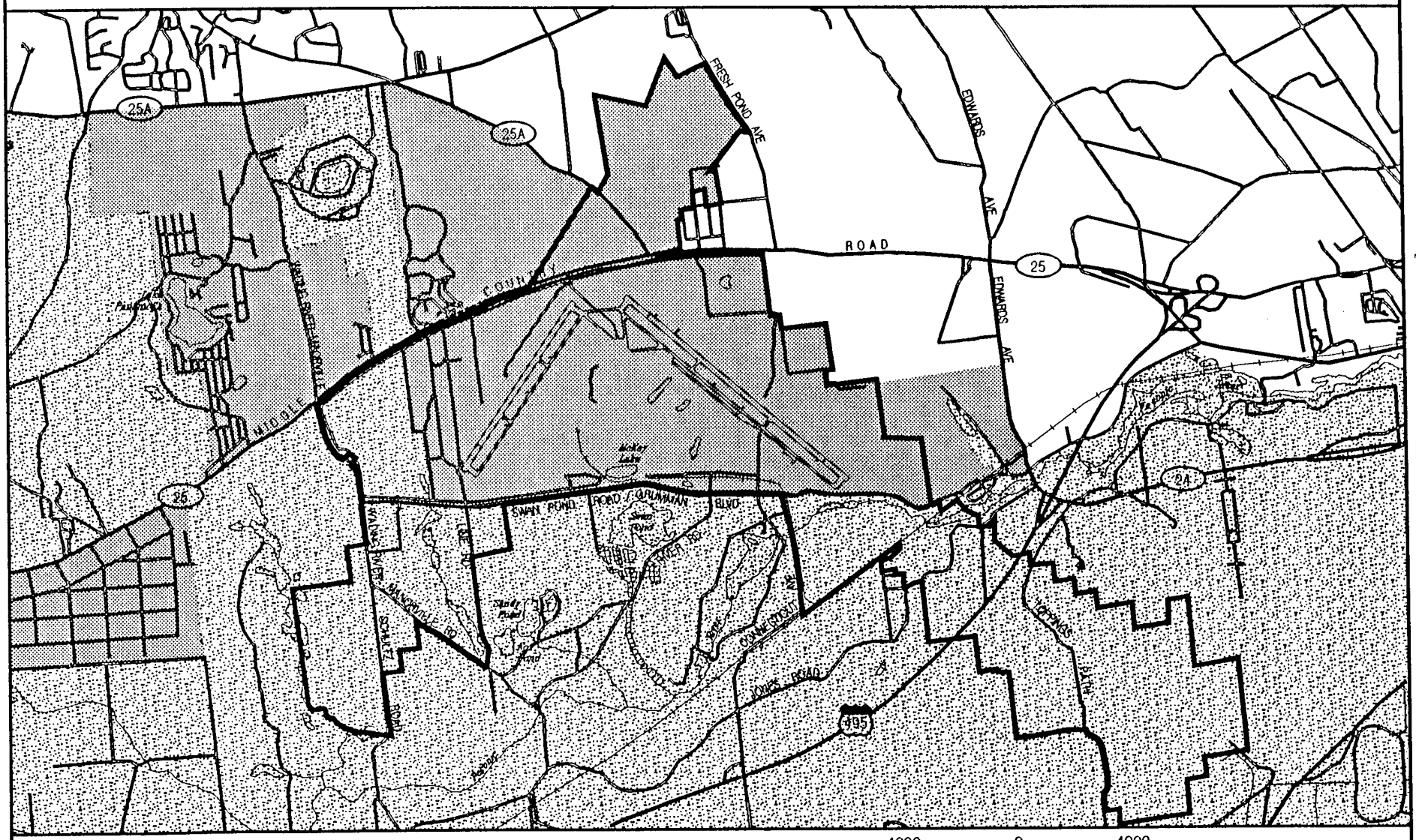
The Central Pine Barrens Comprehensive Land Use Plan was prepared pursuant to the Long Island Pine Barrens Protection Act of 1993 and established a set of policies, programs, and standards to protect, preserve, and enhance the functional integrity of the "Central Pine Barrens" ecosystem of Long Island. The Central Pine Barrens is a 100,000-acre (40,000-hectare) area in central and eastern Long Island that includes the towns of Riverhead, Brookhaven, and Southampton (Central Pine Barrens Joint Planning and Policy Commission [CPBJ&PC], 1995). Within the 100,000 acres (40,000 hectares), there are two zones with different protection goals:

- Core Preservation Area (CPA) - Comprised of 52,500 acres (21,000 hectares), the core area is designed to protect and preserve the ecologic and hydrologic functions of the Pine Barrens. This is to be achieved by preserving the core in its natural state, by promoting compatible agricultural, horticultural, and open space activities, and by minimizing impacts by prohibiting or redirecting new development (CPBJP&PC, 1995).

- Compatible Growth Area (CGA) - The Pine Barrens Plan designed this 47,500-acre (19,000-hectare) area to discourage piecemeal and scattered development and to encourage appropriate patterns of compatible residential, commercial, agricultural, and industrial development. Regional growth is planned to be accommodated in an orderly way and to accommodate a portion of the development directed from the CPA (CPBJP&PC, 1995).

As shown in Figure 3.1-3 (Central Pine Barrens Land Use Areas), most of the fenced-in area of NWIRP Calverton is designated as CGA. Approximately 423 acres (166 hectares) in the western portion of the fenced area (west of runway 05/23) have been designated as part of the CPA. The southeast and southwest buffer zones are part of the CPA; the northern buffer is part of the CGA.

# Central Pine Barrens Land Use Areas




Compatible Growth Area

Core Preservation Area

Area Outside of Central Pine Barrens

Property Boundary

4000 0 4000
Scale in Feet

1000 0 1000
Scale in Meters

N

Source: CPBJP&PC, 1995.

Figure 3.1-3

# 3.2 Socioeconomics

The study area for the review of existing socioeconomic conditions is best defined by the geographic availability of appropriate demographic and economic data. Census tracts at the east end of Long Island tend to be large; the NWIRP Calverton site is but part of one large tract in the town of Riverhead. It is possible to obtain population, household, and housing data at the tract level; however, the tracts do not closely conform to the one mi (1.6 km) radius used in the land use section, and the broader municipal context is more appropriate when considering socioeconomic characteristics and their relationship to community services and employment pools. For these reasons, data are presented for the three adjacent towns of Riverhead, Brookhaven, and Southampton, and for the larger context of Suffolk County (Figure 1-2, Major Municipalities of Long Island).

## 3.2.1 Population

Population in the three municipalities surrounding NWIRP Calverton exceeded 476,000 in 1990, an increase of ten percent from the 1980 population (Table 3.2-1). Among the three municipalities, Brookhaven accounts for 86 percent of the population and experienced the greatest growth over the decade of the 1980s with an increase of almost 43,000, an increment greater than that of Suffolk County as a whole. While each of the three towns experienced growth during the 1980s, growth slowed in the late 1980s. According to the Long Island Lighting Company (LILCO), growth has been quite modest over the 1990-95 period, at approximately one percent. LILCO estimates growth for the county over the 1990-95 period at 0.4 percent, much slower than the 2.9 percent rate of growth during the 1980s (LILCO, 1995). Official projections of future population for the county were last made by the New York State Data Center in 1985 (New York State Department of Commerce, 1985). At that time, population in the year 2000 was projected to reach 1,527,466. This projection appears to be high, as evidenced by a recent projection by Urbanomics, a consultant to the Metropolitan Transportation Council, forecasting that Suffolk County population would reach only 1,495,200 by the year 2010 (Urbanomics, 1995). Neither Suffolk County nor the Long Island Regional Planning Board has provided more current projections for Suffolk County, nor have the three municipalities.

Table 3.2-2 presents the population's age and ethnic characteristics from the 1990 Census. The two municipalities with the highest population growth rates in the 1980s, Brookhaven and Riverhead, also have the highest proportion of their population under age 18, reflecting the usual demographic profile of newer suburbs. In general, the county is experiencing a gradual aging of the population as the older suburbs in the west are witnessing a parallel maturing of their populations. Among the three towns, Brookhaven has a much younger demographic profile than Riverhead and Southampton, which have twice the proportion in the over-65 age group than Brookhaven.

Table 3.2-1

Population Growth and Estimates

| Study Area | 1980 | 1990 | # Change 1980-90 | % Change 1980-90 | Estimate 1995 |
|---|---|---|---|---|---|
| Brookhaven | 365,015 | 407,977 | 42,962 | 11.8 | 418,171 |
| Riverhead | 20,243 | 23,011 | 2,768 | 13.7 | 23,566 |
| Southampton | 43,146 | 45,351 | 2,205 | 5.1 | 46,380 |
| Suffolk County | 1,284,231 | 1,321,977 | 37,746 | 2.9 | 1,334,468 |
| Sources: US Census, 1990, CPH-3; and LILCO 1995 Long Island Population Survey. | | | | | |

Table 3.2-2

Age and Ethnic Characteristics

| Jurisdiction | 1990 Population | | | | |
|---|---|---|---|---|---|
| | % Under 18 | % Over 65 | Median Age | % Black | % Hispanic |
| Brookhaven | 27.1 | 9.6 | 34.1 | 3.6 | 5.5 |
| Riverhead | 22.7 | 20.5 | 33.9 | 12.7 | 2.6 |
| Southampton | 19.6 | 19.0 | 37.8 | 8.8 | 2.6 |
| Suffolk County | 24.7 | 10.7 | 33.7 | 6.3 | 6.6 |
| Source: US Census, 1990, STF 1A. | | | | | |

Table 3.2-3

Income and Poverty Status

| Jurisdiction | Median Household Income | Median Family Income | Per Capita Income | Persons In Poverty | | Families In Poverty | |
|---|---|---|---|---|---|---|---|
| | | | | Persons | % | Families | % |
| Brookhaven | 46,339 | 50,206 | 16,441 | 20,621 | 5.2 | 3,978 | 3.8 |
| Riverhead | 32,655 | 41,308 | 15,643 | 1,883 | 8.4 | 317 | 5 |
| Southampton | 36,859 | 43,929 | 20,684 | 3,290 | 7.6 | 552 | 4.6 |
| Suffolk County | 56,986 | 53,247 | 18,481 | 61,389 | 4.7 | 11,361 | 3.3 |
| Note: All data are for 1989.<br>Source: US Census, 1990, CP-2-34. | | | | | | | |

The minority populations of the three municipalities are relatively small; in 1990 the proportion that is Black ranges from 3.6 percent in Brookhaven to 12.7 percent in Riverhead, compared to the county rate of 6.3 percent. Similarly, Hispanics, who may be of any race, are represented in relatively small numbers in the three municipalities, in this instance, Brookhaven with 5.5 percent and Riverhead and Southampton both with 2.6 percent. Suffolk County as a whole was 6.6 percent Hispanic in 1990.

## 3.2.2 Income

Median household and family incomes in the three municipalities are lower than the county as a whole. Table 3.2-3 shows that incomes in Brookhaven, Riverhead, and Southampton are noticeably less than the median for Suffolk County; for example, household income in Riverhead is only 57 percent of that for Suffolk County. In the study area, Riverhead consistently has the lowest income levels for households and families, and on a per capita basis.

Table 3.2-3 also shows poverty rates from the 1990 Census. Again, all the municipalities have a higher percentage of persons in poverty than Suffolk County as a whole. The percent of persons in poverty in Suffolk County was 4.7 percent, compared to 8.4 percent in Riverhead. The number of families in poverty shows lower percentages but a similar distribution among the municipalities and compared to the county. Riverhead recorded five percent of its families in poverty, compared to 3.3 percent for Suffolk County.

## 3.2.3 Housing

As noted in Land Use (Subchapter 3.1), the great majority of housing in the study area is of a single-family detached character. Although there are some multi-family units, these tend to be low-rise townhouses or garden apartments. A characteristic of the area is the high rate of vacant housing units, particularly in Southampton where vacant units reach 46 percent of the total, largely reflecting the seasonal use of these units for summer recreation.

The 1980s witnessed a substantial increase in the number of housing units in each of the jurisdictions. Table 3.2-4 shows Brookhaven increased its total housing units by 16.5 percent, Riverhead by almost 18 percent, and Southampton by 18.6 percent. Suffolk County, as a whole, increased its total housing stock by 11.5 percent over the decade. Similar shifts are recorded for the number of households in the respective jurisdictions.

In addition to the data presented in Table 3.2-4, based on the LILCO 1995 Population Survey, mean household size continues to decline in the study area. The average for Suffolk County declined from 3.4 persons in 1980 to 3.2 persons in 1990 (a decline of six percent), and to 3.0 persons in 1995 (LILCO, 1995).

Table 3.2-4

Housing and Households

| Jurisdiction | Housing Units | | | | | Households 1990 | | Families 1990 | |
|---|---|---|---|---|---|---|---|---|---|
| | 1980 | 1990 | % Change | Occupied 1990 | Vacant 1990 | Total | Persons per Household | Total | Persons per Family |
| Brookhaven | 120,774 | 140,677 | 16.5 | 129,092 | 11,585 | 129,092 | 3.07 | 103,939 | 3.44 |
| Riverhead | 9,158 | 10,801 | 17.9 | 8,736 | 2,065 | 8,736 | 2.55 | 6,273 | 3.04 |
| Southampton | 28,362 | 33,622 | 18.6 | 18,029 | 15,593 | 18,209 | 2.41 | 35,202 | 2.97 |
| Suffolk Co. | 431,722 | 481,317 | 11.5 | 424,719 | 56,598 | 424,719 | 3.04 | 340,593 | 3.40 |
| Sources: US Census, 1980, 1990 STF 1A; and LILCO, 1995 Long Island Population Survey. | | | | | | | | | |

Table 3.2-5

Housing Characteristics

| Jurisdiction | Tenure 1990 | | Vacancy Rate 1990 | | 1990 Median Housing | | Persons per Occupied Unit | |
|---|---|---|---|---|---|---|---|---|
| | % Owner | % Renter | % Owner | % Renter | Value | Rent | Owner | Renter |
| Brookhaven | 78.7 | 21.3 | 1.8 | 6.7 | $131,300 | $690 | 3.20 | 2.61 |
| Riverhead | 78.1 | 21.9 | 3.9 | 10.0 | $157,900 | $541 | 2.56 | 2.50 |
| Southampton | 75.8 | 24.2 | 6.1 | 6.1 | $196,300 | $618 | 2.43 | 2.35 |
| Suffolk | 80.1 | 19.9 | 1.6 | 8.3 | $165,900 | $802 | 3.16 | 2.57 |
| Source: US Census, 1990, STF 3A. | | | | | | | | |

Table 3.2-5 shows that, in 1990, the proportion of occupied housing occupied by owners is highest in Brookhaven at 78.7 percent, slightly higher than in Riverhead and Southampton, but lower than the county rate of 80.1 percent. The percent of renters is highest in Southampton at 24.2 percent. Excluding seasonal vacant units, there is a vacancy rate of housing-for-sale that varies from a low of 1.8 percent in Brookhaven to 6.1 percent in Southampton; these rates compare to a county-wide rate of 1.6 percent. For rentals, only Riverhead's rate of ten percent vacant-for-rent units exceeded the Suffolk County rate of 8.3 percent.

Median housing values in 1990 ranged from $131,300 in Brookhaven to $196,300 in Southampton. The mean for Suffolk County was $165,900. Median monthly contract rent levels in the study area ranged from a low of $541 in Riverhead to $690 in Brookhaven, compared to $802 for Suffolk County. The study area can be characterized as relatively expensive suburban and ex-urban fringe, with a substantial housing component devoted to recreational use.

## 3.2.4 Employment

The 1990 Census data on employed residents in the study area by industry category are shown in Table 3.2-6. The three municipalities had a combined employed population of 230,629, or 35 percent of Suffolk County's total of 665,182. Among the three municipalities, Brookhaven dominates with over 86 percent of all employment, while Riverhead's employed population is only 48 percent of that of Southampton. Table 3.2-6 also shows the distribution of the employed residents by industrial category in 1990, with Services easily being the largest industrial category, ranging between 35.6 percent of all employment in Southampton to 37.7 percent in Riverhead. Retail Trade is the second highest category, ranging from 15.5 percent in Riverhead to 18.5 percent in Southampton. Manufacturing is the next leading category with a wider range among the municipalities, from 6.4 percent in Southampton to 12.7 percent in Brookhaven. Other notable variations among the municipalities include the stronger emphasis on Construction in Southampton than the other towns; on Manufacturing in Brookhaven; and on Government in Riverhead.

More recent annual employment and unemployment data for the towns and county are available from New York State Department of Labor unpublished sources. These are shown in Table 3.2-7. Riverhead and Southampton are seen to have slightly lower unemployment rates than the county in 1995; Brookhaven was slightly higher.

In Suffolk County, both the labor force and employment levels have been increasing since a loss of over 50,000 jobs during the 1990-91 recession, but in 1995 there were still 32,600 fewer employed residents than in 1990. US Bureau of Labor Statistics data for the county level show recent trends in resident employment for Suffolk County in Table 3.2-8.

Table 3.2-6

Resident Employment Characteristics by Industry

| Employment | Brookhaven | Riverhead | Southampton | Suffolk Co. |
|---|---|---|---|---|
| Total Employment | 199,349 | 10,214 | 21,066 | 665,182 |
| Ag. Forest. Fish. | 2,462 | 552 | 1,106 | 9294 |
| Percent of Total | 1.2 | 5.4 | 5.3 | 1.4 |
| Mining | 194 | 6 | 13 | 412 |
| Percent of Total | 0.1 | 0.1 | 0.1 | 0.1 |
| Construction | 14,255 | 756 | 2,379 | 45,328 |
| Percent of Total | 7.2 | 7.4 | 11.3 | 0.7 |
| Manufacturing | 25,399 | 1,059 | 1,339 | 96,828 |
| Percent of Total | 12.7 | 10.4 | 6.4 | 14.8 |
| Transport & Utilities | 16,744 | 573 | 1,317 | 56,557 |
| Percent of Total | 8.4 | 5.6 | 6.3 | 8.6 |
| Wholesale Trade | 8,804 | 358 | 689 | 33,317 |
| Percent of Total | 4.4 | 3.5 | 3.3 | 5.1 |
| Retail Trade | 33,530 | 1,580 | 3,893 | 106,383 |
| Percent of Total | 16.8 | 15.5 | 18.5 | 16.2 |
| F.I.R.E. | 13,437 | 687 | 1,536 | 55,720 |
| Percent of Total | 6.7 | 6.7 | 7.3 | 8.5 |
| Services | 71,869 | 3,851 | 7,508 | 226,263 |
| Percent of Total | 36.1 | 37.7 | 35.6 | 34.5 |
| Government | 12,655 | 800 | 1,286 | 35,080 |
| Percent of Total | 6.3 | 7.8 | 6.1 | 5.4 |

Source: US Census, 1990, Social and Economic Characteristics New York.

Table 3.2-7

Civilian Labor Force and Employment 1995 (Annual Average)

| Jurisdiction | Labor Force | Employment | % Unemployed |
|---|---|---|---|
| Brookhaven | 206,240 | 194,510 | 5.7 |
| Riverhead | 10,492 | 9,962 | 5.0 |
| Southampton | 21,596 | 20,711 | 4.1 |
| Suffolk | 685,999 | 648,783 | 5.4 |
| Source: New York State Department of Labor, 1996. | | | |

Table 3.2-8

Suffolk County Employment 1990-1995 (Annual Averages)

| Year | Employment | Unemployment | % Unemployed |
|---|---|---|---|
| 1990 | 681,445 | 29,845 | 4.2 |
| 1991 | 650,110 | 47,400 | 6.8 |
| 1992 | 632,308 | 54,728 | 8.0 |
| 1993 | 641,969 | 48,024 | 7.0 |
| 1994 | 642,962 | 43,169 | 6.3 |
| 1995 | 648,783 | 37,216 | 5.4 |
| Source: US Bureau of Labor Statistics 1996. | | | |

More recent income data than the Census are available at the county level from the US Department of Commerce, Bureau of Economic Analysis (BEA), Regional Economic Information System (BEA, 1996). Suffolk County data for 1990-1994 are provided in Table 3.2-9. These data identify employment and earnings in the county rather than employed residents. Total personal income is seen to rise modestly over the period 1991-1992, with annual growth rates of four percent, and then quite substantially in 1993 at 8.6 percent and 1994 at five percent. Although Suffolk County is substantially above the national average in per capita income, it falls from 120 percent to 117 percent in 1993, then rises slightly to 118 percent. It can be seen that full and part-time employment declined from 543,760 to 515,016 over 1990-92, rose to only 521,541 by 1993, but then made a major recovery in 1994 to 533,325. Higher wages per job manage to increase total disbursements despite the overall decline in employment. The net earnings to residents in the county increased from $5.8 billion to almost $6.3 billion over the period.

Table 3.2-9

Suffolk County Income and Employment 1990-94

| Economic Category | 1990 | 1991 | 1992 | 1993 | 1994 |
|---|---|---|---|---|---|
| Population (1,000s) | 1,322.6 | 1,326.3 | 1,334.9 | 1,343.0 | 1,349.3 |
| Total Personal Income ($1,000s) | 29,571,784 | 30,577,099 | 31,653,283 | 32,812,815 | 34,466,965 |
| Annual Growth Rate (%) | 3 | 4 | 4 | 8.6 | 5 |
| Per Capita Personal Income ($) | 22,359 | 23,054 | 23,712 | 24,432 | 25,544 |
| % of National Average | 120 | 120 | 118 | 117 | 118 |
| Wage & Salary Disbursements ($1,000s) | 14,049,171 | 13,973,061 | 14,435,783 | 14,913,162 | 15,658,473 |
| Full & Pt.-Time Wage/Salary Employment | 543,760 | 520,470 | 515,016 | 521,541 | 533,325 |
| Average Wage per Job ($) | 25,873 | 26,847 | 28,030 | 28,594 | 29,360 |
| Total Gross Earnings Inflow ($1,000s) | 7,927,163 | 7,935,609 | 8,246,220 | 8,360,095 | 8,636,473 |
| Total Gross Earnings Outflow ($1,000s) | 2,081,708 | 2,135,315 | 2,222,945 | 2,306,819 | 2,384,791 |
| Net Residence Adjustment ($1,000s) | 5,845,455 | 5,800,294 | 6,023,275 | 6,053,276 | 6,251,682 |
| Source: US Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1996 | | | | | |

# 3.3 Community Facilities and Services

## 3.3.1 Education

No public or private schools are located within the one-mi (1.6-km) study area radius of NWIRP Calverton. Several public school districts are partially located within the study area. Riverhead Central is the largest geographically and includes the site; Shoreham-Wading River is located to the northwest, Longwood School District to the west, South Manor to the southwest, and Eastport to the south.

The Riverhead Central School District has four elementary schools, one junior middle school, one senior middle school, and one high school. Total enrollment in the 1995-96 school year is 4,278. District enrollment has been increasing over the past four years and is expected to reach 5,000 by year 2,000 (Carlson, 1996). The adjacent school districts of Shoreham-Wading River had a 1995-96 enrollment of 2.075; Longwood had an enrollment of 9,170; South Manor had an enrollment of 1,120; and Eastport had an enrollment of 942. Each of these districts has also experienced slight increases in enrollment over recent years. Three private parochial schools are located in Riverhead with a total enrollment of 856. Public and private school enrollment as of 1995-96 is shown in Table 3.3-1.

Institutions of higher education in proximity to NWIRP Calverton in Suffolk County include Suffolk County Community College (Eastern Campus in Riverhead and Selden Campus in Brookhaven), a branch of Long Island University at Southampton College, and St. Joseph's College in Patchogue.

## 3.3.2 Health Care

There are no hospitals within the one-mi (1.6-km) study area. However, there are several hospitals that serve the east end of Long Island. Central Suffolk Hospital in Riverhead is the closest, about 6.5 mi (10.5 km) east of NWIRP Calverton. University Medical center at Stony Brook is the largest and is a teaching, full-service hospital and trauma center located approximately 15 mi (24 km) to the west of NWIRP. Brookhaven Memorial Hospital Medical Center is another full-service trauma center, about 13 mi (21 km) to the southwest of NWIRP. Southampton Hospital is a smaller community hospital about 20 mi (32 km) southeast of the site. Table 3.3-2 lists these hospitals, their licensed beds, and recent occupancy rates, as provided by hospital staff in June 1996.

Table 3.3-1

Educational Facilities and Enrollment, 1995-96

| Schools | Grades | Enrollment |
|---|---|---|
| **Public Schools** | | |
| Riverhead | Elementary K-3 | 1,539 |
| | 4-5 | 606 |
| | 6-8 | 864 |
| | High School 9-12 | 1,184 |
| Shoreham-Wading River | Elementary K-5 | 927 |
| | Middle 6-8 | 494 |
| | High School 9-12 | 654 |
| Longwood | Elementary K-5 | 4,507 |
| | Middle 6-7 | 1,337 |
| | Junior HS 8-9 | 1,326 |
| | High School 10-12 | 2,000 |
| South Manor | Elementary K-3 | 450 |
| | Middle 4-9 | 670 |
| Eastport | Elementary K-6 | 548 |
| | JHS 7-8 | 119 |
| | High School 9-12 | 275 |
| **Private Schools** | | |
| St. Isidore's School | K-8 | 260 |
| St. John the Evangelist | K-8 | 255 |
| Mercy High School | 9-12 | 341 |
| Source: Individual Schools, June 1996. | | |

Table 3.3.2

Hospitals in Proximity to NWIRP Calverton 1996

| Hospital | Licensed Beds | Occupancy Rate |
|---|---|---|
| Central Suffolk Hospital | 214 | 70 |
| University Medical Center at Stony Brook | 504 | 78 |
| Eastern Long Island Hospital | 80 | 73.8 |
| Southampton Hospital | 168 | 40 |
| Brookhaven Memorial Hospital | 345 | 70 |
| Source: Individual Hospitals, June 1996 and June 1997. | | |

## 3.3.3 Public Safety and Emergency Services

### Police

Police services in the study area are provided by the respective town and county police forces. No police station is within the one-mi (1.6-km) study area. The NWIRP facility is entirely within the jurisdiction of the Riverhead police except as the Suffolk County Police Department would be brought in to conduct major case investigations or respond to emergencies. The Riverhead police station is in the hamlet of Riverhead, approximately six mi (ten km) east of the site. Riverhead's police include 70 sworn officers operating in five motorized and one walking sector. The support staff totals 14, and the department's total budget is almost $6 million (Grattan, 1996).

Suffolk County provides police protection in the town of Brookhaven and would, therefore, be involved with services provided immediately to the south and to the west of NWIRP Calverton. Suffolk County Police has a complement of almost 2,800 sworn officers, 600 civilian personnel, and 300 school crossing guards (Michael, 1995). Its headquarters are in Yaphank, about ten mi (16 km) to the southwest. Its nearest substation covers the 6th Precinct and is located in Coram, about nine mi (14 km) west of NWIRP on Route 25. A new 7th Precinct that should be open in approximately two years is planned for the southwest corner of the intersection of the Long Island Expressway and William Floyd Parkway, about eight mi (13 km) southwest of NWIRP Calverton.

### Emergency Services

Fire protection services at the site were previously provided by Grumman but are now provided by the three surrounding fire districts of Riverhead, Manorville, and Wading River. Approximately 80 percent of the site is covered by the Manorville Fire District, which has its headquarters station on Silas Carter Avenue, about four mi (six km) south of NWIRP Calverton. The Manorville District has a second substation at Cranford Avenue about six mi (ten km) southwest of the site. The district fields 11 pieces of equipment and has 80 volunteer personnel (De Lettera, 1996). The Riverhead Fire District has four fire stations. The nearest of these is at the intersection of Twomey and Riley Avenues, about three mi (five km) to the northeast. In total, the Riverhead District can field 18 pieces of equipment and has 180 volunteer personnel (Happner, 1996). The Wading River Fire District is headquartered at North Country Road about three mi (five km) north of the site, and has a substation at Hulse Landing Road about two mi (three km) north of NWIRP Calverton. Wading River can field 22 pieces of equipment and has 85 volunteer personnel (Flam, 1996).

### Ambulance

Emergency medical services (EMS) in Suffolk County are provided by 94 volunteer EMS agencies, 65 integrated with volunteer fire departments and 29 independent community ambulance companies. Each is autonomous but overall coordination is provided by the Suffolk County Division of Emergency Medical Services, within the Department of Health Services. The county provides cohesive communications, linkages with hospitals, training, medical protocols, risk management, standardization of medical equipment, and other support (Larkin, 1996).

The three agencies serving NWIRP Calverton and its vicinity are coterminous with the fire companies noted above. The Manorville Ambulance Company is headquartered at South Street, east of Dayton Avenue about three mi (five km) southwest of the site, and has a substation at Moriches-Middle Island Road, about five mi (eight km) southwest of NWIRP Calverton. Each station fields two ambulances, and a "responder car" (usually first on the scene) serves the district.

The Riverhead Ambulance Company is headquartered at Osborne Avenue, about six mi (ten km) east of NWIRP Calverton, and has a substation in Jamesport, about 12 mi (19 km) east of the site. Three ambulances are stationed at the headquarters and a responder car serves the district. Wading River Fire Department provides EMS services in its district, with two ambulances stationed at its headquarters on North Country Road, about three mi (five km) north of NWIRP Calverton.

**Parks and Recreation**

The only park within the one-mi (1.6-km) study area is the Robert Cushman Murphy (formerly Peconic River) County Park, a natural area that occupies the river valley for about six mi (ten km) to the south and west of NWIRP Calverton. The park encompasses more than 3,000 acres (1,215 hectares), with 1,254 acres (508 hectares) in Brookhaven and 1,831 acres (742 hectares) in Riverhead. Portions of the park are devoted to nature preserve and portions are available for a state hunting and fishing program. Other facilities in proximity to NWIRP Calverton include :

- Wildwood State Park, approximately 722 acres (292 hectares) about 1.5 mi (three km) directly north of the site, offers 322 campsites, one mi (1.6 km) of beach, picnic areas, ballfields, and 15 mi (24 km) of trails;

- Brookhaven State Park, approximately 1,500 acres (608 hectares), is a large undeveloped facility about one mi (1.6 km) west of NWIRP;

- South Haven Park is an important county recreational facility of approximately 1,356 acres (549 hectares), about six mi (ten km) to the southwest, providing for camping, fishing, canoeing, picnicking, activity fields, and some hunting; and

- Cathedral Pines County Park is an active recreational facility of 323 acres (131 hectares) approximately seven mi (11 km) west of the site, providing camping, picnicking, and activity fields. Prosser's-Cathedral Pines is an adjacent nature preserve.

A private recreational facility, the Swan Lake Golf Club, is a golf course of approximately 122 acres (49 hectares) located immediately south of NWIRP Calverton across Swan Pond Road. Another nearby private facility is the 300-acre (121-hectare) Nassau County Boy Scout facility, Camp Wauwepex, located one mi (1.6 km) north of the site.

# 3.4 Transportation

## 3.4.1 Traffic

### Local Street Network

The project site is located on Long Island in Suffolk County, New York, approximately 80 miles east of mid-town Manhattan and over 50 miles west of Montauk Point. Regional access to the site is provided by NYS Route 495 (Long Island Expressway), which runs east-west. Local roadway circulation is provided through several rural arterials that surround the site.

Key study area roadways include:

- Middle Country Road (Route 25) - This is the area's main roadway, with a peak hour one-way volume of up to 880 vehicles within the study area. Daily two-way traffic volume is approximately 15,200 vehicles per day (vpd). Middle County Road is a two-lane east-west roadway with minimal development within the study area. Pavement widths vary from 30 ft (nine m) to 24 ft (seven m), with shoulders provided. Middle Country Road provides access to the site west of Route 25A.

- Manorville/Wading River/Schultz Road - This roadway is a two-lane winding rural road with varying pavement widths from 24 to 36 ft (seven to 11 m). This road is a major north-south access to the site, providing a connection to the Long Island Expressway. Hourly one-way volume reaches 380 vehicles per hour (vph) and two-way daily volume is approximately 6,050 vpd.

- Edwards Avenue - Similar to Manorville Road, this roadway provides north-south access for vehicles coming from points east of the site. Edwards Avenue provides access from NYS Route 495 east and access to NYS Route 495 west. Hourly one-way volume reaches 385 vph and two-way daily volume is approximately 9,000 vpd.

- William Floyd Parkway (Route 46) - This roadway is a four-lane limited access highway. It serves as a north-south collector for vehicles to access the study area via Middle Country Road from Routes NYS Route 495 and Route 25A. Existing peak hour one-way volume is approximately 1,580 vph. Two-way daily volume approaches 32,300 vpd.

## Traffic Characteristics

Traffic data were collected at seven locations for this analysis. Traffic counts were conducted on a weekday (May 16, 1996) and a Saturday (May 18, 1996). The weekday counts were conducted for the am (6:00-9:00) and pm (3:00-6:00) peaks. The Saturday count was conducted during the afternoon peak (11:00 am-4:00 pm). Both turning movement counts and vehicle classifications were obtained. Turning movement counts establish the existing volumes of traffic moving on the street network. Vehicle classifications identify the types of vehicles (i.e., autos, light trucks, and heavy trucks) using each link in the analysis network. Each intersection counted was also inventoried to identify those parameters used to determine the capacity of the intersection and its approaches, as specified by the Transportation Research Board's *Highway Capacity Manual* (HCM), 1994. In addition to the manual counts, seven-day Automatic Traffic Recorder (ATR) counts were collected at ten locations. Figure 3.4-1 (Traffic Count Locations) provides the traffic count locations.

Each traffic signal was inventoried for its cycle length, phasing, and progression characteristics. Geometric conditions of the intersections, such as lane group movements, lane widths, and approach grades, were recorded. General operating conditions such as posted parking regulations, number of parking maneuvers, bus stops, and pedestrian interference, were also observed.

A review of the count data indicates typical am and pm commuter peak periods. The weekday peak hours generally occur between 7:30 and 8:30 am and 4:30 and 5:30 pm. The Saturday peak occurs during the lunchtime hour. Overall volumes within the study area are light to moderate. The recreational nature of the region surrounding the project site induces higher than average traffic volumes during the summer months. Therefore, to account for this, the volumes that were collected in May were adjusted to get average annual volumes using a 0.935 multiplicative seasonality factor. Next, these average annual volumes were adjusted to get worst-case summer volumes using a 1.211 multiplicative seasonality factor. These seasonality factors were supplied by the NYS Department of Transportation (NYSDOT) (NYSDOT, 1996). Capacity analyses were performed for each intersection inventoried using these adjusted summer volumes.

## Capacity Analysis

The 1994 HCM provides a methodology to determine the capacity and level of service of signalized and unsignalized intersections for each approach, as well as the intersection as a whole. The capacity of an intersection is defined as the maximum rate of flow that may pass through the intersection under prevailing traffic and roadway conditions. The quality of traffic flow through an intersection is described by the intersection's level of service (LOS). Level of service for signalized intersections is defined by the "average stopped delay" time per vehicle for various movements within the intersection (see Table 3.4-1 for the level of service criteria expressed in terms of average stopped delay). Level of service for a stop-controlled intersection is also based on an average delay per vehicle, which is computed from available gaps in the major roadway traffic stream (Table 3.4-2).

Table 3.4-1

Traffic Level of Service Definitions for Signalized Intersections

| LOS | Description |
|---|---|
| A | Level A describes operations with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay. |
| B | Level B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay. |
| C | Level C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level, although many still pass through the intersection without stopping. |
| D | Level D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume/capacity (v/c) ratios. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E | Level E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences. |
| F | Level F describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels. |
| Source: Transportation Research Board Special Report, 209, Highway Capacity Manual, 1985. | |

**Table 3.4-2**
**Level of Service Criteria for Stop-Controlled Intersections**

| Level of Service | Average Total Delay (sec/veh) |
|---|---|
| A | ≤5 |
| B | >5 and≤10 |
| C | >10 and ≤20 |
| D | >20 and≤30 |
| E | >30 and ≤45 |
| F | >45 |
| Source: Transportation Research Board Special Report, 209, Highway Capacity Manual, 1985. | |

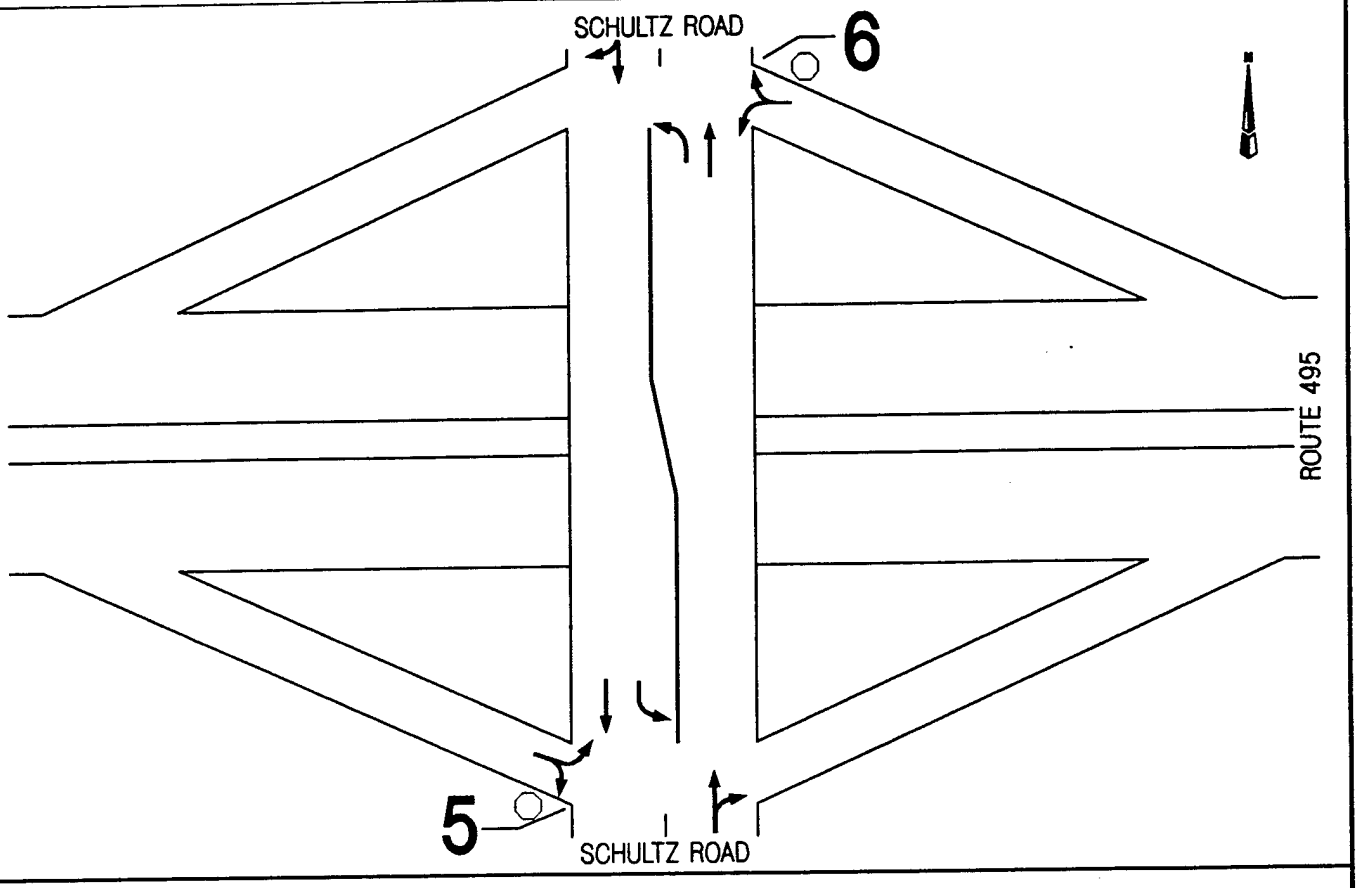
Capacity analyses were performed at all seven count locations. Physical inventories of each intersection studied are provided in Figure 3.4-2 (Intersection Diagram: Location 1 - 4) and Figure 3.4-3 (Intersection Diagram: Location 5 - 7). These inventories provide the roadway configuration and existing lane group utilization. Generally, with the exception of peak periods, the intersections operate favorably (LOS "B" or better) with very few lengthy queues and delays experienced by vehicles. The results of the capacity analyses for peak period existing conditions at the intersections studied are provided in Table 3.4-3. The table provides intersection approach volumes, volume/capacity ratios, stopped delay, and lane group level of service for the am, pm, and Saturday peak hours. Following is a brief description of each intersection and its existing operational characteristics.

- Rocky Point Road and Middle Country Road (Location 1) - This location is controlled by a four-phase traffic signal. This intersection experiences the heaviest volumes of all the study area intersections, with approach volumes reaching 1150 vph. Heavy approach volumes and considerable truck percentages on Rocky Point Road result in operation at LOS "F" for the northbound (NB) and southbound (SB) approaches during peak periods. Operation on the Middle Country Road approach is acceptable.

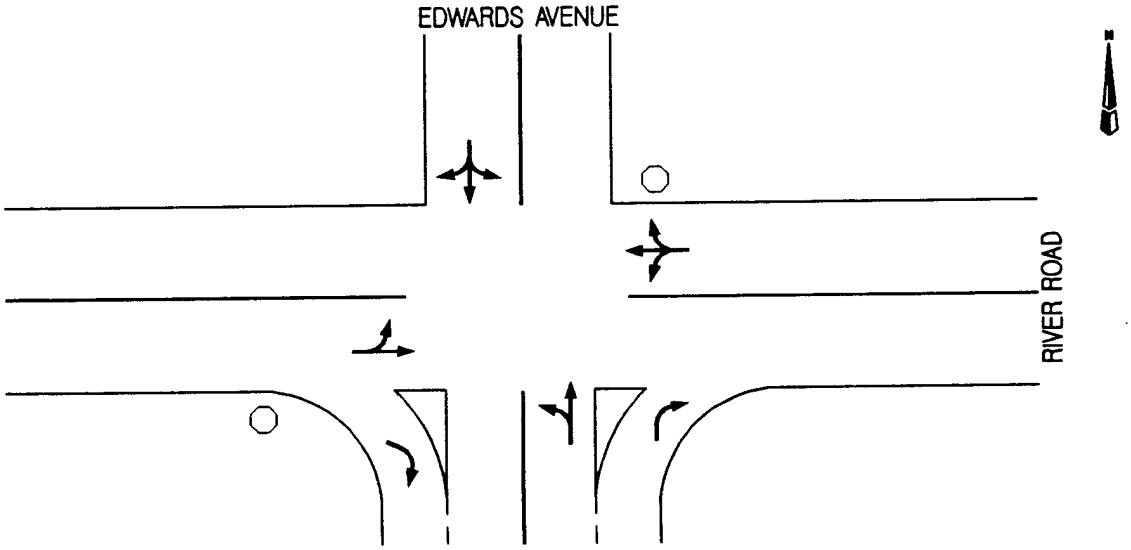
- Edwards Avenue and Middle Country Road (Location 2) - This location is controlled by a two-phase traffic signal. Approach volumes are moderate (less than 750 vph), with acceptable LOS operation during peak periods except on the northbound approach (LOS "F" during the pm peak).

# Intersection Diagrams: Locations 5-7

## Locations 5 & 6




## Location 7




Not to Scale

○ Location of Stop Sign

**Figure 3.4-3**

Table 3.4-3

Summary of LOS Analysis - Peak Period Existing Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Rocky Point Road (Location 1) | | | | | | | | | | | | |
| EB L | 47 | 0.197 | 13.9 | B | 99 | 0.695 | 27.2 | D | 118 | 0.827 | 34.7 | D |
| EB TR | 748 | 0.679 | 23.3 | C | 970 | 0.914 | 36.2 | D | 986 | 0.866 | 29.2 | D |
| WB L | 249 | 1.180 | * | F | 133 | 0.618 | 22.8 | C | 139 | 0.658 | 26.3 | D |
| WB TR | 542 | 0.398 | 16.8 | C | 817 | 0.683 | 23.8 | C | 828 | 0.612 | 19.4 | C |
| NB L | 238 | 0.993 | 66.7 | F | 376 | 1.188 | * | F | 412 | 1.585 | * | F |
| NB TR | 342 | 0.698 | 27.7 | D | 773 | 1.154 | * | F | 427 | 0.878 | 37.3 | D |
| SB L | 68 | 0.406 | 23.5 | C | 136 | 0.935 | 62.0 | F | 153 | 1.072 | 109.6 | F |
| SB TR | 525 | 1.170 | * | F | 356 | 0.643 | 28.4 | D | 296 | 0.681 | 33.0 | D |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | | | | |
| EB LTR | 751 | 0.984 | 27.4 | D | 577 | 0.965 | 28.2 | D | 537 | 0.732 | 8.1 | B |
| WB LTR | 364 | 0.797 | 11.7 | B | 685 | 1.068 | 55.0 | E | 461 | 0.790 | 10.3 | B |
| NB LTR | 165 | 0.561 | 12.5 | B | 383 | 1.264 | * | F | 229 | 0.695 | 15.1 | C |
| SB LTR | 191 | 0.495 | 11.5 | B | 171 | 0.483 | 10.5 | B | 172 | 0.467 | 11.2 | B |
| Overall: | | | 19.7 | C | | | * | F | | | 10.4 | B |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | | | | |
| EB LT | 300 | 0.264 | 4.0 | A | 282 | 0.256 | 4.0 | A | 266 | 0.237 | 3.9 | A |
| WB T | 247 | 0.251 | 4.0 | A | 342 | 0.359 | 4.3 | A | 225 | 0.229 | 3.9 | A |
| WB R | 190 | 0.124 | 0.0 | A | 537 | 0.363 | 0.1 | A | 306 | 0.200 | 0.0 | A |
| SB L | 424 | 0.881 | 23.2 | C | 218 | 0.485 | 11.2 | B | 261 | 0.542 | 11.8 | B |
| SB R | 13 | 0.026 | 9.1 | B | 12 | 0.026 | 9.1 | B | 7 | 0.014 | 9.1 | B |
| Overall: | | | 10.6 | B | | | 3.8 | A | | | 4.8 | A |

Table 3.4-3

Summary of LOS Analysis - Peak Period Existing Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | | | | |
| EB L | 47 | 0.137 | 4.6 | A | 95 | 0.287 | 5.1 | B | 76 | 0.245 | 4.9 | A |
| EB TR | 45 | 0.056 | 4.3 | A | 93 | 0.108 | 4.5 | A | 293 | 0.364 | 5.3 | B |
| WB L | 12 | 0.018 | 4.3 | A | 21 | 0.032 | 4.3 | A | 17 | 0.054 | 4.3 | A |
| WB TR | 255 | 0.314 | 5.1 | B | 300 | 0.346 | 5.3 | B | 282 | 0.347 | 5.3 | B |
| NB LT | 298 | 0.495 | 10.0 | B | 336 | 0.587 | 10.9 | B | 127 | 0.236 | 8.5 | B |
| NB R | 79 | 0.167 | 8.3 | B | 37 | 0.077 | 8.0 | B | 18 | 0.037 | 7.9 | B |
| SB LTR | 184 | 0.522 | 10.6 | B | 137 | 0.282 | 8.7 | B | 134 | 0.250 | 8.6 | B |
| Overall: | | | 8.0 | B | | | 7.6 | B | | | 6.2 | B |
| RT 495 East (Long Island Expressway) and Shultz Road (Location 5) | | | | | | | | | | | | |
| EB LR | 132 | - | 4.2 | A | 352 | - | 5.0 | A | 194 | - | 4.6 | A |
| NB TR | 413 | - | - | A | 187 | - | - | A | 261 | - | - | A |
| SB L | 13 | - | 3.5 | A | 12 | - | 2.7 | A | 20 | - | 3.0 | A |
| SB T | 93 | - | - | A | 165 | - | - | A | 107 | - | - | A |
| Overall: | | | 1.0 | A | | | 2.5 | A | | | 1.7 | A |
| RT 495 West (Long Island Expressway) and Shultz Road (Location 6) | | | | | | | | | | | | |
| WB LR | 32 | - | 8.1 | B | 90 | - | 7.0 | B | 69 | - | 6.9 | B |
| NB L | 275 | - | 3.0 | A | 125 | - | 2.7 | A | 149 | - | 2.7 | A |
| NB T | 84 | - | - | A | 137 | - | - | A | 130 | - | - | A |
| SB TR | 116 | - | - | A | 121 | - | - | A | 113 | - | - | A |
| Overall: | | | 2.0 | A | | | 1.9 | A | | | 1.8 | A |

Table 3.4-3

Summary of LOS Analysis - Peak Period Existing Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Edwards Avenue and River Road (Location 7) | | | | | | | | | | | | |
| EB LT | 55 | - | 4.7 | A | 38 | - | 5.8 | B | 29 | - | 4.3 | A |
| WB LTR | 30 | - | 6.8 | B | 30 | - | 9.5 | B | 45 | - | 6.5 | B |
| NB LT | 213 | - | 3.1 | A | 433 | - | 3.0 | A | 249 | - | 2.7 | A |
| NB R | 26 | - | - | A | 24 | - | - | A | 26 | - | - | A |
| SB LTR | 337 | - | 2.6 | A | 294 | - | 3.2 | A | 216 | - | 2.7 | A |
| Overall: | | | 0.7 | A | | | 0.9 | A | | | 0.9 | A |

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn; T - Through. *Indicates an approach expected to operate at a v/c ratio greater than 1/peak hour factor. In such cases, the stop delay is not calculated but LOS is "F".

- North Country Road and Middle Country Road (Location 3) - This location is a T-intersection controlled by a two-phase traffic signal. North Country Road terminates at Middle Country Road at an acute angle (approximately 120°). Existing flows are moderate to light (less than 880 vph). Operation is favorable during all peak periods.

- Wading River/Manorville Road and Middle Country Road (Location 4) - This location is controlled by a two-phase traffic signal. Existing peak hour volumes are light (less than 375 vph), with favorable operation during all peak periods.

- Schultz Road and Long Island Expressway eastbound (EB) Ramp (Location 5) - This location is a stop-controlled intersection for access to Schultz Road from the Long Island Expressway EB. Volumes are light with favorable LOS "A" operation.

- Schultz Road and Long Island Expressway westbound (WB) Ramp (Location 6) - Similar to Location 5, this location is a stop-controlled intersection for access to Schultz Road from the Long Island Expressway WB. Existing volumes are light with LOS "A" operation.

- Edwards Avenue and River Road (Location 7) - This location is a stop-controlled intersection with light traffic volumes. Flow along Edwards Avenue is uninterrupted and operations are acceptable. Suitable gaps exist for turning movements onto Edwards Avenue from River Road with LOS "B" or better operation.

## 3.4.2 Public Transportation

Although there are bus lines that traverse Middle Country Road (Route 25) and the Long Island Expressway, these routes primarily serve recreational travelers to points east of NWIRP Calverton. The typical commuter within the study area does not utilize public transportation.

# 3.5 Air Quality

## 3.5.1 National Ambient Air Quality Standards

The US Environmental Protection Agency (USEPA), under the requirements of the 1970 Clean Air Act (CAA) as amended in 1977 and 1990, established primary and secondary standards for six criteria pollutants. These standards are known as the National Ambient Air Quality Standards (NAAQS) (Table 3.5-1). The primary standards are intended to protect the public health. The secondary standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare. The NAAQS were established for the following six pollutants:

- Carbon monoxide (CO) is a colorless, odorless gas. The major source of CO is the incomplete combustion of fuels used to power vehicles, heat buildings, and process raw materials, and from the burning of refuse. Carbon monoxide is a site-specific pollutant; major concentrations are found near the source, such as at heavily congested intersections. Carbon monoxide is the most commonly occurring air pollutant. The health effect associated with CO-contaminated air is reduced transport of oxygen by the blood stream, a consequence of CO displacing oxygen in hemoglobin. Exposures to very high levels of CO are lethal and exposures to high levels for a short duration can cause headaches, drowsiness, or loss of equilibrium.

- Sulfur dioxide ($SO_2$) is emitted into the atmosphere from the combustion of sulfur-bearing fuels for space heating and motor vehicles. The use of low sulfur fuels for space heating has reduced the amount of sulfur dioxide emitted from these sources. The combustion of gasoline and diesel fuels in motor vehicles accounts for a very small percent of the total sulfur dioxides emitted. Respiratory illness and damage to the respiratory tract are the health effects associated with inhalation of sulfur dioxide emissions.

- Nitrogen Oxides ($NO_x$) measured as nitrogen dioxide. $NO_2$ is a yellowish-brown, highly reactive gas that is present in an urban environment. The major source of nitric oxide and nitrogen oxide emissions is fuel combustion in boilers associated with electric utilities and industrial facilities. Nitric oxides oxidize in the atmosphere to form nitrogen dioxide. Nitrogen oxides cause irritation to the lungs, bronchitis and pneumonia, and lowered resistance to respiratory infections.

Table 3.5-1

Federal and New York State Ambient Air Quality Standards

| Pollutant | Averaging Period | New York Standards | Federal Standards | |
|---|---|---|---|---|
| | | | Primary | Secondary |
| Carbon Monoxide | 8-hour<br>1-hour | 9 ppm<br>35 ppm | 10 $mg/m^3$<br>40 $mg/m^3$ | 10 $mg/m^3$<br>40 $mg/m^3$ |
| Ozone | 1-hour | 235 $ug/m^3$ | 235 $ug/m^3$ | 235 $ug/m^3$ |
| Nitrogen Dioxide | 1-year | 100 $ug/m^3$ | 100 $ug/m^3$ | 100 $ug/m^3$ |
| Lead | 3-month | 1.5 $ug/m^3$ | 1.5 $ug/m^3$ | 1.5 $ug/m^3$ |
| Particulates10 | 1-year<br>24-hour | 50 $ug/m^3$<br>150 $ug/m^3$ | 50 $ug/m^3$<br>150 $ug/m^3$ | 50 $ug/m^3$<br>150 $ug/m^3$ |
| Sulfur Dioxide | 1-year<br>24-hour<br>3-hour | 80 $ug/m^3$<br>365 $ug/m^3$<br>1300 $ug/m^3$ | 80 $ug/m^3$<br>365 $ug/m^3$ | <br><br>1300 $ug/m^3$ |

- Ozone ($O_3$) is a photochemical oxidant and a major constituent of smog. Hydrocarbons and nitrogen oxides are precursor pollutants to the formation of ozone. Hydrocarbons and nitrogen oxides react in the presence of sunlight to form a photochemical oxidant. This reaction is time-dependent and usually takes place far downwind from the site where the contaminants were originally emitted. Thus, hydrocarbons and nitrogen oxides are reactive contaminants whose impact generally occurs well beyond the areas immediate to the source. High concentrations of ozone are a major health and environmental concern. For example, ozone is a principal cause of lung and eye irritation in an urban environment.

- Particulate matter in an urban environment typically occurs as a result of incomplete fuel combustion. Particulate matter includes dust, dirt, soot, smoke, and liquid droplets directly emitted into the air by sources such as factories, power plants, cars, construction activity, and fires. Diesel fuel compared to gasoline contributes more particulates to the atmosphere. An inhalable particulate is defined as a particulate that is less than ten microns (PM10) in diameter. The major health effect caused by the inhalation of PM10 is damage to the respiratory organs.

- Lead (Pb) is a bluish-gray metal, usually found in small quantities in the earth's crust. The most significant contributors of lead emissions to the atmosphere are gasoline additives, iron and steel production, and alkyl lead manufacturing. Other sources of lead include combustion of solid waste, windblown dust from weathering of lead-based paint, and cigarette smoke. The use of lead-free gasoline has considerably reduced lead levels in the urban environment. Exposure to lead is dangerous for the fetus and results in pre-term birth. Other health effects are decreased intelligence quotient (IQ) for infants and small children, increased blood pressure in middle-aged men, and brain and kidney damage in adults and children.

Suffolk County, New York State, where NWIRP Calverton is located, is presently designated by USEPA as a severe nonattainment area (i.e., not meeting the NAAQS) for ozone. The county is in attainment for the other criteria pollutants.

## 3.5.2 Mobile Sources

Local CO concentrations are estimated through the use of computerized mathematical models. Using the models, worst-case CO levels are calculated for the peak one-hour and eight-hour time periods, which correspond to the averaging periods of the state and federal ambient CO standards.

Generally, the CO concentrations that occur at any one site result from a contribution of several emission sources. Ambient CO concentrations have two components - the local source contribution

(i.e., vehicles on the roadway(s) next to the analysis site) and background contribution. The CO levels due to local roadway source contribution are dependent on traffic and operating conditions such as vehicle volume and speed.

The background CO concentration is a function of land use, land use density, and transportation-related activity in the general community, as opposed to the specific localized sources. Background CO levels at the project site are not available. However, the New York State Department of Transportation (NYSDOT) provides the area-wide applicable CO background levels for various years (NYSDOT, 1995). The one-hour and eight-hour background values for 1996 are 3.6 parts per million (ppm) and 2.45 ppm, respectively.

The CO concentration from local traffic is determined in two steps. First, emissions from vehicle exhausts are calculated. Assumptions about meteorological conditions are then used to calculate the CO concentrations in the air. The composite emission factors and idle emission rates used in this analysis were obtained from NYSDOT, which provides uniform emission factors by region (NYSDOT, 1993).

Carbon monoxide concentrations due to vehicles were then calculated using the USEPA's CAL3QHC computer dispersion model. The concentrations determined by the model are a function of input parameters such as wind speed, wind direction, and atmospheric stability class. The impact levels generated by the model were multiplied by a persistence factor of 0.70 to obtain the eight-hour impact concentration. (The parameters used in this study are based on the recommendations provided in *Guidelines for Modeling Carbon Monoxide from Roadway Intersections* [USEPA, 1992] and *Environmental Procedures Manual* [NYSDOT, 1995]).

CO impacts were estimated at receptor locations for seven intersections. The receptor locations are shown in Figure 3.5-1 (Air Modeling Locations). Intersections were chosen based upon an analysis of where the maximum changes in traffic patterns would occur. At each intersection an analysis was performed for the am and pm peak hours during the week as well as a weekend peak hour when traffic levels were expected to be high. The worst-case conditions during the week occurred during the pm peak hour and are presented in Table 3.5-2. Based on these results, no violations of the NAAQS standards of 35 ppm for the one-hour and nine ppm for the eight-hour concentration are predicted. The impacts predicted for the weekend are shown in Table 3.5-3. No exceedances of the NAAQS standards are predicted for the weekend conditions.

# Air Modeling Locations

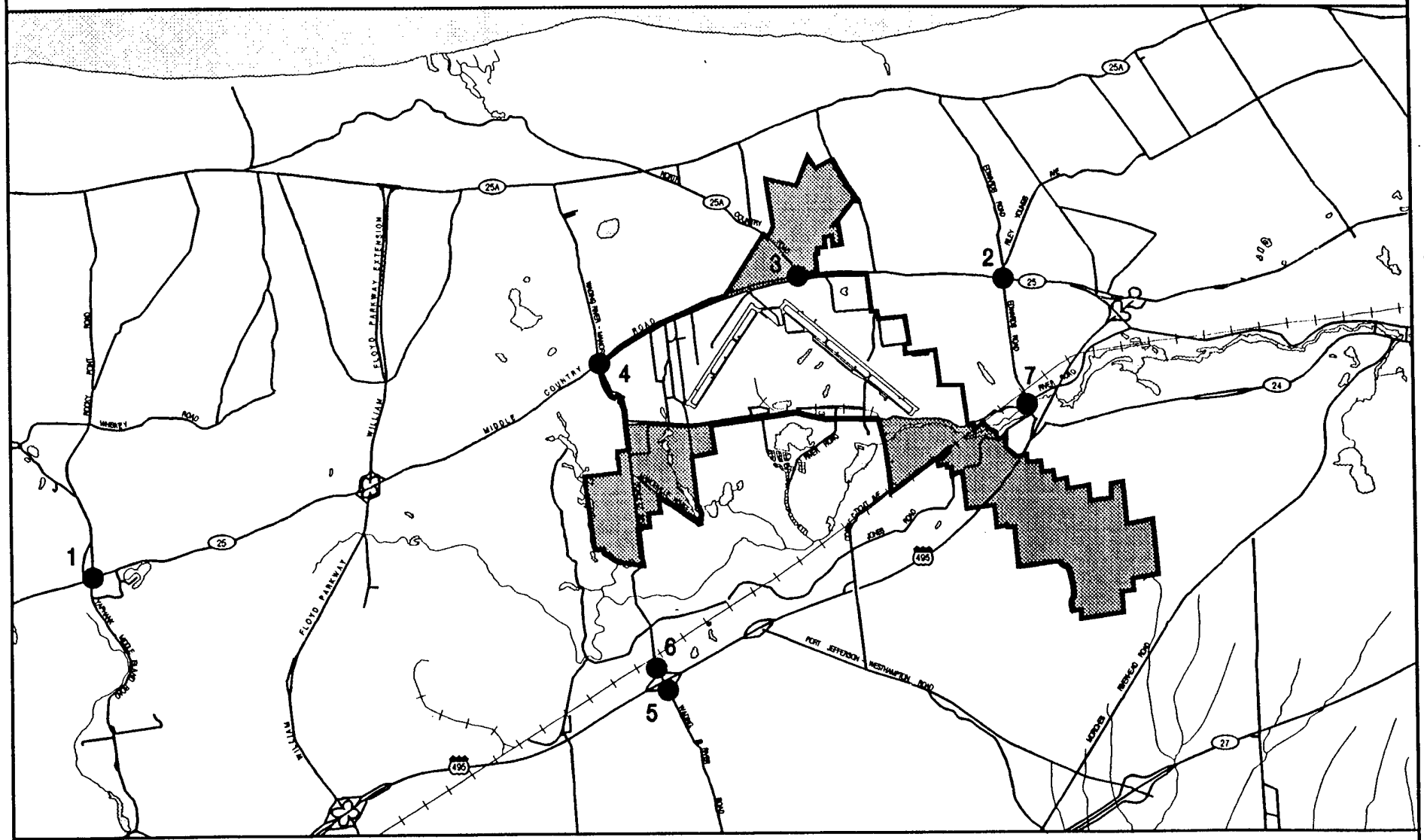



Figure 3.5-1

Table 3.5-2

Weekday Existing Carbon Monoxide Levels

| Receptor | One-Hour Concentration (ppm) | Eight-Hour Concentration (ppm) |
|---|---|---|
| Route 25 / Middle Island Road | 9.1 | 6.3 |
| Route 25 / Edwards Avenue | 7.2 | 5.0 |
| Route 25 / Route 25A | 5.9 | 4.1 |
| Route 25 / Wading River - Manorville Road | 6.2 | 4.3 |
| LIE Eastbound Ramp / Schultz Road | 4.6 | 3.2 |
| LIE Westbound Ramp / Schultz Road | 4.4 | 2.9 |
| Edwards Avenue / River Road | 4.9 | 3.4 |

Note: [1]CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour).
[2]Values are for the pm peak period.

Table 3.5-3

Weekend Existing Carbon Monoxide Levels

| Receptor | One-Hour Concentration (ppm) | Eight-Hour Concentration (ppm) |
|---|---|---|
| Route 25 / Middle Island Road | 9.0 | 6.2 |
| Route 25 / Edwards Avenue | 6.3 | 4.3 |
| Route 25 / Route 25A | 5.4 | 3.7 |
| Route 25 / Wading River - Manorville Road | 5.7 | 3.9 |
| LIE Eastbound Ramp / Schultz Road | 4.3 | 2.9 |
| LIE Westbound Ramp / Schultz Road | 4.2 | 2.9 |
| Edwards Avenue / River Road | 4.3 | 2.9 |

Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour).

### 3.5.3 Stationary Sources

The basewide stationary sources with the potential to emit air pollutants were identified at NWIRP Calverton (Braun, 1995). A review of the emission records revealed a total of 28 discrete point and fugitive sources of air pollution. These emission sources were operated over the past ten years under a permit issued by the NYSDEC. Table 3.5-4 shows the source descriptions and their operational status. Due to the termination of all painting-related operations, only the steam power plant and Anechoic Chamber boilers are currently active; they are being operated at low capacity levels for the sole purpose of facility maintenance.

There is wide disparity between actual and potential emissions since most emission sources are used intermittently. Air pollution regulations are generally based on potential emissions that would be generated by the continuous annual use of equipment (24 hours per day for 365 days or 8,760 hours per year) at full capacity. Table 3.5-5 shows the annual potential emissions calculated for the steam plant replacement boilers (replacement scheduled for 1997) and for the Anechoic Chamber boiler. Table 3.5-6 shows the actual historical emissions for the steam plant and the Anechoic Chamber boiler under current operating conditions. Given the magnitude of total potential emission levels of $SO_2$ and $NO_x$, the existing NWIRP is considered a major source under Title I of the CAAA.

### 3.5.4 Clean Air Act Conformity

The Clean Air Act Amendments (CAAA) of 1990 expand the scope and content of the Act's conformity provisions by providing a more specific definition. As stipulated in Section 176c of the CAAA, conformity is defined as "conformity to the State Implementation Program's (SIP) purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards." Conformity further requires that such activities will not:

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

The USEPA published final rules on general conformity that apply to federal actions in areas designated nonattainment for any of the criteria pollutants under the CAA (40 CFR Parts 51 and 93) in the November 30, 1993 *Federal Register*. The proposed rules provide specific de minimus emission levels by pollutant to determine the applicability of conformity requirements for a proposed project. For a severe ozone nonattainment area such as the area in which NWIRP is located, 25 tons (22.7 metric tons) per year of volatile organic compounds (VOCs) or $NO_x$ is the de minimus criterion.

Table 3.5-4

Permitted Air Emission Sources at NWIRP Calverton

| Emission Point | Source Description | Operational Status |
|---|---|---|
| 06011-13, 06015-16 | Paint and solvent from west hanger | Inactive |
| 06017-19 | Paint and solvent from east hanger | Inactive |
| 06025 | General exhaust from the paint mixing and storage building (bldg. 168) | Inactive |
| 06060-61 | Paint and solvent emissions from paint tunnel | Inactive |
| 06120, 06130 | Paint and solvent from new paint hanger (bldg. 318) | Inactive |
| 06161-64 | Dust and solvent emissions from the paint strip facility (bldg. 06-75) | Removed |
| 00605 | Anechoic chamber boiler (bldg. 284) | Active |
| 06010 | Reproduction area | Removed |
| 06040 | Instrumentation area (bldg. 166) | Inactive |
| 06041 | Passivate tank (bldg. 326) | Inactive |
| 06070 | Band saw (bldg. 169) | Inactive |
| 06081 | Paint canopy (bldg. 282) | Inactive |
| 06171 | Fiberglass shop (bldg. 166) | Inactive |
| 06090, 06100, 06110 | Central steam plant (bldg. 167) | Active |
| 06181 | Upholstery shop (bldg. 166) | Inactive |
| Source: CF Braun, October 1995 & Taormina, May 22, 1996. | | |

Table 3.5-5

Potential Emissions from Stationary Sources

| Pollutant | Annual Potential Emissions (tons per year (tpy)) | | |
|---|---|---|---|
| | Steam Plant Boilers[1] | Anechoic Chamber Boiler[2,3] | Total |
| Sulfur Dioxide ($SO_2$) | 130.9 | 1.7 | 132.6 |
| Nitrogen Oxides ($NO_x$) | 75.5 | 1.1 | 76.6 |
| Fine Particulate Matter ($PM_{10}$) | 16.4 | 0.1 | 16.5 |
| Carbon Monoxide | 30.2 | 0.3 | 30.5 |
| Volatile Organic Compounds (VOCs) | 2.5 | 0.0 | 2.5 |

Source: [1]Grumman Corporation letter, November 10, 1993
[2]Supplement F, AP-42, January 1995.
[3]Taormina, May 22, 1996

Table 3.5-6

Historical Emissions from Stationary Sources

| Pollutant | Historical Actual Emissions (tpy) | | |
|---|---|---|---|
| | Steam Plant Boilers 1991-92 Average | Anechoic Chamber Boilers[2,3] | Total |
| Sulfur Dioxide ($SO_2$) | 120.1 | 0.5 | 120.6 |
| Nitrogen Oxides ($NO_x$) | 53.6 | 0.3 | 53.9 |
| Fine Particulate Matter ($PM_{10}$) | 9.8 | 0.0 | 9.8 |
| Carbon Monoxide | 30.2 | 0.1 | 30.3 |
| Volatile Organic Compounds (VOCs) | 2.5 | 0.0 | 2.5 |

Source: [1]Grumman Corporation letter, November 10, 1993
[2]Supplement F, AP-42, January 1995.
[3]Taormina, May 22, 1996

However, the final rule also defines a series of exemptions under 40 CFR 93.153 (Applicability). In particular, the general conformity rules are not applicable to the proposed Reuse Plan under Exemption XIX in 40 CFR Part 153(c), which reads:

> "Actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific, reasonable condition is met, such as promptly after the land is certified as meeting the requirements of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and where the federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties."

# 3.6 Noise

## 3.6.1 Noise Fundamentals and Methodology

Noise pollution comes from numerous sources. Some noise is caused by activities essential to the health, safety, and welfare of the community's inhabitants, such as emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources of noise such as traffic and aircraft stem from the movement of people and goods, activities that are essential to the viability of a community as a place to live and do business. Although these and other noise-producing activities are necessary to modern life, the noise they produce is sometimes undesirable and may detract from the quality of the living environment.

### Ways to Measure Noise

A number of factors affect sound as it is perceived by the human ear. These include the actual level of the sound (or noise), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure. Levels of noise are measured in units called decibels (dB). Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and high- pitched sounds. This adjusted unit is known as the A-weighted decibel, or dBA. The A-weighted network de-emphasizes both very low- and very high-pitched sound, so the measured levels correlate well with the human perception of loudness.

Human response to changes in noise levels depends on a number of factors, including the quality of the sound, the magnitude of the changes, the time of day at which the changes take place, whether the noise is continuous or intermittent, and the individual's ability to perceive the changes. Human ability to perceive changes in noise levels varies widely with the individual, as does response to the perceived changes. Generally, changes in noise levels less than three dBA will barely be perceptible to most listeners, whereas a ten dBA change normally is perceived as a doubling (or halving) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Since the dBA noise metric describes a noise level at just one moment, and very few noises are constant, other ways of describing noise over extended periods are needed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period, as if it had been a steady, unchanging sound. For this condition, a descriptor called the equivalent sound level, $L_{eq}$, can be computed. The $L_{eq}$ descriptor is the constant sound level that, in a given situation and time period (e.g., one-hour $L_{eq}$, or 24-hour $L_{eq}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors such as $L_1$, $L_{10}$, $L_{50}$, $L_{90}$, and $L_x$ are also sometimes used to indicate noise levels which are exceeded 1, 10, 50, 90, and x percent of the time, respectively.

Alternatively, it is often useful to account for the difference in response of people in residential areas to noises that occur during sleeping hours as compared to waking hours. A descriptor, the day-night noise level ($L_{dn}$), is defined as the A-weighted average sound level in decibels during a 24-hour period with a ten dB weighting applied to nighttime sound levels. It is a widely-used indicator for such evaluations. The ten dB weighting accounts for the fact that noises at night sound louder because there are usually fewer noises occurring at night. The $L_{dn}$ descriptor has been proposed by the US Department of Housing and Urban Development (USHUD), the USEPA, and other organizations as one of the most appropriate criteria for estimating the degree of nuisance or annoyance that increased noise levels would cause in residential neighborhoods.

The maximum one-hour equivalent sound level (one-hour $L_{eq}$), the 24-hour equivalent sound level (24-hour $L_{eq}$), and the day-night noise level ($L_{dn}$) have been selected as the noise descriptors to be used in the noise impact analysis of this project. Maximum one-hour equivalent sound levels were used to provide an indication of highest expected sound levels.

## 3.6.2 Noise Standards and Criteria

There are a number of standards and guidelines adopted by federal agencies and town of Riverhead for assessing noise impacts that are reviewed in this EIS. These regulations and standards are useful to review in that they provide both a characterization of the quality of the existing noise environment as well as a measure of project-induced impacts.

### Federal Highway Administration (23 CFR 772)

The Federal Highway Administration (FHWA) noise regulations require that a noise analysis be conducted for all highway projects (FHWA, 1974). These standards contain noise abatement criteria that the FHWA considers to be the acceptable limits for noise levels for exterior land uses and outdoor activities and for certain interior uses (Table 3.6-1). The FHWA noise abatement criteria lists developed land use types as Categories A, B, C, or E. In this EIS, Category B, which includes residences, schools and churches, would represent most of the sensitive receptors that lie in proximity to the proposed project. Future noise levels are predicted to evaluate the extent of impact in relation to the noise abatement criteria. If these criteria are exceeded, or if there is a substantial increase above the existing noise level, abatement or mitigation measures are considered. Such measures are to be implemented for all project alternatives.

### USHUD Environmental Criteria and Standards

USHUD has adopted environmental standards, criteria, and guidelines for determining acceptability of federally-assisted projects and has proposed mitigation measures to ensure that activities assisted

Table 3.6-1

FHWA Noise Abatement Criteria

| Activity Category | $L_{eq}$(h) | $L_{10}$(h) | Description of Activity Category |
|---|---|---|---|
| A | 57 (exterior) | 60 (exterior) | Land for which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B | 67 (exterior) | 70 (exterior) | Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals. |
| C | 72 (exterior) | 75 (exterior) | Developed lands, properties or activities not included in Categories A or B above. |
| D | — | — | Undeveloped lands. |
| E | 52 (interior) | 55 (interior) | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

Note: The $L_{eq}$ and $L_{10}$ designations represent hourly A-weighted sound levels expressed in decibels (dBA). Either $L_{10}$(h) or $L_{eq}$(h) (but not both) may be used on a project.

Source: US Department of Transportation, FHWA, 1974.

Table 3.6-2

HUD Site Acceptability Standards

| Noise Zone | Day/Night Sound Level ($L_{dn}$) |
|---|---|
| Acceptable | Not exceeding 65 dB |
| Normally Unacceptable | Above 65 dB but not exceeding 75 dB |
| Unacceptable | Above 75 dB |

Source: 24 CFR Part 51.

by USHUD will achieve the goal of a suitable living environment. These guideline values are strictly advisory.

USHUD assistance for the construction of new noise-sensitive land uses is generally prohibited for projects with Unacceptable noise exposure and is discouraged for projects with Normally Unacceptable (as defined in Table 3.6-2) noise exposure with suitable mitigating measures. This policy applies to all USHUD programs for residential housing, college housing, mobile home parks, nursing homes, and hospitals. It also applies to USHUD projects for land development, new communities, redevelopment, or any other provision of facilities and services that is directed toward making land available for housing or noise-sensitive development.

Sites falling within the Normally Unacceptable zone require implementation of additional sound attenuation or reduction or other mitigation measures: five dB if the $L_{dn}$ is greater than 65 dB but does not exceed 70 dB and ten dB if the $L_{dn}$ is greater than 70 dB but does not exceed 75 dB. If the $L_{dn}$ exceeds 75 dB, the site is considered Unacceptable for residential use.

USHUD encourages noise attenuation features in new construction or in alterations of existing structures. The USHUD-mandated or recommended design mitigation measures to eliminate or minimize Unacceptable or Normally Unacceptable levels, respectively, include well-sealed double-glazed windows, forced air ventilation systems (which permit windows to remain closed in summer), and acoustic shielding and insulation.

**Town of Riverhead Permissible Noise Levels**

The town of Riverhead has adopted specific noise control standards and provides the maximum permissible noise levels by receiving property (Table 3.6-3) in order to protect the local community from potential noise impact.

The sound source defined in the town code is based on various categories of property such as residential, commercial, or industrial property. The same categories are used to define different sound receiving properties. The town will not allow or permit the operation of any source of sound on a particular category of property or public land or right-of-way in a manner as to create a sound level that exceeds the maximum permissible sound pressure levels measured within the receiving property. However, a variance to the town noise code could be applied on case-by-case basis, and the Town Board could grant or deny the application through certain procedures, including public hearing.

Table 3.6-3

Maximum Permissible A-Weighted Pressure Levels (dBA) by Receiving Property Category at town of Riverhead

| Sound Source Property Category | Receiving Property Category | | | |
|---|---|---|---|---|
| | Residential | | Commercial | Industrial |
| | 7 am - 8 pm | 8 pm - 7am | All times | All times |
| Apartment within multidwelling building | 65 | 50 | 65 | 75 |
| Residential | 65 | 50 | 65 | 75 |
| Commercial or public lands or rights-of-way | 65 | 50 | 65 | 75 |
| Industrial | 65 | 50 | 65 | 75 |
| Source: Riverhead Town Code, February 25, 1992. | | | | |

## 3.6.3 Noise Monitoring

A noise measurement survey was conducted in the study area. Receptors were selected based on noise sensitivity, such as residential and open space use. All receptors were adjacent to streets where there could be increases in traffic due to implementation of the proposed project. The key receptor locations that could experience noise impacts as a result of traffic increases are those residences along the perimeter roads of the project area.

Six monitoring locations were selected to provide measures of the existing noise levels (Figure 3.6-1, Noise Monitoring Locations). A sampling measurement program for weekdays and Saturdays was conducted at Sites 1 through 6 during four time periods on June 1, 5, 6, and 8, 1996. Measurements were taken five ft (1.5 m) from the existing building walls of the receptor locations. Microphone height for all receptors was eight ft (2.4 m) above ground level.

Site 1 Along the eastern end of the project site, there are several residences and a couple of commercial properties between Fresh Pond Avenue and Parker Road. The monitor was located on the south side of Route 25 at the Calverton property line. The receptor was set back approximately 60 ft (18 m) from the centerline of the roadway. Route 25 is a two-lane road with one lane in each direction. There is no on-street parking.

Site 2 Along Route 25 at the western end of the project site, the Wading River Motel is located east of Kay Road. The closest hotel room is approximately 125 ft (37.5 m) from the center line of Route 25 where the monitor was placed.

Site 3 There are two homes located on the east side of Wading River Road between Grumman Boulevard and Route 25. These homes are adjacent to the Pine Barrens Core Area. Manor Road is a two-lane road with one lane of traffic in each direction. There is no shoulder or street parking. The microphone was located approximately 75 ft (22.7 m) from the centerline of the road.

Site 4 This receptor is adjacent to the Swan Lake Golf Course, across from the existing main entrance to the project site on Grumman Boulevard. There were no receptors on Grumman Boulevard between the entrance and Wading River Manor Road. Grumman Boulevard is one lane of traffic in each direction with no parking. The microphone was located approximately 50 ft (15 m) from the centerline of the road.

Site 5 Grumman Boulevard turns into River Road just east of the project property line. There are a number of residential receptors on River Road. These receptors are located between Edwards Avenue and the existing entrance onto the property. River Road is a rural road with one lane of traffic in each direction. The microphone was located at residential house #312, approximately 60 ft (18 m) from the center line on the north side of the road.

Site 6 Edwards Avenue carries traffic from the Long Island Expressway to Route 25. This is a two-lane road with one lane in each direction. There is no parking on the road. The microphone was located at 460 Edwards Avenue between Route 25 and River Road. The receptor is located on the east side of the street and is approximately 70 ft (21 m) from the center line of the road.

Measurements at each sampling location were made on the A-scale (dBA) for a sampling period of 30 minutes. A wind screen was used to minimize wind noise across the face of the microphone. The data were digitally recorded by the noise analyzer and displayed at the end of the measurement period.

## 3.6.4 Existing Noise Levels

The one-hour equivalent noise levels (one-hour $L_{eq}$) measured at Sites 1 through 6 for weekday and Saturday are presented in Tables 3.6-4 and 3.6-5. At all measurement locations, the predominant source of noise is vehicular traffic. The measured noise levels are common for residential areas, reflecting the level of vehicular traffic present. While not directly applicable, the USHUD, FHWA,

# Noise Monitoring Locations

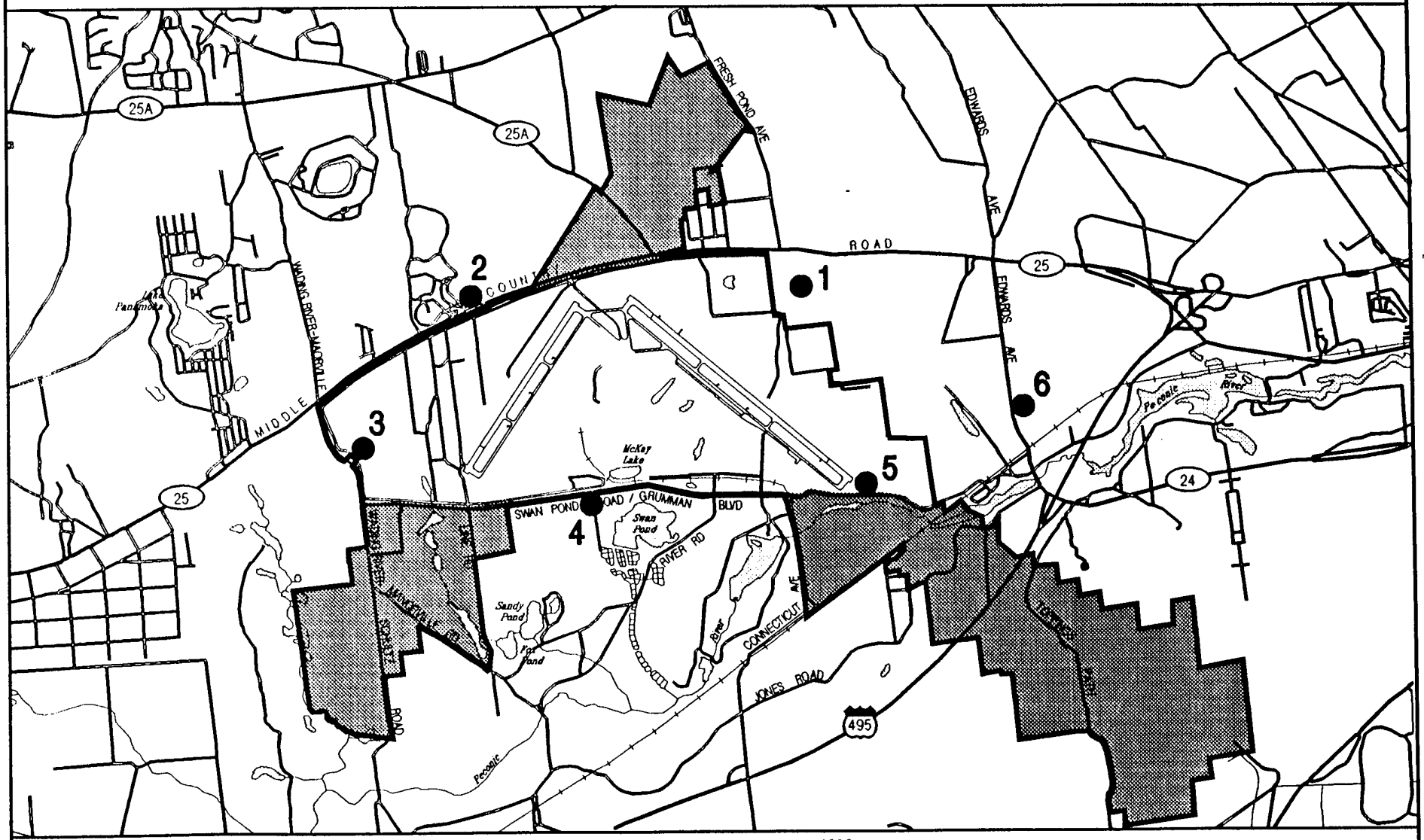



Figure 3.6-1

Table 3.6-4

Existing Sound Levels - Weekdays Sites 1 through 6

| Time Period | One-Hour $L_{eq}$ in dBA | | | | | |
|---|---|---|---|---|---|---|
| | Site 1 | Site 2 | Site 3 | Site 4 | Site 5 | Site 6 |
| AM Peak (7 - 9 am) | 66 | 68 | 63 | 62 | 63 | 67 |
| Midday (10am - 2pm) | 65 | 65 | 61 | 60 | 59 | 65 |
| PM Peak (5 - 7 pm) | 68 | 66 | 64 | 61 | 61 | 68 |
| Pre-Midnight (9pm-12 am) | 60 | 61 | 59 | 57 | 56 | 61 |
| 24-Hour $L_{eq}$ | 64 | 64 | 60 | 60 | 59 | 65 |
| $L_{dn}$ | 66 | 67 | 63 | 62 | 62 | 67 |

Table 3.6-5

Existing Sound Levels - Saturdays Sites 1 through 6

| Time Period | One-Hour $L_{eq}$ in dBA | | | | | |
|---|---|---|---|---|---|---|
| | Site 1 | Site 2 | Site 3 | Site 4 | Site 5 | Site 6 |
| AM Peak (7 - 9 am) | 64 | 64 | 62 | 61 | 61 | 66 |
| Midday (10am - 2pm) | 61 | 64 | 59 | 60 | 60 | 65 |
| PM Peak (5 - 7 pm) | 65 | 65 | 61 | 59 | 62 | 65 |
| Pre-Midnight (9pm-12 am) | 60 | 60 | 58 | 56 | 57 | 60 |
| 24-Hour $L_{eq}$ | 62 | 63 | 59 | 58 | 59 | 64 |
| $L_{dn}$ | 65 | 66 | 63 | 62 | 63 | 66 |

and town of Riverhead noise criteria provide a useful yardstick by which to assess the existing noise environment in the study area:

- The USHUD criterion for residential land use is exceeded when the $L_{dn}$ exceeds 65 dBA. Based on existing noise levels, the $L_{dn} = 65$ is exceeded at Sites 1, 2, and 6 for both weekdays and Saturdays.

- The FHWA criterion for Activity Category B land uses (residential, parkland, hospitals, etc.) is 67 dBA. Existing noise levels exceed the FHWA criteria at Site 1 during the pm hour weekdays, Site 2 during the am hour weekdays, and Site 6 during the pm hour weekdays. There are no exceedances on Saturdays. These sites are adjacent to heavily-traveled streets that experience large traffic volumes. At the other three sites, the existing noise levels do not exceed the FHWA criteria; however, the measured ambient levels at all receptors reflect typical levels for suburban areas.

- The Riverhead Town Code criteria for residential land use is exceeded when the $L_{eq}$ exceeds 65 dBA during daytime (7 am to 8 pm) and 50 dBA during nighttime (8 pm to 7 am). Based on existing noise levels, the $L_{eq} = 65$ dBA is exceeded at Sites 1, 2, and 6 during daytime hours for weekdays and Saturdays, and $L_{eq} = 50$ dBA is exceeded at all sites during nighttime hours for weekdays and Saturdays.

# 3.7 Infrastructure

## 3.7.1 Water Supply

### NWIRP Calverton

Groundwater serves as the source of drinking water for the population residing within a four-mi (six-km) radius of the site (NUS, 1995). Private wells, wells at NWIRP Calverton (described below), at Brookhaven National Lab, and two municipal water systems (Riverhead Water District [RWD] and Suffolk County Water Authority [SCWA]) supply the drinking water needs of the area.

Historically, all the potable and process water needs of NWIRP Calverton were supplied via three wells located on site, near the central area within the fence (Figure 3.7-1, Infrastructure). Permitting and use data on these wells is displayed in Table 3.7-1. A description of groundwater resources in the NWIRP Calverton area is provided in Subchapter 3.10.

Table 3.7-1

Water Supply - NWIRP Calverton

| Permit License | Permit Number/Plant Number | Well Depth feet (meters) | General Conditions |
|---|---|---|---|
| Groundwater Pumping | Well No. S-10639/No. 1<br>Well No. S-49605/No. 2<br>Well No. S-35110/No. 3 | 146 (45)<br>140 (43)<br>147 (45) | At each well total pumpage cannot exceed 1,000 gallons/minute (or 1.44mgd). Total pumpage for entire site cannot exceed 1.97mgd or 720 mgy. |
| Source: HR&A, 1996; NUS Corporation, 1995. | | | |

The three on-site wells were completed in the upper glacial aquifer. Well No. 2 was removed from service in December 1989 and Well No. 3 was removed from service in April 1991 because of volatile organic contamination (US Navy, 1986 and Smith, 1991). Grumman added a carbon filtration unit to treat all water prior to use. Because the three production wells were alternately run through the treatment system, they are considered to be back in service and capable of providing water that meets the federal MCLs for VOCs.All three wells are considered back in service and are capable of providing water that meets the federal MCLs for VOCs.

### Municipal Water Systems

The RWD and the SCWA are the two municipal water purveyors with wells located in a four-mi (six-km) radius of NWIRP Calverton (NUS Corporation [NUS], 1995).

RWD services about 5,700 customers (22,500 residents) from nine groundwater wells. Two of the nine wells are within a four-mi (six-km) radius of the site. These two wells were completed in the deeper Magothy Formation at depths of 780 ft (238 m) and 490 ft (149 m). It has been estimated that the portion of the population served from by RWD within the four-mi (6-km) radius is approximately 2,096 (Pendzick; 1991a; Riverhead Water District, 1990). RWD is presently expanding its service territory immediately north of NWIRP Calverton, north of Middle Country Road (NYS Route 25).

From its seven groundwater wells, SCWA serves 5,243 customers (12,000 residents). Two of its wells are located within a four-mi (six-km) radius of NWIRP Calverton; the apportioned population served by SCWA within the four-mi (six-km) radius is estimated to be 2,763 residents (Andersen, 1991). These SCWA wells are located in the upper glacial aquifer at depths of 144 ft (44 m) and 146 ft (45 m). SCWA recently started an expansion into existing development surrounding Lake Panamoka, situated between one and two mi (two and three km) west of the site. SCWA also plans to expand into the area north of Brookhaven National Lab, south of Middle Country Road (NYS Route 25), and west of William Floyd Parkway (NUS, 1995).

## 3.7.2 Sewage System

### Storm Drainage

Stormwater runoff from NWIRP Calverton is collected by a gravity storm sewer system comprised of reinforced concrete pipes with diameters ranging from 12 to 54 inches (in) (30 to 137 centimeters [cm]). The overall system consists of ten individual subsystems; the most extensive subsystem discharges the runoff into McKay Lake at the plant entrance near Swan Pond/Grumman Boulevard. Runoff from the other subsystems is discharged through a series of on-site swales. The stormwater drainage system was constructed in the 1950s and is approaching the end of its design life of 50 to 60 years (HR&A, 1996). Table 3.7-2 provides data on the existing stormwater permit for NWIRP Calverton.

### Sanitary Sewer

Sanitary sewage from on-site facilities is collected by the gravity sewage drainage system and delivered to the on-site Calverton sewage treatment plant (STP) (Figure 3.7 -1). The sanitary sewer system is made of asbestos cement gravity sewers with diameters ranging from six to ten in (15 to 25 cm). The system was constructed in the 1950s. There are two sanitary sewage lift pumping stations on the site.

# Infrastructure

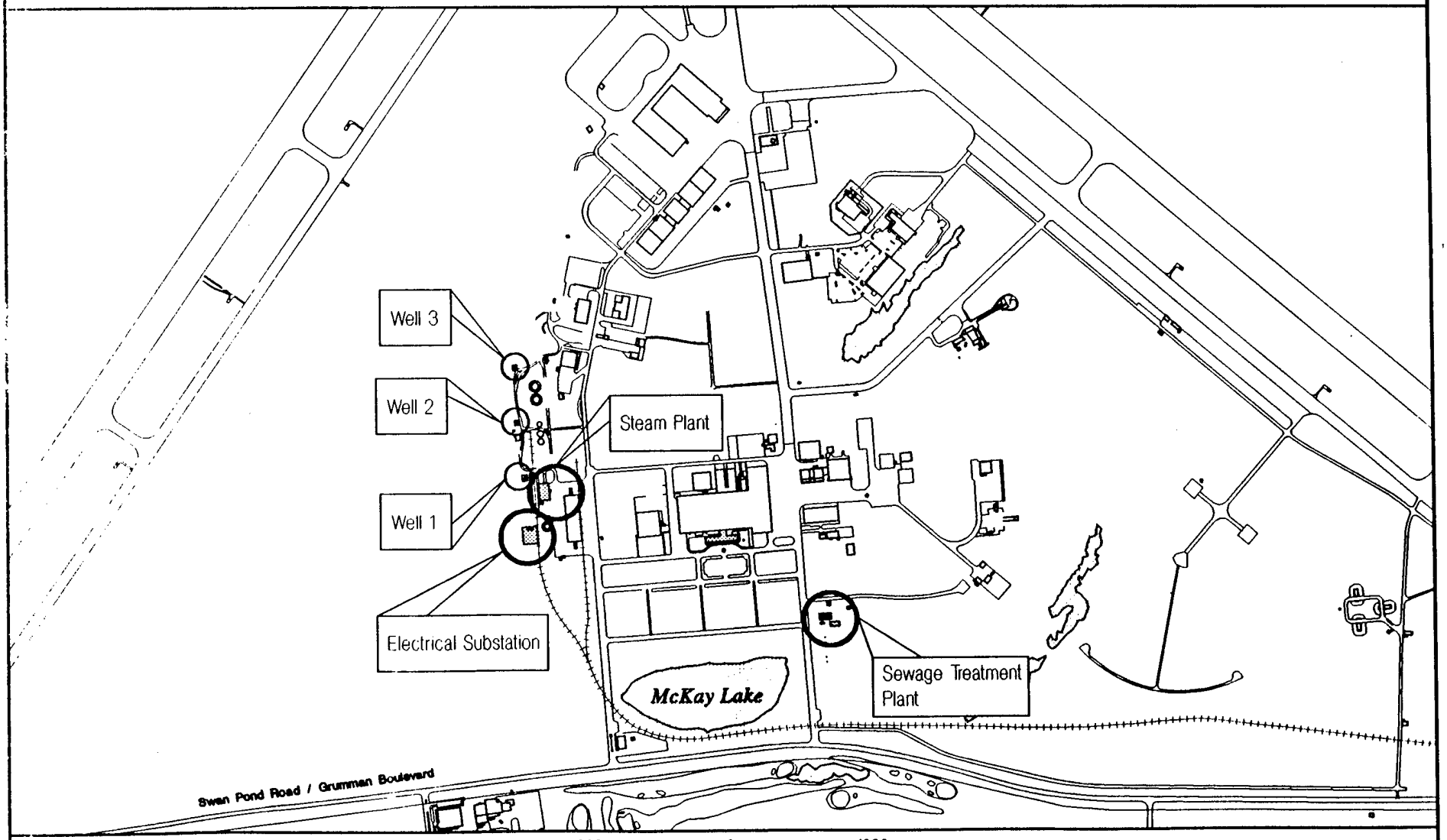



**Figure 3.7-1**

Table 3.7-2

Stormwater Discharges - NWIRP Calverton

| Permit License | Permit/License Number | Date Granted or Renewed/Expiration Date | General Conditions |
|---|---|---|---|
| Stormwater Discharges | General Permit (GP)-93-05 | Aug.1, 1993/Aug.1, 1998 | Requirements for preparation of stormwater pollution prevention plans, monitoring, and reporting requirements |
| Source: HR&A, 1996; NUS Corporation, 1995. | | | |

The primary components of the STP include:

- Collection system with lift stations;
- Gravity interceptor;
- Comminutor with bypass;
- Influent pumping station flow equalization tank;
- Aeration tank;
- Two settling tanks;
- Return sludge system;
- Chlorine contact tank;
- Two aerated sludge holding tanks;
- Control building; and
- Retention pond (McKay Lake).

When NWIRP Calverton was fully operational, influent to the STP consisted of sanitary waste from various buildings (including degreased liquid wastes from cafeterias), steam generation plant blow-down, and the discharge from the industrial waste treatment facility (IWTF). The IWTF is a state-of-the-art facility that contains five 6,000-gallon (22,710-liter) batch treatment tanks, holding tanks, and equipment designed to handle waste associated with the chemical stripping of aircraft finishes in preparation for painting. Constructed in 1970, the rated design capacity of the STP is 62,000 gallons per day (gpd) (234,700 liters per day). It utilizes primary sedimentation and secondary activated-sludge process with extended aeration as its treatment method. The treated and chlorinated effluent from the sewage treatment plant is discharged into McKay Lake. Acting as a retention pond, McKay Lake releases overflow along a natural water course, ultimately entering the Peconic River (US Navy, 1994). The primary and secondary sludge produced during treatment is collected into holding tanks for thickening; the supernatant from the sludge tanks is returned to the treatment plant; the sludge is transported to a local treatment plant for processing.

The STP discharge is regulated under the New York State Pollutant Discharge Elimination System (NYSPDES), the state-wide program regulating all surface water discharges. Relevant permitting data is presented in Table 3.7-3.

Table 3.7-3

SPDES Permits - NWIRP Calverton

| Permit License | Permit/License Number | Date Granted or Renewed/Expiration Date | General Conditions |
|---|---|---|---|
| State Pollutant Discharge Elimination System | NYSPDES #025453 | Feb. 1, 1995/Feb. 1, 2000 | Outfalls to McKay Lake<br>001 - Process & Sanitary Wastewater<br>002 - Non-Contact Cooling Water<br>003 - Non-Contact Cooling Water<br>Outfalls to Groundwater<br>004 - Non-Contact Cooling Water<br>005 - Non-Contact Cooling Water<br>008 to 023 - Sanitary Wastewater<br>Surface discharge standards for BOD, heavy metals, coliform, solids, volatile organics; reporting requirements for flow and total nitrogen. |
| Source: HR&A, 1996; NUS Corporation, 1995. | | | |

The STP was operated by an outside vendor. Historical monitoring data show two minor violations of the SPDES permit that were of short duration. Presently, there are no major operational problems at the treatment plant (HR&A, 1996).

## 3.7.3 Other Utility Systems

### Electric

When NWIRP Calverton was operational, electrical service was provided by the Power Authority, State of New York (PASNY); however, since being idled and because of the reduced demand and personnel, power use fell below required contract levels. Presently, incoming electrical service is provided by the Long Island Lighting Company (LILCO) via a 69 kilovolt (kV) switching station located south of the site along Connecticut Avenue and the Long Island Railroad. The switching station is supplied by overhead 69 kV transmission lines from Brookhaven and Riverhead. LILCO's switching station supplies power to the "Connecticut Avenue" substation of NWIRP Calverton located adjacent to the LILCO station. The Connecticut Avenue Substation supplies 69 kV power to the main 69 kV substation on site via a 69 kV overhead distribution line (Figure 3.7-1). The main

substation transforms the incoming 69 kV distribution line voltage to 13.8 kV voltage for use and distribution on site (HR&A, 1996).

Primary electrical distribution is accomplished via 15 kV feeders from the main substation that feed a set of locally mounted step-down transformers. The cables are installed in underground duct banks. There is a limited number of overhead pole lines on site that are also used for primary distribution. Secondary electrical distribution consists primarily of pad-mounted transformers located adjacent to the respective buildings.

Some buildings are equipped with locally-mounted emergency generators that can provide limited power in the event of a power failure.

### Gas

NWIRP Calverton has no on-site natural gas piping. The use of a small diameter line to Bldg. 6 for the kitchen was discontinued and the line shut off.

### Steam Distribution

The main buildings of NWIRP Calverton are supplied by steam with condensate return from the steam plant (Figure 3.7-1). The 24,000-sq-ft (2,230-sq-m) steam plant was constructed in 1953. From 1954 to 1971 the facility used coal as a source of fuel; in 1972, the plant was modified to use only #4 and #6 fuel oil (CF Braun, 1995) The steam plant is capable of providing heat to 90 per cent of NWIRP facilities (Mastrogiocomo, 1995). Presently, the steam plant is undergoing a major boiler replacement with an estimated completion date of mid-1997. The steam distribution system and the condensate return system are underground direct piping.

# 3.8 Cultural Resources

The Navy performed an intensive level historic resources survey and a Phase IA archaeological survey (TAMS Consultants, 1996) in compliance with Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966, as amended; Executive Order 11593, *Protection and Enhancement of the Cultural Environment*; OPNAVINST 5090.1B, *Environmental and Natural Resources Program Manual*; and NEPA. These laws and regulations require that cultural resources meeting the eligibility criteria of the National Register of Historic Places be identified and evaluated. Therefore, the objectives of the intensive level historic resources survey were to establish the historic context of NWIRP Calverton and to evaluate each building and structure with respect to National Register criteria. The objectives of the Phase IA archaeological survey were used to determine the presence or absence of intact archaeological resources.

## 3.8.1 Overview of Prehistoric and Historic Periods

### Prehistoric Periods

The prehistoric occupation of Long Island and the northeastern United States represented in this area extends for over 10,000 years. The many Native American occupations for which remains have been collected and analyzed in this region have been broken down into four major cultural periods: Paleo-Indian Period; Archaic (Early, Middle, and Late) Period; Woodland (Early, Middle, and Late) Period; and Historic Period.

- **Paleo-Indian Period** - The Paleo-Indian period followed the retreat of the Wisconsin Glacier approximately 14,000 years ago. This led to the emergence of a cold, dry tundra environment. The earliest human occupation dating to this period is generally represented by limited small surface finds and limited manifestations such as that recovered from the Port Mobile Site in Staten Island where projectile points diagnostic of this cultural period were recovered. The highly mobile nomadic bands of this period specialized in hunting large game animals such as mammoth, moose-elk, bison, and caribou, and gathering plant foods. It has been theorized that the end of the Paleo-Indian Period arose from the failure of over-specialized, big-game hunting.

- **Archaic Period** - In the Archaic period a change to a more generalized subsistence strategy with increased importance placed on gathering a wider variety of plant and animal foods occurred. The environment during the Early Archaic (10,000 to 8,000 years before present [BP]) displayed a milder climate and the gradual emergence of a deciduous-coniferous forest with a smaller carrying capacity for the large game animals of the previous period. The large Pleistocene fauna of the previous period

were gradually replaced by modern species such as elk, moose, bear, beaver, and deer. New species of plant material suitable for human consumption also became abundant. The increasing diversification of utilized food sources is further demonstrated by a more complex tool kit.

The Middle Archaic period (8000-6000 BP) is characterized by a moister and warmer climate and the emergence of an oak-hickory forest. The settlement pattern during this period displays specialized sites and increasing cultural complexity. The exploitation of the diverse range of animal and plant resources continued with an increasing importance of aquatic resources such as mollusks and fish.

The Late Archaic period (6000-3700 BP) was a time of cultural flourishing in Long Island. The Wading River complex, which dates from this period, has been the subject of extensive investigation. The Wading River salt marsh, from which the complex was named, is located only a few miles northwest of NWIRP Calverton. The most commonly identified artifact of the Wading River complex is the thick percussion-flaked point that has a long narrow blade, poorly defined shoulders, and an essentially straight stem.

This time period demonstrates a seasonally-based subsistence pattern with a greatly expanded population base. The Terminal Archaic (3700-1700 BP) is defined as a technologically transitional stage from the pre-ceramic Late Archaic period to the Early Woodland period.

- **Woodland Period** - The Woodland period (3000 BP-European Contact) is generally divided into Early, Middle, and Late Woodland on the basis of cultural materials and settlement-subsistence patterns. The Early Woodland was a continuation of the tool design traditions of the Late Archaic; it marked a transitionary period in which the production and use of ceramics began. Settlement pattern data suggest that the broad-based strategies of earlier periods continued with a possibly more extensive use of coastal resources. This point must be qualified since the larger shell middens of the Woodland Period could simply be representing their greater preservation. The gradually rising sea level around Long Island was likely responsible for the destruction of many earlier coastal shell middens.

  The Early and Middle Woodland periods display significant evidence of a change in settlement patterns toward a more sedentary lifestyle. The discovery of large storage pits and larger sites in general has fueled this theory. Some horticulture may have been utilized at this point but not to the extent that it was in the Late Woodland period.

During the Late Woodland period, food items such as maize, beans, and squash were raised through a specialized agricultural system. This radically different settlement pattern was accompanied by further changes in settlement patterns, social organization, long distance trade networks, and an overall increase in population densities.

- **Historic Period, 1609 - 1952** - Recorded local history begins in 1609, with Henry Hudson's exploration of the New York area. The first English colonists settled in Suffolk County in 1639, including the town of Southold, which was a religious community. The western portion of Southold eventually became the town of Riverhead. In 1792, Riverhead officially formed as an independent town.

  Suffolk County was mostly agricultural from the time of its settlement until the mid-20th century. In the 18th century, fishing and whaling were also practiced along the coastal areas as well as lumber production and cattle raising inland. The British occupied the county for seven years following the Battle of Long Island (1776) and used it as a supply station for British naval forces. Woodcutting and cranberries became major industries in Suffolk County during the 19th century. The majority of cranberry bogs were in the NWIRP Calverton area - Calverton, Riverhead, and Manorville. Cranberry production thrived until the mid-20th century, with one active bog remaining until 1974. Additional agricultural activities included duck farming beginning in the late 19th century and, for a brief time during the 1920s, a pickle factory operated right near NWIRP Calverton.

  A series of maps reviewed for this report show information about topography and changes in the landscape and property ownership. The earliest cartographic evidence of settled land near NWIRP Calverton is from a circa 1675 map showing "Wading R[iver] Farms." A map from 1731 shows another farm structure called "Land Mark Hills." By 1802, several small farms and roads appear in the area, including Old Country Road which borders the northern fence of NWIRP Calverton. A few roads and structures appear within NWIRP Calverton on other early 19th century maps, but they do not appear in successive, less detailed maps.

  A map from 1858 is the first to list landowners within NWIRP Calverton and the roads shown are those bordering the site today. The construction of the Long Island Railroad in the mid-19th century contributed to the further development of Suffolk County. Although it remained rural into the 20th century, the coastal areas were built up as resorts and, after World War II, the population grew quickly and agriculture declined. Maps from 1878 to 1944 show sparse settlement in the area.

The major landowners within NWIRP Calverton were the Davis Family, who came to settle in the area from Boston in 1655, once owning 3,250 acres (1315 hectares); Joseph Raynor, one of Riverhead's 47 original settlers, owning several farms; and William Wells, who owned several farms in the area and whose family held several key positions in the town of Riverhead. The John H. Wells Cemetery exists at the southeast corner of the site, just beyond the main eastern runway. There were approximately 50 farm and residential structures within NWIRP Calverton, including an estate owned by the Woolworth family, when it was purchased by the Navy in 1952.

**Grumman Era at Calverton, 1952 - 1996**

NWIRP Calverton was purchased by the US Navy in 1952, built during 1953, and leased in 1954 to the Grumman Corporation for the final assembly and flight testing of jet aircraft. The construction of Government-Owned Contractor-Operated (GOCO) facilities began during World War II to meet a shortfall in production and were later built for the Korean and Vietnam Wars to meet new research, development, and production needs. NWIRP Calverton was built at the beginning of the jet age in aircraft history in response to the production needs of the Korean War.

Founded in 1929, Grumman was the primary producer of the Navy's carrier-based aircraft for over 60 years. Among the company's most significant aircraft were the F4F Wildcat and F6F Hellcat in World War II, the F9F-5 Panther and F9F-6 Cougar in Korea, and, in the last two decades of the Cold War (1946-1989), the A-6 Intruder, EA-6B Prowler, E-2C Hawkeye, and the celebrated F-14 Tomcat. Grumman was the first airframe manufacturer in the country to receive the Navy "E" for excellence, and continued to receive high honors throughout its production history.

The impetus for the construction of NWIRP Calverton was the lack of production and runway space at Grumman headquarters in Bethpage, New York, during the Korean War. With a World War II peak employment of 25,527, Grumman was a major force in the suburbanization of Nassau County. The land surrounding the Bethpage plant was fully developed by 1951 and the Navy looked eastward to more rural Suffolk County for a site within proximity of Bethpage large enough to accommodate Grumman's space needs, including a 10,000-ft (3,048-m) runway, while causing a minimum of noise and safety risks to neighboring residents.

The NWIRP Calverton site was built on 3,000 acres (1,214 hectares) leased to Grumman. Another 3,000 acres (1,214 hectares) were acquired by the Navy in 1960, after a lengthy conflict with the surrounding communities, for the extension of buffer zones beyond the runways. The large size of NWIRP Calverton was intended to meet possible expansion needs in case of wartime mobilization.

The two runways at NWIRP Calverton are 10,000 ft (3,048 m) and 7,000 ft (2,134 m) long. The original group of buildings contained over 600,000 sq ft (55,740 sq m) of space, including a large production facility (Plant 6), testing hangars (Plant 7), and five support facilities including a steam

plant, paint shop, and warehouse. Built of innovative precast concrete panels upon wide-span steel frames, the structures were fast and cost-effective to construct. They were designed by the prominent New York City architecture firm of Walker and Poor with Seelye, Stevenson, Value & Knecht as consulting engineers.

Additional facilities were built to meet evolving needs in aircraft testing and production as Grumman increasingly focused upon aircraft electronics (avionics) and advanced methods of airborne electronic warfare (EW) technology. In the late 1950s, in response to the escalating arms race with the Soviet Union, space flight and missile technology began to eclipse jets in the defense budget for research and development. Until the late 1960s, Grumman turned its attention to these programs while improving the development of avionics for aircraft.

The Anechoic Chamber, a hangar designed for the testing of electromagnetic waves of aircraft radar systems, was built in 1968 by the Navy at NWIRP Calverton as a prototype, and was at that time the largest of its kind (able to house an entire aircraft) in the "free" world. Along with the chamber, other facilities, including Plant 8, the Systems Integration Test Station (in Plant 7, now dismantled), and the Electronic Warfare Test Range (now demolished), were built to develop and test the computers, electronics, and radar detection and jamming capabilities of the aircraft. In Plant 6, an "assembly trestle" was installed, markedly improving the production time for aircraft.

The 1980s brought a new wave of construction to NWIRP Calverton to meet the space needs of the growing work force and laboratory facilites used in the development and testing of the F-14 Tomcat as well as the various EW aircraft. Among these new buildings were the AWSACS (Air Warning Support and Control Systems) Development Building, used for flight test evaluation and testing (now demolished); the A-6 Laboratory and Penthouse Building, with activities similar to AWSACS as well as a "black area" (i.e., top secret) laboratory (now demolished); the A-6 Office Building; and the Aircraft Development Support Building (ADSB) and hangars. These new buildings brought the total space at NWIRP Calverton to more than one million sq ft (92,900 sq m).

Grumman was one of Long Island's largest employers, and its impact upon the rural community of Riverhead was felt throughout its presence at NWIRP Calverton. When the land was first acquired in 1952 and the buffer zone added in 1960, there were serious objections from the surrounding communities. Despite NWIRP Calverton's status as a government-owned property, Grumman agreed to pay real estate taxes to the community. On several occasions, the site has been proposed by local and state authorities as a commercial jetport, which at one point ended in Grumman's threat to leave the region.

The Grumman workforce actively participated in community life. The corporation promoted an informal, familial environment that stressed teamwork, innovation, and high-quality work. The company newspaper, *Grumman Plane News*, regularly reported upon the social life and achievements of Grumman employees. The annual family picnics at Calverton were attended by over 25,000 people

and the picnic grounds at the northwest corner of the site had several attractions, including an authentic 1930s hand-carved carousel.

The economic recession that began in 1989, coupled with the decline of defense production after the conclusion of the Cold War, had a visible impact upon the local economy. Grumman was acquired by the Northrop Corporation on May 18, 1994 and, as a result of the completion of Grumman's major F-14 Tomcat contract in 1992 and delivery of the last E-2C Hawkeyes in 1995, NWIRP Calverton closed on February 15, 1996.

## 3.8.2 Intensive Level Historic Resources Survey

A program of documentary research was conducted on the history of NWIRP Calverton and the general history of naval aviation during the Cold War in order to place the facility in an appropriate historic context. Sources used in preparation of the historic period overview and historic context included local histories, contemporary periodicals, administrative records of NWIRP Calverton, and historic maps. Repositories consulted included:

- Engineering Societies' Library, New York Public Library, NY;
- Grumman History Center, Bethpage, Long Island, NY;
- Sterling Memorial Library, Yale University, New Haven, CT;
- Avery Memorial Architectural Library, Butler Library, Columbia University, NY;
- Naval Historical Center, Washington Navy Yard;
- National Air and Space Museum, Smithsonian Institution;
- National Archives Main Branch, Washington, D.C.;
- Northrop Grumman Public Affairs Office, Bethpage, Long Island, NY;
- National Archives and Records Administration, Regional Archives; and
- Historian's Office, Naval Facilities Engineering Command, Arlington, Virginia.

A review of the National Register files at the Office of Parks Recreation and Historic Preservation in People's Island, New York in January 1996 showed that no architectural or archaeological cultural resources within the NWIRP Calverton property boundaries are listed in the national or state registers. Likewise, no cultural resources determined eligible but not yet listed in the registers are located within NWIRP Calverton.

Although NWIRP Calverton is less than 50 years old, the site was identified as potentially historic in a town-wide survey conducted in 1977 by the Society for the Preservation of Long Island Antiquities. The form is outdated, vague, and historically incorrect and contains no assessment of significance. Although the New York State Historic Presentation Office (SHPO) has had the survey in their files for almost 20 years, the conclusions have not yet been revised.

Upon completion of documentary research, a vehicular and pedestrian field study was conducted. Along with the background research, the purpose of this field study was to permit assessment of the potential significance of historical resources. A Cultural Resource Form K was completed for each building or structure that appeared potentially to meet the Secretary of the Interior's Criteria for Evaluation (36 CFR 60.4). Table 3.8-1 identifies the relevant measures for assessing historic significance. Buildings less than 50 years old are considered ineligible unless considered exceptionally significant (36CFR 60.4[g]). The research and field examinations indicated that certain structures and buildings at NWIRP Calverton would be considered exceptionally significant under two areas of significance used by the National Register of Historic Places: Military and Engineering. The recommended contexts for the properties are: (1) the development of naval aviation; and (2) electronic warfare during the last 25 years of the Cold War (1965-1989).

Each building or structure at NWIRP Calverton was then evaluated on the basis of whether it possessed: (1) physical or associative characteristics significantly related to the historic contexts (above); and (2) a sufficient degree of historic integrity as defined by the National Park Service guidelines (Table 3.8-2) to be an exceptional representative of its property type. Buildings or structures that did not meet these requirements were recommended as not eligible.

Three NWIRP buildings individually appear to possess the requisite historic importance necessary to be eligible for listing under Criteria A and C (Table 3.8-1) for their exceptional significance in relation to the development of naval air power during the Cold War:

- The Anechoic Chamber (Bldg 284), used to test for electromagnetic emissions, was the largest of its kind when built;
- Plant 6 was a facility used for the final assembly of aircraft, most notably the F-14 Tomcat; and
- Plant 7 was a facility designed for the development and testing of experimental and production aircraft (e.g., F-14), the testing and development of the EA-6B Intruder, the EF-111B, and other electronic warfare aircraft.

The locations of these buildings appear in Figure 3.8-1 (National Register-Eligible Properties).

Following the evaluation of individual building eligibility at the national level, an assessment was made regarding the signficance of NWIRP Calverton at the state and local levels and the potential for a historic district on the site.

**State And Local Significance**

The NPS guidance on registering buildings less than 50 years old, *Bulletin 22* (p. 6), states that, "exceptional importance does not necessarily mean national significance, it is measure of a property's

Table 3.8-1

Criteria for Historic Significance

| 36 CFR 60.4, Part I |
|---|
| The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:<br><br>A. that are associated with events that have made a significant contribution to the broad patterns of our history; or<br><br>B. that are associated with the lives of persons significant in our past; or<br><br>C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or<br><br>D. that have yielded, or may be likely to yield, information important in prehistory or history. |
| 36 CFR 60.4, Part II |
| Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:<br><br>A. a religious property deriving primary significance from architectural or artistic distinction or historical importance; or<br><br>B. a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or<br><br>C. a birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or<br><br>D. a cemetery which derives its primary significance from graves or persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or<br><br>E. a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or<br><br>F. a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or<br><br>G. a property achieving significance within the past 50 years if it is of exceptional importance. |

# National Register Eligible Properties

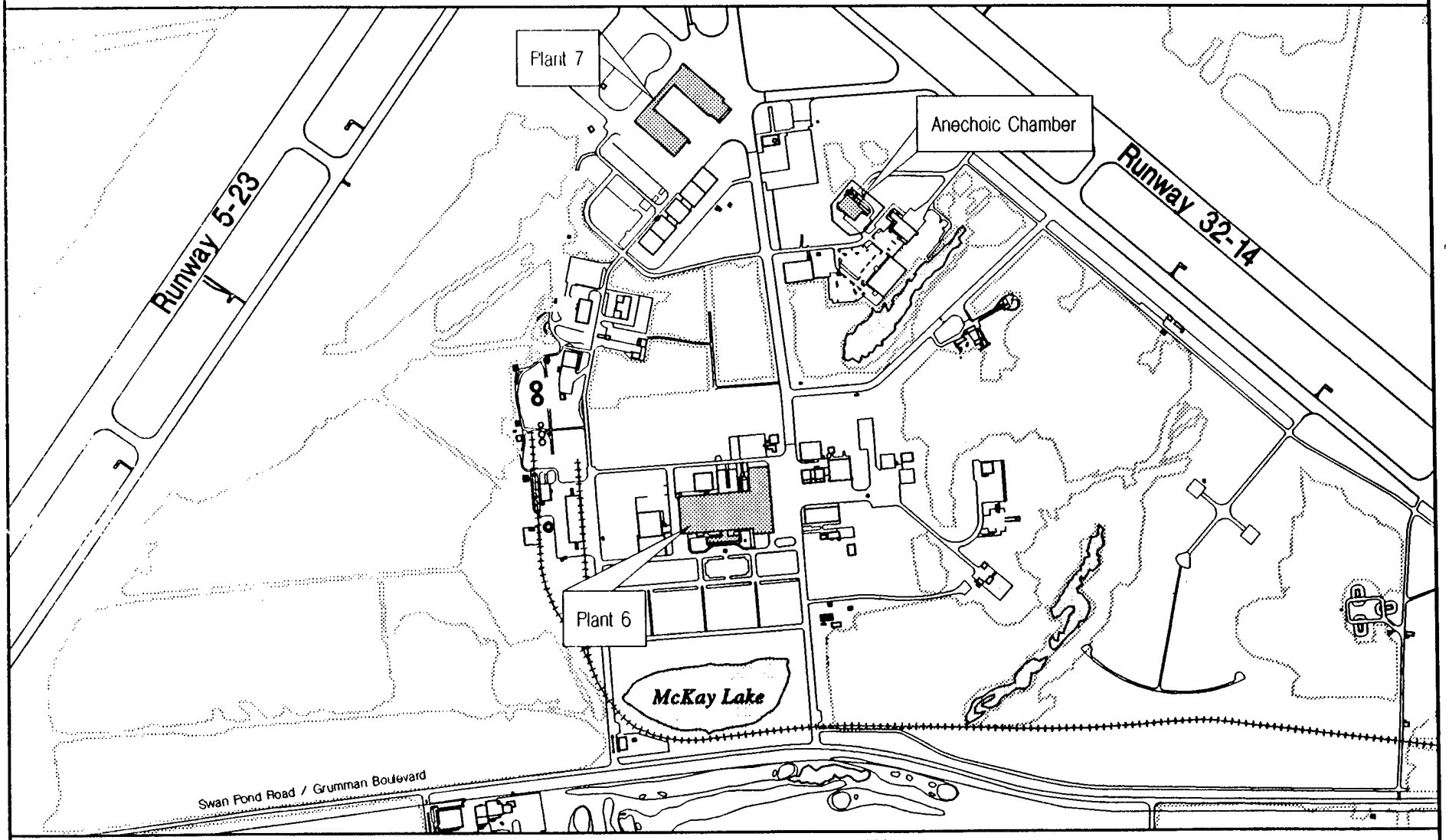



Figure 3.8-1

Table 3.8-2

Integrity Aspects Defined

| Aspect of Integrity | Property Attributes |
|---|---|
| Location | Must not have been moved. |
| Design | Must retain historic elements that create the form, plan, space, structure, and style of the property. |
| Setting | Setting must retain its historic character. |
| Workmanship | Methods of construction from its time of significance must be evident. |
| Materials | Must retain the key exterior materials dating from the period of its historic significance. |
| Feeling | Physical features must convey its historic character. |
| Association | Must be the actual place where a historic event or activity occurred and must be sufficiently intact to convey that relationship to an observer. |
| Source: US Department of the Interior 1991: 44-45. | |

significance within the appropriate historic context." The geographic contextual scale of the Cold War is global. The national context is the lowest level at which Cold War resources can be effectively evaluated.

Every military installation existed in some part due to the Cold War. However, every building on every base does not become exceptionally significant on a local or state level simply because it collectively helped to form the community's tie to the Cold War and/or is the only facility of its kind locally or within the state.

Military facilities, like all large industries, had impacts on state and local economies throughout the Cold War. Military spending shaped community demographics, growth patterns, and ultimately the community identity. The state and local significance of an installation is economic and social – it provided jobs and was often the lifeblood of the community. NWIRP Calverton's primary impact on Riverhead was economic due to Grumman's payment of real estate taxes to the town of Riverhead.

While state and local issues are significant, they are not exceptionally significant in the Cold War context. The Cold War was not primarily about local social and economic impacts of installations; it centered on mutual fear and mistrust of opposing ideologies and the US investment in technology for strategic advantage over the Soviet Union.

**Historic District Significance**

According to NPS guidelines, a district must possess "a significant concentration, linkage or continuity or sites, buildings, or objects united historically or aesthetically by plan or physical development (USDOI, 1991)." It must be further stressed that NWIRP Calverton was a manufacturing facility, one of dozens, if not hundreds, of government-owned, contractor-operated facilities. Unlike operational bases such as Plattsburgh or Griffiss Air Force Bases, no alert sorties were ever flown off the runway at NWIRP Calverton, nor was the facility considered a front-line base for force projection against adversaries. Instead, NWIRP Calverton assembled a variety of naval aircraft, two of which were considered to be essential to the conduct of the Cold War. As noted in the historic overview, all of the buildings at NWIRP Calverton were constructed within the last 50 years and most of them are unexceptional buildings whose role was not crucial to the conduct of the Cold War.

Although these buildings are united historically by plan and physical development, they were not considered eligible for the National Register because, as simple ancillary and production buildings, they fail to meet the standards for exceptional significance. It was, however, the nature of the site and the function of the buildings that led to reject the concept of a district.

The buildings on the complex housed relatively few functions at any given time and, with the exception of shared utilities, functioned as fairly discrete units. Consequently, in the assessment analysis, and as a result of repeated site visits, the various buildings emerged as separate and individual entities.

Additionally there is the location of the buildings on the site. As shown in Figure 3.8-1, the major buildings were placed at great distances from each other. The combination of the great distances, coupled with the vegetation screens, further justifies the analytical approach used, i.e. that the various elements of NWIRP Calverton should be asessed as individual, discrete, elements. Attempts to link these resources would have included hundreds of acres of wooded land that had no relevance to the context.

In accordance with the NHPA, the Navy has requested and received the concurrence of the NYSHPO with the above findings of eligibility and non-eligibility.

## 3.8.3 Phase IA Archaeological Survey

A review of the files of the New York State Museum (NYSM) and the New York State Historic Preservation Office/Office of Parks Recreation and Historic Preservation (OPRHP) in Albany revealed that 24 archaeological sites lie within the general vicinity of the NWIRP Calverton.

There are ten historical sites listed with the New York State Preservation Office within one mi (1.6 km) of NWIRP Calverton. There was no information on file regarding historical sites within the boundaries of the project site or the three buffer areas. Informant interviews also indicated that artifacts made of "white stone" (presumably quartz) had been found around the north shore of Twin Pond and a "road cut" east of McKay Lake. Both of these areas were later investigated through subsurface testing. Documentary analysis also indicated that over the course of the last two centuries, there were once numerous farmhouses and outbuildings at NWIRP Calverton.

To identify the potential for intact archaeological resources at NWIRP, a field survey, supplemented by selective shovel testing, was conducted. In order to maximize the effectiveness of the shovel testing, excavation efforts were concentrated in areas of high sensitivity. These areas were initially delineated using a sensitivity model developed for the Long Island Pine Barrens by Kenneth Lightfoot. Flat or slightly sloping areas near modern or ancient water were considered of higher sensitivity than steep sloped areas or areas that were more than 328 ft (100 m) distant from water sources (TAMS 1996). Using this model, approximately 300 acres (121 hectares) were initially identified as potentially highly archaeologically sensitive, while the remaining 2,700 acres (1,093 hectares) were identified as potentially low to moderately sensitive (Figure 3.8-2; Prehistoric Sensitivity Areas). To further refine the assessment of archaeological sensitivity, 376 shovel test pits (STP) were excavated in areas of high potential sensitivity, while 356 STP were excavated in areas of predicted low to moderate sensitivity more than 328 ft (100 m) from freshwater sources. The 356

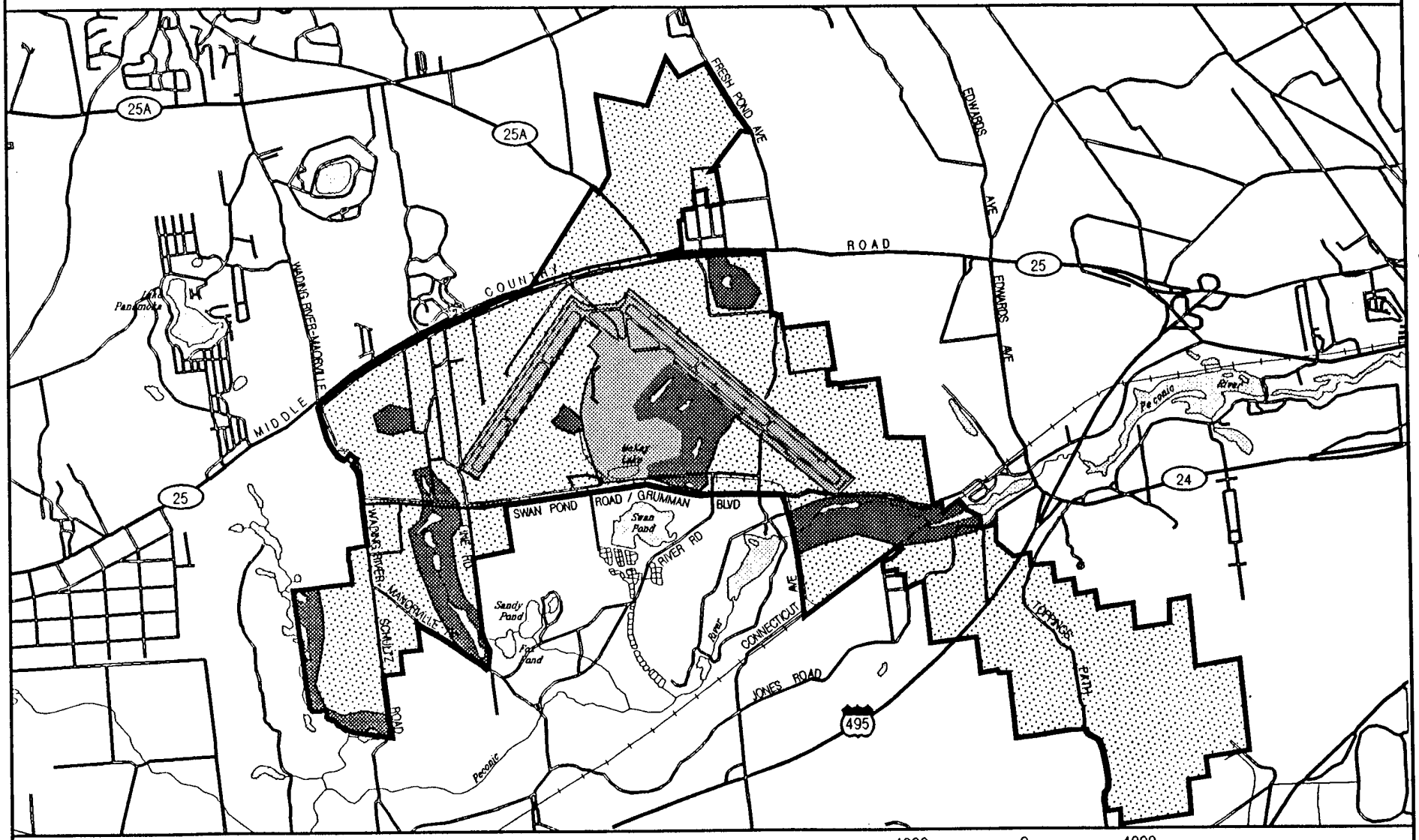
STP excavated in areas of potentially low to moderate sensitivity yielded only one resource, while 375 artifacts were recovered in the areas of predicted high sensitivity. These materials consisted primarily of lithic debit age (stone debris) resulting from the manufacture and processing of stone tools. In addition, eight projectile points, four tools, one core, two pieces of fire-cracked rock, and two pieces of prehistoric pottery were recovered. One historic resource, a 20th century foundation, was also encountered. This refinement reduced the total highly sensitive archaeological area within the fence at NWIRP Calverton to approximately 240 acres (97 hectares).

Initial analysis of these artifacts revealed that the prehistoric activity responsible for their deposition dates from the Archaic (8000 to 4000 BP) and Woodland Periods (3000 to 500 BP). Further laboratory analysis found that in the areas around freshwater resources, prehistoric activity was quite varied. It appeared to be transient, and consisted primarily of hunting, foraging, cooking, and tool manufacture and repair (TAMS, 1996).

Based on the field survey, documentary analysis, and the laboratory analysis of the recovered artifacts, five areas comprising about 100 acres (40 hectares) within the fence at NWIRP Calverton were identified as areas of high potential for finding prehistoric resources. Located adjacent to water sources, these areas are identified on Figure 3.8-2. Areas comprising approximately 140 acres (57 hectares) along Swan Pond Road, including the Wells Cemetery, two areas along Middle Country Road, and one area northeast of the main runway were also identified as possessing high potential for finding historic resources. These locations are identified in Figure 3.8-3 (Historic Sensitivity Map of NWIRP Calverton). The industrial and runway portions of NWIRP Calverton were identified as too disturbed to be likely to yield any archaeological resources. The remaining areas were shown as being of low to medium sensitivity archaeologically. Undisturbed areas where the slope of the land is less than ten percent were identified as being of medium sensitivity and are identified in Figure 3.8-3.

In accordance with the NHPA, the Navy has received the concurrence of the NYSHPO with the above findings of archaeological sensitivity.

# Prehistoric Sensitivity Areas




Area of High Potential

Area of Medium to Low Potential

Property Boundary

Developed Area (Building/ Paved Areas)

4000 0 4000
Scale in Feet
1000 0 1000
Scale in Meters

N

Figure 3.8-2

# Historic Sensitivity Areas

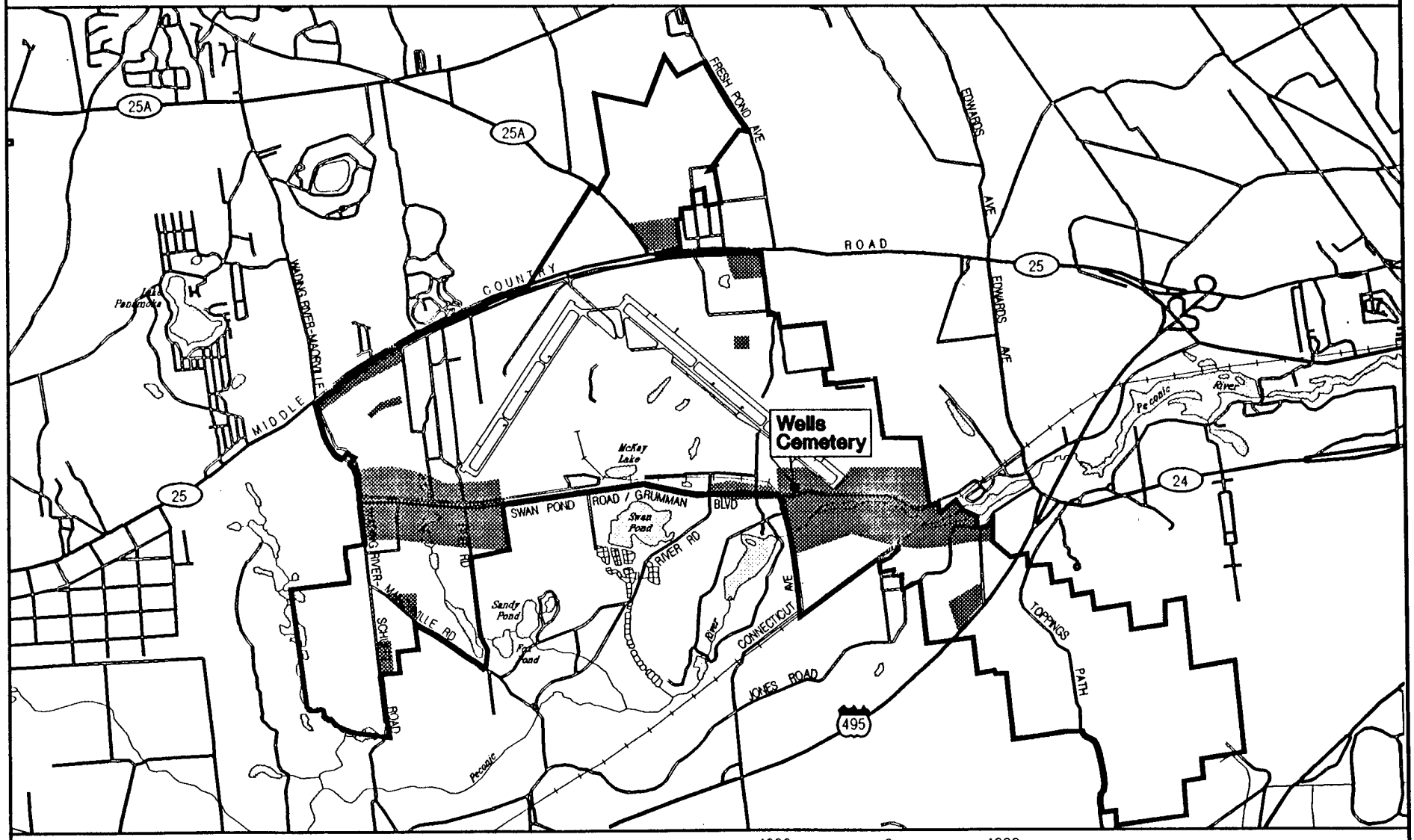



Figure 3.8-3

# 3.9 Topography, Geology, and Soils

## 3.9.1 Topography

Most of NWIRP Calverton occupies a relatively flat, intermorainal area between the Harbor Hill end moraine to the north and the Ronkonkoma terminal moraine to the south. The landscape surrounding the site is mostly broad farm fields, interspersed with large forested areas. The terrain is a relatively flat, broad, glacial outwash plain sloping to the south.

The area to the west and south of NWIRP Calverton is dominated by the Peconic River, its tributary streams, and numerous associated ponds and wetlands. The land south of the river is a minor escarpment, with irregular hills and rough terrain; forested ridge lines dominate and provide a large area of natural habitat, one of the last on Long Island.

The land of NWIRP Calverton generally slopes from the north to the south, with the lowest area along the Peconic River. Elevations gradually fall from about 100 ft (30 m) above mean sea level (msl) in the northeast buffer zone to a low of about 30 ft (9 m) above msl along the Peconic River (Myers and Gaffney, 1989). South of the Peconic River, in the southeast buffer zone, elevations rise to over 300 ft (91 m) above msl at peaks in the steep, morainic area south of the Long Island Expressway (USGS, 1956 and 1967).

The fenced-in area of the site where the reuse plan would be implemented is gently sloping; elevations range from approximately 39 ft (12 m) to 84 ft (26 m) above msl (USGS, 1967). Slopes are generally under six percent within the fenced area, and the north and southwest buffer zones, except where dissected by drainage swales (USDA, 1975). Some slopes to the south of the Long Island Expressway, within the southeast buffer zone, approach 35 percent.

## 3.9.2 Geology

NWIRP Calverton is located in the Atlantic Coastal Plain Physiographic Province. The land was created or altered by the activity of four major glacial stages. The youngest glacial event, the Wisconsin, produced Long Island Sound and most of the current topographic features of Suffolk County (USDA, 1975). Most of NWIRP Calverton, north of Swan Pond/River Road, is an outwash plain; south of this road are the remnants of the Ronkonkoma moraine (Myers and Gaffney, 1989).

Approximately 1,300 ft (396 m) of unconsolidated sediments underlie NWIRP Calverton. The sediments consist of four distinct geological units. Listed in order of increasing depth, these units are described as follows (McClymonds and Franke, 1972):

- Upper Glacial Formation is approximately 250 ft (76 m) thick and consists of both glacial till and outwash deposits. The till generally consists of poorly-sorted to unstratified sediments. The outwash deposits consist chiefly of well-sorted and stratified sand and gravel;

- Magothy Formation is approximately 520 ft (158 m) thick and consists chiefly of stratified, fine to coarse sand and gravel;

- Raritan Clay Member of the Raritan Formation is approximately 170 ft (52 m) thick and consists of clay and silty clay;

- Lloyd Sand Member of the Raritan Formation is approximately 400 ft (122 m) thick and consists chiefly of fine to coarse sand and gravel.

Crystalline bedrock, consisting of schist, gneiss, and granite, underlies the unconsolidated sediments beneath NWIRP Calverton. The regional dip is to the south and southeast (McClymonds and Franke, 1972).

A soil boring and sampling program for parts of NWIRP Calverton's fenced-in area was undertaken as part of the Installation Restoration Program to investigate and clean up portions of the site; no similar program was done for the buffer zones (NUS, 1995). The depths of the borings ranged from six to 22 ft (1.8 to 6.7 m) below surface level. Analysis of the borings indicated that much of the fenced area is underlain predominantly by fine to coarse sediments of probable glaciofluvial (glacier and water-based) origin. Three distinct lithofacies were encountered and include (NUS, 1995):

- Upper lithofacies consist predominantly of silty, fine-grained sand with varying amounts of peat and clay, representing a mixture of soil, fill, and glacial deposits;

- Middle lithofacies consist of predominantly fine-grained sand with varying amounts of medium to coarse-grained sand, and pebbles, probably representing undisturbed glacial deposits; and

- Lower lithofacies consist of micaceous, silty clay.

## 3.9.3 Soils

NWIRP Calverton lies within two soil associations: the Haven-Riverhead association, which occurs generally north of the Swan Pond/River Road, and the Plymouth-Carver association, which occurs south of the road (USDA, 1975). Approximately three-quarters of the fenced-in area and the northern buffer zone fall within the Haven-Riverhead association. The remaining one-quarter of the

fenced-in area and the southwest and southeast buffer zones fall within the Plymouth-Carver association.

**Haven-Riverhead Association**

The Haven-Riverhead association soils are deep, nearly level to gently sloping, well-drained, medium-textured, and moderately coarse textured soils that occur on outwash plains (USDA, 1975). The association is nearly level and has short gentle slopes along shallow drainageways. Some areas are pitted by steep-sided kettle holes. Slopes range from one to 12 percent. Haven soils make up about 40 percent of the association and Riverhead soils make up about 30 percent; minor soils comprise the remaining 30 percent. Haven and Riverhead soils are together across most landforms; however, Haven soils are most extensive at slightly higher elevations and at greater distances from the drainageways. The characteristics of Haven and Riverhead soils are (USDA, 1975):

- Haven soils are deep, well-drained, and medium-textured. Their surface layer is loam and their subsoil is loam or silt loam. The substratum is sand and gravel. Depth to the substratum ranges from about 18 to 36 in (45 to 91 cm).

- Riverhead soils are deep, well-drained and moderately coarse-textured. Their surface layer and subsoil are sandy loam. In many places, however, the lower part of the subsoil is loamy sand. The substratum is sand and gravel. Depth to the substratum ranges from about 22 to 36 in (56 to 91 cm).

Riverhead and Haven are productive soils and are used extensively for agriculture and development; most areas of this association have been cleared (USDA, 1975). These soils have moderate to high available moisture capacities. From the Brookhaven-Riverhead town line eastward, the soils in this association make up the largest area of farmland in the county, and they are used extensively for potatoes and other vegetables.

Because of its good drainage and the ease of excavation, this association has excellent potential for housing developments and similar uses. In places where the soils have a high water table or have steep slopes, however, limitations are more severe for most non-farm uses. The soils are strongly acid and highly erodible. Long bare slopes as flat as two percent are subject to sheet erosion caused by rain. On three percent or steeper slopes, sheet erosion often turns into rill erosion (erosion via small streams), causing greater soil loss, sometimes in the range of ten tons or more per acre. Conservation measures are required to prevent erosion.

**Plymouth-Carver Association**

The Plymouth-Carver association is rolling and hilly. It contains deep, excessively drained, coarse-textured soils that occur on the Ronkonkoma moraine (USDA, 1975). These soils are characteristically steep-sloping, with slopes ranging from eight to 35 percent. Plymouth loamy sand

soils make up about 45 percent of the association, and Carver and Plymouth sands make up about 30 percent. The characteristics of Plymouth soils and Carver and Plymouth sands are (USDA, 1975):

- Plymouth soils are deep and excessively drained. The substratum is sand and gravel. Depth to the substratum ranges from 20 to 36 in (51 to 91 cm).

- Carver soils are deep and excessively drained. Their surface layer and subsoil are sand. The substratum is sand and gravel. Depth to the substratum ranges from 16 to 32 in (41 to 81 cm).

Carver and Plymouth sands generally are the steeper soils on ridgetops and the lower part of slopes (USDA, 1975). The more gently sloping Plymouth loamy sand soils are mainly on the intervening areas. Areas along the crests of some ridges have a large amount of gravel on the surface. These gravelly areas generally are very small and are scattered throughout the association. The soils of this association have a characteristically poor cover of scrub oak, white oak, and pitch pine.

Plymouth and Carver soils are coarse-textured, excessively drained, rapidly permeable, and droughty. Natural fertility and organic matter content is low to very low. Plymouth soils are also highly erodible. If exposed for agriculture or development, the Plymouth soils are easily eroded by both wind and water. These factors make Plymouth and Carver soils poor for most crops commonly grown in the county. Only a small part of this association has ever been farmed, and many of these areas have been allowed to revert to brush.

Steeper slopes and difficulty in establishing and maintaining lawns and landscape plantings for the reasons described above severely limit Plymouth and Carver soils for housing developments or similar non-farm uses. Because these soils are highly permeable, movement of water and wastes through them is rapid; these soils are also excellent recharge areas for ground water supplies.

### Hydric Soils

Hydric soils are those soils that are saturated, flooded, or ponded long enough during the growing season to produce low oxygen conditions that are detrimental to most plants, but that favor hydrophytic plants (plants that live and survive in wet conditions). These soils in their undrained condition are usually classified as wetlands. There are four hydric soils that occur on NWIRP Calverton - Atsion, Berryland, muck, and Wareham soils. Only small portions of the fenced-in area of NWIRP Calverton are hydric soils; these soils types are more prevalent in the southeast and southwest buffer zones, although not as extensively as mapped in the Soil Survey of Suffolk County (USDA, 1975). Wetlands of NWIRP Calverton are discussed in Subchapter 3.10 and 3.11.

# 3.10 Water Quality and Hydrology

## 3.10.1 Surface Water

Most of NWIRP Calverton is located within the Peconic River drainage basin. The drainage basin to the main portion of NWIRP Calverton originates one to 1.5 mi (1.6 to 2.2 km) north of state Highway 25 (Myers and Gaffney, 1989). Surface water generally moves in a southerly direction towards the Peconic River.

The Peconic River is the largest stream in Suffolk County (Figure 3.10-1, Surface Water Features). It originates on the Brookhaven National Laboratory property, west of NWIRP Calverton. The Peconic River flows easterly across the southeast buffer zone, passing within approximately 500 ft (152 m) of the fenced-in area, near the southern terminus of Runway 32-14 (Braun, 1995). From just south of the runway, the river flows 1.9 stream mi (3.1 stream km) eastward into Peconic Lake. The Peconic River is tidally influenced below the dam on Upper Mills Pond and discharges to Peconic Bay, 8.5 stream mi (13.7 stream km) from NWIRP Calverton.

A small, perennial tributary originates between the two runways west of the building complex on NWIRP Calverton, flows south through a series of old cranberry bogs along the main entrance through McKay Lake and Swan Pond, then into the Peconic River. A second stream originates near North Pond at the southwest end of the Runway 5-23, flows through Prestons Pond and Forest Pond, into Linus Pond, then into the Peconic River. A third perennial tributary that originates northwest of the site in Lake Panamoka flows south across the southwest buffer zone through a series of small ponds (Sandy Pond, Grassy Pond, and Jones Pond) then into the Peconic River.

On NWIRP Calverton, most of the bodies of water are a combination of a pond and wetland, because of their shallow nature and greatly fluctuating water levels. On NWIRP Calverton there are 16 ponds and wetlands, ranging in size from about one-quarter to ten acres (one-tenth to four hectares). Six are in the fenced area and ten are in the southwest buffer zone (Figure 3.10-1). Several of the ponds, e.g., North Pond, Northeast Pond, and the Runway Ponds, lie in landlocked depressions and have no outfalls.

The largest pond that is entirely on the site is McKay Lake, a man-made groundwater recharge basin, about nine acres (4 hectares) in size (Braun, 1995). Although Grassy Pond is larger than McKay Lake, (12 acres [5 hectares] in size), only about three acres (1 hectare) of it are on NWIRP Calverton. McKay Lake receives non-contact cooling water discharge from industrial activities, treated sanitary effluent, and stormwater runoff from paved areas in the centrally developed (or industrial core) of NWIRP Calverton. McKay Lake has an intermittent discharge to Swan Pond (located on a privately-owned golf course), which discharges to the Peconic River via a series of former cranberry bogs.

The ponds and wetlands of the area are formed by the water table intersecting the land surface. When the water table lowers, the water levels in the ponds drop, sometimes to near desiccation. During drought years, in addition to the Peconic River, only McKay Lake and a small area of Prestons Pond retain water. The other ponds are shallow, less than 6 ft (2 m) in depth, and occasionally dry up during years of low rainfall. Among these, only the deeper ponds - Grassy, Jones, Linus, and Forest ponds - retain permanent water during most years. According to the NYSDEC, most of the ponds were desiccated or nearly desiccated in 1981 and again in 1988 (Myers and Gaffney, 1989).

NYSDEC has classified the Peconic River in the immediate vicinity of NWIRP Calverton as a Class "C" freshwater; McKay Lake and all other ponds on the site are also classified as "C" waters. The best use of these waters as designated by the state is for fishing; these waters are to be suitable for fish propagation and survival. The water quality shall also be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes (NYCRR, Title 6, Parts 701 and 921). While the quality of the water in the Peconic River and the larger ponds is suitable to support fish, the depth of the on-site small ponds and their tendency to dry up in droughts limits their potential for maintaining a population of fish (Myers and Gaffney, 1989).

**New York State Wild, Scenic and Recreational Rivers Systems Act**

The stated policy of the New York State Wild, Scenic and Recreational Rivers System Act (Title 27 of Article 15 of the Environmental Conservation Law) is that designated rivers of the state and their immediate environs possessing outstanding values (natural, scenic, ecological, recreational, aesthetic, botanical, geological, hydrological, fish and wildlife, historical, cultural, archaeological, and scientific) be preserved in a free-flowing condition and be protected. Segments of the Peconic River and three of its tributaries are designated "scenic" near NWIRP Calverton. The "scenic" designation is one of three classes of rivers defined in the Act:

> "Scenic rivers are generally free of diversions or impoundments with limited road access. Their river areas are essentially primitive and undeveloped or are used for agriculture, forest management and other dispersed human activities which do not in themselves substantially constrain public use and enjoyment of these rivers and their environs. Management of scenic river areas will be directed to preserving and restoring their natural scenic qualities (Part 666.4)".

The Act allows a river area width of up to 0.5 mi (0.8 km) from either bank of the river. The location of the river corridor in relation to NWIRP Calverton is displayed in Figure 3.10-1. In the western portion of the site, the scenic corridor traverses the Pine Barrens CPA, parallels a portion of Grumman Boulevard, winds its way across the developed industrial core, and crosses the southern portion of Runway 32/14. Within the regulated area of the scenic corridor, new multiple-family dwellings, commercial, and industrial uses are not permitted.

# Surface Water Features

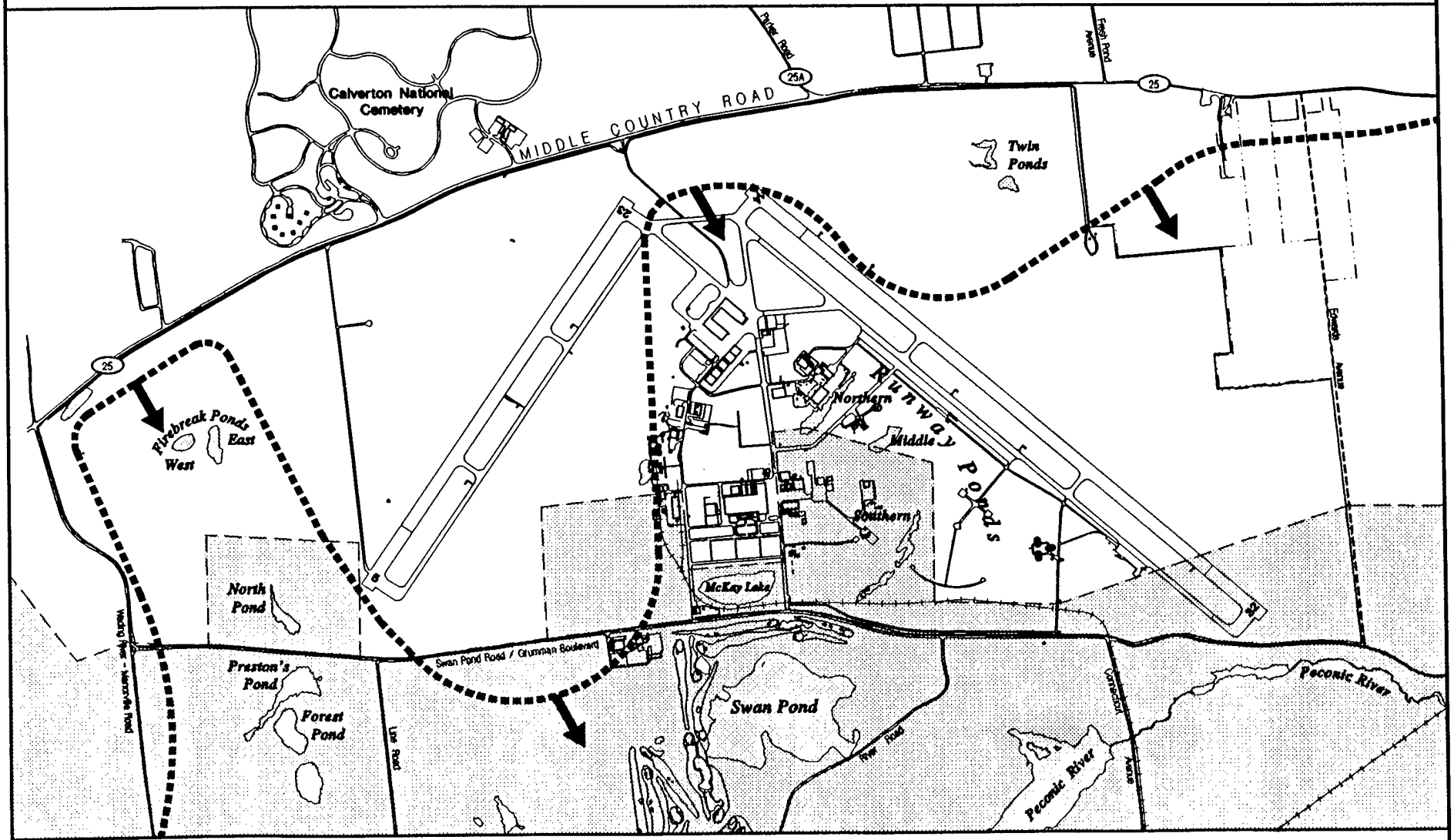



Figure 3.10-1

The Peconic Estuary Program's Management Plan, discussed in the next section, also addresses the scenic river designation of the Peconic River. It recommends setbacks of 250 ft (76 m) for new building in the scenic portion of the river, minimum setbacks of 75 ft (23 m) from the landward edge of tidal wetlands, and limiting development within 100 ft (30 m) of freshwater wetlands.

At the time of field reconnaissance in the spring and summer of 1996, most of the existing scenic corridor on NWIRP Calverton was completely dry, except for the wetlands through which it passes. The corridor is crossed by several roads within NWIRP Calverton and there at least two culverts with piping within the scenic corridor for the conduct of stormwater.

**Peconic Estuary, National Estuary Program**

In 1987 the Clean Water Act (CWA) was amended to provide for creation of a National Estuary Program (NEP) to promote long-term planning and management in nationally significant estuaries that are threatened by pollution, development, or overuse (LIRPB, 1993). The Peconic Estuary was designated in September, 1991. The Peconic Estuary contains a large variety of natural communities, from upland pine barrens along the Peconic River to soft-bottom benthos in the bays. There is a larger percentage of undisturbed habitats and a greater diversity of natural communities within this watershed than anywhere else in the coastal zone of New York State (Suffolk County Department of Health Services Office of Ecology [SCDHS], 1995).

A Comprehensive and Management Plan (CCMP) for the Peconic is to be prepared; at the present time a preliminary plan, or working draft, is available (SCDHS). The final CCMP is scheduled to be produced in July 1997. The CCMP is prepared to address three management areas:

- water and sediment quality, dealing with abatement and control;
- living resources, focusing on protection and restoration; and
- land use and water resources, including conservation areas and special protective legislation and initiatives.

One of the nutrients of concern in the Peconic Estuary is nitrogen that can lead to excessive algal blooms and lowered dissolved oxygen levels. The NYSDEC has accepted a nitrogen guideline of 0.5 milligrams per liter (mg/l) for the Peconic River. A prior study published in 1988 by SCDHS known as the Brown Tide Comprehensive Assessment and Management Program (BTCAMP) identified the Riverhead Sewage Treatment Plant (STP) as the most significant of all controllable nitrogen loadings in terms of impact on the estuarine system. This impact is due to the concentrated nature of the discharge near the mouth of the Peconic where tidal flushing is poor. Modeling projected that removal of the Riverhead STP would result in attainment of the nitrogen guideline (SCDHS, 1995). BTCAMP recommended that, from a natural resources and surface water quality perspective, groundwater recharge seems to be the most desirable alternative for the Riverhead STP; this would result in additional filtration of effluent through the soil and elimination of potential surface water contamination during upset conditions. The town of Riverhead has committed to freezing nitrogen

loads from its STP via a Town Board Resolution. The long-range plan for the Riverhead STP may be in the form of a groundwater discharge (ten mg/l total nitrogen), a relocated surface water discharge, or reduced nitrogen loads at the existing discharge point.

BTCAMP also recommended more stringent land use controls for the Peconic River, such as two-acre (0.8-hectares) zoning for the groundwater-contributing area of which the fenced-in portion of NWIRP Calverton is a part.

## 3.10.2 Groundwater

Three major aquifers underlie NWIRP Calverton. From the ground surface in descending order, these are:

- Upper Glacial Formation aquifer, widely used as a source of groundwater in Suffolk County. The water table beneath NWIRP Calverton lies within this aquifer. Porosities in excess of 30 percent have been calculated in the adjoining Nassau County; the estimated value of hydraulic conductivity (the speed at which water moves through the formation) is 270 ft (82 m) per day;

- Magothy aquifer, widely used as a source of groundwater in Suffolk County. The most productive units are the coarser sands and gravels. The permeability is high; hydraulic conductivities in excess of 70 ft (21 m) per day have been calculated;

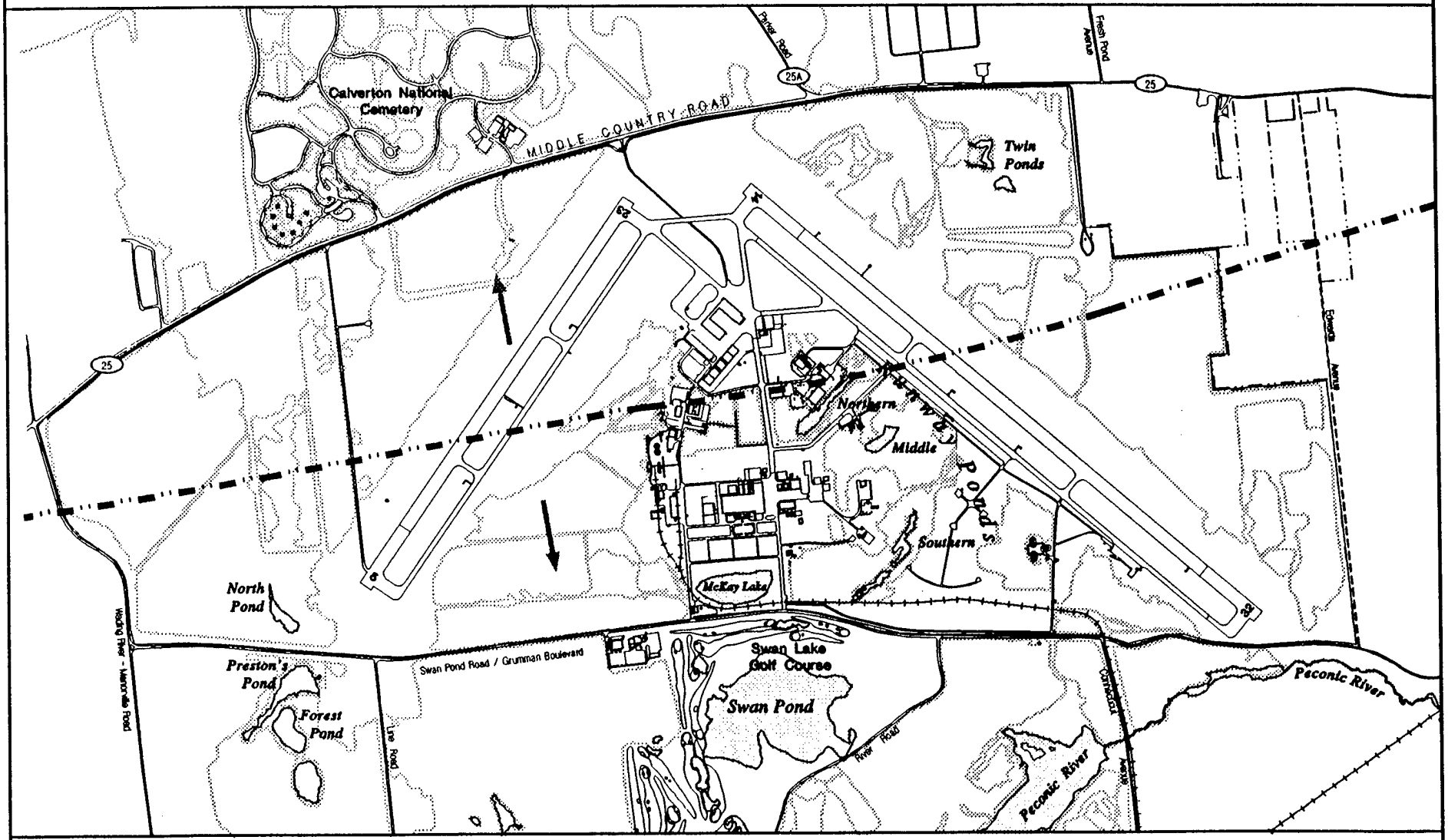
- Lloyd Sand aquifer, a potentially excellent aquifer, not widely exploited because of its depth and the abundant water available in the overlying aquifers. Estimated hydraulic conductivities range from 20 to 70 ft (6 to 21 m) per day (SCDHS, 1987; McClymonds and Franke, 1972).

The Upper Glacial and the Magothy aquifers are believed to be hydraulically connected and to function as a single unconfined aquifer (Braun, 1995). The Raritan Clay, which overlies the Lloyd Sand aquifer, has a very low permeability and hydrologically acts as a regional confining layer.

The water table at NWIRP Calverton is at an elevation of between 40 and 50 ft (12 to 15 m) above msl, being deeper towards the west (SCDHS, 1987). Based on soil borings in the NWIRP Calverton fenced area, the depth to water table is estimated to range from about five (two m) beneath the south-central part of the fenced area to approximately 20 ft (6 m) beneath the northeastern part (NUS, 1995).

A groundwater divide cuts across the NWIRP Calverton fenced area as shown in Figure 3.10-2 (Groundwater Divide). Groundwater in the shallow aquifer zones (upper Glacial and upper Magothy

# Groundwater Divide




Source: Koppelman, et. al., 1993.

Figure 3.10-2

aquifers) beneath the north buffer zone and the northern half of the fenced area flows to the northeast, probably discharging into Long Island Sound (Rogers, Golden and Halpern, 1986; NUS, 1995). The shallow aquifer zone groundwater beneath the southwest and southeast buffer zones and beneath the southern half of the fenced area flows to the southeast. The southeast-draining groundwater probably discharges into the Peconic River and its associated ponds and wetlands.

Groundwater serves as the source of drinking water for population residing within a four-mi (six-km) radius of NWIRP Calverton (NUS,1992). The drinking water needs are supplied by private wells, wells on two government-owned facilities (NWIRP Calverton and Brookhaven National Lab), and three municipal water systems, Riverhead Water District, Shorewood Water Company, and Suffolk Water Company.

The aquifer beneath Suffolk and Nassau County was designated by USEPA as a sole source aquifer in 1978, concluding that the system was the principal source of drinking water to the people of Long Island. Any federally funded projects must be reviewed by USEPA to ensure that the sole source aquifer would not be adversely affected.

The NYSDEC regulates potential sources of groundwater contamination. New source discharges and renewed permits on NWIRP Calverton would be reviewed for effluent standards Class GA waters (6 NYCRR 703.6). These standards require that groundwater discharges with respect to coliform and pathogens cannot be detrimental to public health, safety, and welfare. NYSDEC has also established groundwater standards for principal organic containment values, and guidance values for a variety of chemicals.

NWIRP Calverton served about 2,800 workers with potable water from three production wells located approximately 2,500 to 2,750 ft (762 to 838 m) north of the south gate. The three wells were completed in the upper glacial aquifer (at depths ranging from 140 to 147 ft [45 to 47 m] below the surface), each with an estimated capacity of 1,000 gallons per minute (gpm). Well No. 2 was removed from service in 1989 and Well No. 3 was removed from service in 1991 because of volatile organic contamination (Navy, 1896; Smith, 1991). These three production wells were alternately run through a carbon filtration treatment system and are considered to be back in service (US Navy, August 1995). There are also two wells located off the site that were used by Grumman Corporation as production wells for Plants 8 and 78 in the fenced area of the site. The production well at Plant 8 was used a potable water supply for that Plant. Additional information on the water supply system is presented in Subsection 3.7.

Groundwater contamination in Suffolk County has been investigated by the Suffolk County Department of Health Services, using data from public and private wells (SCDHS, 1987). Two wells used in the county survey are located in the vicinity of NWIRP Calverton.

The first well (Well 51591) is located 25 ft (8 m) north of Swan Pond Road and 213 ft (65 m) west of River Road, about 1,500 ft (457 m) southeast of the NWIRP Calverton waste treatment plant.

Analysis of water taken from this well between 1981 and 1987 showed some low concentrations of nitrates and ammonia, which generally indicate proximity to septic system waste (SCDHS, 1987). Recent tests on this well, conducted in 1993, revealed a detection of 1,1,1 trichloroethane (TCA) at 4 ppb. 1,1 dichloroethane (DCA) was detected at a concentration of 27 ppb, which is slightly above the federal MCL for this chemical of five parts per billion (ppb). These chemicals could be from waste treatment facilities, septic systems, or industrial solvents.

The second well (Well 51592) is located 179 ft (55 m) south of the intersection of Schultz Road and Wading River Road in the southwest buffer zone. Analysis of this water over the same time period indicated that it is of good quality, with only very low concentrations of nitrates (SCDHS, 1987).

**Special Groundwater Protection Area**

In 1992, the Long Island Comprehensive Special Groundwater Protection Area (SGPA) Plan (Long Island Regional Planning Board [LIRPB], 1992) was prepared to assist in the further protection of groundwater resources in Suffolk/Nassau region. Approved in 1993 by NYSDEC, the plan requires that new land uses produce no net increase in the levels of polluting constituents in the groundwater supply.

For Suffolk County, the LIRPB established nine Special Groundwater Protection Areas (SGPAs) with specific requirements for land use activities and groundwater. NWIRP Calverton lies completely within the Central Suffolk SGPA. The fenced-in area and northern buffer are in the northern part of the SGPA; the southern buffer zones are in the southern part of SGPA. SGPAs are considered critical environmental areas (CEAs) pursuant to the State Environmental Quality Review Act (SEQRA). A CEA is "a specific geographic area designated by a state or local agency, having exceptional or unique characteristics that make the area environmentally important (Section 617.2 (I) of Title 6 New York Codes of Rules and Regulations [NYCRR]).

The quality of the groundwater, particularly the shallow groundwater, within the SGPA has been impacted by point and non-point sources of contamination. STPs represent a major category of point sources within the SGPA (LIRPB, 1992). Landfills, other potential hazardous waste disposal sites, and spills and leaks of petroleum products are other major point sources. Specific areas of concern within NWIRP Calverton are described in Subchapter 3.12.

In the SGPA, non-point sources are common and significant and include unsewered medium density residential and commercial developments that release nitrogen through cesspools; farming activities and impacts from plant nutrients (like nitrate) and pesticides; and accidental spills or discharges of hazardous substances.

Selected recommendations from the SGPA Plan for the town of Riverhead (unless otherwise noted) for the area near NWIRP Calverton include the following:

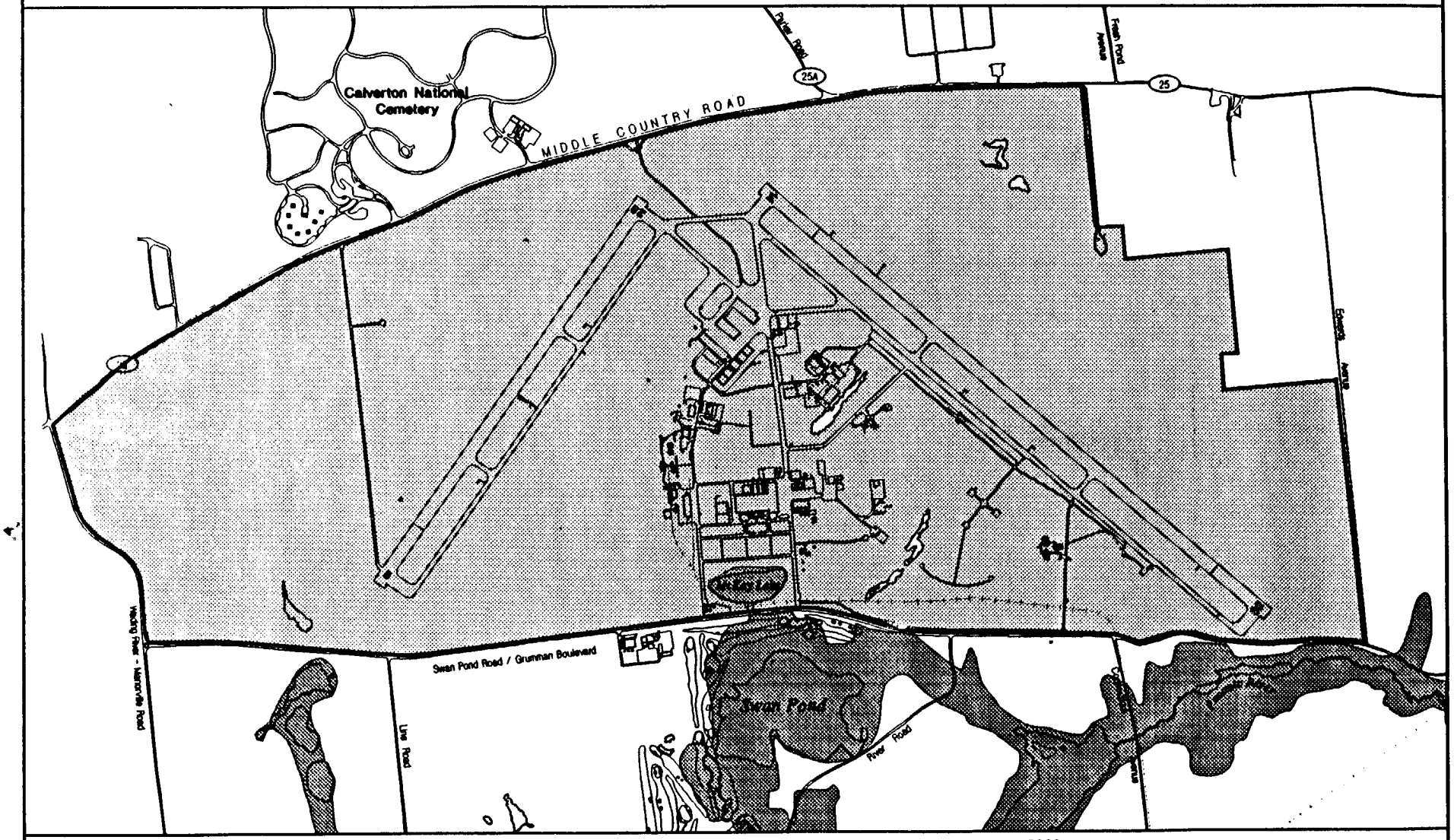
- Along with Suffolk County, expand the existing agricultural preserve;
- Amend the town zoning ordinance requiring five-acre (two-hectare) minimum lot size for all farmland in the SGPA;
- Require clustering of new development in the town where transfer of development (TDR) is infeasible;
- Place excess lands at the National Cemetery and in the NWIRP Calverton buffer zones in a protected category and retain them as open space;
- Reduce the amount of industrially-zoned land and concentrate these uses at the end of the Long Island Expressway; and
- Review and amend the town zoning ordinance to preclude expansion of commercial activities beyond the existing limits in the SGPA.

## 3.10.3 Floodplains

The 100-year floodplain, as defined by the Federal Emergency Management Agency (FEMA) of the US Department of Housing and Urban Development, has been delineated for the Peconic River. Figure 3.10-3 (Peconic River Floodplain) shows the boundary of the 100-year floodplain. No part of the NWIRP Calverton fenced area where reuse would occur lies within the 100-year floodplain of any rivers or streams; only parts of the southwest and southeast buffer zones are within the Peconic River floodplain.

For the most part, flooding is limited to a narrow band along the river and its major tributaries, because the topography rises fairly rapidly. The 100-year floodplain is delineated around the Swan Pond tributary as far upstream as McKay Lake, along Linus Pond, upstream to Prestons Pond, along Jones Pond, Grassy Pond, Sandy Pond, Peasys Pond, and upstream to Horn Pond.

# 100-Year Floodplain




100-Year Floodplain

Existing Building

Property within fence

2000 0 2000
Scale in Feet

500 0 500
Scale in Meters

N

Source: Myers & Gaffney, 1989.

Figure 3.10-3

# 3.11 Terrestrial and Aquatic Environment

NWIRP Calverton, located within the Long Island Pine Barrens, is home to many plant and animal species, some of which are classified as endangered or threatened (Central Pine Barrens Joint Planning and Policy Commission [CPBJPPC], 1995). The land surrounding NWIRP Calverton is generally sparsely settled, reflecting the existing agricultural economy. As described in Subchapter 2.1, the buffer zones of NWIRP Calverton constitute about half of the total property acreage. The buffer provide habitat for many plants and animals. Based on a cooperative agreement between the Navy and NYSDEC, the buffer lands are used for a variety of conservation, agricultural, fish, wildlife, recreation, and educational activities.

## 3.11.1 Vegetation

Because NWIRP Calverton is within the pine barrens region of Long Island, pitch pine-oak is the dominant upland plant community. Other communities found at NWIRP Calverton include upland hardwoods, planted spruce (*Picean* spp.), pine (*Pinus* spp.), larch (*Larix* spp.) locust (*Gleditsia* spp.), and open water and wetlands. Pine barrens vegetation also occurs in Pennsylvania and Ohio, extending south to Maryland, including over 1 million acres (404,000 hectares) in New Jersey, and extending northward through New England (Olsvig et al., 1979). On Long Island, perhaps 25 percent of the land was pine barrens 100 to 150 years ago. Presently the largest contiguous intact pine barrens on Long Island is the majority of 52,500 acres designated as the Core Preservation Area by the Long Island Pine Barrens Protection Act of 1993 (ECL Section 57-0105).

The *Natural Resource Management Plan* for NWIRP Calverton (Myers and Gaffney, 1989) separated vegetation within the fenced area and the buffer zone into three management categories: improved, semi-improved, and unimproved. Table 3.11-1 provides the approximate acreage of vegetation in each of these management categories by area.

Other than the developed lands within the fenced area and the agricultural outleases in the buffer zones, most of NWIRP Calverton supports forest dominated by pitch pine and upland oaks (Figure 3.11-1, Generalized Vegetation Cover). Dominance by pitch pine is generally greatest in the southwest and southeast buffer zones, where sandy, xeric (dry) soils are prevalent, while dominance by oaks and other hardwoods is generally greatest in the fenced area and the north buffer zone, where soils are more mesic (moist). In addition, wildfires have been suppressed in the fenced area to protect buildings and agriculture (Braun, 1995). There was one small fire in the eastern portion of the site and a larger one in the southwest buffer zone in the early 1980s. Several tracts in the fenced area, north and east of Runway 32-14, support plantations of white pine and spruce, established in the 1960s. Other vegetation cover includes (Myers and Gaffney, 1989; NUS, 1995; CF Braun, 1995):

Table 3.11-1

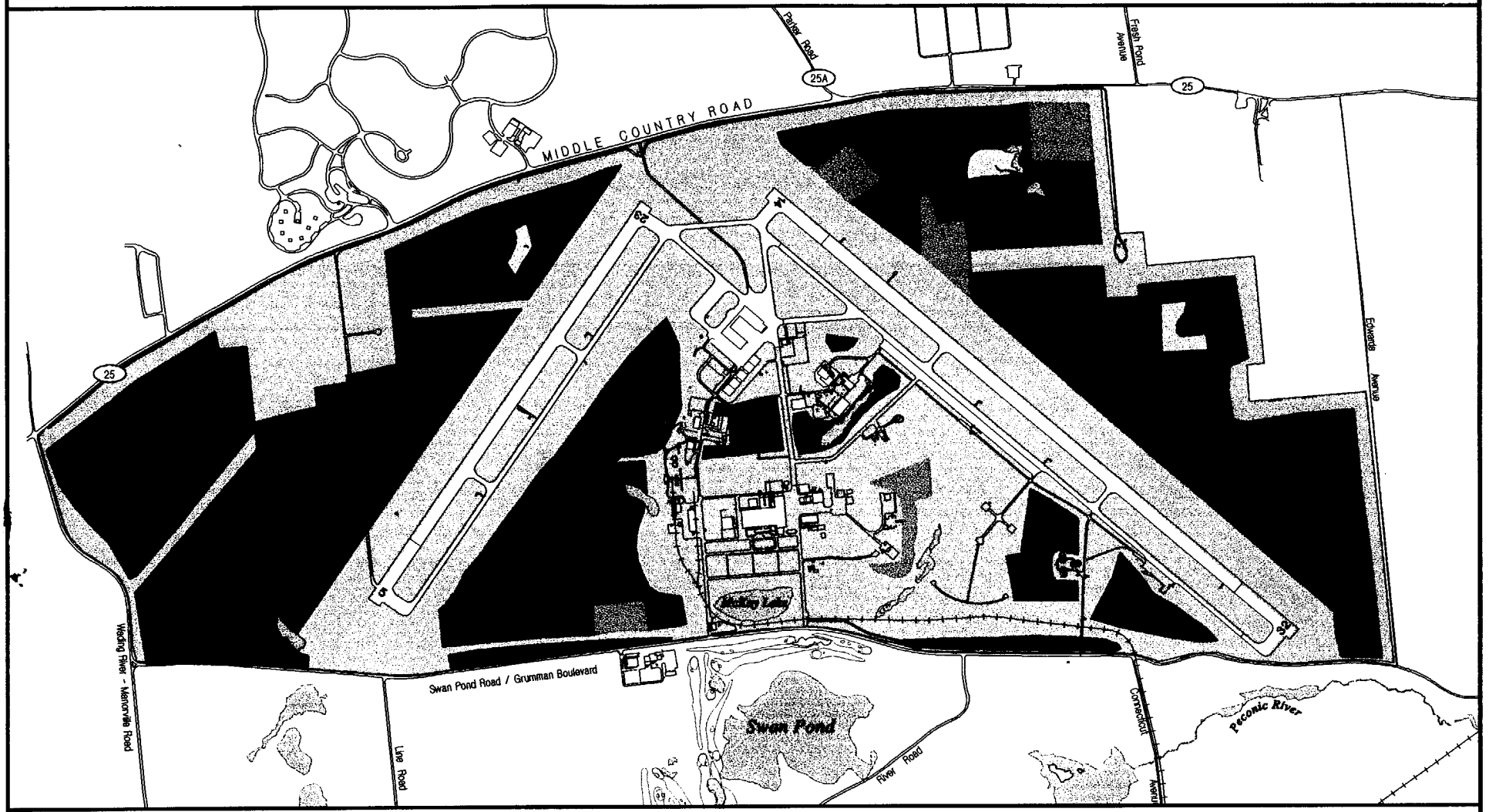
Approximate Acreage of Vegetation by Management Categories

| Vegetative Management Category | Fenced Area | Buffer Zones | | | Total | Percent of Total |
|---|---|---|---|---|---|---|
| | | N | SW | SE | | |
| Improved (frequently mowed) | 67 | - | - | - | 67 | 1.1 |
| Semi-Improved (infrequently mowed) | | | | | | |
| Grassland | 789 | - | - | - | 789 | 13.0 |
| Wildlife Food/Cover Plantings | - | 5 | 169 | 2 | 176 | 2.9 |
| Unimproved | | | | | | |
| Forest | 1,562 | 239 | 566 | 1,500 | 3,868 | 63.8 |
| Water/Wetlands | 28 | trace | 93 | 130 | 251 | 4.1 |
| Power Line Right-of-Way | - | - | 3 | 4 | 7 | 0.1 |
| Agricultural Fields | - | 366 | - | 45 | 411 | 6.8 |
| Buildings and Paved Areas | 477 | - | 4 | 11 | 492 | 8.1 |
| Total | 2,923 | 610 | 835 | 1,692 | 6,061 | 100 |

Note: The Forest Management Plan shows 4,239 acres of forest land, as opposed to the 3,868 acres indicated above. Wooded wetlands and tree and shrub-type wildlife food and cover plantings account for the 371 additional acres.

Source: Modified from Myers and Gaffney, 1989, Table 6, page 47.

# Generalized Vegetation Cover




Hardwood - Pine Forest

Pine Plantation

Old Field/Shrub (Fields reverting back to woodlands)

Grass

Open Water

Existing Improvements

2000 0 2000
Scale in Feet

500 0 500
Scale in Meters

N

Source: CF Braun Engineering Corp., 1995.

Figure 3.11-1

- Wetland vegetation associated with the Peconic River as it passes through the Southeast Buffer Zone, and with areas surrounding the ponds in the fenced area and the Southwest Buffer Zone;
- Agricultural fields in outleases;
- Wildlife food and cover plantings established by the NYSDEC, located primarily in the abandoned farmland in the southwest buffer zone;
- Semi-improved, infrequently mowed grassland around the runways and in other working areas in the fenced area; and
- Improved, landscaped lawns that are regularly mowed, surrounding the buildings in the industrial core area.

**Improved Vegetation Category**

Vegetation in the improved vegetation category requires the most management and maintenance of the three management categories. Intense management is necessary to meet the designated use criteria, protect the natural environment, and ensure a pleasing appearance that harmonizes with the natural landscape (Myers and Gaffney, 1989). Examples of vegetation in this category include lawns, landscape plantings, flower beds, foundation plantings around buildings, athletic fields, and picnic areas. Table 3.11-2 lists representative plant taxa in this category.

**Semi-Improved Vegetation Category**

Land in the semi-improved vegetation category is maintained at a lesser degree of intensity than improved vegetation, but at a level meant to match the intended use, enhance natural beauty, ensure conservation of natural resources, and reduce the vegetation fire hazard (Myers and Gaffney, 1989). Lands subject to annual, semiannual, or once in three- to four-year maintenance operations are included in this category. Examples of semi-improved vegetation include the clear zones required along the runways, compass calibration area, radar fields, the electronic counter measure test range, and wildlife food and cover plantings. Table 3.11-3 lists representative plant taxa in this category.

**Unimproved Vegetation Category**

The unimproved vegetation category includes forests, agricultural fields, wetlands, ponds, and lakes. Most of the land in the unimproved vegetation category is forested. Little, if any, maintenance is required, aside from protecting the forests from fire (Myers and Gaffney, 1989). Management practices, such as timber stand improvement, may be implemented as infrequently as once in five to ten years or more.

Table 3.11-2

Improved Vegetation Category Plant Taxa

| Common Name | Scientific Name |
|---|---|
| Lawns | |
| Kentucky Bluegrass | *Poa pratensis* |
| Red Fescue | *Festuca rubra* |
| Crabgrass | *Digitaria sanguinalis* |
| Quackgrass | *Agropyron repens* |
| Tall Fescue | *Festuca arundinacea* |
| Redtop | *Agrostis gigantea* |
| Panicgrass | *Panicum* spp. |
| Orchardgrass | *Dactylis glomerata* |
| Foundation Plantings and Ornamental Shrubs | |
| Juniper | *Juniperus* spp. |
| Yew | *Taxus* spp. |
| Rhododendron | *Rhododendron* spp. |
| Redosier Dogwood | *Cornus stolonifera* |
| Burning Bush | *Euonymus alata* |
| Hawthorn | *Crataegus* spp. |
| Trees | |
| Pin Oak | *Quercus palustrus* |
| Basswood | *Tilia americana* |
| Flowering Dogwood | *Cornus florida* |
| Flowering Cherry | *Prunus* spp. |
| Blue Spruce | *Picea pungens* |
| Source: Myers and Gaffney, 1989 | |

Table 3.11-3

Semi-Improved Vegetation Category Plant Taxa

| Common Name | Scientific Name |
|---|---|
| Ragweed | *Ambrosia artemisifolia* |
| Broomgrass | *Andropogon virginicus* |
| Three Awn | *Aristida* sp. |
| Lambsquarters | *Chenopodium* spp. |
| Crabgrass | *Digitaria* sp. |
| Autumn Olive | *Elaeagnus umbellata* |
| Tall and Hard Fescue | *Festuca* spp. |
| Hawkweed | *Hieracium* spp. |
| Switchgrass | *Panicum virgatum* |
| Plantain | *Plantago* spp. |
| Sorghum | *Sorghum vulgare* |
| Bracken Fern | *Pteridium aquilinum* |
| Wintergreen | *Gaultheria procumbens* |
| Pennsylvania Sedge | *Carex pennsylvanica* |

Source: Myers and Gaffney, 1989; Milazzo, 1995.

The vegetation on the agricultural outlease fields is primarily potatoes and corn. However, other crops are also grown. Table 3.11-4 lists representative vegetation in the unimproved category.

Unimproved areas of NWIRP Calverton located within the fenced area and the buffer zone (outside of the core area) can be generally divided into upland and wetland communities (Myers and Gaffney, 1989). These plant communities are briefly described below.

### Upland Vegetation Communities

Upland communities at NWIRP Calverton include the following four habitats:

- **Pitch pine-shrub oak woodlands**: Situated on dry sites, these woodlands are maintained by frequent fires. There are scattered, small examples of this plant community within the NWIRP Calverton fence and in the southeast buffer zone;

- **Pitch pine-oak woodlands**: The dominant vegetation type in upland sites, these woodlands occur in areas that burn occasionally. The canopy is usually nearly closed. Most of the woodlands within the NWIRP Calverton fence and in the upland sections of the buffer zone near Linus Pond, Jones Pond, and Grassy Pond are of this plant community;

- **Oak-pine woodlands**: These woodlands occur in upland areas where fires have been suppressed. Examples of this plant community are located near NWIRP Calverton buildings and at scattered locations throughout the area within the fence; and

- **Successional pine barrens grassland**: These grasslands occur in mowed sites, such as along the runways and along roads in the fenced area. Native grass species often are dominant, with herbaceous species (Table 3.11-3) found throughout sunny areas of the coastal pine barrens. Diversity in this community ranges from very low in areas that are frequently mowed to very high at infrequently disturbed woodland edges and along sand roads. This habitat also supports several specialized grassland bird species (see Subchapter 3.11.2 for further discussion).

### Wetland Communities

Wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Under the US Fish and Wildlife Service (USFWS) classification system, wetlands must have at least one of the following three attributes: 1) at least periodically, hydrophytes predominate; 2) the substrate is predominantly undrained hydric soil; or 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Table 3.11-4

Unimproved Vegetation Category Plant Taxa

| Common Name | Scientific Name | Common Name | Scientific Name |
|---|---|---|---|
| **Upland Communities** | | | |
| **Pitch Pine-Shrub Oak Woodlands** | | **Pitch Pine-Oak Woodlands** | |
| Pitch Pine<br>Scrub Oak<br>Black Oak<br>Scarlet Oak<br>Black Huckleberry<br>Lowbush Blueberry | *Pinus rigida*<br>*Quercus ilicifolia*<br>*Quercus velutina*<br>*Quercus coccinea*<br>*Gaylussacia baccata*<br>*Vaccinium vacillans* | Pitch Pine<br>Black Oak<br>Scarlet Oak<br>White Oak<br>Black Cherry | *Pinus rigida*<br>*Quercus velutina*<br>*Quercus coccinea*<br>*Quercus alba*<br>*Prunus serotina*<br>*Ericaceous* spp. |
| **Oak-Pine Woodlands** | | **Successional Pine Barrens Grassland** | |
| White Oak<br>Black Oak<br>Black Locust<br>Black Cherry<br>Catbriar<br>Poison Ivy<br>Japanese Honeysuckle<br>Virginia Creeper | *Quercus alba*<br>*Quercus velutina*<br>*Robinia pseudoacacia*<br>*Prunus serotina*<br>*Smilax* spp.<br>*Rhus radicans*<br>*Lonicera japonicus*<br>*Parthenocissus quinquifolia* | Little Bluestem<br>Spike Grass<br>Switchgrass<br>Asters<br>False Indigo<br>Goldenrod<br>Sweet Fern | *Andropogon scoparius*<br>*Danthonia spicata*<br>*Panicum virgatum*<br>*Aster* spp.<br>*Baptisia tinctoria*<br>*Solidago* spp.<br>*Comptonia peregrina* |
| **Wetland Communities** | | | |
| **Red Maple-Pitch Pine Woodlands** | | **Coastal Plain Pond Shores** | |
| Red Maple<br>Pitch Pine<br>Sourgum<br>Sweet Pepperbush<br>Swamp Azalea<br><br>Inkberry | *Acer rubrum*<br>*Pinus rigida*<br>*Nyssa sylvatica*<br>*Clethra alnifolia*<br>*Rhododendron viscosum*<br>*Ilex glabra* | Short-Beaked Bald-Rush<br>Long-Beaked Bald-Rush<br>Coppery St. Johnswort<br>Rose Coreopsis | *Psilocarya nitens*<br><br>*P. scirpoides*<br><br>*Hypericus denticulatum*<br>*Coreopsis rosea* |
| **Coastal Plain Poor Fen** | | **Pine Barren Shrub Swamp** | |
| Narrow-Leaf Cattail<br>Sedge<br>Walter's Sedge<br>Bayberry<br>Swamp Azalea<br><br>Red Maple<br>Rose | *Typha angustifolia*<br>*Carex lasiocarpa*<br>*Carex walteriana*<br>*Myrica gale*<br>*Rhododendron viscosum*<br>*Acer rubrum*<br>*Rosa* spp. | Red Maple<br>Sweet Pepperbush<br>Rose<br>Blueberry | *Acer rubrum*<br>*Clethra alnifolia*<br>*Rosa* spp.<br>*Vaccinum corymbosum* |
| **Coastal Plain Pond** | | **Open Water River Channel** | |
| Arrowheads<br>Bayonet Rush<br>Bladderwort<br>Spike rushes | *Sagittaria* spp.<br>*Juncus militaris*<br>*Utricularia* spp.<br>*Eleocharis* spp. | Duckweed<br>Starwort<br>Arrowheads<br>Pondweeds | *Lemna minor*<br>*Callitriche* spp.<br>*Sagittaria* spp.<br>*Potamogeton* spp. |
| Source: Myers and Gaffney, 1989. | | | |

During the 1970s NYSDEC mapped wetlands throughout the state by vegetative cover type using aerial photographs (Myers and Gaffney, 1989). In the 1980s, the USFWS, as part of a nationwide inventory known as the National Wetland Inventory (NWI), mapped both wetlands and deepwater habitats using conventional aerial photo-interpretation (stereoscopic analysis) of high altitude aerial photography (1:80,000 black and white). The NWI is more detailed than the NYSDEC inventory, and includes information such as the water regime and other wetland modifiers, along with vegetation, using the USFWS hierarchical classification system (Cowardin et al., 1979).

NWI maps show the general configuration, location, and type of wetlands found within a given area of coverage. A margin of error is inherent in the use of the aerial photographs and a detailed, on-the-ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation (USFWS, 1983). Because the NWI maps are limited in precision by their scale (1:24,000 or 1 in = 2000 ft) and the identification method used, the boundaries of wetlands shown on the NWI maps may need to be more precisely determined in the field at a later date. Often small wetland areas, and less frequently large wetland areas, are not shown on NWI maps.

Twenty-five wetlands, wetland complexes, and deepwater habitats totaling 251 acres (102 hectares) have been identified on NWIRP Calverton property (Myers and Gaffney, 1989). In addition, TAMS identified other two potential wetlands during field reconnaissance in May 1996. The wetlands range in size from 0.1 to 126 acres (0.04 to 51 hectares) (Myers and Gaffney, 1989). The largest is a wetland complex associated with the Peconic River. The locations of wetlands and open water habitats are shown in Figure 3.11-2 (Wetlands).

The majority of the wetlands on NWIRP Calverton are forested, palustrine wetlands that have a saturated or seasonally saturated water regime. The second most abundant type is open water wetlands that have an intermittently exposed permanent water regime and occasionally dry up. There is only one lacustrine (lake)-type deepwater habitat, which is a stretch of the Peconic River that is impounded, west of the hamlet of Calverton. The mid-stream portion of the Peconic River is a riverine-type deepwater habitat, although the area it occupies is too narrow to delineate on the NWI wetland maps. Wetland and deepwater habitats at NWIRP Calverton and their classifications are provided in Table 3.11-5. All wetlands including those not regulated by NYSDEC are regulated by the US Army Corps of Engineers (COE) under the Section 404 permit process.

NYSDEC regulates all freshwater wetlands in New York State that are 12.4 acres (five hectares) or larger in size and valuable wetlands that are smaller than 12.4 acres (five hectares), such as those containing threatened or endangered species. A permit is needed to modify any of the regulated wetlands. Of the 25 wetlands on NWIRP Calverton, 18 are NYSDEC-regulated wetlands. Several of the NYSDEC-regulated wetlands include two or more closely associated wetlands that are separately numbered in Table 3.11-5.

# Wetlands

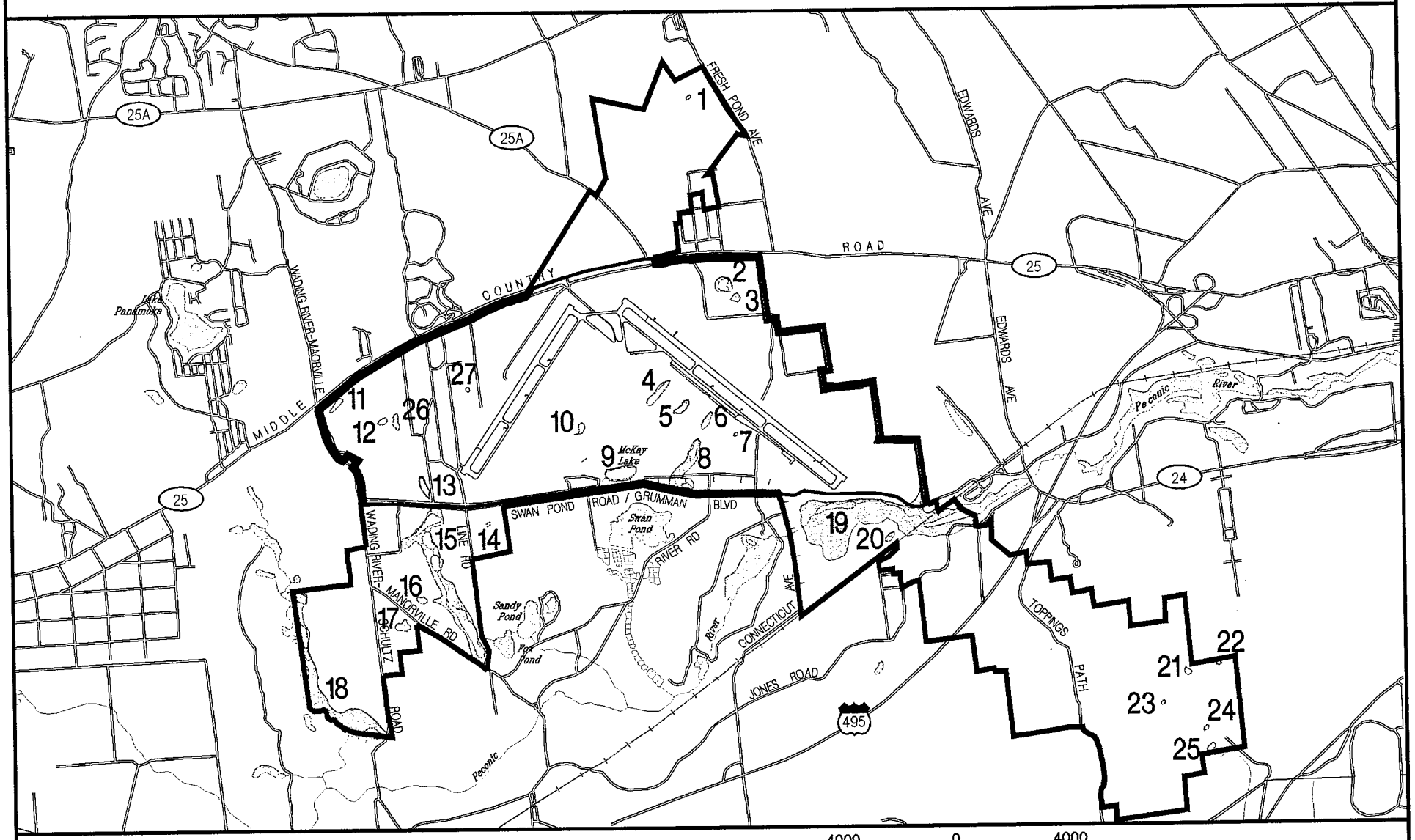



**Figure 3.11-2**

Table 3.11-5

Wetland and Deepwater Habitats

| Map No * | NYSDEC Regulated Wetland | NYSDEC Wetland Designation | NYSDEC Class ☼ | NWI Class ◊ | Area Subtotal (Acres) | Field Id.or Confirmed Wetlands (In the Fence) | Total Area (Acres) |
|---|---|---|---|---|---|---|---|
| 1 | - | - | | PEM | 0.2 | | 0.2 |
| 2 | X | W-16 | I | PSS3Ba | 1.2 | X | 4.0 |
| | | | | PUBHh | 2.8 | | - |
| 3 | X | W-16 | I | PUBHh | 0.8 | X | 0.8 |
| 4 | X | W-27 | II | PUBHh | 2.2 | X | 2.2 |
| 5 | X | W-28 | II | PUBHh | 1.8 | X | 1.8 |
| 6 | X | R-5 | I | PUBHh | 1.2 | X | 6.0 |
| 7 | - | - | | PFO1E | 0.4 | | 0.4 |
| 8 | X | R-5 | I | PUBHh | 1.2 | X | 6.0 |
| | | | | PUBHx | 3.2 | | - |
| 9 | X | R-5 | I | PUBHh | 10.0 | X | 10.0 |
| 10 | - | - | | PSS1Eh and PUBHh | 0.4 | X | 0.4 |
| 11 | X | W-24 | IV | POWZ | 0.8 | X | 0.8 |
| 12 | X | W-25 | I | PUBH | 0.2 | X | 0.2 |
| 13 | X | W-26 | I | PUBHh | 1.2 | X | 1.2 |
| 14 | - | - | | PEM | 0.2 | | 0.2 |
| 15 | X | R-5 | I | PUBH | | | 41.8 |
| | | | | PFO1E | | | - |
| | | | | PFO1C | | | - |
| | | | | PEM/SS1E | | | - |

Table 3.11-5

Wetland and Deepwater Habitats

| Map No * | NYSDEC Regulated Wetland | NYSDEC Wetland Designation | NYSDEC Class ☼ | NWI Class ◊ | Area Subtotal (Acres) | Field Id. or Confirmed Wetlands (In the Fence) | Total Area (Acres) |
|---|---|---|---|---|---|---|---|
| 15 | | | | L1UBH | | | - |
| | | | | PPFOSF | | | - |
| 16 | - | - | | | | | - |
| 17 | X | W-4 | I | PUBHx | 1.6 | | 1.6 |
| 18 | X | R-5 | I | PUBH | 10.2 | | 48.9 |
| | | | | PSSIF, PSS1E and PSS3/EMB1B | | | - |
| 19 | X | R-5 | I | PFOIE | 68.0 | | 126.0 |
| | | | | PFOI/4E | 15.6 | | - |
| | | | | PEM/SS1E | | | - |
| | | | | PUB/EM1Fh | | | - |
| | | | | PF04E | | | - |
| | | | | PSS1F | | | - |
| | | | | PEM5E | | | |
| 20 | X | R-5 | I | | 1.6 | | 1.6 |
| 21 | X | R-55 | III | PFO/SSIE | 0.2 | | 0.2 |
| 22 | X | R-55 | III | PFO/SSIE | 0.2 | | 0.2 |
| 23 | - | - | | PFO/SSIE | 0.2 | | 0.2 |
| 24 | - | - | | PFO/SSIE | 0.1 | | 0.1 |
| 25 | X | R-7 | III | PFO/SSIE | 0.2 | | 0.2 |

Table 3.11-5

Wetland and Deepwater Habitats

| Map No * | NYSDEC Regulated Wetland | NYSDEC Wetland Designation | NYSDEC Class ☼ | NWI Class ◊ | Area Subtotal (Acres) | Field Id.or Confirmed Wetlands (In the Fence) | Total Area (Acres) |
|---|---|---|---|---|---|---|---|
| 26 | | | | 26 & 27 - Potential wetlands identified by TAMS (May, 1996) | | X | |
| 27 | | | | | | X | |
| Total | | | | | | | 255.0 |

Notes:
*Numbers relate to location in Figure 3.10-1, Location of Wetlands and Deepwater Habitats.
☼Class I regulated wetlands are most beneficial, Class IV the least.
◊ Classification of Wetlands and Deepwater Habitats of the United States, US Fish and Wildlife Service, Washington, DC 20240, FWS/OBS-79/31, December 1979 .
P - Palustrine (upland) System
OW -Open water ..... 1 Algal
UB - Unconsolidated Bottom .....1 Cobble-Gravel
AB - Aquatic Bed ..... 2 Aquatic Moss
EM - Emergent .....1 Persistent plants
SS - Scrub/Shrub .....1 Broad-Leaved deciduous plants, 3 Broad Leaved Evergreen
FO - Forested.....1 Broad-leaved deciduous plants
4 Needle-leaved evergreen plants, 5 Dead
L - Lacustrine (Lake) System.....1 Limnetic
Modifying Terms - Water Regime.....B Saturated
C Seasonally Flooded
E Seasonally Flooded/saturated
F Semipermanently Flooded
H Permanently Flooded
Z Intermittently Exposed/Permanent
Special Modifiers.....h Impounded/Diked

Source: Modified from Myers and Gaffney, Table 5, 1989.

Wetlands on Long Island are predominantly seasonally flooded. Generally, they are at least saturated or temporarily ponded in the spring and perhaps again in the fall, providing resting areas for migrating waterfowl and marsh and shore birds. They also provide courtship and brood habitat for waterfowl and other species of wildlife. NYSDEC classifies the regulated wetlands according to their characteristics and beneficial value, from most beneficial (Class I) to least beneficial (Class IV). Table 3.11-5 provides the NYSDEC classification of each of the regulated wetlands on NWIRP Calverton. Of the 18 regulated wetlands on NWIRP Calverton, 12 wetlands are Class I, two are Class II, three are Class III, and one is Class IV. Several of the wetlands are Class I because of the presence of threatened or endangered species. Myers and Gaffney (1989) have described the general wetland communities as follows:

- **Red maple-pitch pine woodlands**: These woodlands typically occur as a band of woods in low areas between dry pine barrens and permanent wetlands. Examples are located within the fenced area along edges of identified wetlands, and within the buffer zone at the northern ends of Linus and Jones Ponds and around Kents Pond;

- **Coastal plain pond shores (water/wetlands)**: This community occurs in shallow topographic depressions that are wet in years with high rainfall and dry in years with low rainfall. Fluctuating water levels maintain these sites in the earliest stages of succession. Because of the variable abiotic conditions present in pond shore habitats, an unusual assemblage of annual species and short-lived perennials occurs in, and many are restricted to, this community. This Long Island wetlands habitat contains one of the highest concentrations of rare plant and animal species in New York State. Examples include Sandy Pond, Third Pond, and Linus Pond, located outside of the NWIRP Calverton fence;

- **Coastal plain poor fen**: This community comprises sedge and cattail marshes with a low density assembly of shrubs and stunted trees. It occurs in sections of the Peconic River with permanent standing, slow-moving water. The only occurrence on NWIRP Calverton is east of Kents Pond. Only two other sites occur on Long Island;

- **Pine barren shrub swamp (brush wetlands)**: These shrub thickets form on consolidated organic mats of sedge, grass, and cattail. The most representative occurrence of this community in the buffer zone is west of Jones Pond;

- **Coastal plain pond (water/wetlands)**: These communities are pine barrens open standing water areas with no regular flow. The bottoms of these ponds have organic accumulations or are sandy. Emergent and submerged species are dominant, and trees and shrubs are absent. These wetland habitats also support many of New York State's rare species. The most representative occurrences of this community are Jones Pond, Kents Pond, and Linus Pond; and

- **Open water river channel**: These communities occur in sections of the Peconic River with moderate to high flow. Vegetation is dominated by emergent, submerged, and floating species. The only occurrence of this community on NWIRP Calverton is the Peconic River section south of River Road.

As a result of previous fires, drought, and/or low fertility soil conditions, the forests are dominated by scrub oak and pitch pine, which are fire- and drought-tolerant species. These species will not mature to saw timber size, and at best may produce poles or provide firewood. Of the approximately 4,000 acres (1,600 hectares) of forest, only about 700 acres (280 hectares) are classed as pole timber; the remaining acres containing smaller trees (Myers and Gaffney, 1989).

## 3.11.2 Wildlife

### Terrestrial

Muskrat and mink and a variety of marsh birds, shorebirds, and migrating waterfowl are associated with the Peconic River and the streams, ponds, and wetlands in and around NWIRP Calverton. Eastern chipmunk and eastern mole have also been identified within the fenced area. It has been reported that of the migrating waterfowl, a few black ducks and wood ducks remain throughout the summer to nest and raise their young. Although no ducks were identified within the fenced area during a recent field visit, a flock of Canada geese resides on or near McKay Lake throughout the year (Myers and Gaffney, 1989).

Terrestrial wildlife on NWIRP Calverton is dominated by woodland wildlife species although grassland and wetland species also occur on-site. There is a large population of whitetail deer. Within the NWIRP Calverton woodlands, low natural populations of cottontail rabbits, woodchucks, gray squirrels, raccoon, red fox, opossum, and weasel occur (Myers and Gaffney, 1989). Common birds that are expected to occur on-site are rufous-sided towhee, blue jay, red-tailed hawk, bobwhite quail and ring-necked pheasant. Numerous songbirds use the site during migration and for breeding, including species of flycatchers, warblers, thrushes, and vireos. Grassland bird species such as field, vesper, and grasshopper sparrows, meadowlark, bobolink, and upland sandpiper occur in the infrequently mowed grasses near the airstrips (semi-improved vegetation) (Table 3.11-3). The most recent and comprehensive bird survey for Calverton (The Atlas of Breeding Birds in New York State) described over 100 species confirmed to have bred on-site and an additional 35 species as probable or possible breeding on-site (Andrle and Carroll, 1988). Common expected herpetofauna include racer and garter snakes, Fowler's toad, and box turtles.

Table 3.11-6 lists birds that were observed at NWIRP Calverton during a field reconnaissance in 1996. Table 3.11-7 lists bird species of special concern that were observed and/or are expected on-

Table 3.11-6

On-Site Birds

| Common Name | Scientific Name |
|---|---|
| Rufous-sided Towhee | *Pipilo erythrophthalmus* |
| Blue Jay | *Cyanocitta crista* |
| Eastern Pewee | *Contopus virens* |
| Eastern Phoebe | *Sayornis phoebe* |
| Brown Thrasher | *Toxostoma rufum* |
| American Crow | *Corvus brachyrhynchos* |
| Common Yellowthroat | *Geothlypis trichas* |
| Yellow Warbler | *Dendroica petechia* |
| American Robin | *Turdus migratorius* |
| Northern Cardinal | *Cardinalis cardinalis* |
| Tree Swallow | *Iridoprocne bicolor* |
| Red-Winged Blackbird | *Agelaius phoeniceus* |
| Canada Goose | *Branta canadensis* |
| Mute Swan | *Cygnus olor* |
| Gray Catbird | *Dumetella carolinensis* |
| Killdeer | *Charadrius vociferus* |
| Baltimore Oriole | *Icterus galbula* |
| Orchard Oriole | *Icterus spurius* |
| American Tree Sparrow | *Spizella arborea* |
| Mourning Dove | *Zenaida macroura* |
| Red-Tailed Hawk | *Buteo jamaicensis* |
| Yellow-Bellied Flycatcher | *Empidonax traillii* |
| Source: TAMS field reconnaissance of NWIRP Calverton fenced area, May 1996. | |

Table 3.11-7

On-Site Birds of Special Concern - Observed and Expected

| Common Name | Scientific Name |
|---|---|
| Field Sparrow | *Spizella pusilla* |
| Vesper Sparrow | *Pooecetes gramineus* |
| Grasshopper Sparrow | *Ammodramus savannarum* |
| Upland Sandpiper | *Bratramia longicauda* |
| Eastern Bluebird | *Sialia Sialis* |
| Red Crossbill | *Loxia curvirostra* |
| Yellow-breasted Chat | *Icteria virens* |
| Acadian Flycatcher | *Empidonax virescens* |
| Sources: NYSDEC; NYNHP; Myers and Gaffney 1989, Nature Conservancy, 1997. | |

site. Common terrestrial mammal species at NWIRP Calverton are listed in Table 3.11-8, and herpetofauna expected to occur are listed in Table 3.11-9. Rare insects that occur on-site are described in the following section.

As would be expected in a Pine Barrens habitat, there is a general lack of diversity in the types of vegetative cover, particularly in the buffer zones, and a lack of a variety of plant species in each cover type for all species of wildlife. Forest vegetation diversity is low; therefore, only a few food-producing species are available to wildlife. The oak trees within the woodlands produce acorns that are a food source for gray squirrels, whitetail deer, and wood ducks. Most of the trees, however, are not large enough to provide high numbers of dens and cavities for squirrels, wood ducks, raccoons, and other wildlife (Myers and Gaffney, 1989). Outside the fenced area and throughout Long Island, mortality due to hunting and incidental collisions with cars contributes to maintaining some balance in the deer population. Within the fenced area (outside the runway deer exclosure), these controls are not present and the deer population is above the site's carrying capacity (Myers and Gaffney, 1989).

The large on-site deer population results in over-browsing of food species, prevents regeneration of browse species, results in large fluctuations in the deer population, and may contribute to a higher incidence of Lyme Disease (Myers and Gaffney, 1989). The primary deer foods are grasses, oak mast and browse, and blueberry browse. There are few legumes and the diversity of browse species is minimal.

### Grassland Birds

The NWIRP Calverton site contains approximately 790 acres (320 hectares) of grassland vegetation that currently provides habitat for grassland birds. There is evidence that grassland bird species are experiencing a decline in populations size in eastern North America, with some species, such as upland sandpiper, bobolink, dickissel, grasshopper sparrow, savannah sparrow, and Henslow's sparrow each declining by 94 to 98 percent in the past 40 years (Robbins et al. 1986, Herkert 1991, 1997, Askins, 1993). In New York, upland sandpiper, grasshopper sparrow, vesper sparrow, and Henslow's sparrow were all historically locally common, and are now listed as Species of Special Concern by the NYSDEC (Andrle and Carroll, 1988, Smith and Smith 1992, NYSDEC 1993). There are historical records of each of these species occurring at NWIRP Calverton, although not all observations have been confirmed.

This dramatic decline has been largely attributed to more intensive agricultural practices that destroy breeding habitats, to the regeneration of forest on abandoned farmland and to commercial development of open areas (Askins, 1993, Kershner and Bollinger, 1996). Although habitat fragmentation is partially responsible for these population declines, the high degree of habitat specialization that characterizes grassland bird species is probably a more important factor. The preferred habitat of many grassland birds becomes rapidly unsuitable within a few years because of

Table 3.11-8

Common Terrestrial Mammal Species

| Common Name | Scientific Name |
|---|---|
| Opossum | *Didelphise virginiana* |
| Woodchuck | *Marmota monax* |
| Weasel | *Mustela erminea* |
| Whitetail Deer | *Odocoileus virginianus* |
| Racoon | *Procyon lotor* |
| Gray Squirrel | *Sciurus carolinensis* |
| Cottontail Rabbit | *Sylvilaqus floridanus* |
| Red Fox | *Vulpes fulva* |
| Muskrat | *Ondatra zibethica* |
| Mink | *Mustela vison* |
| Striped Skunk | *Mephitis mephitis* |
| Sources: Myers and Gaffney, 1989, NYSDEC. | |

Table 3.11-9

Anticipated Herpetofauna

| Common Name | Scientific Name |
|---|---|
| Eastern Box Turtle | *Terrapene carolina* |
| Eastern Painted Turtle | *Chrysemys picta* |
| Snapping Turtle | *Chelydra serpentina* |
| Common Musk Turtle | *Sternotherus odoratus* |
| Black Racer | *Coluber constrictor* |
| Eastern Garter Snake | *Thamnophis sirtalis* |
| Ribbon Snake | *Thamnophis sauritus* |
| Northern Water Snake | *Natrix sipedon* |
| Eastern Hognose Snake | *Heterodon platyrhinos* |
| Bull Frog | *Rana catebeiana* |
| Fowler's Toad | *Bufo woodhousei fowleri* |
| Green Frog | *Rana clamitans* |
| Spring Peeper | *Pseudacris crucifer* |
| Wood Frog | *Rana sylvatica* |
| Gray Tree Frog | *Hyla versicolor* |
| Eastern Spadefoot | *Scaphiopus holbrookii* |
| Red-spotted Newt | *Notophthalmus viridescens* |
| Redback Salamander | *Plethodon cinerus* |
| Spotted Salamander | *Ambystoma maculatum* |
| Tiger Salamander | *Ambystoma tigrinum* |
| Marbled Salamander | *Ambystoma opacum* |
| Source: NYSDEC, Myers and Gaffney; 1989. | |

succession, invasion, and establishment of woodland plant species, as contrasted with forest interior birds whose habitats are more stable in the absence of a disturbance.

### Aquatic

On NWIRP Calverton, the Peconic River, McKay Lake, and seven pond/wetlands are known to support fisheries, according to NYSDEC fish survey records (Myers and Gaffney, 1989). Fish found in the Peconic River, just outside fo the fence, are listed in Table 3.11-10. The dominant sport fish in the river are bass, pickerel, and bullheads (Myers and Gaffney, 1989). McKay Lake, located within the fenced area, contains an excellent quality fishery, composed of largemouth bass, bluegills, and pumpkinseeds. The seven pond/wetlands supporting fisheries include: North Pond, Prestons Pond, Third Pond, Linus Pond, Sandy Pond, Grassy Pond, and Jones Pond. These pond/wetlands are connected by tributaries to the Peconic River. The fisheries in these pond-wetlands are eliminated in dry years, but are replaced naturally with fish from the Peconic River (Myers and Gaffney, 1989). Restocking occurs when heavy rains provide sufficient runoff or flood waters from the river backup to connect the ponds with the river, enabling fish to swim from the river to the ponds. A ninth pond/wetland, Forest Pond, presumably contains fish, as it is located between and is connected to two ponds with known fisheries (Figure 3.11-2).

## 3.11.3 Threatened, Endangered, and Rare Species

The federal Endangered Species Act (ESA), passed in 1973 and reauthorized in the 1988, protects listed plant and animal species. The New York State Environmental Conservation Law protects threatened, endangered, rare, and exploitably vulnerable plant and animal species, and the law contains ranked listings of rare vascular plants and animals in New York State.

In addition, tne New York Natural Heritage Program (NYNHP) has prepared lists of rare plants and animals in New York. Unless protected by state or federal regulations, the species on these lists have no legal protection.

As of 1991, no federally-listed threatened or endangered species were known to reside within a four-mi (six-km) radius of NWIRP Calverton, although suitable habitat exists for transient individuals of certain species (NUS, 1995). However, several plants, amphibians, insects, fish, and birds listed by the State of New York as threatened, endangered, rare, or of special concern do occur on NWIRP Calverton.

Table 3.11-10

Peconic River Fish Species

| Common Name | Scientific Name |
|---|---|
| Largemouth Bass | *Micropterus salmoides* |
| Chain Pickerel | *Esox niger* |
| Yellow Perch | *Perca flavescens* |
| Brown Bullhead | *Ictalurus nebulosus* |
| Golden Shiner | *Notemigonus crysoleucas* |
| Pumpkinseed | *Lepomis gibbosus* |
| Bluegill | *Lepomis macrochirus* |
| Banded Sunfish | *Enneacanthus obesus* |
| Tessellated Darter | *Etheostoma olmstedi* |
| Swamp Darter | *Etheostoma fusiforme* |
| Creek Chub | *Semotilus atromaculatus* |
| Source: NYSDEC, Myers and Gaffney; 1989. | |

In 1986 and 1987, a study was undertaken by the NYNHP to review and determine the status of endangered, threatened, vulnerable, and rare species on NWIRP Calverton (NYNHP, 1987). The study included field surveys to confirm the presence of protected species, supplemented on an annual basis. The findings of this study are summarized as follows:

- No federally-listed or candidate plant species have historical or current records;
- No species or habitat of federally-listed animal species were identified on NWIRP Calverton; however, migrating species such as the bald eagle occasionally may move through the area;
- Twenty-nine rare plant species have NYNHP historical records from the vicinity of NWIRP Calverton. Of these, 17 have been confirmed since 1984;
- The tiger salamander, listed as endangered by New York State, was identified on NWIRP Calverton (Buffington 1991/Scheibel 1991);
- Nineteen NYNHP-listed rare animals have been recorded historically from the study area. Of these, seven have been confirmed on NWIRP Calverton; and
- Four additional songbirds have been confirmed in the vicinity during recent breeding bird atlas surveys and suitable habitat does occur on NWIRP Calverton. None of the recent records represents federally-listed species or candidate species.

Some occurrence records cannot be confirmed in the database due to one of the following reasons (NYNHP, 1987): 1) the original location information is sometimes imprecise and the species may not have occurred on NWIRP Calverton; 2) the species was present at the time of the historical record, but since has been extirpated; or 3) the species is present, but was not seen during the field survey.

Table 3.11-11 lists the New York State-listed threatened, endangered, and special-concern plants reported for the NWIRP Calverton Area. Table 3.11-12 provides the listed threatened, endangered, and special-concern animals.

A total of 173 rare animals, rare plants, and significant natural communities in the Peconic Estuary is documented in the NYNHP Biological and Conservation Data System (Pleuthner, 1995). The Peconic is among the most diverse rivers in New York and contains many pine barren plants and animals that are rare or absent elsewhere in the state (Newton, undated), including at least six rare species of fish and salamanders (NYSDEC, 1987). Of the 278 survey sites in the estuary, 32 high priority survey sites containing 228 element occurrences (28 percent of the 798 total occurrences) have been identified by the NYNHP. One of the high priority sites is Sandy Pond West, which is partially in the southwest buffer zone and partly off site. Two additional high priority survey sites occur off site, within the immediate vicinity of NWIRP Calverton: Fox Pond, adjacent to the eastern boundary of the southwest buffer zone; and Peasys Pond, about one-fifth mi (one-third km) from the southwest buffer zone's western boundary.

Of the 52 species identified as NYNHP-listed threatened, endangered, and species of concern existing on NWIRP Calverton, only six species (three plant and three animal species) are located within the fenced area (O'Neill, 1996; Conrad, 1997). These six species occur in six locations within the forested, or unimproved, vegetation portion of the fenced area. The tiger salamander occurs in four of the six locations, once with the spotted salamander, once alone, and in three locations with the Nuttall Lobelia, a flowering plant associated with coastal plain pond margins, swamps, wet meadows, and roadsides. The remaining three species include two plants, the slender pinweed, an upland plant that grows in sandy soil, and the rose coreopsis, a wetland plant that is associated with standing water, coastal plain pond shores, margins, and wet depressions; it grows in damp sand, gravel, or peat. The third species is the coastal barrens buckmoth, a small moth that is restricted to sandy pitch pine/scrub oak barrens.

The endangered tiger salamander inhabits open woodland with ponds or other suitable breeding wetlands. Breeding takes place from late February through early April; adult salamanders migrate to wetlands on rainy nights. After egg deposition, the adults return to land. Except for the several week long breeding season, adult tiger salamanders are terrestrial, and spend most of their time in

Table 3.11-11

New York State Threatened, Endangered, and Special-Concern Plants

| Common Name | Scientific Name | New York State Status | Confirmed Presence |
|---|---|---|---|
| Pine-Barrens Gerardia | *Agalinus virgata* | Rare | No |
| Swamp Pink | *Arthusa bulbosa* | Rare | No |
| Silvery Aster | *Aster concolor* | Endangered | Yes |
| Blunt-lobed Grape Fern | *Botrychium multifidum* | Unprotected | No |
| Button Sedge | *Carex bullata* | Threatened | No |
| Sedge | *Carex hormathodes* | Rare | No |
| Rose Coreopsis | *Coreopsis rosea* | Rare | Yes |
| Tall Tick-Clover | *Desmodium glabellum* | Threatened | No |
| Smooth Tick-Clover | *Desmodium laevigatum* | Unprotected | No |
| Knotted Spikerush | *Eleocharis equisetoides* | Threatened | Yes |
| Three-Ribbed Spikerush | *Eleocharis tricostata* | Threatened | Yes |
| Coppery St. John's-Wort | *Hypericum denticulatum* | Endangered | No |
| St. John's-Wort | *Hypericum dissimulatum* | Unprotected | Yes |
| Carolina Redroot | *Lachnanthese caroliniana* | Threatened | No |
| Slender Pinweed | *Lechea tenuifolia* | Rare | Yes |
| Southern Twayblade | *Listera australis* | Rare | Yes |
| Nuttall's Lobelia | *Lobelia nuttallii* | Rare | Yes |
| Ludwigia | *Ludwigia sphaerocarpa* | Rare | Yes |
| Comb-Leaved Mermaid-Weed | *Prosperpinaca pectinata* | Rare | Yes |
| Short-Beaked Bald-Rush | *Psilocarya nitens* | Rare | Yes |
| Loose-Headed Beakrush | *Rhynchospora chalarocephala* | Rare | No |
| Long-Beaked Bald-Rush | *Rhynchospora scirpoides* | Unprotected | Yes |
| Drowned Horned Rush | *Rhynchospora inundata* | Endangered | Yes |
| Quill-leaf Arrowhead | *Sagittaria teres* | Endangered | No |
| Reticulated Nutrush | *Scleria reticularis* var. reticularis | Rare | Yes |
| Two-Flowered Bladderwort | *Utricularia biflora* | Rare | Yes |
| Fibrous Bladderwort | *Utricularia fibrosa* | Rare | Yes |
| Hiddenfruit Bladderwort | *Utricularia geminiscapa* | Rare | Yes |
| Rush Bladderwort | *Utricularia juncea* | Rare | Yes |
| Small Floating Bladderwort | *Utricularia radiata* | Rare | Yes |
| Mountain Bellwort | *Uvularia puberula* | Endangered | Yes |

Source: NYNHP, 1987, as cited in Myers and Gaffney, 1989; NYNHP, 1996; NYNHP, 1997

Table 3.11-12

New York State Threatened, Endangered, and Special-Concern Animals

| Common Name | Scientific Name | New York State Status | Confirmed Presence |
|---|---|---|---|
| Northern Cricket Frog | *Acris crepitans* | T | No |
| Spotted Salamander | *Ambystoma maculatum* | SC U | Yes |
| Tiger Salamander | *Ambystoma tigrinum* | E | Yes |
| Grasshopper Sparrow | *Ammodramus savannarum* | SC P | Yes |
| Pine Barrens Underwing Moth | *Catocala herodias* gerhardi | U | Yes |
| Common Nighthawk | *Chordeiles minor* | SC P | ? |
| Acadian Flycatcher | *Empidonax virescens* | P | ? |
| Lateral Bluet | *Enallagma laterale* | U | ? |
| Painted Bluet | *Enallagma pictum* | U | ? |
| Barrens Bluet Damselfly | *Enallagma recurvatum* | U | ? |
| Banded Sunfish | *Enneacanthus obesus* | U SC | No |
| Coastal Barrens Buckmoth | *Hemileuca maia maia* | SC U | Yes |
| Eastern Hognose Snake | *Heterodon platyrhinos* | SC U | No |
| Yellow-Breasted Chat | *Icteria virens* | P | ? |
| Eastern Mud Turtle | *Kinosternon subrubrum* | T | No |
| Red Crossbill | *Loxia curvirostra* | P | ? |
| Southern Sprite | *Nehalennia integricollis* | U | ? |
| Vesper Sparrow | *Pooecetes gramineus* | SC P | ? |
| Southern Leopard Frog | *Rana sphenocephala* | SC G | No |
| Eastern Spadefoot | *Scaphiopus holbrookii* | U | No |
| Eastern Bluebird | *Sialia sialis* | SC P | Yes |
| Regal Fritilllary | *Speyeria idalia* | U | No |
| New England Cottontail | *Sylvilagus transitionalis* | SC G | No |

Notes: E - Endangered
T - Threatened
SC - Special Concern
P - Protected Wildlife
U - Unprotected
G - Game
? - Confirmed during initial, but not subsequent surveys.

Source: NYNHP, 1987, as cited in Myers and Gaffney, 1989; Pleuthner, 1995.

burrows, including those created by shrews or other small animals. The gilled, aquatic larvae remain in the ponds until late July or early August.

The most detailed available study of Long Island populations was conducted by the State University of New York, Binghamton (Madison, 1993). Three populations, located one half to one mile (0.8 to 1.6 km) west and southwest of the project site, were studied from 1990 through early 1993. Radio transmitters were surgically implanted in 44 tiger salamanders, which were then tracked though the spring and summer months. Salamanders moved in all directions from the study ponds, with males moving a mean distance of 321 ft (98 m) from the pond, and females moving a mean distance of 221ft (67 m) from the pond. The greatest distance moved from a pond was 942 ft (287 m). Salamanders avoided open or developed areas and did not cross roads.

Another study, conducted in Riverhead (Dru Associates, 1995), had similar results except that salamanders did venture into treeless successional field habitat and did cross unpaved roads. Both studies indicated that the majority of the breeding salamander population (80 to 85 percent) remains within 400 ft (122 m) of the pond, with a few animals moving greater distances up to a maximum of 1000 ft (305 m). No information is available on juvenile movements.

On Long Island, tiger salamanders generally inhabit pitch pine/oak woodland. Elsewhere in the range tiger salamanders do well on sites managed with controlled fire, possibly because such sites are more open and tend to have a denser ground layer of grasses, sedges, and forbs. Suitable breeding ponds retain water into August in an average year, but dry at least some years. Permanent ponds generally are unsuitable because of fish predation on eggs and smaller larvae. Ponds which consistently dry early are unable to support larvae to metamorphosis. Ponds are a key habitat component, because population size is thought to be regulated largely by larval interspecific and intraspecific competition. The best tiger salamander sites are those with multiple breeding ponds within an extensive matrix of pitch pine/oak woodland.

The threatened spotted salamander uses breeding wetlands similar to those of the tiger salamander, but usually prefers a somewhat denser and more mesic woodland.

## 3.11.4 Natural Resource Management

There are several natural resource management plans that either have in the past affected NWIRP Calverton or will in the future guide resource management on the site. Two of them, the Navy-NYSDEC Cooperative Agreement and the NWIRP Calverton Forest Resources Management Plan, are described below; the other two are described in their resource-related Subchapters (i.e., the Pine Barrens Plan in Subchapter 4.1, Land Use, and the Wild and Scenic River Act in Subchapter 4.10, Water Quality and Hydrology).

## Navy - NYSDEC Cooperative Agreement

In 1965, the Navy entered into a Cooperative Agreement with the NYSDEC Division of Fish and Wildlife for public recreational use of most of the NWIRP Calverton buffer zone lands. Hunting, fishing, trapping, dog training, dog field trials, and other uses are allowed under a state permit (under authority of Public Laws 85-337 and 86-797) (Myers and Gaffney, 1989). The Navy also issues licenses to military reserve units, dog trainers, and the Boy Scouts for use of the property. Four tracts of cropland totaling 411 acres (166 hectares) were leased through 1994 to agricultural outleasers, and a few other small tracts are leased to other parties (Myers and Gaffney, 1989; Braun, 1995). The remainder of the buffer zones is covered under the terms of the Cooperative Agreement. The NYSDEC issues permits under the agreement to control access to the buffer zone lands.

The southwest and southeast buffer zones are predominantly forested. The 610-acre (247-hectare) north buffer zone contains agricultural land that was outleased to local farmers and commercial forest land.

A nominal user fee is charged by the NYSDEC for parking at the buffer zones, the revenue from which is used for the continued development and improvement of the fish and wildlife resources on these areas (Myers and Gaffney, 1989). Under the agreement, NYSDEC prepares ten-year plans that identify development and wildlife habitat improvements to be undertaken in the buffer zones. These plans are prepared to be compatible with the Navy's Forest Resource Management Plan. Under the plans, clearings have been created in the forested areas to establish food and cover plots for wildlife as part of the habitat improvement plan.

In the 1980s, the current ten-year plan was changed to authorize the use of off-road vehicles (trail bikes) in the south end of the southeast buffer zone. The use was approved initially on a one-year trial. At the end of the trial year, the use area was inspected for environmental impacts. A determination was made that the level of impact was acceptable, when combined with restoration projects voluntarily undertaken by the users (Myers and Gaffney, 1989). NYSDEC and the Navy periodically inspect the areas of use for impacts and adjust the use in accordance with conditions found.

Heavy use of the buffer zones for fishing and hunting occurs in the spring and fall. The heaviest use is during hunting season, which usually runs from October to February. It includes various hunting seasons for waterfowl, pheasant, quail, grouse, rabbit, squirrel, deer, and woodcock. The deer season is divided into archery and shotgun seasons.

NYSDEC has issued woodcutting permits to the public for cutting selected trees for firewood. This system facilitates development of the clearings for wildlife foodplots and as salvage for other operations (Myers and Gaffney, 1989). Fishing for pickerel, largemouth bass, and panfish is done on a permit basis in the Peconic River and in the ponds of the Southwest Buffer Zone.

**NWIRP Calverton Forest Resource Management Plan**

It is the policy of the Navy (NAVFACINST 11015.9A) that all facilities having the potential for commercial timber production shall have programs for the conservation and management of forest resources. Forest resource management includes activities such as timber management and forest administration, reforestation, timber stand improvement, access road construction and maintenance, and fire protection.

The Natural Resources Branch of Northern Division Naval Facilities Engineering Command (NORTHNAVFACENGCOM) prepared a long-term Forest Resource Management Plan for NWIRP Calverton in 1987, with the cooperation of Rutgers University. It also prepared annual increments to the plan for tasks such as timber stand improvement and planting of seedlings for reforestation. Timber stands suitable for harvest are advertised for bids for sale of these forest products.

# 3.12 Petroleum and Hazardous Materials

## 3.12.1 Hazardous Waste Generation

NWIRP Calverton ceased operations in February 1996. Hence, no hazardous waste from operations is currently being generated. During its operation from 1952 to 1996, NWIRP Calverton operations and maintenance activities generated wastes classified as hazardous under federal and New York State regulations, including:

- Waste halogenated solvents;
- Waste non-halogenated solvents;
- Photo waste;
- Waste jet fuel;
- Oil and water waste;
- Cleaning absorbent waste;
- Paint stripping and metal finishing rinse waters;
- Residue and debris;
- Industrial wastewater treatment sludge;
- Waste sulfuric acid;
- Spent batteries; and
- Lab packs of acute hazardous waste, offspec material, and non-asbestos asphalt.

Hazardous waste was generated from aircraft maintenance, assembly, and support operations throughout the installation, collected at undocumented accumulations points, and stored in 55-gallon (208-liter) drums or 250-gallon (946-liter) bowsers (mobile fuel tank and pipe used for refueling aircraft). The waste was periodically transported to the permitted hazardous waste storage facility (Bldg 329) where it was consolidated and prepared for shipment to a permitted Treatment, Storage and Disposal (TSD) facility. All halogenated and non-halogenated solvents were sent to an off-site facility for reprocessing and kiln burning. Industrial wastewater was treated on-site at the Industrial Wastewater Treatment Plant (Bldg 316).

## 3.12.2 Hazardous Waste Storage

As required by the Resource Conservation and Recovery Act (RCRA) of 1976, the US Navy and Grumman obtained a Hazardous Waste and Solid Waste Amendment (HSWA) Permit and a New York State Part 373 Hazardous Management Permit for the treatment, storage, and disposal of hazardous substances. A HSWA Permit was issued on April 13, 1992 that included an assessment of Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), requirements for further investigations, waste minimization requirements, land disposal restrictions, and organic air emissions standards. A Part 373 Hazardous Management Permit was issued by the New York State

Department of Environmental Conservation (NYSDEC) on March 25, 1992 (NYSDEC 1-4730-00013/0001-0) for the operation of a hazardous waste container storage facility (Bldg 329). This permit outlined procedures governing the operation and final closure of this facility. The USEPA has also issued a permit (USEPA ID Number NYD003995198) dated May 11, 1992 for the operation of this facility. The USEPA supports NYSDEC in its oversight activities. The requirements of both permits are the same, although the terminology and format vary.

## 3.12.3 Previous Hazardous Waste Investigations

The US Navy's Installation Restoration (IR) Program is designed to identify contamination of Navy and Marine Corps lands/facilities resulting from past operations and to institute corrective measures, as needed. There are typically four distinct stages in the IR Program, which are listed below.

**Stages of the Installation Restoration Program at NWIRP Calverton**

**Stage 1** is the Preliminary Assessment (PA), formerly known as the Initial Assessment Study (IAS).

**Stage 2** is a RCRA Facility Assessment Sampling Visit (RFA), similar to a Site Investigation (SI), which augments the information collected in the PA.

**Stage 3** is the RCRA Facility Investigation/Corrective Measures Study (RFI/CMS), similar to a Remedial Investigation/Feasibility Study (RI/FS), which characterizes the contamination at a facility and develops options for the remediation of the site.

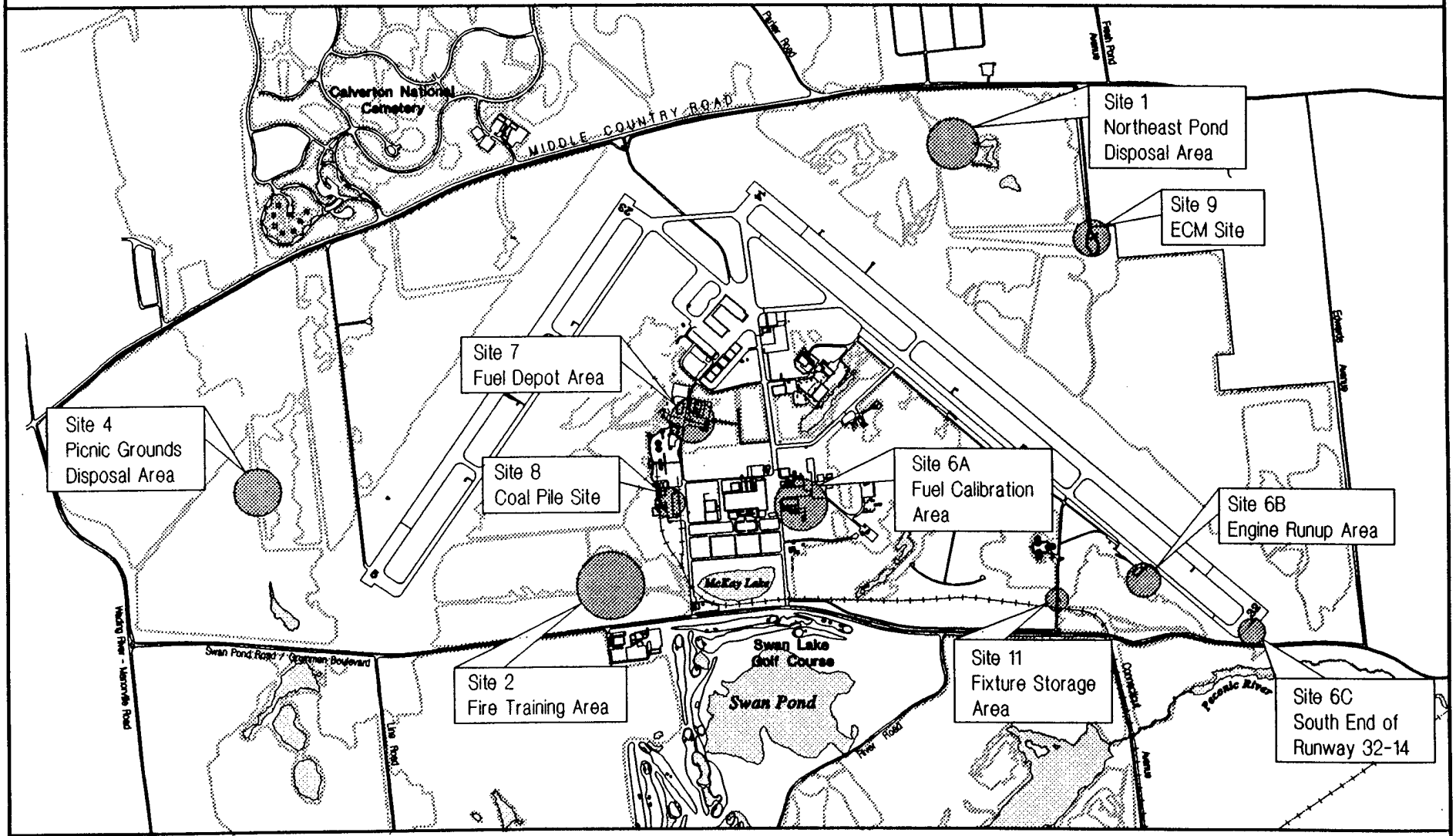
**Stage 4** is the Corrective Action, which results in the control or cleanup of contamination at sites.

The US Navy has conducted several studies to evaluate past disposal sites and practices at NWIRP Calverton. The first study performed, the Initial Assessment Study (IAS), identified six areas of potential concern (NEESA, 1986). The IAS recommended that a Site Investigation be performed at only four of the six areas. Those four sites are listed below and are shown on Figure 3.12-1 (Installation Assessment Study Sites).

- Site 1, Northeast Pond disposal area;
- Site 2, Fire rescue training area;
- Site 4, Picnic grounds disposal area; and
- Site 6, Fuel calibration/engine run-up area.

A Site Investigation (SI) performed under the US Navy Comprehensive Long-Term Environmental Action Navy (CLEAN) Program conducted sampling at these areas and at an additional area, Site 7 -

# Initial Assessment Study Sites




Installation Restoration Site

Existing Building

Treelines

2000 0 2000

Scale in Feet

500 0 500

Scale in Meters

N

Source: CF Braun Engineering Corp., 1996.

Figure 3.12-1

Fuel Depot Area (US Navy, 1992). Site 6 was divided into three areas: Site 6A, Fuel Calibration Area; Site 6B, Engine Runup Area; and Site 6C, South End of Runway 32-14 (Figure 3.12-1). The SI eliminated Sites 4, 6B, and 6C from further consideration based on field sampling results. A more detailed investigation was recommended for the remaining four sites where environmental contamination was confirmed (Site 1, Site 2, Site 6A, and Site 7).

A RCRA Facility Investigation (RFI) was completed for Sites 1, 2, 6A, and 7 in 1995 (US Navy, August 1995). A brief overview of each site is provided below:

- Site 1, the Northeast Pond Disposal Area- was used for the disposal of demolition debris such as concrete, brick, wood, and other construction material. When it was closed in 1984 a final soil cover was placed over the material. The RFI detected contamination in surface soils, sediments, groundwater, and surface water. Contaminants included metals, VOCs, semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs). Contamination is suspected to be linked to contaminated soil (fill).

- Site 2, the Fire Training Area- was used by Grumman and Navy crash rescue crews as a training area beginning in 1955. The soils are contaminated with VOCs, semivolatile organics (including polyaromatic hydrocarbons [PAHs] and phthalates), metals, PCBs, and pesticides. Groundwater is contaminated with VOCs, and floating free product has been identified on site.

- Site 6A, the Fuel Calibration Area- was used in the testing of aircraft fuel and engine systems. Aircraft fuel delivery systems were pressurized with fuel in the calibration area to test for leaks. The testing may have resulted in frequent small fuel spills to the area's pavement. VOCs, PAHs, and phthalates were detected in the soils. The fuel-contaminated area appears to be localized to an area immediately south of the concrete pad. Groundwater was found to be contaminated by VOCs, and floating free product was identified at the site.

- Site 7, the Fuel Depot Area- was used for the storage and distribution of fuel products, such as JP-4 and JP-5 jet fuel, at the activity. Fuels were stored in underground storage tanks and then transferred to trucks for use in the flight preparation areas of the facility. These activities have resulted in groundwater contamination by fuels, which may have occurred by tank and pipe leakage, overfilling, and spills.

The RCRA RFI included a baseline human health risk assessment for each of the four sites investigated (Sites 1, 2, 6A, and 7) to determine potential health risks. For current exposures, maintenance workers were evaluated and a residential land use scenario was assumed for future

exposure. A baseline ecological risk assessment was also performed for the Northeast Pond Disposal Area (Site 1). These risk assessments were performed to determine if any unacceptable risks (i.e., above target risk levels) are present at NWIRP Calverton, and if so, to provide an estimate of their magnitude. The results of these risk assessments are summarized in Table 3.12-1.

Under the current conditions only the Fire Training Area (Site 2) has calculated risks above the target levels. These risks are attributable to polychlorinated biphenyl compounds (PCBs), benzo (b) flouranthene, and benzo (a) pyrene.

Under a hypothetical future residential land use scenario all four of the sites investigated in the August 1995 RFI had the potential for unacceptable health effects from contact with soils and domestic use of groundwater. Contaminants in the surface water and sediments of Site 1- Northeast Pond Disposal Area have the potential to cause adverse impacts to the biological community of the area.

A RCRA Facilities Assessment (RFA) performed for NWIRP Calverton identified four additional areas with environmental concerns (US Navy, March 1995). These areas are shown on Figure 3.12-1:

- Site 8, Coal pile storage area;
- Site 9, Electronic countermeasures area;
- Site 10, Cesspool/leach field areas; and
- Site 11, Fixture storage area.

No further action was recommended at Site 11, but further investigation was recommended for Sites 8, 9, and 10. Site 10 consists of 22 cesspools/leach fields associated with various industrial buildings in the south-central part of the fenced portion of NWIRP Calverton, known as the Cantonment Area. A preliminary screening eliminated concerns over most of the areas, but two buildings in Site 10 were recommended for further sampling. These areas were named Site 10A, Jet Fuel Systems Lab (Bldg. 06-11), and Site 10B, Engine Test House (Bldg. 06-18).

A supplemental RFA was performed (US Navy, April 1996) to confirm the presence or absence of contamination at four of the sites investigated during the initial RFA-Sampling Visit. Two additional sites were added to help define the limit of groundwater contamination. The supplemental RFA included the following five areas within NWIRP Calverton and one area outside of NWIRP Calverton:

- Site 8, Coal pile storage area;
- Site 9, Electronic countermeasures area;
- Site 10A, Jet fuel system lab;
- Site 10B, Engine test house;
- Southern area; and
- Swan Lake Golf Course (outside of NWIRP Calverton).

Table 3.12-1

Potential Human Health and Ecological Risks at NWIRP Calverton

| Site | Human Health Concerns | | Ecological Concerns |
|---|---|---|---|
| | Current | Future | |
| Site 1: Northeast Pond Disposal Area | None | Future residential use: unacceptable risks from direct contact with soils and domestic use of groundwater | Adverse impacts to aquatic life and other pond inhabitants is possible |
| Site 2: Fire Training Area | Unacceptable risks from contact with surface soils | Future residential use: unacceptable risks from direct contact with soils and domestic use of groundwater | Not evaluated |
| Site 6A: Fuel Calibration Area | None | Future residential use: unacceptable risks from direct contact with soils and domestic use of groundwater | Not evaluated |
| Site 7: Fuel Depot Area | None | Future residential use: unacceptable risks from direct contact with soils and domestic use of groundwater | Not evaluated |
| Source: US Navy, August 1995. | | | |

Only trace levels of compounds were found at Sites 8 and 9. The levels detected in the soils at these sites were generally below federal and state action levels, as well as the compounds in the groundwater at Site 8. At Site 9, the levels of chemicals (VOCs) in the groundwater slightly exceeds the federal MCLs for acceptable drinking water quality and may require some level of remediation, especially if groundwater in this area is to be used for residential (domestic) purposes.

A source of VOC contamination was not identified at the southern area, where it was suspected that a source of VOCs was contributing to the contamination in a nearby county well located downgradient.

VOC contamination has been confirmed at the fenceline downgradient of Site 2 and has likely moved across Swan Pond Road into the area of the Swan Lake Golf Course. Results of an off-site investigation for this area will be published in the Draft Phase 2 RFI in December 1997.

Petroleum-based contamination at Sites 10A and 10B appeared to be restricted to fairly localized areas. Additional investigations are required at Site 10A to further delineate contamination, but there appears to be sufficient information to proceed to a removal action at Site 10B.

A Basewide Phase I Environmental Baseline Survey (EBS) inspected Navy-owned buildings and areas in the NWIRP Calverton complex operated by the Navy (US Navy, October 1995). The EBS divided NWIRP Calverton into five zones for the purpose of reporting data (Figure 3.12-2, Installation Restoration Zones). Each zone is described in Table 3.12-2. The EBS identified areas that require further investigation.

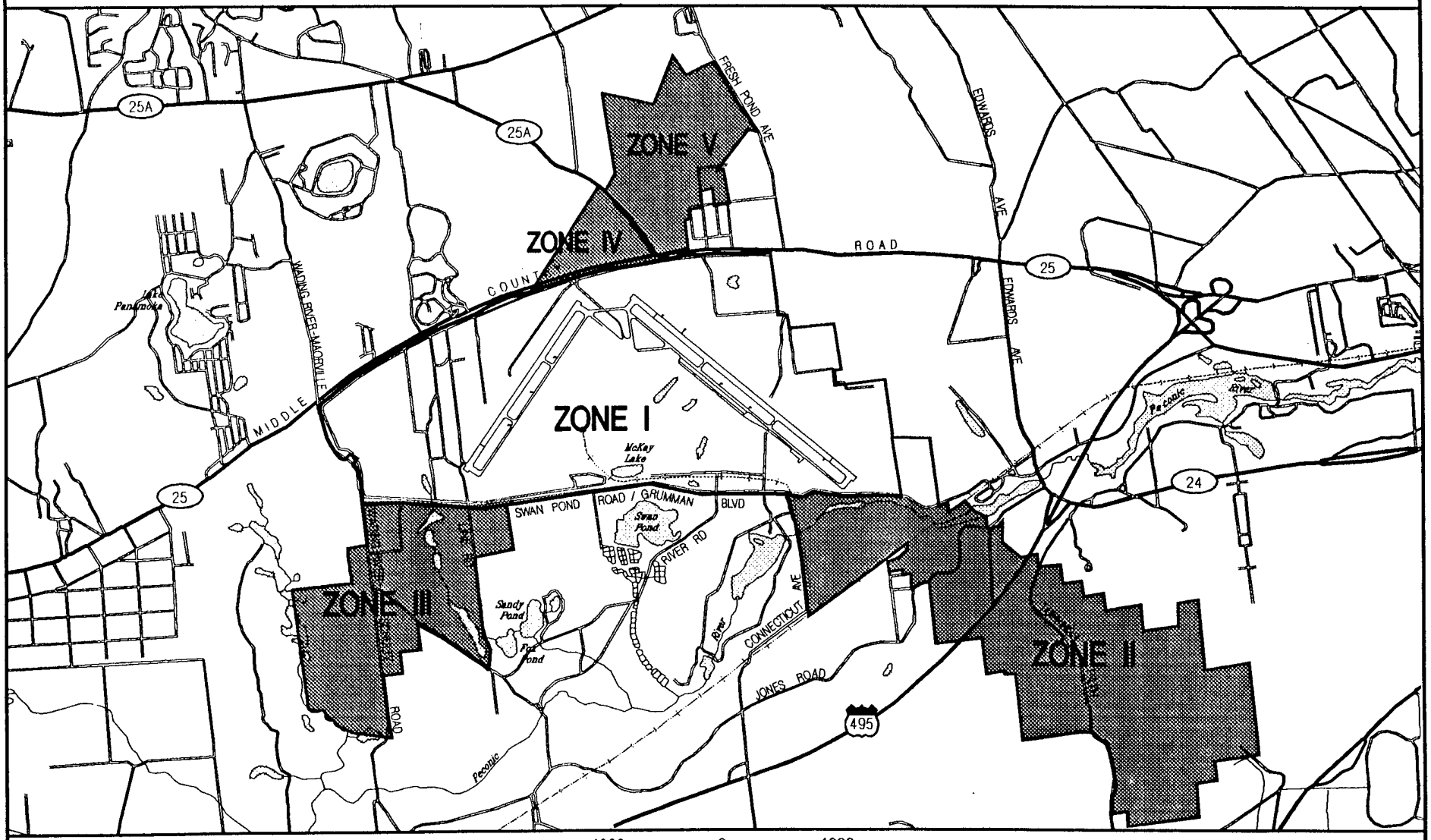
A Phase II Field Sampling Work Plan has been prepared for areas selected for sampling (US Navy, March 1996). These areas are Navy-owned buildings in Zone I and all areas identified in the EBS in Zones II through V (Table 3.12-3). Many areas in Zone I are being addressed independently by the Northrop Grumman Corporation. The media that will be sampled include surface soil, subsurface soil, groundwater, surface water, and sediments.

Only the media suspected of contamination in each area will be tested. Contaminants to be tested for include VOCs, SVOCs, metals, pesticides, and herbicides. Media will be tested for contaminants that are suspected to be present based on prior or current use, anecdotal evidence, or field observations.

**Groundwater Investigations**

NWIRP Calverton served approximately 2800 workers with potable water from three production wells. The wells are located in a line approximately 2,500 to 2,750 ft north of the south gate, approximately 500 ft (152 m) west of the roadway (Figure 3.12-1). The three wells are in the upper glacial aquifer (Subchapter 3.10.2) and have depths ranging from 140 to 146 ft (43 to 45 m) below the surface and capacities of between 1,000 to 1,100 gallons per minute (gpm). Wells No. 2 and 3

# Environmental Baseline Survey Zones




Designation and Zone Boundary

Buffer Zones

4000 0 4000
Scale in Feet

1000 0 1000
Scale in Meters

N

**Figure 3.12-2**

were removed from service on December 5, 1989 and April 23, 1991, respectively, because of volatile organic contamination (US Navy, August 1995). Well service was reinstated after the Grumman Corporation installed an activated carbon treatment system to address the VOC contamination.

Historically, higher concentrations of 1,1,1-trichloroethane and freon-113 (greater than five $\mu$g/l) have been detected in production wells. Northrop Grumman added a carbon filtration unit to treat the production water prior to use. The Brookhaven National Laboratory, located approximately two mi (three km) southwest of NWIRP Calverton, had two of its production wells removed from service in 1989 because concentrations of 1,1,1-trichloroethane were detected above the New York State Drinking Water Standard of 5 $\mu$g/l. These wells were located 3.5 and 3.6 mi (5.6 and 5.8 km) southwest of Calverton. In addition, sampling by the Suffolk County has detected volatile organic contamination in well No. 51591, located southeast of the south gate, over the last 17 years (Robbins, 1996).

## 3.12.4 Compliance Program Status

An Environmental Compliance Evaluation (ECE) of NWIRP Calverton was conducted 1995 (US Navy, 1995) in order to identify and document instances of non-compliance (deficiencies); provide specific recommendations to achieve compliance; and provide to the Operations Contractor's Environmental Manager an overall assessment of the installation's compliance posture.

A Basewide Phase I Environmental Baseline Survey (EBS) was also performed in 1995 to identify, to the extent feasible, recognized environmental conditions in connection with real property (US Navy, 1995). The environmental regulatory issues summarized below are based on information contained in the ECE and EBS.

### Resource Conservation and Recovery Act (RCRA) Corrective Action Program

The HSWA permit issued on April 13, 1992 included an assessment of SWMUs, AOCs, requirements for further investigations, waste minimization requirements, land disposal restrictions, and organic air emissions standards. RCRA Facility Investigations were recommended for two SWMUs and one AOC, and RCRA Facility Assessments were recommended for one SWMU and one AOC. These investigations were performed and are discussed in Subchapter 3.12.3.

Table 3.12-2

Description of EBS Zones at NWIRP Calverton

| |
|---|
| **Zone I: Fenced Area.** Zone I encompasses approximately 2,923 acres (1,183 hectares) of land and buildings leased by the Navy to Grumman. Nearly all mission-related activities at NWIRP Calverton have taken place in Zone I, while the other zones have largely served as undeveloped buffer lands. Zone I is surrounded by a chain-link perimeter fence. It is bounded to the south by Grumman Boulevard, to the west by Wading River Manor Road, and to the north by New York Route 25 (Middle County Road). Zone I includes an area of hangers, shops, and administrative buildings in the industrial core, two runways, and several other facilities scattered within a largely wooded perimeter. |
| **Zone II: Southeast Buffer Zone.** Zone II consists of about 1,703 acres (689 hectares) of land extending southeast from the eastern end of the two runways (Runway 32-14). The land north of Grumman Boulevard is leased to a local farmer. Most of Zone II is woodland. |
| **Zone III: Southwest Buffer Zone.** Zone III covers approximately 812 acres (329 hectares) of land extending southwest from the western end of the two runways (Runway 5-23). Nearly all of Zone III is woodland. |
| **Zone IV: Northwest Buffer Zone.** Zone IV includes about 140 acres (57 hectares) bounded by Route 25 to the south, Route 25A (Parker Road) to the north and east, and the Calverton National Cemetery to the west. This land was previously leased to a local farmer; however it was idle in the 1995 growing season. The wooded areas interspersed among the outleased cropland are managed for public hunting by NYSDEC. |
| **Zone V: Northeast Buffer Zone.** Zone V encompasses approximately 470 acres (190 hectares) of land northeast of Route 25A. Two areas of cropland in Zone V are presently leased to a local farmer, and the remaining land is woodland. |
| Source: US Navy, October 1995. |

Table 3.12-3

Areas of Potential Environmental Concern Included in the Phase II Field Sampling Plan

| Area | Reason for Concern | Zone |
|---|---|---|
| Land area north of A/C engine run-in building (Bldgs 296 and 307) | Stormwater runoff may have carried leaked jet fuel from building to adjacent area of soil. | I |
| Pistol range (Bldg 232) | Bullet fragments in surface soil and sand pile at south end of range | I |
| Flightlines Number 1 and 2 | Suspected presence of jet fuel under concrete | I |
| Ponds east of cantonment area (Runway Ponds 1,2, and 3) | Receives stormwater from Cantonment Area and Flightline number 1 | I |
| Former skeet range | Shell fragments from former skeet shooting activity | I |
| Sprayer staging area near Bldg 260 | Used to load pesticides into farm equipment | II |
| Irrigation pump on Peconic River and aboveground storage tank | Anecdotal evidence of oil sheens on water in river | II |
| Potato barn (Bldg 222) | Empty 55- gallon drums reportedly removed from around the barn by volunteer cleanup in May 1995 | III |
| Pesticide dump area | Location of discarded pesticide containers, mostly removed during a volunteer cleanup in May 1995 | III |
| Burn site for tire and other debris | Burn site for old tires and other debris | III |
| AST east of VORTAC station and abandoned well | Poor condition of AST | IV |
| Source: US Navy, March 1996. | | |

### Above-ground Storage Tanks (ASTs)

There are 25 active ASTs and one removed AST associated with facilities inspected in the fenced area of Zone 1. In addition, agricultural outleasers maintain diesel fuel ASTs (under 500-gallon [1893-liter] capacity) in the agricultural outlease areas and there is a 5,000-gallon (18,930-liter) AST containing No. 2 fuel oil at the Transmitter Building at Terry Hill was removed (Ohlman, 1996).

### Polychlorinated Biphenyls (PCBs)

There are three PCB-containing (.500 ppm) transformers that remain at the Calverton site, but only one is still active (T21). There are three PCB-contaminated (<500 ppm) transformers that remain at the Calverton site, but again, only one remains active (T114). Finally, there are six pole-mounted transformers that still exist at Calverton and only one of these remains active (T132). These six pole-mounted transformers have not been tested, but are assumed to be PCB-contaminated.

### Lead

No facilities have been inspected for lead-based paint (LBP). However, it should be assumed that all facilities constructed prior to the implementation of the DoD ban on the use of LBP in 1978 are likely to contain one or more coats of such paint.

### Pesticides

Prior to the Northrop Grumman shutdown in February 1996, it was reported that pesticides were applied at NWIRP Calverton by a contractor and were not stored at the facility. It is possible, however, that short-term storage and mixing did occur. The ECE found the pesticide program had no deficiencies. As part of the Environmental Baseline Survey, the Navy is planning to sample several ponds, both within and outside the fenceline, for the presence of pesticides.

### Asbestos

An installation-wide survey for asbestos containing material was conducted by both the Northrop Grumman Corporation and the Navy. Results are documented in two reports - one by Eder Associates (1995) and by L. Robert Kimball Associates (1995). An asbestos Operations and Maintenance (O&M) Plan was prepared for Zone I in 1996.

## 3.12.5 Summary

The town of Riverhead's Community Development Agency (CDA) was given authority to receive title to NWIRP Calverton from the US Navy via Public Law 103-c337. A Finding of Suitability to

Transfer (FOST) must be issued before property transfer. This involves the identification of uncontaminated property. As defined by the Community Environmental Response Facilitation Act (CERFA), an uncontaminated property is any real property on which no hazardous substances or petroleum products and their derivatives (including aviation fuel and motor oil) were stored for more than one year, and further, no known releases or disposals have been associated with the property. The EBS assigned each building and area of land on NWIRP Calverton to one of seven categories described in Table 3.12-4. The classification of all areas at Calverton is provided in Figure 3.12-3 (Classification of EBS Program Areas). If release or disposal of hazardous substances, hazardous wastes, and/or petroleum products are confirmed in an area, Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and/or Resource Conservation and Recovery Act (RCRA) requirements must be met prior to property transfer.

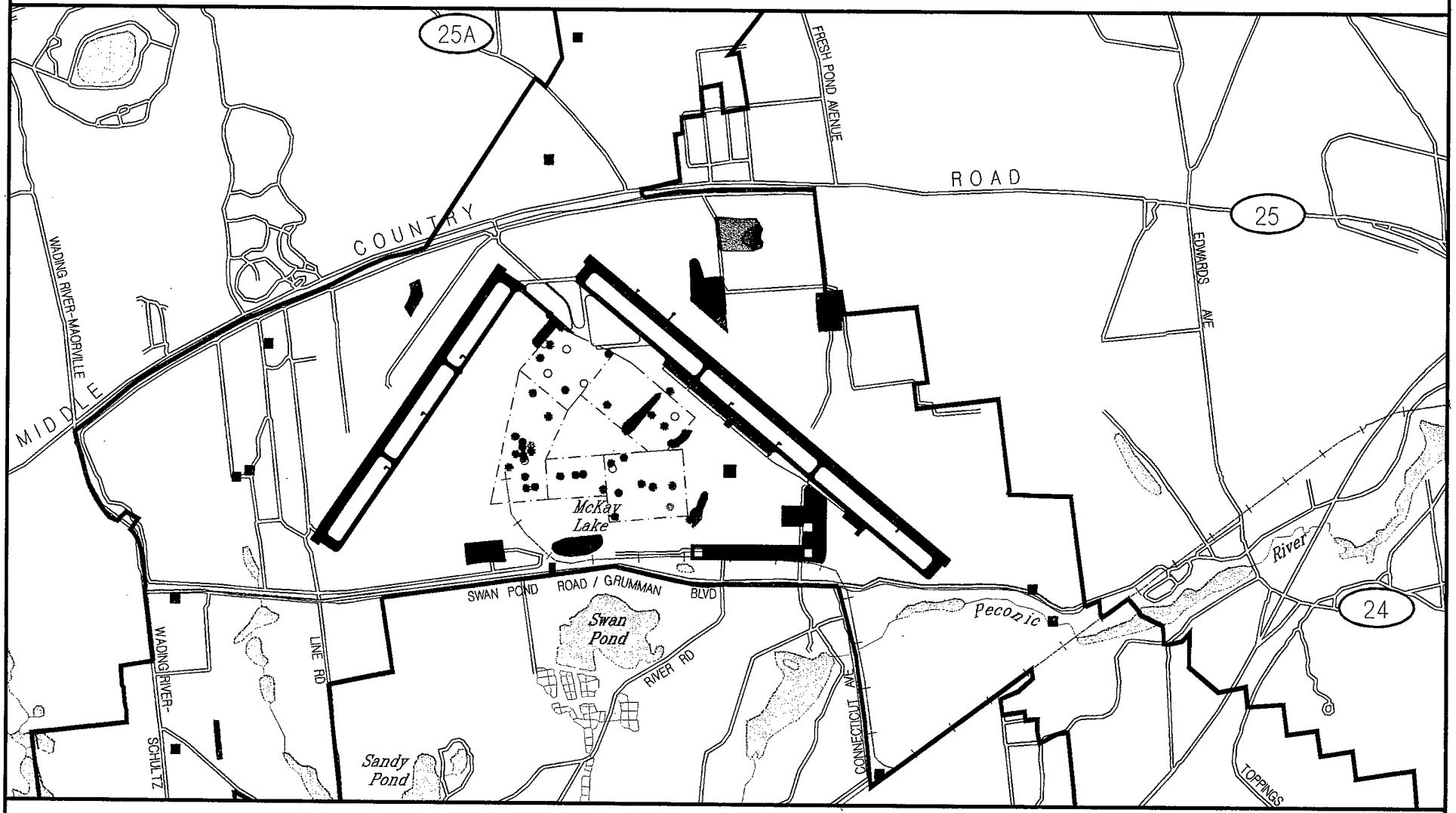
Most of the areas of concern are located in the fenced area (Zone I) where the majority of maintenance and operation activities occurred. Investigations and corrective actions for these areas are ongoing. Zones II, III, and V include several small areas where additional evaluation is required, and Zone V contains one area where hazardous substances or petroleum products have been stored, but no release has occurred. Since NWIRP Calverton ceased operations in February 1996, no additional areas of concern are anticipated.

Table 3.12-4

Environmental Condition Categories

| |
|---|
| **Category 1-** Areas where no storage, release, disposal, or migration of hazardous substances or petroleum products has occurred. |
| **Category 2-** Areas where only storage of hazardous substances or petroleum products has occurred. |
| **Category 3-** Areas of contamination below action levels. |
| **Category 4-** Areas of known contamination where remedial or removal actions have been taken. |
| **Category 5-** Areas of known contamination where remedial or removal actions are underway. |
| **Category 6-** Areas of known contamination where no remedial or removal actions have yet been initiated. |
| **Category 7-** Areas requiring further investigation. |
| Source: US Navy, October 1995. |

# Classification of EBS Program Areas




**Property Boundary**

**Class 1**
No Storage, Release, or Disposal of Hazardous Substances or Petroleum Products

**Class 2**
Storage Only of Hazardous Substances or Petroleum Products, but No Release or Disposal

**Class 3**
Storage, Release, or Disposal, but Concentrations Do Not Require Remediation

**Class 4**
Storage, Release, or Disposal, but All Necessary Remediation has Been Completed (None Present)

**Class 5**
Storage, Release, or Disposal, and Remediation In Progress

**Class 6**
Storage, Release, or Disposal, and Remediation Not Yet Initiated

**Class 7**
Additional Evaluation Required

2500 0 2500
Scale in Feet
500 0 500
Scale in Meters

N

**Source: CF Braun Engineering Corp., 1995.**

**Figure 3.12-3**

# 4 IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter presents a discussion of the potential impacts that would result from the transfer and reuse of NWIRP Calverton based on the locally developed Reuse Plan and two redevelopment alternatives. The transfer of the 3,137 acres (1,255 hectares) of agricultural and wooded buffer zones located outside the fence, which are to be kept in their present states, is a component of the Reuse Plan and the two redevelopment alternatives. Transfer of the buffer zones would not occur under the no action alternative. As the NYSDEC has maintained these lands in their present state under a Cooperative Agreement with the Navy since 1965, and will continue to do so as a requirement of the transfer, no impacts are associated with the transfer of these lands. Therefore, no further discussion of this action is required as part of the analysis of the alternative reuse plans.

Chapter 4 is organized in a parallel fashion to Chapter 3. Subchapters 4.1 through 4.12 address the potential environmental impacts for each of the resource categories due to implementation of the four alternatives:

- No action;
- Calverton Enterprise Park Reuse Plan;
- Calverton Enterprise Park/Raceway Alternative; and
- Peconic Village Alternative.

Subchapter 4.13 discusses cumulative impacts of transfer and reuse.

The proposed Reuse Plan of the town of Riverhead provides overall development goals and objectives, including general types of development (e.g., industrial, commercial, theme attraction, etc.) and the acreage and/or floor area for each general category of land use (Chapter 2). However, specific developments within the land use categories are uncertain and much will depend upon emerging market opportunities. This situation has necessitated two levels of impact analysis - quantitative and qualitative.

Quantitative analyses were conducted wherever possible for those aspects of the alternatives that are essentially a function of the number of employees and/or square feet of development. For example, employment impacts, intersection analyses of future traffic, motor vehicle-related air and noise impacts, and sanitary wastewater loads are discussed quantitatively. However, these calculations would change should the amount, type, timing and other aspects of the action alternatives be modified.

Qualitative analyses were conducted for those proposed alternative components that cannot be specified at this time. For example, specific building renovation and site layout plans have not yet been developed and specific related impacts can only be discussed qualitatively. Similarly, although sanitary wastewater loads can be quantified at this time, industrial wastewater loads and air emissions cannot, since the specific type and requirements of such future uses are unknown. However, the qualitative analyses presented do identify sensitive environmental issues that need to be addressed, and describe the types of permits (and their requirements) that must be obtained.

The impact analysis of the alternatives listed above is based on the assumption of full project implementation over a 20-year timeframe.

## 4.1 Land Use and Zoning

As discussed in Subchapter 1.1, lands within the fence may be transferred of to the town of Riverhead. Lands outside the fence (the buffer zones) may also be disposed to the NYSDEC and the Department of Veterans Affairs. Legislation mandates that the buffer lands transferred to NYSDEC remain in their natural state. Therefore, implementation of any of the action alternatives for the area within the fence would, by in large, have no direct land use effect on the buffers.

### 4.1.1 No Action Alternative

Under the no action alternative (representing future baseline conditions), NWIRP Calverton would be retained in ownership by the federal government. No reuse or redevelopment would occur at the facility. NWIRP Calverton land and facilities within the fence in the town of Riverhead would be vacated and closed in accordance with *Base Realignment and Closure Facility Layaway and Caretaker Standards* (Naval Facilities Engineering Command, September 1994). All Navy GOCO activities have already ceased at NWIRP Calverton (February 1996). The National Transportation Safety Board (NTSB) is using a portion of the site as it continues its investigation of TWA Flight 800.

Buffer zones outside the fence in the towns of Riverhead and Brookhaven would be deeded to the NYSDEC and the Department of Veterans Affairs.

## 4.1.2 Calverton Enterprise Park Reuse Plan

### Land Use

Implementation of the locally developed Reuse Plan for NWIRP Calverton would result in the development of a multi-use enterprise park that has at its core a major industrial complex and a limited industrial airpark. As discussed in Chapter 2, other primary uses include: theme park and attractions; commercial recreation family entertainment center; stadium; golf course; and a variety of open spaces. Figure 2-3 in Chapter 2 shows the allocation of land uses within the overall conceptual site plan for the Reuse Plan.

The industrial business park of 887,500 sq ft (82,538 sq m) would consist of 50 percent new development and 50 percent reuse of existing buildings. The 443,750 sq ft (41,269 sq m) of new industrial space would be developed as infill parcels within the industrial core. The airport would utilize the existing 10,000-ft (3,048-m) runway and would require about 65 acres (26 hectares) of land in the industrial core for ancillary facilities. Two of the proposed land uses, the industrial business park and the airport, are compatible with historical activities of the facility. Maintenance of the buffer zones in a natural state would assist in maintaining land use compatibility with the proposed airport use in the Reuse Plan. With the retention of the industrial business park, this alternative would retain some of the historical land use relationship with surrounding land uses. The retention of the buffer lands as conservation and recreational resources would also be consistent with historical land use patterns. Proposed uses such as the theme park and family entertainment center would represent new land uses in the area. Although these uses have been included by the town as part of the Reuse Plan, future land planning such as facility layouts and landscaping treatments would need to be utilized to minimize effects on existing surrounding properties.

It is estimated that about 477 acres (193 hectares), or 16 percent of the fenced-in area, is presently developed as either buildings or paved areas (Table 3.11-1). It is estimated that the Reuse Plan would require an additional 320 acres (130 hectares) of new building/paved area; therefore, the total amount of developed land in the Reuse Plan would be 797 acres (323 hectares) or 27 percent of the site. Open space would remain the largest land use component on site. Including wetlands and surface water features, it is estimated that open space would account for 2,126 acres (861 hectares) or about 73 percent of the total fenced-in area.

### Zoning

At the present time lands within the fence are zoned as Defense Institutional, allowing agriculture, national cemetery, and Naval weapons testing facility uses. No zoning regulations exist that specify such land use development parameters as density, floor area ratios (FARs), and setbacks.

Implementation of the Reuse Plan would therefore require that the town of Riverhead prepare and adopt new zoning for the site, or portions thereof, based on the specific uses adopted. The

Comprehensive Economic Development Task Force, a body created by the town of Riverhead to identify issues of significance relating to the reuse of NWIRP Calverton, prepared a report addressing future land use and zoning of the site. In its 1994 report, the Task Force recommended that a Planned Unit Development (PUD) District be the operative zoning district for the property pursuant to Section 263 of the Town Law. Implementation of the PUD would be based on a Comprehensive Development Plan for the site and through the adoption of a PUD District into the town of Riverhead zoning ordinance. Implementation of the Reuse Plan via a new PUD zoning ordinance would be consistent with the plans of the town of Riverhead for the town's future land use. Once transfer of the buffers to the NYSDEC is complete, the towns of Riverhead and Brookhaven would appropriately rezone these lands from Defense Institutional and Open Space Conservation in Riverhead and from Residential in Brookhaven.

**Central Pine Barrens Comprehensive Land Use Plan**

Lands in the far western portion of the site (438 acres or 177 hectares) have been defined as Pine Barrens Core Preservation Area (CPA) in the Reuse Plan, consistent with the Central Pine Barrens Comprehensive Land Use Plan. The town of Riverhead has adopted a Pine Barrens Overlay District that prescribes allowable uses and intensities. For the CPA, the Overlay District language states:

> "Those economic development activities to occur within the fence of the Calverton Naval Weapons Industrial Reserve Plant as contemplated by Public Law 103-c337, the Plan and its attending Generic Environmental Impact Statement shall not constitute development as defined by Section 57-0121 of the New York State Environmental Conservation Law and by this Article....Land uses which do not constitute development may be permitted provided that the use complies with all other provisions of this Chapter."

Development is defined in the town of Riverhead's Overlay District language as:

> ". . the performance of any buildings or mining operation, the making of any material changes in the use of or intensity of any structure or land...."

Thus, the Overlay District of the town would effectively render the Pine Barrens CPA designation inapplicable, as any "development" associated with the disposal of NWIRP Calverton would not be considered "development" as presently worded in the Pine Barrens Plan. However, the Reuse Plan has designated these lands as CPA, consistent with the Pine Barrens Plan.

With regard to the remainder of lands within the fence designated Compatible Growth Area (CGA) (2,500 acres or 1,013 hectares), the Riverhead Overlay District states:

> "A land use within the Compatible Growth Area that lawfully exists at the time of the effective date of this article or any amendment thereto may be continued in its present form except that the aforementioned standards shall apply to any change, structural alteration,

expansion, restoration or modification to said land use constituting development as defined herein."

Therefore, the industrial uses and aviation use of the Reuse Plan would be allowed as pre-existing uses within the CGA. Modifications to these facilities as part of the Reuse Plan would need to be done in compliance with the Overlay District development standards for the CGA.

In its Findings Statement for the implementation of the Pine Barrens Plan, the CPBJP&PC specifically addresses the future reuse of NWIRP Calverton. The language of the Findings Statement describes the status of NWIRP Calverton with respect to the Pine Barrens Plan:

> "Additionally, the Plan recognizes the need for both managed land development within the CGA in general and the congressionally mandated economic redevelopment of the Calverton Naval Weapons and (sic) Industrial Reserve Plant (the "Calverton Site") in particular....The SEQRA record identifies the level of economic development contemplated to occur within the CGA of the Calverton site and provides that proposed land uses which conform to prescribed Standards and Guidelines for Land Use and the Planned Development District ("PDD") ordinance adopted by the town, which is deemed to be consistent with the Plan by the Commission, will be considered environmentally appropriate developments which support regional economic growth as contemplated by the Act.
>
> "The Plan provides that the redevelopment activity in the CGA contemplated for the Calverton site is considered a public improvement and shall in no instance be considered a development of regional significance as defined by the Act, so as to warrant an automatic review by the Commission. Therefore, those development activities on the Calverton site which conform to both the development standards for the CGA as well as those zoning ordinances enacted by the town of Riverhead to implement the Plan, which are deemed to be consistent with the Plan by the Commission, shall be presumed not to require formal review or consideration of the Commission."

In summary, the Central Pine Barrens Comprehensive Land Use Plan as ratified and adopted by the towns of Brookhaven, Riverhead, and Southampton, defines those economic development activities to occur at NWIRP Calverton to be exempt from regulation under Article 57 of the New York State Environmental Conservation Law. This is because such activities are to be considered governmental actions which are provided a specific exemption. At such time as the Riverhead Town Board adopts the proposed Planned Development Zoning Use District for the property, the Pine Barrens Overlay District would immediately cease to regulate the property and the inconsistency in language between the Pine Barrens Overlay District and the Pine Barrens Comprehensive Plan would be resolved.

## 4.1.3 Calverton Enterprise Park/Raceway Alternative

As described in Subchapter 2.4, this alternative would retain many of the land uses of the Reuse Plan. Therefore, the land use effects for those uses would be essentially the same as the ones described for the Reuse Plan:

- Implementation would be done via a new zoning ordinance consistent with the plans of the town for its future land use; and

- Western lands of the site would be designated at Pine Barrens CPA; new development in the CPA would be done in a manner consistent with the Pine Barrens Plan.

The most significant difference between this alternative and the Reuse Plan is that an automobile raceway complex (approximately 808 acres or 324 hectares) would replace the aviation use. The land use components of the Enterprise Park/Raceway Alternative are displayed in Figure 2-4.

Because this alternative retains the industrial business park use and the existing 10,000-ft (3,048-m) runway for the raceway component, the amount of new building and paved area coverage would be less than if development were to occur on an undisturbed site. Using the procedure described in Subchapter 4.1.2, an estimate was made of the amount of new building/paved area associated with this alternative. Approximately 250 acres (101 hectares) would be required for completely new building and paved area construction. In total, the site would have an estimated 690 acres (280 hectares) or 24 percent devoted to development uses with impervious surfaces. Open space would comprise 2,233 acres (904 hectares) or about 76 percent of the site.

The automobile raceway would occupy much of the same terrain as the proposed airport in the Reuse Plan. The raceway would incorporate the existing runway as part of the race course. The conceptual layout of the race course would enter a portion of the industrial business park. There would be a number of industrial/mixed use buildings in close proximity to the race track as conceptually designed (e.g., a portion of Building 7 would be as close as 150 ft (46 m) away). New infill development that occurs as part of the industrial business park plan would include buildings that may abut the race course on its western edge. Although there is no explicit land use incompatibility between these uses, noise could affect the adjacent properties in the industrial core during race events. Based on the noise analysis (Subchapter 4.6.3), it is estimated that there would be significant but short-term noise levels experienced both within and outside the fence during the scheduled racing events. These estimated noise levels would exceed the town of Riverhead's maximum permissible levels for residential, commercial, and industrial land uses during race events.

## 4.1.4 Peconic Village Alternative

As described in Subchapter 2.5, this alternative includes some of the land use features of the others (i.e., industrial business park, hotel conference center, golf course(s), and open space). However, the site would be developed primarily as an age-restricted residential community with two primary housing areas, 688 units of assisted living, and 1,350 units of senior housing.

It is estimated that approximately 260 acres (105 hectares) of new building and paved areas would be expected with full implementation of this alternative. Combined with the existing development, it is estimated that a total of 690 acres (280 hectares) would be developed as buildings and/or paved areas. Open space (including wetlands and surface water features) would comprise 2,233 acres (904 hectares) or about 76 percent of the site.

It is estimated that about 2,201 residents (1.63 residents per senior housing unit [Leisure Village, 1996]) would reside in the senior housing; 688 residents (one per unit) would live in the assisted (congregate) care units. The total resident population would be 2,889. The golf recreational component (one public and one private course) would provide an added market incentive to the development.

As shown in Figure 2-5, 438 acres (177 hectares) have been designated as Pine Barrens Core Preservation Area (CPA). Any new development in the CPA or in the adjacent CGA would be consistent with the Pine Barrens Plan.

The residential uses proposed in this alternative are presently inconsistent with the existing Defense Institutional Zoning of the town. It is assumed that as with the Reuse Plan, the town would adopt a new PUD zone for implementation should it decide to develop the Peconic Village instead of the preferred Reuse Plan.

# 4.2 Socioeconomics

## 4.2.1 No Action Alternative

### Demography

Under the no action alternative, the Navy has vacated and closed NWIRP Calverton; there would be no permanent maintenance staff. Therefore, the no action alternative would have no demographic impacts.

### Employment and Income

Under the no action alternative, there would be no redevelopment at the site and hence no new income would be generated by businesses, institutions, and their employees. The prolonged vacancy of the site could, however, detract from the quality of local conditions if vandalism or visual blight were to escalate.

### Fiscal Impacts

There would be no redevelopment at the plant site and hence no new tax revenues would be collected from real property taxes, earned income taxes, sales taxes, or other relevant business taxes and fees. Local governments and the state would receive no revenues to off-set the loss of the former activity at NWIRP Calverton. Existing public infrastructure, facilities, and services would therefore have to be maintained from a reduced economic base.

### Housing

Under the no action alternative there would be no redevelopment at the site, no new workers, and, hence, no potential new demand created for housing in the region by reuse of NWIRP Calverton.

## 4.2.2 Calverton Enterprise Park Reuse Plan

### Demography

The demographic impacts of a proposed project can be both direct and indirect. There would be no direct demographic impacts from the Reuse Plan since the plan has no residential component. With respect to the potential for inducing new population growth, the proposed development should be assessed in the relative context of the Suffolk County labor force. The estimated increase of 2,978 jobs under the Reuse Plan represents less than 0.5 percent of the 1995 resident labor force. If all prospective employees were drawn from the pool of Suffolk County unemployed workers, it would

reduce the numbers of those who were unemployed in 1995 by 8.5 percent (Table 3.2-8) from 37,216 to 34,041. The developed jobs represent a small proportion of the Suffolk County labor force and those presently unemployed; this implies that the Reuse Plan would be unlikely to cause an in-migration of new workers to fill the positions. Consequently, there would be no significant impacts on demographics of the county.

**Employment and Income**

Direct Employment

Table 4.2-1 identifies the proposed job development by activity for five-year intervals over the 20-year development timeframe. All fiscal estimates are based on that 20-year timeframe and a Reuse Plan that is subject to change. Of the estimated 2,980 total jobs, 1,775 (or 60 percent) would be derived from the industrial business park. The estimated annual payroll associated with redevelopment activities (other than aviation) would be $74.8 million in year 20 (1995 dollars) (HR&A Inc., February, 1996). With the aviation component included, year 20 total payroll would increase to $75.1 million (rounded) (Table 4.2-2). Of that total, the industrial business park would account for $55.7 million (rounded) or 74 percent of the total estimated payroll. In addition to direct permanent jobs, there would be indirect employment resulting from the earnings from direct employment circulating in the regional economy, and from construction employment generated by the construction activity implicit in the Reuse Plan.

Indirect Employment

Spending by the households of the 2,980 employed workers would generate additional indirect economic activity. Estimates of indirect jobs and earnings were derived from an econometric input/output model known as RIMS II, developed by the US Bureau of Economic Analysis for the Nassau-Suffolk region. Categories of employment are allocated to their respective standard industrial codes in the detailed 471 industry input/output (I/O) matrix, which is then used to obtain the industry-specific direct-effect multipliers (Table 4.2-3). The total employment and earnings generated by the proposed development are calculated and indirect effects are obtained by deducting the direct employment and earnings. Estimated total direct and indirect employment would be 6,220 jobs, with indirect employment representing 52 percent or 3,240 jobs. Total earnings are projected to be $139.3 million, of which $64.4 million are generated indirectly. These numbers are in 1995 dollars but the volume is based on the full build-out scenario in year 2017. As development is phased in as part of the Reuse Plan, the indirect jobs and earnings would grow proportionately.

Tourist Spending

It is assumed that the estimated 2.8 million annual vistors to the theme-park will almost all be day-trippers or guests at the proposed on-site hotel and that their spending will be concentrated at the project site, generating the employment and earnings already noted, and the fiscal benefits noted

below. The primary reason for this asumption is the very limited number of hotel accommodations in eastern Suffolk County, and the seasonal nature of attractions that inhibit the development of greater numbers of rooms. This assumption is addressed in further detail in Section 4.2.3 discussing the Enterprise Park/Raceway Alternative, where the theme-park (which is common to both alternatives) and the raceway would attract visitors to the site.

Construction Employment

Table 4.2-4 presents the total capital expenditure estimate of $484 million for infrastructure (new roads, utilities, etc.) and the facilities to accommodate the new uses (e.g., theme park, business park, hotel/conference center). The Reuse Plan provided broad cost estimates only for the infrastructure (i.e., $20-30 million for on-site improvements [water, sewer, wastewater, etc.] and $23-33 million for off-site improvements [roads]). The high end of these ranges was used for this analysis. Costs of specific activity components were not provided in the Reuse Plan and had to be estimated. This task is relatively straightforward for the more common land use elements where square footage of proposed construction (e.g., for the industrial business park and service retail) or the number of rooms (i.e., for the hotel/conference center) is provided. However, estimates are open to wide variations for the more atypical land uses such as the theme park and commercial recreation components. The size, and hence cost, of these elements is essentially unknown; thus, numbers analyzed here represent rough order-of-magnitude costs.

Based on the estimated Reuse Plan construction costs, the number of direct construction jobs and other indirect jobs generated by this construction activity has been estimated. An estimate of the direct employment created by the construction activity was made first using the Urban Land Institute's (ULI) *Development Impact Assessment Handbook* (1994). The handbook provides a model based on national data showing that an estimated 4,865 direct construction jobs would be created based on the total construction value of $484 million. The construction jobs would be stretched over the 20-year development period, for an average of 243 jobs per year.

The total economic impact of the construction expenditures can be derived from the RIMS II model for the Nassau-Suffolk region. On the basis of the employment and earnings multipliers provided by the model, the direct and indirect employment and income effects of the temporary construction employment in the region was estimated. Construction employment projected by the RIMS II model is 10,650 person-year jobs, or an average of 533 jobs in each of the 20 years. Applying the ULI model results of 4,865 direct construction jobs to the RIMS II model results, it is estimated that 5,785 indirect jobs would be generated by construction activity of the Reuse Plan. Total direct and indirect earnings from construction are estimated at $307 million.

Table 4.2-1

Reuse Plan Phasing of Direct Employment

| Year | Theme Park Attractions | Aviation Aircraft Use | Commercial/ Recreation | Industrial Business Park | Hotel/ Conference Center | Service Retail | Private Golf Course | Total Jobs |
|---|---|---|---|---|---|---|---|---|
| 2002 | 257 | 0 | 14 | 275 | 135 | 56 | na | 737 |
| 2007 | 314 | 5 | 68 | 775 | 270 | 81 | na | 1,513 |
| 2012 | 428 | 7 | 68 | 1,275 | 360 | 144 | na | 2,282 |
| 2017 | 571 | 10 | 68 | 1,775 | 360 | 194 | na | 2,978 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. The Reuse Plan does not include a private golf course as in the Peconic Village Alternative and the public golf course employment is not disaggregated in the Reuse Plan (HR&A, 1996). It is assumed that about 15 jobs associated with this activity are included in the Commercial/Recreation Use.
na = not applicable
Source: HR&A, Inc. February, 1996.

Table 4.2-2

Reuse Plan Estimated Direct Employment and Earnings

| Land Use | Jobs Year 20 | Estimated Mean Annual Wage ($ 1995) | Estimated Total Annual Earnings $1,000s ($ 1995) |
|---|---|---|---|
| Theme Park Attractions | 571 | 15,594 | 8,904 |
| Aviation/Aircraft Use | 10 | 31,355 | 314 |
| Industrial Business Park | 1,775 | 31,355 | 55,654 |
| Commercial/Recreation | 68 | 16,534 | 1,124 |
| Hotel/Conference Center | 360 | 16,414 | 5,909 |
| Service Retail | 194 | 16,394 | 3,180 |
| Private Golf Course | - | - | - |
| Totals | 2,978 | - | 75,085 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change.
The Reuse Plan does not include a private golf course as in the Peconic Village Alternative and the public golf course employment is not disaggregated in the Reuse Plan (HR&A, 1996). It is assumed that about 15 jobs associated with this activity are included in the Commercial/Recreation Use.
na = not applicable.
Source: HR&A, Inc., February 1996.

Table 4.2-3
Reuse Plan Estimated Direct and Indirect Employment & Earnings

| Land Use | Industrial Code | Direct Jobs | Direct Earnings ($million) | Multipliers | | Total Jobs | Indirect Jobs | Total Earnings ($million) | Indirect Earnings ($million) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Jobs | Earnings | | | | |
| Theme Park Attr. | 76.0206 | 571 | 8.9 | 1.6283 | 1.7996 | 930 | 359 | 16.0 | 7.1 |
| Comm. Recreation | 76.0203 | 68 | 1.1 | 3.8742 | 2.1771 | 263 | 195 | 2.4 | 1.3 |
| Aviation/Aircraft Use | 65.0500 | 10 | 0.3 | 2.5681 | 2.0495 | 26 | 16 | 0.8 | 0.5 |
| Industrial Bus. Park | 62.0100 | 1,775 | 55.7 | 2.2986 | 1.8620 | 4,080 | 2,305 | 103.6 | 48.0 |
| Hotel/Conference | 72.0100 | 360 | 5.9 | 1.7898 | 1.9019 | 644 | 284 | 11.2 | 5.3 |
| Service Retail | 69.0200 | 194 | 3.2 | 1.4276 | 1.6810 | 277 | 83 | 5.3 | 2.2 |
| Private Golf Course | - | - | - | - | - | - | - | - | - |
| Totals | | 2,978 | 75.1 | | | 6,220 | 3,242 | 139.3 | 64.4 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$ for build-out in year 20. It is assumed that about 15 jobs associated with the private golf course are included in the commercial/recreation use.
Source: US Bureau of Economic Analysis, RIMS II model of Nassau-Suffolk Region, 1996.

Table 4.2-4
Reuse Plan Estimated Construction Costs

| Land Use | Costs ($millions - 1995$) |
|---|---|
| Theme Park (a) | 204 |
| Commercial/Recreation(b) | 75 |
| Aviation/Aircraft Use (c) | 45 |
| Industrial Business Park (d) | 44 |
| Hotel/Conference Center (e) | 28 |
| Service Retail (f) | 15 |
| Golf Course and Parks (g) | 10 |
| Infrastructure (h) | 30 |
| On-Site Improvements | |
| Off-Site Improvements | 33 |
| Total | 484 |

Notes: Estimates are approximate based on a long-term (20-year) development plan that is subject to change. (a)Assumes $100 per sq ft;
(b) Rough order-of magnitude estimate;
(c) TAMS estimate of aviation improvements;
(d) Assumes 50% of space will be new at $100 per sq ft;
(e) Assumes $70,000 cost per room;
(f) Assumes $125 per sq ft;
(g) Rough order-of magnitude estimate;
(h) Uses the upper estimate of the Reuse Plan.

## Fiscal Impacts

An analysis of the Reuse Plan shows substantial fiscal benefits being generated from the development of the site. This development would be newly entered onto the tax rolls for either property taxes or payments in lieu of taxes (PILOT). Reuse Plan employment would generate new earned-income and sales taxes, and the business activity would raise new revenues from business taxes and fees. Estimates of new revenues from the Reuse Plan are presented in Table 4.2-5. Table 4.2-5 shows estimated total property taxes of almost $3.8 million, sales taxes of $12.8 million, and income taxes of $2.6 million. The total annual estimated tax revenues at full build-out in year 20 are $19.2 million (rounded). These estimates are approximate because they assume full development of several vaguely defined land use elements; for example, the theme park and commercial recreation areas, which account for over two-thirds of all tax revenues derived from the Reuse Plan.

The applicable tax revenues would be distributed among the various state and local government entities. Property taxes would be allocated approximately 25 percent to the town of Riverhead, 56 percent to the Riverhead School District, 4.6 percent for the Town highway fund, 6.0 percent to Suffolk County, and 8.4 percent to Other (local fire districts, local lighting districts, etc.). Sales taxes are distributed 50 percent to the state and 50 percent to the county (with one quarter of one percent to the NYS Metropolitan Transportation Authority). Income taxes are collected 100 percent by the state.

Additional local revenues would flow from various licenses and fees; however, because these revenues are relatively small and difficult to predict, no estimate of increases in these revenues has been made. Additional tax revenues would be generated on a temporary basis during the construction of the site but are not estimated here because they would be spread over 20 years on an undetermined schedule.

## Housing

No housing development is proposed under the Reuse Plan. The Reuse Plan would develop 2,980 direct jobs and estimates the indirect employment generated in the larger region would be 3,240 jobs. Direct employment at the site would be expected to be held by residents within a reasonable commuting range that would easily include all of Suffolk County. In the context of the 1995 Suffolk County labor force of 685,999, this employment increment amounts to less than 0.5 percent, or about 8.5 percent of those unemployed. The 1990 Census records 481,317 housing units in the county, with 56,598 vacant. Vacant-for-rent units accounted for 8.3 percent of rental units in Suffolk and 10 percent in Riverhead. The model used to estimate indirect employment created by the project could locate these jobs anywhere in the larger Nassau-Suffolk region.

The scale of the proposed development in the context of the existing labor and housing markets, its proposed 20-year build-out period, the speculative nature of several of its components, and the uncertainty of exactly where any induced worker/residents may locate, all combine to make

quantification of induced new units speculative. In an unlikely situation where all the direct and indirect jobs were to be held by newly induced residents, they would generate a demand for about 3,864 new units (assuming the 1990 standard of 1.6 employed persons per household in Suffolk County). This maximum number would then be discounted by: existing residents taking those jobs; out-of county residents commuting to those jobs; and the occupation of presently vacant housing units by induced new residents. The remaining number is likely to be a small fraction of the maximum and they could locate anywhere in the county where affordable housing units could be found. Furthermore, estimated mean annual wages for the direct employment are not particularly high (refer to Table 4.2-2) and are unlikely to induce significant new construction. With respect to developable land, in Riverhead alone there are 20,000 acres of undeveloped residential land (HR&A 1995).

## 4.2.3 Calverton Enterprise Park/Raceway Alternative

### Demography

Similar to the Reuse Plan, the Enterprise Park/Raceway alternative would add no new residents to the site and is therefore not expected to induce significant new residential development in the region because it has no on-site residential component, and the estimated increase of 2,199 jobs represents less than 0.5 percent of the 1995 resident labor force and would be unlikely to cause significant in-migration of new workers.

### Employment and Income

Direct Employment

The employment and earnings estimated for this alternative are shown in Table 4.2-6. Direct employment at full build-out is estimated to be 2,199 jobs, with associated earnings of $53.6 million (rounded). In addition to the direct permanent jobs, indirect employment would be created from the earnings from direct employment circulating in the regional economy, and from temporary construction employment generated by construction activity.

Table 4.2-5

Reuse Plan Estimated Tax Revenues

| Activity | Property Tax | Sales Tax | Income Tax | Total | Percent |
|---|---|---|---|---|---|
| Theme Park Attractions | 1,687,500 | 9,562,500 | 311,640 | 11,561,640 | 60.1 |
| Commercial Recreation | 100,000 | 1,147,500 | 39,350 | 1,286,850 | 6.7 |
| Aviation/Aircraft Use | 359,000 | 50,700 | 10,974 | 420,674 | 2.2 |
| Industrial Business Park | 1,109,375 | 0 | 1,947,904 | 3,057,279 | 15.9 |
| Hotel/Conference Center | 280,000 | 310,250 | 206,815 | 797,065 | 4.1 |
| Commercial/Retail | 261,563 | 1,729,219 | 111,314 | 2,102,095 | 10.9 |
| Private Golf Course | na | na | na | na | na |
| Totals | 3,797,438 | 12,800,000 | 2,627,998 | 19,225,604 | 100 |

Notes: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Aviation component assumes effective property tax rate of $500 per acre; sales taxes are based on estimated usage by based and non-based aircraft and applicable NYS aviation gasoline and jet fuel taxes. Reuse Plan provides no estimate of sales taxes for the hotel/conference component; these are estimated here based on 50 percent occupancy at $50 daily rate and 8.5 percent sales tax.
Percent may not add exactly due to rounding.
Dollars in 1995$ at build-out in year 20.
na = not applicable.
Source: HR&A, February 1996.

Table 4.2-6

Enterprise Park/Raceway Alternative Estimated Direct Employment and Earnings

| Land Use | Direct Jobs | Mean Annual Wage ($) | Total Annual Earnings ($1,000s) |
|---|---|---|---|
| Automobile Raceway | 100 | 31,355 | 3,136 |
| Theme Park | 571 | 15,594 | 8,904 |
| Industrial Business Park | 1,100 | 31,355 | 34,503 |
| Hotel/Conference Center | 360 | 16,414 | 5,909 |
| Commercial Recreation | 68 | 16,534 | 1,124 |
| Private Golf Course | - | - | - |
| Totals | 2,199 | - | 53,576 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$ for build-out in year 20. na = not applicable.
Sources: HR&A, Inc., February, 1996; and Project Calverton, Inc., May, 1995.

## Indirect Employment

Spending by the households of the 2,199 employed workers would also generate additional indirect economic activity. Estimates of these indirect jobs and earnings have been derived from the RIMS II model for the Nassau-Suffolk region in a manner similar to the Reuse Plan analysis. Total direct and indirect employment is computed at 4,612 jobs; indirect employment represents 52.2 percent of the total at 2,413 jobs (Table 4.2-7). Total earnings are projected to be $102 million, of which $48.4 million are generated indirectly. These numbers are in 1995 dollars but the amount is based on the full build-out scenario in year 2017. As the proposed development is phased in, the indirect jobs and earnings would grow proportionately.

## Tourist Spending

Project Calverton, Inc. (May 1995) anticipates up to 500,000 visitors per year, each staying an average of 2.5 days in the vicinity and spending $200 per day, or a total of $250 million per year. These visitors are in turn projected to generate 3,300 indirect jobs. However, in this EIS, the numbers of indirect jobs assigned to this activity in the RIMS II model and applied here are more conservative for purposes of estimating employment and earnings.

An assessment of the potential economic effects derived from visitors associated with the raceway venue is difficult given the availability of supporting documentation and general reference material.

If the proposed raceway does, in fact, attract a maximum of 500,000 annual visitors, and if they were to spend $200 per day, $100 million, not $250 million, would be generated. However, the $200 per day estimate is based on a study that determined daily expenditure of delegates at national conferences. National conventions draw more overnight visitors than state or regional events, and those convention centers with more hotel facilities capture more than those with fewer rooms, (i.e. "gateway" cities offering over 20,000 hotel rooms capture more than 14 times the amounts of non-resident attendee spending than the high end of "regional" cities that offer less than 10,000 rooms). Further, the largest share of delegate spending at national events is at hotels: $112.80 or 62 percent of a daily total of $183.39 (Urban Land Institute [ULI] handbook *Sports, Convention, and Entertainment Facilities*, 1996 p.89).

It may be inappropriate to compare the potential economic effects of raceway visitors in eastern Suffolk County with visitors to national conferences. The entire eastern Suffolk region has only 2,000 year-round rooms and 5,845 seasonal rooms (including bed and breakfasts) (Gurvitz, May 1997). This would place the eastern Suffolk region at the low end of the "regional" category of visitor accommodations; there simply would not be sufficient rooms available in the area to capture more than a very small amount of "convention-type," or multiple-day, spending. Although the Reuse Plan and the Enterprise Park/Raceway Alternative both propose the construction of a 400-room hotel on the site, the problem would remain that an increment of 90,000 to 100,000 raceway fans to a major racing event could simply not be accommodated by the existing hotel rooms.

Thus, the implication is that the great majority of raceway visitors would be day trippers, as was assumed for the 2,800,000 annual visitors expected at the theme park/sports venue. Consequently, visitor spending in the region would not follow the patterns of national conference visitors, but would rather be concentrated on admission tickets to the facility and on spending for food and drink, etc., and would occur largely at the multiple recreational/dining opportunities proposed in both the Reuse Plan and Enterprise Park/Raceway Alternative. This on-site spending is already accounted for in the employment and earnings attributed to the raceway and theme park, and is also the basis of the indirect economic effects projected for the alternatives (Tables 4.2-3 and 4.2-7). The fiscal consequences of each alternative are projected using an assumption developed by the town of Riverhead Reuse Plan consultants (HR&A) that these visitors spend $45 per day (Tables 4.2-5 and 4.2-9). In addition, the $650,000 gate and parking taxes estimated by Project Calverton for the raceway venue were included.

Although it is possible that additional spending would occur from non-resident visitors to the raceway/theme park as a result of pre- and post-event touring in the region, the problem of insufficient hotel accommodations would also impact such touring, and many visitors would likely end up staying in hotels out of the immediate area, or closer to New York City. With the occupancy rate of existing hotels in eastern Suffolk County during the peak months of July and August between 80 to 90 percent (Lipper and Garofolo, *1996 End of the Year Lodging Report*, Island Metro Publications, 1997), the number of vacant rooms would only be approximately 860 at any given time, hardly the level of availability to generate significant economic benefits.

Clearly, in order to reap much significant benefit from potential tourist spending in the vicinity of the project, many thousands of additional hotel rooms would be needed. However, to further complicate the economic possibilities, the nature of the area is seasonal, and the historic market problem is that the year-round occupancy rate for existing hotels is only about 43 percent (Lipper and Garofolo, *1996 End of the Year Lodging Report,* Island Metro Publications, 1997), an insufficient level on which to capitalize new investment. The seasonal nature and regional draw of Eastern Long Island's primary attraction, its beaches, has fundamentally inhibited the development of additional hotels. Even the development of two major attractions in Riverhead over the past four years, the Splish Splash water amusement park (reporting 500,000 visitors per year) and the Tanger Shopping mall (reporting six million shoppers per year), has generated neither plans for nor actual construction of any new hotels, other than the hotel proposed as part of the Reuse Plan. Meanwhile, in western Suffolk County 11 hotels went into Chapter 11 and three closed over recent years (Lipper, June 1997). The present situation therefore cannot accommodate the proposed visitors, and there appears to be little expectation of new growth as long as the area retains its seasonal nature, and as long as seasonal attractions continue to be the primary market base.

For the purpose of this analysis, though, in order to provide an order-of-magnitude benchmark estimate of the potential for tourist spending generated by the theme park and raceway if some additional hotel accomodations were to be constructed, it has been assumed that 2,000 visitors at each of four major events will spend an additional two days in the area, spending $200 per day; thereby spending a total of $3,200,000. Assuming that $100,000 in spending creates one additional full time equivalent (FTE) job, this spending would generate 32 jobs directly and approximately as much again in indirect jobs, for a total of 64 FTE jobs. If all the spending was subject to sales tax, this would result in approximately $264,000 in sales taxes. However, the assumption of 2,000 new vistors finding accommodations in the region, without displacing others that would have come anyway, remains an optimistic one. For these reasons, this potential pre- and post-event tourist spending is not included with the employment, earnings, and fiscal analysis included here.

## Construction Employment

Capital expenditures for infrastructure elements (new roads, utilities, etc.) would most likely be similar to the Reuse Plan's estimate of $63 million ($30 million and $33 million for on-site and off-site improvements, respectively; Table 4.2-4). Total construction costs (including infrastructure) are identified in Table 4.2-8 and are estimated at $432 million, somewhat less than the Reuse Plan's $484 million estimate. Based on the estimated construction costs, it is possible to project the number of direct construction jobs and other indirect jobs generated by construction activity. Following the same ULI and RIMS II modeling methodology identified for the Reuse Plan, an estimated 4,344 construction jobs would be created with this alternative. An additional 5,165 jobs would be created in other industries, thus generating a total of 9,509 direct and indirect jobs from the construction. Spread over the development period, the direct construction employment would average 217 jobs in each of the 20 years. Total earnings associated with construction are estimated to be $140 million for direct and $134 million for indirect employment.

### Fiscal Impacts

As with the Reuse Plan, a fiscal analysis of the Enterprise Park/Raceway alternative identifies that substantial fiscal benefits would result from the redevelopment of NWIRP Calverton. Using similar assumptions as for the Reuse Plan, projections of real property, sales, and income taxes have been estimated and are presented in Table 4.2-9. Real property tax collections of $3.4 million are expected, including a $650,000 parking and gate tax for the raceway component (Project Calverton, Inc. 1995). Again, following assumptions made for the Reuse Plan in Table 4.2-5, these tax revenues would be distributed to the appropriate jurisdictions (town, school district, fire district, etc.). Sales taxes of $12.9 million are estimated to be collected for the New York State and Suffolk County; almost $1.9 million in income taxes would go to the state. Appropriate caution should be used with respect to these tax revenue estimates given that they assume full build-out by the year 2017 and that the alternative includes several speculative elements such as the theme park and the raceway, which together account for 78 percent of all revenues.

### Housing

Like the Reuse Plan, no residential housing component is proposed under the Enterprise Park/Raceway alternative; therefore, inducement of significant new housing is not anticipated because of the relatively small numbers of new employees in the context of the overall Suffolk County labor market. Sufficient existing resident labor is anticipated to fill the direct and indirect jobs, so that no new housing development is anticipated in the region attributable to this alternative.

## 4.2.4 Peconic Village Alternative

### Demography

This alternative is the only one that would introduce new residents to the site. The Peconic Village alternative would develop 688 units of assisted living and 1,350 units of senior housing. The total new resident population is estimated to be 2,889 and all these persons would be aged 55 or older. The estimated total number of employees at the site would be 1,923 (1,055 less than the Reuse Plan and 301 less than the Enterprise Park/Raceway alternative). The non-residential components of this alternative would not be expected to induce a significant number of new resident in-migration to the region.

Table 4.2-7

Enterprise Park/Raceway Alternative Estimated Direct and Indirect Employment & Earnings

| Land Use | Industrial Code | Direct Jobs | Direct Earnings ($million) | Multipliers | | Total Jobs | Indirect Jobs | Total Earnings ($million) | Indirect Earnings ($million) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Jobs | Earnings | | | | |
| Theme Park Attraction | 76.0206 | 571 | 8.9 | 1.6283 | 1.7996 | 930 | 359 | 16.0 | 7.1 |
| Commercial Recreation | 76.0203 | 68 | 1.1 | 3.8742 | 2.1771 | 263 | 195 | 2.4 | 1.3 |
| Automobile Raceway | 76.0204 | 100 | 3.1 | 2.4671 | 2.6035 | 247 | 147 | 8.2 | 5.0 |
| Industrial Business Park | 62.0100 | 1,100 | 34.5 | 2.2986 | 1.8620 | 2,528 | 1,428 | 64.2 | 29.7 |
| Hotel/Conference Center | 72.0100 | 360 | 5.9 | 1.7898 | 1.9019 | 644 | 284 | 11.2 | 5.3 |
| Private Golf Course | - | - | - | - | - | - | - | - | - |
| Totals | | 2,199 | 53.5 | | | 4,612 | 2,413 | 102.0 | 48.4 |

Note: Estimates are approximate based on a long-term (20-year) development plan that is subject to change. Dollars in 1995$ for build-out in year 20.
na = not applicable.
Source: US Bureau of Economic Analysis, RIMS II model of Nassau-Suffolk Region, 1996.

## Employment and Income

### Direct Employment

Employment and estimated earnings for the Peconic Village Alternative are shown in Table 4.2-10. Direct employment at full build-out in year 20 (1995 dollars) would be 1,923, with associated estimated earnings of $49.4 million. Employment of 25 full time equivalent jobs is estimated from the private and public golf courses. In addition to the direct permanent jobs, indirect employment would be created from the earnings from direct employment circulating in the regional economy, and from temporary construction employment generated by construction activity.

### Indirect Employment

Spending by the households of the 1,923 employed workers estimated under the Peconic Village Alternative will also generate additional secondary economic activity. Estimates of these secondary jobs and earnings have been derived from the RIMS II model for the Nassau-Suffolk region, as was done for the other alternatives. Table 4.2-11 shows that total direct and indirect employment at full build-out would be 3,809 jobs, with indirect employment representing 49.5 percent, or 1,886 jobs. Total earnings are projected to be $90.7 million, of which $41.3 million are generated indirectly. These numbers are in 1995 dollars but the volume is based on the full build-out scenario in year 2017. As the Peconic Village development is phased in, the indirect jobs and earnings would grow proportionately.

### Construction Employment

Capital expenditures for infrastructure elements (new roads, utilities, etc.) would likely to be less than that of the Reuse Plans because of the reduced numbers of visitors. The theme park attraction component is eliminated and would draw many more visitors than the two golf courses that are part of this alternative. Data from the town's reuse planning process estimated that the Peconic Village infrastructure improvements would be in the range of $27 million to $49 million. The higher figure has been used for this analysis. Total construction costs (including infrastructure) are identified in Table 4.2-12 and are estimated to be $406.8 million, less than the Reuse Plan estimate of $484 million and the Enterprise Park/Raceway alternative estimate of $432 million. Using methods described for the Reuse Plan, an estimated 4,089 direct construction jobs and 4,862 indirect jobs would be generated from the construction activities. Earnings for the construction phase are estimated at $132 million for direct employment and $113 million for indirect employment.

Table 4.2-8

Enterprise Park/Raceway Alternative Estimated Construction Costs

| Land Use | Construction Costs ($millions) |
|---|---|
| Automobile Raceway | 10 |
| Theme Park Attractions | 204 |
| Industrial Business Park | 42 |
| Hotel/Conference Center | 28 |
| Commercial Recreation | 75 |
| Golf Course | 10 |
| Infrastructure | 63 |
| Total | 432 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$.
Sources: Based on HR&A, Inc., February 1996; and Project Calverton, Inc., May 1995.

Table 4.2-9
Enterprise Park/Raceway Alternative Estimated Tax Revenues

| Activity | Property Tax | Sales Tax | Income Tax | Total | Percent |
|---|---|---|---|---|---|
| Theme Park Attractions | 1,687,500 | 9,562,500 | 311,640 | 11,561,640 | 63.5 |
| Commercial Recreation | 100,000 | 1,147,500 | 39,350 | 1,286,850 | 7.1 |
| Automobile Raceway (a) | 650,000 | 1,912,500 | 109,742 | 2,672,242 | 14.7 |
| Industrial Business Park(b) | 687,750 | 0 | 1,207,605 | 1,895,355 | 10.4 |
| Hotel/Conference Center(c) | 280,000 | 310,250 | 206,815 | 797,065 | 4.4 |
| Private Golf Course | - | - | - | - | |
| Totals | 3,405,250 | 12,932,750 | 1,875,152 | 18,213,152 | 100.0 |

Notes: (a) Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Raceway component assumes gate and parking taxes of $650,000 as per Project Calverton proposal, and assumes sales taxes based on 500,000 visitors each spending $45 (similar to theme park assumptions in Reuse Plan, Economics Worksheets (HR&A), February 1996); (b) no sales taxes are assumed for industrial activities as limited revenues would be generated; (c ) Reuse Plan provides no estimate of sales taxes for the hotel component, these are estimated here based on 50 percent occupancy at $50 daily rate and 8.5 percent sales tax.
Percent may not add exactly due to rounding.
na = not applicable.
Sources: Reuse Plan, Development Economics Worksheets, February 1996; and Project Calverton, Inc., Mid Atlantic Race Complex, May 1995.

Table 4.2-10

Peconic Village Estimated Direct Employment and Earnings

| Land Use | Jobs | Estimated Mean Annual Wage ($) | Estimated Total Annual Earnings ($1,000s) |
|---|---|---|---|
| Retirement Housing | 0 | 0 | 0 |
| Assisted Living | 275 | 24,336 | 6,692 |
| Industrial Business Park | 1,036 | 31,355 | 32,484 |
| Hotel/Conference Center | 360 | 16,414 | 5,909 |
| Retail | 227 | 16,394 | 3,716 |
| Golf Courses and Parks | 25 | 25,000 | 625 |
| Total | 1,923 | | 49,426 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$.
Source: HR&A, Inc., February, 1996.

## Fiscal Impacts

As with the other alternatives, the Peconic Village alternative would result in fiscal benefits from redevelopment of NWIRP Calverton even though the estimated number of direct jobs (1,923) is 35 percent fewer than the Reuse Plan. Peconic Village direct employment earnings are estimated to be $49.4 million, about $25.7 million less than the Reuse Plan.

Using the same assumptions for the fiscal impacts of the Reuse Plan, and pro-rating them to the development associated with the Peconic Village alternative, projections of real property, sales, and income taxes were made and are shown in Table 4.2-13. Estimates include annual real property tax collections of $8.3 million (rounded); sales taxes of $2.3 million (rounded); and income taxes of $1.7 million. Again, using the same revenue distribution assumptions as were applied to the Reuse Plan anticipated tax revenues, the total $12.3 million in new revenues would be distributed to the appropriate jurisdictions.

Table 4.2-11

Peconic Village Estimated Direct and Indirect Employment and Earnings

| Land Use | Industrial Code | Direct Jobs | Direct Earnings ($million) | Multipliers | | Total Jobs | Indirect Jobs | Total Earnings ($million) | Indirect Earnings ($million) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Jobs | Earnings | | | | |
| Assisted Housing | 77.0800 | 275 | 6.7 | 1.5207 | 1.742 | 418 | 143 | 11.7 | 5.0 |
| Industrial Business Park | 62.0100 | 1,036 | 32.5 | 2.2986 | 1.862 | 2,381 | 1,345 | 60.5 | 28.0 |
| Hotel/Conference Center | 72.0100 | 360 | 5.9 | 1.7898 | 1.9019 | 644 | 284 | 11.2 | 5.3 |
| Retail | 69.0200 | 227 | 3.7 | 1.4276 | 1.681 | 324 | 97 | 6.2 | 2.5 |
| Golf Courses/Parks | 76.0206 | 25 | 0.6 | 1.6283 | 1.7926 | 41 | 16 | 1.1 | 0.5 |
| Totals | | 1,923 | 49.4 | | | 3,808 | 1,885 | 90.7 | 41.3 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$.
Source: US Bureau of Economic Analysis, RIMS II model of Nassau-Suffolk Region, 1996.

Table 4.2-12

Peconic Village Alternative Estimated Construction Costs

| Land Use | Construction Costs ($millions) |
|---|---|
| Senior Housing | 200 |
| Assisted Housing | 77 |
| Industrial Business Park | 26 |
| Hotel/Conference Center | 28 |
| Retail | 17 |
| Golf Courses and Parks | 10 |
| Infrastructure | 49 |
| Totals | 407 |

Note: Estimates are approximate based on a long-term (20- year) development plan that is subject to change. Dollars in 1995$.
Source: Based on HR&A, Inc., February 1996.

Table 4.2-13
Peconic Village Estimated Tax Revenues

| Activity | Property Tax | Sales Tax | Income Tax | Total | Percent |
|---|---|---|---|---|---|
| Senior Housing | 5,130,000 | 0 | 0 | 5,130,000 | 41.7 |
| Assisted Housing | 1,960,800 | 0 | 234,234 | 2,195,034 | 17.8 |
| Industrial Business Park | 647,500 | 0 | 1,136,932 | 1,784,432 | 14.5 |
| Hotel/Conference Center | 280,000 | 310,250 | 206,815 | 797,065 | 6.5 |
| Retail | 306,000 | 1,963,500 | 130,059 | 2,399,559 | 19.5 |
| Golf Courses/Parks | 0 | 0 | 21,875 | 21,875 | 0.2 |
| Totals | 8,324,300 | 2,273,750 | 1,729,915 | 12,327,965 | 100 |

Notes: Estimates are approximate based on a long-term (20-year) development plan that is subject to change. The Reuse Plan provides no estimate of sales taxes for the hotel component, these are estimated here based on 50 percent occupancy at $50 daily rate and 8.5 percent sales tax.
Percents may not add due to rounding.
Source: HR&A, Development Economics Worksheets, February 1996.

## Housing

The Peconic Village Alternative would develop new on-site housing for seniors, aged 55 or older (688 units of congregate care and 1,350 units of senior retirement housing). This proposal would make a major contribution to meeting assisted housing and senior housing needs in the region. A large proportion of the population of Riverhead, and Southampton in particular, is aged 65 and over (20.5 percent and 19 percent, respectively). No specific profile of anticipated housing costs or anticipated resident population was provided as part of the reuse planning process for the Peconic Village alternative; consequently, an assessment of how well the housing element of the Peconic Village would meet specific housing needs in the region is not possible.

# 4.3 Community Services

## 4.3.1 No Action Alternative

Under the no action alternative there would be no redevelopment at NWIRP Calverton. Consequently, there would be no new demand for community services. These conditions represent the baseline condition assumed for the no action alternative.

## 4.3.2 Calverton Enterprise Park Reuse Plan

No new housing units would be developed under the Reuse Plan and no new residential development is likely to be induced; therefore, there would be little or no effect upon those services usually focused on serving the residential population, particularly schools and health services. Other community services which relate more directly to the types of development envisioned at NWIRP Calverton under the Reuse Plan, particularly the emergency services of police, fire, and ambulance, would likely see additional demands.

### Schools

As previously noted, no direct or indirect effects on school services and facilities are expected from the Reuse Plan since no new residents or their families are anticipated.

### Health Care

The location and availability of hospitals and hospital beds were presented in Subchapter 3.3.2. Hospital occupancy rates are 78 percent at Stony Brook, 70 percent at Brookhaven, and 70 percent at Central Suffolk Hospital in Riverhead. In general, demand projections for medical/surgical and pediatric unit hospitals are declining, based largely on trends of reduced stays in hospitals. Given that no new residential population is projected under the Reuse Plan, the only new demands would be to serve the employees and visitor populations at the site.

The new worker population at the redeveloped NWIRP Calverton would increase to an estimated 2,980 employees by year 2017. Until the late 1980s, the facility employed approximately 2,800 workers and, consequently, the proposed employment under the Reuse Plan is within the range historically served by the local health facilities. The major difference would be the numbers of visitors drawn to the theme park and commercial/recreation activities proposed in the Reuse Plan. As many as 2,500,00 annual visitors are projected for the theme park and 300,000 to the sports venue. While this is a sizeable increase, the kinds of health services likely to be required would focus more on emergency/trauma conditions and would be likely to represent only a small daily increase to demands on the health facilities that serve Suffolk County's estimated 1994 resident population of 1,349,300.

The present availability of hospital beds and the possible decline in demand indicate that the redevelopment of NWIRP Calverton, including its associated visitor population, would be unlikely to present any particular problems for the county's health care facilities. The phased Reuse Plan development over 20 years would also provide ample lead time for expansion of facilities to meet any specific health services that may be affected.

**Public Safety and Emergency Services**

The redevelopment of NWIRP Calverton as the Reuse Plan would potentially present an increase in service demands on the surrounding communities' safety and security services. Local fire and police agencies were contacted for their comments on the Reuse Plan and its effects on service capability.

The town of Riverhead has appointed the Comprehensive Economic Development Task Force to propose appropriate zoning for the site, and this task force proposed a planned unit development district requiring a Comprehensive Development Plan to be approved by the town. Review of such a plan would provide the town with substantial leverage to assure development that is compatible with the town's ability to provide appropriate public services.

As no new significant resident population would be expected from the Reuse Plan, service demands would relate to the new developments on site and the visitors drawn to them. The development of new structures would need to be constructed according to applicable fire and safety codes with sprinkler systems and, consequently, would present minimal fire risks. Existing structures at NWIRP Calverton are already so equipped. In addition, public safety would be reviewed for facilities drawing visitor populations of over 5,000, and the project would require permits issued by Suffolk County Health Department, Division of Emergency Services (NYS Sanitary Code, Part 18). Discussion with the Director of Regional EMS indicated that private facilities drawing large populations would be required to maintain their own emergency vehicles and facilities, proportionate to the population (Larkin, June 25, 1996).

The proposed Reuse Plan envisions components that would usually provide for internal safety and security operations (i.e. general aviation facility, industrial park, amusement park). As presented in Table 4.2-3, there would be substantial increments in local tax revenues with which to support increase in services by local police and fire agencies (i.e. $3.8 million per year in local real property taxes, and all tax revenues by over $20 million.)

If increased fire or police service demands were to occur, specific increments would be difficult to predict, particularly for off-site needs like traffic control or emergency managment since many of the project components are not completely defined at this time and are likely to evolve with changing market conditions and opportunities over the 20-year build out period. However, the long lead time proposed, together with the Comprehensive Development Plan requirement, would provide local authorities with substantial opportunities to prepare for any specific increases in service demand.

While acknowledging some difficulty with specific projections of the fiscal consequences for increased service demands, it can still be determined that the increase in fire services generated by the Reuse Plan, with a maximum of 2,980 employees in modern fire-proofed structures, would be modest. Presently, the Manorville Fire District that serves most of the site has a budget of $650,000 and serves a resident population of 12,000 and some 200 workers (T. Martz, Manorville Fire Commissioner, May 27, 1997). This would translate to approximately $53 per capita. At this rate, the increment in employment at the site would increase the budget by only $158,000.

Similarly, the town of Riverhead Police budget in FY 1995 was $5,584,255 serving a resident population of 23,566 and 9,962 workers (1995 data), equivalent to $166.55 per capita. At this rate, adding 2,980 employees would generate an increased police budget requirement of approximately $496,000. If all indirect employment generated by the project were accommodated in the town of Riverhead, this budget requirement would increase to $1.1 million. These levels are clearly within the expected increase in local property taxes, let alone other tax sources. Moreover, given that service increments are rarely at a fixed per capita rate, that efficiencies of scale are usual, and that fundamental uncertainties exist as to whether these services will largely be provided by the project operators or the location of indirect employment, these estimated increments serve as reasonable benchmarks against which to compare expected increases in local revenues.

**Parks and Recreation**

The Reuse Plan proposes the development of substantial designated open space, park, and recreational facilities, totaling 884 acres (358 hectares), not counting the theme park and commercial recreation areas. This designated total is comprised of:

- 438 acres (176 hectares) of Pine Barrens Core Preservation Area;
- 137 acres (55 hectares) of natural undisturbed lands west of McKay Lake;
- 183 acres (74 hectares) for an active community park south of the industrial core fronting Grumman Boulevard;
- 24 acres (10 hectares) of buffer area along Route 25 adjacent to the Calverton National Cemetery;
- 27 acres (11 hectares) of lands for a park within the industrial core;
- 27 acres (11 hectares) of natural area in the northeast to serve as an endangered species habitat; and
- 48 acres (19 hectares) of additional open space.

The proposed 18-hole public golf course of 166 acres (67 hectares) would provide additional open space recreational opportunities.

The theme park attractions would provide a major regional recreational facility on 434 acres (176 hectares) of the site and is expected to draw 2,500,000 visitors per season. In addition, a commercial recreational center in the northeastern portion of the site would provide a family entertainment center,

skating rink, and a sports stadium, with annual visitors estimated at 300,000. Successful development of these proposed elements would provide a major increment to existing recreational facilities in the region.

As a separate but related action, all of the buffer lands outside of the fence comprising 3,138 acres (1,241 hectares) would be transferred to the NYSDEC and Department of Veterans Affairs. NYSDEC-transferred lands have been legislatively mandated to remain in their natural state for conservation and recreational purposes (Subchapter 1.1).

## 4.3.3 Calverton Enterprise Park/Raceway Alternative

Many of the assumptions and much of the rationale for the Reuse Plan may also be applied to the Calverton Enterprise Park/Raceway Alternative. Like the Reuse Plan, there would be no new residents on site nor would induced population be likely. As described in Subchapter 2.4, the primary differences between this alternative and the Reuse Plan would be:

- A permanent automobile raceway replaces the aviation and aircraft use;
- Service retail (32 acres or 13 hectares) is eliminated; and
- The industrial business park is reduced in size from 282 acres (114 hectares) to 217 acres (88 hectares).

### Schools

No direct or indirect effects on school services and facilities would result from the Enterprise Park/Raceway Alternative because no new residents or their families are anticipated.

### Health Care

This alternative would create an estimated 2,200 jobs, or 26 percent fewer than the Reuse Plan (Subchapter 4.2.3). However, the raceway is estimated to increase the overall number of event visitors to the site by 500,000 per year, compared to the Reuse Plan. As with the Reuse Plan, and despite the increase in event visitors, the availability of health facilities and services described in Subchapter 3.3.2 would be adequate in coping with the temporary visitor population and workers at the site.

### Public Safety and Emergency Services

While the Enterprise Park/Raceway Alternative would shift some of the development from new employment to new visitors (compared to the Reuse Plan), only modest net shifts in demand for these services would result. As noted in the discussion of impacts for the Reuse Plan (Subchapter 4.3.2),

with the increases in the local tax base from private redevelopment of NWIRP Calverton there would be would be sufficient funds for increases in service capacity that may be required.

**Parks and Recreation**

The Calverton Enterprise Park/Raceway Alternative would provide an increment of 1,026 acres (416 hectares) of designated new open space, park, and recreation land to the community. The private recreational components of the theme park attractions and the commercial recreation area would remain the same but would be joined by the 808-acre (324-hectare) raceway. Buffer lands would be transferred to the NYSDEC for conservation and recreational activities; lands would also be transferred to the VA for expansion of the National Cemetery. In summary, the provision of new public parkland and recreational facilities would represent a major increase in the availability of such facilities in the region.

## 4.3.4 Peconic Village Alternative

The Peconic Village Alternative is the only one that would introduce a residential population to the NWIRP Calverton site. Like the other alternatives, because of the scale of the potential job development (an estimated 1,923 jobs at full build-out in 20 years), the affected community services would relate directly to the redeveloped site itself, rather than to serving a new induced population off site.

**Schools**

As with the Reuse Plan and the Enterprise Park/Raceway Alternative, no direct or indirect effects on school services and facilities would be expected from the Peconic Village Alternative. This is because the new residents would be seniors without school-aged children, and the anticipated new employment (estimated at 1,923 jobs) would not be of a scale likely to induce new residents to the area.

**Health Care**

The Peconic Village Alternative would generate an estimated new senior population of 2,889 on site, of which 688 would live in congregate care units and 2,197 would live in senior housing. Consequently, the anticipated impacts on health care services, particularly geriatric services, would be greater than for the Reuse Plan and the Enterprise Park/Raceway Alternative. No plans or cooperative arrangements are cited in the Reuse Plan as having been developed with area hospitals for this alternative. State licenses for the nursing facility would require careful review by the NYS State Department of Health, including concerns for the need and appropriate support services for any new facility. This review would provide assurance on the appropriateness of such a facility at the proposed site.

The senior housing would provide a newly concentrated demand for health services on area facilities. These seniors may be new to Suffolk County or may have been prior residents in the region served by the local health facilities - no proportion which is known and any assignment would be arbitrary at this time.

In the larger regional context, the total of 2,899 senior residents implies an increment of: 0.2 percent to the population of Suffolk County; 0.7 percent to Brookhaven; 6.4 percent to Southampton; and 12.6 percent to Riverhead. In the regional context, the Peconic Village Alternative would generate minimal impacts on regional facilities; however, impacts on Riverhead facilities could be more significant. If demand created by the 12.6 percent increment in Riverhead's population were to be concentrated entirely on Central Suffolk Hospital, a 12.6 percent increase in bed-occupancy would increase this facility's occupancy rate from 70 percent to 79 percent. Given the speculative nature and long-term development schedule of this alternative, it is appropriate only to note this potential for an expansion of health care demand in Riverhead. Local facilities would have adequate lead time to prepare for any necessary expansions in staff and facilities if this demand increase were to be realized.

### Public Safety and Emergency Services

The impact analysis of the Reuse Plan for safety and emergency services indicated no major problems in meeting the anticipated growth in demand created by the redevelopment of NWIRP Calverton. While the Peconic Village Alternative adds new residents to the site, projected employment is only 61 percent of the Reuse Plan employment (1,923 and 3,175 jobs, respectively). Moreover, with no theme park attractions and commercial recreation area present, a large number of seasonal visitors would not be visiting the site, compared to the other alternatives. The Peconic Village Alternative does, however, increase the retail component to 190,000 sq ft (17,763 sq m) compared to 100,000 sq ft (9,300 sq m) in the Reuse Plan. Overall, only modest net shifts in demand for public safety and emergency services are predicted and no adverse impacts are likely from the Peconic Village Alternative. In addition, the increase in the local tax base from private redevelopment of the site would be expected to support the increments in service capacity that may be required.

### Parks and Recreation

The Peconic Village Alternative would provide a substantial increment of parkland recreation facilities in the area - a total of 1,428 acres (578 hectares) of designated open space and parkland. In addition to the 168-acre (68-hectare) public golf course, common to both the Reuse Plan and the Peconic Village Alternative, there would be a 192-acre (78-hectares) private golf course. The Peconic Village Alternative would provide the greatest increment to public parkland of the three alternatives, but it would not provide the private recreational facilities of the theme park and commercial recreation areas proposed in the other alternatives.

# 4.4 Transportation

## 4.4.1 No Action Alternative

In order to predict future traffic volumes under the no action alternative, it is necessary to document historical traffic conditions and changes in the study area as well as future changes in traffic generators (residential and employment centers that will likely be constructed, expanded or closed by the build year of 2017). A growth rate of 2.5 percent per year was used to account for general background traffic growth in the area and was provided by NYSDOT (Thornwell, June 7, 1996). To document other developments that would be in operation by the build year, the towns of Riverhead and Brookhaven were consulted.

Several changes in traffic generation are expected to occur by 2017. The town of Riverhead provided a list of projects that will be operable and likely to have an impact within the study area. Trips generated by these projects were developed from trip generation rates published by the Institute of Transportation Engineers (ITE). The projects from Riverhead included the following:

- Office Complex at Edwards Avenue and Route 25 -This 74,800-sq-ft (6,949-sq-m) office development would generate additional trips along Edwards Avenue and Route 25, particularly during the weekday commuter peaks.

- Ice Rink & Recreational Facility - A 35,100-sq-ft (3,261-sq-m) recreational facility located along Edwards Avenue to the south of Route 25. Trips generated by this facility generally occur during the weekday pm peak and on the weekend.

- Omni Solid Waste Transfer Station - Located along Route 25 between Route 25A and Edwards Avenue, trips generated by this 17,500-sq-ft (1,626-sq-m) facility are limited to trucks during the weekdays.

- Tanger Outlet Expansion - The 450,000-sq-ft (41,805-sq-m) expansion of this commercial facility would generate additional trips along Route 25. It is located to the east of the Long Island Expressway on Route 25.

- Riverhead Center - A new 430,000-sq-ft (39,947-sq-m) commercial establishment is planned along Route 25 to the east of the Long Island Expressway. Some additional trips generated from this facility are expected along Route 25.

A review of development projects likely to be constructed and in operation in the town of Brookhaven by the build-out year was conducted. These projects within approximately two mi (3.2 km) of NWIRP Calverton were used to generate additional vehicle trips based on trip generation rates published by ITE. A summary of the developments considered included:

- 1,673 single family homes and condominiums;
- 1.6 million sq ft (148,640 sq m) of retail space;
- 69,000 sq ft (6,410 sq m) of commercial office space;
- 67,000 sq ft (6,224 sq m) of senior housing; and
- 157,000 sq ft (14,585 sq m) of industrial space.

Therefore, the future baseline traffic network uses existing (1996) volumes as a baseline, provides 2.5 percent per year background growth, and adds trips to account for the specific developments in Riverhead and Brookhaven. The street network is assumed to remain the same as there are presently no scheduled major changes by New York State, Suffolk County, or Riverhead.

## LOS Analysis

Capacity analysis and Level of Service (LOS) determinations for the future baseline condition were performed for the same intersections studied as for existing conditions (Chapter 3.4). The significant background traffic growth, along with traffic generated by the future developments in Riverhead and Brookhaven, would result in most of the signalized intersections operating at or above capacity. Extensive delays and congestion would result. Under the no action alternative, for all the am, pm, and weekend peak hours at Locations 1 through 5 (except Location 3 on the weekend), the LOS would be F, which represents unacceptable conditions to most drivers where operations have delays in excess of 60 seconds per vehicle. LOS for all the am, pm, and weekend peak hours at Locations 5, 6, and 7 would be A, characterized as operations with very low delays (i.e., less than five seconds per vehicle). The results of the overall LOS analysis for am, pm, and Saturday peak hours is provided below in Table 4.4-1, and the complete LOS analysis is provided in Appendix C.

Table 4.4-1
Summary of Overall LOS Analysis - Future Baseline Conditions

| Intersection | AM Peak Hour Overall LOS | PM Peak Hour Overall LOS | Weekend Peak Hour Overall LOS |
|---|---|---|---|
| Middle Country Road and Rocky Point Road (Location 1) | F | F | F |
| Middle Country Road and Edwards Road (Location 2) | F | F | F |
| Middle Country Road and North County Road (Location 3) | F | F | C |
| Middle Country Road and Manorville Road (Location 4) | F | F | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | A | A | A |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | A | A | A |
| Edwards Avenue and River Road (Location 7) | A | A | A |

**Public Transportation**

The existing bus lines in the study area are expected to accommodate future increases in ridership demands without appreciable degradation in operation.

## 4.4.2 Calverton Enterprise Park Reuse Plan

The proposed Reuse Plan development incorporates a variety of land uses including the industrial business park, theme park, limited industrial air park, commercial recreation area and a golf course.

**Assumptions**

Where applicable, trips generated by the Reuse Plan have been based on trip generation rates in *Trip Generation* (ITE, 1991). Otherwise, estimates of trip generation were developed using information from other sources as noted below. Table 4.4-2 provides a summary of proposed Reuse Plan land uses, trip generation rates, and generated vehicle trips for am, pm, and Saturday peak hours. Trips developed from ITE trip generation rates are identified by the ITE land use code.

The following additional assumptions have been used in the development of trips in Table 4.4-2:

- Within the Theme Park, trips generated by the "Attractions" land use component were developed based on trip generation characteristics for the Six Flags Great Adventure Theme Park in Jackson, New Jersey (McDonough & Rea Associates, 1996). The Great Adventure facility is a major theme park in the northeast and has operational characteristics similar to those expected for the theme park attractions with patrons arriving primarily by auto. The attractions would open at 10:00 am and operate until 11:00 pm during the summer peak season. Estimated vehicle trips were developed from the expected yearly attendance level at the theme attractions compared to actual yearly attendance recorded at Great Adventure. Annual attendance at Great Adventure was 4 million visitors in 1995 (McDonough & Rea, 1996), while expected maximum annual attendance for Reuse Plan attractions is 2.5 million visitors. A 4:2.5 proportion of attendance levels was applied to vehicle trips generated for Great Adventure to estimate theme park attraction vehicle trips. Vehicle trips generated for the theme park attractions were estimated to be 63 percent of the trips generated by Great Adventure during peak attendance levels.

Table 4.4-2

Generated Vehicle Trips
Calverton Enterprise Park Reuse Plan- Weekday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | | | Weekday Daily Trip Generation Rate | Generated Trips | | | | Weekday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | | PM | | | AM | | PM | | |
| | | | | Enter | Exit | Enter | Exit | | Enter | Exit | Enter | Exit | |
| Industrial Business Park | 770 | 887,500 | sq ft | 0.0014 | 0.0002 | 0.0003 | 0.0011 | 0.01437 | 1243 | 178 | 266 | 976 | 12,753 |
| Theme Park | | | | | | | | | | | | | |
| Attractions | | 434 | acres | - | - | - | - | - | 300 | 0 | 125 | 493 | 14,380 |
| Hotel/Conference | 310 | 400 | rooms | 0.402 | 0.268 | 0.410 | 0.350 | 8.70 | 161 | 107 | 164 | 140 | 3,480 |
| Service Retail | 814 | 100,000 | sq ft | 0.0016 | 0.0017 | 0.0014 | 0.0011 | 0.02033 | 160 | 170 | 140 | 110 | 2,033 |
| Aviation/Aircraft Use | 022 | 10 | employees | 1.316 | 1.034 | 1.680 | 1.820 | 21.45 | 13 | 10 | 17 | 18 | 215 |
| Commercial Recreation | | | | | | | | | | | | | |
| Stadium | | 8,000 | seats | - | - | - | - | - | 15 | 0 | 1,350 | 135 | 6,490 |
| Family Entertainment Center | | 137 | acres | - | - | - | - | - | 36 | 137 | 15 | 59 | 1,726 |
| Public Golf Course | 430 | 18 | holes | 2.673 | .574 | 1.747 | 1.613 | 37.59 | 48 | 10 | 31 | 29 | 677 |
| Open Space - Parkland | 413 | 884 | acres | 0.03 | 0.03 | 0.03 | 0.03 | 0.50 | 27 | 27 | 27 | 27 | 442 |
| Sewage Treatment Plant | | 18 | acres | - | - | - | - | - | 6 | 0 | 0 | 6 | 20 |
| Total Trips | | | | | | | | | 1,976 | 612 | 2,108 | 1,960 | 42,216 |

Table 4.4-2

Generated Vehicle Trips
Calverton Enterprise Park Reuse Plan - Saturday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | Saturday Daily Trip Generation Rate | Generated Trips | | Saturday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Saturday Peak Hour | | | Saturday Peak Hour | | |
| | | | | Enter | Exit | | Enter | Exit | |
| Industrial Business Park | 770 | 887,500 | sq ft | 0.0001 | 0.0001 | 0.00291 | 89 | 89 | 2,583 |
| Theme Park | | | | | | | | | |
| Attractions | | 434 | acres | - | - | - | 0 | 2,375 | 14,380 |
| Hotel/Conference | 310 | 400 | rooms | 0.435 | 0.435 | 10.5 | 174 | 174 | 4,200 |
| Service Retail | 814 | 100,000 | sq ft | - | - | 0.02102 | - | - | 2,102 |
| Aviation/Aircraft Use | | 10 | employees | 0.555 | 0.555 | 11.71 | 6 | 6 | 117 |
| Commercial Recreation | | | | | | | | | |
| Stadium | | 8,000 | seats | - | - | - | 1,350 | 135 | 6,680 |
| Family Entertainment Center | | 137 | acres | - | - | - | 0 | 285 | 1,725 |
| Public Golf Course | 430 | 18 | holes | 3.312 | 1.288 | 42.43 | 60 | 23 | 764 |
| Open Space - Parkland | | 884 | acres | 0.03 | 0.03 | 0.61 | 27 | 27 | 539 |
| Sewage Treatment Plant | | 18 | acres | - | - | - | 2 | 2 | 6 |
| Total Trips | | | | | | | 1,679 | 3,087 | 33,096 |

- To generate trips to the proposed 8,000 seat stadium of the Commercial Recreation area, a sold-out event was assumed with a two-hour arrival pattern. Research has indicated auto occupancy for this type of facility is 3.0 persons per automobile (Weant and Levinson, 1990). Therefore, a sold-out (8,000 spectator) event would generate approximately 2,700 vehicles during a two-hour arrival pattern, or 1,350 vehicles per hour. In addition to the arriving volume, a ten percent exiting volume was applied for drop-off vehicle trips. Adjacent to the stadium, a Family Entertainment Center would generate 300,000 visitors per year.

Vehicle trips generated by these visitors were developed by applying a similar vehicle trip/visitor proportion as used for the Theme Park attractions.

- Trips to the Service Retail uses are expected to be pass-by or shared trips generated by other uses within the site. They would not contribute a substantial amount of additional trips to the roadway network. Therefore, trip rates as provided by ITE were reduced by 50 percent.

- Aviation land use vehicle trips were developed from anticipated employment and the number of expected daily flights.

- Trips generated by the industrial business park, hotel/conference center, golf course, and open space (parkland) land uses were based on trip rates in Trip Generation (ITE, 1996).

Traffic generation characteristics for the proposed uses exhibit varying temporal distributions. In order to develop the appropriate analysis time periods, the following assumptions were made:

- Industrial Business Park - Trips generated by this 887,500 sq ft (82,449 sq m) development would occur primarily during typical weekday am and pm commuter peaks. To a lesser degree, trips would also be generated on Saturdays.

- Theme Park - A major portion of this district would consist of the "attractions" land use, with support facilities such as a hotel, campgrounds, and retail uses. Assumed hours of operation were between 10:00 am and 11:00 pm. The McDonough & Rea study for Great Adventure notes the greatest number of trips after the park closes, between 11:00 pm and 12:00 am.

- Aviation/Aircraft Use - The limited industrial air park would include several flights a day during the week and one each weekend day with generated vehicle trips occurring during am and pm commuter peaks.

- Commercial Recreation - Trips generated by these facilities would occur during pm commuter and Saturday peaks. The actual time period of greatest impact would be dependent upon the starting time of the scheduled event.

- Public Golf Course - Trips generated by the 18-hole golf course would occur during am and pm commuter peaks, and the Saturday peak.

The DEIS originally evaluated an aviation use with 242 flights per day. However, as described in Subchapter 2.3, the number of flights was substantially reduced to only several per day, with 10 employees. From trip generation rates in *Trip Generation* based on the number of employees, the revised aviation scenario would generate 215 daily vehicle trips and up to 35 peak hour trips as noted in Table 4.4-2. Compared to the original analysis in the DEIS, the change in the overall generated traffic is about four percent and two percent, respectively. This would represent a negligible volume change on the street network and would not affect the level of service analysis performed for the Reuse Plan.

Analysis periods considered for weekday conditions are typical am and pm commuter peak periods. However, land uses for the Calverton Enterprise Park Reuse Plan would result in various traffic generation peaks during Saturdays. The appropriate traffic analysis time period on Saturday was developed considering the expected temporal distribution of generated trips for proposed land uses.

To determine the appropriate peak, Table 4.4-3 was developed to provide expected hourly trip generation characteristics of each use. A scenario was modeled by assuming a stadium event would be scheduled for 8:00 pm on Saturday. As noted in the table, the most significant peak occurs between 11:00 pm and midnight, as the peak exiting volume from the theme park coincides with the peak stadium exiting volume.

Trips were distributed throughout the roadway network based on likely travel routes to the site. These trips account for new internal circulation routes, including a new entrance on River Road. Distribution of these trips on the local street network is provided in Figure 4.4-1 (Vehicle Trip Distribution). Predicted impacts would differ should the trip distribution be changed.

Capacity analyses were performed for the same intersections considered under existing and future baseline conditions. The Reuse Plan would generate considerable additional trips: 2,693 additional peak hour trips are generated during the weekday am peak hour, 4,161 additional trips during the weekday pm peak, and 4,882 additional trips during the Saturday peak (Table 4.4-2). These additional trips would create a dramatic increase in congestion levels. Results of capacity analyses are provided in Table 4.4-4. A comparison of this table with the capacity analysis indicates that the Reuse Plan would significantly impact all of the study area intersections during both weekday and weekend analysis conditions. Under the future baseline condition, the intersections would operate poorly. The Reuse Plan would worsen these conditions. The LOS for Location 5 would change from A under the future baseline condition to F with the Reuse Plan for all peak hours. The pm peak hour

LOS for Locations 6 and 7 are also adversely affected under the Reuse Plan; the LOS would change from A for both locations to E and F for Locations 6 and 7, respectively.

Several options were investigated to mitigate these potential impacts. Signal timing adjustments, new phasing plans and geometric improvements were considered. These mitigative measures are discussed in Chapter 5.

### Public Transportation

Minimal increases in existing public transit system use are expected under Reuse Plan. This is because the modal split for the generators would heavily favor the automobile. Therefore, the existing system would experience only minor impacts, and would continue to operate acceptably.

## 4.4.3 Calverton Enterprise Park/Raceway Alternative

The trips generated by the Enterprise Park/Raceway Alternative were developed using assumptions similar to the Reuse Plan. However, events at the automobile raceway introduce different trip generation characteristics. Attendance levels at the racetrack would vary considerably, depending on the event scheduled. Typically, local amateur events would be scheduled on weekends during the summer. According to Project Calverton Inc., approximately six major weekend events would be scheduled over the racing season; two of the major events, a Winston Cup Race and an Indy Car Race, would expect attendance of up to 60,000 people. Performing capacity analysis and programming roadway improvements for these unusual events was not considered reasonable and was therefore not performed. Rather, an analysis of a smaller, more typical, event was considered. For analysis purposes, a Sports Car Club of America Race with attendance of 21,000 was evaluated. The Sports Car Club of America event would likely generate peak hourly volumes of 2,300 vph (Dunn, January 18, 1996). Since these race events would occur only on weekends, racetrack-generated trips were applied to the Saturday peak. This alternative would generate 2,096 am peak vehicle trips and 3,707 pm peak vehicle trips during the week, and 7,460 vehicle trips during the Saturday peak (Table 4.4-5).

Analysis periods considered for weekday conditions were typical am and pm commuter peaks. Table 4.4-6 provides expected hourly trips generated by each land use. A weekend "worst case scenario" was considered, with an event at the stadium occurring at 1:00 pm. This condition would result in the peak inbound flows occurring simultaneously at the theme park, stadium, and racetrack. As noted in the table, peak flow would occur between 11:00 am and 12:00 pm. The peak volumes for the am and pm peak hours are 22 and 11 percent less, respectively than the peak volumes calculated for the Reuse Plan. The Saturday peak is more than 1.5 times greater than the Reuse Plan under the assumed major raceway event.

# Vehicle Trip Distribution

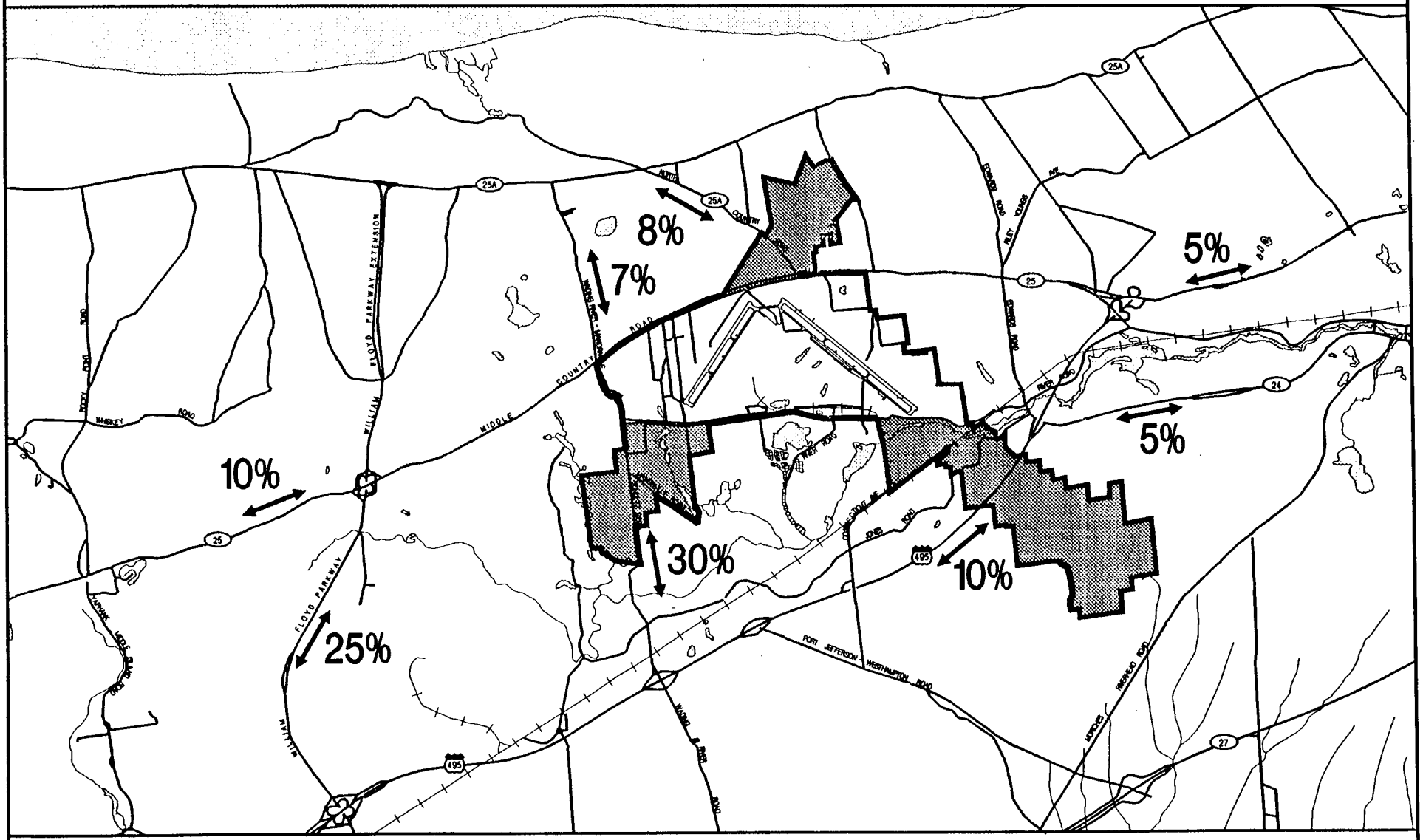



Figure 4.4-1

## Table 4.4-3

### Calverton Enterprise Park Reuse Plan - Weekend
### 24-Hour Vehicular Volumes

| Time Period | Industrial Business Park | | | Theme Park | | | | | | Aviation/Aircraft Use | | | Commercial Recreation | | | | | | Golf Course/Open Space/ Sewage Treatment Plant | | | Hourly Totals (No. Of Cars) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Attractions | | | Hotel/Conference/ Retail | | | | | | Stadium | | | Family Entertainment Center | | | | | | |
| | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-Way | |
| 12-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 100 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 110 |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 10 |
| 4-5 | 25 | 25 | 50 | 0 | 0 | 0 | 36 | 35 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 18 | 210 |
| 5-6 | 45 | 45 | 90 | 0 | 0 | 0 | 70 | 70 | 140 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 6 | 31 | 401 |
| 6-7 | 60 | 60 | 120 | 100 | 0 | 100 | 145 | 145 | 290 | 5 | 5 | 10 | 0 | 0 | 0 | 12 | 0 | 12 | 30 | 11 | 41 | 863 |
| 7-8 | 70 | 70 | 140 | 300 | 0 | 300 | 205 | 205 | 410 | 6 | 6 | 12 | 0 | 0 | 0 | 36 | 0 | 36 | 43 | 12 | 55 | 1363 |
| 8-9 | 80 | 80 | 160 | 475 | 0 | 475 | 215 | 215 | 430 | 4 | 4 | 8 | 0 | 0 | 0 | 57 | 0 | 57 | 57 | 14 | 71 | 1631 |
| 9-10 | 83 | 83 | 166 | 725 | 0 | 725 | 240 | 240 | 480 | 3 | 3 | 6 | 0 | 0 | 0 | 87 | 0 | 87 | 60 | 21 | 81 | 2025 |
| 10-11 | 85 | 85 | 170 | 1200 | 0 | 1200 | 250 | 254 | 504 | 3 | 3 | 6 | 5 | 5 | 10 | 144 | 0 | 144 | 70 | 31 | 101 | 2639 |
| 11-12 | 89 | 89 | 178 | 1200 | 0 | 1200 | 294 | 264 | 558 | 3 | 3 | 6 | 5 | 5 | 10 | 144 | 0 | 144 | 89 | 52 | 141 | 2795 |
| 12-1 | 85 | 85 | 170 | 938 | 25 | 963 | 270 | 265 | 535 | 3 | 3 | 6 | 5 | 5 | 10 | 113 | 3 | 116 | 57 | 52 | 109 | 2444 |
| 1-2 | 83 | 83 | 166 | 875 | 47 | 922 | 230 | 225 | 455 | 3 | 3 | 6 | 5 | 5 | 10 | 105 | 6 | 111 | 45 | 40 | 85 | 2210 |
| 2-3 | 81 | 81 | 162 | 625 | 74 | 699 | 210 | 200 | 410 | 3 | 3 | 6 | 15 | 5 | 20 | 75 | 9 | 84 | 35 | 41 | 76 | 1867 |
| 3-4 | 80 | 80 | 160 | 250 | 178 | 428 | 185 | 190 | 375 | 3 | 3 | 6 | 25 | 10 | 35 | 30 | 21 | 51 | 29 | 48 | 77 | 1531 |
| 4-5 | 77 | 77 | 154 | 188 | 244 | 432 | 162 | 165 | 327 | 4 | 4 | 8 | 50 | 50 | 100 | 23 | 29 | 52 | 29 | 52 | 81 | 1481 |
| 5-6 | 73 | 73 | 146 | 125 | 493 | 618 | 157 | 155 | 312 | 6 | 6 | 12 | 100 | 100 | 200 | 15 | 59 | 74 | 25 | 58 | 83 | 1757 |
| 6-7 | 67 | 67 | 134 | 89 | 469 | 558 | 151 | 152 | 303 | 4 | 4 | 8 | 1350 | 135 | 1485 | 11 | 56 | 67 | 23 | 78 | 101 | 2959 |
| 7-8 | 63 | 63 | 126 | 63 | 516 | 579 | 135 | 150 | 285 | 4 | 4 | 8 | 1350 | 135 | 1485 | 8 | 62 | 69 | 17 | 75 | 92 | 2929 |
| 8-9 | 55 | 55 | 110 | 31 | 738 | 769 | 100 | 115 | 215 | 2 | 2 | 4 | 50 | 35 | 85 | 4 | 89 | 92 | 6 | 41 | 47 | 1537 |
| 9-10 | 50 | 50 | 100 | 6 | 825 | 831 | 61 | 66 | 127 | 0 | 0 | 0 | 100 | 50 | 150 | 1 | 99 | 100 | 0 | 21 | 21 | 1456 |
| 10-11 | 40 | 40 | 80 | 0 | 1206 | 1206 | 35 | 40 | 75 | 0 | 0 | 0 | 135 | 1350 | 1485 | 0 | 145 | 145 | 0 | 7 | 7 | 3073 |
| 11-12 | 0 | 0 | 0 | 0 | 2375 | 2375 | 0 | 0 | 0 | 0 | 0 | 0 | 135 | 1350 | 1485 | 0 | 285 | 285 | 0 | 0 | 0 | 4145 |
| Totals | | | 2582 | | | 14380 | | | 6302 | | | 117 | | | 6680 | | | 1726 | | | 1323 | |

Table 4.4-4

Summary of Overall LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | AM Peak Hour Overall LOS | PM Peak Hour Overall LOS | Weekend Peak Hour Overall LOS |
|---|---|---|---|
| Middle Country Road and Rocky Point Road (Location 1) | F | F | F |
| Middle Country Road and Edwards Road (Location 2) | F | F | F |
| Middle Country Road and North County Road (Location 3) | F | F | C |
| Middle Country Road and Manorville Road (Location 4) | F | F | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | F | F | F |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | A | E | F |
| Edwards Avenue and River Road (Location 7) | A | F | C |

Capacity analyses were performed for the same intersections considered for the Reuse Plan. This alternative generates fewer weekday vehicle trips than the Reuse Plan, due to the reduced industrial business park component of the site. Hence, weekday impacts to the study area intersection are somewhat less than the Reuse Plan. However, the racetrack component of this alternative, and the scheduled weekend events, results in a substantially greater impact on the Saturday peak than the Reuse Plan. In terms of overall LOS, this alternative, like the Reuse Plan, would cause F-level conditions at Locations 1 through 5 for the am, pm, and weekend peak hours. Generally, overall LOS at Locations 6 and 7 are somewhat improved compared to the Reuse Plan, due to fewer weekday vehicle trips because of the reduced Industrial Business Park component of the site. However, the racetrack component of the this alternative and associated weekend events results in a substantially greater impact on the Saturday peak than the Reuse Plan. The overall results of the LOS analysis is provided in Table 4.4-7 and the complete analysis is contained in Appendix C. Capacity analyses were performed for the same intersections considered for the Reuse Plan. This alternative generates considerably fewer vehicle trips than the Reuse Plan. Hence, impacts to the study area intersections are likewise diminished. The overall results of the LOS analysis is provided in Table 4.4-7, with the complete results provided in Appendix C.

This alternative generates fewer trips than the preferred action and weekday operation is improved over the Reuse Plan; however, overall poor traffic operation is expected to continue under this alternative, similar to the future baseline condition. Operation at the study area intersections remains

poor, with most lane group movements operating at LOS "F,"even though the v/c ratios are marginally improved in comparison to the Reuse Plan. Weekend conditions exhibit more constrained operations as compared with the Reuse Plan. Extensive delays and congestion can be expected as racetrack-, stadium-, and theme park-generated traffic are simultaneously destined for the site.

### 4.4.4 Peconic Village Alternative

Trips generated by the residential component of the Peconic Village Alternative were developed using ITE Trip Generation rates. It was assumed the private golf course would not generate additional trips on the surrounding roadway network as it would primarily serve residents.

Approximately 127,000 sq ft (11,798 sq m) of service retail would be developed primarily to serve residents and, as such, would not generate new trips on the surrounding roadway network. Adjacent to the Route 25/Route 25A intersection, approximately 63,000 sq ft (5,853 sq m) of commercial development would generate a mix of shared use and pass-by trips, as well as stand-alone trips to the adjacent roadway network. Hence, trip rates as provided by ITE were reduced by 50 percent to account for these new trips.

Using these methodologies and assumptions, data were developed to provide weekday- and Saturday-generated vehicle trips, reflected in Table 4.4-8. Comparing this table with Table 4.4-2, the Peconic Village Alternative would generate markedly fewer vehicles than the Reuse Plan. This alternative would generate 1,885 vehicles during the am weekday peak and 2,038 vehicles during the pm peak, about 30 percent and 51 percent less than the Reuse Plan, respectively. The Saturday peak hour volume of 1,515 vehicles would be about 69 percent less than the Reuse Plan.

Capacity analyses were performed for the same intersections considered for the Reuse Plan. This alternative generates considerably fewer vehicle trips than the Reuse Plan. Hence, impacts to the study area intersections are diminished. At Locations 1, 2, 3, and 4 overall LOS levels in the Peconic Village Alternative would be most similar to the future baseline condition without the project. Locations 6 and 7 would also be similar to the future baseline condition where overall LOS as A for am, pm and weekend peak hours. At Location 5 under the Peconic Village Alternative, overall LOS would be more like the Reuse Plan for the am and pm weekday peak hours; however, on the weekend, the Peconic Village would be much better than the Reuse Plan - LOS would be at B, characterized by good traffic progression and short cycle lengths. The overall results of the LOS analysis is provided in Table 4.4-9, with the complete analysis provided in Appendix C.

Table 4.4-5

Generated Vehicle Trips
Calverton Enterprise Park/Raceway Alternative - Weekday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | | | Weekday Daily Trip Generation Rate | Generated Trips | | | | Weekday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | | PM | | | AM | | PM | | |
| | | | | Enter | Exit | Enter | Exit | | Enter | Exit | Enter | Exit | |
| Industrial Business Park | 770 | 682,900 | sq ft | 0.0014 | 0.0002 | 0.0003 | 0.0011 | 0.01437 | 956 | 137 | 205 | 751 | 9,813 |
| Theme Park | | | | | | | | | | | | | |
| Attractions | | 434 | acres | - | - | - | - | - | 300 | 0 | 125 | 493 | 14,380 |
| Hotel/Conference | 310 | 400 | rooms | 0.402 | 0.268 | 0.410 | 0.350 | 8.7 | 161 | 107 | 164 | 140 | 3,480 |
| Automobile Raceway | | 21,000 | seats | | | | | | | | | | |
| Manufacturing/Warehouse | 150 | 69,000 | sq ft | 0.0004 | 0.0002 | 0.0003 | 0.0005 | 0.00488 | 28 | 14 | 21 | 35 | 337 |
| Office Space | 710 | 73,400 | sq ft | 0.0018 | 0.0002 | 0.0004 | 0.0017 | 0.01539 | 132 | 15 | 29 | 125 | 1,130 |
| Commercial Recreation | | | | | | | | | | | | | |
| Stadium | - | 8,000 | seats | - | - | - | - | - | 15 | 0 | 1,350 | 135 | 6,490 |
| Family Entertainment Center | - | 137 | acres | - | - | - | - | - | 36 | 137 | 15 | 59 | 1,726 |
| Public Golf Course | - | 18 | holes | 2.673 | .574 | 1.747 | 1.613 | 37.59 | 48 | 10 | 31 | 29 | 677 |
| Open Space - Parkland | - | 999 | acres | 0.03 | 0.03 | 0.03 | 0.03 | 0.50 | 30 | 30 | 30 | 30 | 500 |
| Sewage Treatment Plant | - | 18 | acres | - | - | - | - | - | 6 | 0 | 0 | 6 | 20 |
| Total Trips | | | | | | | | | 1,676 | 420 | 1,940 | 1,767 | 38,553 |

Table 4.4-5

Generated Vehicle Trips
Calverton Enterprise Park/Raceway Alternative - Saturday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | Saturday Daily Trip Generation Rate | Generated Trips | | Saturday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Saturday Peak Hour | | | Saturday Peak Hour | | |
| | | | | Enter | Exit | | Enter | Exit | |
| Industrial Business Park | 770 | 682,900 | sq ft | 0.0001 | 0.0001 | 0.00291 | 68 | 68 | 1,987 |
| Theme Park | | | | | | | | | |
| Attractions | | 434 | acres | - | - | - | 0 | 2,375 | 14,380 |
| Hotel/Conference | 310 | 400 | rooms | 0.435 | 0.435 | 10.50 | 174 | 174 | 4,200 |
| Automobile Raceway | | 21,000 | seats | - | - | - | 2,300 | 230 | 14,480 |
| Manufacturing/Warehouse | 150 | 69,000 | sq ft | 0.0004 | 0.0004 | 0.00488 | 28 | 28 | 337 |
| Office Space | 710 | 73,400 | sq ft | 0.0011 | 0.0011 | 0.01539 | 81 | 81 | 1,130 |
| Commercial Recreation | | | | | | | | | |
| Stadium | | 8,000 | seats | - | - | - | 1,350 | 135 | 6,880 |
| Family Entertainment Center | | 137 | acres | - | - | - | 0 | 285 | 1,725 |
| Public Golf Course | 430 | 18 | holes | 3.312 | 1.288 | 42.43 | 60 | 23 | 764 |
| Open Space - Parkland | | 999 | acres | 0.03 | 0.03 | 0.61 | 30 | 30 | 609 |
| Sewage Treatment Plant | | 18 | acres | - | - | - | 2 | 2 | 6 |
| Total Trips | | | | | | | 4,061 | 3,399 | 46,498 |

Table 4.4-6

Calverton Enterprise Park/Raceway Alternative - Weekend
24-hour Vehicular Volumes

| Time Period | Industrial Business Park | | | Theme Park | | | | | | Automobile Raceway | | | | | | Commercial Recreation | | | | | | Golf Course/Open Space | | | Hourly Totals (No. Of Cars) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Attractions | | | Hotel/Conference | | | Raceway | | | Man./Warehouse/ Office | | | Stadium | | | Family Entertainment Center | | | Sewage Treatment Plant | | | |
| | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-way | Enter | Exit | 2-Way | |
| 12-1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 1-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2-3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3-4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 5 |
| 4-5 | 10 | 10 | 20 | 0 | 0 | 0 | 25 | 25 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 18 | 88 |
| 5-6 | 15 | 15 | 30 | 0 | 0 | 0 | 50 | 50 | 100 | 10 | 0 | 10 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 6 | 31 | 181 |
| 6-7 | 25 | 25 | 50 | 100 | 0 | 100 | 95 | 95 | 190 | 50 | 0 | 50 | 90 | 7 | 97 | 0 | 0 | 0 | 12 | 0 | 12 | 35 | 11 | 46 | 642 |
| 7-8 | 43 | 43 | 86 | 300 | 0 | 300 | 130 | 130 | 260 | 80 | 0 | 80 | 160 | 29 | 189 | 0 | 0 | 0 | 36 | 0 | 36 | 49 | 12 | 61 | 1201 |
| 8-9 | 47 | 47 | 94 | 475 | 0 | 475 | 135 | 135 | 270 | 200 | 10 | 210 | 109 | 17 | 126 | 0 | 0 | 0 | 57 | 0 | 57 | 63 | 19 | 82 | 1440 |
| 9-10 | 51 | 51 | 102 | 725 | 0 | 725 | 155 | 155 | 310 | 950 | 100 | 1050 | 32 | 13 | 45 | 5 | 5 | 10 | 87 | 0 | 87 | 66 | 24 | 90 | 2464 |
| 10-11 | 54 | 54 | 108 | 1200 | 0 | 1200 | 165 | 165 | 330 | 2000 | 150 | 2150 | 20 | 13 | 33 | 50 | 10 | 60 | 144 | 0 | 144 | 72 | 31 | 103 | 4161 |
| 11-12 | 55 | 55 | 110 | 1200 | 0 | 1200 | 174 | 174 | 348 | 2300 | 230 | 2530 | 67 | 67 | 134 | 150 | 20 | 170 | 144 | 0 | 144 | 92 | 55 | 147 | 4917 |
| 12-1 | 54 | 54 | 108 | 938 | 25 | 963 | 165 | 165 | 330 | 1000 | 100 | 1100 | 67 | 67 | 134 | 1350 | 135 | 1485 | 113 | 3 | 116 | 59 | 47 | 106 | 4476 |
| 1-2 | 53 | 53 | 106 | 875 | 47 | 922 | 160 | 160 | 320 | 100 | 100 | 200 | 20 | 13 | 33 | 1350 | 135 | 1485 | 105 | 6 | 111 | 47 | 40 | 87 | 3297 |
| 2-3 | 52 | 52 | 104 | 625 | 74 | 699 | 140 | 140 | 280 | 50 | 200 | 250 | 20 | 13 | 33 | 150 | 20 | 170 | 75 | 9 | 84 | 37 | 43 | 80 | 1733 |
| 3-4 | 51 | 51 | 102 | 250 | 178 | 428 | 130 | 130 | 260 | 230 | 2000 | 2230 | 20 | 43 | 63 | 95 | 10 | 105 | 30 | 21 | 51 | 31 | 45 | 76 | 3378 |
| 4-5 | 50 | 50 | 100 | 188 | 244 | 432 | 110 | 110 | 220 | 200 | 2000 | 2200 | 30 | 75 | 105 | 135 | 1350 | 1485 | 23 | 29 | 52 | 28 | 62 | 90 | 4789 |
| 5-6 | 45 | 45 | 90 | 125 | 493 | 618 | 105 | 105 | 210 | 50 | 1500 | 1550 | 50 | 160 | 210 | 135 | 1350 | 1485 | 15 | 59 | 74 | 25 | 68 | 93 | 4540 |
| 6-7 | 43 | 43 | 86 | 89 | 469 | 558 | 100 | 100 | 200 | 20 | 450 | 470 | 24 | 85 | 109 | 10 | 150 | 160 | 11 | 56 | 67 | 20 | 70 | 90 | 1849 |
| 7-8 | 41 | 41 | 82 | 63 | 516 | 579 | 100 | 100 | 200 | 0 | 250 | 250 | 14 | 71 | 85 | 5 | 105 | 110 | 8 | 62 | 69 | 17 | 71 | 88 | 1548 |
| 8-9 | 40 | 40 | 80 | 31 | 738 | 769 | 75 | 75 | 150 | 0 | 125 | 125 | 6 | 45 | 51 | 5 | 50 | 55 | 4 | 89 | 92 | 8 | 51 | 59 | 1432 |
| 9-10 | 37 | 37 | 74 | 6 | 825 | 831 | 51 | 51 | 102 | 0 | 25 | 25 | 0 | 15 | 15 | 0 | 0 | 0 | 1 | 99 | 100 | 0 | 30 | 30 | 1192 |
| 10-11 | 22 | 22 | 44 | 0 | 1206 | 1206 | 35 | 35 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 | 145 | 0 | 11 | 11 | 1476 |
| 11-12 | 15 | 15 | 30 | 0 | 2375 | 2375 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 285 | 285 | 0 | 0 | 0 | 2690 |
| Totals | | | 1606 | | | 14380 | | | 4200 | | | 14480 | | | 1467 | | | 6880 | | | 1726 | | | 1393 | |

Table 4.4-7

Summary of Overall LOS Analysis - Calverton Enterprise Park/Raceway Alternative

| Intersection | AM Peak Hour Overall LOS | PM Peak Hour Overall LOS | Weekend Peak Hour Overall LOS |
|---|---|---|---|
| Middle Country Road and Rocky Point Road (Location 1) | F | F | F |
| Middle Country Road and Edwards Road (Location 2) | F | F | F |
| Middle Country Road and North County Road (Location 3) | F | F | C |
| Middle Country Road and Manorville Road (Location 4) | F | F | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | F | F | F |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | A | C | F |
| Edwards Avenue and River Road (Location 7) | A | C | A |

Although this alternative generates fewer trips than the Reuse Plan, operation at the study area intersections remains poor with most lane group movements operating at LOS "F", although the v/c ratios are marginally improved in comparison to the Reuse Plan. Poor operation is expected to continue under this plan, as well as under the future baseline conditions.

Despite the fact that this alternative generates fewer trips than the preferred action and the v/c ratios are improved in comparison to the Reuse Plan, operation at the study area intersections remains poor, similar to the future baseline condition, with most lane group movements operating at LOS "F." In general, operation under this alternative would be slightly improved over the Reuse Plan.

Table 4.4-8

Generated Vehicle Trips
Peconic Village Alternative - Weekday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | | | Weekday Daily Trip Generation Rate | Generated Trips | | | | Weekday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | | PM | | | AM | | PM | | |
| | | | | Enter | Exit | Enter | Exit | | Enter | Exit | Enter | Exit | |
| Industrial Business Park | 770 | 582,000 | sq ft | 0.0014 | 0.0002 | 0.0003 | 0.0011 | 0.01437 | 815 | 116 | 175 | 640 | 8,363 |
| Commercial/Retail | | | | | | | | | | | | | |
| Center of Site | | 127,000 | sq ft | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 |
| Route 25 & Route 25A | 814 | 63,000 | sq ft | 0.002 | 0.002 | 0.002 | 0.002 | 0.020 | 126 | 126 | 126 | 126 | 1,260 |
| Hotel/Conference | 310 | 400 | rooms | 0.402 | 0.268 | 0.410 | 0.350 | 8.7 | 161 | 107 | 164 | 140 | 3,480 |
| Residential (2,889 residents) | | | | | | | | | | | | | |
| Assisted Living | 252 | 688 | units | 0.037 | 0.023 | 0.095 | 0.075 | 2.15 | 25 | 16 | 65 | 52 | 1,479 |
| Retirement Village | 250 | 1,350 | units | 0.077 | 0.094 | 0.157 | 0.123 | 2.76 | 104 | 127 | 212 | 166 | 3,726 |
| Public Golf Course | 430 | 18 | holes | 2.673 | .574 | 1.747 | 1.613 | 37.59 | 48 | 10 | 31 | 29 | 677 |
| Private Golf Course | - | 18 | holes | - | - | - | - | - | 0 | 0 | 0 | 0 | 0 |
| Civic Facilities | - | 55 | acres | - | - | - | - | - | 10 | 2 | 10 | 10 | 200 |
| Open Space - Parkland | - | 1,428 | acres | 0.03 | 0.03 | 0.03 | 0.03 | 0.5 | 43 | 43 | 43 | 43 | 714 |
| Sewage Treatment Plant | - | 18 | acres | - | - | - | - | - | 6 | 0 | 0 | 6 | 20 |
| Total Trips | | | | | | | | | 1,338 | 547 | 826 | 1,212 | 19,919 |

Table 4.4-8

Generated Vehicle Trips
Peconic Village Alternative - Saturday

| Land Use | ITE Code | Size | Units | Trip Generation Rate | | Saturday Daily Trip Generation Rate | Generated Trips | | Saturday Daily Trips |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Saturday Peak Hour | | | Saturday Peak Hour | | |
| | | | | Enter | Exit | | Enter | Exit | |
| Industrial Business Park | 770 | 582,000 | sq ft | 0.0001 | 0.0001 | 0.00291 | 58 | 58 | 1,694 |
| Commercial/Retail | | | | | | | | | |
| Center of Site | | 127,000 | sq ft | - | - | - | 0 | 0 | 0 |
| Route 25 & Route 25A | 814 | 63,000 | sq ft | 0.003 | 0.003 | 0.021 | 189 | 189 | 1,323 |
| Hotel/Conference | 310 | 400 | rooms | 0.435 | 0.435 | 10.50 | 174 | 174 | 4,200 |
| Residential | | | | | | | | | |
| Assisted Living | 252 | 688 | units | 0.085 | 0.085 | 2.15 | 58 | 58 | 1,479 |
| Retirement Village | 250 | 1,350 | units | 0.135 | 0.135 | 2.76 | 182 | 182 | 3,726 |
| Public Golf Course | 430 | 18 | holes | 3.312 | 1.288 | 42.43 | 60 | 23 | 764 |
| Private Golf Course | - | 18 | holes | - | - | - | 0 | 0 | 0 |
| Civic Facilities | - | 55 | acres | - | - | - | 10 | 10 | 150 |
| Open Space - Parkland | - | 1,428 | acres | 0.03 | 0.03 | 0.61 | 43 | 43 | 871 |
| Sewage Treatment Plant | - | 18 | acres | - | - | - | 2 | 2 | 6 |
| Total Trips | | | | | | | 776 | 739 | 14,213 |

Table 4.4-9

Summary of Overall LOS Analysis - Peconic Village Alternative

| Intersection | AM Peak Hour Overall LOS | PM Peak Hour Overall LOS | Weekend Peak Hour Overall LOS |
|---|---|---|---|
| Middle Country Road and Rocky Point Road (Location 1) | F | F | F |
| Middle Country Road and Edwards Road (Location 2) | F | F | F |
| Middle Country Road and North County Road (Location 3) | F | F | C |
| Middle Country Road and Manorville Road (Location 4) | F | F | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | F | E | B |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | A | A | A |
| Edwards Avenue and River Road (Location 7) | A | A | A |

# 4.5 Air Quality

## 4.5.1 No Action Alternative

### Mobile Sources

The purpose of performing a microscale air quality analysis is to evaluate the no action (future baseline) condition for comparison purposes with the Calverton Enterprise Park Reuse Plan and other alternatives. Average hourly CO concentrations were predicted for the peak am and pm one-hour traffic periods using the USEPA approved CAL3QHC air pollutant dispersion model. Peak weekend conditions were also analyzed, using the same method, because of heavy traffic volume in the area during the weekend. These concentrations were multiplied by a persistence factor of 0.7 to determine the eight-hour concentrations. Background CO concentrations (Subchapter 3.5.2) were added to the traffic-related concentrations predicted from the model to obtain a total CO impact level.

This analysis used the same receptor locations used in the study of existing conditions. The worst case weekday results of the microscale air quality analysis for the future no action alternative show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm (Table 4.5-1) and no violations during the peak weekend conditions (Table 4.5-2). The results indicate CO levels less than those under existing conditions due to a decrease in per vehicle emissions resulting from compliance with the Federal Vehicle Emission Control Program.

### Stationary Sources

Under the no action alternative, all operational functions at NWIRP Calverton would be terminated. Therefore, there would be no stationary source emissions.

## 4.5.2 Calverton Enterprise Park Reuse Plan

### Mobile Sources

Utilizing the same modeling assumptions described in Section 4.5.1, the results of the microscale air quality analysis for the Reuse Plan show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm (Tables 4.5-1 and 4.5-2). Although CO levels would be higher than the future baseline condition under the Reuse Plan due to increased traffic, the increases would not be significant.

Table 4.5-1
Weekday Peak Carbon Monoxide Levels
for No Action Alternative and Calverton Enterprise Park Reuse Plan (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Reuse Plan | No Action Alternative | Reuse Plan |
| Route 25 / Middle Island Road | 6.4 | 6.9 | 4.4 | 4.8 |
| Route 25 / Edwards Avenue | 5.6 | 5.6 | 3.9 | 3.9 |
| Route 25 / Route 25A | 5.1 | 5.1 | 3.5 | 3.5 |
| Route 25 / Wading River-Manorville Road | 5.1 | 6.1 | 3.5 | 4.2 |
| LIE Eastbound Ramp / Schultz Road | 4.2 | 4.6 | 2.9 | 3.2 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 4.8 | 2.8 | 3.3 |
| Edwards Avenue / River Road | 4.4 | 4.9 | 3.0 | 3.4 |

Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm.

Table 4.5-2
Weekend Peak Carbon Monoxide Levels
for No Action Alternative and Calverton Enterprise Park Reuse Plan (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Reuse Plan | No Action Alternative | Reuse Plan |
| Route 25 / Middle Island Road | 6.3 | 6.4 | 4.3 | 4.4 |
| Route 25 / Edwards Avenue | 5.5 | 5.5 | 3.8 | 3.8 |
| Route 25 / Route 25A | 4.8 | 5.0 | 3.3 | 3.4 |
| Route 25 / Wading River-Manorville Road | 4.9 | 6.3 | 3.4 | 4.3 |
| LIE Eastbound Ramp / Schultz Road | 4.1 | 4.5 | 2.8 | 3.1 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 5.0 | 2.8 | 3.4 |
| Edwards Avenue / River Road | 4.2 | 4.7 | 2.9 | 3.2 |

Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm.

### Stationary Sources

Stationary source emissions would result from the use of boilers for heating and hot water in existing and newly constructed buildings on the site. Given the scale of proposed development and its capacity to generate the full-time jobs, the Reuse Plan anticipated that the currently permitted steam plant on base would be used to supply heat and hot water required for the industrial business park. The Reuse Plan does not call for any other facility on site to supply power demands. However, if any additional individual emissions sources would be generated in the future, the source would be built in compliance with CAA-related air permitting regulations to ensure that no significant adverse air quality impact would occur. These individual building sources would not likely be major sources.

### Construction Impacts

The major air quality concerns during construction and demolition are fugitive dust from on-site construction activities and mobile source emissions from construction vehicles and equipment and the motor vehicles of construction workers.

Preventative measures such as the use of water to control dust during demolition and construction operations would sufficiently minimize significant airborne particulate release. Additionally, periodic sweeping and wetting of dirt or gravel paths, roadways, material stockpiles, and other surfaces may be necessary.

Mobile source emissions would be generated from construction vehicles and equipment and the motor vehicles of construction workers. However, these effects would not be significant and would be short-term in nature.

### Clean Air Act Conformity

As discussed in Subchapter 3.5, the general conformity rules are not applicable to the proposed Reuse Plan (or the alternatives) for NWIRP Calverton under exemption XIX as stated in 40 CFR Part 153(c).

## 4.5.3 Calverton Enterprise Park/Raceway Alternative

### Mobile Sources

Utilizing the same modeling assumptions described in Section 4.5.1, the results of the microscale air quality analysis for the Calverton Enterprise Park/Raceway Alternative show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm (Tables 4.5-3, 4.5-4).

Table 4.5-3
Weekday Peak Carbon Monoxide Levels
for No Action and Calverton Enterprise Park/Raceway Alternative (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Park/Raceway Alternative | No Action Alternative | Alternative |
| Route 25 / Middle Island Road | 6.4 | 6.4 | 4.4 | 4.4 |
| Route 25 / Edwards Avenue | 5.6 | 5.6 | 3.9 | 3.9 |
| Route 25 / Route 25A | 5.1 | 5.2 | 3.5 | 3.6 |
| Route 25 / Wading River-Manorville Road | 5.1 | 5.9 | 3.5 | 4.0 |
| LIE Eastbound Ramp / Schultz Road | 4.2 | 4.6 | 2.9 | 3.2 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 4.5 | 2.8 | 3.1 |
| Edwards Avenue / River Road | 4.4 | 4.7 | 3.0 | 3.2 |
| Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm. | | | | |

Table 4.5-4
Weekend Peak Carbon Monoxide Levels
for No Action and Calverton Enterprise Park/Raceway Alternative (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Park/Raceway Alternative | No Action Alternative | Alternative |
| Route 25 / Middle Island Road | 6.3 | 6.5 | 4.3 | 4.5 |
| Route 25 / Edwards Avenue | 5.5 | 5.6 | 3.9 | 3.9 |
| Route 25 / Route 25A | 4.8 | 5.0 | 3.3 | 3.4 |
| Route 25 / Wading River-Manorville Road | 4.9 | 6.8 | 3.4 | 4.7 |
| LIE Eastbound Ramp / Schultz Road | 4.1 | 5.1 | 2.8 | 3.5 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 5.4 | 2.8 | 3.7 |
| Edwards Avenue / River Road | 4.2 | 4.4 | 2.9 | 3.0 |
| Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm. | | | | |

Although CO levels would be higher than the future no action condition with implementation of the alternative due to increased traffic, the increases would not be significant.

### Stationary Sources and Construction Related Impacts

The impacts from stationary sources and construction activities related to this alternative would have equivalent impact levels as those described for the Reuse Plan due to the generally similar scale and characteristics of the proposed development.

## 4.5.4 Peconic Village Alternative

### Mobile Sources

Utilizing the same modeling assumptions described in Subchapter 4.5.1, the results of the microscale air quality analysis for the Peconic Village residential alternative show no violations of the NAAQS CO one-hour standard of 35 ppm and eight-hour standard of nine ppm (Tables 4.5-5, 4.5-6). Although CO levels would be higher than the future no action condition with implementation of the alternative due to increased traffic, the increases would not be significant.

### Stationary Sources and Construction Related Impacts

Since this alternative is primarily residential in nature, major land use components such as a theme park, an airport, etc., would not be part of this plan. Therefore, impacts from the stationary sources and construction activities related to this plan would have less impact compared to the other alternatives. Although heating boilers for residential use would be needed under this alternative, they are minor emission sources and no significant adverse impacts would be expected.

Table 4.5-5
Weekday Peak Carbon Monoxide Levels
for No Action and Peconic Village Alternative (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Peconic Village Alternative | No Action Alternative | Alternative |
| Route 25 / Middle Island Road | 6.4 | 6.4 | 4.4 | 4.4 |
| Route 25 / Edwards Avenue | 5.6 | 5.6 | 3.9 | 3.9 |
| Route 25 / Route 25A | 5.1 | 5.1 | 3.5 | 3.5 |
| Route 25 / Wading River-Manorville Road | 5.1 | 5.6 | 3.5 | 3.9 |
| LIE Eastbound Ramp / Schultz Road | 4.2 | 4.3 | 2.9 | 2.9 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 4.2 | 2.8 | 2.9 |
| Edwards Avenue / River Road | 4.4 | 4.5 | 3.0 | 3.1 |

Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm.

Table 4.5-6
Weekend Peak Carbon Monoxide Levels
for No Action and Peconic Village Alternative (Year 2017)

| Location | One-Hour Concentration (ppm) | | Eight-Hour Concentration (ppm) | |
|---|---|---|---|---|
| | No Action Alternative | Peconic Village Alternative | No Action Alternative | Peconic Village Alternative |
| Route 25 / Middle Island Road | 6.3 | 6.3 | 4.3 | 4.3 |
| Route 25 / Edwards Avenue | 5.5 | 5.5 | 3.8 | 3.8 |
| Route 25 / Route 25A | 4.8 | 4.9 | 3.3 | 3.4 |
| Route 25 / Wading River-Manorville Road | 4.9 | 5.4 | 3.4 | 3.7 |
| LIE Eastbound Ramp / Schultz Road | 4.1 | 4.2 | 2.8 | 2.9 |
| LIE Westbound Ramp / Schultz Road | 4.1 | 4.2 | 2.8 | 2.9 |
| Edwards Avenue / River Road | 4.2 | 4.3 | 2.9 | 2.9 |

Note: CO levels include background concentrations of 3.6 ppm (one-hour) and 2.45 ppm (eight-hour). NAAQS CO one-hour standard is 35 ppm; CO eight-hour standard is 9 ppm.

# 4.6 Noise

Human response to changes in noise levels depends on many factors, including the quality of sound, the magnitude of the change, the time of day at which the changes take place, whether the noise is continuous or intermittent, and the individual's ability to perceive the changes. Noise levels are typically expressed in terms of decibels (dB). Decibels are a logarithmic expression of sound energy. Frequency weightings have been developed to more closely duplicate the human hearing response. A-weighted decibels, or dBA, is the weighting network most often applied to traffic and aircraft noise evaluation.

Human ability to perceive changes in noise levels varies widely with the individual, as does response to the perceived changes. However, the average ability of an individual to perceive changes in noise levels is well documented, as shown in Table 4.6-1.

Table 4.6-1

Average Ability to Perceive Changes in Noise Levels

| Change in Decibels (dBA) | Human Perception of Sound |
|---|---|
| 2-3 | Barely perceptible |
| 5 | Readily noticeable |
| 10 | A doubling or halving of the loudness of sound |
| 20 | A "dramatic change" |
| 40 | Difference between a faintly audible sound and a very loud sound |
| Source: Bolt, Beranek and Neuman, Inc., June 1973. | |

Generally, a three dBA or smaller change in noise level would be barely perceptible to most listeners but a five dBA level would be readily noticeable. A ten dBA change is normally perceived as a doubling (or halving) of noise levels. These thresholds permit estimation of an individual's probable perception of changes in noise levels.

## 4.6.1 No Action Alternative

### Mobile Sources

The methodology for predicting future mobile source noise levels is based on the assumptions that:

- Existing levels are dominated by, and are a function of, existing traffic volumes; and

- Future noise levels can be determined based on the proportional increase in traffic (on a logarithmic basis) associated with a project.

For example, if the existing volume on a street is 100 vehicles per hour, and if the future traffic were increased by 50 vehicles per hour for a total of 150 vehicles per hour, the noise levels would increase by approximately 1.8 decibels (based on the logarithmic ratio of traffic volumes). If future traffic were increased by 100 vehicles per hour to a total of 200 vehicles per hour, the noise levels would increase by three decibels.

Future predicted (baseline) noise levels for the no action alternative in the year 2017 are presented in Table 4.6-2 (weekday) and Table 4.6-3 (weekend). The noise computations are based on the traffic analyses presented in Subchapter 4.4. Because of both anticipated annual traffic growth and specific developments planned in the vicinity of the study area that would also increase traffic volume, there would be increases in peak hour noise levels from existing conditions to future no action conditions. Predicted hourly noise levels for each site are presented in Appendix D. In comparing Tables 3.6-4 and 3.6-5 for existing conditions to the future no action condition, increases in peak hour noise levels are predicted to range from two to seven dBA at the six study sites. The corresponding 24-hour equivalent noise level ($L_{eq}[24]$) and day-night noise level ($L_{dn}$ ) increase would range from two to five dBA. Thus, as shown in Table 4.6-1, noise level increases would range from barely perceptible to readily noticeable.

## 4.6.2 Calverton Enterprise Park Reuse Plan

### Ground Vehicles

Future (2017) noise levels were calculated by adding the noise from projected development-generated traffic to noise levels calculated for the future no action. Tables 4.6-2 (weekday) and 4.6-3 (weekend) present results of the am peak, midday peak, pm peak, pre-midnight, and 24-hour $L_{eq}$ and $L_{dn}$ analysis. The specific hour of the day with the largest noise increase is also identified.

Weekday

The peak hour $L_{eq}$ shows that at Sites 1, 3, and 6, noise levels would increase less than or equal to 1 dBA compared with levels under the no action condition (Table 4.6-2). At Sites 2, 4 and 5, the increase in peak hour noise levels would be greater than 3 three dBA (a three dBA or greater change in noise levels becomes perceptible to most listeners).

At Sites 2, 3, 4, 5, and 6, the largest increase in weekday noise levels would be between 11 pm to 12 midnight (Table 4.6-2). Noise level increases equal to or greater than three dBA are noted below (these are <u>not</u> shown in Table 4.6-2; only the largest hourly increases are presented in the table):

Table 4.6-2

Predicted Weekday Noise Levels for No Action and Calverton Enterprise Park Reuse Plan

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Reuse Plan | Net Increase |
| 1 | AM Peak | 69 | 69 | 0 |
| | Midday Peak | 68 | 68 | 0 |
| | PM Peak | 71 | 72 | 1 |
| | Pre midnight | 63 | 63 | 0 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$ | 67 | 67 | 0 |
| | $L_{dn}$ | 69 | 70 | 1 |
| 2 | AM Peak | 72 | 75 | 3 |
| | Midday Peak | 69 | 72 | 3 |
| | PM Peak | 70 | 73 | 3 |
| | Pre midnight | 65 | 69 | 4 |
| | 11 pm - 12 am* | 59 | 72 | 13 |
| | 24-Hour $L_{eq}$ | 68 | 72 | 4 |
| | $L_{dn}$ | 72 | 76 | 4 |
| 3 | AM Peak | 65 | 65 | 1 |
| | Midday Peak | 64 | 65 | 1 |
| | PM Peak | 67 | 68 | 1 |
| | Pre midnight | 61 | 63 | 2 |
| | 11 pm - 12 am* | 57 | 64 | 7 |
| | 24-Hour $L_{eq}$ | 63 | 64 | 1 |
| | $L_{dn}$ | 66 | 68 | 2 |

Table 4.6-2 (continued)

Predicted Weekday Noise Levels for No Action and Calverton Enterprise Park Reuse Plan

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Reuse Plan | Net Increase |
| 4 | AM Peak | 64 | 72 | 8 |
| | Midday Peak | 62 | 69 | 7 |
| | PM Peak | 63 | 70 | 7 |
| | Pre midnight | 59 | 68 | 9 |
| | 11 pm - 12 am* | 55 | 72 | 17 |
| | 24-Hour $L_{eq}$ | 60 | 69 | 9 |
| | $L_{dn}$ | 64 | 74 | 10 |
| 5 | AM Peak | 65 | 72 | 7 |
| | Midday Peak | 61 | 67 | 8 |
| | PM Peak | 63 | 69 | 6 |
| | Pre midnight | 58 | 66 | 8 |
| | 11 pm - 12 pm* | 54 | 70 | 16 |
| | 24-Hour $L_{eq}$ | 61 | 68 | 7 |
| | $L_{dn}$ | 64 | 72 | 8 |
| 6 | AM Peak | 69 | 70 | 1 |
| | Midday Peak | 67 | 67 | 0 |
| | PM Peak | 70 | 70 | 1 |
| | Pre midnight | 63 | 63 | 0 |
| | 11 am - 12 am* | 59 | 62 | 3 |
| | 24-Hour $L_{eq}$ | 66 | 67 | 1 |
| | $L_{dn}$ | 69 | 70 | 1 |

Note: * = specific hour of the day at a site with the largest noise increase

Table 4.6-3

Predicted Weekend Noise Levels for No Action and Calverton Enterprise Park Reuse Plan

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Reuse Plan | Net Increase |
| 1 | AM Peak | 67 | 68 | 1 |
| | Midday Peak | 64 | 64 | 0 |
| | PM Peak | 69 | 69 | 0 |
| | Pre midnight | 63 | 64 | 1 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$ | 66 | 66 | 0 |
| | $L_{dn}$ | 69 | 69 | 0 |
| 2 | AM Peak | 68 | 70 | 2 |
| | Midday Peak | 68 | 71 | 3 |
| | PM Peak | 70 | 73 | 3 |
| | Pre midnight | 64 | 68 | 4 |
| | 11 pm - 12 am* | 61 | 71 | 10 |
| | 24-Hour $L_{eq}$ | 67 | 70 | 3 |
| | $L_{dn}$ | 70 | 74 | 4 |
| 3 | AM Peak | 65 | 66 | 1 |
| | Midday Peak | 62 | 64 | 2 |
| | PM Peak | 65 | 67 | 2 |
| | Pre midnight | 60 | 64 | 4 |
| | 11 pm - 12 am* | 59 | 66 | 7 |
| | 24-Hour $L_{eq}$ | 63 | 65 | 2 |
| | $L_{dn}$ | 67 | 69 | 2 |

Table 4.6-3 (continued)

Predicted Weekend Noise Levels for No Action and Calverton Enterprise Park Reuse Plan

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Reuse Plan | Net Increase |
| 4 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 62<br>62<br>62<br>58 | 69<br>71<br>70<br>68 | 7<br>9<br>8<br>10 |
| | 11 am - 12 am* | 57 | 72 | 15 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 60<br>63 | 69<br>73 | 9<br>10 |
| 5 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 62<br>62<br>65<br>59 | 66<br>70<br>72<br>68 | 4<br>8<br>7<br>9 |
| | 11 pm - 12 pm* | 58 | 72 | 14 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 61<br>64 | 69<br>73 | 8<br>9 |
| 6 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 68<br>68<br>69<br>62 | 68<br>68<br>69<br>63 | 0<br>0<br>0<br>1 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 66<br>69 | 67<br>70 | 1<br>1 |
| Note: * = specific hour of the day at a site with the largest noise increase | | | | |

- Site 2 (on north side of Route 25, near west end of project site) - weekdays would experience noise levels increases that are equal to or greater than three dBA for 13 hours of the day, with a maximum increase of 13 dBA occurring between 11 pm to 12 am.

- Site 3 (on east side of Wading River Road between Swan Pond Road/Grumman Boulevard and Route 25) - weekdays would experience noise level increases that are equal to or greater than three dBA for two hours of the day, with a maximum increase of seven dBA occurring between 11 pm to 12 am.

- Site 4 (on Swan Pond Road/Grumman Blvd near site entrance) - weekdays would experience noise level increases that are equal to or greater than three dBA for 22 hours of the day, with a maximum increase of 17 dBA occurring between 11 pm to 12 am.

- Site 5 (on north side of River Road) - weekdays would experience noise level increases that are equal to or greater than three dBA for 21 hours of the day, with a maximum increase of 16 dBA occurring between 11 pm to 12 am.

The FHWA criterion for residential-level use, schools, parks, and recreation is 67 dBA. Predicted noise levels under the Reuse Plan during the weekday would exceed this criterion for the following total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis):

- Site 1 - 14 hours (14 hours - no action);

- Site 2 - 19 hours (15 hours - no action);

- Site 3 - 3 hours (not exceeded - no action);

- Site 4 - 18 hours (not exceeded - no action);

- Site 5 - 13 hours (not exceeded - no action); and

- Site 6 - 11 hours (10 hours - no action).

The HUD criterion for acceptable noise levels at housing developments is an $L_{dn}$ of 65 dBA. The increase in $L_{dn}$ noise level from the no action to the Reuse Plan during the weekday would be less than or equal to one decibel at Sites 1 and 6. The differences between the no action and the Reuse Plan at Sites 2 and 3 would be barely perceptible. At Sites 4 and 5, the acceptable noise level criterion would be exceeded for the Reuse Plan, but would not be exceeded for the no action condition.

## Weekend

The peak hour $L_{eq}$ presented in Table 4.6-3 for the weekend shows that at Sites 1 and 6, noise levels would increase less than or equal to 1 dBA compared with levels under no action condition. At sites 2, 4, and 5, the increase in noise levels due to traffic would be equal to or greater than three dBA. The increase of peak hour $L_{eq}$ at Site 3 would be two dBA.

At Sites 2, 3, 4, and 5, the largest increase in noise levels during a weekend would be between 11 pm to 12 midnight due to the departure of vehicles primarily from the theme park attractions.(Table 4.6-3). Noise level increases equal to or greater then three dBA are noted below (these are not shown in Table 4.6-2; only the largest increases are presented):

- Site 2 (on north side of Route 25, near west end of project site) - weekends would experience noise level increases that are equal to or more than three dBA for 11 hours of the day, with a maximum increase of ten dBA occurring between 11 pm to 12 am.

- Site 3 (on east side of Wading River Road between Grumman Boulevard and Route 25) - weekends would experience noise level increases that are equal to or more than three dBA for six hours of the day, with a maximum increase of eight dBA occurring between 11 pm to 12 am.

- Site 4 (on Swan Pond Road/Grumman Blvd near site entrance) - weekends would experience increases in noise levels that are equal to or more than three dBA for 21 hours of the day, with a maximum increase of 15 dBA occurring between 11 pm to 12 am.

- Site 5 (on north side of River Road) - weekends would experience increases in noise levels that are equal to or more than three dBA for 21 hours of the day, with a maximum increase of 14 dBA occurring between 11 pm to 12 am.

Predicted weekend noise levels would exceed the FHWA criterion for residential-level use, schools, parks, and recreation (67 dBA). Exceedances of this criterion for the total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis) are listed below:

- Site 1 - eight hours (eight hours - no action);

- Site 2 -18 hours (13 hours - no action);

- Site 3 - three hours (not exceeded - no action);

- Site 4 - 17 hours (not exceeded - no action);

- Site 5 - 17 hours (not exceeded - no action); and
- Site 6 - 11 hours (12 hours - no action).

The HUD criterion for acceptable noise levels at housing developments is an $L_{dn}$ of 65 dBA. This criterion would be exceeded at all monitored sites under the Reuse Plan during the weekend. It should be noted that the monitored locations are located on the perimeter of the site and noise levels from ground vehicles inside the site would likely be lower.

**Aircraft**

Aircraft noise levels are also typically expressed in terms of dBA. Two types of noise metrics are typically used: single event metrics and cumulative metrics. The single event metrics describe individual aircraft events. Two types of single-event energy metrics include:

- EPNL - Effective Perceived Noise Level; and
- SEL - Sound Exposure Level.

The cumulative metrics describe average noise levels over a period of time. Several cumulative metrics derived from EPNL or SEL are available to describe aircraft noise. Of these, the Day-Night Average Sound Level (DNL) is currently the officially accepted metric of the Federal Aviation Administration (FAA).

In June 1980, a Federal Interagency Committee (FIC) on Urban Noise published guidelines (FIC, June 1980) relating DNL to compatible land uses. Since the issuance of these guidelines, federal agencies have generally adopted these guidelines for their noise analyses.

Following the lead of the committee, the DOD and the FAA adopted the concept of land-use compatibility as the accepted measure of aircraft noise effect. The FAA included the committee's guidelines in the Federal Aviation Regulations. Although these guidelines are not mandatory, they provide a method for determining noise impact in airport communities. In general, residential land uses are not normally compatible with outdoor DNL above 65 dB; the extent of land areas and populations exposed to DNL of 65 dB and higher provide measures for assessing the noise impacts of alternative aircraft actions.

In 1990 a new FIC on Noise was formed to review the manner in which aviation noise effects are assessed and presented. This group released its report in 1992 and reaffirmed the use of DNL as the best metric for this purpose (FIC, August 1992).

The DNL is the average of aircraft sound levels at a location over a complete 24-hour period, with a ten-decibel "penalty" added to those noise events which take place between 10:00 pm and 7:00 am (local time) the following morning. This ten-decibel adjustment represents the added intrusiveness of sounds that occur during normal sleeping hours, both because of the increased sensitivity to noise during those hours and because ambient sound levels during nighttime are typically about ten dB lower than during daytime hours. For this analysis, levels of DNL equal to and greater than 65 dB were used for assessing community noise impact.

As described in Subchapter 2.3.3, the DEIS initially evaluated a more intensive general aviation/cargo airport use than is evaluated in this FEIS. The DEIS assessed the effects of operating an air facility that would have included about three to four cargo flights each night and 242 general aviation flights each day. At the request of the Riverhead Development Corporation, the aviation use, herein called a limited industrial air park, has been substantially modified. The air park is considered to be a use ancillary to the industrial business park for the use of turbo prop or small corporate jets only. The airpark would operate several flights each weekday and one flight (one departure and one landing) each weekend day.

The FAA-preferred computer model, Integrated Noise Model (INM, version 5.0), was initially used in the DEIS to predict the noise impact from the aircraft operations. INM was developed by the FAA as a planning tool for determining approximate aircraft noise levels at and around airports. The model incorporates a database of known sound levels from various aircraft and uses mathematical processes which consider the degradation of sound energy over distance. The assumptions used to derive the original aviation noise forecast can be found in Appendix B of the DEIS. Assumptions for the original aviation noise analysis are presented in Appendix D.1 of this FEIS.

Figure 4.6-1 displays the flight tracks developed in the original DEIS analysis that would still apply to the limited industrial air park scenario. The DNL 65 dB through 85 dB contours for the original general aviation/cargo airport evaluated in the DEIS with 242 flights per day is presented in Figure 4.6-2, (DNL Contours for Calverton Enterprise Park Reuse Plan). That analysis indicated that the areas with noise levels above 65 dBA were contained almost completely within the fence (except for a small area of approximately ten acres outside the fence south of Grumman Boulevard in a buffer zone). Therefore, given the substantially reduced number of flights and daytime operations of the limited industrial air park compared to the general aviation/cargo airport in the DEIS, there would be no adverse noise impacts on the surrounding community.

For the purposes of comparing potential future effects with historical aircraft noise, noise contours at NWIRP Calverton for the year 1991 are presented in Figure 4.6-3 (1991 Historic Noise Contours). As displayed in the figure, areas affected by aircraft activity that year were substantially greater than what is predicted for the limited industrial air park. Operations in 1991 mainly involved military jets that generated more noise than the aviation aircraft proposed for the air park.

# Flight Tracks

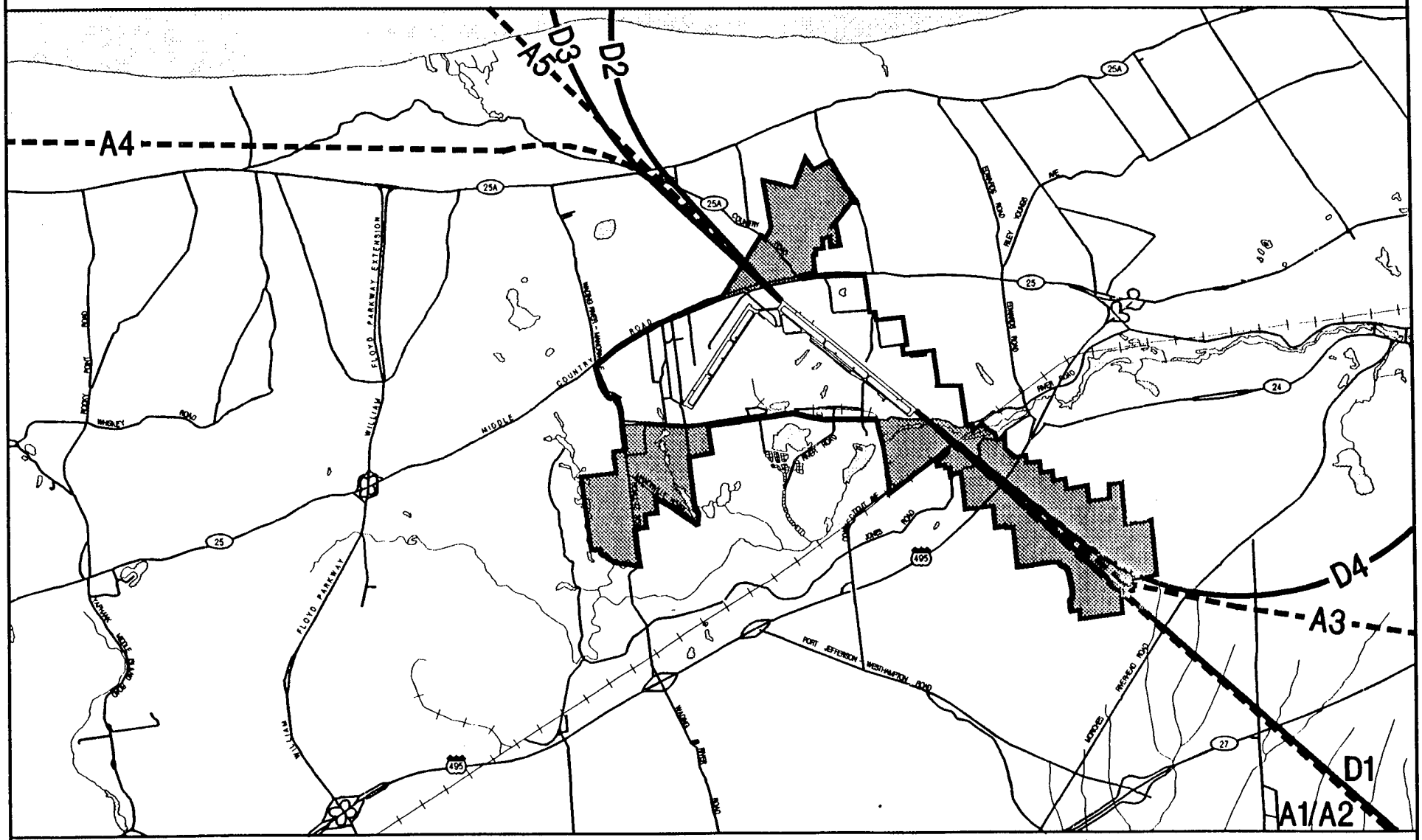



**Figure 4.6-1**

# DNL Contours for Calverton Enterprise Park Reuse Plan (Medium-Range)

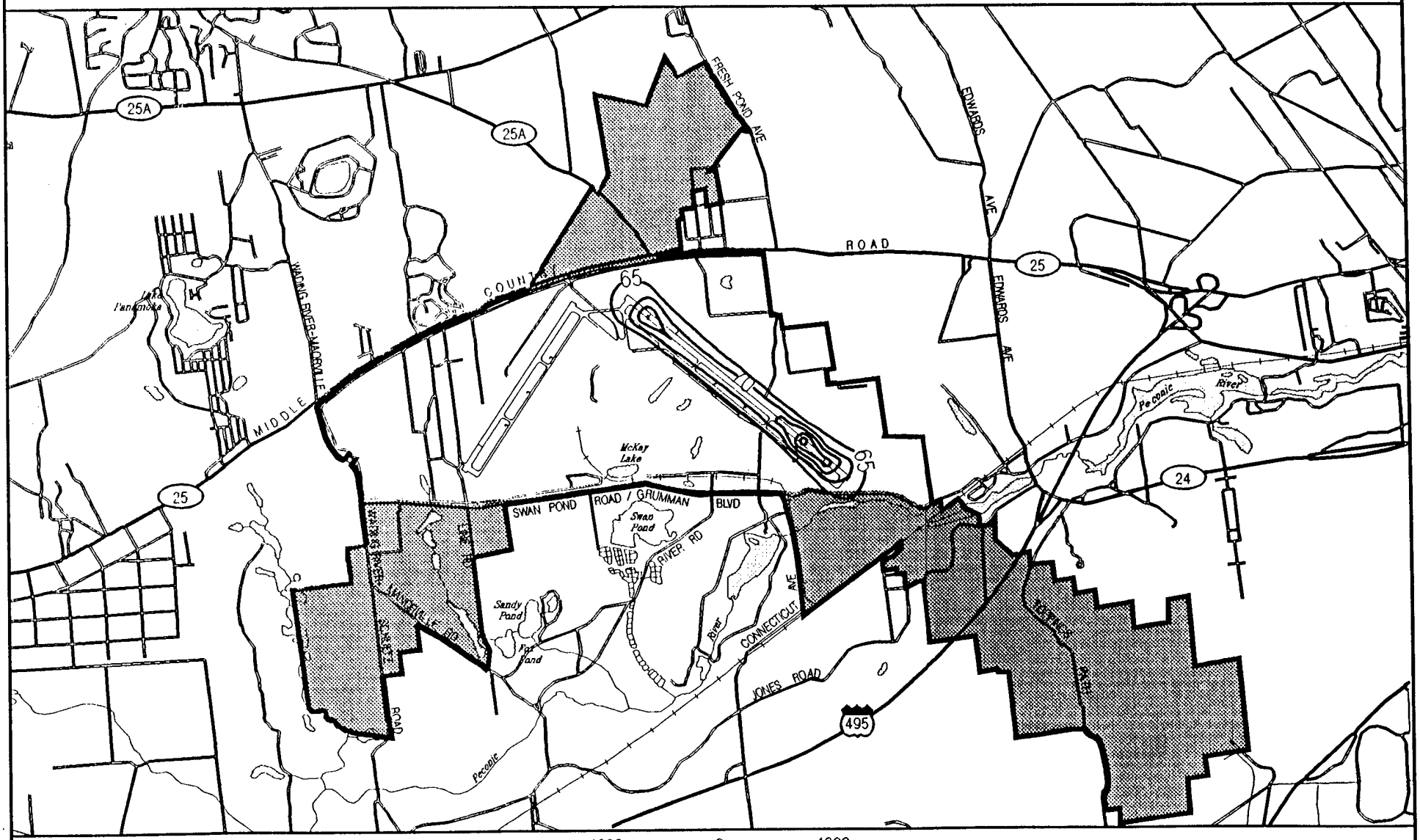
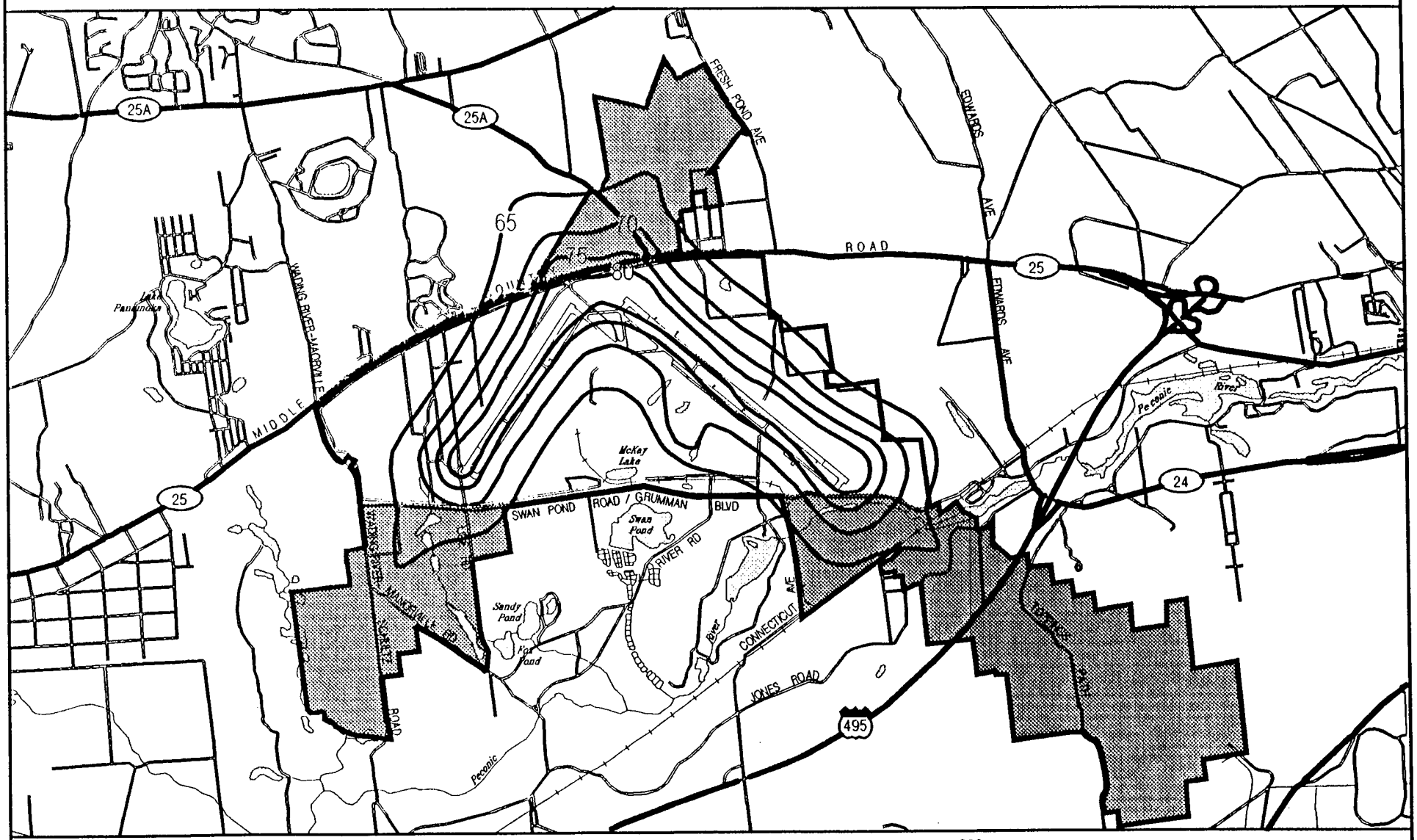



Figure 4.6-2

# 1991 Historic Noise Contours




65 1991 DNL Noise Contour

Property (within the fence)

Buffer Zones (outside of fence)

4000 0 4000
Scale in Feet
1000 0 1000
Scale in Meters

N

Figure 4.6-3

### Stationary Sources

Any exterior mechanical equipment (e.g., fans, compressors) would be designed to comply with all local and state noise ordinances. As a result, increased noise levels from such mechanical equipment at the site under the Reuse Plan would not be anticipated. Operations would need to comply with the applicable local noise ordinance.

Because of the speculative nature of certain land uses, such as the theme park, with respect to scale, location, and specific uses, a noise analysis was not conducted for these elements; however, it is assumed that such uses would be designed to comply with the Riverhead noise ordinance.

### Construction Impacts

Impacts on community noise levels during construction of the Reuse Plan would include noise from construction equipment operating at the site and construction vehicles/delivery vehicles traveling to and from the site. Noise impacts would also vary widely, depending on the phase of construction - demolition, land clearing and excavations, foundation and capping, erection of structural steel, construction of exterior walls, etc. - and the specific task being undertaken. Increased noise levels would be greatest during the early stages of each construction phase, although these periods would be of relatively short duration. The noise generated would be similar to other construction projects in the county and all phases of construction would comply with the restrictions specified in the local noise ordinance.

Noise levels at a given receptor location would depend on the type and number of pieces of construction equipment being operated and the distance from the construction-site. Typical noise levels for construction equipment are shown in Table 4.6-4.

In addition, small increases in noise levels would be expected as a result of the operation of delivery trucks and other construction vehicles. These short-term increases would be expected mainly along a few defined truck routes and close to the development site.

## 4.6.3 Calverton Enterprise Park/Raceway Alternative

### Ground Vehicles

Weekdays

Predicted hourly noise levels with implementation of the Enterprise Park/Raceway Alternative are presented in Appendix D of the DEIS. The peak hour $L_{eq}$ analysis presented in Table 4.6-5 shows

that with the exception of Sites 2, 4, and 5 noise levels would increase less than or equal to one decibel from the no action condition to the Enterprise Park/Raceway Alternative. At Sites 2, 4 and 5, increases in noise levels greater than three dBA would take place during the day and night. At Sites 2, 3, 4, and 5, the largest increase in noise levels during a weekday would be between 11 pm and 12 am. These increases are shown in Table 4.6-5. Noise level increases equal to or greater than 3 dBA are noted below (these are not shown in Table 4.6-5; only the largest hourly increases are presented in the table):

- Site 2 (on north side of Route 25, near west end of project site) - weekdays would experience noise level increases equal to or greater than three dBA for 15 hours of the day, with a maximum increase of 13 dBA occurring between 11 pm to 12 am.

- Site 3 (on east side of Wading River Road between Swan Pond Road/Grumman Blvd and Route 25) - weekdays would experience increases equal to or greater than three dBA for two hours of the day, with a maximum increase of seven dBA occurring between 11 pm and 12 am.

- Site 4 (on Swan Pond Road/Grumman Blvd near site entrance) - weekdays would experience increase in noise levels that are equal to or greater than three dBA for 21 hours of the day, with a maximum increase of 17 dBA occurring between 11 pm and 12 am.

- Site 5 (on north side of River Road) - weekdays would experience noise level increases equal to or greater than three dBA for 21 hours of the day, with a maximum increase of 16 dBA occurring between 11 pm and 12 am.

Predicted noise levels under the Enterprise Park/Raceway Alternative during the weekday would exceed the FHWA criterion of 67 dBA for the following total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis):

- Site 1 - 14 hours (14 hours - no action);

- Site 2 - 18 hours (15 hours - no action);

- Site 3 - three hours (not exceeded - no action);

- Site 4 - 18 hours (not exceeded - no action);

- Site 5 - 15 hours (not exceeded - no action); and

- Site 6 - 11 hours (ten hours - no action).

Table 4.6-4

Typical Noise Emission Levels for Construction Equipment

| Type of Equipment | Noise Level at 50 feet (dBA) |
|---|---|
| Air Compressor | 81 |
| Asphalt Spreader (paver) | 89 |
| Asphalt truck | 88 |
| Backhoe | 85 |
| Bulldozer | 87 |
| Compactor | 80 |
| Concrete Plant | 83 |
| Concrete Spreader | 89 |
| Concrete Mixer | 85 |
| Concrete Vibrator | 76 |
| Crane (derrick) | 88 |
| Delivery Truck | 88 |
| Diamond Saw | 90 |
| Dredge | 88 |
| Dump Truck | 88 |
| Front End Loader | 84 |
| Gas-Driven Vibro-compactor | 76 |
| Hoist | 76 |
| Jackhammer (Paving Breaker) | 88 |
| Line Drill | 98 |
| Motor Crane | 83 |
| Pile Driver/Extractor | 101 |
| Pump | 76 |
| Roller | 80 |
| Shovel | 82 |
| Truck | 88 |
| Tug | 85 |
| Vibratory Pile Driver/Extractor | 89 |

Source: Patterson, et al., 1974.

Table 4.6-5

Predicted Weekday Noise Levels for the No Action and Calverton Enterprise Park /Raceway Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 1 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 69<br>68<br>71<br>63 | 69<br>68<br>71<br>63 | 0<br>0<br>0<br>0 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 67<br>70 | 67<br>69 | 0<br>1 |
| 2 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 72<br>69<br>70<br>65 | 75<br>73<br>74<br>69 | 3<br>4<br>4<br>4 |
| | 11 pm - 12 pm* | 59 | 72 | 13 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 68<br>72 | 72<br>76 | 4<br>4 |
| 3 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 65<br>64<br>67<br>61 | 67<br>65<br>68<br>63 | 2<br>1<br>1<br>2 |
| | 11 pm - 12 am * | 57 | 64 | 7 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 63<br>66 | 65<br>68 | 2<br>2 |

Table 4.6-5 (continued)

Predicted Weekday Noise Levels for the No Action and Calverton Enterprise Park /Raceway Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 4 | AM Peak | 64 | 71 | 7 |
| | Midday Peak | 62 | 70 | 8 |
| | PM Peak | 63 | 71 | 8 |
| | Pre midnight | 59 | 68 | 9 |
| | 11 pm - 12 pm * | 55 | 72 | 17 |
| | 24-hour $L_{eq}$ | 60 | 69 | 9 |
| | $L_{dn}$ | 64 | 74 | 10 |
| 5 | AM Peak | 65 | 71 | 6 |
| | Midday Peak | 61 | 68 | 7 |
| | PM Peak | 63 | 70 | 7 |
| | Pre midnight | 58 | 66 | 8 |
| | 11 pm - 12 am * | 54 | 70 | 16 |
| | 24-Hour $L_{eq}$ | 61 | 68 | 7 |
| | $L_{dn}$ | 64 | 72 | 8 |
| 6 | AM Peak | 69 | 69 | 0 |
| | Midday Peak | 67 | 67 | 0 |
| | PM Peak | 71 | 71 | 0 |
| | Pre midnight | 63 | 63 | 0 |
| | 11 pm - 12 am * | 59 | 62 | 3 |
| | 24-Hour $L_{eq}$ | 66 | 67 | 1 |
| | $L_{dn}$ | 69 | 70 | 1 |

Note: * = specific hour of the day at a site with the largest increase

The HUD criterion ($L_{dn}$ of 65 dBA) would be exceeded for this alternative at all six monitored sites.

Weekend

The peak hour $L_{eq}$ for the weekend shows that at Sites 1 and 6, noise levels would increase less than or equal to one dBA compared with levels under no action condition (Table 4.6-6). At Sites 2, 4, and 5, the increase in noise levels due to traffic would be greater than 3 dBA. The peak hour $L_{eq}$ at Site 3 would be two dBA.

Predicted noise levels under the Enterprise Park/Raceway Alternative during the weekday would exceed the FHWA criterion of 67 dBA for the following total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis):

- Site 1 - eight hours (eight hours - no action);
- Site 2 - 17 hours (13 hours - no action);
- Site 3 - four hours (not exceeded - no action);
- Site 4 - 17 hours (not exceeded - no action);
- Site 5 - 17 hours (not exceeded - no action); and
- Site 6 - 12 hours (11 hours - no action).

The HUD criterion ($L_{dn}$ of 65 dBA) would be exceeded for this alternative at all six sites.

At Sites 2, 3, 4, and 5, the greatest increase in noise levels during a weekend would be between 11 pm and 12 midnight (Table 4.6-6). Noise level increases equal to or greater then 3 dBA are noted below (these are not shown in Table 4.6-6; only the largest increases are presented in the table):

- Site 2 - weekends would experience increases in noise levels that are equal to or greater than three dBA for 15 hours of the day, with a maximum increase of eight dBA between 11 pm to 12 am.
- Site 3 - weekends would experience noise level increases that are equal to or greater than three dBA for 11 hours of the day, with a maximum increase of six dBA between 11 pm to 12 am.

- Site 4 - weekends would experience noise level increases equal to or greater than three dBA for 21 hours of the day, with a maximum increase of 13 dBA between 11 pm and 12 am.

- Site 5 - weekends would experience increases in noise levels that are equal to or greater than three dBA for 21 hours of the day, with a maximum increase of 12 dBA between 11 pm and 12 am.

The increase in $L_{dn}$ noise level from the no action to the Enterprise Park/Raceway Alternative during the weekday would be less than or equal to one decibel at Sites 1 and 6. The differences between the no action and the Enterprise Park/Raceway Alternative at Sites 1, 2, and 3 would be barely perceptible. At Sites 4 and 5, the HUD noise criterion ($L_{dn}$ of 65 dBA) would be exceeded for the Enterprise Park/Raceway Alternative, but would not be exceeded for the no action condition.

**Automobile Raceway**

Noise impacts from the raceway element of this alternative on the local community would result from racing events that are scheduled for the daytime on six weekends each year; therefore, the impact would be considered to have a short duration.

Assumptions

For purposes of this analysis, a racing car was treated as a point noise source on the race track that would radiate acoustic energy equally in all directions. Over hard site terrain, a point source noise level is reduced six dB per doubling of distance (e.g., 118 dB at 50 ft (15 m), 112 dB at 100 ft (30 m),

106 dB at 200 ft (61 m), etc.). Over an acoustically soft site (e.g., a site containing trees, shrubs, etc.), the noise reduction would be even greater. For a conservative analysis, an acoustically hard site was assumed.

Two race track configurations are proposed as part of the raceway element. The Club Track would be a 2.4-mile road racing circuit encompassing a triangular area around the northern end of Runway 32-14. The National Track would be 3.4 mi (5.5 km) in length, and it would include an extra stretch of Runway 32-14 in addition to the Club Track circuit. Noise analyses were performed for the National Track configuration because greater noise levels would be expected given the longer race track and potentially higher speeds.

Table 4.6-6

Predicted Weekend Noise Levels for No Action and Calverton Enterprise Park /Raceway Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 1 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 67<br>64<br>69<br>63 | 67<br>65<br>69<br>64 | 0<br>1<br>0<br>1 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 66<br>69 | 66<br>69 | 0<br>0 |
| 2 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 68<br>69<br>70<br>64 | 70<br>73<br>75<br>68 | 2<br>4<br>5<br>4 |
| | 11 pm - 12 am * | 61 | 69 | 8 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 67<br>70 | 71<br>73 | 4<br>3 |
| 3 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 65<br>62<br>65<br>60 | 67<br>66<br>69<br>63 | 2<br>4<br>4<br>3 |
| | 11 pm - 12 am * | 59 | 65 | 6 |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 63<br>67 | 65<br>69 | 2<br>2 |

Table 4.6-6 (continued)

Predicted Weekend Noise Levels for No Action and Calverton Enterprise Park /Raceway Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 4 | AM Peak | 62 | 69 | 7 |
| | Midday Peak | 62 | 73 | 11 |
| | PM Peak | 62 | 73 | 11 |
| | Pre midnight | 58 | 68 | 10 |
| | 11 pm - 12 am* | 57 | 70 | 13 |
| | 24-Hour $L_{eq}$ | 60 | 70 | 10 |
| | $L_{dn}$ | 63 | 73 | 10 |
| 5 | AM Peak | 62 | 68 | 6 |
| | Midday Peak | 62 | 72 | 10 |
| | PM Peak | 65 | 75 | 10 |
| | Pre midnight | 59 | 68 | 9 |
| | 11 pm - 12 am | 58 | 70 | 12 |
| | 24-Hour $L_{eq}$ | 61 | 70 | 9 |
| | $L_{dn}$ | 64 | 73 | 9 |
| 6 | AM Peak | 68 | 68 | 0 |
| | Midday Peak | 68 | 69 | 1 |
| | PM Peak | 69 | 70 | 1 |
| | Pre midnight | 62 | 63 | 1 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$ | 66 | 67 | 1 |
| | $L_{dn}$ | 69 | 70 | 1 |

Note: * = specific hour of the day at a site with the largest noise increase

The automobile race track would be the site of various type of amateur and professional racing events; however, it is the professional race events that would cause the greatest potential noise impact. Most amateur cars would be run at much lower speeds and in fewer numbers. Therefore, noise levels would be substantially lower than the professional events modeled. Table 4.6-7 presents the racing specifics for three types of potential professional events. The noise level at any location outside the raceway would depend upon the type of car, the number of cars, and their location on the track. Although the SCCA event would have the largest number of cars (85), it was determined that the CART/Indy Cars would generate the worst noise impact due to the high reference noise level per car (118 dB) and number of cars (32). The cumulative noise impacts at the reference point (50 ft [15 m]) from SCCA and CART car operations were calculated to be 124 and 133 dB, respectively. Therefore, a CART/Indy racing event was used for the noise analysis.

Table 4.6-7

General Racing Specifications

| | CART[1] | SCCA[2] | IMSA[3] |
|---|---|---|---|
| Race Class | Indy Cars | Sport Cars | World Sports Cars |
| Race Speed Limit (mph) | 240 | 95 | 200 |
| Race Capacity (cars) | 32 | 85 | 15 |
| Race Duration (hour) | 3 | 1 to 5 | 3 |
| Daily Races | 2 | <5 | <4 |
| Reference Noise Level (dB)[4] | 118 | 105 | 108 |
| Reference Distance (feet) | 50 | 50 | 50 |

Notes: [1] CART - Championship Auto Racing Teams;
[2] SCCA - Sports Car Club of America;
[3] IMSA - International Motorsports Association;
[4] Noise level per car provided by individual race organization.
Source: Jambhekar Strauss Architects PC, June 4 and July 23, 1996;
Project Calverton, Inc., 1995 and 1996.

Noise levels at a given receptor location would vary minute-by-minute of the race. It is anticipated that the maximum instantaneous noise level would occur in the beginning of race when the packed cars would pass by the point with the shortest distance between source and receptor. After a few laps of racing, those packed cars would be separated over longer distances, with some of the cars dropping out of the race; therefore, the hourly average noise level ($L_{eq}$) during the first racing hour would be a representative worst-case hourly impact. The following additional assumptions were used for predicting the noise level from a racing event:

- The average racing speed would be 130 mi (209 km) per hour (Macchio, June 26, 1996);
- The average time for one lap would be 1.6 minutes;
- Noise barriers would not be present;
- The race track would be at ground level;
- Four cars are assumed to run as a group that pass the same point on the race track at the same time; i.e., a total of eight car groups (equivalent to a total of 32 cars) would be in each race;
- Eight car groups are packed for the first 30-minute racing period (approximately 19 laps);
- The distance between every two-packed car groups would be 197 ft (60 m);
- During the first 30-minute period, an average of eight seconds (approximately the time each car runs through the length of eight packed car groups) in each lap would be required to generate the worst noise impact at a given receptor location; and for the remaining lap time, the noise impact on a given receptor location would be contributed by eight car groups that are evenly distributed over the whole race track; and
- During the second 30-minute period, the noise impact would result from eight car groups that are spread evenly over the race track.

The basic acoustical principle of six dB attenuation per doubling of distance was used for noise level estimation in association with the time weighting factors described above. The average noise levels of the first racing hour were estimated at 60 grid points. These grid points were placed on five rings around the race track with 1,000-ft (305-m) spacing ranging from 1,000 ft (305 m) to 5,000 ft (1,524 m). Each ring consisted of 12 points approximately located with a 30-degree interval. Additional receptor locations analyzed included the proposed land development areas (e.g., industrial business park, theme attractions, etc.). Three peak hour noise contours (Figure 4.6-4, LEQ Contours for Calverton Enterprise Park/Raceway Alternative) were developed based on the analyses at those grid points.

Results

It is predicted that noise levels on and near the project site would exceed the FHWA Noise Abatement Criteria (Table 3.6-1) and the town of Riverhead noise standard (Table 3.6-3). Based on available weekend daytime noise monitoring measurements presented in Tables 3.6-4 and 3.6-5 for

six locations near the site, the noise levels near the race track would be expected to increase 20 dB or more (Table 4.6-8), a significant increase in noise level. However, the noise impacts predicted here are based on a set of conservative assumptions that represent a peak hour operational scenario. Moreover, the calculations incorporate no potential noise attenuation due to the presence of barriers, berms, vegetation and trees, building walls, etc.

It was assumed that major race events would be scheduled six times a year for three days, including the weekend. Therefore, based on two races of three hours duration per day, the total number of racing hours over an entire year would be 108 hours, or 1.2 percent of the year. In addition, the race events would occur only during the daytime, when noise impacts are generally less disruptive than at night. Therefore, noise impacts, though significant with respect to generated noise levels, would be of short duration and relatively infrequent occurrence based on the assumed race schedule.

Table 4.6-8

Automobile Race Event Peak Hour Noise Levels

| Land Use Receptor | Peak Hour $L_{eq}$ (dB) |
|---|---|
| Industrial Business Park | >98 |
| Theme Park | |
| Attractions | 92 |
| Hotel/Conference Center | 98 |
| Commercial Recreation | |
| Stadium | 98 |
| Family Entertainment Center | 94 |
| Public Golf Course | 95 |
| Open Space | |
| Pine Barrens Core | 86 |
| McKay Lake (west) | 96 |
| Community Park | >98 |
| National Cemetery Buffer | 90 |
| Natural Area | 93 |

# LEQ Contours for Calverton Enterprise Park/Raceway Alternative

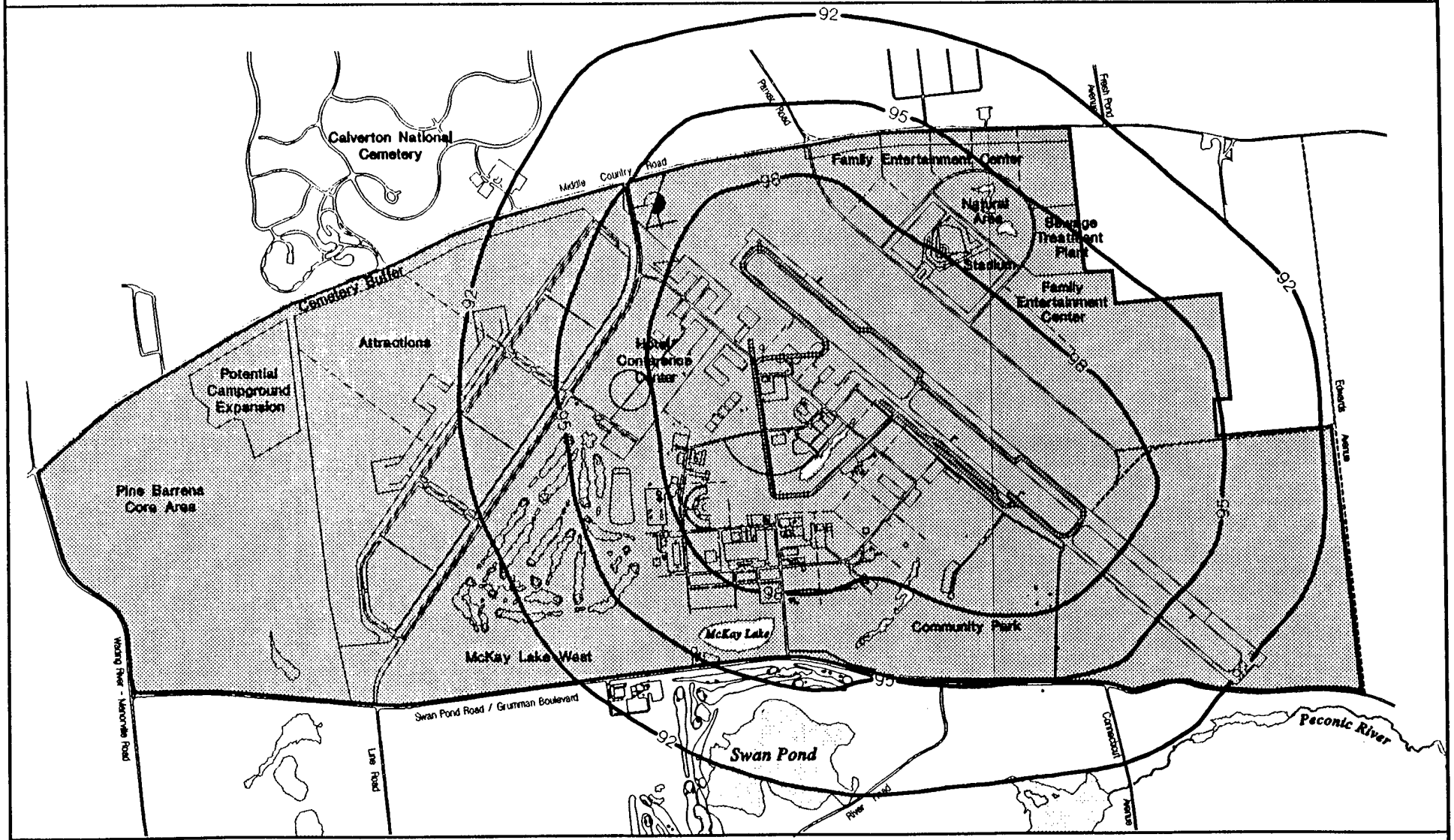



Figure 4.6-4

## 4.6.4 Peconic Village Alternative

### Ground Vehicles

Weekdays

The peak hour $L_{eq}$ analysis shows that at Sites 1, 3, and 6, noise levels would increase less than two dBA compared with levels under no action conditions (Table 4.6-9). At Sites 4 and 5, increases in noise levels greater than three dBA would take place over the cause of day and night time hours. Noise level increases equal to or greater than three dBA are noted below:

- Site 4 (on Swan Pond Road/Grumman Blvd near site entrance) - weekdays would experience increases in noise levels that are equal to or greater than three dBA for nine hours of the day, with a maximum increase of nine dBA occurring between 4 and 5 am.

- Site 5 (on north side of River Road) - weekdays would experience noise level increases equal to or greater than three dBA for 19 hours of the day, with a maximum increase of eight dBA occurring between 4 and 5 am.

Predicted noise levels under the Enterprise Park/Raceway Alternative during the weekday would exceed the FHWA criterion of 67 dBA for the following total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis):

- Site 1 - 14 hours (14 hours - no action);
- Site 2 - 15 hours (15 hours - no action);
- Site 3 - two hours (not exceeded - no action);
- Site 4 - 19 hours (not exceeded - no action);
- Site 5 - eight hours (not exceeded - no action); and
- Site 6 - 11 hours (ten hours - no action).

Table 4.6-9

Predicted Weekday Noise Levels for No Action and the Peconic Village Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 1 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 69<br>68<br>71<br>63 | 69<br>68<br>71<br>63 | 0<br>0<br>0<br>0 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 67<br>69 | 67<br>70 | 0<br>1 |
| 2 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 72<br>69<br>70<br>65 | 74<br>71<br>72<br>67 | 2<br>2<br>2<br>2 |
| | No hours with net change of ≥ 3 dBA | | | |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 68<br>72 | 70<br>74 | 2<br>2 |
| 3 | AM Peak<br>Midday Peak<br>PM Peak<br>Pre midnight | 65<br>64<br>67<br>61 | 66<br>64<br>68<br>61 | 1<br>0<br>1<br>0 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$<br>$L_{dn}$ | 63<br>66 | 64<br>67 | 1<br>1 |

Table 4.6-9 (continued)

Predicted Weekday Noise Levels for No Action and the Peconic Village Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 4 | AM Peak | 64 | 71 | 7 |
| | Midday Peak | 62 | 67 | 5 |
| | PM Peak | 63 | 69 | 6 |
| | Pre midnight | 59 | 64 | 5 |
| | 4 am - 5 am | 50 | 59 | 9 |
| | 5 am - 6 am * | 55 | 64 | 9 |
| | 24-Hour $L_{eq}$ | 60 | 66 | 6 |
| | $L_{dn}$ | 64 | 70 | 6 |
| 5 | AM Peak | 65 | 71 | 6 |
| | Midday Peak | 61 | 65 | 4 |
| | PM Peak | 63 | 68 | 5 |
| | Pre midnight | 58 | 62 | 4 |
| | 4 am - 5 am | 49 | 57 | 8 |
| | 5 am - 6 am * | 54 | 62 | 8 |
| | 24-Hour $L_{eq}$ | 61 | 65 | 4 |
| | $L_{dn}$ | 64 | 69 | 5 |
| 6 | AM Peak | 69 | 69 | 0 |
| | Midday Peak | 67 | 67 | 0 |
| | PM Peak | 71 | 71 | 0 |
| | Pre midnight | 63 | 63 | 0 |
| | No hours with net change of ≥ 3 dBA | – | – | – |
| | 24-Hour $L_{eq}$ | 66 | 66 | 0 |
| | $L_{dn}$ | 69 | 69 | 0 |

Note: * = specific hour of the day at a site with the largest noise increase

The HUD criterion ($L_{dn}$ of 65 dBA) would be exceeded for this alternative at all six monitored sites.

Weekend

The peak hour $L_{eq}$ analysis presented in Table 4.6-10 shows that at Sites 1, 3, and 6, noise levels would increase less than one dBA compared with levels under the no action condition. At Sites 4 and 5, increases in noise levels greater than three dBA would take place over the course of day and night time hours. Noise level increases equal to or greater than three dBA are noted below:

- Site 4 - weekend noise level increases would be equal to or greater than three dBA for 19 hours of the day, with a maximum increase of seven dBA occurring between 4 am and 5 am.

- Site 5 - weekends would experience noise level increases equal to or greater than three dBA for 19 hours of the day, with a maximum increase of six dBA occurring between 4 am and 5 am.

Predicted noise levels under the Peconic Village Alternative during the weekend would exceed the FHWA criterion of 67 dBA for the following total number of hours of the day at each site (number of hours for which there are exceedances for the no action alternative are shown in parenthesis):

- Site 1 - eight hours (eight hours - no action);

- Site 2 - 14 hours (13 hours - no action);

- Site 3 - one hour (not exceeded - no action);

- Site 4 - four hours (not exceeded - no action);

- Site 5 - 16 hours (not exceeded - no action); and

- Site 6 - 11 hours (11 hours - no action).

The HUD criterion ($L_{dn}$ of 65 dBA) would be exceeded for this alternative at all six sites.

Table 4.6-10

Predicted Weekend Noise Levels for No Action and the Peconic Village Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 1 | AM Peak | 67 | 67 | 0 |
| | Midday Peak | 64 | 64 | 0 |
| | PM Peak | 69 | 69 | 0 |
| | Pre midnight | 63 | 63 | 0 |
| | No hours with net change of ≥ 3 dBA | | | |
| | 24-Hour $L_{eq}$ | 65 | 65 | 0 |
| | $L_{dn}$ | 69 | 69 | 0 |
| 2 | AM Peak | 68 | 69 | 1 |
| | Midday Peak | 68 | 69 | 1 |
| | PM Peak | 70 | 71 | 1 |
| | Pre midnight | 64 | 65 | 1 |
| | No hours with net change of ≥ 3 dBA | | | |
| | 24-Hour $L_{eq}$ | 67 | 68 | 1 |
| | $L_{dn}$ | 70 | 71 | 1 |
| 3 | AM Peak | 65 | 67 | 1 |
| | Midday Peak | 62 | 65 | 1 |
| | PM Peak | 65 | 68 | 1 |
| | Pre midnight | 60 | 63 | 1 |
| | No hours with net change of ≥ 3 dBA | | | |
| | 24-Hour $L_{eq}$ | 63 | 64 | 1 |
| | $L_{dn}$ | 67 | 67 | 1 |

Table 4.6-10 (continued)

Predicted Weekend Noise Levels for No Action and the Peconic Village Alternative

| Site | Hour | Noise Level ($L_{eq}$ in dBA) | | |
|---|---|---|---|---|
| | | No Action | Alternative | Net Increase |
| 4 | AM Peak | 62 | 68 | 6 |
| | Midday Peak | 62 | 67 | 5 |
| | PM Peak | 62 | 67 | 5 |
| | Pre midnight | 58 | 63 | 5 |
| | 4 am - 5 am | 51 | 58 | 7 |
| | 5 am - 6 am * | | | |
| | $L_{eq}$ | 60 | 65 | 5 |
| | $L_{dn}$ | 63 | 68 | 5 |
| 5 | AM Peak | 62 | 67 | 5 |
| | Midday Peak | 62 | 66 | 4 |
| | PM Peak | 65 | 69 | 4 |
| | Pre midnight | 59 | 64 | 5 |
| | 4 am - 5 am | 52 | 58 | 6 |
| | 5 am - 6 am * | 56 | 62 | 6 |
| | 24-Hour $L_{eq}$ | 61 | 65 | 4 |
| | $L_{dn}$ | 64 | 68 | 4 |
| 6 | AM Peak | 68 | 68 | 0 |
| | Midday Peak | 68 | 68 | 0 |
| | PM Peak | 69 | 69 | 0 |
| | Pre midnight | 62 | 62 | 0 |
| | No hours with net change of ≥ 3 dBA | | | |
| | 24-Hour $L_{eq}$ | 66 | 66 | 0 |
| | $L_{dn}$ | 69 | 69 | 0 |

Note: * = specific hour of the day at a site with the largest noise increase

# 4.7 Infrastructure

## 4.7.1 No Action Alternative

Under the no action alternative, there would be minimal demand for utilities since the facility would be closed and no permanent maintenance staff would be retained. All unused existing utility systems would be abandoned in place and permanently closed according to the *Base Realignment and Closure Facility Layaway and Caretaker Maintenance Standards* (Naval Facilities Engineering Command, September 1994).

## 4.7.2 Calverton Enterprise Park Reuse Plan

### Water Supply

As described in Subchapter 3.7, existing buildings within the fence at NWIRP Calverton are supplied with water from on-site wells. According to the Reuse Plan, these wells and well pumps are old, low capacity and, therefore, would not ultimately be used for the proposed new development in year 20 at full build-out. According to the Reuse Plan, the town of Riverhead would ultimately provide a source of water supply for the site. The Riverhead Water District has identified nine possible well field sites (LIRPB, 1992). This source would include a network of water distribution mains along the main thoroughfares subdividing the parcels of land subject to future development. NWIRP Calverton is contiguous to existing water mains running within the right-of-way (ROW) of New York State Route 25. As demand for water begins to exceed the capacity of the existing system, the Reuse Plan proposes that the Riverhead Water District be extended to serve the site, and be integrated with the existing distribution network. It is expected that this extension would facilitate an adequate water supply to NWIRP Calverton.

Table 4.7-1 provides typical per capita water use rates for various uses. Table 4.7-2 presents the per capita water usage estimated for the Calverton Enterprise Park Reuse Plan based on: 1) the projected number of employees; 2) the projected maximum number of visitors for the proposed theme park and commercial recreation components; 3) the number of hotel rooms anticipated; 4) the typical per capita water use rates provided in Table 4.7-1; and 5) typical daily water use rates at golf courses. As indicated in Table 4.7-2, the estimated future water use under this alternative is 487,000 gallons (1.9 million liters) per day. According to HR&A (1996), NWIRP Calverton had a permit to pump up to 1.97 million gallons (7.5 million liters) of water per day. Total water use under this alternative would therefore be less than the existing permit limitations; however, the existing wells would not ultimately be used to supply water to the site.

Table 4.7-1

Typical Per Capita Daily Water Use Rates

| Land Use | Per Capita Flow Rates | |
|---|---|---|
| | Gallons per day | Liters per day |
| Industrial Business Park[1] | 35 | 132 |
| Theme Park[2] | 8 | 30 |
| Aviation/Aircraft Use (employee)[1] | 15 | 57 |
| Commercial/Recreation[1] | 5 | 19 |
| Automobile/Raceway[1] | 5 | 19 |
| Hotel/Conference[3]<br>Employee<br>Guest | <br>10<br>50 | <br>38<br>189 |
| Residential[3] | 100 | 379 |
| Sources: [1]New York State Department of Environmental Conservation 1988;<br>[2]Dejong, July 9, 1996; and<br>[3]Tchobanoglous and Burton, 1991. | | |

Table 4.7-2

Calverton Enterprise Park Reuse Plan Estimated Daily Water Use

| Land Use | No. of employees | Per capita use gallons (liters) | No. of visitors | Per capita use gallons (liters) | Total Use (gallons) | Total Use (liters) |
|---|---|---|---|---|---|---|
| Industrial Business Park | 1,775 | 35 (132) | na | | 62,125 | 235,143 |
| Theme Park Attractions | 571 | 10 (38) | 30,000[1] | 8 (30) | 245,710 | 930,012 |
| Hotel/Conference Center | 360 | 10 (38) | 400[2] | 50 (189) | 23,600 | 89,326 |
| Service Retail | 194 | 35 (132) | na | | 6,790 | 25,700 |
| Aviation | 10 | 15 (57) | na | | 150 | 568 |
| Commercial Recreation<br>Stadium<br>Family Entertainment<br>Subtotal | 68 | 10 (38) | <br>8,000[3]<br>820[4] | <br>5 (19)<br>5 (19) | <br>680<br>40,000<br>4100<br>[44,780] | <br>2,574<br>151,400<br>15,519<br>169,492 |
| Private Golf Course | na | | | | 104,000[5] | 393,682 |
| TOTAL | 3,175 | | | | 487,195 | 1.9 million |

Notes: [1] maximum number of visitors - 30,000 (10,000 parking spaces x 3 people/car).
[2] assumes maximum use at 400 rooms.
[3] assumes maximum number of spectators at 8,000.
[4] based on 300,000 visitors per year.
[5] adapted from SCPD, 1990.
na - not applicable

## Storm Drainage

Development of areas that are currently unpaved would result in an increase in the amount of impervious surfaces. As discussed in Subchapter 4.1.2, it is estimated that the amount of impervious surfaces would increase by 320 acres (130 hectares) for a total of 797 acres on the site (including 477 acres or 193 hectares of existing impervious surface). This would increase the total volume and rate of stormwater discharge and would require new storm sewer construction. In accordance with the town of Riverhead's zoning ordinance (Article XIII, Part 108-60, J), it would be necessary to accommodate additional stormwater on site in a set of recharge basins. Recharge basins are designed to capture stormwater, thereby reducing the amount and velocity of overland water flow, reducing sediment loads to waterways, and providing retention time for recharge to groundwater. Although their location would be dependent on site specific development, it is estimated that the total area on site needed for recharge basins would be approximately 30 to 35 acres (12 to 14 hectares) (based on a formula in the town of Riverhead's zoning ordinance). This estimate assumes that the existing storage capacity is needed for the 477 acres (193 hectares) of impervious surface already on-site. Incremental construction would require state General Stormwater Discharge Permits to address stormwater runoff from industrial uses, including a plan for minimizing pollutants in runoff.

## Sanitary Sewer

As described in Subchapter 3.7.2, portions of the NWIRP Calverton site are presently served by a wastewater treatment plant with a total capacity of 65,000 gallons (246,000 liters) per day. Actual water use at NWIRP Calverton may once have been as high as 70,000 gallons (264,950 liters), with an assumed single shift of 2,000 workers. Several buildings on site had their own septic systems so that water would not have passed through the STP. Future daily sanitary flow is estimated to be approximately 383,195 gallons (1.5 million liters) (based on the water use estimates provided in Table 4.7-2, excluding the golf course). This flow would exceed historic usage of wastewater treated via the STP and the septic systems.

Riverhead intends to have the existing SPDES permit transferred to itself and operate the STP at its current location until such time when the permit must be renewed (Feb 1, 2000). The Reuse Plan proposes that improvements to the existing wastewater system be made; furthermore, the feasibility of developing a new and expanded wastewater treatment facility north of the groundwater divide would be investigated (Figure 3.10-2). The total estimated cost for providing a sanitary sewer system (sanitary sewer network and an on-site wastewater treatment plant) for the Reuse Plan is in the order of magnitude of $8 - $11 million (HR&A, 1995). With these improvements and additions, it is anticipated that the sanitary sewer system would be of adequate capacity to serve the Calverton Enterprise Park Reuse Plan.

With respect to relevant permits, State Pollution Discharge and Elimination Permits (SPDES) would be required for any new surface and groundwater discharges. The conveyance of permits from the

Navy to the town for the existing STP would require demonstration of the town's capability to operate the plant to the NYSDEC.

### Other Utility Systems

Electric

When NWIRP Calverton was operational, electrical service was provided by the PASNY. Currently, incoming electrical service is provided by LILCO. According to the Reuse Plan, in the event that lower cost electrical energy cannot be transmitted to the site by either LILCO or PASNY, there exists the potential for on-site generation and distribution of electricity at competitive rates per kilowatt hour (HR&A, 1996). Although the Reuse Plan indicates this possibility, permitting, impacts, and costs for such a facility were neither discussed nor provided in the plan. Given the uncertainty of this matter and the potential scope of analysis associated with evaluating an on-site generating facility, the potential effects of an such a facility are not addressed in this EIS. It is assumed that power for the Reuse Plan would be provided from off the site (LILCO or PASNY).

Gas

There is a four-in (ten-cm) high-pressure gas main extending into NWIRP at Gate 14 that formerly fed into the heating plant (Brooks, August 23, 1996). This line has been cut and capped. Although the Reuse Plan does not specifically indicate this possibility, the presently defunct main could provide gas to the site for a variety of uses proposed as part of the Reuse Plan.

Steam Distribution

The main buildings of NWIRP Calverton are currently supplied by steam, with condensate return from the steam plant. The steam plant is presently undergoing a major boiler replacement with an estimated completion date of mid-1997. Steam would continue to be supplied to buildings in the industrial core as conceived in the Reuse Plan. It is anticipated that there would be ample steam available for future heating and industrial use in the industrial business park.

## 4.7.3 Calverton Enterprise Park/Raceway Alternative

### Water Supply

Table 4.7-3 presents the per capita water usage estimated for the Calverton Enterprise Park Raceway Alternative based on: 1) the projected number of employees; 2) the projected maximum number of visitors for the proposed theme park, automobile raceway, and commercial recreation components; 3) the number of hotel rooms anticipated; 4) the typical per capita water use rates provided in Table

4.7-1; and 5) typical daily water use rates at golf courses. As indicated in Table 4.7-3, the estimated future water use under this alternative is 562,590 gallons (2.1 million liters) per day. According to HR&A (1996), NWIRP Calverton had a permit to pump up to 1.97 million gallons (7.5 million liters)

Table 4.7-3

Calverton Enterprise Park/ Raceway Alternative Estimated Daily Water Use

| Land Use | No. of employees | Per capita use gallons (liters) | No. of visitors | Per capita use gallons (liters) | Total Use (gallons) | Total Use (liters) |
|---|---|---|---|---|---|---|
| Industrial Business Park | 1,100 | 35 (132) | na | | 38,500 | 145,733 |
| Theme Park Attractions | 571 | 10 (38) | 30,000[1] | 8 (30) | 245,710 | 930,012 |
| Hotel/Conference Center | 360 | 10 (38) | 400[2] | 50 (189) | 23,600 | 89,326 |
| Automobile Raceway | 100 | 10 (38) | 21,000 [6] | 5 (19) | 106,000 | 401,210 |
| Commercial Recreation<br>Stadium<br>Family Entertainment<br>Subtotal | 68 | 10 (38) | <br>8,000[3]<br>820[4] | <br>5 (19)<br>5 (19) | 680<br>40,000<br>4100<br>[44,780] | 2,574<br>151,400<br>15,519<br>169,492 |
| Private Golf Course | na | | | | 104,000[5] | 393,682 |
| TOTAL | 2,199 | | | | 562,590 | 2.1 million |

Notes: [1] maximum number of visitors - 30,000 (10,000 parking spaces x 3 people/car).
[2] assumes maximum use at 400 rooms.
[3] assumes maximum number of spectators at 8,000.
[4] based on 300,000 visitors per year.
[5] adapted from SCPD, 1990.
[6] assumes 21,000 spectators per day.
na - not applicable

of water per day. Total water use under this alternative would therefore be less than the existing permit limit. However, as with the Reuse Plan, it is anticipated that the Riverhead Water District would ultimately be extended to serve the site and integrate with the existing distribution network. It is expected that this extension would provide a suitable water supply to the site.

### Storm Drainage

Development of areas that are currently unpaved for the Calverton Enterprise Park/Raceway Alternative would result in an increase in the amount of impervious surfaces. It is estimated that impervious surfaces would increase by 250 acres (101 hectares), from 477 acres (193 hectares) to an on-site total of 690 acres (280 hectares) (Subchapter 4.1.3). This would be about 70 acres (78 hectares) less than the Reuse Plan. This would increase the total volume and rate of stormwater discharge and would require new storm sewer construction. Using the estimation method as for the Reuse Plan, approximately 20 to 25 acres of land would be needed to accommodate the additional stormwater. Incremental construction would require state General Stormwater Discharge Permits to address stormwater runoff from industrial uses, including a plan for minimizing pollutants in runoff.

### Sanitary Sewer

Future sanitary flow is estimated to be approximately 458,590 gallons (1.7 million liters) (based on the water usage estimates provided in Table 4.7-3, excluding the golf course). This would exceed the capacity of the existing wastewater treatment plant. Similar to the Reuse Plan, improvements and additions to the sanitary sewer system would be expected to provide adequate capacity. As discussed for the Reuse Plan, SPDES permits would be required for any new surface and groundwater discharges.

### Other Utility Systems

#### Electric

As with the Reuse Plan, it is assumed that electrical service would be provided by LILCO or PASNY.

#### Gas

Like the Reuse Plan, the presently out-of-service four-in gas main could provide service to the site for a variety of uses proposed as part of the Enterprise Park/Raceway Alternative.

Steam Distribution

Steam would continue to be supplied to buildings of the industrial business park as conceptualized in the Reuse Plan. It is anticipated that there would be ample steam available for future heating and industrial use.

## 4.7.4 Peconic Village Alternative

### Water Supply

Table 4.7-4 presents the per capita water usage estimated for the Peconic Village Alternative based on: 1) the projected number of employees; 2) the projected number of residential units (assisted living and senior housing); 3) the number of hotel rooms anticipated; 4) the typical per capita water use rates provided in Table 4.7-1 and typical daily water use rates at golf courses. As indicated in Table 4.7-4, the estimated total future water use under this alternative is 482,605 gallons (1.8 million liters) per day, including the golf courses. According to HR&A (1996), NWIRP Calverton had a permit to pump up to 1.97 million gallons (7.5 million liters) of water per day. Total water use under this alternative would therefore be below that allowed under existing permit. It is assumed that water would ultimately be provided via an extension of the Riverhead Water District.

### Storm Drainage

The development of areas that are currently unpaved for the Peconic Village Alternative would result in an increase in the amount of on-site impervious surfaces. This would increase the total volume and rate of discharge of stormwater and would require new storm sewer construction. It is estimated that 260 acres (105 hectares) of impervious surface would be added to the existing 477 acres (193 hectares) for a total of 690 acres (280 hectares). In accordance with the town of Riverhead's requirement for on-site storage of stormwater, it is estimated that approximately 25 to 30 acres (12 to 14 hectares) of land would be needed for recharge basins. Incremental construction of the alternative would require state General Stormwater Discharge Permits to address stormwater runoff from industrial uses, including a plan for minimizing pollutants in runoff.

### Sanitary Sewer

For purposes of this analysis, it is expected that improvements and additions to the sanitary sewer system would be made to provide adequate capacity to serve the Peconic Village Alternative. As discussed for the proposed Reuse Plan, SPDES permits would be required for any new surface and groundwater discharges. Future sanitary flow is estimated to be approximately 274,605 gallons (1.0 million liters) (based on the water use estimates provided in Table 4.7-3, but excluding the golf courses).

Table 4.7-4

Peconic Village Alternative Daily Estimated Water Use

| Land Use | # of employees | Per capita use gallons (liters) | # of visitors or housing units | Per capita use gallons (liters) | Total Use (gallons) | Total Use (liters) |
|---|---|---|---|---|---|---|
| Industrial Business Park | 1,036 | 35 (132) | na | | 36,260 | 137,244 |
| Commercial/Retail | 227 | 35 (132) | na | | 7,945 | 30,072 |
| Hotel/Conference Center | 360 | 10 (38) | 400[1] | 50 (189) | 23,600 | 89,326 |
| Residential - Assisted Living | 275 | 10 (38) | 688 | 100 | 71,550 | 270,817 |
| Residential - Senior Living | na | | 1,350 | 100 | 135,000 | 510,975 |
| Golf Courses | 25 | 10 (38) | | | 208,250[2] | 787,402 |
| TOTAL | 1,923 | | | | 482,605 | 1.8 million |

Notes: [1] assumes maximum use at 400 rooms.
[2] Adapted from SCPD, 1990.
na - not applicable

## Other Utility Systems

### Electric

As with the other alternatives, it is assumed that electrical power supply would be provided by LILCO or PASNY. No on-site electrical generation would take place.

### Gas

Like the other alternatives, natural gas would be available to service the site and any of the uses proposed under the Peconic Village Alternative.

### Steam Distribution

Steam would continue to be supplied to buildings of the industrial business park under the Peconic Village Alternative. It is anticipated that there would be ample steam available for future heating and industrial use.

# 4.8 Cultural Resources

Section 106 of the National Historic Preservation Act provides that federal agencies take into account the effect of their actions on any district, site, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places. Implementing regulations for Section 106 are contained in 36 CFR 800, *Protection of Historic Properties*. These regulations provide specific criteria for assessing the effect of federal undertakings on historic properties and identifying adverse effects of proposed undertakings on historic properties. The effects that a proposed undertaking will have on a cultural resource are predicted based on the significant characteristics or distinguishing elements of the resource and the design and anticipated consequences of the undertaking. Effects to cultural resources on or eligible for listing in the National Register of Historic Places are evaluated with regard to the *Criteria of Effect and Adverse Effect*, established by the Advisory Council on Historic Preservation (ACHP) (36 CFR 800.9). These criteria are summarized in Table 4.8-1.

The cultural resources survey conducted at NWIRP Calverton (TAMS Consultants Inc. and Historical Perspectives, Inc., 1996) identified three structures that could be considered eligible for the National Register of Historic Places (Figure 3.8-1). Built within the past 50 years, these structures are considered to be individually eligible for several reasons. Plant 6 and Plant 7 (built in 1953) are excellent examples of military-industrial architecture of wide-span steel frame and precast concrete panel curtain wall construction. The Grumman aircraft developed and manufactured in these final assembly, experimental, and production flight testing facilities had unmatched capabilities and made up three-quarters of the US Navy's carrier-based aircraft. The Anechoic Chamber (built in 1968) was a prototypical research, development, testing, and evaluation facility for the testing of the electronic and radar systems of aircraft such as the EA-6B Prowler, A-6 Intruder, and F-14 Tomcat. It was the largest such facility in the free world when it was built, housing an entire aircraft; it was used as a model for all later anechoic chambers of this kind.

These three facilities are historically significant for their critical role in research, development, and production of important Cold War weapons systems, including fighter, attack, and electronic warfare aircraft. Each one retains historic integrity and clearly conveys a strong association with military activities. Therefore, this analysis addresses the impacts of implementing the Reuse Plan and the alternatives on the character of the individual buildings.

The Navy, the SHPO, and the ACHP have agreed to terms of a Memorandum of Agreement (MOA) for the protection of all National Register-eligible properties. Pursuant to the MOA, the conveyance document will contain covenants to ensure the protection of all National Register-eligible properties. This satisfies the requirements of 36 CFR 800.9[b], and mitigates the adverse effect of transfer on the eligible historic resources.

Table 4.8-1

Criteria of Effect and Adverse Effect

An undertaking has an effect on a historic property when it may alter characteristics of the property that may qualify the property for inclusion in the National Register. For purposes of determining effect, alteration to features of the property's location, setting, or use may be significant depending on a property's significant characteristics and should be considered (36 CFR 800.9[a]).

An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

1. Physical destruction, damage, or alteration of all or part of the property;
2. Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;
3. Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
4. Neglect of a property resulting in its deterioration or destruction; and
5. Transfer, lease, or sale of the property (36 CFR 800.9[b]).

Effects of an undertaking that would otherwise be found to be adverse may be considered as being not adverse for the purpose of these regulations:

1. When the historic property is of value only for its potential contribution to archeological, historic, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines;
2. When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historical and architectural value of the affected historic property through conformance with the Secretary's "Standards for Rehabilitation and Guidelines for Rehabilitating Buildings;" or
3. When the undertaking is limited to the transfer, lease or sale of a historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant historic features (36 CFR 800.9[c]).

## 4.8.1 No Action Alternative

Under future baseline (no action) conditions, there would be no new construction or alteration in the area of the historic buildings. Closure of NWIRP Calverton would follow the standards and procedures for mothballing facilities published in *Base Realignment and Closure Facility Layaway and Caretaker Maintenance Standards* (Naval Facilities Engineering Command, September 1994). These guidelines and procedures meet the requirements for mothballing historic structures outlined by the National Park Service in *Preservation Brief 31: Mothballing Historic Buildings* (National Park Service, September 1993). By following these Navy and National Park Service guidelines, there would be no adverse effect on the historic structures under the no action alternative.

## 4.8.2 Calverton Enterprise Park Reuse Plan

Under the Reuse Plan, NWIRP Calverton would be redeveloped for a variety of commercial, recreational, industrial, and open space uses (Subchapter 2.3).

### Architecture

Plant 6, an aircraft assembly facility built in 1953, would be part of the industrial business park in the Reuse Plan. It was constructed as a wide-span, steel-framed structure clad with a pre-cast, reinforced concrete panel curtain wall. Plant 7 was built in the same year and in the same fashion as Plant 6; it too would be part of the industrial business park. Assuming that any exterior renovations are made in accordance with the Secretary of Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, there would be no adverse effect on these structures.

The Anechoic Chamber, built in 1968 of steel frame sheathed with insulated, corrugated metal panels, was used as a research, development, testing, and evaluation facility for electronic and radar aircraft systems. The interior of the Anechoic Chamber is intrinsic to its significance because the material lining the walls of the chamber was the key element responsible for the effective testing of the aircraft systems. If renovations to either the interior or exterior of the Anechoic Chamber are carried out according to the Secretary of Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, then there would be no adverse effect.

### Archaeology

There are an estimated 240 acres (97 hectares) of high archaeological sensitivity within the fence of NWIRP Calverton (Figure 3.8-2). These areas are found primarily in and around former and existing bodies of water. The largest contiguous area of high archaeological sensitivity is located southwest of the main (east) runway within the core area of the site.

Under the Reuse Plan, archaeological resources of high sensitivity may be disturbed in the area of the industrial business park and the commercial recreation area. Areas already paved (i.e., runways and much of the industrial core) border areas of high sensitivity but are not in themselves considered highly sensitive. Should areas of high sensitivity be disturbed in the future, the Navy's conveyance document will contain covenants to protect National Register-eligible resources. The remainder of NWIRP Calverton contains areas of medium to low potential for finding prehistoric sites. As noted in Subchapter 5.1.8, the Navy has consulted with the ACHP and the New York SHPO in accordance with Section 106 of the NHPA. This process resulted in the agreement to terms of an MOA between the parties providing for appropriate protection or mitigation of National Register-eligible properties.

## 4.8.3 Calverton Enterprise Park/Raceway Alternative

Under the Calverton Enterprise Park/Raceway Alternative, NWIRP Calverton would be redeveloped similar to the Reuse Plan, except in the area of the eastern runway and part of the industrial core, where an automobile raceway would replace the aviation/aircraft use (Subchapter 2.4). There would be few differences between the archaeological and architectural impacts of this alternative and the Reuse Plan.

### Architecture

Plants 6 and 7 would be within the industrial business park of this alternative. Assuming that the any exterior renovations are made in accordance with the Secretary of Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, there would be no adverse effect on these structures. In this alternative, the Anechoic Chamber would be part of the property associated with the racing complex. The raceway site plan of Project Calverton Inc. shows the Anechoic Chamber as a workshop. As described previously, the interior is intrinsic to the significance of the structure. Therefore, if any proposed renovations to both the interior and exterior of this structure are be carried out in accordance with the Secretary of Interior's Standards, no adverse effect would occur. As described in Subchapter 4.8.2, the Navy, NYSHPO, and the ACHP have agreed to the terms of an MOA to to ensure protection of National Register-eligible structures after transfer. The MOA includes restrictive deed covenants to protect these resources

### Archaeology

As described in Subchapter 4.8.2 the Navy, NYSHPO, and the ACHP have agreed to the terms of an MOA to to ensure protection of National Register-eligible archaeological resources after transfer. The MOA includes restrictive deed covenants to protect these resources

## 4.8.4 Peconic Village Alternative

The Peconic Village Alternative would include a combination of senior housing, recreation, open space, commercial, and industrial uses (Subchapter 2.5).

### Architecture

Plant 6, the assembly and administration building, would be part of the industrial business park under this alternative. Plant 7, the hangar and operations building, would be situated in the civic facilities area of this alternative. Assuming that any exterior renovations would be carried out according to the Secretary of Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, there would be no adverse effect on these structures. Under the Peconic Village Alternative, the Anechoic Chamber would be demolished to make way for senior citizen assisted living housing. If taken, this action would have an adverse effect because it involves the physical destruction, damage, or alteration of all or part of the property (36 CFR 800.9[b]1). The Navy, NYSHPO, and the ACHP have agreed to the terms of an MOA to protect National Register-eligible structures. The MOA includes restrictive deed covenants to protect these resources; at a minimum, recordation of this National Register-eligible building, prior to its demolition, would be required.

### Archaeology

Under this alternative archaeological resources of high sensitivity may be disturbed in these areas: assisted living housing; commercial use adjacent to the east runway; in the area of senior housing directly east of the industrial core; and in the area of the Sewage Treatment Plant. The Navy, NYSHPO, and the ACHP have agreed to the terms of an MOA to to ensure protection of National Register-eligible archaeological resources after transfer. The MOA includes restrictive deed covenants to protect these resources

# 4.9 Topography, Geology and Soils

Given the gently sloping relief of the NWIRP Calverton fenced-in area, with slopes generally under six percent, none of the action alternatives would significantly affect existing topography. Construction of the proposed uses within each alternative (e.g., industrial business complex, airport, automobile raceway, senior housing) would not likely require extensive regrading, excavation, or filling. Because none of the proposed construction projects would entail deep excavations, no direct impacts to geologic resources are anticipated.

With respect to soils, construction elements of all three alternatives generally fall within the Haven-Riverhead Association. The soils of this association are typically deep, nearly level to gently sloping, and well-drained (Subchapter 3.9). Development as proposed in the alternatives is generally considered compatible with the soils association, because of its good drainage and the ease of excavation. In places where there may be a high water table or where soils are on steep slopes, construction procedures to reduce effects on groundwater and on soils would need to be implemented Although these site-specific issues cannot be addressed at this time given the existing conceptual level of the alternatives, a soil erosion and sediment control plan would be prepared prior to construction to address these issues. The plan is typically designed to achieve the following objectives:

- Minimize potential impacts during construction;
- Limit work areas to the immediate area of construction, to minimize disruption of adjacent lands; and
- Restore and revegetate adjacent lands as quickly as possible to the extent practicable following construction of a particular facility.

The Pine Barrens Plan (Volume 1, Chapter 5, CPBJP&PC, 1995) defines a set of standards and guidelines for land use that would be applicable to all of the alternatives - the lands proposed for development for each alternative are within Compatible Growth Area of the Central Pine Barrens. Areas of the site to be cleared would need to comply with the clearance standards that include:

- Residential uses - maximum site clearances range from 90 percent for 10,000 sq ft (930 sq m) on 0.25 acres (0.10 hectares) (zoning lot size) to 20 percent for 160,000 sq ft to 200,000 sq ft (14,880 sq m to 18,600 sq m); and
- Commercial, industrial and other or mixed uses - 65 percent maximum site clearance.

Guidelines for soils include:

- Maximize placement of site clearing on slopes less that ten percent;

- Prepare slope analysis maps showing slopes in the ranges zero to ten percent, and 11-15 percent, and 15 percent and greater;
- Develop erosion and sediment control plans for areas of 15 percent or greater slopes;
- Design roads and driveways to minimize traversing slopes greater than ten percent and to minimize cuts and fills; and
- Revise details of retaining walls and erosion control structures should be provided for roads and driveways that traverse slopes greater than ten percent.

Suffolk County's Pine Barrens Review Commission (PBRC) has similar guidelines for soils (PBRC, 1989).

# 4.10 Water Quality and Hydrology

## 4.10.1 No Action Alternative

Under the no action alternative (future baseline condition), water quality and hydrologic resources would not be adversely affected. With the site vacant and the facility closed, the existing Calverton STP would not be operating; therefore, its discharge to McKay Lake (and then to the Peconic River) would be eliminated. Additional stormwater would not be produced, nor would recharge to the underground aquifers be affected, because there would be no change in the amount of existing impervious (e.g., buildings and paved areas) surface at the site.

Under the no action alternative where the facility is retained by the US government and no reuse or redevelopment occurs, the Navy's IR Program (Chapter 3.12), designed to identify contamination and to institute corrective measures, would continue to be implemented and completed. Consequently, the potential for future contamination of surface and groundwater from the IR-property on site would be eliminated.

## 4.10.2 Calverton Enterprise Park Reuse Plan

### Surface Water

The New York SPDES program (Environmental Conservation Law (ECL), Article 17, Parts 750-757) is designed to control industrial waste discharges, sewage discharges, and stormwater discharges into waters of New York. The state regulates point source discharges such as effluent from a STP as well as non-point sources such as stormwater from industrial facilities and construction sites. In Suffolk County, the SCDHS has permit authority for this program. The Reuse Plan, as well as the other alternatives, would be subject to SPDES regulations for the control of stormwater and STP (existing and new) discharges.

Specific impacts of the Reuse Plan on surface waters would depend on site-specific development within each of the major land use categories (e.g., industrial business park, commercial recreation area, theme park, etc.). Given the large size of the site, the 20-year time frame for redevelopment, and the relatively small amount of surface waters present, existing surface water features would not be directly affected by construction operations such as filling or elimination, (i.e., existing surface water features would be incorporated within the final design plans of the Reuse Plan). Existing on-site surface water features and the Peconic River, located just outside the fenced-in area of NWIRP Calverton, are displayed in Figure 3.10-1.

## Stormwater

Stormwater runoff is that part of precipitation that flows over the surface of the land. In natural conditions, stormwater normally flows to lower elevations where it drains to streams, rivers, and other surface water bodies or is recharged to the groundwater. The amount of stormwater in an area depends on a number of variables, including vegetative cover, soils, slope, existing drainage systems, and the amount of impervious surface area. Sources of contaminants transported by stormwater include fertilizers, pesticides, by-products of urban development and industrial facilities such as sediment, oils and grease, improper storage/disposal of toxics, and air-borne contaminants.

Construction activities associated with development of the Reuse Plan would be subject to the state construction site general permit issued under the SPDES program. Stormwater pollution prevention plans (SWP3s), including elements addressing sedimentation basins, would need to be prepared prior to a formal approval for general permit coverage. The SWP3s would need to include applicable components of the local sediment and erosion control site plan standards, site permits, stormwater management site plans, and other duly adopted regulations. The state general permit requires that stormwater flows be diverted from exposed soils and that runoff from exposed areas be limited "to the degree attainable." Such practices may include sediment traps and sedimentation basins. Given the scope of potential redevelopment at NWIRP Calverton, it is likely that areas of ten acres (four hectares) or more would be disturbed; therefore, temporary or permanent sediment basins that provide at least 3,600 cu ft (101 cu m) of storage per acre drained would need to be provided "where attainable" until final site stabilization.

Construction stormwater management controls in the SWP3 must conform to the State Guidelines for New Development (Article 17, Titles 7 and 8, ECL). Compliance with the state Erosion and Sediment Control Guidelines would also be required. These guidelines mandate that waters downstream from construction areas not show any substantial visible contrast to upstream reaches with respect to color, taste, odor, turbidity, or sediment deposition.

NWIRP Calverton has a general stormwater permit for runoff from the existing industrial areas that will expire in 1998. For the continuation of similar industrial activities, the general stormwater permit would need to be maintained and/or modified. For new industrial uses the applicability of the SPDES general industrial stormwater permit requirements would need to be assessed at the time specific industrial reuses are identified. All industrial stormwater discharges must comply with state water quality standards under Article 17 of the ECL.

The Pine Barrens Comprehensive Land Use Plan (CPBJP&PC, 1995 [Volume 1, Chapter 5]) defines a standard requiring on-site storage capacity for stormwater discharges:

> "Development projects must provide that all stormwater originating from the development of the property is recharged on site unless surplus capacity exists in an off site drainage system."

According to the CPBJP&PC, the construction of large excavated recharge basins is discouraged within the pine barrens area. The use of alternative natural recharge areas and/or drainage systems that would cause less disturbance of the site "may be encouraged" per the Pine Barrens Plan. Alternatives include, but are not limited to, the use of natural swales and depressions and/or the installation of perforated pipe, vertical drains or dry wells. The Pine Barrens Plan recommends that ponds be constructed and planted to create shallow marsh habitat to filter runoff to the maximum extent practicable; ponds should only be created in place of recharge basins, not for aesthetic purposes.

It is estimated that the potential increase in impervious surfaces would be about 320 acres (130 hectares), with full build-out of the Reuse Plan. Presently, there are about 477 acres (193 hectares) of impervious surface on the 2,923-acre (1,184-hectare) site. In order to accommodate the additional volume of stormwater, it is estimated that approximately 30 to 35 surface acres (12 to 14 hectares) of additional land would be needed for stormwater recharge basins of five ft (1.5 m) in depth. This represents an order of magnitude estimate only, and has not been calculated for preliminary site engineering purposes; it is based on the following assumptions:

- Amount and type of development proposed in the Reuse Plan;
- The town of Riverhead's allowable building coverages and parking requirements as defined in its existing zoning ordinance;
- Estimate of an area-weighted runoff coefficient; and
- The town requirements for estimating recharge basins as defined in the Zoning Ordinance (Chapter 108, Article XIII, 108-60).

In general, runoff from land uses such as aircraft runways, theme parks, and automobile raceways have similar characteristics. These land uses require large paved areas for parking of automobiles and aircraft as well as roadways and runways for access. Runoff from paved surfaces will entrain particulate matter, oil/grease, and trace levels of metals and organics. Both the USEPA (Urban Wet Weather Advisory Committee) and the Federal Highway Administration (April, 1990) have characterized runoff from a variety of land uses and have established methods to evaluate and control runoff quality.

It can be anticipated that some maintenance of equipment and machinery will occur on the site. Such maintenance typically occurs indoors where hydraulic fluids and fuels, if spilled, can be collected in building floor drains and removed for proper treatment, reuse and/or disposal. Storage of fuels and hydraulic fluids can be expected to be either indoors or within double-walled, monitored containment structures as prescribed by various federal and state regulations.

In northern climates, where freezing conditions occur during winter, airports require de-icing of both runways and aircraft. De-icing of runways involves the application of either organic or inorganic agents to large surface areas. To control runoff and deicing residuals from runways and taxiways, it is often necessary to install retention facilities that collect discharging stormwater until the storm

event has terminated so that retained runoff can be collected for treatment. The level of treatment depends on the sensitivity of water resources and if treatment is to occur on- or off-site.

STP Surface Water Discharge

The existing Calverton STP is permitted to discharge treated sanitary and process wastewater as well as non-contact cooling water to McKay Lake at a flow capacity of 62,000 gallons (234,670 liters) per day. The existing permit will expire in February, 2000. According to the original engineering report, the plant's treatment capacity could be increased fourfold with the addition of new tankage (HR&A, 1996). Because of the estimated wastewater treatment demands of the Reuse Plan (Subchapter 4.7), a new groundwater discharging STP is ultimately proposed in the northern area of the site. As discussed in Subchapter 4.7.2, it is estimated that at full build-out of this alternative there would be a daily maximum of approximately 383,200 gallons (1.5 million liters) of wastewater generated. In the interim, it would be possible to operate the existing STP, with a modified permit for any proposed volume or treatment-related changes necessary. Riverhead intends to have the existing SPDES permit transferred to itself and to operate the STP at its current location until the permit expiration date. Continuing operation of the STP would require a transfer of ownership or name change, which is also considered a SPDES permit modification. A change in the type of waste stream would also likely necessitate a permit modification.

Pursuant to NYCRR Part 666.12(b)(1), new discharges from point sources are not permitted unless it can be demonstrated that the discharge will not have a detrimental impact on river area resources.

**Groundwater**

The Reuse Plan would result in the development of the fenced-in portion of the site on both sides of the groundwater divide (Figure 3.10-2). Groundwater in the shallow aquifer zones beneath the northern buffer zones and the northern half of the fenced-in area flows to the northeast, probably discharging to Long Island Sound. Shallow aquifer zone groundwater beneath the southern half of the fenced-in area as well as the southern buffer zones probably discharges into the Peconic River and its associated ponds and wetlands.

The industrial business park, airport, and commercial uses have the potential for accidental pollution of groundwater (and surface water) or endangerment of public health. These uses would be required to prepare Spill Contingency Plans. In general, the NYSDEC requires spill plans to be submitted for review and approval as part of the SPDES permit application.

Nitrates from fertilizers that would be used on the golf course of the Reuse Plan are of potential concern, considering that groundwater is the primary source of drinking water in the vicinity of NWIRP Calverton. Nitrates have been associated with several environmental issues: surface water quality (eutrophication), productivity, acid rain, and the depletion of stratosphere ozone. Potential human health risks associated with nitrates include birth defects, cancer, nervous system impairments,

and the blue baby syndrome - methemoglobinemia (LIRPB, 1992). The consumption of nitrates reduces the oxygen-carrying capacity of the blood, particularly in infants less than three months old who are not yet on solid food. There have been however, virtually no reports of methemoglobinemia in the US in recent years. The USEPA recommends the maximum concentration limit of ten mg of nitrate-N per liter, or ten ppm, in drinking water.

Research has shown the occurrence of nitrate leaching when excessive amounts of nitrogen have been used, highly soluble nitrogen sources are used, fertilizer is applied in a dormant or semi-dormant period of plant uptake, and excessive irrigation has caused greater amounts of leaching (LIRPB, 1992). Consequently, the causes of leaching lend themselves to being controlled by best management practices (BMPs) including:

- Applying slow release nitrogen sources;
- Reducing the total yearly amount of nitrogen fertilizer applied;
- Avoiding fertilization with higher amounts of soluble nitrogen in cool, wet conditions;
- Using grasses with low nitrogen requirements;
- Reducing the size of greens, tees, and fairways;
- Using an irrigation system capable of replacing only the amount of water used by the grasses and other vegetation that is not supplied by the rainfall; and
- Recycling water by applying it back to the turfgrass surface to allow chemicals to pass through the natural biological filter of the soil and not into groundwater (SCPD, 1990).

The Long Island Special Groundwater Protection Area (SGPA) Plan addresses protective measures for Nassau and Suffolk County, including the Central Suffolk SGPA within which NWIRP Calverton is located. A set of BMPs is identified for a variety of land uses. All development that would occur as part of the Reuse Plan would require review and approval by Suffolk County. The SGPA Plan requires that new land uses produce no net increase in the levels of polluting constituents in the groundwater supply. The SGPA Plan recommends that new commercial or industrial land be severely restricted in the SGPAs. However, where these uses exist or are developed, natural areas should be retained.

Similarly, a policy contained in the Pine Barrens Plan encourages the rezoning of vacant industrial sites within the Pine Barrens Zone (Core Preservation Area and Compatible Growth Area) to less intensive/less potentially hazardous uses, and concentrating industrial development outside the Pine Barrens boundaries.

**Peconic Scenic River Corridor**

As described in Subchapter 3.10.1, a portion of the Peconic River scenic corridor traverses the site (Figure 3.10-1). Pertinent regulations as well as the Peconic Estuary Program's Comprehensive Conservation and Management Plan (CCMP) recommend setbacks of 250 ft (76 m) for new buildings

in the scenic portion of the Peconic River. Based on the existing scenic corridor boundary, it is estimated that approximately 526 acres (213 hectares) of land within the fence of NWIRP Calverton (and Compatible Growth Area of the pine barrens) would be restricted from development. The land uses that are crossed by the scenic corridor in the Reuse Plan include the GA/cargo airport, community park, industrial business park (and associated parklands), golf course, natural area, theme attraction area, and Pine Barrens Core Preservation Area. Therefore, with the present scenic corridor boundary, these uses of the Reuse Plan would be inconsistent with the regulations and could not be developed.

That portion of the Peconic River Scenic Corridor on NWIRP Calverton was specifically discussed in the Findings Statement for the Central Pine Barrens Plan. Essentially, it was stated that the Pine Barrens Commission (CPBJP&PC) would support and recommend that the northerly boundary of the scenic river area (Figure 3.10-1) within the Compatible Growth Area of NWIRP Calverton be moved to a point coterminous with the Core Preservation Area boundary line, under the following conditions:

- adherence to the pine barrens standards and guidelines through adoption of a planned development district (PDD) or, in other words, a planned unit development (PUD) that is consistent with the Pine Barrens Plan; and

- incorporation of plans for wastewater treatment plant infrastructure improvements for the Calverton STP.

If these conditions were met, the scenic corridor could be relocated outside the fenced-in area, south of Swan Pond/Grumman Boulevard where development would occur, and would therefore pose no restriction to Reuse Plan implementation. The Reuse Plan complies with the Pine Barrens Plan in general. However, it does not address infrastructure improvements to the Calverton STP but proposes the development of a new STP in the future. If the scenic corridor boundary did not change, redevelopment of the site as proposed in the Reuse Plan would be restricted on those lands within the corridor.

The Commissioner of NYSDEC may amend the scenic corridor boundary only if the proposed change will "further the purposes and policies of the Act" [Part 666.6(h)] and after a public hearing is held in or near the river area. In addition, the location of corridor boundaries "will be delineated and established to include within the river area those natural, cultural, and recreational features whose protection and preservation are necessary to accomplish the purposes of the Act." Although the Central Pine Barrens Joint Planning and Policy Commission can support and recommend changing the scenic corridor boundary, the position of the Commission carries the same weight in the public hearing process as the opinions of other citizens. Any proposal to relocate the Peconic River boundary would also be subject to review under SEQRA.

Regulations of the Wild, Scenic and Recreational River Systems Act (Title 27, Article 15, Environmental Conservation Law) do provide for variances under certain conditions:

- for use variances where there is an unnecessary hardship on the applicant;
- for area variances where the area or dimensional provisions would cause practical difficulty; and
- where applicants are state agencies or municipal corporations, the variance must fulfill a public health, safety or welfare function while remaining as environmentally protective of river values as the regulations themselves (Part 666.2(e)).

The town of Riverhead and/or its CDA would qualify as an applicant to whom a variance could be granted if the other requirements (compliance with pine barrens standards and improvements to the Calverton STP) were fulfilled. In addition, the NYSDEC would need to review more detailed plans, a more detailed project description, and a variance request to determine if the proposal is protective of the river and eligible to receive a variance.

Regulations (Part 666) pursuant to the Wild, Scenic and Recreational River Systems Act (ECL Title 27, Article 15) address the water quality issues:

- New discharges from point sources (like the Calverton and Riverhead STPs) are not allowed unless it is shown that the discharge will not have a detrimental impact on river area resources;
- Existing point source discharges are to be minimized or eliminated;
- Stormwater runoff from a new development will not exceed pre-developmental (natural) conditions. Stormwater runoff must be managed to the extent practicable within each newly created lot. Development plans must provide for control of the first ½-inch of runoff from all disturbed and otherwise developed areas.

**Peconic Estuary Program**

McKay Lake is the existing discharge location for the Calverton STP. As discussed in Subchapter 4.7, the Reuse Plan would generate sanitary waste discharge well above the existing STP capacity of 65,000 gallons (246,025 liters) per day. Consequently, an expanded treatment facility or a new treatment facility would need to be constructed. As described in Subchapter 2.3.7, 18 acres (seven hectares) of land would be allocated to a new STP.

The Calverton STP (and Brookhaven National Lab STP) have been identified as contributors of nutrients to the Peconic Estuary by the Peconic Estuary Program (PEP) CCMP. The Calverton STP

is of particular concern because of its direct discharge into the environmentally sensitive Peconic River (SCDHS, 1995). The CCMP recommended that no net increase in the quantity of nitrogen discharged to surface waters be allowed from the Calverton STP. The CCMP recommended that the permit be modified to include nitrogen limits and subsequent monitoring requirements. Although nitrogen itself does not directly impair the Peconic Estuary environment, excess nitrogen can lead to excessive algal blooms in the Peconic Estuary; this in turn lowers dissolved oxygen levels resulting in adverse effects on water quality and biota (SCDHS, 1995). According to the CCMP, NYSDEC would be seeking agreements from operators of the STPs for defining nitrogen limits and effluent monitoring.

The most significant of all controllable nitrogen loadings in terms of impact on the Peconic estuary system is the Riverhead STP, due to the discharge's concentrated nature and the STP's location near the mouth of the Peconic River, a poorly-flushed area of the estuary (SCDHS, 1995). Based on the modeling done for the PEP CCMP, improvements in wastewater treatment and disposal at the Riverhead STP would result in achieving the total nitrogen standard of 0.5 mg/l throughout the tidal areas of the estuary. The town of Riverhead has voluntarily committed to a freeze in additional nitrogen loading from its STP and has implemented a fee for new sewer hook-ups to fund denitrification upgrades. According to the CCMP, the improvements for the Riverhead STP could include any of the following:

- A groundwater discharge (containing 10 mg/l total nitrogen);
- A relocated surface water discharge (to central or eastern Flanders Bay); or
- A surface water discharge at the existing discharge location with an effluent limitation of 4 mg/l total nitrogen.

The PEP CCMP further recommends that new groundwater-discharging STPs be avoided in the Peconic River area. New groundwater-discharging plants should be considered only under these circumstances:

- If best available denitrification technology is used;
- If the project is associated with significant natural resources, and/or surface water quality benefits; and
- If additional analysis shows that impacts on the Peconic River would be negligible.

BTCAMP, a study preceding the working draft CCMP that addressed brown tides in the Peconic estuary, recommended that groundwater recharge seemed to be the most desirable alternative for the Riverhead STP from a natural resources and surface water quality perspective. This recharge would allow additional filtration of effluent through soil and elimination of the potential of surface water contamination during upset conditions (SCDHS, 1995).

The Final Pine Barrens Comprehensive Land Use Plan (Subchapters 3.1 and 4.1) also addresses the issue of wastewater discharges (Volume 1, Chapter 5 of the Land Use Plan). In the Compatible

Growth Area, where redevelopment would occur as part of the Reuse Plan, STP discharges "shall be outside and downgradient of the Central Pine Barrens...where deemed practical" and approved denitrification systems "may be used in lieu of a sewage treatment plant." The proposed location of the new STP is within the Compatible Growth Area of the Pine Barrens. Based on the location of the groundwater divide, flow from the STP discharge would be to the north, away from the Pine Barrens and toward the Long Island Sound.

## 4.10.3 Calverton Enterprise Park/Raceway Alternative

Specific impacts of the Enterprise Park/Raceway alternative on surface waters would depend on site-specific development within each of the major land use categories as discussed in Subchapter 4.10.2 for the Reuse Plan. Development would be designed to meet all surface water regulations of the town of Riverhead, the County of Suffolk, and NYSDEC for water quality, industrial waste discharges, sewage discharges, and stormwater.

**Surface Water**

Like the Reuse Plan, this alternative would be subject to all applicable regulations of the SPDES program administered by Suffolk County for construction and for industrial stormwater discharges.

With complete build-out of this alternative, the estimated potential increase in impervious surfaces would be about 250 acres (101 hectares) (Subchapter 4.1.3). Using the same estimation method and similar assumptions as for the Reuse Plan, it is estimated that the total area on site needed for additional recharge basins would be approximately 20 to 25 acres (eight to ten hectares). This estimate assumes that the present on-site drainage capacity is needed for the existing 477 acres (193 hectares) of impervious surface.

The standards and guidelines of the Pine Barrens Plan concerning stormwater discharges and recharge basins, as discussed in Subchapter 4.10.2 for the Reuse Plan would be applicable in the same way to this alternative.

The requirements of the SPDES program administered by Suffolk County for point source discharges from the existing and newly proposed STPs would also be applicable to the Enterprise Park/Raceway Alternative. As discussed in Subchapter 4.7.3, it is estimated that at full build-out of this alternative there would be a daily maximum of approximately 562,600 gallons (rounded) (2.1 million liters) of wastewater generated.

### Groundwater

Because many of the land uses are similar to the Reuse Plan (including the industrial business park, theme park, commercial recreation area, golf course, and infrastructure [STP]), issues concerning potential groundwater effects would be similar. The automobile raceway and its ancillary uses, like other industrial uses on site (and the GA/cargo airport use in the Reuse Plan), would be required to prepare a spill plan for review and approval by NYSDEC.

The standards and guidelines of the Pine Barrens Plan concerning groundwater as discussed in Subchapter 4.10.2 for the Reuse Plan would be applicable in the same way to this alternative. BMPs identified in the Long Island SGPA Plan would be also applicable; likewise, protective measures and policies defined in the SGPA plan would require compliance.

### Peconic River Scenic Corridor

The Peconic River scenic corridor would traverse (from east to west) the following land uses in this alternative - automobile raceway, community park, industrial business park, golf course, natural area, theme attractions, and Pine Barrens Core Preservation Area. Approximately 526 acres (213 hectares) of land within the fence would be restricted from development (Figure 3.10-1). As discussed in Subchapter 4.10.2, unless the scenic corridor were to be relocated, reuse of those lands as proposed in this alternative within the corridor boundaries would be severely limited

### Peconic Estuary Program

The recommendations of the PEP CCMP as discussed in Subchapter 4.10.2 would be applicable to the Calverton Enterprise Park/Raceway alternative in the same way as for the Reuse Plan. Most land uses are similar to the Reuse Plan; the raceway replaces the airport in the same on-site location (Figure 2-4). A new STP is proposed as part of this alternative and it would need to comply with the recommended actions of the CCMP. The STP and its discharge are proposed in the same location as the Reuse Plan - within the Compatible Growth Area of the Pine Barrens with a discharge flowing to the north, away from the pine barrens.

## 4.10.4 Peconic Village Alternative

Like the other two build alternatives, specific impacts of the Peconic Village on surface waters would depend on site-specific development within each of the major land use categories. As with the other alternatives, development would be designed to meet all surface water regulations of the town of Riverhead, the County of Suffolk, and NYSDEC for water quality, industrial waste discharges, sewage discharges, and stormwater.

### Surface Water

Assuming full development of this alternative, the estimated potential increase in impervious surfaces would be about 260 acres (105 hectares) (Subchapter 4.1.4). Using the same estimation method as for the Reuse Plan and the Enterprise Park/Raceway Alternative and similar assumptions, the total area on site needed for recharge basins would be approximately 25 acres to 30 acres (10 to 12 hectares).

The standards and guidelines of the Pine Barrens Plan concerning stormwater discharges and recharge basins, that are discussed in Subchapter 4.10.2 for the Reuse Plan (and Subchapter 4.10.3 for the Enterprise Park/Raceway alternative) would be applicable in the same way to the Peconic Village Alternative.

All applicable SPDES regulations for construction and industrial stormwater discharges as well as for the existing and newly proposed STP would require compliance with implementation of this alternative. As discussed in Subchapter 4.7.3, it is estimated that at full build-out of this alternative there would be a daily maximum of approximately 378,400 gallons (rounded) (1.4 million liters) of wastewater generated.

### Groundwater

Senior housing of the Peconic Village is the major difference in land use from the other two alternatives; moreover, the following uses do not exist in this alternative - airport, raceway, theme park, and commercial recreation area. However, because the industrial park remains (as well as commercial uses, golf course(s), and infrastructure [STP]), the potential for impacts to the groundwater would exist. The industrial business park (and its variety of individual uses) would be required to prepare spill plan(s) for review and approval by NYSDEC.

The standards and guidelines of the Pine Barrens Plan concerning groundwater as discussed in Subchapter 4.10.2 for the Reuse Plan (and 4.10.3 for the Enterprise Park/Raceway Alternative), would be applicable to the Peconic Village Alternative. BMPs identified in the Long Island SGPA Plan would be applicable; protective measures and policies defined in the SGPA Plan would also require compliance.

### Peconic River Scenic Corridor

The Peconic River scenic corridor would traverse (from east to west) the following land uses in the Peconic Village: senior housing, public golf course, open space/natural area, commercial, industrial business park, senior housing, private golf course, open space/natural area, and pine barrens core area. About 526 acres (213 hectares) of land would be restricted from development on site (Figure 3.10-1). As discussed in Subchapter 4.10.2, the scenic corridor on NWIRP Calverton would be considered for relocation to the area outside of where development would occur as part of this

alternative provided that: 1) certain infrastructure improvements to the Calverton STP and 2) adherence to the Pine Barrens Plan standards and guidelines were met via a new zoning ordinance to be enacted by Riverhead. Unless such actions were to be taken in the future by the town of Riverhead, the scenic corridor would severely limit development opportunities on-site.

**Peconic Estuary Program**

The recommendations of the PEP CCMP as discussed in Subchapter 4.10.2 for the Reuse Plan (and Subchapter 4.10.3 for the Enterprise Park/Raceway Alternative) would be applicable to the Peconic Village Alternative. A new STP is proposed as part of this alternative (Figure 2-5) and it would need to comply with the recommendations and actions of the CCMP. The STP is proposed for the same location as in the Reuse Plan and the Enterprise Park/Raceway Alternative - in the Compatible Growth Area of the Pine Barrens and with a discharge flowing away from the Pine Barrens.

The SGPA Plan outlines a set of BMPs for the residential uses that are the primary land use in this alternative. In areas that are already cleared and would likely require new landscaping, the amount of fertilizer, watering, and overall use of the grassed areas is to be controlled. Turf management is recommended to include increased use of fescue varieties of grass that require less irrigation and less fertilizer.

# 4.11 Terrestrial and Aquatic Environment

For the purposes of this EIS, the terrestrial environment includes vegetation, wetlands, and threatened and endangered species concerns for lands within the fenced area at NWIRP Calverton.

## 4.11.1 No Action Alternative

### Vegetation

The major impacts to the vegetative communities within the fenced area of NWIRP Calverton as a result of the no action alternative would primarily be in the maintained and semi-maintained management areas. These areas would no longer be maintained due to the lack of personnel on-site and would soon become successional old fields, with the encroachment of woody vegetation gradually resulting in a loss of grassland habitat.

Naturally-introduced fire is required to maintain pine and pine/oak communities. However, while NWIRP Calverton was an active facility, naturally-introduced fires were retarded on site. Under a no action alternative, unless forest fires are quickly identified and surrounding fire departments respond promptly, naturally-introduced fires in the unimproved areas may increase in their intensity and duration.

There would be no impact to the buffer zone areas under the no action alternative.

### Wetlands

No impacts to on-site wetlands would occur under the no action alternative.

### Wildlife

Under the no action alternative the continued overpopulation of animals, primarily deer, and associated problems (e.g., over-grazing, limited genetic exchange, stress and disease) would persist within NWIRP Calverton. The deer population is currently trapped within the NWIRP facility by 12-ft (3.7-m) fences, which are too high for deer to jump over. No natural predators live within the fenced area, and there is only limited recreational hunting to cull the herd. Unless a deer management program is developed and implemented, the deer population will continue to increase, resulting in over-grazing of the vegetation and an eventual population crash due to limited food resources. Management of the deer herd would keep overpopulation, over-grazing, and disease to a minimum; however, no such program is proposed as part of the no action alternative. Creating one or several openings in the fence would allow for some deer movement across the site barriers, thus facilitating interbreeding with deer populations that have not been isolated, and colonization of new locations.

Under the no action alternative, grassland bird habitats would be impacted within three to four years unless a vegetation management plan was created. Such a plan would rely on the habitat requirements of the grassland birds, and would include annual and rotated mowing of the grass fields, timed to avoid mowing during the nesting season (mid-May to mid-August). No such plan is presently proposed.

**Threatened and Endangered Species**

There is a wetland area that presently supports a tiger salamander population that could potentially be impacted under the no action alternative. This area is surrounded by successional field and maintained lawn and could be gradually impacted without proper management such as maintaining proper hydrology and controlling invasive vegetation. No other impacts to protected species identified on site would occur under the no action alternative.

## 4.11.2 Calverton Enterprise Park Reuse Plan

It is estimated that the Reuse Plan would require an additional 320 acres (130 hectares) of new building/paved area for a total of 797 acres (323 hectares) of developed land. The majority of development is planned in the industrial core of NWIRP Calverton, where most of the vegetation is considered to be improved (i.e., grass). However, the Reuse Plan would substantially increase land use at: 1) the area northwest of runway 5-23, which would be used for a theme park; 2) the area between runway 5-23 and the industrial area, which would be used for a golf course; and 3) the areas northeast of runway 14-32, which would be used for commercial recreation (Figure 2-3). The eastern end of NWIRP Calverton would be used for aviation; however, most support facilities for the airfield would be located in the industrial business core.

**Vegetation**

The improved and semi-improved vegetation within the fenced area comprises 856 acres (347 hectares) (Table 3.11-1). The unimproved area within the fence contains 1,590 acres (643 hectares), of which 1,562 acres (632 hectares) is forested and 28 acres (11 hectares) consists of water and wetland areas.

Vegetation impacts would result from the removal or clearing of vegetation for development. The largest impact to unimproved lands would be from the 415-acre (168-hectare) theme park attractions area in the western side of the site, approximately half of which is covered by either hardwood-pine forest or pine plantation. The second largest impact would be from the proposed 160-acre (65-hectare) public golf course, to be located on land that is presently covered by hardwood-pine vegetation. The third largest impact to forest communities would be in the proposed commercial recreation area, 103 acres (42 hectares) currently dominated by hardwood-pine forest, with sections

of pine plantation, old field/scrub and grass. The remaining land use components of the Reuse Plan would have less significant impacts because they do not involve forested land within the fence, but would nonetheless disturb existing plant communities.

Three conservation areas totaling 580 acres (235 hectares) are identified in the Reuse Plan. These areas include the Pine Barrens Core Area (438 acres [177 hectares]), McKay Lake West, (137 acres [52 hectares]) and a natural area of 27 acres (11 hectares) that would not be impacted by the proposed development.

**Wetlands**

Seven distinct wetland areas are located within the main development footprint of the Reuse Plan, between the two runways (Wetlands 4, 5, 6, 7, 8, 10, and 27 on Figure 3.11-2). Together they cover approximately 16.8 acres (6.8 hectares) of the 33.4 acres (13.5 hectares) of wetlands located within the fenced area. In addition, two wetlands (Wetlands 2 and 3) are located in the northeastern corner of the site, in the vicinity of the proposed 27-acre (11-hectare) natural area. McKay Lake (wetland 9) is located on the southern edge of the site, outside the development footprint.

Wetlands could be potentially impacted by future development, depending on the ultimate site configuration. All disturbances to regulated wetlands would require a permit from the US Army Corps of Engineers (COE). NYSDEC approval on wetlands that have an area of at least 12.4 acres (5 hectares) (or smaller if they have unusual local importance) may be needed. Although all potentially impacted wetlands are less than 12.4 acres (five hectares), NYSDEC has jurisdiction over four of the seven wetlands within the core area (Wetlands 4, 5, 6, and 8) and the two wetlands (2 and 3) in the vicinity of the proposed natural area. Therefore, coordination with both NYSDEC and the COE is anticipated.

Wetland permit applications would require, at a minimum, an alternatives analysis; mitigation plan; impact analysis; a surveyed wetland boundary; and a stormwater management analysis. This data can be completed prior to submittal of an actual permit application. In connection with the alternatives analysis, the *Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404 (b)(1) Guidelines* emphasizes:

- Avoidance - avoid potential impacts to the maximum extent practicable;
- Minimization - take appropriate and practicable steps to minimize the adverse impacts (e.g., limit the anticipated impact to an area of the wetland with lesser value than other areas, or reduce the actual size of the impacted area); and
- Compensatory Mitigation - take appropriate and practicable compensatory mitigation action for unavoidable adverse impacts which remain after all appropriate and

practicable minimization has been taken (created a new wetland area, restore existing degraded wetland, or enhance low value wetland into improved wetland).

Proposed projects impacting wetlands would have to obtain a Section 404 permit. NYSDEC permits are also required for most construction activities located in or within 100 ft (30 m) of regulated freshwater wetlands.

**Wildlife**

NWIRP Calverton facility has a total of 2,446 acres (990 hectares) of potential wildlife habitat within the fenced area (Myers and Gaffney, 1989). The amount of vegetation lost directly correlates to the amount of habitat lost to mammal, bird, fish, amphibian and insect populations. The surrounding woodland and grassland communities can potentially absorb some of the additional vacating population, but the deer population within the fenced area of NWIRP Calverton is already estimated to be greater than the carrying capacity of the land (Myers and Gaffney, 1989).

The Calverton Enterprise Park Reuse Plan would require the most new acreage for development among the different reuse alternatives. Approximately 320 acres (130 hectares) of habitat would be necessary for implementation of the Reuse Plan (although the specific location of this development has not been defined in the local Reuse Plan). This represents only 14 percent of the site and leaves roughly 2,100 acres (850 hectares) of open habitat (and inherent natural resources) remaining on-site. Additionally, the site is located within the protected Long Island Pine Barrens and, the land surrounding the site is sparsely settled (thereby providing considerable available habitat).

Terrestrial wildlife species on-site are characterized by common woodland species that are typical of similar habitats throughout the region. Given that the development of the 320 acres (130 hectares) would be developed in stages over 20 years, it is anticipated that the surrounding area could support incremental increases in populations of those animals that are able to migrate. This opportunity may be enhanced due to the protection of existing populations within the Pine Barrens Core Preservation Area as per the Central Pine Barrens Comprehensive Land Use Plan.

There may be increased competition between individuals of the same species for resources (food, shelter, etc.); therefore, potential population fluctuations may occur in response to these competitive interactions. There would also be a loss of some species of wildlife (e.g., rabbits, squirrels, opossums, and rodents, plus turtles, snakes, and frogs) due to road crossing and a limited ability to move during construction phases.

There exists the possibility that shifts in abundances of animal populations due to migration could potentially alter predator-prey/competition interactions. However, the species composition of the woodlands and grassland populations of the site, as previously mentioned, are typical of such habitats throughout the Pine Barrens region. New dominant species would not be introduced into the surrounding area, and therefore, community structure is not expected to be altered with

implementation of the various reuse plans. Classic, documented cases of the community structure of an area being dramatically altered have involved the introduction of exotic and/or non-native species into an area, or the complete removal of a common species, which would not be the case with the proposed reuse alternatives. No altered predation patterns are therefore likely to develop and so, no reduction in overall species diversity would be anticipated.

The dispersal of the common woodland species on-site could potentially create increased conspecific (between individuals of the same species) competition among those same species in the surrounding community. However, this circumstance would be mitigated by the fact that any development would be in incremental stages, and therefore, population dispersal and resulting conspecific competition would be incremental as well.

Grassland bird species would be impacted under this alternative, on the western end of the development because of a loss of habitat. On the eastern side of NWIRP Calverton, an airstrip would remain, with several daily flights. This would mean that grassland habitat associated with the airstrip (roughly 150 to 175 acres [60 to 70 hectares]) would remain.

With respect to potential noise impacts to wildlife under this alternative, noise levels would be greatly reduced compared to historical noise levels on-site. Aviation use under the Reuse Plan would entail only two flights per day by turboprop or small corporate jets. Subchapter 4.6-2 provides noise contours at NWIRP Calverton for the year 1991. Areas affected by aircraft activity that year were substantially greater than what is predicted for the Reuse Plan. Operations in 1991 mainly involved military jets that generated more noise than the aviation aircraft proposed in the Reuse Plan. As such, substantially reduced noise impacts from 1991 to wildlife are anticipated under this alternative.

**Threatened and Endangered Species**

In order to protect rare plants, rare animals, and significant natural communities, the specific locations of site-identified species are not included in this report, as requested by the NY Natural Heritage Program. The disclosure of specific location information could further endanger the continued existence of these species.

A total of six NYS-listed threatened and endangered species (three animal, three plant) have been found at six locations within the fenced area of NWIRP Calverton (as described in Subchapter 3.11). Four of these locations are in the Pine Barrens Core Area and would not be directly impacted by development. The Pine Barrens Core Area is a large, contiguous block of undeveloped land and it contains several known breeding ponds, and suitable upland habitat. It is also contiguous with the three 1990 to 1993 study areas for tiger salamanders described in Subchapter 3.11. Combined, these locations on and adjacent to the project site comprise a sizeable metapopulation (i.e., a series of distinct populations connected by occasional low level immigration and emigration). While movement of animals between populations typically occurs at a low level, it can be a critical component of long-term population viability (Pechmann, et al., 1991).

One of the remaining two locations, where only the tiger salamander was found, is within the wetland area referred to in Subchapter 4.11.1 (No Action Alternative) that is surrounded by successional field and maintained lawn. Under this alternative, natural area/open space is planned for this area as a community park. The town of Riverhead will need to consult with the NYSDEC to ensure that proper management of the area is undertaken and that a suitable buffer is provided around the breeding pond. Typical NYSDEC policy is to require an upland buffer of 1,000 ft (305 m) around known tiger salamander breeding ponds. Some recreational facilities, such as a limited trail system could be compatible, but major modification of vegetation structure within the buffer area could jeopardize the population.

The last location, where the spotted salamander (special concern species), tiger salamander, and Nuttall's lobelia were found, is in an area of the site where commercial and recreational uses are planned around a natural area. The town of Riverhead or the ultimate recipient of the property would have to consult with the NYSDEC regarding locations for any significant construction activity potentially affecting the habitats. Inventories would need to be conducted to verify the continued presence of breeding populations. Existing plant communities in the vicinity of known breeding ponds would be mapped, and the extent and location of suitable buffer areas identified. Management guidelines would then be able to be formulated to enhance habitat quality in buffer areas. All study objectives and methods and formulation of management guidelines would be coordinated with NYSDEC.

## 4.11.3 Calverton Enterprise Park/Raceway Alternative

The overall acreage of development was calculated to be 1,924 acres (779 hectares) for this alternative, slightly less than the 2,039 acres (825 hectares) calculated for the Calverton Enterprise Park Reuse Plan. The major difference between the plans is land use. Instead of using the eastern area for aviation and aircraft use, this plan utilizes that area, as well as portions of the industrial business park area, to accommodate a motor racing complex for both road racing and drag racing events. The raceway would include fencing, removable concrete barriers, tire walls, and semi-permanent bleachers; parking for major events would occur on adjacent grasslands. The remaining impacts from this alternative, including the impacts from the theme park, golf course, and the commercial recreation are similar to those discussed for the Calverton Enterprise Park Reuse Plan.

### Vegetation

The vegetation impacts for this alternative would be similar to the Reuse Plan. However, although grasslands near the racecourse would remain, they would be subjected to regular human disturbance, primarily by the parking and movement of automobiles, and this could adversely affect grassland bird breeding habitat.

### Wetlands

The same wetland areas described for the Reuse Plan are located within the core area of this alternative. As discussed in subchapter 4.11.2, all disturbances to wetlands would require a permit from the COE and likely from NYSDEC.

### Wildlife

This alternative would have similar impacts to wildlife as the Reuse Plan (Subchapter 4.11.2). The natural area in the center of the development would provide an "island" of habitat for wildlife, as the center of the site would be developed. Similar animal movements as the Reuse Plan could be anticipated during the development phase. Some animal populations may become isolated from additional habitat following development.

Grassland bird breeding habitat could be impacted by the raceway alternative. The regular occurrence of large crowds of people (four to six times a year), increased traffic, and on-site parking could reduce the likelihood of grassland birds successfully fledgling nestlings in a given year.

Noise from the six major racing events each year would likely disturb some on-site species on a temporary basis.

### Threatened and Endangered Species

This alternative would have the similar impacts on state-listed threatened and endangered species as would the Reuse Plan (Subchapter 4.11.2). The ultimate recipient of the property would have to consult with the NYSDEC regarding locations for any significant construction activity potentially affecting the habitats.

## 4.11.4 Peconic Village Alternative

In this alternative, the commercial, recreation/raceway, and theme park acreage of the previous two alternatives would be eliminated to facilitate both housing and two golf courses. The acreage of development was calculated to be 1,495 acres (605 hectares), which is less than the 1,924 acres (779 hectares) for the Calverton Enterprise Park /Raceway Alternative and the 2,039 acres (825 hectares) calculated for the Calverton Enterprise Park Reuse Plan.

### Vegetation

The overall footprint of development differs from the previous alternatives by having less impact on the forests in the northeastern section of the development, but more impact on the central and

southeastern portions of the site. More open space and natural areas remain; however, the areas near the roadways are likely to be improved vegetation of little habitat value. Nonetheless, "corridors" of open space/natural area would be present throughout the site.

### Wetlands

The same seven wetland areas located within the proposed development areas of the Reuse Plan would be potentially impacted by development (Subchapter 4.11.2). The other two wetlands located in the northeastern corner of the site, would probably not be impacted, since a larger natural area is planned in this alternative. As discussed previously, all disturbances to wetlands would require a permit from the COE and possibly from NYSDEC.

### Wildlife

A higher proportion of land in this alternative would be natural areas or open space, including the hardwood-pine forest in the northeast of the site. In addition, "corridors" of open space or natural areas would be left, which could allow wildlife to move more easily between areas. Many of the open areas, however, are located near roadways, so that some mortality would probably be associated with moving between areas. The impacts to wildlife for this alternative would be slightly less than the impacts from the Calverton Enterprise Park, due to the potential reduction in habitat loss.

Impacts to grassland bird habitats would be dependent upon the amount of grassland habitat lost due to specific development plans (which are unavailable at this time). Areas of grassland habitat could be set aside, and appropriately managed for these species.

### Threatened and Endangered Species

This alternative would have similar impacts on state-listed threatened and endangered species as would the Reuse Plan (Subchapter 4.11.2). The town of Riverhead or the ultimate recipient of the property would have to consult with the NYSDEC regarding locations of any significant construction activity potentially affecting the habitats.

# 4.12 Petroleum and Hazardous Substances

## 4.12.1 No Action Alternative

Under the no action alternative (Chapter 2.5) the US Government would retain ownership of NWIRP Calverton in a caretaker status. The Navy would continue to provide for cleanup of contaminated sites as identified in the EBS (US Navy, October 1995) and the *Phase II Field Sampling Plan* (US Navy, 1996). Use of hazardous materials would cease, with the exception of maintenance operations, due to the cessation of all mission-related activities.

As part of the closure activities for NWIRP Calverton, the Navy is obligated to comply with DoD Defense Environmental Security Council policies for radon (May 6, 1994), lead-based paint (May 10, 1994), and asbestos-containing material (ACM) (May 10, 1994). These policies provide guidance for addressing radon, lead-based paint, and asbestos-containing material at installations before their demolition, transfer, or disposal, as follows:

**Radon**: DoD policy is to ensure that any available and relevant radon assessment data pertaining to property being transferred is included in property transfer documents. No radon assessment and mitigation is to be performed prior to transfer unless required by applicable law. Radon surveys were not conducted since no residential uses existed on the site (nor are any such uses included in the proposed Reuse Plan; refer to Subchapter 2.3).

**Lead-based paint**: DoD policies on lead-based paint differ depending upon the date of the property transfer and the date of construction of the residential housing being transferred. Target housing constructed after 1960 and before 1978 must be inspected for lead-based paint hazards, although no abatement is required. Target housing constructed before 1960 must be inspected for lead-based paint hazards, and such hazards must be abated. However, DoD policy does not require lead-based paint inspection and abatement when a building is scheduled for demolition by the transferees and the transfer document prohibits occupation of the building prior to demolition or when a building is not targeted for reuse.

Prior to demolition of any building that is known or suspected to contain lead-based paint, a sampling program would be conducted to confirm the presence or absence of lead above RCRA Toxicity Characteristic levels. This sampling would be the responsibility of the new owner of the building, who would have to follow 29 CFR 1926.62 (OSHA construction standards for buildings with lead-based paint), and be responsible for the sampling, analysis, abatement, and disposal of debris. The Navy's responsibility is to disclose that the presence of lead-based paint can be assumed at NWIRP Calverton due to the age of the structures. This has been documented in the Basewide Phase I EBS (US Navy, October 1995).

**Asbestos-containing material**: The DoD policy with regard to asbestos-containing material is to manage it in a manner protective of human health and the environment, and to comply with all applicable federal, state, and local laws and regulations governing asbestos-containing material hazards. Unless it is determined by a certified industrial hygienist that asbestos-containing material at the property does pose a threat to human health at the time of transfer, all property containing ACM would be conveyed, leased, or otherwise disposed of "as is." Asbestos remediation is not required when a building is scheduled for demolition by the transferees and the transfer document prohibits building occupancy before demolition. Assuming the previous conditions are met, the transferee assumes responsibility for the future management of asbestos-containing material in accordance with applicable laws.

Future occupants of buildings in Zone I should consult the Final Survey Report by L. Robert Kimball Associates (1995) to determine if ACM are present. If present, the Operations and Maintenance Plan should be consulted for ACM-handling protocols and procedures.

The status of the lead-based paint survey and asbestos survey is outlined in Chapter 3.12.4.

## 4.12.2 Calverton Enterprise Park Reuse Plan

### Hazardous Substances/Waste Quantities

The Calverton Enterprise Park Reuse Plan (Subchapter 2.2) includes an industrial business park, theme park, aviation/aircraft use, commercial recreation areas, a golf course, and open space. Some hazardous substances would be generated by operation and maintenance activities of theme park, aviation/aircraft operations, and the industrial business park. Herbicides and pesticides would probably be used for grounds maintenance, particularly for the golf course. The amount of hazardous substances that might be used by the industries in the industrial business park cannot be quantified at this time as the specific nature of the industries is not yet known. Hazardous substances users would be subject to inspection by the Suffolk County Department of Health Services and would be required to file information on hazardous material usage with the local fire departments, the County, and NYSDEC.

### Site Contamination

The transfer of excess DoD property involves the following: 1) review of currently available information and preparation of an Environmental Baseline Survey (EBS); and 2) preparation of a Finding of Suitability for Transfer (FOST). The purpose of the FOST is to report the environmental suitability of a parcel for transfer to nonfederal agencies or to the public by disclosing that one of the following is true:

- No hazardous substances were known to have been released or disposed of on the parcel. Section 120(h) of CERCLA was amended in accordance with the 1997 Defense Authorization Act, and, specifically, Section 120(h)(4) was revised to delete the condition of "storage for more than one year" from the clean parcel determination); or

- The requirements CERCLA 120(h)(3) have been met for the parcel being transferred, which specifies that where the condition above does not apply, deeds to transfer must disclose/contain:

  - information on the type, quantity, and time of the release of hazardous substances, and a description of the remedial action (RA) taken, if any; and

  - a covenant warranting that all remedial action necessary to protect human health and the environment with respect to any such substance has been taken before the date of transfer and any additional remedial action found to be necessary after the date of such transfer shall be conducted by the federal government.

Completion of remedial action does not necessarily have to take place prior to property transfer. If the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the USEPA to be operating properly and successfully, the property could be transferred prior to complete remediation.

In accordance with CERCLA Section 120 (h) (3) (C), the Governor of the State of New York may defer the covenant for the property if :

- The property is suitable for the use intended by the transferee, and the intended use is consistent with protection of human health and the environment;

- The deed or other agreement proposed to govern the transfer contains the assurances that would be set forth in the covenant;

- The Navy has provided public notice and the opportunity to provide written comments on the suitability of the property for transfer; and

- The deferral and the transfer of property will not substantially delay any necessary response action at the property.

The Navy has prepared a draft Finding of Suitability to Lease (FOSL) for the core area of the property (all lands within the fence and a 7-acre (3-hectare) parcel along Connecticut Avenue), which

the USEPA is currently reviewing. According to CERCLA Section 120 (h) (3) (B), the covenant for the property shall not apply in any case in which the transfer of the property occurs or has occurred by means of a lease. In the case of a lease entered into after September 30, 1995, with respect to real property located at an installation approved for closure or realignment, the Navy in consultation with the USEPA, shall determine before leasing the property that:

- The property is suitable for lease;
- The uses contemplated for the lease are consistent with protection of human health and the environment; and
- There are adequate assurances that the Navy will take all remedial action required, that has not been taken on the date of the lease.

**Groundwater Contamination**

Volatile organic contaminants have been detected in the production wells at concentrations above drinking water standards (Chapter 3.12.3). Groundwater would be treated (e.g., carbon filtration unit) prior to usage to prevent any adverse health effects. In addition, water quality would be monitored to ensure that contaminants are removed from the system prior to use.

**Building Use and Reuse by the Community**

Any reuse, modification, renovation, and/or demolition of buildings will have to address the issues of lead-based paint and asbestos:

- Lead-based Paint - Due to the age of most of the buildings at the NWIRP Calverton, the presence of some lead-based paint should be assumed as a possibility. Reuse and/or modifications to any of the buildings would take into consideration the likelihood of a lead-based paint hazard relative to reuse.
- Asbestos - Asbestos must be removed in accordance with 40 CFR Part 61 Subpart M (National Emission Standard for Asbestos) and Part 61.145 (Standard for Demolition and Renovation).

## 4.12.3 Calverton Enterprise Park/Raceway Alternative

The Calverton Enterprise Park/Raceway Alternative (Chapter 2.3) would have hazardous waste generation related to the operation and maintenance of industrial business park components similar to that of the Calverton Enterprise Park alternative. Operation of a raceway would generate

petroleum substances during routine maintenance and operation. Associated raceway uses in the industrial business park would also use such materials as solvents and degreasers and would generate petroleum-based waste products.

Property transfer of contaminated areas would not occur prior to the construction, installation, and successful operation of an approved remedial design. Property transfer may occur if contaminants not regulated under CERCLA are identified or if chemicals are found but it has been determined that they pose no risk to human health or the environment; in such cases, only disclosure of those chemicals or deed restrictions are required for property transfer. Therefore, no adverse effects related to hazardous waste are anticipated.

## 4.12.4 Peconic Village Alternative

Under this alternative (Chapter 2.4), the majority of NWIRP Calverton would be converted into residential housing for senior citizens. There would also be a mixed use/industrial business park, hotel/conference center, and two 18-hole golf courses. The hazardous waste generated under this alternative would be limited to operation and maintenance of the facilities and from herbicides/pesticides for maintenance of the grounds and golf courses.

Property transfer of contaminated areas would not occur prior to the construction, installation, and successful operation of an approved remedial design; therefore, no adverse effects related to hazardous waste are anticipated.

# 4.13 Cumulative Impacts

This discussion addresses the cumulative impacts related to the transfer and reuse of the former NWIRP Calverton. Cumulative effects are defined by the Council on Environmental Quality (CEQ) in 40 CFR 1508.7 as:

> "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions."

The CEQ regulations state that the cumulative impacts addressed should not be limited to those from actual proposals, but must include impacts from actions being contemplated or that are reasonably foreseeable. The NEPA environmental analyses must also evaluate connected, cumulative, and similar actions in the same document (40 CFR 1508.25). This requirement prohibits segmentation of a project into smaller components to avoid required environmental analysis. The analyses contained in this EIS address the entire project under consideration, as well as connected, cumulative, and similar existing and potential actions in the Riverhead/Brookhaven area, where applicable.

Cumulative impacts have been taken into consideration throughout this EIS, as appropriate, on a discipline-by-discipline basis. Specifically taken into consideration in this EIS were the following actions:

- General growth trends in the Riverhead/Brookhaven area; and
- Other specific land use development projects in the town of Riverhead and in the town of Brookhaven within approximately two miles (3.2 km) of the site.

The results of the cumulative impact analysis for each alternative are reviewed below. Because the impact analyses contained in Chapter 4 of this FEIS were performed for a 20-year full build out scenario, the cumulative impacts described herein are, to a great extent, included in that analysis.

The potential cumulative effects described in this chapter would result from the future redevelopment of the site by the CDA. The Navy action that would have potential cumulative effects - the on-going IR to remediate portions of the facility - is also discussed.

## 4.13.1 Calverton Enterprise Park Reuse Plan

### Land Use and Zoning, Socioeconomics, Community Facilities and Services

Cumulative effects of implementing the Reuse Plan on land use, socioeconomics, and community facilities and services have been considered in terms of proposed and contemplated land use changes in the Riverhead/Brookhaven area and forecasted population changes. The Reuse Plan could be considered to have a cumulatively positive effect, since the plan responds to and supports the Town's objectives for NWIRP Calverton, creates land uses to be integrated with the surrounding community, and serves local and regional needs. Significant long-term changes in population are not anticipated although some additional residential demand in Riverhead created by the employment opportunities could result. There would be no cumulative adverse effects on community services given the 20-year build out time period and the development of a local Comprehensive Development Plan. With respect to parks and recreation, the proposed Reuse Plan would add significantly to publicly accessible park land and open space and, thus, have a potentially positive cumulative effect on these resources.

### Transportation, Air Quality, and Noise

Analyses of traffic, air quality, and noise associated with the Reuse Plan in 20 years have been quantitatively compared with anticipated future changes without the proposed Reuse Plan (future baseline conditions), including future development (general growth and specific developments) in Riverhead and Brookhaven (Subchapter 4.4.1). Implementation of the Reuse Plan would add substantially to the projected future baseline traffic conditions (Subchapter 4.4.1). A 2.5 percent annual increase in traffic volumes was assumed over the 20-year analysis period in addition to these developments:

- 1,673 single family homes and condominiums;
- 1.6 million sq ft (148,640 sq m) of retail space;
- 69,000 sq ft (6,410 sq m) of commercial office space;
- 67,000 sq ft (6,224 sq m) of senior housing; and
- 157,000 sq ft (14,585 sq m) of industrial space.

Emissions from automobiles in the study area would increase with the Reuse Plan; however, the air quality analysis does not predict any violation of the NAAQS one-hour standard of 35 ppm and eight-hour standard of nine ppm for CO. Likewise, the Reuse Plan would increase noise levels due to the travel of additional vehicles on local roads. Increases of ten dBA and greater were predicted for both the weekday and weekend for the peak hour of 11pm to 12 am. Smaller increases, though still perceptible, are predicted during the day-time peak hours, particularly at locations 4 and 5 (Table 4.6-2).

### Infrastructure

Impacts of the Reuse Plan on infrastructure, specifically utilities, would have no cumulative adverse effects. This is based on the assumptions that a new sewage treatment plant (STP) to handle the anticipated wastewater volumes would be constructed as proposed in the Reuse Plan; and, the Riverhead Water District would ultimately be extended to the site for future water supply. Adequate electrical and gas supplies would be available to the site.

### Cultural Resources

Three buildings on site (Plant 6, Plant 7, and the Anechoic Chamber) have been determined to be eligible for nomination to the National Register of Historic Places. No cumulative adverse effects are predicted on these resources if renovations are carried out according to the Secretary of the Interior's *Standards and Guideline for Rehabilitating Historic Structures.* No cumulative adverse effects would occur to archaeological resources with the protective covenants that will be included in the Navy's property conveyance document. The Navy, NYSHPO, and ACHP have agreed to terms of an MOA to provide protective covenants in the conveyance document which specify appropriate mitigation of any potential loss of the National Register-eligible resources.

### Topography, Geology, and Soils

No cumulative effects adverse are predicted these physical resources with implementation of the Reuse Plan.

### Water Quality and Hydrology

No adverse cumulative effects on water resources would occur with implementation of the Reuse Plan, given these actions:

- Construction of a new STP above the groundwater divide with a discharge away from the Central Pine Barrens and the Peconic River watershed in the future;
- Development of an overall drainage plan to accommodate additional stormwater from the industrial business park and other uses.

There would likely be a cumulatively positive effect on the water quality of the Peconic River with the construction and operation of a new STP. Although not directly associated with the Reuse Plan or any of the alternatives, the long-term plans for the Riverhead STP, as described in Subchapter 3.10.1 would be expected to improve surface water quality conditions in the Peconic River, particularly with respect to nitrogen loadings.

With respect to the Navy's actions, the ongoing IR program will implement remedial measures to address on-site groundwater contamination (Chapters 3.12 and 4.12).

**Terrestrial and Aquatic Environment**

The Reuse Plan would not affect wetlands, floodplains, or critical habitats if built in compliance with applicable state and federal law; moreover, given the conceptual nature of the Reuse Plan with respect to building locations and configurations, as well as the timeframe for development (20 years), development could be planned to eliminate the potential for cumulative adverse effects.

Although development would reduce the amount and/or quality of habitat available for certain species, the Reuse Plan would cumulatively add to the local and regional natural resource base by providing for 884 acres (358 hectares) of dedicated open space and park land. Associated with this action would be the disposal of the buffer areas (3,235 acres [1,271 hectares]) to the NYSDEC for use as conservation and recreation lands in perpetuity. Wetlands, floodplains, and critical habitats in these buffer zones would not be disturbed and would continue to perform their ecological functions.

The presence of a state-listed endangered species, the tiger salamander (*Ambystoma tigrinum*), in areas where development is proposed, would require coordination with NYSDEC to avoid adversely directly, indirectly or cumulatively affecting these protected animals.

**Petroleum and Hazardous Substances**

With respect to the use, storage, and disposal of hazardous substances, the proposed reuse of the site would have no anticipated cumulative impacts. Environmental remediation conducted by the Navy would have been completed and/or would be in process, resulting in the cleanup of formerly contaminated portions of the facility. At the present time, the Navy intends to retain an estimated 238 acres (96 hectares) in order to continue its remedial investigations. Any industrial facilities that would store, manufacture, or generate petroleum and/or hazardous substances would be subject to applicable federal, state, and local regulation as were prior industrial uses at NWIRP Calverton.

Maintenance of the golf course will require the use of fertilizers, herbicides, and pesticides. No cumulative adverse effects would be anticipated from their use as part of the Reuse Plan if they are applied in accordance to manufacturer recommended guidelines and government regulations.

## 4.13.2 Calverton Enterprise Park/Raceway Alternative

The potential cumulative impacts of implementing the Calverton Enterprise Park/Raceway Alternative would be similar to those described for the Reuse Plan. Only with respect to noise and terrestrial/aquatic resources would the predicted cumulative impacts differ.

**Noise**

The automobile raceway would introduce temporary but significant noise increases to the site. Noise modeling indicates that during major race events noise levels would exceed the FHWA Noise Abatement Criteria and the town of Riverhead's noise ordinance. It is estimated that these noise effects would occur a total of 108 hours or 1.2 percent of the year based on the proposed racing schedule. Additional major or minor events would increase the amount of time that increased noise levels would be experienced.

**Terrestrial and Aquatic Environment**

Because of the proposed frequency of racing events (four to six major events during the racing season) and the large number of attendees (90,000 to 100,000 for major events), existing grasslands adjacent to the proposed race track would be subject to disturbance by race fans and their vehicles. Existing conceptual plans call for these adjacent grasslands, habitat for grassland bird species, to be used for parking during major events. Unless mitigation activities, such as restricted parking areas, scheduling major events outside of the breeding season, etc. were developed, there could be adverse cumulative effects on grassland bird breeding habitat.

A substantial amount of grassland habitat has been lost to development over the past 50 years in the United States. This has led to population declines of at least a dozen grassland specialist bird species, some by as much as 95 per cent in that time frame, such as the Bobolink and the Meadowlark.

## 4.13.3 Peconic Village Alternative

Similarly, only those resources that would be affected in ways resulting in potentially different cumulative impacts than the Reuse Plan are described for this alternative.

**Land Use and Zoning, Socioeconomics, and Community Facilities and Services**

This alternative would result in more designated open space - 544 acres (220 hectares) - than the Reuse Plan; however, it would not provide the private recreational facilities of the theme park and commercial recreational uses. Residential uses would predominate the site in contrast to the Reuse

Plan and the Enterprise Park/Raceway Alternative where no residential use would exist. An estimated new population of 2,889 persons would eventually reside in Riverhead with implementation of this alternative.

### Transportation, Air Quality, and Noise

The Peconic Village Alternative, like the other alternatives, would also add substantially to the project future baseline traffic condition; however, the increase is less than that predicted for the other two build alternatives. Air quality standards are not predicted to be contravened. Noise levels along local roadways would also increase; however, the only perceptible increase would generally be at Locations 4 and 5 (Table 4.6-14 and 15).

### Cultural Resources

The Anechoic Chamber would be demolished under this alternative and would therefore not exist as a structure potentially eligible for the National Register of Historic Places. The restrictive covenant would require, at a minimum, recordation of this structure prior to demolition.

### Terrestrial and Aquatic Environment

This alternative would affect less existing vegetation and would retain more designated open space than either the Reuse Plan and the Enterprise Park/Raceway Alternative. Unless modified, the conceptual site plan would impact one location where the tiger salamander (*Ambystoma tigrinum*), a state-listed endangered species, was reported. As described in Subchapter 4.11, all mitigation efforts would need to be coordinated with NYSDEC.

# 5 MITIGATION MEASURES

This chapter identifies mitigation measures that would minimize or eliminate impacts (Chapters 4.1-4.12) of the alternatives on the existing natural and man-made resources of the site and surrounding area (Chapters 3.1 - 3.12). These measures, or other similar and/or additional actions, would be implemented by the town or Riverhead or an applicant proposing redevelopment at NWIRP Calverton.

All resources are discussed for the Reuse Plan even if mitigation measures have not been identified. For the other two alternatives mitigation is discussed only for those resources where applicable.

## 5.1 Calverton Enterprise Park Reuse Plan

### 5.1.1 Land Use and Zoning

No significant environmental impacts have been identified and therefore no mitigation measures are required. New development within the Core Preservation Area would be implemented in a fashion consistent with the Pine Barrens Plan.

### 5.1.2 Socioeconomics

The amount and type of development proposed in the Reuse Plan is not expected to result in adverse socioeconomic effects, such as induced population. Therefore, no mitigation measures are required.

### 5.1.3 Community Facilities and Services

No significant adverse effects are predicted on community facilities and services from implementation of the Reuse Plan. No mitigation measures are required.

### 5.1.4 Transportation

Implementation of the Reuse Plan would cause significant traffic impacts at the signalized study area intersections. Coordination with NYSDOT, Suffolk County, and local transportation agencies would be necessary on development parcels. Potential mitigation measures investigated include changing of signal timing, geometric improvements, and regulatory measures. Table 5.1-1 provides a

**Table 5.1-1**

**Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan**

| Intersection | AM Peak Hour - Unmitigated | | | | Intersection | AM Peak Hour - Mitigated | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | |
| GEB LTR | 1505 | 2.102 | * | F | EB L | 22 | 0.271 | 5.9 | B |
| WB LTR | 919 | 2.025 | * | F | EB TR | 1483 | 1.770 | * | F |
| NB LTR | 316 | 1.507 | * | F | WB L | 102 | 1.323 | * | F |
| SB LTR | 297 | 0.862 | 24.5 | C | WB TR | 817 | 0.955 | 23.1 | C |
| | | | | | NB L | 162 | 1.196 | 160.9 | F |
| | | | | | NB TR | 154 | 0.304 | 11.2 | B |
| | | | | | SB LTR | 297 | 0.703 | 16.4 | C |
| Overall: | | | * | F | | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | |
| EB LT | 792 | 0.864 | 12.5 | B | EB L | 45 | 0.408 | 7.4 | B |
| WB T | 586 | 0.596 | 5.8 | B | EB T | 747 | 0.897 | 17.2 | C |
| WB R | 330 | 0.216 | 0.0 | A | WB T | 586 | 0.696 | 9.0 | B |
| SB L | 689 | 1.431 | * | F | WB R | 330 | 0.216 | 0.0 | A |
| SB R | 177 | 0.363 | 10.4 | B | SB L | 689 | 1.133 | 87.3 | F |
| | | | | | SB R | 177 | 0.287 | 7.9 | B |
| Overall: | | | * | F | | | | 31.9 | D |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | |
| EB L | 71 | 0.692 | 17.0 | C | EB L | 71 | 0.691 | 15.9 | C |
| EB TR | 1038 | 1.267 | * | F | EB TR | 1038 | 1.158 | 92.9 | F |
| WB L | 79 | 0.747 | 20.8 | C | WB L | 79 | 0.748 | 19.9 | C |
| WB TR | 814 | 1.008 | 33.1 | D | WB TR | 814 | 0.921 | 16.5 | C |
| NB LT | 448 | 1.264 | * | F | NB LT | 448 | 0.867 | 21.3 | C |
| NB R | 327 | 0.691 | 12.9 | B | NB R | 327 | 0.800 | 18.5 | C |
| SB LTR | 431 | 4.937 | * | F | SB L | 257 | 2.466 | * | F |
| | | | | | SB TR | 174 | 0.303 | 10.1 | B |
| Overall: | | | * | F | | | | * | F |

Table 5.1-1 (continued)

Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | PM Peak Hour - Unmitigated | | | | Intersection | PM Peak Hour - Mitigated | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | |
| EB LTR | 1447 | 2.051 | * | F | EB L | 54 | 0.441 | 3.4 | A |
| WB LTR | 1740 | 3.041 | * | F | EB TR | 1393 | 1.077 | 47.8 | E |
| NB LTR | 699 | 2.962 | * | F | WB L | 112 | 1.323 | * | F |
| SB LTR | 284 | 0.762 | 16.2 | C | WB TR | 1628 | 1.252 | * | F |
| | | | | | NB L | 429 | 5.153 | * | F |
| | | | | | NB TR | 270 | 1.215 | * | F |
| | | | | | SB LTR | 284 | 5.484 | * | F |
| Overall: | | | * | F | | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | |
| EB LT | 1013 | >2.0 | * | F | EB L | 179 | 1.613 | * | F |
| WB T | 1072 | 1.126 | 75.4 | F | EB T | 834 | 0.771 | 7.0 | B |
| WB R | 858 | 0.580 | 0.4 | A | WB T | 1072 | 1.011 | 29.2 | D |
| SB L | 369 | 0.822 | 18.9 | C | WB R | 858 | 0.580 | 0.4 | A |
| SB R | 200 | 0.440 | 10.9 | B | SB L | 369 | 1.042 | 59.7 | E |
| | | | | | SB R | 200 | 0.557 | 13.8 | B |
| Overall: | | | * | F | | | | * | F |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | |
| EB L | 142 | 1.300 | * | F | EB L | 142 | 1.202 | * | F |
| EB TR | 1325 | 1.522 | * | F | EB TR | 1325 | 1.082 | 49.8 | E |
| WB L | 270 | 2.388 | * | F | WB L | 270 | 2.394 | * | F |
| WB TR | 1839 | 2.139 | * | F | WB TR | 1839 | 1.521 | * | F |
| NB LT | 505 | 2.195 | * | F | NB LT | 505 | 3.507 | * | F |
| NB R | 313 | 0.647 | 12.0 | B | NB R | 313 | 1.581 | * | F |
| SB LTR | 392 | 4.593 | * | F | SB L | 225 | 2.167 | * | F |
| | | | | | SB TR | 167 | 0.623 | 18.2 | C |
| Overall: | | | * | F | | | | * | F |

Table 5.1-1 (continued)

Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | Sat. Peak Hour - Unmitigated | | | | Intersection | Sat. Peak Hour - Mitigated | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | |
| EB LTR | 1600 | 2.166 | * | F | EB L | 30 | 0.364 | 2.8 | A |
| WB LTR | 1484 | 3.089 | * | F | EB TR | 1570 | 1.323 | * | F |
| NB LTR | 404 | 1.573 | * | F | WB L | 122 | 1.098 | 103.0 | F |
| SB LTR | 279 | 0.957 | 40.6 | F | WB TR | 1362 | 1.158 | 87.3 | F |
| | | | | | NB L | 149 | 1.833 | * | F |
| | | | | | NB TR | 255 | 1.233 | * | F |
| | | | | | SB LTR | 279 | 5.143 | * | F |
| Overall: | | | * | F | | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | |
| EB LT | 1217 | >2.0 | * | F | EB L | 285 | 2.480 | * | F |
| WB T | 862 | 0.878 | 12.9 | B | EB T | 932 | 0.797 | 8.5 | B |
| WB R | 518 | 0.339 | 0.0 | A | WB T | 862 | 0.853 | 11.0 | B |
| SB L | 471 | 0.978 | 37.3 | D | WB R | 518 | 0.339 | 0.0 | A |
| SB R | 211 | 0.433 | 10.8 | B | SB L | 471 | 1.032 | 52.5 | E |
| | | | | | SB R | 211 | 0.457 | 11.5 | B |
| Overall: | | | * | F | | | | * | F |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | |
| EB L | 114 | 1.108 | 116.9 | F | EB L | 114 | 1.026 | 74.2 | F |
| EB TR | 1783 | 2.183 | * | F | EB TR | 1783 | 1.553 | * | F |
| WB L | 400 | 3.781 | * | F | WB L | 400 | 3.503 | * | F |
| WB TR | 2348 | 2.923 | * | F | WB TR | 2348 | 2.080 | * | F |
| NB LT | 191 | 0.836 | 24.8 | C | NB LT | 191 | 1.728 | * | F |
| NB R | 316 | 0.668 | 12.4 | B | NB R | 316 | 1.633 | * | F |
| SB LTR | 417 | 1.341 | * | F | SB L | 236 | 2.190 | * | F |
| | | | | | SB TR | 181 | 0.722 | 21.5 | C |
| Overall: | | | * | F | | | | * | F |

Notes: NB - - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn. T - Through.
*Indicates an approach expected to operate at a v/c ratio greater than 1/ peak hour factor. In such cases, the stop delay is not calculated but LOS is "F".

comparison of the traffic analyses for unmitigated and mitigated conditions. Although traffic operation remains at unacceptable levels despite these measures, the results indicate levels comparable to future baseline conditions. That is, traffic conditions have been mitigated to a point where effects of the Reuse Plan are comparable to projected future conditions without the project. Those locations for which mitigative measures have been developed include the following:

**Middle Country Road and Edwards Avenue (Location 2)**

The existing configuration of this intersection provides one lane for each approach. The suggested mitigative measure includes widening the east, west and north approaches to provide left turn lanes. Although this mitigation improves traffic conditions, poor operation remains since this intersection is heavily surcharged by project-generated traffic. These measures however result in operation at similar levels to future baseline conditions.

**Middle Country Road and North Country Road (Location 3)**

An additional lane for an exclusive left turn lane for the eastbound approach would improve operation for both through and left turning vehicles. This measure improves the intersection operation to LOS " D" during the am peak. The pm and weekend peaks continue to operate at LOS "F", however there is significant improvement in the v/c ratio, with operation comparable to future baseline conditions.

**Middle Country Road and Manorville Road (Location 4)**

To improve operations at this location an additional lane for left turning movements was analyzed. Signal timing changes to favor east and westbound movements would also improve operations. Despite these improvements, operation remains unacceptable. However, the mitigated conditions result in operation at levels similar to future baseline conditions.

In addition to these roadway improvement mitigations, projected future traffic could be improved through a set of transportation system management measures. Dunn Engineering identified some of these measures that would serve to lessen impacts to the surrounding street network, particularly for the weekends when race events would be scheduled or when other site activities have events that would generate traffic at the same time of day. However, no such measures have been proposed as part of the Reuse Plan or any of the alternatives at this time because of their presently conceptual nature.

One key to alleviating impacts would be to schedule events at the Theme Park and Stadium such that no other special events occur within the same time frame. Further, advanced ticket sales for such an event could have specified areas to park, where parking would be prepaid within the price of the ticket. Prepaid parking serves to reduce congestion at the approaches to the site. Portable variable message signs (VMS) could also be placed to direct motorists approaching the site towards the least congested approach. The presence of traffic directors at key locations would also assist in smoothing

peak traffic flows. The enactment of these measures, among others, would ease the burden placed on the road network.

As noted in Subchapter 4.4.2, predicted traffic impacts would differ should the assumed trip distribution be changed; likewise, so would the mitigation measures. The town of Riverhead has recently indicated that improvements to Schultz Road are not proposed in the near future; however, William Floyd Parkway and Edwards Avenue would likely be the locations of future road improvements. Therefore, depending on the actual improvements made or other mitigation implemented, impacts on these roads would be different from those predicted in this FEIS.

## 5.1.5 Air Quality

Short term construction and demolition-related effects on air quality would occur, but could be alleviated by the implementation of common construction management practices such as dust suppression and phasing of construction. No other mitigation is proposed as no adverse effects were predicted.

## 5.1.6 Noise

Demolition and construction activities would temporarily increase noise levels near construction areas. To mitigate for these temporary noise effects, construction-related activities would be scheduled to occur during regular working hours in accordance with the applicable local noise ordinance.

## 5.1.7 Infrastructure

The amount of proposed development and the number of visitors to the various components of the Reuse Plan (e.g., theme park, stadium, family entertainment center) would create demands on the existing water supply within the existing permit limits; however, sanitary wastewater flows would exceed existing treatment system capacities. As discussed in Chapter 4.7, a new potable water supply service would ultimately be extended to the site to serve these needs. The construction and operation of a new sewage treatment plant would be necessary to meet the sanitary wastewater needs of the redeveloped site and its uses.

## 5.1.8 Cultural Resources

Application of the Secretary of the Interior's *Standards and Guideline for Rehabilitating Historic Structures* would mitigate any potential adverse effects on Plant 6 and Plant 7. The Navy, NYSHPO, and the ACHP have agreed to terms of an MOA to provide for appropriate protection or mitigation of effects on National Register-eligible resources, including areas of high archaeological sensitivity. This protection or mitigation will be provided by restrictive covenants contained in the Navy's conveyance document.

## 5.1.9 Topography, Geology, and Soils

The implementation of appropriate soil erosion and sediment control measures and Best Management Practices (BMPs) during construction as required by local regulatory agencies would mitigate the potential for soil erosion and loss; it would likewise reduce the potential for adding sediment to on-site surface waters including those associated with wetlands.

## 5.1.10 Water Quality and Hydrology

Limited surface waters exist on NWIRP Calverton. Most of the on-site ponds are associated with wetlands and would not be adversely affected through compliance with state and federal laws protecting wetlands. Several ponds lie outside areas that are proposed for development and would not be affected. Application of appropriate sediment erosion control plans and BMPs would be stipulated in the construction design plans to mitigate the potential for adverse effects on surface waters. Non-point source recharge systems would be sited and constructed to avoid adverse impacts on wetlands. Activities of the Reuse Plan that would store, use, or dispose of materials that could impair groundwater would be subject to federal and state law to prepare a spill contingency plan.

## 5.1.11 Terrestrial and Aquatic Environment

Complete buildout of the Reuse Plan would reduce the amount habitat for certain species on-site, including the population of white-tailed deer. As described in Subchapter 3.11, the deer population has exceeded the carrying capacity of the site. With the amount of proposed development on the site as well as the operation of the air park, a deer population control program, would assist in maintaining runway safety and limiting interference with human activities. As coordination with NYSDEC had been done in the past with respect to natural resource management when the property was owned by the US Navy, so too could a plan be developed to mitigate potential conflicts as well as to preserve and enhance the existing population. Opportunities for deer relocation to the buffer lands that would be under the control of the NYSDEC may be possible.

Mitigation of potential construction and operational effects of the Reuse Plan would entail coordination with NYSDEC. Early agency coordination is generally recommended in situations where threatened, endangered, and/or rare species may be present as discussed in Subchapter 4.11.2. Depending on the proposal for the campground as part of the Reuse Plan, four NYS threatened and endangered species sites which are situated in the Pine Barrens Core area of the site, could be affected by this development. Appropriate management of sensitive areas in the Compatible Growth Area of the Pine Barrens where most of the redevelopment would occur for such matters as public accessibility, hours of operation, and permitted activities would also require consultation with NYSDEC. The location of several NYS-listed species (spotted salamander, tiger salamander, and nuttall's lobelia) are in an area where commercial and recreational uses are proposed. Consultation and implementation of recommended mitigation by the town of Riverhead or ultimate recipient of the property, as applicable, would serve to protect these species in accordance with state requirements.

### 5.1.12 Petroleum and Hazardous Substances

Implementation and completion of the ongoing remediation plan of contaminated land within the ence would mitigate that existing condition. As of December 1996, it was estimated that approximately 238 acres (96 hectares) would not be transfered. The transfer of federal lands by the US Navy that have not been remediated is prohibited.

Those activities of the Reuse Plan that would store, use, or generate hazardous materials (e.g., uses in the industrial business park) compliance with applicable federal, state, and local regulation would act as mitigation to prevent the accidental spill or release of such substances into the environment.

## 5.2 Calverton Enterprise Park/Raceway Alternative

Implementation of this alternative would also result in many of the same types of impacts in these areas as were previously described for the proposed Calverton Enterprise Park Reuse Plan:

- land use and zoning;
- socioeconomics;
- community facilities and services;
- traffic;
- air quality;
- infrastructure;
- cultural resources;
- topography, geology, and soils;
- water quality and hydrology; and
- petroleum and hazardous substances

Executing similar mitigation measures to the Reuse Plan for the Enterprise Park/Raceway Alternative would reduce or eliminate the potential impacts to these resources.

## 5.2.1 Noise

Noise impacts resulting from the automobile raceway are expected to be significant during actual race events - areas adjacent to the raceway would experience a 20 dB or greater noise increase during race peak hours (Subchapter 4.6). Noise abatement could be achieved using noise barriers around portions of the race track. The following assumptions were used to simplify the estimation procedures to determine the potential noise abatement through the use of barriers:

- Barrier heights evaluated would be 15 and 30 feet, respectively;
- No side diffraction around a barrier was considered;
- Distance from a barrier to the race track would be 100 ft; and
- Abatement noise levels were calculated based only on groups of cars spread evenly on the race track, i.e., weighting factors for packed cars were not applied.

The comparison of noise impact levels during a race event on those identified land use receivers before and after using noise barrier are presented in Table 5.2-1. A noise barrier of 15 to 30 ft in height would reduce the noise impact on the proposed community park near race track (Figure 2-2) between 5 to 15 dB, respectively. However, this reduced race peak hour noise level would still be in exceedance of the FHWA and Riverhead noise ordinance criteria.

## 5.2.2 Terrestrial and Aquatic Environment

Because of the presence of the automobile raceway and its scheduled six major race events each year, consultation with NYSDEC is recommended to determine if any species' breeding or migration activities might be noise intolerant, requiring consideration in the planning of a major race event. Consultation with NYSDEC would be particularly important in planning for major race events that could adversely affect grassland bird habitat with the movement of vehicles and visitors in areas adjacent to the race track, particularly at critical breeding times (Subchapters 4.11.2 and 3). Preliminary plans for these events call for the use of these adjacent grasslands for visitor parking (major events could draw 90,000 to 100,000 visitors).

Table 5.2-1

Comparison of Noise Barrier (15 ft and 30 ft) Effectiveness
At Automobile Race Event Peak Hour Noise Levels

| Land Use Receptor | Hourly $L_{eq}$ (dB) without Noise Barrier | Hourly $L_{eq}$ (dB) with 15-foot Noise Barrier | Hourly $L_{eq}$ (dB) with 30-foot Noise Barrier |
|---|---|---|---|
| Industrial Business Park | >98 | 93 | 88 |
| Theme Park | | | |
| Attractions | 92 | 82 | 79 |
| Hotel/Conference Center | 98 | 88 | 84 |
| Commercial Recreation | | | |
| Stadium | 98 | 88 | 84 |
| Family Entertainment Center | 94 | 85 | 81 |
| Golf Course | 95 | 85 | 81 |
| Open Space | | | |
| Pine Barrens Core | 86 | 78 | 75 |
| McKay Lake (west) | 96 | 85 | 81 |
| Community Park | >98 | 90 | 85 |
| National Cemetery Buffer | 90 | 82 | 79 |
| Natural Area | 93 | 81 | 78 |

## 5.3 Peconic Village Alternative

This discussion addresses those resource areas that would be affected in such a way that would either require mitigation where none was identified for the Reuse Plan or where a different type of mitigation would be necessary. Areas that would be similar to that described for the Reuse Plan with respect to mitigation include:

- socioeconomics;
- community facilities and services;
- air quality
- infrastructure;
- topography, geology, and soils;
- water quality and hydrology; and
- petroleum and hazardous substances.

Executing similar mitigation measures to the Reuse Plan for the Enterprise Park/Raceway Alternative would reduce or eliminate the potential impacts to these resources.

## 5.3.1 Land Use and Zoning

### Central Pine Barrens Plan

The Central Pine Barrens Plan has defined a set of clearance standards for residential uses that would act as mitigation measures to reduce the amount of vegetation clearing on the site. As discussed in Subchapter 4.1.2, the town of Riverhead would implement redevelopment of NWIRP Calverton via a new zoning ordinance in the form of a PUD District. Like other new developments, PUDs usually have site clearance standards and/or maximum building coverage standards; however, these requirements are based on development across an entire site (including uses other than residential) rather than on lot sizes or zoning category acreages. The conceptual layout of the Peconic Village indicates a clustering concept only. Because of its preliminary nature, no design data such as lot sizes and zoning category acreages have been developed; moreover, these standards may not be defined in the PUD ordinance. Nevertheless, in the interest of presenting a range of standards that could be applicable or serve as the basis of similar standards in the PUD District, Table 5.3-1 displays the clearance standards of the Pine Barrens Plan for residential uses. The proposed maximum recommended site clearance standards would be a topic of discussion between the town of Riverhead and the CPBJP&PC.

Table 5.3-1

Central Pine Barrens Residential Clearance Standards

| Residential Lot Size (sq ft) | Zoning Category Acreage | Proposed Recommended Maximum Site Clearance |
|---|---|---|
| 10,000 | 0.25 | 90 percent |
| 20,000 | 0.5 | 60 percent |
| 40,000 | 1 | 57 percent |
| 80,000 | 2 | 35 percent |
| 160,000 -200,000 | 4-5 | 25 percent |
| Note: Total site clearance including lots, roads, drainage, and other improvements.<br>Source: Central Pine Barrens Comprehensive Land Use Plan, 1996. | | |

Within the Pine Barrens the use of clustering would be required when large open space tracts , like NWIRP Calverton, can be preserved. The following guidelines have been developed by the CPBP&PC with regard to residential development on a site such as NWIRP Calverton:

- Wooded Parcel - with slopes less than 10 percent. The development on a parcel, if adjacent to other parcels to be reviewed or adjacent to existing dedicated open space, should be clustered to take advantage of increasing natural open space.

- Wooded Parcel - more than 50 percent of parcel has slopes less than 10 percent; lots should be clustered on slopes less than 10 percent.

- Parcel Partly Wooded and Partly Old Field/Agricultural - Clustering shall occur on the open field portion of the site first with the intent of preserving as much of the natural Pine Barrens as possible.

## 5.3.2 Traffic

Although the projected traffic associated with the Peconic Village Alternative does not create as much impact to the surrounding street system impact as the Reuse Plan or the Enterprise Park/Raceway Alternative, the mitigation measures would apply as well. As with the Reuse Plan, while the mitigative measures will improve operation over unmitigated conditions, traffic operation will remain poor. The suggested improvements do, however, result in traffic operation comparable to the future baseline condition.

## 5.3.3 Noise

No mitigation measures are proposed as no significant adverse effects were identified in the impact analysis. This alternative does not incorporate either the air park or an automobile raceway. The raceway is a major generator of noise in the Enterprise Park/Raceway Alternative.

## 5.3.4 Terrestrial and Aquatic Environment

One potential location of the tiger salamander could be affected by this alternative based on the layout of the conceptual site plan. As with the other alternatives, early consultation with the NYSDEC and implementation of recommended mitigation, as applicable, would serve to protect these species in accordance with state requirements.

# 6 RELATIONSHIP OF THE PROPOSED ACTION TO FEDERAL, STATE, AND LOCAL PLANS, POLICIES, AND CONTROLS

Transfer and reuse of NWIRP Calverton would comply with existing federal regulations and with state, regional, and local policies and programs. The federal acts and executive orders with which the proposed action must demonstrate compliance include:

- NEPA;
- RCRA, CERCLA, and SARA;
- Clean Water Act;
- Clean Air Act;
- Endangered Species Act;
- National Historic Preservation Act;
- Coastal Zone Management Act;
- Toxic Substances Control Act;
- Executive Order 11990, Protection of Wetlands;
- Executive Order 11988, Floodplain Management; and
- Executive Order 12898, Environmental Justice.

For preparation of this EIS, communication was undertaken with relevant state, regional, and local authorities to determine which existing policies and programs apply to the proposed transfer and reuse.

## 6.1 Federal Plans and Policies

### 6.1.1 National Environmental Policy Act (NEPA)

This EIS has been prepared in accordance with the Council on Environmental Quality regulations implementing NEPA (40 CFR Part 1500-1508) and Navy NEPA procedures (OPNAVINST 5090.1B). Executive Order 11991 of May 24, 1977 directed the Council on Environmental Quality to issue regulations for procedural provisions of NEPA; these are binding for all federal agencies. The Navy invited comments on the Draft EIS (Feburary, 1997). These comments are addressed and responded to by the Navy in this Final EIS.

## 6.1.2 RCRA, CERCLA, SARA, and CERFA

The Resource Conservation and Recovery Act (RCRA) was passed in 1976 and continued earlier provisions relating to solid waste and resource recovery, including hazardous waste. It sets standards for hazardous waste treatment, storage, and disposal facilities.

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was passed to provide a superfund for cleanup of sites with uncontrolled releases of hazardous substances. This program was continued in the Superfund Amendments and Reauthorization Act (SARA) of 1986. Section 211 of SARA provides continued authorization for the DoD Environmental Restoration Program and the Defense Environmental Restoration Account. Major responsibilities for monitoring compliance with these acts rests with the USEPA. The Navy is conducting all remedial activities in accordance with CERCLA and the National Contingency Plan.

The Navy recognizes its responsibilities for control and management of hazardous substances and wastes in compliance with federal, state, and local requirements. These responsibilities are defined in Chapter 3 of the Navy's Environmental and Natural Resources Protection Manual (US Navy, 1994). Studies and some remedial actions have already been undertaken by the Navy at NWIRP Calverton to identify problem areas related to petroleum and hazardous substances. The Navy will make further assessments regarding cleanup and disposal as required by DoD guidelines.

The Community Environmental Response Facilitation Act (CERFA), Public Law 102-425, requires the identification of all uncontaminated real property, or parcels thereof, at installations undergoing closure or realignment. In accordance with CERFA, the Navy conducted an Environmental Baseline Survey (EBS) that included visual inspections, interviews, and review of plans, logs, maps, aerial photographs, records, and reports. The findings of the EBS were included in a CERFA report (US Navy, 1994) and summarized in Subchapter 3.10 of this EIS. The report also addressed CERCLA requirements to identify parcels on which hazardous substances in quantities greater than or equal to their reportable quantity were stored for more than one year, known to be released, or disposed of on the property.

## 6.1.3 Clean Water Act

The Clean Water Act of 1977, which amends the Federal Water Pollution Act of 1972, and subsequent amendments were designed to assist in restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. This covers discharge of pollutants into navigable waters, wastewater treatment management, and protection of relevant fish, shellfish, and wildlife. Section 402 of this act requires a National Pollutant Discharge Elimination System (NPDES) permit for discharges into navigable waters. Congress also passed the Water Quality Act of 1987 to address excessive levels of toxic pollutants still found in some waters.

Depending on the ultimate site development plan, implementation of project components could result in the loss of jurisdictional wetlands under Section 404 of the Clean Water Act (the amount of wetlands filled would be dependent upon the specific reuse that was selected). The alternative analysis for any proposed project under the Reuse Plan that could potentially affect wetlands must first consider avoiding impacts to wetlands. Only after wetland impacts have been avoided to the greatest extent practicable, should other mitigative measures be considered. Other mitigation measures could involve both consideration of area and wetland function. Should wetlands be impacted, authorization from the US Army Corps of Engineers and the NYSDEC would be required prior to construction.

Under the Reuse Plan, there would be no proposed discharges to navigable waters.

As discussed in Subchapter 4.10, compliance with storm water management regulations would be required, including acquisition of SPDES permits.

## 6.1.4 Clean Air Act

The Clean Air Act (CAA) of 1955 and subsequent amendments specify regulations for control of the nation's air quality. Federal and state ambient air standards have been established for each criteria pollutant. The 1990 amendments to the act require federal facility compliance with all applicable substantive and administrative requirements for air pollution control.

Any demolition of buildings or materials associated with reuse activities must comply with established emission and ambient air standards, especially for removal of asbestos materials. This removal would meet the National Emissions Standards for Hazardous Air Pollutants. The asbestos removal contractor would use a landfill approved for asbestos disposal after removing the asbestos-containing materials.

The USEPA has published final rules on general conformity (40 CFR Part 51 in Federal Register, November 30, 1993) that apply to federal actions in areas designated nonattainment for any of the criteria pollutants under the CAA. The rules do not apply to implementation of the Reuse Plan, as the Navy will not retain control of the property once transfer occurs.

## 6.1.5 Endangered Species Act

The Endangered Species Act of 1973 and subsequent amendments provide for the conservation of threatened and endangered species of animals and plants, and the habitats in which they are found. Based on available documentation, there are no known federally endangered species of animals or plants on NWIRP Calverton.

## 6.1.6 National Historic Preservation Act

This act was passed in 1966 to provide for the protection, enhancement, and preservation of any property that possesses significant architectural, archaeological, historical, or cultural characteristics. Executive Order 11593 of 1974 further defined the obligations of federal agencies concerning this act. Under the regulatory program implementing the National Historic Preservation Act, a federal agency must determine if the subject property is eligible for listing in the National Register of Historic Places (NRHP).

In preparing this EIS, state and local agencies were contacted about cultural resources at the site. Through the Cultural Resource Survey (CRS), it has been determined that three structures are individually eligible as historic structures - Plant 06, Plant 07, and the Anechoic Chamber (Subchapter 3.8). Another 240 acres have been identified as highly archaeologically sensitive. The Navy, NYSHPO, and the ACHP have agreed to terms of an MOA to mitigate the effects of disposal of on-site National Register-eligible resources.

## 6.1.7 Coastal Zone Management Act

The Coastal Zone Management Act of 1972 provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs for the coastal zone. This includes the protection of natural resources and management of coastal development. Policy is implemented by the respective state coastal zone management program. NWIRP Calverton is situated outside of the designated coastal zone.

## 6.1.8 Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (TSCA) was enacted to "regulate commerce and protect human health and the environment by requiring testing and necessary use restrictions on certain chemical substances." Unlike many of the existing environmental laws, TSCA regulates not only the end products of manufacturing or processing activities, but also provides for regulating the manufacture of substances not yet developed, the permitted use of these chemicals, and allowable manufacturing quantities. The act also requires manufacturers to test substance(s), to submit reports and maintain records on their health and environmental effects. TSCA, therefore, regulates chemicals or substances during their entire lifetime.

Under the authority of Section 6 of TSCA, the USEPA developed regulations for the management of polychlorinated biphenyls (PCBs). PCBs were historically used as an insulating fluid in transformers. Transformers remain within Zone I that would be defined as PCB-contaminated (less than 0.500 ppm); the Navy has removed three transformers classified as PCB-containing (0.500 ppm).

## 6.1.9 Executive Order 11990, Protection of Wetlands

This order of May 24, 1977 directs federal agencies to take action to protect wetlands on their property and mandates review of proposed actions on wetlands through procedures established by NEPA. Depending on the ultimate site development plan, implementation of project components could result in the loss of jurisdictional wetlands under Section 404 of the Clean Water Act (the amount of wetlands filled would be dependent upon the specific reuse that was selected). As mentioned in Subchapter 6.3, the alternative analysis for any proposed project under the Reuse Plan that could potentially affect wetlands must first consider avoiding impacts to wetlands. Only after wetland impacts have been avoided to the greatest extent practicable, should other mitigative measures be considered.

## 6.1.10 Executive Order 11988, Floodplain Management

This order sets forth federal agency responsibilities for reducing the risk of flood loss or damage to personal property, minimizing the impact of flood loss, and restoring the natural and beneficial functions of floodplains. This order was issued in furtherance of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Plans or proposals for actions of the Navy in floodplain areas would be submitted for public review. Because redevelopment areas on NWIRP Calverton do not lie within the 100-year floodplain, there would have no impact on floodplains.

## 6.1.11 Executive Order 12898, Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," was signed on February 11, 1994. It directs all federal departments and agencies to incorporate environmental justice in achieving their mission. Each federal department and agency is to accomplish this by conducting programs, policies, and activities that substantially affect human health or the environment in a manner that does not exclude communities from participation in, deny communities the benefits of, or subject communities to discrimination under such actions, because of their race, color, or national origin.

As evaluated in accordance with Executive Order 12898, the direct and indirect effects of the proposed transfer and reuse are not expected to cause adverse environmental or economic impacts specific to any groups or individuals from minority or low-income populations residing in the study area. Neither would any persons be displaced as a result of proposed transfer and reuse of the former NWIRP Calverton. All populations would be affected equally and in the same manner by the proposed action.

In addition, consistent with the NEPA process, the wide mailing and the publication of the newspaper

notice announcing availability of the original DEIS and this FEIS allows the general public, including minority and low-income individuals and populations, the opportunity to comment on the proposed Reuse Plan. The scoping meeting and DEIS public hearing were advertised and open to all interested members of the public who wished to participate.

## 6.2 State and Local Plans and Policies

The Navy pursues close and harmonious planning relations with local and regional agencies and planning commissions of adjacent cities, counties, and states for cooperation and resolution of mutual land use and environment-related problems. In addition, coordination may be made with state and regional planning clearing houses as established by Executive Order 12372 of 1982.

In preparing this EIS, relevant state, regional, and local agencies were contacted for information on the impact of the proposed transfer and reuse of NWIRP Calverton. Execution of the proposed Reuse Plan would require financial incentives, additional public investment, and an appropriate governance structure to control and implement the proposed development.

### 6.2.1 State Environmental Quality Review Act

In addition to meeting the federal requirement for NEPA, this EIS was also written to comply with The New York State Environmental Quality Review Act (SEQRA). When a NEPA EIS is prepared the SEQRA lead agency will review the document to ensure that all applicable subject areas cited in the SEQRA regulations are incorporated; SEQRA findings based on the Final EIS will also need to be made.

The NEPA EIS is a Generic EIS under SEQRA since the town of Riverhead will use it to implement zoning for the site. A Generic EIS is appropriate in such instances where the effects of projects are to be developed in phases over time; where separate actions have generic or common impacts; and/or, where there are a sequence of actions contemplated by an agency. A Generic EIS is appropriate because details concerning future phases of the reuse plan are available only in general terms. The Generic EIS analysis is used to identify constraints in the natural and man-made environment that should be considered in determining appropriate conditions to be placed on the project's as it is developed. Supplemental EISs would be prepared for future development components assuming that the individual actions trigger SEQRA requirements.

### 6.2.2 New York State Wild, Scenic and Recreational River System Act

The stated policy of the New York State Wild, Scenic and Recreational Rivers System Act (Title 27

of Article 15 of the Environmental Conservation Law [ECL]) is that designated rivers of the state and their immediate environs possessing outstanding values (natural, scenic, ecological, recreational, aesthetic, botanical, geological, hydrological, fish and wildlife, historical, cultural, archaeological and scientific) be preserved in a free-flowing condition and be protected. As described in Subchapter 3.10, segments of the Peconic River and three of its tributaries are designated "scenic" near NWIRP Calverton. The "scenic" designation is one of thee classes of rivers defined in the Act:

> "Scenic rivers are generally free of diversions or impoundments with limited road access. Their river areas are essentially primitive and undeveloped or are used for agriculture, forest management and other dispersed human activities which do not in themselves substantially constrain public use and enjoyment of these rivers and their environs. Management of scenic river areas will be directed to preserving and restoring their natural scenic qualities."(Part 666.4 of Act)

The location of the scenic river corridor regulatory boundary is displayed in Figure 3-10-1. It is estimated that approximately 526 acres of the site are contained within the existing scenic river corridor. Within that area much of the development proposed within the Reuse Plan would not be able to be developed. Additional discussion about this issue is provided in Subchapter 6.2.4, the Central Pine Barrens Comprehensive Land use Plan.

## 6.2.3 New York State Freshwater Wetlands Act

Freshwater wetlands of New York State are protected under Article 24 of the ECL, commonly known as the Freshwater Wetlands Act. Wetlands protected under Article 24 are known as New York State regulated wetlands. The regulated area includes the wetlands themselves and a protective buffer or adjacent area that extends 100 ft (30 m) landward of the wetland boundary. All freshwater wetlands with an area 12.4 acres (5 hectares) or greater are depicted on a set of maps published by NYSDEC. Wetlands less than 12.4 acres (5 hectares) may also be mapped if they have unusual local importance (or are located in the Adirondack Park). Four classes of wetlands (Class I, the most valuable through Class IV, the least valuable) have been established and are ranked according to their ability to perform wetland functions and provide wetland benefits. Vegetative cover, ecological associations, special features, hydrological and pollution control features, distribution and location are factors considered in the determination of wetland benefit. Within the fenced-in area of NWIRP Calverton where redevelopment would occur, there are ten state regulated wetlands - seven Class I, two Class II, and one Class IV.

For work to be conducted in the wetland or its buffer area, a permit must be first be obtained from NYSDEC. However, such permits are granted only when it can be proven that no feasible alternatives exist to the proposed activity.

## 6.2.4 Central Pine Barrens Comprehensive Land Use Plan

The Central Pine Barrens Comprehensive Land Use Plan was prepared pursuant to the Long Island Pine Barrens Protection Act of 1993 and established a set of policies, programs, and standards to protect, preserve, and enhance the functional integrity of the "Central Pine Barrens" ecosystem of Long Island.

As shown in Figure 3.1-3, most of the fenced-in area of NWIRP Calverton is designated as Compatible Growth Area (CGA). Approximately 438 acres (177 hectares) in the western portion of the fenced area were designated Core Preservation Area (CPA) in the Pine Barrens Plan. The southeast and southwest buffer zones are part of the CPA; the northern buffer is part of the CGA. The Reuse Plan has designated the site's western lands as Pine Barrens Core Preservation Area, consistent with the Pine Barrens Plan. The remainder of the site in the Compatible Growth Areas would also be considered consistent with the Pine Barrens Plan , assuming that the activities are consistent with Pine Barrens Plan development standards and that zoning is considered consistent with the Plan by the CPBJP&PC.

That portion of the Peconic River Scenic Corridor on NWIRP Calverton was specifically addressed in the Findings Statement for the Central Pine Barrens Plan. Essentially, it is stated that the Pine Barrens Commission (CPBJP&PC) would support and recommend that the northerly boundary of the scenic river area (Figure 3.10-1) within the Compatible Growth Area of NWIRP Calverton be moved to a point coterminous with the Core Preservation Area boundary line, under the following conditions:

- adherence to the Pine Barrens standards and guidelines through adoption of a planned development district (PDD) or, in other words, a Planned Unit Development (PUD) that is consistent with the Pine Barrens Plan; and

- incorporation of plans for wastewater treatment plant infrastructure improvements for the Calverton STP.

If these conditions were met, the scenic corridor could be relocated outside the fenced-in area, south of Swan Pond/Grumman Boulevard where development would occur and would therefore pose no restriction to Reuse Plan implementation. The Reuse Plan complies with the pine barrens standards in general; however, it does not specifically address improvements to the Calverton STP but rather proposes a new STP in the future. If the scenic corridor boundary did not change, redevelopment of the site as proposed in the Reuse Plan would be severely restricted on those lands within the corridor.

## 6.2.5 Peconic Estuary Program

In 1987 the Clean Water Act (CWA) was amended to provide for creation of a National Estuary Program (NEP) to promote long-term planning and management in nationally significant estuaries that are threatened by pollution, development, or overuse (LIRPB, 1993). The Peconic Estuary was designated in September, 1991. The Peconic Estuary contains a large variety of natural communities, from upland pine barrens along the Peconic River to soft-bottom benthos in the bays. There is a larger percentage of undisturbed habitats and a greater diversity of natural communities within this watershed than anywhere else in the coastal zone of New York State (Suffolk County Department of Health Services Office of Ecology [SCDHS], 1995).

A Comprehensive and Management Plan (CCMP) for the Peconics is to be prepared; at the time of preparing this EIS a preliminary plan, or working draft, was available (SCDHS). The PEP CCMP identified three overall goals:

- to protect and improve the Peconic Estuary system water quality to ensure a healthy and diverse marine community;
- to ensure an effective technical, regulatory and administrative framework for the continued monitoring and management of the Peconic Estuary study area; and
- to broaden and generalize the recommended water quality policy, administrative and regulatory framework so that lessons learned from the Peconic Estuary system will serve as a model for other estuaries that may experience similar problems.

More specific objectives include:

- to preserve and enhance the integrity of the ecosystems and natural resources present in the study area;
- to optimize opportunities for water-dependent recreation;
- to promote, to the maximum extent practicable, the social and economic benefits associated with the Peconic Estuary;
- to minimize health risks from human consumption of shellfish and finfish; and
- to promote, to the maximum extent practicable, public awareness and involvement in estuarine management issues.

As discussed in Subchapter 3.10, the CCMP identified the Calverton STP as one of concern because of its direct discharge into the environmentally sensitive Peconic River with respect to nitrogen loadings. However, a prior study published in 1988 by SCDHS known as the Brown Tide

Comprehensive Assessment and Management Program (BTCAMP) identified that the most significant of all controllable nitrogen loadings in terms of impact on the estuarine system is the Riverhead Sewage Treatment Plant (STP); this impact is due to the concentrated nature of the discharge near the mouth of the Peconic where tidal flushing is poor. The CCMP identified as two action items the modification of the SPDES permit for Calverton with a defined nitrogen limit and subsequent monitoring requirements of the discharge. These action items were identified prior to the development and publication of the Reuse Plan evaluated in this EIS.

BTCAMP also recommended more stringent land use controls for the Peconic River, such as two-acre zoning for the groundwater-contributing area of which the fenced-in portion of NWIRP Calverton is a considered a part.

The CCMP also recommended the continuation of setbacks of 250 ft (76 m) for new building in the scenic portion of the Peconic River and limiting development within 100 ft (30 m) of freshwater wetlands.

## 6.2.6 Special Groundwater Protection Area

In 1992, the Long Island Comprehensive Special Groundwater Protection Area (SGPA) Plan (Long Island Regional Planning Board [LIRPB], 1992) was prepared to assist in the further protection of groundwater resources in Suffolk/Nassau region. Approved in 1993 by NYSDEC, the plan requires that new land uses produce no net increase in the levels of polluting constituents in the groundwater supply.

For Suffolk County, the LIRPB established nine Special Groundwater Protection Areas (SGPAs) with specific requirements for land use activities and groundwater. NWIRP Calverton lies completely within the Central Suffolk SGPA. The fenced-in area and northern buffer are in the northern part of the SGPA; the southern buffer zones are in the southern part of SGPA. SGPAs are considered critical environmental areas (CEAs) pursuant to the SEQR. A CEA is "a specific geographic area designated by a state or local agency, having exceptional or unique characteristics that make the area environmentally important (Section 617.2 (I) of Title 6 New York Codes of Rules and Regulations [NYCRR].

Selected recommendations from the SGPA Plan for the town of Riverhead (unless otherwise noted) for the area near NWIRP Calverton include the following:

- Along with Suffolk County, expand the existing agricultural preserve;
- Amend the town zoning ordinance requiring five-acre (two-hectare) minimum lot size for all farmland in the SGPA;

- Require clustering of new development in the town where transfer of development (TDR) is infeasible;
- Place excess lands at the National Cemetery and in the NWIRP Calverton buffer zones in a protected category and retain them as open space;
- Reduce the amount of industrially-zoned land and concentrate these uses at the end of the Long Island Expressway,
- Review and amend the town zoning ordinance to preclude expansion of commercial activities beyond the existing limits in the SGPA.

## 6.2.7 Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern

The New York State endangered species legislation, enacted in 1970, was designed to complement the Federal Endangered Species Act by authorizing NYSDEC to adopt the federal endangered species list so that prohibitions of possession or sale of federally listed species and products could be enforced by state enforcement agents. The state list can therefore include species that while plentiful elsewhere, are endangered in New York. The law was amended in 1981 to authorize the adoption of a list of threatened species that would receive protection similar to endangered species. In addition to the threatened species list, NYSDEC also adopted a list of species of special concern, species for which a risk of endangerment has been documented by NYSDEC. As described in Subchapter 3.11.3, there are six NYS-listed threatened and endangered species (three animal, three plant) in the fenced-in area of NWIRP Calverton.

## 6.2.8 Suffolk County Sanitary Code

Suffolk County Department of Health Services is the lead agency in the area of potable well pumping and wastewater discharges and is responsible for inspection of plant operations, treatment facilities and discharges, potable water supply distribution systems and water quality monitoring. Article 6 of the code regulates overall allowable densities for residential and nonresidential projects, and it establishes maximum sewage flow requirements. In Article 7 specific limitations are defined on the maximum volume of chemicals that may be stored in deep groundwater recharge areas. Specific restrictions on the construction of storage facilities for toxic and hazardous materials are defined in Article 12 of the county code. These regulations would likely be most applicable to those operating in the industrial business park component of the reuse plan and alternatives.

## 6.2.9 Riverhead Noise Ordinance

The Riverhead town code includes a noise ordinance that regulates noise levels and identifies maximum permissible noise levels by the land use class of the receiving property (Subchapter 3.6).

The sound source is based on various categories of property such as residential, commercial, or industrial property. Similar categories are used to define different sound receiving properties. The ordinance does not allow or permit the operation of any source of sound on a particular category of property or public land or right-of-way in a manner as to create a sound level that exceeds the maximum permissible sound pressure levels measured within the receiving property (Table 3.6-3). However, a variance to the town noise code could be applied on case-by-case basis, and the Town Board could grant or deny the application through certain procedures, including public hearing.

# 7 UNAVOIDABLE ADVERSE EFFECTS

The transfer and reuse of NWIRP Calverton in accordance with the Calverton Enterprise Park Reuse Plan, the preferred, locally developed alternative, would result in the following unavoidable adverse effects based on the assumptions made concerning development as described in Chapter 2 and potential impacts discussed in Chapter 4.

## 7.1 Transportation

Implementation of the Reuse Plan would result in substantial impacts at several study area intersections. However, as noted in Chapter 5, mitigative measures implemented by Riverhead, the applicant, or others can be applied which will provide operation similar to future baseline conditions, without the project. To mitigate the project impacts at Rocky Point Road and North Country Road (Location 1) substantial land acquisition due to the adjacent development would likely be required. Heavy background traffic growth would also likely necessitate intersection improvements, regardless of the project, based on a review of future operations. Therefore, it is anticipated that future intersection improvements required to accommodate the projected future vehicular traffic without the project would likely negate the need for the project-specific mitigation defined in Chapter 5.

## 7.2 Terrestrial and Aquatic Environment

Implementation of the proposed Reuse Plan would reduce potential habitat for certain species on the site like the white-tailed deer; however, the deer population has already exceeded the carrying capacity of the site since the deer have no natural predators and they are unable to move out of the fenced-in area on their own. Mitigative measures to reduce potential conflicts with the Reuse Plan are described in Chapter 5.

Because of the general nature of the Reuse Plan and alternatives and the expected 20-year build-out of the site, specific impacts on threatened, endangered, rare and/or species of concern would have to be addressed when individual components of the project are developed. Given the time frame for project implementation and recommended consultation with NYSDEC, it is likely that adverse effects on these species would be avoidable.

# 8 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Implementation of the Calverton Enterprise Park Reuse Plan at NWIRP Calverton would result in the redevelopment of the site from its existing condition into a new development. Construction and operation of this proposed development would generate new jobs and tax revenues for the town of Riverhead and surrounding communities; access to open space "within the fence" would be increased; existing open space opportunities would be enhanced given local control of the buffer zones. Consequently, the project would be expected to enhance long-term productivity in Riverhead and the local communities.

During the construction phase of Reuse Plan implementation, as discussed in Chapter 4, there would be some short-term adverse impacts. These would include some vehicular traffic disruptions, increased noise levels associated with construction activities including noise from construction equipment, and diminution of air quality due to fugitive dust and vehicular emissions.

The longer term significant negative impact would be increased traffic volumes on roads not able to accommodate the projected trips. The Reuse Plan would also increase sewage, water usage, and energy consumption. None of these issues would be expected to adversely affect long-term productivity.

Positive consequences of implementing the Calverton Enterprise Park would include the provision for productive use of land that would otherwise be occupied by vacant buildings that could have a potentially blighting influence on nearby properties including some residential neighborhoods. Completion of the Reuse Plan would produce new employment opportunities and increase tax revenues. Transfer of the buffer zones to NYSDEC would allow for the long term control and conservation of these managed lands to the benefit of the general public.

# 9 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

While implementing the Calverton Enterprise Park Reuse Plan would bring important benefits to the town of Riverhead and the surrounding area, nonrenewable resources would be consumed during the design, construction, and operation of the proposed project. Since the reuse of these resources is impossible, they must be considered irreversibly and irretrievably committed to the development of the proposed project. The finite resources that would be irretrievably committed by implementation of the Reuse Plan are expendable materials, such as steel, concrete and glass, lumber, and fuel and energy used during construction of the proposed development, as well as supplies and energy resources (in the form of gas and electricity for heating and cooling) necessary to operate and maintain it after construction.

The land use changes associated with the development of the preferred Reuse Plan on the former NWIRP Calverton site may also be considered an irreversible and irretrievable commitment of the site as a land resource. Further, private funds committed to the design, construction, and operation of the proposed redevelopment would not be available for other projects. The disposal of construction debris would also result in an irreversible and irretrievable commitment of landfill or other solid waste disposal capacity.

The public services to be provided in connection with the proposed development of NWIRP Calverton (e.g., police and fire protection services) would also constitute resource commitments. These public services might otherwise be available for use by other programs or projects although the Reuse Plan components would also be expected to generate sufficient tax revenues to provide public funding of other activities in the future. The human labor expended for development and operation of the Reuse Plan would also be considered irrevocable commitment.

# 10 PUBLIC REVIEW PROCESS AND RESPONSE TO COMMENTS

Public involvement in the review of Draft Environmental Impact Statements (DEISs) is stipulated in 40 CFR Part 1503 of the Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act (NEPA), and in OPNAVINST 5090.1B. These regulations and guidance provide for active solicitation of public comment via scoping meetings, public comment periods, and public hearings. This chapter is prepared to respond to the specific questions and comments raised by individual commentors during the public comment period on the *Draft Environmental Impact Statement - Disposal and Reuse of Naval Weapons Industrial Reserve Plant, Calverton, New York.*

## 10.1 Public Review Process

### 10.1.1 Filing and Distribution of the Draft Environmental Impact Statement

The formal Notice of Intent to Prepare an EIS for transfer and reuse of NWIRP Calverton was published in the *Federal Register* on March 26, 1996. The notice was also published in local newspapers - *Newsday* (Nassau and Suffolk editions) and *Suffolk County Life*. The public scoping meeting was held on April 10, 1996 at the Ramada Inn - East End, on Route 25 in Riverhead, NY.

On March 17, 1997, the DEIS was distributed to agencies and officials of federal, state, and local governments, citizen groups and associations, and other interested parties.

### 10.1.2 Public Review Period and Public Hearing

Public review and comment on the DEIS occurred through May 9, 1997. A public hearing was held on April 17, 1997 in Riverhead, NY. The notice was published in the *Federal Register* on April 1, 1997. The notice was also published in local newspapers - *Newsday* (Nassau and Suffolk editions, April 1 and April 15, 1997) and *Suffolk County Life* (April 2, 1997). The hearing was conducted in accordance with NEPA and SEQRA requirements. Copies of the hearing transcript were sent to the

Riverhead Free Library on May 8, 1997. A complete transcript of the hearing is also available from:

Mr. Kurt Frederick
Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop #82
Lester, PA 19113-2090

## 10.2 Receipt of Comments

Comments on the DEIS were received in three forms: letters, written statements delivered at the hearing, and oral statements made at the hearing. In most cases, oral statements were summaries or verbatim readings of written statements submitted at the hearing or of letters that were sent to the Navy. All substantive comments are reviewed and addressed in this chapter.

### 10.2.1 Identification of Comments

Each submission received, whether written or contained only in the transcript of the public hearing, was assigned one of the following letter codes:

F - Federal agencies and officials;
S - State agencies and officials;
R - Regional agencies and officials;
L - Local agencies and officials;
G - Groups and associations; and
P - Public (Individuals).

These labels were assigned for the convenience of readers and to assist in the organization of this document; priority or special treatment was neither intended nor given in the responses to comments. Within each of the categories, each submission was then assigned a number, in the order that it was received and processed, such as F-1, S-1, and so on. In addition, each separate comment was assigned a separate sub-number. Thus, if an agency or citizen made three different comments, they are designated as F-1.1, F-1.2, F-1.3 or as P-1.1, P-1.2, P-1.3, etc.

Due to the lengthiness of the written hearing transcript, the transcript is not reprinted in this document, but has been made available as noted at Section 10.1.2. However, all oral comments were coded and treated in the same manner as written comments.

All written submissions have been included in this EIS. The alphanumeric code associated with each written submission is marked at the top of the first page of each letter; the sub-numbers of the individual comments are marked in the left margin. Comment letters or statements are reprinted in numerical order.

## 10.2.2 Locating Response to Comments

### Comment Index

The Comment Index (Table 10-1), following this text, contains a complete listing of all commentors and responses to comments. The listing allows readers to find answers to specific questions they have raised. The index provides the following information:

- The first column lists the names of all commentors, according to type (federal, state, regional, local, group, private citizen).
- The second column identifies the alphanumeric file code assigned to each comment and indicates whether comments were written or oral;
- The third column provides a summary of the comment; and
- The fourth column indicates the response to the comment.

In a few instances, a commentor may appear in the Comment Index more than once, because he/she sent different letters, sent letters different from oral statements or made different oral statements. If an individual spoke for a group and then wrote a letter in his/her own name (or vice-versa), the submissions were coded separately and each appears in the Comment Index.

It was not always clear if a commentor intended to represent an organization/group or simply himself/herself. The reader is advised to examine both the G (Group) listing for the name of the group, firm, or association used on the letterhead of a written submission and the P (Public) list for his/her own name.

### Kinds of Responses

Responses to comments include the types described below:

- Specific Response to Comment - The comment is answered in the index.
- Reference to Final EIS - Modifications have been made to specific sections of the

Final EIS (FEIS). The chapter headings and section numbers are the same as or similar to those in the DEIS. This type of reference typically states: Refer to FEIS Subchapter 2.7, or other appropriate section number.

# Table 10-1
## Comment Response Index

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| **Federal Government Comments** | | | |
| Department of Veterans Affairs | F-1.1 | Include reference to property being transferred to Dept. of Veterans Affairs (VA) | References have been made in Subchapter S.1 and Chapter 1 of the FEIS. Figure 2-1 displays lands being transferred to the VA. |
| US DOT Federal Aviation Administration | F-2.1 | Request clarification of the preferred alternative | The preferred alternative is the Calverton Enterprise Park, which includes an aviation component. The aviation use is described in Subchapter 2.3 of the FEIS. |
| US DOT Federal Aviation Administration | F-2.2 | Requests consideration as a cooperating agency if aviation use is part of Reuse Plan | The Navy acknowledges the comment. Coordination with the LRA should be made as the development of the (redefined) aviation component may proceed in the future. |
| US Environmental Protection Agency | F-3.1 | Recommends explanation of difference in federally and state regulated wetlands | State and federal permitting processes are identified in Subchapter 3.11.1. |
| US Environmental Protection Agency | F-3.2 | Recommends that avoidance and minimization of wetland impacts be factored in project planning | Wetlands potentially affected by the alternatives are identified in Subchapters 4.11.2, 4.11.3, and 4.11.4. Because reuse plans are general in nature, wetlands are limited in size and location, the site is large, and the buildout is 20 years, the FEIS indicates that "wetlands could be potentially impacted by future development, depending on the ultimate site configuration". Refer to Subchapter 4.11.2 for information on the Section 404 (b)(1) guidelines. |
| US Environmental Protection Agency | F-3.3 | Indicate sole source aquifer status and federal compliance with Section 1424 (e) of SWDA | The status of groundwater in Suffolk County as a sole source aquifer is referenced in Subchapter S.3.10 and in Subchapter 3.10.2. Implementation of the Reuse Plan is not federally funded; however, reference to federal funding of projects is made in Subchapter 3.10.2. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| US Environmental Protection Agency | F-3.4 | Provide additional data on source and extent of groundwater contamination | Identification and descriptions of contaminated sites are being addressed under the Navy's Installation Restoration (IR) Program and reports consistent with the conduct of a RCRA Corrective Action have been prepared. The Navy is currently gathering additional data to support the preparation of a Phase II RCRA Facility Investigation (RFI). The objective of that document is to fully characterize groundwater contamination, both vertically and horizontally, at all IR sites.<br><br>Soil contamination has been previously characterized under the Phase I RFI Report (August 1995), the Final RCRA Facility Assessment (RFA) Report (March 1995), and the RFA Addendum (April 1996). Because of the volume and complexity of the analytical data, it is recommended that the reader refer to the source documents themselves which are incorporated by reference in this FEIS. All IR documents are available at the Navy's information repository located at the Riverhead Free Library. All documents have also been provided to NYSDEC, Suffolk County Dept. Of Health Services, and the US EPA Region II Office. |
| US Environmental Protection Agency | F-3.5 | Evaluate nonpoint sources of pollution from proposed uses on groundwater | A discussion of potential and typical nonpoint source pollutants from the proposed land uses has been added to Subchapter 4.10.2, Stormwater |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| US Environmental Protection Agency | F-3.6 | FEIS should summarize ongoing investigations and corrective actions; address cost, schedule and effectiveness of long term remedial and/or corrective actions; Address impacts that contamination could have on design, construction, and operation of Reuse Plan | The Navy is currently conducting a Phase II RCRA Investigation (RFI) at seven locations - Sites 1, 2, 6A, 7, 9, 10A, and 10B (Figure 3.12-1). The Navy is also conducting sampling at one on-site EBS location at the flightline parking area behind Plant 7 and at three off-site locations - two within the southeast buffer zone and one in the area designated for transfer to the VA. Results of these studies are not available in time for incorporation into the FEIS; however, separate reports with the results will be published and placed in the Navy's information repository at the Riverhead Free Library.<br><br>Cost and schedule data of any of the potential long-term remedial or corrective measures is not available. A Feasibility Study (FS), which evaluates different remedial alternatives, is planned to be initiated for each site as environmental investigations are completed. The FS is expected to begin in late 1997 or early 1998, depending on the level of regulatory comment on the Navy's investigations. Once sufficient data are gathered, evaluation of different alternatives can begin.<br><br>Specific effects of contamination of the Reuse Plan and alternatives cannot be made at this time given their general nature and the on-going status of the environmental investigations. Hazardous waste issues are discussed in Subchapters 3.12 and 4.12 including the areas of investigation and the potential type of contamination. |
| US Environmental Protection Agency | F-3.7 | Identify Navy cleanup schedule and clean up activities by site | The locations of the IR sites are provided in Figure 3.12-1. The Navy is presently preparing a Site Management Plan (SMP) that outlines the strategy and schedule for completion of remedial actions at each site. The SMP is being based on the anticipated amount of funding that can be expected for the site over the next several years. The Navy's objective is to use available funding as effectively as possible to achieve site closeout or to demonstrate remedy-in-place for all sites as soon as practicable. |
| US Environmental Protection Agency | F-3.8 | Add language re: need for lead-based paint inspection prior to demolition | Appropriate language has been added to Subchapter 4.12.1. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| US Environmental Protection Agency | F-3.9 | Provide more detailed discussion on CERCLA and federal property transfer; Add reference of FOSL prepared by Navy for industrial core and presently under review by EPA | Supplemental data on CERCLA has been provided in Subchapter 4.12.2, Site Contamination.<br><br>Supplemental data on the FOSL are provided in Subchapter 4.12.2, Site Contamination. The FOSL was prepared in anticipation of the upcoming lease agreement, not the transfer, between the Government and the town of Riverhead since transfer of the property had to be delayed due to the presence of another Federal Agency, the National Transportation Safety Board. No timeframes have been established as to when the transfer may be able to take place. The Navy is pursuing the installation of remedial actions at each of the IR sites, as appropriate. Property transfer could occur prior to remediation with the approval of the Governor. |
| US Environmental Protection Agency | F-3.10 | Evaluate long-term viability of T&E species given indirect impacts of proposed development | Specific analyses on long term-viability cannot be made given the general nature of the Reuse Plan and alternatives. Supplemental data on habitat is provided in Subchapter 3.11.3. General measures to avoid and/or mitigate potential impacts are provided in Subchapter 4.11.3. |
| US Environmental Protection Agency | F-3.11 | Provide particulars of MOA for protection of cultural/historic resources | The Navy, NYSHPO, and the Advisory Council on Historic Preservation have agreed to terms of an MOA. |
| US Environmental Protection Agency | F-3.12 | Insufficient socioeconomic data to conclude no effect on minority/low income populations | The proposed Reuse Plan does not displace any population, rather it would provide a substantial increase in employment opportunities as presented in Subchapter 4.2. Many of these jobs, based on the land uses proposed, would require minimal or entry level skills, and would be available to all area residents. Additional information on Environmental Justice is provided in Subchapter 6.1.11. |
| Department of Army, New York District Corps of Engineers | F-4.1 | Clarify federal/state roles and processes re: wetlands | Refer to Response F-3.1. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| Department of Army, New York District Corps of Engineers | F-4.2 | Request field report on wetlands and Myers & Gaffney report | The data has been forwarded as requested. |
| Department of Army, New York District Corps of Engineers | F-4.3 | Preferred alternative should be one with minimal impact to wetlands | The selection of the preferred alternative was made by the LRA. All alternatives discussed are likely to avoid wetlands impacts given the knowledge of their location on the site and the 20-year timeframe for full site buildout. |
| Department of Army, New York District Corps of Engineers | F-4.4 | Send copies of DEIS to USF&WS, NMFS | A copy of DEIS was sent to USF&WS. A copy was sent to NMFS. |
| US Dept of the Interior | F-5.1 | There are no federally listed or proposed endangered species in the project area and no Biological Assessment is necessary. | The Navy acknowleges the comment. The status of federally designated T&E species was determined via reference to another report as listed in Subchapter 3.11.3. |
| US Dept of the Interior | F-5.2 | Clarify jurisdiction of NYSDEC and COE regarding wetlands | The language in Subchapter S.3.11 has been clarified. |
| US Dept of the Interior | F-5.3 | For potential wetland disturbances, a draft set of analyses should be prepared and submitted to all involved resource agencies prior to submittal of any COE permit application | Supplemental language has been added to Subchapter 4.11.2. |
| US Dept of the Interior | F-5.4 | For cultural resources, recommend either: a letter of acceptability of preferred Reuse Plan from NY SHPO; or, a draft MOA<br><br>Issues should be addressed in and/or prior to FEIS | Refer also to Response F-3.11 for status of MOA. The Navy, NYSHPO and ACHP have verbally agreed upon on a MOA for protection of National Register-eligible resources at NWIRP Calverton.<br><br>All issues are addressed in the FEIS. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| State Government Comments | | | |
| NYS Department of Environmental Conservation | S-1.1 | Descriptions of proposed development, alternatives and expected impacts are not sufficiently site and project-specific | It is premature to provide the site specific and project specific data requested given the general nature of the reuse plans and the stage of the environmental review process. The NEPA EIS is a Generic EIS under SEQRA. |
| NYS Department of Environmental Conservation | S-1.2 | Inadequate discussion of growth inducing aspects of reuse plans on local roadways, existing residential areas, and natural resources (e.g., no discussion of impact widening and increasing traffic flows on roads and impacts on existing rural neighborhoods) | Reuse Plan and alternatives as developed by LRA did not identify off-site improvements to accommodate redevelopment. Once traffic analysis was complete, the FEIS identified general traffic improvements at intersections as potential mitigation to eliminate project-related impacts. An annual traffic increase of 2.5 %, along with traffic generated by specific developments in the project area in the same planning horizon, were used to evaluate future transportation growth, air and noise effects. |
| NYS Department of Environmental Conservation | S-1.3 | Potential freshwater wetland impacts from road improvements (widening/safety) are not discussed | Refer to Response S-1.2 with respect to no specific local off-site traffic improvements being identified and incorporated into the Reuse Plan and alternatives by LRA. Consequently, potential effects on natural resources would be speculative as to their location, extent, and intensity. |
| NYS Department of Environmental Conservation | S-1.4 | Sewage treatment plant issues (modification, upgrade, change in ownership, WSRR regulations) | Comments are addressed in Subchapter 4.10.3, STP Surface Water Discharge. |
| NYS Department of Environmental Conservation | S-1.5 | Peconic River Scenic Corridor issues (boundary changes, variances) | Supplemental information and corrections have been made in Subchapter 4.10.2, Peconic Scenic River Corridor. |
| NYS Department of Environmental Conservation | S-1.6 | Impacts to freshwater wetlands | Additional data have been provided in Subchapter 4.11.3, Wetlands. |
| NYS Department of Environmental Conservation | S-1.7 | Evaluate effects of redevelopment on grassland birds | Supplemental data have been provided in Subchapters 3.11.2 and 4.11. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| NYS Department of Environmental Conservation | S-1.8 | More detailed plans are necessary to evaluate effects on redevelopment on T&E species; Concern is expressed for sites outside of industrial core that are associated with the tiger and spotted salamander | More detail on the proposed Reuse Plan and alternatives is not available at the present time. The alternatives evaluated are general in nature and have been developed by the LRA as planning tools, not as site plans for a 20-year buildout. Refer to Response F-3.10. However, as on-site development proposals proceed, more detailed data will be developed by the applicant. |
| NYS Department of Environmental Conservation | S-1.9 | Refer to historical fires | Appropriate reference has been made in Subchapter 3.11.1. |
| NYS Department of Environmental Conservation | S-1.10 | Add lists of reptiles/anuran amphibians | Supplemental data have been provided in Subchapter 3. 11.2 and Table 3.11-9. |
| NYS Department of Environmental Conservation | S-1.11 | Add discussion of noise impacts on wildlife and humans | Noise effects (on humans) are discussed in FEIS, Chapter 4.6. A discussion of noise effects on wildlife has been provided in Subchapter 4.11.2. |
| NYS Department of Transportation | S-2.1 | Identifies receipt of DEIS as a permit application | The DEIS does not represent a permit application. |
| NYS Department of Transportation | S-3.1 | Request for 6 copies of DEIS; request for 30 day extension of public comment period | Additional copies of DEIS were provided. The Navy granted an extension of the comment period through May 23, 1997. |
| NYS Office of Parks, Recreation and Historic Preservation | S-4.1 | Recommend deed restrictions on open space (excluding golf course); recommend a Phase 1B for golf course and all other areas proposed for development; Awaiting supplemental data on buildings and structures | The Navy's property conveyance document will contain covenants to protect National Register-eligible resources in accordance with the MOA. A Phase 1B survey is being conducted inside the fenced area to further refine areas of archaeological sensitivity. Supplemental data was provided. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| NYS Department of Transportation | S-5.1 | As plans proceed coordination is necessary to provide safe and efficient transportation on State, County and town highways | The need for coordination has been added to Subchapter 5.1.4. |
| NYS Department of Transportation | S-5.2 | Origin and destination traffic data are not provided; Impact of the Pine Barrens must be included in these future plans | The original trip distribution was based on data developed by the Long Island Regional Planning Board for the *Airpoint Joint Use Feasibility Study* (1993) where it was determined that 90% of the site traffic would come west of Wading River Road and 10% from the east. For the EIS traffic analysis, this trip distribution was modified to account for a second entrance to the site along Swan Pond Road/Grumman Boulevard and the regional nature of traffic that would be generated by the Reuse Plan. |
| NYS Department of Transportation | S-5.3 | NYSDOT will work with Riverhead to incorporate mitigation strategies into their Regional travel Demand Model | The Navy acknowledges the comment. |
| Local Government Comments | | | |
| Suffolk Community College | L-1.1 | School is poised to provide low cost quality education | The Navy acknowledges the comment. |
| Suffolk County Department of Public Works | L-2.1 | Perform additional work to address traffic mitigation measures; Mitigate for unrelated development and future growth in area | The FEIS identified and addressed potential mitigation for project-related impacts appropriate to the level of detail of alternatives and analysis required. The FEIS cannot address mitigation for unknown, unrelated future development. The analysis iccorporated a future growth (2.5 % annual traffic increase) factor and other planned projects in the future baseline condition. |
| Town of Riverhead Planning Department | L-3.1 | Add language re: Town Board adoption of preferred alternative | Additional language has been added to Subchapter 2.2. |

| Name/Agency | Comment Code | Comment | Response |
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| Town of Riverhead Planning Department | L-3.2 | Modify aviation alternative to be ancillary to industrial core; Reanalyze modifications to preferred plan because of change in aviation use | The aviation use has been modified. A limited industrial airpark is described in Subchapter 2.3.3 of the FEIS. The associated noise analysis is discussed in Subchapter 4.6.2. Additional reanalysis is unnecessary as other land uses have not been changed. |
| Town of Riverhead Planning Department | L-3.3 | Provide information on NTSB presence, expected duration, property utilization, leasing issues | The Navy intends to enter into a Master Lease with the town of Riverhead. Riverhead will then enter into a sublease agreement with the NTSB. No information is available at this time on the expected duration, property use, or other leasing issues associated with the NTSB. |
| Town of Riverhead Planning Department | L-3.4 | Examine appropriateness of NYSDEC title to northern buffer zone and discuss alternatives to perpetual development restrictions | The title to the property is being transferred by special legislation; therefore, the scenario suggested in the comment is neither appropriate nor relevant to the transfer action. |
| Town of Riverhead Planning Department | L-3.5 | State town's intentions with regard to sewage treatment plant SPDES permit. Evaluate the scenario that maintains use of existing facility at present location, treatment levels and capacity until the year 2000. | Information on Riverhead's plans for operation of the STP have been added to Subchapters 4.7.2, Sanitary Sewer and Subchapter 4.10.2, STP Surface Water Discharge. The FEIS analysis assumed full buildout in Year 20; moreover, the timeframes for redevelopment of site in the intervening years (1,2,3...years hence) were not defined in the Reuse Plan developed by LRA. Therefore, no interim year analysis was conducted. |
| Town of Riverhead Planning Department | L-3.6 | Examine alternative to use Riverhead Water District water supply; Determine optimum time for implementation and estimate costs | FEIS identifies the presence, status and capacity of existing on-site wells in Subchapters 3.7.1 and 4.7.2. Consistent with the Reuse Plan, the FEIS indicates that depending on the rate of development, the Riverhead Water District could be extended to the site. Implementation and associated costs are dependent on schedule of site development and specific plans that will be controlled in the future by the LRA. Therefore, optimum times for implementation and cost estimates cannot be prepared. |
| Town of Riverhead Planning Department | L-3.7 | Improvements necessary for the Manorville Fire District to allow for efficient fire service should be discussed | Refer to Subchapter 4.3.2, Public Safety and Emergency Services. |

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| Town of Riverhead Planning Department | L-3.8 | FEIS should contain a comprehensive groundwater map based on more discrete data and a hydrological investigation | A comprehensive groundwater map is not available and will not be prepared. Additional data on groundwater based on the Navy's IR program will be acquired as the program continues; however, additional data is not available for the FEIS. As additional data from this program become available, they will be provided to all interested parties. |
| Town of Riverhead Planning Department | L-3.9 | Given that proposed zoning district cannot mandate private security or fire protection, examine costs of fire and police protection | Refer to Response L-3.7. |
| Town of Riverhead Planning Department | L-3.10 | Reexamine trip generation analysis to minimize traffic effects on Pine Barrens Core Protection Area | The trip generation analysis was based on land uses as proposed by the LRA's preferred action and alternatives. Road improvements were not specified as part of the Reuse Plan nor the alternatives. The FEIS identifies general mitigation at local intersections to reduce project-induced traffic to future background conditions (20 years into the future). |
| Town of Riverhead Planning Department | L-3.11 | Analyze the capacity of Edwards Avenue and Route 25 and develop improvements necessary to manage expected traffic volumes | This intersection was evaluated as Location 2 under peak existing conditions, for each of the three action alternatives, and for the future baseline condition. Potential mitigation was identified in Subchapter 5.1.4. Additional traffic analysis is not proposed. |
| Town of Riverhead Planning Department | L-3.12 | Evaluate the capacity of thoroughfares considered to be approaches to the site and discuss improvements (road widening, land modification) | The capacity and operation of seven intersections were evaluated as part of the traffic analysis (Chapters 3.4 and 4.4). Off-site improvements to the road network such as road widening, lane modifications, etc., were not defined as part of the Reuse Plan or the alternatives by the LRA. The FEIS identifies potential mitigation at the studied intersections to reduce project-related traffic to future background levels ( Subchapters 5.1.4, 5.3.2). |
| Town of Riverhead Planning Department | L-3.13 | Relationship of Pine Barrens Overlay District and Comprehensive Plan | Revised language has been provided in Subchapter 4.1.2, Central Pine Barrens Comprehensive Land Use Plan. |

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| Town of Riverhead Planning Department | L-3.14 | Examine the potential market shift of new residential units in the vicinity of NWIRP Calverton and quantify the number of new dwelling units | Discussion has been added to Subchapter 4.2.2, Housing. |
| Town of Riverhead Planning Board | L-4.1 oral | Potential direct and indirect growth will occur in Riverhead; Local health effects need to be reevaluated given hospital vacancy rates | Refer to Response L-3.14 as it is broadly applicable to potential impacts of the direct and indirect workers on health care services. In particular, this is because: the number of induced new resident workers is uncertain and relatively small; they could choose to reside anywhere in (or outside of) the county; and, the buildout period is 20 years. All of these factors make impact predictions on specific health care facilities (such as the Central Suffolk hospital in Riverhead) speculative.<br><br>Supplemental discussion on potential impacts to local health services is provided in Subchapter 4.3.4, Health Care. |
| Suffolk County Dept of Health Services | L-5.1 | There is no objection to the general concept of the Calverton Enterprise Park | The Calverton Enterprise Park is the preferred plan of the LRA. The Navy had no role in the development of the Reuse Plan. |
| Suffolk County Dept of Health Services | L-5.2 | The entire island has been designated a sole source aquifer | Refer to Response F-3.3. |
| Suffolk County Dept of Health Services | L-5.3 | An explanation of Articles 7 and 12 of the Sanitary Code should be provided | References to Articles 6, 7, and 12 of the Sanitary Code are made in Subchapter 6.2.8. Additional language has been added to that subchapter. |
| Suffolk County Dept of Health Services | L-5.4 | A new ground water discharging STP will have to be carefully considered; the flow from the proposed STP should be referenced as to the northeast | The Navy acknowledges the comment.<br><br>The direction of flow has been referenced as to the north/northeast in Subchapter S.3.10. |
| Suffolk County Dept of Health Services | L-5.5 | The County Department of Health Services covers inspection of toxic and hazardous materials storage, handling, and discharge | The appropriate language has been added to Subchapter S.3.12, Calverton Enterprise Park. |

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| Suffolk County Dept of Health Services | L-5.6 | There was no analysis of impacts on groundwater from industrial/commercial uses using chemicals, application of fertilizers, herbicides, and pesticides, pumping and its effect on natural flows or contamination plumes, and recharge activities on groundwater mounding | Refer to Response S-1.1 regarding the issue of conducting specific analyses for the Reuse Plan and the alternatives. Refer to Response G-2.1 regarding the conduct of quantitative and qualitiative analyses.<br><br>Subchapter 4.10.2 discusses potential effects on water quality and hydrology. A discussion of the potential for nonpoint source pollution has been added to 4.10.2, Surface Water. The potential for accidental pollution of ground and surface waters from uses associated with the industrial business park and the proposed golf course is referenced in Subchapter 4.10.2, Groundwater.<br><br>The Navy has a permit to pump 1.97 million gallons per day from the existing wells on NWIRP Calverton. How much of that capacity and for how long it would be used are unknown, depending upon the rate of future development on the site, and other factors. However, as referenced in Subchapter 4.7.2, according to the Reuse Plan, the Riverhead Water District would ultimately be extended to the site as the water supply. Given these factors, it was neither appropriate nor possible to perform an analysis to address the issue of groundwater pumping and its effect on groundwater flows.<br><br>Similarly, because of the uncertainties about the location, size, treatment level, and start-up date of the proposed STP, it was not possible to evaluate recharge effects on groundwater mounding. |
| Suffolk County Dept of Health Services | L-5.7 | There was no discussion of the possible effect on future development of the residual contamination on-site | Approximately 238 acres of land will not be transferred and will continue to undergo clean -up as part of the Navy's IR Program as noted in Subchapter 1.2. Subchapters 3.12.4 and 3.12.5 respectively describe the status of the compliance program and the issues of protperty transfer. A discussion of similar issues is provided in Chapter 4.12 for each of the alternatives. Refer also to Response F-3.4 for additional data.<br><br>The extent of contamination has not been completely defined in all areas. For detailed information, the reader should refer to the source documentation as noted in Response F-3.4. |

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| Suffolk County Dept of Health Services | L-5.8 | A request for profile wells downstream of property has been rejected; a request for a complete and accurate groundwater map has been rejected. These data are needed | These matters have been part of an ongoing dialogue that concerns the clean-up program at the the site. The Navy will continue this effort, interacting will all regulatory agencies as necessary, as the program proceeds.<br><br>Refer to Response L-3.8 regarding the groundwater map. |
| Suffolk County Dept of Health Services | L-5.9 | The statement regarding halogenated and non-halogenated sovents and their disposal /treatment is incorrect. | The statement was removed from the Executive Summary |
| Suffolk County Dept of Health Services | L-5.10 | The statement about treatment of industrial wastewater is incomplete and misleading | The language in Subchapter S.3.12 has been changed. |
| Suffolk County Dept of Health Services | L-5.11 | The NW Pond Area, designated as a nature preserve, is a dump site presently under investigation | The statement is accurate. The location and status of sites that are part of the on-going IR Program are identified and discussed in Chapters 3.12 and 4.12. The land uses proposed for the Reuse Plan and alternatives are depicted in Figures 2-3, 2-4, and 2-5 and represent those envisioned 20 years into the future. |
| The Nature Conservancy | G-1.1 | More detailed hydrological data is necessary | Refer to Response L-3.9. |
| The Nature Conservancy | G-1.2 | Indicate that nonpoint source recharge systems should be sited and constructed to avoid adverse impacts on sensitive natural wetlands, especially coastal plain ponds | The appropriate language has been added to Subsection 5.1.10. |

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| Group and Association Comments | | | |
| The Nature Conservancy | G-1.3 | Recommend that the STP be upgraded to reduce nutrient loading regardless of discharge location | Issues relating to the existing and proposed STPs per the Reuse Plan are found in Subchapters 3.7.2, 4.7.2, and 4.10.2. |
| The Nature Conservancy | G-1.4 | Recommend relocating golf course and any other development with potential to degrade groundwater quality to the northern and eastern portions of NWIRP Calverton | The FEIS evaluated a Reuse Plan and a set of alternative land uses that were developed by the LRA and identified to be in certain locations on the site. The FEIS addresses the effects of the plans as provided and does not evaluate alternate on-site locations for land uses within each alternative. |
| The Nature Conservancy | G-1.5 | Evaluate the ecological communities and species in a local and regional context | The FEIS describes these resources on the site within the context of the Long Island Pine Barrens and the State of New York. Supplemental information is provided in Subchapter 3.11.1. |
| The Nature Conservancy | G-1.6 | Identify the significance of the loss of grasslands for grassland birds | Refer to Response S-1.7. |
| The Nature Conservancy | G-1.7 | Conduct additional on-site bird surveys; Include two additional species of special concern on avian list | Additional on-site bird surveys are not needed. Supplemental data on avian species is provided in Subchapter 3.11.2. Two additional species are classified as species of concern and are listed in Table 3.11-7. |
| The Nature Conservancy | G-1.8 | A new T, E, and Rare species survey should be performed as the NY Natural Heritage Program (NHP) Inventory list is outdated and insufficient | A new T, E and Rare species survey is not needed. The June 7, 1996 NHP letter was obtained and then-current species data was provided. It is published as part of Appendix D of the FEIS. The NHP is the proper regulatory agency for obtaining official data on T, E, and Rare species in New York State. NHP has been contacted once again to confirm that the data used is the best available information. A June 11, 1997 NHP letter has been received and updated data are presented in Table 3.11-11. |
| The Nature Conservancy | G-1.9 | Ecological concerns have not been evaluated for three of four sites of groundwater contamination | The sites are the location of the on-going IR Program. As data are available, including ecological concerns, it will be provided to the state, county, and local authorities. Additionally, the Navy is initiating the establishment of a Restoration Advisory Board (RAB) to disemminate data to the public on the Remedial Feasibility Investigation process. |

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| The Nature Conservancy | G-1.10 | Begin hydrological studies and perform a biological inventory of site | Additional focused hydrological studies will be a part of the Navy's ongoing IR Program on areas of contamination. Additional hydrological studies are not planned as part of this EIS. An additional biological inventory of the site is not planned (refer to Response G-1.8). |
| Long Island Pine Barrens Society (LIPBS) | G-2.1 | DEIS does an uneven job at impact analysis | Refer to Chapter 4, p. 4.1-1. The EIS addresses impacts based on a variety of factors that vary by resource type including the level of detail known about the type and location of uses, the availability of data, the availability of accepted, professional techniques for analysis, regulatory criteria, etc. Therefore, for some resource categories quantitative assessments can be made (e.g., traffic), while qualitative assessments are done for others (e.g., groundwater). Moreover, these evaluations are made more difficult given the general or conceptual nature of the alternatives to be evaluated and the projected time frame for analysis (in this case, 20 years in the future).<br><br>The NEPA EIS analysis is a Generic EIS under SEQRA since the town of Riverhead will use it to implement zoning for the site. A Generic EIS is appropriate in such instances where the effects of projects are to be developed in phases over time; where separate actions have generic or common impacts; and/or, where there are a sequence of actions contemplated by an agency. A Generic EIS is appropriate because details concerning future phases of the Reuse Plan are available only in general terms. The Generic EIS analysis is used to identify constraints in the natural and man-made environment that should be considered in determining appropriate conditions to be placed on the project's as it is developed. Supplemental EISs would be prepared by an applicant for future development components assuming that the individual projects trigger SEQRA review. |

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| Long Island Pine Barrens Society | G-2.2 | The Reuse Plan and all alternatives do not meet the spirit and letter of the Pine Barrens Protection Act or the Comprehensive Management Plan; Encourage development of another alternative that eliminates, to the greatest extent possible, impacts to wetland and upland Pine Barrens communities | See response to G-1.4. It is the responsibility of the LRA to develop the Reuse Plan. The Navy analyzed the effects of the reuse plans in accordance with NEPA and SEQRA to assist the community to understand the implications for implementation. |
| Long Island Pine Barrens Society (LIPBS) | G-2.3 | LIPBS will oppose the transfer of property to Riverhead if large scale cargo jetport is an element of the preferred plan | The aviation component of the preferred alternative has been modified as described in L-3.2. |
| Long Island Pine Barrens Society | G-2.4 | A campground proposed in the Core Preservation Area should be withdrawn; If not, an assessment of ecological effects should be included | The campground in the CPA is part of the preferred Reuse Plan developed by the LRA. No specifics on the type of campground were provided and consequently, an analysis of that particular use may be required in the future. |
| Long Island Pine Barrens Society | G-2.5 | Avifauna list is incomplete; insect list and herbaceous plant list is missing | Avifauna and herbaceous plants are listed in Tables 3.11-2, 3, and 4. Rare insects are listed in Table 3.11-10. Data on insects has been added to Subchapter 3.11.2, Terrestrial. |
| Long Island Pine Barrens Society | G-2.6 | Statement re: absorption capability of surrounding woodland and grassland communities is unsubstantiated | The EIS states that "the surrounding woodland and grassland communities can potentially absorb *some* of the additional vacating population...". Supplemental data are provided in Subchapter 4.11.2. |
| Long Island Pine Barrens Society | G-2.7 | A 23-acre preserve surrounded by inhospitable habitat is unlikely to sustain salamander populations over the long term | Land uses including the location and size of natural areas were developed by the LRA as part of the Reuse Plan. Refer to Response F-3.10. |
| Long Island Pine Barrens Society | G-2.8 | Clarify Figure 3.10-2 depicting groundwater divide and groundwater contributing area | Figure 3.10-2 has been modified. |

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| Long Island Pine Barrens Society | G-2.9 | Assess point and non-point source pollution; Discuss mitigation measures | Point sources identified by the LRA Reuse Plan alternatives were discussed. Future additional point sources are unknown at this time but existing permit requirements were discussed. Concerning non-point source pollution, refer to Response F-3.5. |
| Long Island Pine Barrens Society | G-2.10 | Cumulative and adverse effects are not adequately addressed | Cumulative effects are discussed in Subchapter 4.13. Unavoidable adverse effects are discussed in Chapter 7 for those resources so affected. |
| Project Calverton Inc. | G-3.1 | Economic impact of tourism was omitted | A discussion of economic impacts of tourism has been provided in Subchapter 4.2.3. |
| Dunn Engineering Associates | G-4.1 | Raceway noise effects are evaluated for peak hour and aircraft noise is evaluated on a day/night average | The noise analysis performed in the FEIS is appropriate for the type of noise expected and follows generally accepted professional practice. The aircraft noise level is an $L_{dn}$ (day/night) value while the raceway noise level is a peak hour value. |
| Dunn Engineering Associates | G-4.2 | Raceway noise analysis assumes no noise attenuation from barriers, berms, or buildings; Surface used for analysis was "hard" and should have been "soft" | The analysis was initially performed without the consideration of such noise attenuation so that the effectiveness of barriers could be determined. The potential for noise reduction through the use of noise barriers is discussed in Subchapter 5.2.1 of the FEIS.<br><br>A 6 dBA reduction of noise per doubling of distance was used in the FEIS analysis, a widely used and professionally accepted reference for point source impact studies. It is possible that some additional attenuation would occur if soft site conditions (unpaved) were assumed. Based on the FHWA Highway Traffic Noise Prediction Model (1978), an additional 1.5 dBA might be possible, making the attenuation 6 to 7.5 dBA per doubling of distance; however, this potential additional attenuation was based on a line source evaluation, not a point source evaluation as was performed in the FEIS. Moreover, when sound travels over great distances, estimates of noise attenuation become more complicated. Other factors, such as terrain elevation, ground surfaces, and buildings all may affect these estimates. Therefore, 6 dBA was used given its applicability to the point source analysis and its accepted use as a professional reference. Even with substantial additional attenuation (natural or otherwise), the noise levels predicted for the events modeled would exceed FHWA Noise Abatement Criteria and the town of Riverhead noise standard. |

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| Dunn Engineering Associates | G-4.3 | Analysis should be revised to reflect Project Calverton's actual operation as presently defined (1 SCCA race, 2 larger events, and many small [2,000 person attendance] events) | The FEIS reflects a conceptual raceway alternative that includes elements obtained from Project Calverton Inc. at the time of the analysis. Some race schedule data were used so that the effects analysis, particularly with respect to traffic and noise, would be generally representative of this type of development proposal. |
| Dunn Engineering Associates | G-4.4 | A Traffic Management Plan prepared by Dunn Engineering recommends prohibiting the concurrent scheduling of major events as a traffic management tool | A traffic management plan was not identified or suggested in the Reuse Plan or alternatives developed by the LRA. Because there was no data provided about how the entire site (not just the raceway element) was to operate, a set of site operating assumptions was developed to conduct the analysis. The staging of racing events was evaluated within the context of the overall site (i.e., a raceway event on the weekend did not preclude the concurrent operations of the theme park, stadium, family entertainment center, or other uses.). The use of event scheduling was referenced in Subchapter 5.1.4 of the FEIS for the Reuse Plan. Similar mitigation measures were suggested for the Calverton Enterprise Park/Raceway Alternative in Subchapter 5.2. |
| Dunn Engineering Associates | G-4.5 | Clarify the trip generation numbers associated with the proposed aviation use | The aviation use has been modified the trip generation analysis has been revised in Subchapter 4.4.2. |
| Project Calverton, Inc. | G-5.1 | Project Calverton, Inc.'s plans call for no removal of trees, loss of 27 acres of natural area as stated in DEIS | Reference to loss of natural area has been removed from discussion of the Enterprise Park/Raceway Alternative; however, as presently configured the race course would traverse the Industrial Park Recreation Area (Figure 2-4). |
| Greater Calverton Civic Association, Inc. | G-6.1 | Opposed to aviation use, except as designated by local commission; Concerns expressed about traffic congestion, noise and property values | The aviation use was defined as part of the Reuse Plan by the LRA. Traffic, noise, and economic impacts are addressed in Subchapters 4.4, 4.6, and 4.2, respectively. |

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| ACT *NOW!* Inc. | G-7.1 | Property should remain in federal ownership as it has provided valuable in recent emergency situations (i.e., forest fires, TWA Flight 800 recovery); One suggested use would be a nature preserve | Property transfer has been designated by special legislation. |
| Ridge Civic Association | G-8.1 oral | The DEIS does not address groundwater and air quality impacts | Groundwater is discussed in Chapters 3.10 and 4.10. Air Quality is discussed in Chapters 3.5 and 4.5. |
| Ridge Civic Association | G-8.2 oral | Redevelopment plans seem incompatible with Pine Barrens Protection Plan | Proposed development of the Reuse Plan and the alternatives is located in the Compatible Growth Area of the Pine Barrens. Compatibility with the Pine Barrens Comprehensive Management Plan would be determined when specific development proposals are made for the site in the future. |
| Ridge Civic Association | G-8.3 oral | Noise effects will affect rural quality of life; traffic effects will be negative | Noise effects of the reuse plan and alternatives are discussed in Chapter 4.6. Noise impacts result from vehicular traffic associated with the Reuse Plan and alternatives and the raceway component of the Calverton Enterprise Park/Raceway Alternative. Noise effects from the aviation use of the Calverton Enterprise Park, the preferred plan, do not exceed FAA regulatory criteria. |
| Riverhead Development Corporation | G-9.1 oral | It was never the intention of the Riverhead CDA to recommend the use of the site as either a cargo port or major aviation airport, although the runway would be retained in the preferred plan | The aviation use has been modified. Refer to Response L-3.2. |
| Dennis Macchio | G-10.1 oral | Refer to G-3.1 | Refer to Response G-3.1. |
| Walter Dunn | G-11.1 oral | Refer to G-4.1 - G-4.5 | Refer to Responses G-4.1 to G-4.5. |
| Thomas W. Gahan | G-12.1 oral | Refer to G-5 | Refer to Response G-5. |

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| Robert Reilly | G-13.1 oral | Project Calverton is ready to move forward with its proposal | The Navy acknowledges the comment. |
| Public Individual Comments | | | |
| Chris & Tony Simione | P-1.1 | Consider Project Calverton as one of the proposed plans because of economic benefits and minimal environmental impacts | A raceway use was incorporated into the analysis of the Calverton Enterprise Park/Raceway Alternative. |
| Chris & Tony Simione | P-1.2 | Cargo airport is a use that should not be considered an option | A potential aviation use was included as part of the preferred alternative, the Calverton Enterprise Park, as proposed by the LRA. A modified aviation use is evaluated in the FEIS. Refer to Response L-3.2. |
| Helga S. Guthy | P-2.1 | Wading River Civic Association opposed prior Jetport proposal; concerns for that proposal were submitted for consideration; Concerns expressed about noise and traffic from a race track; opposes gambling casinos; Prefers technical facilities, museums, environmental programs, movie studios, etc. as appropriate uses for property | Comments on the aviation use provided by the writer are for a prior study, not for the one described in the FEIS. The aviation use has been redefined and reanalyzed in the FEIS. Casinos were not identified as a potential use for site by the LRA. |
| Timothy G. Yousik | P-3.1 | Incorporate the economic impact of tourist dollars in the analysis | Refer to Response G-3.1. |
| Carlos Jimenez | P-4.1 | A majority of the people want the raceway alternative and nobody wants the jet airport reuse | Refer to Response P-1.2. |

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| Carlos Jimenez | P-4.2 | Navy's statement that an airport use would be "quiet" and "not like when the F-14's flew overhead" is ridiculous | Actual statement of the Navy representative from the official transcript indicated..." Yes there is some impact off of the base and that includes also the buffer area, but clearly, it would not be anything like you experienced when the F-14's are flying." The statement was based on a comparison of the historic noise contours (Figure 4.6-5 of the FEIS) and the one projected with the aviation use as defined for the preferred Reuse Plan (Figures 4.6-2 to 4.6-4 of the FEIS). |
| Rita Hodum | P-5.1 | Requests an update on the cleanup program | Refer to Responses F-3.4, F-3.7 to F-3.9. |
| Steve Hoizlip | P-6.1 | Concerns expressed about the cost of maintaining concrete/paved surfaces | The Navy acknowledges the comment. |
| Joseph Velazquez | P-7.1 | Opposed to airport as it would affect his quality of life | An aviation use was defined as part of the preferred Reuse Plan by the LRA. Effects of that use are described in Chapter 4 of the FEIS. |
| D. Casper | P-8.1 | Airport use would destroy peace and tranquility; water and air quality effects were not addressed in the DEIS | Noise impacts of redefined aviation use are discussed in Subchapter 4.6.2, Aircraft. Air quality impacts from two flights/day would not cause adverse air quality impacts. Regulatory programs that would address water quality (and other environmental concerns) are addressed in Subchapters 4.12.2 and 4.12.3. |

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| D. Casper | P-8.2 | Requests that "super fund" moneys be used to clean up site | Superfund is another name for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. This Act gave the EPA its authority to regulate and remediate Non-Federal sites that are listed on the National Priorities List (NPL) only. Since the Department of Defense had numerous contaminated sites of their own, Congress decided, through the Superfund Amendments and Reathorization Act (SARA) of 1986, to establish the Defense Environmental Restoration Program (DERP) which allowed the DoD to pursue remediation in accordance with CERCLA regardless of NPL designation by using a parallel funding source known as the Defense Environmental Restoration Account (DERA). The cleanup program under the Navy's cognizance is known as the Installation Restoration (IR) Program. DoD facilities such as NWIRP Calverton will not receive Superfund funding but has and will continue to utilize the DERA, now known as Environmental Restoration, Navy (ER,N) account, to continue progress on the IR Program. |
| D. Casper | P-8.3 | Review Riverhead report, accept findings, and incorporate into DEIS | The purpose of the EIS is to objectively evaluate the Reuse Plan and a set of locally developed alternatives. It is not intended to adopt the findings of any entity. |
| Richard Quick | P-9.1 | Water use and wastewater figures for the Calverton Enterprise Park/Raceway Alternative were unclear; As this alternative was commonly referred to as the Raceway Alternative in the DEIS, it could be assumed that figures were attributable to raceway component only | Table 4.7-3 identifies the estimated water use of the primary land uses comprising the alternative, including the raceway for a racing event. The table also presents a cumulative total for the alternative. |
| Roy MacDonnell | P-10.1 | The raceway should be identified as the preferred alternative as more people prefer it | The local LRA developed and identified the Calverton Enterprise Park as its preferred plan. The preferred Reuse Plan does not include a raceway proposal. |

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| Sherry A. Johnson | P-11.1 | No analysis was done of the 50-odd homes located between 1 and 2 miles south of fenced-in portion of site | Effects from the Reuse Plan and alternatives were evaluated from both an on-site and off-site perspective. Potential off-site effects such as socioeconomics, community facilities and services, traffic, air quality, and noise were evaluated. Specific neighborhoods between one and two miles south of the fenced-in portion of the site were not evaluated. |
| Sherry A. Johnson | P-11.2 | Maps should be corrected to properly display street network | Base maps were developed to display and highlight data of interest to the topic of discussion in the FEIS. In some instances, given the scale of the maps, certain data such as secondary and/or tertiary roads were eliminated to provide a more readable base map or to display other data that would be less clear if such detailed background were shown. |
| Sherry A. Johnson | P-11.3 | Evaluate Exit 70 of the LIE as an alternate route to the site | Based on a review of the Reuse Plan, the existing road network and projected traffic flows, seven traffic count locations were selected for analysis. Exit 70 was not included as it currently provides a less direct route to the site than traffic count locations 5, 6, and 7. |
| Sherry A. Johnson | P-11.4 | DEIS should refer to total local opposition to the idea of expanding aviation uses at the site | Chapter 10 of this FEIS summarizes all relevant public comment on DEIS. All letters including those in opposition to expansion of aviation use are incorporated. |
| Sherry A. Johnson | P-11.5 | Direct jobs should be broken down to show seasonal and year-round employment; Estimated earnings should be adjusted accordingly | Table 4.2-1 shows the number and phasing of jobs by activity for the Reuse Plan. The Reuse Plan prepared by HR&A identified 571 full-time equivalent (FTE) jobs associated with the theme park and 68 FTE jobs associated with the sports venue, the two major seasonal components. These job estimates were based on the HR&A assumptions as follows: season of 135 days; 2.5 million visitors to theme park; 300,000 visitors to sports venue; and one seasonal job per 12 daily visitors. Thus, 2.7 seasonal jobs equal one FTE job. |
| Sherry A. Johnson | P-11.6 | Add reference to Sportsmen's Club | This addition has been made in Subchapter S.3.3. |

| Name/Agency | Comment Code | Comment | Response |
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| Sherry A. Johnson | P-11.7 | Describe the Phase 1B archaeological survey including cost | As a part of 106 compliance, a Phase 1B archaeological survey is being performed. The results of that survey will likely reduce the overall extent of areas identified as highly sensitive or NR-eligible. The survey costs are approximately $150,000. |
| Sherry A. Johnson | P-11.8 | List aquifer as federally designated sole source aquifer | Refer to Response F-3.3. |
| Sherry A. Johnson | P-11.9 | Add reference to state wetland permits | The appropriate reference has been made in Subchapter S.3.11. |
| Sherry A. Johnson | P-11.10 | Off-site contamination should be mentioned | Figure S-9 shows EBS areas including off-site (outside the fence) areas where additional evaluation is being conducted. Refer to Responses F-3.7 - F-3.9. |
| Sherry A. Johnson | P-11.11 | Include more discussion on asbestos; Has an asbestos survey been done and if so, how many buildings are affected | Additional Information on asbestos is provided in Subchapters 3.12.4 and 4.12.1. An installation-wide asbestos survey was conducted by Northrop Grumman and NORTHDIV in August 1995 and is incorporated by reference. |
| Sherry A. Johnson | P-11.12 | Water use should be included in executive summary table | Water use among alternatives is generally similar, with Enterprise Park/Raceway alternative estimated to have the greatest daily use. Refer to Subchapters 4.7.2, 4.4.3, and 4.7.4 for water use data. |
| Sherry A. Johnson | P-11.13 | Refers to miscellaneous edits and typos | Corrections have been made. |
| Sherry A. Johnson | P-11.14 | The proposed access road would have to comply with NYS Wild, Scenic and Recreational Rivers Act | The NYS Wild, Scenic and Recreational Rivers Act is discussed in Subchapters 3.10.1, 4.10.2, 4.10.3, and 4.10.4. |
| Sherry A. Johnson | P-11.15 | Natural area should have a connecting wildlife corridor | Location and configuration of natural areas and open space elements of Reuse Plan and alternatives were developed by the LRA. |
| Sherry A. Johnson | P-11.16 | Riverhead Ambulance is located on Osborne Avenue | Correction has been made in Subchapter 3.3.3. |

| Name/Agency | Comment Code | Comment | Response |
|---|---|---|---|
| Sherry A. Johnson | P-11.17 | Traffic counts were inadequate based on day and time taken | The traffic count program is described Chapter 3.4. A review of the 24-hour Automatic Traffic Recorder (ATR) counts collected over a seven-day period confirm that the actual peak hours occur (8:00 -9:00 and 4:00-5:00 pm) during the times traffic count data were collected (6:00-9:00 am and 3:00-6:00 pm on weekdays; 11:00-4:00 pm on Saturday). |
| Sherry A. Johnson | P-11.18 | Receptor location and description for Swan Lake Golf Course do not match | Correction has been made in Subchapter 3.6.3. |
| Sherry Johnson | P-11.19 | Dam location is on Upper Mills Pond | Correction has been made in Subchapter 3.10.1. |
| Sherry A. Johnson | P-11.20 | Swan Pond retains water in "drought" years | The discussion about surface waters was focused generally on ponds located on federal lands and within the fence at NWIRP Calverton. Swan Pond is not located on federal property and is outside the fence and is a perennial water body. |
| Sherry A. Johnson | P-11.21 | Typo noted | Correction has been made in Subchapter 3.1. |
| Sherry A. Johnson | P-11.22 | Swan Pond supports a fishery | Refer to Response P-12.20. |
| Vincent G. Villella | P-12.1 | Question posed - Which Riverhead town officials stated interest in becoming the public sponsor of Calverton as a mixed-use facility | By definition, the preferred Reuse Plan and all of the alternatives are mixed-use (i.e., they contain a variety of separate land uses). Since the Calverton Enterprise Park has been identified as the LRA's preferred plan, it was assumed that local officials would sponsor the preferred plan (which is a mixed use type). |
| Tim Yousik | P-13.1 | Two questions posed - 1. What portion of Riverhead wants a jet cargo port; 2. What involvement does Suffolk County government have in the jet cargo port reuse plan | The preferences of the community were not polled as part of the EIS, nor is this normally considered a component of an EIS. The preferred plan of the LRA included an aviation component and an aviation use was analyzed in the DEIS. Based on local input, the aviation use remains in the preferred plan but has been redefined in this FEIS. Other than commenting on the DEIS, any other involvement by Suffolk County government with respect to the aviation use is unknown. |
| Nicholas Alp | P-14.1 oral | Supports racetrack use | Refer to Response P-1.1. |

F-1

**DEPARTMENT OF VETERANS AFFAIRS**
**National Cemetery System**
**Washington DC 20420**

MAY 0 2 1997

Mr. Kurt Frederick
Northern Division (Code 202)
Naval Facilities Engineering Command
10 Industrial Highway
MSC 82
Lester, Pennsylvania 19113-2090

Dear Mr. Frederick:

We wish to offer comments on behalf of the Department of Veterans Affairs regarding the Draft Environmental Impact Statement (DEIS) for the disposal and reuse of the Naval Weapons Industrial Reserve Plant in Calverton, New York.

(1) The DEIS does not address the 150 acre triangle at the intersection of Middle County Road and Highway 25A. This property is being transferred by the Department of Defense to the Department of Veterans Affairs for expansion of the Calverton National Cemetery as authorized by Public Law 104-106, Subtitle D, Part II, Section 2865. The DEIS should be amended in comments and maps to address this parcel.

It is requested that the Department of Veterans Affairs be included in the distribution of the final EIS and Record of Decision. If I or my staff can be of further assistance, please contact me at (202) 565-4890. All correspondence should be addressed to:

Mr. Robert Holbrook
Director, Technical Support Service (401B)
National Cemetery System
Department of Veterans Affairs
810 Vermont Avenue, N.W.
Washington, D.C. 20420

Sincerely yours,

Robert B. Holbrook

Robert B. Holbrook
Director, Technical Support Service

U.S. Department
of Transportation
**Federal Aviation
Administration**

Eastern Region

Fitzgerald Federal Building
John F. Kennedy
International Airport
Jamaica, New York 11430

APR 07 1997

Mr. Kurt Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
MSC 82
Lester, PA 19113

Dear Mr. Frederick:

We are in receipt of the Draft Environmental Impact Statement (DEIS) for the disposal and reuse of the Naval Weapons Industrial Reserve Plant (NWIRP) at Calverton, New York. This DEIS was submitted by the Department of the Navy on March 17, 1997.

A review of the DEIS indicates the preferred alternative is the Calverton Enterprise Park Reuse Plan, which includes an aviation use. However, coordination of this document with the New York Airports District Office has determined that there is no local support for an aviation use of the NWIRP at Calverton. Newspaper articles indicate that the Calverton Enterprise Park/Raceway Alternative is the preferred alternative. Prior to Federal Aviation Administration (FAA) asuuming a role in this action, we ask that you clarify which alternative, in fact, is the preferred alternative. (1)

If an aviation use is not a part of the disposal and reuse of the NWIRP at Calverton, the FAA has no jurisdiction over the reuse of the facility. However, if an aviation use is to be a part of the reuse of Calverton, the FAA, in accordance with CEQ guidelines Section 1501.6, requests that we be considered as a cooperating agency for this action. The FAA has special expertise and jurisdiction with regard to the potential environmental impacts associated with the development of aviation facilities. (2)

Should you have any questions, or require additional information, please feel free to contact Steven Urlass at 718-553-3353.

Sincerely,

William J. DeGraaff
Manager, Planning and Programming

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

MAY [illegible] 1997

David L. Spritke, Director
Planning Division
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Mail Stop #82
Lester, Pennsylvania 19113-2090

Class: EC-2

Dear Mr. Spritke:

The Environmental Protection Agency (EPA) has reviewed the draft environmental impact statement (EIS) for the Disposal and Reuse of the Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, located in the Towns of Brookhaven and Riverhead, New York. This review was conducted in accordance with Section 309 of the Clean Air Act, as amended (42 U.S.C. 7609, PL 91-604 12(a), 84 Stat. 1709), and the National Environmental Policy Act.

Until the Northrup Grumman Corporation terminated its use of the facility in February 1996, NWIRP Calverton was a government-owned contractor-operated (GOCO) aircraft assembly and testing facility. The facility includes 84 buildings on 6,000+ acres, including the assembly and manufacturing center, aircraft hangars, control tower, runways, a central steam plant, water supply wells, and wastewater treatment facilities. According to information presented in the EIS, federal legislation (P.L. 103-C337) authorizes transfer of 2,923 acres of the facility to the Town of Riverhead for economic redevelopment, while the remainder of the property (the 3,138 acre former flight operations buffer zone) is authorized to be transferred to the New York State Department of Environmental Conservation for conservation purposes.

The EIS evaluates three locally-developed reuse alternatives, and the no action alternative. The reuse alternatives are: a Calverton Enterprise Park (the Calverton Air Facility Joint Planning and Redevelopment Commission's preferred alternative); a Calverton Enterprise Park/Raceway; and the Peconic Village alternative.

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Based on our review of the draft EIS, we offer the following comments:

Wetlands

The draft EIS indicates that there are 14 wetland areas, totaling approximately 28 acres, within the proposed redevelopment area, and indicates that impacts to an unspecified acreage of wetlands could occur depending upon the ultimate site configuration. The document acknowledges that disturbances to regulated wetlands would require a Section 404 permit from the U.S. Army Corps of Engineers and also, in some cases, approval from New York State. However, the discussions in the draft EIS tend to focus primarily on wetlands regulated by New York State. The final EIS should explain that federally regulated wetlands are defined differently than New York State regulated wetlands and do not have a minimum size limitation. In a related matter, the language on page 4.11-3 seems to suggest that state and federal wetlands are identical, which is incorrect. (1)

In general, the document implies that wetland impacts resulting from the selected project alternative will be authorized through the permitting process regardless of their magnitude; this is incorrect. The final EIS should explain that avoidance and minimization of wetland impacts need to be factored into project planning at an early stage because, pursuant to the Clean Water Act Section 404(b)(1) Guidelines, discharge of fill into wetlands is not authorized when there is a practicable alternative available that would have less impact on the aquatic ecosystem. Thus, avoidance and minimization of wetland impacts must be thoroughly evaluated prior to considering compensatory mitigation for wetland impacts. (2)

In addition, we recommend that the final EIS evaluate the feasibility of utilizing additional measures to ensure protection of wetlands on the site. For example, conservation easements held by an appropriate third party can be an effective measure to protect wetlands over the long term and should be evaluated in the final EIS.

Ground Water

The NWIRP Calverton is located within the Nassau/Suffolk Aquifer system, which has been designated as a sole source aquifer (SSA) pursuant to Section 1424(e) of the Safe Drinking Water Act (SDWA). Section 1424(e) mandates that Federal agencies not commit funds to projects that may (3)

contaminate an aquifer system. This designation is not fully acknowledged in the draft EIS and, thus, should be included in the final EIS. Moreover, given this SSA designation, the final EIS should indicate that compliance with Section 1424(e) must be demonstrated for any federally funded projects in the future, and that all activities in the project area must be evaluated for their potential impacts to ground water.

The document indicates that volatile organic contamination in the on-site potable and process water wells has been alleviated by carbon filtration treatment of the water prior to use. We recommend that the final EIS provide additional information concerning the source and extent of this contamination plume and indicate which party is responsible for evaluating and remediating it, and for ensuring that the (4) on-site water supply meets all applicable standards. Ground water also needs to be considered in determining which areas of the site are considered contaminated. In particular, the section of the draft EIS Executive Summary that states that 99% of the property is uncontaminated should be revised in the final EIS to reflect the possible extent of ground water contamination.

In addition, the analysis of potential ground water impacts is generally limited to reuse activities which are amenable to regulation. However, all potential sources of ground water impacts do not fall into this category (e.g, contaminated runoff from parking/maintenance areas). (5) Accordingly, we recommend that the final EIS provide a more thorough evaluation of each of the proposed reuse activities' potential impacts to ground water, with particular attention to those which are to be expected from operation of airports, raceways, and theme parks.

Site Contamination/Remediation

According to the information presented in the draft EIS, the Navy is conducting a number of ongoing investigations and corrective actions related to various areas of concern (6) located in the core area of the facility. The final EIS should present the results of these investigations and actions, and should analyze the impacts that construction of the proposed project could have on the cost, schedule, and effectiveness of any long term remedial and/or corrective actions needed in these areas. In a related matter, the final EIS should also address the impacts that the contamination could have on the design, construction, and operation of the reuse plan. Appropriate measures to

mitigate these impacts should also be developed and incorporated into the final EIS.

For ease of review and analysis, it would be helpful to locate each of these areas, as well as areas which have already been remediated, on a site plan of the preferred alternative, and include the Navy's schedule for completing all anticipated contaminant cleanups and/or demonstrations of remedies which it expects to be operating properly and successfully. (7)

In a related matter, the draft EIS states that reuse of and/or modifications to any of the existing buildings would need to take into account the potential presence of lead-based paint. This indicates that proper precautions will be taken for those buildings that will be reused. However, the document does not address the issue of lead-based paint in buildings that could be demolished after transfer. On Page 4.12-1, the EIS states that, "DoD policy does not require lead-based paint inspection and abatement when a building is scheduled for demolition by the transferees and the transfer document prohibits occupation of the building prior to demolition or when a building is not targeted for reuse." The final EIS should state that, prior to demolition of any building that is known or suspected to contain lead-based paint, a sampling program must be conducted to confirm the presence or absence of lead above RCRA Toxicity Characteristic levels. If these levels are exceeded, some or all of the construction debris could be RCRA-regulated hazardous waste which would require the use of specific handling and disposal methods. Alternatively, the entire debris could be assumed to be hazardous and, thus, be handled and disposed of accordingly. However, this waste determination method is generally not considered to be cost-effective for disposal of construction debris. (8)

In addition, the discussion, on page 4.12-2 of the draft EIS, of the remedial action covenant required of federal agencies under CERCLA Section 120(h)(3) is incorrect and outdated. It should be replaced in the final EIS with a more complete and accurate discussion of the CERCLA requirements that apply to property transfers by federal agencies. Specifically, the document should indicate that the essential requirement is for property transfer deeds to include a covenant warranting that all remedial actions necessary to protect human health and the environment have been taken prior to transfer. Furthermore, it should explain that this covenant could be given if the Navy can (9)

demonstrate to EPA's satisfaction that a long-term remedy is operating properly and successfully. The document should then discuss CERCLA Section 120(h)(3)(C), which allows the Governor of the State in which the facility is located (because NWIRP Calverton is not a National Priorities List site) to defer the covenant for property which is suitable for its intended use, consistent with protection of human health and the environment, and where deferral of the covenant will not substantially delay any necessary response actions. Furthermore, the final EIS should reflect that the Navy has prepared a draft "Finding of Suitability for Lease" (FOSL) for the core area of the property, which EPA is currently reviewing. Accordingly, the final EIS should explain the relationship of the FOSL to its property transfer schedule, and indicate whether the Navy expects to be able to demonstrate that any long-term remedies are operating properly and successfully or plans to request deferral of the warranty covenant prior to transfer of the property.

Endangered/Threatened Species

The draft EIS indicates that three state-listed endangered/threatened species are known to utilize an area (10) of the site which is proposed to be maintained as a natural area. While we generally concur with this approach, we recommend that the final EIS evaluate, in consultation with state wildlife officials, the potential indirect impacts of the proposed development on the long term viability of the biological community in this area. This is particularly important in light of the development that is proposed on adjacent areas.

Historic and Cultural Resources

The draft EIS indicates that there are three structures on the facility that are considered eligible for listing on the (11) National Register of Historic Places (NHPA), and that all property eligible for the National Register would be protected through covenants in the property transfer documents. In addition, it indicates that there are many areas of high potential for the presence of prehistoric resources. As a result, the EIS states that a Memorandum of Agreement (MOA) may be executed between the U.S. Navy, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer, to ensure compliance with the National Historic Preservation Act with respect to potential archeological resources. However, the particulars of the proposed MOA have not been provided in the draft EIS. The

MOA should address resolution of all site-related issues pertaining to compliance with the NHPA, and the details of the MOA should be presented in the final EIS. The final EIS should also indicate that the MOA will be executed prior to the property transfer.

Air Quality

The property is located within an area which is classified as a severe non-attainment area for ozone. The draft EIS indicates that the disposal of the property is exempt from general conformity requirements under the provisions of 40 CFR Parts 93 and 153. We concur with this determination; however, please note that, should the Navy decide to lease or retain administrative control over a portion of the property, a general conformity determination would be required pursuant to 40 CFR Part 93.

The analyses performed predict that none of the alternatives would result in violation of the National Ambient Air Quality Standards. Consequently, we do not expect them to have a negative impact on air quality.

Environmental Justice

(12) In accordance with Executive Order 12898, the draft EIS indicates that the proposed disposal and reuse are not expected to cause adverse impacts to, or displace, any minority or low income populations. However, there is insufficient information in the draft EIS concerning the socioeconomic composition of the potentially affected population in the immediate vicinity of the NWIRP on which to base such a conclusion. Thus, we recommend that the additional information needed to address this question be included in the final EIS.

In conclusion, based on our review and in accordance with EPA policy, we have rated the draft EIS as EC-2, indicating that we have environmental concerns (EC), as noted above, about the project. Specifically, additional information (2) must be provided in the final EIS regarding issues related to wetlands, ground water, site contamination/remediation, endangered and threatened species, cultural resources, and environmental justice concerns.

Should you have any questions concerning this comment letter, please contact William Lawler of my staff at (212) 637-3728.

Sincerely yours,

Robert W. Hargrove, Chief
Strategic Planning and Multi-Media Programs Branch

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO ATTENTION OF

CENAN-OP-RE

26 March 1997

MEMORANDUM FOR: Commander, U.S. Department of the Navy, ATTN: David L. Spritke, Director, Planning Division, NAVCOM, Northern Division, 10 Industrial Highway, Mail Stop #82, Lester, PA 19113-2090

SUBJECT: Review of Draft Environmental Impact Statement (DEIS) for Disposal and Reuse of Naval Weapons Industrial Reserve Plant, Calverton, New York

1. Section S.3.11 of the subject document has been reviewed by CENAN-OP-RE and comment follows.

2. In the section headed "Calverton Enterprise Park Reuse Plan", the discussion in the third paragraph suggests that it is believed Department of the Army (DA) authorization is necessary only for (1) disturbances to wetlands with sizes in excess of 12.4 acres (five hectares). Be advised DA authorization is required pursuant to Section 404 of the Clean Water Act for most types of wetland and waterbody disturbances, and is not governed by the 12.4-acre threshold which is part of the New York State Environmental Conservation Law (ECL).

3. It should be noted there are differences between the New York State Department of Environmental Conservation (NYSDEC) definition of wetlands, and the Federal definition as set forth in the 1987 Corps of Engineers Wetland Delineation Manual. Thus, the extent of Federal jurisdiction on the project site may differ substantially from the extent of NYSDEC jurisdiction under Article 24 of the ECL.

4. We request we be provided with a copy of the TAMS field (2) reconnaissance report of May, 1996 and the Myers and Gaffney 1989 report used to determine the presence of on-site waters of the United States, for our review.

5. Be advised the Section 404 (b)(1) of the Clean Water Act Guidelines promulgated by the Administrator, U.S. Environmental Protection Agency requires selection of the least environmentally (3) damaging practicable alternative for proposals involving discharges of dredged or fill material into waters of the United States. For proposals involving impacts to wetlands, it is presumed that alternatives not involving such impacts are available, unless these involve other adverse environmental consequences. We therefore recommend that the Preferred Alterative be that which has minimal potential impacts to wetlands, unless it would result in other environmental consequences.

6. If not already accomplished, we recommend that copies of the DEIS be provided to the U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service, and National Marine Fisheries Service for their review and comment. We also suggest a meeting among all affected parties to discuss permitting and jurisdictional determination requirements in greater detail. (4)

7. Any questions pertaining to this matter can be addressed to Mr. Douglas E. Price of my staff at (212) 264-6731.

FOR THE COMMANDER:

JAMES W. HAGGERTY
Chief, Eastern Permits Section

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
408 Atlantic Avenue - Room 142
Boston, Massachusetts 02210-3334

May 5, 1997

ER 97/187

Mr. Kurt C. Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113

Dear Mr. Frederick:

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of the Naval Weapons Industrial Reserve Plant at Calverton, Towns of Riverhead and Brookhaven, Suffolk County, New York.

As a result of Northrop Grumman Corporation's decision to vacate the site, the United States Navy has determined that it will consider disposal of the Naval Weapons Industrial Reserve Plant (NWIRP) at Calverton by transferring the facility to the Town of Riverhead's Community Development Agency (CDA).

The Riverhead CDA has developed three alternatives based on the general themes of industrial reuse, commercial tourism, and residential development: 1) the Calverton Enterprise Park Reuse Plan (Reuse Plan); 2) the Calverton Enterprise Park/Raceway; and, 3) the Peconic Village, a senior housing development for those age 55 and up. The preferred alternative is the Reuse Plan.

DRAFT ENVIRONMENTAL ASSESSMENT COMMENTS

The DEIS adequately describes the environmental resources in the project area, the potential impacts on these resources that could result from implementation of the preferred alternative, and the need for interagency coordination. We note, however, that although you state that as of 1991 there were no Federally listed threatened or endangered species in the project area, there is no record of correspondence from the U.S. Fish and Wildlife Service to that effect.

(1) Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under the Fish and Wildlife Coordination Act or other legislation.

The Service has the following additional comments:

(2) 1. On page S-28, paragraph 5 states, in part, "All disturbances to wetlands with an area of at least 12.4 acres (five hectares), or smaller if they have unusual local importance as determined by NYSDEC, require a permit from the US Army Corps of Engineers (COE) and approval from NYSDEC".

This statement is confusing in that it appears to suggest that the COE only regulates wetlands if they are 12.4 acres or larger, unless NYSDEC informs them that a smaller wetland has special significance. There is no limitation on the size of a wetland the COE will regulate if it meets the characteristic wetland criteria. The COE can, and does, regulate wetlands that are 0.1 acre or less.

(3) 2. On page 4.11-3 of the Impacts Analysis, it is noted that any COE permit applications would require, at a minimum, an alternatives analysis (pursuant to the Clean Water Act's 404 (b)(1) Guidelines), a mitigation plan, an impact analysis, a wetland delineation, and a stormwater management analysis.

A draft combined alternatives analysis/impact analysis/wetland delineation/mitigation plan should be completed and submitted to all involved resource agencies for review prior to submitting any application to the COE. In this way, any significant concerns can be resolved before the formal application is carried forward. Ideally, the draft plan should be a supplement to the draft EIS.

Cultural Resource Preservation

The National Park Service (NPS) notes that: 1) three buildings (architectural objects) in this Naval Weapons Plant have been determined eligible for listing in the National Register of Historic Places (NRHP); 2) impacts on these eligible NRHP listings and the probable presence of archeological values vary in their association with the three "build" or "action" alternatives; 3) consultation with the State Historic Preservation Officer (SHPO) remains incomplete; and, 4) Section 106 proceedings and a Memorandum of Agreement (MOA) would need to be completed for any of the three "build" alternatives, at least on the basis of probable impacts to archeological values. Further, we note that two of the "build" alternatives suggest development design which, if accomplished, would cause the selected alternative to have no adverse effect on the architectural objects eligible for the NRHP, thus removing an architectural basis for a Section 106 proceeding.

Since the preferred alternative, the Calverton Enterprise Park Reuse Plan, is one of the two possible no adverse affect alternatives, and in order to assure cultural resource preservation, assuming the preferred alternative would be selected, we recommend that (4) (1) either a letter of acceptability of the design features and conditions of the preferred alternative be secured from the SHPO, presented and discussed in the final EIS, and/or (2) at least a draft MOA, treating with the same, by terms and conditions, should be presented in the final EIS as an ongoing procedure to be completed before commencement of any physical work.

SUMMARY COMMENTS

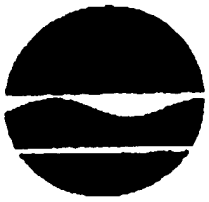
Issues raised by the Service and the NPS should be addressed in, and/or prior to, the final EIS for this proposal.

For technical assistance on fish and wildlife matters, please contact the Field Supervisor, U.S. Fish and Wildlife Service, 3817 Luker Road, Cortland, NY 13045 (telephone: (607) 753-9334). For assistance regarding cultural resources, please contact the National Park Service, New England System Support Office, 15 State Street, Boston. MA 02109 (telephone: (617) 223-02109).

Sincerely,

Andrew L. Raddant
Regional Environmental Officer

**New York State Department of Environmental Conservation**
Building 40 - SUNY, Stony Brook, New York 11790-2356
Telephone (516) 444-0365
Facsimile (516) 444-0360



May 9, 1997

John P. Cahill
Acting Commissioner

Mr. Kurt C. Frederick
US Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Lester, PA 19113

RE: DEIS For the Disposal and Reuse of the Naval Weapons
Industrial Reserve Facility Calverton, NY

Dear Mr. Frederick:

The New York State Department of Environmental Conservation has reviewed the Draft Environmental Impact Statement for the Disposal and Reuse of the Naval Weapons Industrial Reserve Facility located in Calverton, Town of Riverhead, New York. With regulatory involvement in the redevelopment of this facility stemming from a number of our programs, including Wild, Scenic, and Recreational Rivers System, Freshwater Wetlands, State Pollutant Discharge Elimination System, and Hazardous Waste Management Facilities, the Department is an involved agency pursuant to the State Environmental Quality Review Act. Our general and specific comments are provided below.

(1) In general, the DEIS does not contain enough site specific and project specific information for the Department to make the findings and determinations required of it pursuant to SEQRA (6 NYCRR Part 617.11). Section 6.2.1 indicates on page 6-6:

> "In addition to meeting the federal requirement for NEPA, this EIS was also written to comply with the New York State Environmental Quality Review Act. When a NEPA EIS is prepared, the SEQRA lead agency will review the document to ensure that all applicable subject areas cited in the SEQR regulations are incorporated; SEQR findings based on the final EIS will also need to be made."

The DEIS does not contain enough specific information about the proposed development and its expected impacts to allow us to adequately evaluate environmental effects or comply with the requirements of SEQR. The descriptions of the planned development, for the preferred and alternate scenarios, are not developed in enough detail to allow assessment of the project impacts on protected resources such as wetlands, surface waters, or endangered species habitat. The drawings included are preliminary, and of such small scale that their value for evaluation of on the ground impacts is severely limited.

(2) The impact statement is also missing an adequate discussion of the growth inducing aspects of the redevelopment proposals. This is an essential element of the environmental review which must be included to fulfill the requirements of SEQRA. An important example is the lack of consideration of the action's effects on local roadways, existing residential areas, and natural resources. Figure 4.4-1 on page 4.4-8 titled "Vehicle Trip Distribution" shows that approximately one-third of the total vehicle trips associated with the redevelopment will approach the site from the south via Schultz Road from exit 69 of the Long Island Expressway. This will result in a large increase in the number of vehicles using this narrow road which winds through an established low density residential and rural area. This increased use of Schultz Road as a through street to access the new facilities of the NWIRP site will almost certainly result in demand to improve this road, as well as others such as Wading River-Manorville Road, by widening and increasing the provided level of service. The DEIS includes no discussion of the impact widening and increasing traffic flows on these roads will have on the existing rural neighborhood through which they pass.

(3) The impact statement is also silent on the likely physical impacts to freshwater wetlands and the protected Peconic River which would occur from the projects designed to expand the level of service or improve safety on Schultz Road and Wading River-Manorville Road. Both of these roadways, from their intersections with the Long Island Expressway north into the vicinity of the NWIRP, pass through or directly adjacent to regulated freshwater wetlands and cross the Peconic River. Construction to expand the roadways will occur in wetlands as will increased stormwater flows from expanded pavement areas. These growth inducing aspects of the redevelopment proposal are very important and must be covered in the DEIS.

(4) Section 4.10.2 page 4.10-3 Sewage Treatment Plant Issues: Any modification or upgrading of the existing sewage treatment plant will require Department approval pursuant to SPDES and the WSRR System regulations. The existing discharge to McKay Lake was constructed before the Peconic River was included in New York's WSRR System, and was effectively "grandfathered" while the facility was in use by Grumman. With the change in ownership, new development, and possible modifications to the STP contemplated with the redevelopment proposal, the regulatory status of the facility may be subject to change. 6 NYCRR Part 666.12 states: " Existing discharge from point sources will be minimized or eliminated." Surface water discharges from the existing STP will be significantly constrained by WSRR System regulations.

Pursuant to Part 666.12(b)(1), new discharges from point sources are not allowed unless the applicant can demonstrate that the discharge will not have a detrimental impact on river area resources. Any new treatment facility proposed as part of the redevelopment plan would be unlikely to receive approval to discharge to surface waters.

Section 4.10.2 pages 4.10-5&6 Change in the Peconic Scenic River Corridor Boundary: The discussion on a possible change in the boundary of the Peconic Scenic River Corridor should be revised. The Commissioner of Environmental Conservation may amend the corridor boundary only if the proposed change will "further the purposes and policies of the Act"[Part 666.6(h)] and after a public hearing held in or near the river area. In addition, corridor boundaries "will be delineated and established to include within the river area those natural, cultural, and recreational features whose protection and preservation are necessary to accomplish the purposes of the Act. Some features may include: scenic areas; natural, scientific and cultural features; flood plains and wetlands; significant fish and wildlife habitats; watershed and hydrological aquifer features, ecologically important areas and river related outdoor recreational facilities"[Part 666.6(a)]. Thus, although the Central Pine Barrens Joint Planning and Policy Commission can support and recommend changing the boundary, the position of the Commission carries the same weight in the public hearing process as the opinions of other citizens. It is also important to realize that any proposal to relocate the Peconic River boundary would also be subject to review under SEQR.

(5)

Section 4.10.2 page 4.10-6 Variances Under WSRR: The Town of Riverhead as a municipality may qualify for a variance from the provisions of Part 666 if the proposed activity is " ...equally as protective of the river values identified in section 666.2(e) of this Part as compliance with the provision(s) to be varied and must fulfill a public health, safety, or welfare function."[Part 666.9(a)(3)] Contrary to what is written in the DEIS, the Town and /or its Community Development Agency would not necessarily qualify for a variance if the project only complied with the Central Pine Barrens Commission standards and included improvements to the Calverton Sewage Treatment Facility. To determine if a variance is appropriate, the Department would need to review more detailed plans, a more detailed project description, and variance request to decide if the proposal is protective of the river values and eligible to receive a variance.

(6)

Section 4.11.2 page 4.11-3 Impacts to Freshwater Wetlands: The DEIS evaluates impacts to the freshwater wetlands at a very cursory level. The document states " Wetlands could be potentially impacted by future development, depending on the ultimate site configuration". (Page 4.11-3) Unfortunately, the plans submitted with the DEIS are at scale 1 inch equals 2000 feet, which is too small to analyze impacts. The document goes on to state that prior to developing the site, NYSDEC would need to be consulted. To be more specific, the impact statement should include an additional sentence indicating that DEC approval is required for most construction activities located in or within 100 feet of regulated freshwater wetlands.

Section 4.11.2 page 4.11-3&4 Impacts on Wildlife: The authors discuss general impacts from the proposed redevelopment on wildlife and more specifically addressed impacts on the white-tailed deer (Odocoileus virginianus) populations. However, they do not discuss the impacts from the redevelopment on grassland birds. The area surrounding the runways and the fields north and south of the runways are dominated by infrequently mowed grasses which, in part, would be lost with redevelopment of the site. Grassland habitat on Long Island as well as the northeastern US region is limited and declining. These grasslands are potential habitat for such grassland birds as the field sparrow (Spizella pusilla), vesper sparrow (Pooecetes gramineus), grasshopper sparrow (Ammodramus savannarum), and upland sandpiper (Bratramia longicauda). The NWIRP Calverton site contains one of the few large areas of grassland on Long Island. (7)

Page 4.11-4 Impacts to Threatened and Endangered Species: Although most of the Natural Heritage Program element occurrences for this site are located in the Pine Barrens Core Area, there are two sites outside the Core Area that could be subject to development. The DEIS indicates that the Heritage sites outside the Core Area will be protected in parkland. However, it is unclear what is meant by the term "community park" as used in the EIS, and whether the plan calls for sufficient undisturbed buffers around breeding ponds to protect the upland habitat requirements of the state endangered tiger salamander (Ambystoma tigrinum), and the spotted salamander (Ambystoma maculatum). In a general sense, these mole salamanders can move as far as 1000 linear feet from a breeding pond. Thus, activities located a large distance from the shore of a breeding pond can affect individual animals. As stated above, more detailed plans are needed to evaluate the potential impacts on these amphibians from redevelopment of the site. (8)

Section 3.11.1 page 3.11-1 Affected Environment Vegetation: The document states that fires have been suppressed on the NWIRP property. This is generally true, however, it should be noted that a fairly large fire occurred north of the firebreak on the western portion of the property in the late 1970's or early 1980's. (9)

Section 3.11.2 page 3.11-12 through 15 Affected Environment-Wildlife: The list of mammals should include the striped skunk (Mephitis mephitis). The DEIS omits any listing of reptiles or anuran amphibians common on the site. The eastern box turtle (Terrapene carolina) and black racer (Coluber constricter) are known to be on the site. Anticipated herpatofauna includes the bull frog (Rana catesbeiana), Fowlers toad (Bufo woodhousei fowleri), green frog (Rana clamitans), spring peeper (Hyla crucifer), wood frog (Rana sylvatica), eastern hognose snake (Heterodon platyrhinos), eastern garter snake (Thamnophis sirtalis), ribbon snake (Thamnophis sauritus), northern water snake (Natrix sipedon), and eastern painted turtle (Chrysemys picta). (10)

Section 4.6 Noise Impacts: This section does not include discussion of some important aspects of the noise impacts that can be expected as a result of the redevelopment. There is no discussion of the effects on wildlife or humans from the proposed airport use. As a test facility for Grumman Corp., NWIRP was used regularly, but at a low level, for testing of military aircraft. The airport to be developed as part of the redevelopment proposal will handle many more flights per day than Grumman ever flew. The noise and disturbance to both wildlife and humans living, working, or recreating in the vicinity of the site or on the redeveloped site has not been adequately addressed. (11)

In conclusion, this DEIS is not sufficient to satisfy the substantive requirements of SEQR. I suggest that the current NEPA EIS be used to satisfy federal requirements for the transfer of the land only. Subsequent development proposals or requests to change the boundary of the Peconic Scenic River Corridor for the NWIRP facility should be the subject of future, more detailed environmental review under SEQR when the details of the proposals are known.

Please contact me at (516) 444-0371 if you have any questions about these comments. Thank you for considering our comments.

Very Truly Yours,

George W. Hammarth

George W. Hammarth
Deputy Regional Permit
Administrator

cc: R. Cowen
R. Jacobson
J. Pavacic
L. Riley
W. Spitz

S-2

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
STATE OFFICE BUILDING
250 VETERANS MEMORIAL HIGHWAY
HAUPPAUGE, N.Y. 11788-5518

EDWARD J. PETROU, P.E.
REGIONAL DIRECTOR

JOSEPH H. BOARDMAN
ACTING COMMISSIONER

April 18, 1997

Marc Lawlor
TAMS Consultants Incorporated
The TAMS Building
655 Third Avenue
New York, NY 10017

Naval Weapons Industrial Reserve Plant
Route 25, Calverton
Our Case No. 97-88

Dear Mr. Lawlor:

(1) This is to acknowledge receipt of your submission on the above permit application.

The subject material will be reviewed by Mr. J. Lentini of my staff. He can be contacted at (516) 952-6020 if you have any questions.

Your submission did not contain a cover letter. In all future submissions, kindly include a cover letter indicating the subject case number, as this will assure the proper processing of your request.

In all future correspondence, kindly refer to the subject case number. The plans must indicate the appropriate county tax map number.

Thank you for your cooperation concerning this matter.

Very truly yours,

THOMAS F. OELERICH, P.E.
Regional Traffic Engineer

cc: Ms. Barbara Grattan, Town of Riverhead

TFO:JH:JS

S-3

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
VETERANS MEMORIAL HIGHWAY
HAUPPAUGE, N.Y. 11788

EDWARD J. PETROU, P.E.
REGIONAL DIRECTOR

JOSEPH H. BOARDMAN
ACTING COMMISSIONER

April 18, 1997

Mr. Kurt Frederick
Code 202
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
MSC 82
Lester, PA 19113

Draft Environmental Impact Statement
Naval Weapons Industrial Reserve Plant
Calverton, N.Y.

Dear Mr. Frederick:

(1) We have received a copy of the referenced DEIS. In accordance with our phone conversation, please send six copies of the DEIS to Mr. Vito Lena at this address.

We herewith also request an extension of time for the Public Comment Period of 30 days to allow our Department adequate time for review.

If you have any questions, you may contact G. Beierling at (516) 952-6128.

Very truly yours,

Frank Pearson

FRANK PEARSON
Planning & Program Management

S-4

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

Bernadette Castro
Commissioner

May 16, 1997

R.K. Ostermueller
Department of The Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop, #82
Lester, PA 19113-2090

Dear R.K. Ostermueller:

Re: NAVY
Naval Weapons Industrial Reserve Plant/Calverton
Riverhead/Brookhaven, Suffolk Co.
96PR3018

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the Cultural Resource Survey of the Naval Weapons Plant prepared by TAMS Consultants, Inc. and Historical Perspectives, Inc. in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations. We have requested additional information on site locations from Steven Bedford of TAMS. Pending the arrival of this information, our office concurs with the recommendations of this report. We also offer the following recommendations with regard to the disposal of NWIRP Calverton as outlined in the RIS of February 1997:

TRANSFER OF 3,137 ACRES TO NYSDEC

Since this land is legally mandated to remain in a natural state we have no concerns regarding its transfer.

TRANSFER OF 2,923 ACRES TO RIVERHEAD CDA

(1) For the three alternative reuse plans our office recommends that deed restrictions be attached to the property designated as open space, exclusive of the public golf course. A Phase Ib archeological survey is recommended for the public golf course property and all other parcels proposed for development. Exceptions may be made by our office for areas of low sensitivity for cultural resources (as discussed in the Phase Ia/b report) if sufficient ground disturbance can be documented.

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S-4



Regarding historic buidings and structures, we are still awaiting the additional information outlined in our January 14, 1997 letter.

When responding, please refer to the SHPO project review (PR) number noted above. If you have any questions, please contact Ellen Cesarski at (518) 237-8643 ext. 281.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director, Historic Preservation
Field Service Bureau

RLP:cm

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
VETERANS MEMORIAL HIGHWAY
HAUPPAUGE, N.Y. 11788

EDWARD J. PETROU, P.E.
REGIONAL DIRECTOR

JOSEPH H. BOARDMAN
ACTING COMMISSIONER

May 28, 1997

Mr. David L. Spritke
Director, Planning Division
Dept. of the Navy, N/E Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Draft Environmental Impact Statement
Disposal and Reuse of Naval Weapons
Industrial Reserve Plant
Calverton, N.Y. Our Case #97-88

Dear Mr. Spritke:

We have reviewed the referenced Draft Environmental Impact Statement (DEIS) which suggests various potential new and/or modified land uses for the existing Naval Weapons Industrial Reserve Plant (NWIRP).

(1) As future plans are proposed, coordination between the Riverhead Community Development Agency, the developers and the Department of Transportation will be required to provide safe and efficient transportation on State, County and Town highways. The State Routes mentioned in the DEIS include Route 25, Route 25A, Route 495. These routes intersect with various County and Town facilities and both the intersections and the routes between intersections may require widenings and physical improvements. The costs for these improvements will have to be born by the developers.

(2) No estimate is provided concerning the origins and destinations of the traffic to be generated by the proposed reuse of the NWIRP facility. While proposed land use is an element in this estimate, existing land usage, existing zoning, existing demographics, existing highway capacity, levels of service, and speed and delay will all be a part of the final determination of travel patterns. The impact of the Pine Barrens must also be included in these future transportation plans.

(3) We are forwarding a copy of the DEIS to our consultant working on the Long Island Transportation Plan to incorporate the trip generation data into our Regional Travel Demand Model. We will be working with the Town of Riverhead to incorporate any strategies to mitigate adverse travel impacts identified through this modeling process.

We appreciate the opportunity to be a party to planning for the future transportation needs of the reuse of the NWIRP.

Very truly yours,

Frank Pearson

FRANK PEARSON
Planning & Program Management

BCC: T. Oelerich, Traffic
W. Thornewell, Planning
V. Lena, Traffic
W. Ugolik, TDM
C. Scheffer, Design
R. Schmalz, Planning
M. Lipsman, Real Estate

FP:GB:JH

# SUFFOLK
## COMMUNITY COLLEGE
EASTERN CAMPUS • 2 SPEONK-RIVERHEAD ROAD • RIVERHEAD, NEW YORK 11901-3499 • (516) 548-2500


Commanding Officer, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090
Att: Mr. Kurt Frederick

May 8, 1997

Dear Mr. Frederick,

Suffolk County Community College is a comprehensive community college that has served the residents of Suffolk County for almost forty years. The Calverton property falls within the catchment area of the Eastern Campus. We are poised to provide low cost quality education (1) to any business and industry employees that may require our services. Long Island is noted for its highly skilled workforce and we are proud of the part we have played in developing those skills.

We have recently had discussions with the representatives of Project Calverton Inc., the proposers of the Mid Atlantic Race Complex. We discussed many of the curricula we currently offer that would both complement and supplement the skills that will be needed by the employees of the proposed use. We discussed the need for students from our Graphic Design, Hotel/Restaurant, Travel and Tourism and the Automotive Specialist program that is sponsored by the College and General Motors at our Ammerman Campus. In addition, we discussed our proposed Aviation curriculum and how those same skills would be needed by their technicians.

It should also be noted that we are capable of responding to any of the educational needs that may develop as the project takes shape. We have the capacity to develop courses and/or curricula.

As this complex is developed we would like to be an active participant in the process and offer our expertise in working with all of the potential developers to provide the educational needs for this labor force.

Sincerely,

R.H. Manning
Dean of Instruction

RHM

cc: J. Braxton
C. Highsmith, Sr.

L-2

# COUNTY OF SUFFOLK

ROBERT J. GAFFNEY
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF PUBLIC WORKS

STEPHEN G. HAYDUK, P.E.
COMMISSIONER

May 8, 1997

David L. Spritke
Director, Planning Division
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Dear Mr. Spritke,

We have reviewed the Draft Environmental Impact Statement (DEIS) for the disposal and reuse of the Naval Weapons Industrial Reserve Plant (NWIRP) in Calverton, New York. We believe the DEIS requires further work and revision to address the traffic mitigation measures.

(1) The DEIS concludes that with the proposed unrelated developments in the area anticipated to occur by 2017, traffic operations will be at an unacceptable level without any development at the NWIRP. This unacceptable level then becomes the goal of mitigation alternatives associated with each of the NWIRP development alternatives.

We strongly urge the DEIS be revised to include mitigating measures to bring all impacted roads to an acceptable level of service.

Sincerely,

Stephen G. Hayduk, P.E.
Commissioner

SGH/CJB:ljl

cc: George Gatta, Jr., Deputy County Executive
Anthony Apollaro, Assistant Deputy County Executive
Richard LaValle, P.E., Chief Engineer

Town of Riverhead
PLANNING DEPARTMENT
200 Howell Avenue~Riverhead, New York 11901-2596
(516) 727-3200 Richard W Hanley, Planning Director

May 9, 1997

Mr. Kurt Frederick (Code 202)
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway, MSC 82
Lester, PA 19113

RE: Draft Generic Environmental Impact Statement - Disposal and Re-Use
Naval Weapons Industrial Reserve Plant - Calverton, New York

Dear Mr. Frederick:

Please find attached the comments of the Town of Riverhead upon the above referenced document. You should be aware that these comments are a compilation of observations of the Riverhead Development Corporation, the Town Planning Department, the Town Board and the public through a SEQRA hearing which was held by the Town Board on May 6, 1997.

Upon the response by the United States Navy, the Town will be in the position to form a Final Generic Environmental Impact Statement pursuant to Article 8 of the Environmental Conservation law and proceed with Town Findings.

Very truly yours,

Richard Hanley,
Planning Director

RH:js
Attachment

General Re-Use Alternatives

(1) The DGEIS states that the Town Board has "unofficially" chosen the Calverton Enterprise Park Re-Use Plan (Re-Use Plan) as the preferred alternative development scenario. As the object of the instant environmental review process is to evaluate the environmental impacts of identified alternative development scenarios prior to any decision, the FGEIS should include the following qualifying language:

> The USN has requested that the Riverhead Town Board identify one reuse plan as its preferred alternative for the purpose of preparing a generic environmental impact statement. In this regard, the Town Board has tentatively identified the Calverton Enterprise Park Reuse Plan as the preferred alternative. Although no final decision has been made, the Town Board will make its final decision as to preferred development scenario subsequent to the review of all factors, including the environmental impacts or the various alternatives analyzed in the Comprehensive Re-Use Strategy - NWIRP at Calverton (HRA 1996). Upon the determination of the optimum development scenario, the Town Board will formally amend the Master Plan of the Town and will adopt zoning regulations to implement such amendment.

Airport Land Use

The description of the Calverton Enterprise Park Re-Use Plan identifies a general aviation/cargo jet port use to occur upon the property within a 20 year planning horizon, the expectation of such a use based upon the continued existence of the easterly runway. The DGEIS further states that a "strong local sponsorship is a mandatory pre-requisite" for an airport at Calverton.

The preferred alternative as identified by the Town includes an aircraft component which was limited to a facility ancillary to corporate and industrial uses within the planned industrial core. It is the position of the Town that the land use planning work supporting the (2) preferred alternative included an exhaustive study of the regional air transportation industry and concluded that the costs of airport operation would far exceed revenues which could be expected given present and future market conditions for cargo or general aviation. This finding was the basis for the limited aircraft use (manufacturing, testing, corporate) inherent in the preferred alternative. The use of the site as a cargo port/general aviation airport should be eliminated as a principal use in the Final EIS and substituted with corporate or industrial aircraft use employing the easterly runway.

The inclusion of aviation as a principal use necessitated modifications to the total land area to be dedicated to use as commercial recreation and, consequently, reduced the level of environmental impacts associated with recreation, i.e. traffic, groundwater etc.. The impacts of full development of commercial recreation should be evaluated in the FEIS with respect to noise, traffic, employment and other parameters.

NTSB Use

The project site has been utilized by the National Transportation Safety Board for the investigation of the TWA Flight 800 disaster since the summer of 1996. There exists the probability that the NTSB will continue it operation at Cavlerton well into the foreseeable future. In that the NTSB proceeding will have impacts upon the marketing of the premises by the Town, the FGEIS should provide information with regard to the NTSB presence including its expected duration, the extent of property utilization, and the manner in which the leasing of land and buildings could be effected. (3)

North Buffer Zone

The DGEIS states that the title to buffer lands outside the fence may be transferred to the NYSDEC for management and that such lands will be used for conservation, recreation and agricultural use.

The buffer lands located to the south of the site clearly retain habitat value (pine barrens core) and should remain in open space. The northerly buffer zone, however, does not retain such habitat value, and has been partially cleared for agricultural use. Given this fact picture, and notwithstanding the federal Forever Wild designation, the FGEIS should examine the appropriateness of NYSDEC ownership of this area and discuss alternatives to perpetual development restrictions. (4)

Sewage Treatment

The description of the Calverton Enterprise Park re-Use Plan indicates that portions of the site are served by a wastewater collection and treatment facility. The text indicates that a new and expanded wastewater treatment system will be necessary to provide collection and treatment of wastewater generated by full development without a suggestion as to the time period in the redevelopment process at which time a new treatment system would be required.

The existing sewage treatment is presently operating and retains a valid SPEDES Permit for operation (62,000 gpd) at the current level of treatment (secondary) until February 1, 2000. It is the intent of the Riverhead Town Board to have the SPEDES permit transferred to the Town in its present form and to operate the plant at its current location until such time as the SPEDES permit must be renewed. This should be stated in the FEIS and the impacts associated with this scenario assessed. (5)

Water Supply

The DGEIS identifies the existence of three (3) supply wells on the site capable of providing a total pump output of 1.97 mgd. As the appurtenances of the Riverhead Water District exist within the vicinity of the project site, it may be more cost effective to supply district water to tenants. The FGEIS should examine this alternative and determine the optimum time at which the water district should be extended to the site and the costs associated with such an extension. Further, the Grumman Aerospace operation provided fire protection through the use of motorized vehicles as opposed to a complete underground water supply network. In that fire protection for the site will be provided by the Manorville Fire District, the FGEIS should (6) (7)

include a discussion of those improvements required to allow for efficient service by the Fire District.

Groundwater

The hydrology of the project site is discussed in the Affected Environment section. The description is extremely generic and relies solely upon general information gathered through a standard literature search. Given the size of the property, the probability of the existence of unique groundwater conditions and the complexity of the pine barrens habitat existing directly down-gradient of the site, it is essential that the FEIS contain a comprehensive groundwater map to be predicated upon more discrete data collected through an acceptable hydrogeologic investigation. This science is considered basic in the assessment of off site impacts of development as well as in the determination of the size of contaminated areas within the fence as initially described in Section 3.12 - Petroleum and Hazardous Materials.

(8)

Fire & Police Districts

The site lies within an area which is served by the Town of Riverhead Police and the Manorville Fire District. In that the zoning district which will eventually regulate development of the site cannot mandate private security or fire protection, the FEIS should examine the costs of these services as provided by the Town as compared to the real property tax revenue expected to be generated.

(9)

Transportation

The vehicle trip distribution analysis provided in the DGEIS assumes a significant percentage (30%) of generated motor vehicle traffic selecting a route to the site which relies upon the use of the Wading River Manorville Road exit from the Long Island Expressway or from points south. Given that this roadway may require improvements to accommodate increased traffic loads with such improvements impact upon the integrity of the core protection area of the Central Suffolk Pine Barrens, the FEIS should re-examine the trip generation analysis and discuss measures to minimize traffic on secondary roadways within the Pine Barrens Core Protection Area.

(10)

The traffic capacity analysis identifies the impact of site development on seven (7) intersections of roadways which are considered to be the major approaches to the site. As the Town considers the Route 25 access drive as the main site entrance, a suitable route to the site would employ Edwards Avenue and its intersection with Route 25. In this regard, the FGEIS should analyze the capacity of this intersection and identify those improvements necessary to manage revised expected traffic volumes.

(11)

Though the DGEIS thoroughly treated improvements to major intersections, the document was silent to the extent of improvements in the roadbed between intersections. The FGEIS should evaluate the capacity of thoroughfares which are considered to be approaches to the site and discuss improvements (widening, lane modification) which might be required. Of particular interest to the Town is that portion of Middle Country Road east of William Floyd Parkway to the site, that portion of Middle Country Road west of Edwards Avenue as well as Edwards Avenue north of River Road.

(12)

Pine Barrens Legislation

The Central Pine Barrens Comprehensive Land Use Plan as ratified and adopted by the Towns of Brookhaven, Riverhead and Southampton, defines those economic development activities to occur at the Calverton site to be exempt from regulation under Article 57 of the New York State Conservation Law as such activities are to be considered governmental action which is provided a specific exemption. At such time as the Town Board adopts the proposed Planned Development Zoning Use District upon the property, the Pine Barrens Overlay District would immediately cease to regulate the property and the apparent inconsistency in language between the Pine Barrens Overlay District and the Pine Barrens Comprehensive Plan would be resolved.

(13)

Growth Inducing Aspects

The DGEIS states that no new housing units would be development as a result of the implementation of the re-use plan. The New York State Environmental Conservation Law [Sections 8-0109(2)(g)] requires that a DEIS examine the growth inducing aspects of a proposed action where applicable and significant. It is the position of the Town Board that the level of direct and indirect employment opportunities to be created by reuse efforts will most certainly create a market for new residential units within the vicinity of the Calverton site. The FGEIS should provide an examination of this potential market shift and quantify the expected number of new dwelling units which could be developed within the general vicinity.

(14)

L-5

# COUNTY OF SUFFOLK

ROBERT J. GAFFNEY
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

MARY E. HIBBERD, M.D., M.P.H.
COMMISSIONER

June 6, 1997

Mr. Kurt C. Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, Pennsylvania 19113

Re: Draft E/S Disposal and Reuse of NWIRP, Calverton
Dated February, 1997

The environmental impact statement for the Grumman, Calverton property prepared by the Navy has been reviewed by this Department and the following comments are offered:

1. The Department does not object to the general concept of the Calverton Enterprise Park Reuse Plan that has been chosen by the Riverhead Town Board.

2. In section S.3.10, reference should be made to the fact that the entire island has been designated as being supplied by a sole source aquifer.

3. A full explanation should be included of the obligation of any new tenants of the property to meet the requirements of Articles 7 and 12 of the Suffolk County Sanitary Code (SCSC). This would be of particular concern to new occupants of the Industrial Business Park. Article 7 will severely limit the types of industries to basically "dry" operations due to the restrictions on the storage and use of toxic or hazardous materials in the deep recharge zones regulated by the code. Article 12 will not affect the type of development, but will require any storage or use of toxic or hazardous materials to meet the stringent double-walled standards of the code.

4. The idea of a new groundwater discharge sewage treatment plant in the northeast of the property will have to be carefully considered before such a change is made. The standards for discharge to the Peconic River proposed by the CCMP are not appreciably different than those required for a ground discharge.

DIVISION OF ENVIRONMENTAL QUALITY
OFFICE OF WATER RESOURCES ■ 225 RABRO DRIVE EAST, HAUPPAUGE, N.Y. 11788-4290 ■ TEL. (516) 853-3076

One minor error on page S-26 related to the proposed STP is in the second paragraph from the bottom of the page where it states that flow from such a plant would be to the "north." Actually flow would be to the northeast.

(5.) On page S-31 in the second paragraph reference is made to hazardous substance users being subject to inspection by the Suffolk County Fire Department. There is no "Suffolk County Fire Department." Town fire departments cover fire regulations and the County Department of Health Services covers inspection of toxic and hazardous materials storage, handling and discharge. Articles 7 and 12 of the SCSC apply as well as the NYS Conservation Law.

(6.) No effort has been made to address the possible water related impacts of the proposed development plans such as the following:

a. Any industrial or heavy commercial use has the possibility of contaminating soil or groundwater from chemicals.

b. Large amounts of fertilizers, herbicides and pesticides can be expected to be used and could have an adverse effect on water quality if not managed carefully.

c. Pumping substantial amounts of water from supply wells to serve a major development will lower the water table in the vicinity of the wells and may affect the natural flow pattern of any contamination plumes left behind by the Grumman activities, even if they are in the process of being remediated by the Navy.

d. Any new recharge activities such as a new ground discharge sewage treatment plant or new storm water sumps will cause groundwater mounding and also affect any contamination plumes.

(7.) No discussion has been provided on the possible effect on future development of the residual contamination problems left by Grumman activities. These sites are located in the areas the Navy proposes to retain control of at the time of initial disposal, and are scattered throughout the central part of the property. They will certainly interfere with development until they too can be released. In some cases there may be an impact on portions of the property outside of the retained areas because groundwater contamination plumes may extend farther than initially anticipated. They have not all been completely defined.

(8.) There could be other areas of contamination from the property that have not been discovered yet. A request by the regulators for the Navy to install a row of profile wells downstream

of the developed area of the property to search for contamination has, so far, been rejected by the Navy as being unnecessary. Likewise, a request for a complete and accurate groundwater map to assist in locating the wells has also been rejected.

The Department feels that these are very important data that need to be obtained, and even if all other comments are addressed, this information is still needed.

(9.) In the first paragraph of section S.3.12, the statement is incorrect that "all halogenated and nonhalogenated solvents were sent to an off-site facility for reprocessing and kiln burning." The fire training area is currently heavily contaminated with solvents as well as fuel products because for many years any waste solvent that would burn was dumped on the ground of the fire training area to create practice fires. A major groundwater plume remains there to be remediated.

Similarly, solvents were poured on the steam plant coal piles to encourage evaporation and eventual incineration with the coal. This resulted in minor soil contamination in the coal pile area.

(10.) The sentence following the one quoted in item 9, is incomplete and therefore misleading. Only in recent years since the construction of the industrial pre-treatment plant has industrial waste water been treated on-site and discharged via the sewage treatment plant to McKay Lake and thence to the Peconic River. Sediments in McKay Lake are yet to be sampled for a complete scan of possible contaminants. Previous to construction of the industrial waste treatment plant, all industrial waste water was stored in a series of holding tanks on-site which were pumped into a tank truck and hauled daily to Bethpage for disposal.

(11.) It should be made clear that the NW Pond area, which is indicated in the plans to be reserved as a nature preserve, is in fact the Grumman dump which is still under investigation.

Please contact me if you have any questions about these items (516-853-3198).

Very truly yours,

James H. Pim, P.E.
Chief, Office of Water Resources

JHP/pd

cc: Richard Hawley
Marsden Chen, NYSDEC, Albany

The Nature Conservancy®

Long Island Chapter

250 Lawrence Hill Road • Cold Spring Harbor, New York 11724 • (516) 367-3225 Fax: (516) 367-4715

May 7, 1997

Mr. Kurt C. Frederick
Northern Division Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113

Dear Mr. Frederick:

As per the instructions on the title page of the Draft Environmental Impact Statement for the Disposal and Reuse of the Naval Weapons Industrial Reserve plant, I enclose written comments to complement oral comments I gave at the Public Hearing in Riverhead last month.

While these comments should speak for themselves, I cannot overemphasize the importance of adequate groundwater information to ensure that, whatever redevelopment scheme ultimately is the NWIRP's fate, reuse of the facility is done in a manner consistent with the long-term health and integrity of the critical wildlife habitat adjacent to the facility.

The Conservancy is a willing partner in any efforts to better delineate the local hydrological regime. Current information is simply not detailed enough to use in the manner presented in the DEIS for NWIRP. I hope that you and the Navy will endeavor to more accurately quantify the needed answers to the questions we pose in the attached.

Sincerely,

Stuart R Lowrie

Dr. Stuart R. Lowrie
Director of Conservation Programs
and Government Relations

# DISPOSAL AND REUSE OF NAVAL WEAPONS INDUSTRIAL RESERVE PLANT REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

Marilyn Jordan and Stuart Lowrie
The Nature Conservancy
May 7, 1997

Scope of review: Our comments are directed primarily towards the following components of the DEIS: Water Quality and Hydrology, Terrestrial and Aquatic Environment, and Petroleum and Hazardous Materials

## Water Quality and Hydrology

**While apparently thorough in many areas, the NWIRP DEIS lacks adequate hydrological information and analysis. Ecologically important and hydrologically sensitive areas exist just outside the fenced area of the NWIRP. Possible impacts of present or future groundwater contamination to these critical natural areas cannot be adequately assessed without more detailed hydrologic information that MUST encompass NWIRP areas in and outside the fence line, as well as surrounding downgradient areas.**

Groundwater flow in the vicinity of NWIRP Calverton is poorly known, and thus only very general flow directions can be given. The DEIS states that "The southeast-draining groundwater [in buffer zones and southern half of fenced area] **probably** discharges into the Peconic River and its associated ponds and wetlands" (p. 3.10-5, emphasis added). This lack of hydrological knowledge is unacceptable.

Coastal plain ponds containing one of the highest concentrations of rare species in New York State appear to be downgradient of at least the southwestern portion of the fenced area. Coastal plain ponds are dependent upon an uninterrupted supply of pure groundwater. It is vitally important that future uses of NWIRP Calverton with the potential to add nutrients or other contaminants to groundwater not be located upgradient of these ponds, including the Peconic River headwaters chain of ponds, ponds in the southwestern buffer zone, and the Calverton Ponds system. It is also important that future water supply wells be placed in locations that will not alter the hydrologic regime on which the coastal plain ponds depend. Inputs of nutrients, hazardous organic compounds, and other contaminants to the Peconic River (and ultimately the Peconic Bay) from the present sewage treatment plant, and future uses of the site, are also of concern. NWIRP Calverton is situated on the groundwater divide in a deep recharge area designated as a Special Groundwater Protection Area (SGPS). NWIRP Calverton also is upgradient of the Central Pine Barrens Core Preservation Area, an area designated for ecological and hydrological protection. Long Island groundwater is a sole source aquifer deserving of the most strict protection.

(1) For all of the above reasons, more detailed hydrological information is essential. For example, at the Rowe Industries Superfund Site in Sag Harbor remediation studies

included a precise delineation of the plume of contaminated groundwater, detailed groundwater contour maps, and groundwater flow and contaminant transport modeling. Similarly detailed study is needed at NWIRP Calverton.

As a first step, hydrological and lithological information from NWIRP Calverton needs to be integrated with existing hydrological information from the surrounding area, utilizing existing groundwater monitoring wells. The Nature Conservancy began this process with a cooperative groundwater monitoring study begun on March 25, 1997. The US Navy participated in this effort, for which it is to be commended, by reading all of its wells within the fenced area, plus many wells previously installed by Grumman. Other participants included Brookhaven National Laboratory, Suffolk County Department of Health Services, and NYS Department of Environmental Conservation. The Nature Conservancy read its wells in the Calverton Ponds area, plus several US Geological Survey Wells. The Conservancy's hydrologist will use these data to produce a more finely detailed groundwater table map for the area than has previously been possible. This cooperative effort should be repeated, probably on a quarterly basis. This effort is just a beginning, however, and should be incorporated into a much larger hydrological investigation under the direction of the Navy.

Other hydrologic issues:

1. Stormwater runoff. The use of natural swales and depressions, perforated pipe, vertical drains or dry wells as an alternative to excavated recharge basins is correctly cited as a recommendation of the Pine Barrens Plan (GEIS pages 10.10-2 to 4.10-3). The Conservancy would like to add the caution that these recharge systems be sited
(2) and constructed so that they do not adversely impact sensitive natural wetlands, especially coastal plain ponds.

2. Sewage Treatment Plant discharge: We agree that the sewage treatment plant, or effluent discharge from the present plant, be relocated to the northern portion of
(3) NWIRP Calverton (p. 4.10-3 and 4.10-8). The present STP discharges to the Peconic River and associated wetlands, and ultimately to the Peconic Bay; a move to the north would result in discharge moving towards Long Island Sound. We recommend that the STP be upgraded to reduce nutrient loading regardless of the discharge location.

(4) 3. Impacts of future development on groundwater: All three alternative reuse plans evaluated in the GEIS include a golf course in the southwestern portion of the developed area. Based on existing limited hydrological information, it appears likely that nutrients and other contaminants (such as pesticides and herbicides) introduced to groundwater in this portion of NWIRP Calverton would flow towards some or all of the sensitive coastal plain ponds of the Peconic River headwaters/Calverton Ponds area. Degradation of groundwater quality could adversely affect the rare species in these ponds. The Best Management Practices recommended for the golf course are certainly advisable, but even if they were fully enforced (for which there is no guarantee) some groundwater contamination would still be inevitable. Even low-level groundwater contamination could impact the rare coastal plan pond plant species, which require a

level of water quality much higher than necessary for drinking water. The Conservancy recommends that the golf course, and any other development with the potential to degrade groundwater quality, be relocated to the northern and eastern portions of NWIRP Calverton. Acceptable areas can not be accurately delineated without more detailed information on groundwater flow.

**Terrestrial and Aquatic Environment**

(5) **Vegetation: . The importance of all ecological communities and species at NWIRP should be evaluated in a local and regional context.** Most of the information on ecological communities and species is cited as coming from Myers and Gaffney, 1989, which is not included in the list of references; thus the credentials of the source cannot be evaluated. The importance of the coastal plain pond and pond shore communities should be strongly emphasized, for these Long Island wetlands harbor one of the highest concentrations of rare species in New York State. The grassland areas, which are often dominated by native grass species, also are important. Extensive areas of grassland once existed throughout the northeast coastal region, but have been largely lost due to development and fire suppression. As a result many grassland species, including grassland birds, have become rare or been lost. Most of (6) the few large areas of grassland remaining are found at airports. How significant would be the loss of grasslands at NWIRP Calverton?

**Wildlife:** Additional surveys for on-site birds should be conducted. Local birders have reported seeing grasshopper sparrows and upland sandpiper (both NYS species of (7) special concern) within the fenced area of NWIRP Calverton; these species are not included in Table 3.11-6.

**Threatened, Endangered and Rare Species: This section of the DEIS relies almost entirely on a NY Natural Heritage Program inventory from 1987, which is now outdated and insufficient.** During the last ten years there have been many additions to the list of species considered rare or of special concern; these species, even if present, would not have been noted in the 1987 survey. Also, the presence, location or status of species noted in the 1987 survey may have changed in the last ten years. As explained in the letter from the NY Natural Heritage Program in Appendix E of the DEIS, "...[the Heritage Program] can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should <u>not</u> be substituted for on-site surveys that may be required for environmental assessment." (8) **Clearly, a new survey is needed.** Second, the DEIS focuses on just those species occurring within the portion of the fenced area that will be developed. Since impacts of development will extend beyond the fence line, effect on species both within and outside of the NWIRP buffer zones should be included. For example, what would be the effects of development on the hydrologic regime, and rare species, of sensitive wetlands?

## Petroleum and Hazardous Materials

Plumes of contaminated groundwater, and predicted future paths, have not been completely delineated within the fenced area, or beyond. Without this knowledge, it is difficult to understand how contaminated groundwater can be adequately remediated, or possible environmental effects assessed. Ecological concerns have not been evaluated for three of the four major sites of groundwater contamination (Table 3.12-1). (9)

## Conclusions

The NWIRP DEIS inadequately addresses the potential impacts that redevelopment of the NWIRP might have on the hydrologic regime and water quality of sensitive wetlands in and around the fenced area of the facility. Only generalized and scanty hydrological information is presented. The DEIS inadequately addresses the biological status and importance of the flora and fauna of the facility, relying on outdated survey information. Finally, the DEIS does not adequately delineate areas contaminated by historic uses of the site (both inside and outside of the fence), and does not address present or future ecological concerns relative to this contamination.

Future impacts from the redevelopment of the site (and impacts from the mitigation work that must still be planned and implemented to clean up toxic waste on and under the site) can only be assessed with closer attention to groundwater issues. We do not yet know enough to predict with any confidence the environmental impact of future development at this site. It is incumbent on the Navy and its consultant to obtain the needed certainty before deeming this DEIS to be complete.

## Recommendations

(10) **We strongly urge that the Navy and its consultants immediately begin the hydrological studies needed to address the outstanding questions posed above.** The Conservancy has been and remains a willing partner in these efforts.

**We also strongly urge that the Navy and its consultants commission a professional biological inventory of the NWIRP, either through the NY State Natural Heritage Program or a reliable professional identified by NYNHP.**

LONG ISLAND
PINE BARRENS
SOCIETY

May 9, 1997

Mr. Kurt C. Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113

Dear Mr. Frederick:

The Long Island Pine Barrens Society is a not-for-profit environmental organization dedicated to the preservation and interpretation of the Long Island Pine Barrens. Given the fact that all of the federally-owned Calverton property is situated within the Central Pine Barrens, with nearly 450 acres situated in the Core Preservation Area, the Society has a strong interest in issues relating to the property's disposition and reuse.

Accordingly, on behalf of the organization, I have reviewed the Draft Environmental Impact Statement (DEIS) prepared for the Naval Weapons Industrial Reserve Plant at Calverton and I appreciate the opportunity to offer the following comments for your consideration of, and response to, in the Final Environmental Impact Statement.

(1) In general, the DEIS does an uneven job at describing and assessing relevant and appropriate issues. Certain topics, noise and traffic impacts, for example, are covered in impressive depth. Other subject areas, however, such as water quality and ecological impacts are given superficial treatment.

Specifically:

1. Alternatives

(2) The DEIS considers four possible development scenarios for the Calverton property. In addition to the required "No-Action" alternative, they are the Calverton enterprise Park Reuse Plan (the Town of Riverhead's preferred alternative), the Calverton enterprise Park/Raceway Alternative, and the Peconic Village Alternative. In our judgement, while the Peconic Village Alternative has the least significant environmental impacts, none of the three proposed alternatives meets the spirit and letter of either the 1993 Pine Barrens Protection Act or the Comprehensive Management Plan (CMP) prepared subsequent to the adoption of the legislation. We say this fully recognizing the fact that the majority of the "fenced" property is within the Compatible Growth

Area and is, therefore, subject to some level of development. However, the scale, magnitude, and associated environmental impacts of all of the proposed alternatives far exceeds, in our judgement, the land use standards designed to guide development in the CGA. Accordingly, we would encourage the development of another alternative, along the lines of the Peconic Village proposal but one that eliminates, to the greatest extent possible, impacts to the wetland and upland Pine Barrens communities and associated species occurring on the subject property. This could be done by accommodating all development in the previously disturbed, developed, and degraded portions of the subject property.

2. Aviation Use

During the Pine Barrens Preservation Campaign, no other issue generated as much opposition as the proposal to establish a commercial scale jetport at Calverton. This opposition stems from the obvious noise and air quality concerns. It also is derived from concerns about water quality contamination, concerns that unfortunately, have been borne out by past aviation use at the airport, currently subject to remediation activity. (3)

We wish to make it clear that including a large scale cargo jetport as an element in the preferred alternative will result in the Pine Barrens Society opposing the transfer of the property to the Town of Riverhead.

3. Campground

The preferred concept plan envisions a public campground to be located within the Core Preservation Area (CPA) section of the property. Such a facility is inconsistent with the goals and objectives established for the CPA pursuant to the CMP and the Pine Barrens Protection Act. While the Society is supportive of hiking trails and encouraging other passive recreational opportunities, we are on record in opposition to recreational facilities in the CPA that require material alteration to the vegetation, as would be the case with this campground. (4)

Moreover, the DEIS makes no effort to assess the ecological impacts of the campground. While we believe the campground is contraindicated by the CMP and should be withdrawn, at the very least an assessment of the ecological impacts of the facility should be included in the FEIS.

4. Wildlife and Ecology

The DEIS does a poor effort in inventorying, describing and identifying the myriad communities and species that occur on the property. In some cases, general species lists are included which contain species that either do not occur on the property or would not be expected to occur. In some instances, these lists are markedly incomplete, such as is the case with regard to the avifauna that is described. Furthermore, lists for certain taxa, most notably insects, and herbaceous plants are lacking entirely. An additional shortcoming is the lack of any meaningful information on the habitat and ecological needs of the species. (5)

Nor is there any reasoned, scientifically-based assessment concerning the impact the various development proposals might have on these species and communities. The assertion on page 4.11-3 and 4 of the DEIS, which downplays the project's impacts to wildlife on page 4.11-3 and 4 by stating: "The surrounding woodland and grassland communities can potentially absorb some of the additional vacating population.... " is unsubstantiated by any further documentation and is contraindicated by most peer-reviewed studies undertaken to measure or analyze community structure, species competition, or niche/habitat partitioning among species. (6)

Another example in which the project may have adverse effects upon wildlife, effects which are not described and assessed in the DEIS, is in regard to the two Ambystoma salamander species that have been identified on the site. Both species are known to have large home ranges with adults moving up to several thousand feet from breeding ponds. A 23 acre preserve surrounded by inhospitable habitat is unlikely to sustain salamander populations over the long term. (7)

In summary, the section dealing with vegetation, wildlife and ecological impacts is, at best, cursory. The statement should contain an in-depth description of the resources, communities, and species occurring on the project site, the relevant processes and activities that shape these communities, the habitat requirements of these species, a detailed assessment of the impacts the various development proposals would have on these features, and an identification of proposed mitigation measures designed to reduce or eliminate these adverse impacts.

5. Water Quality and Hydrology

Figure 3.10-2 depicts both the groundwater divide and the boundary for the groundwater contributing area to the Peconic River, with the latter being depicted as north of the divide in the

eastern part of the property. Such a depiction would seem to be in error in that it would suggest water that recharges through the land surface between the divide and the river contributing boundaries simultaneously recharges deeply and yet, also, eventually in the River. Or viewed another way, how can water recharging through the land surface north of the divide, with the implication that regional flow patterns would eventually result in it being discharged into Long Island Sound, be within the zone of contribution to the River? This should be clarified. (8)

We are quite concerned over the cursory treatment the DEIS gave to water quality issues. The discussion about water quality is limited to an overview of governmental regulatory programs relating to water quality such as SPDES, with little discussion about the impacts various elements of the project, such as, for example, the golf course, might have on regional water quality. A description of related federal and state water quality programs does not constitute an adequate analysis of project specific water quality impacts. Similarly, there is no pollutant load calculations for any likely or potential contaminants. The DEIS should, therefore, be amended to include a detailed description and assessment of the relevant point and nonpoint sources of pollution the project elements are likely to create and a discussion of reasonable mitigation measures to reduce or eliminate these impacts. (9)

6. Cumulative and Impacts and Unavoidable Adverse Effects

These sections suffer from the same problem as the section dealing with wildlife and water quality, in that they are cursory, failing to rigorously discuss and analyze relevant issues. The discussion on adverse effects is particularly lacking. Both sections should be expanded. (10)

I appreciate the opportunity to provide these comments and look forward to reviewing your agency's response to them.

Sincerely,

Dick Amper
Executive Director
Long Island Pine Barrens Society

PROJECT CALVERTON INC.
MID ATLANTIC RACE COMPLEX
12 WEST MAIN ST.
RIVERHEAD, NY 11901
516-369-8113

Kurt C. Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113

May 9, 1997

Gentlemen,

We have read in great detail, the Draft Environmental Impact Statement, prepared by Tams, on behalf of the U.S. Navy, with respect to the Calverton Naval Weapons site.

While we applaud the comprehensiveness of the study, we are of the opinion that a major omission exists, with respect to the raceway alternative use plan.

(1) Specifically the economic impact, associated with the generation of tourism, was completely omitted.

We fully understand the strategy employed to analyze economic impact of the various potential uses. The generation of jobs, and the concomitant expenditure of income, both primary and secondary, is often fairly conclusive in estimating economic impact.

However, in the case of tourism related businesses, this methodology is not only incomplete, but, grossly underestimates its impact. The Tams report suggests that the impact numbers supplied by Project Calverton were overestimated, but in fact, completely misunderstands the basis of our numbers.

The real economic impact of our proposal lies in the generation of tourism spending, both at the track and in the surrounding areas.

The spending data that we supplied is supported by dozens of surveys conducted throughout the U.S. by independent consulting firms, on behalf of race tracks and similar tourism related businesses.

The composite results of these surveys strongly support the following conclusions;

1. That annual attendance at this type of track should reach approximately 500,000.
2. That the average expenditure of race fans approximates $250 per diem, and that the average length of stay of a race fan is 2 days.

2. That the average expenditure of race fans approximates $250 per diem, and that the average length of stay of a race fan is 2 days.

3. Taking these numbers, and adding a "conservative" turnover multiplier of 2, you arrive at a figure of about $500 million in expenditures within the economic impact area.
4. Further, using a figure of 11% with respect to state and local taxes, we estimate that approximately $55 million in new taxes
5. Most of these expenditures represent "imported" dollars. That is, dollars spent from people from outside of the economic impact zone. The multiplier for this type of expenditure for obvious reasons, is generally much higher than what we have used here.

This, gentlemen, is why every city and large town in America is dying for, and in many cases paying for the construction of sports complexes within their areas. The numbers generated from these types of businesses are so large, and the economic impact so great, that a traditional analysis based on job creation and associated income spending is rendered insignificant.

Omitting the impact of tourism spending associated with our project, completely misses the point. It is a gross error in the analysis; So gross, in fact that it renders the analysis useless as far as economic impact is concerned, and severely damages the credibility of this portion of the report.

I am at your disposal to discuss these matters in greater detail.

Sincerely,

Dennis Macchio
President
Project Calverton, Inc.

DM/cb

Dunn Engineering Associates
Consulting Engineers
66 Main Street
Westhampton Beach, N.Y. 11978
516-288-2480
516-288-2544 Fax

May 7, 1997

Mr. Kurt C. Frederick
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Lester, PA 19113

Re: Draft Environmental Impact Statement
Disposal and Reuse of Naval Weapons
Industrial Reserve Plant
Calverton, New York

Dear Mr. Frederick:

In our capacity as consultant to Project Calverton, Inc., we conducted a review of the above document and offered our comments at the public hearing which took place on April 17, 1997 at the Ramada Inn in Riverhead. We offer the following as documentation of and in addition to our testimony that evening.

- Analysis is presented of the noise impacts of the proposed alternatives examined in the DEIS. However, average daily noise impacts due to the aircraft activities of the airport use are compared to worst hour noise impacts from a raceway event featuring the noisiest vehicle type. This does not present an appropriate comparison of the noise impacts due to the development of these alternatives. Furthermore, it obscures the fact that airport cargo flight activity is intended to take place during nighttime hours, while raceway activity by nature takes place during the day. (1)

- Furthermore, the noise analysis performed for the raceway alternative assumes that no noise attenuation due to the presence of barriers, berms or buildings will take place. If the raceway alternative is developed, berms would be installed. In addition, the grandstands would offer protection to some of the receptors, depending on their placement and design. The noise impact analysis further assumes that the property between the race track and the receptors chosen for analysis would be a "hard" as opposed to a "soft" site. Soft sites, which contain trees, shrubs, etc. provide significantly greater noise attenuation than do hard sites. Thus, the noise impact at many of the receptors is overstated for the raceway alternative. (2)

- For the alternative which includes the raceway, the DEIS presents traffic and noise analysis for a Sports Car Club of America event attended by 21,000 persons, which is identified in the DEIS as a "typical" event. In reality, current plans for the operation of the proposed raceway depict this type of event as taking place only once per year. Although two other major racing events with higher anticipated attendance than the Sports Car Club of America (3)

event will take place during the year, events sponsored by local organizations will be more typical of the raceway operation. These events have anticipated attendance on the order of 2,000 persons. In addition, raceway operation is seasonal in nature, with no racing during winter months. Any analyses results presented in the DEIS based on these assumptions should be recalculated to present a typical scenario. When this is performed, the revised results are likely to show the raceway alternative to have considerably less impact than the air cargo facility.

- The DEIS assumes that major events at the proposed raceway would be scheduled concurrently with events at the 8,000 seat sports stadium proposed in both the raceway and air cargo scenarios. The preliminary traffic management plan prepared by Dunn Engineering Associates for Project Calverton, Inc. (January 18, 1996) recommends prohibiting the concurrent scheduling of major events, as a traffic management tool. Any Traffic Management Plan prepared for this development would include this technique. It could be anticipated to be required by the Town for inclusion in such a plan. This would further reduce the impact of the raceway alternative. (4)

- There is confusion as to how the DEIS arrived at the predictions for vehicle traffic generation due to the proposed airport facility. In the employment section, the DEIS predicts the creation of 207 new jobs. According to the Institute of Transportation Engineers report, Trip Generation, a facility of this size (207 employees) would generate 486 weekday A.M. peak hour trips, 724 weekday P.M. peak hour trips, and a weekday total of 3,900 trips. The traffic section of the DEIS states that the proposed air facility would generate only 855 trips per day based on 242 flights per day. Elsewhere in the DEIS, 400 flights per day are predicted in the Executive Summary section. This should be clarified, and the correct number of trips due to the air cargo facility should be utilized in the analyses. (5)

Based on the foregoing, we feel that much of the analysis presented in the DEIS reflects unfavorably on the raceway alternative, and that the use of more appropriate assumptions would have resulted in a more accurate representation of the raceway alternative.

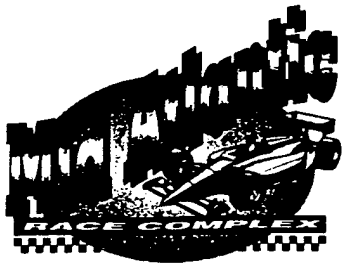
Thank you for your attention to these issues. If you have any questions or need any further information, please call me.

Sincerely,

Walter M. Dunn, Jr.

WALTER M. DUNN, JR., P.E.
Principal

VC/lam
L970381




Project Calverton, Inc.
Mid Atlantic Race Complex
12 West Main Street
Riverhead, NY 11901
516-369-8113

Department Of The Navy
Mr. Kurt Frederick
Code 202 Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, MSC 82
Lester, PA 19113

17 April 1997

HAND DELIVERED:

Gentlemen:

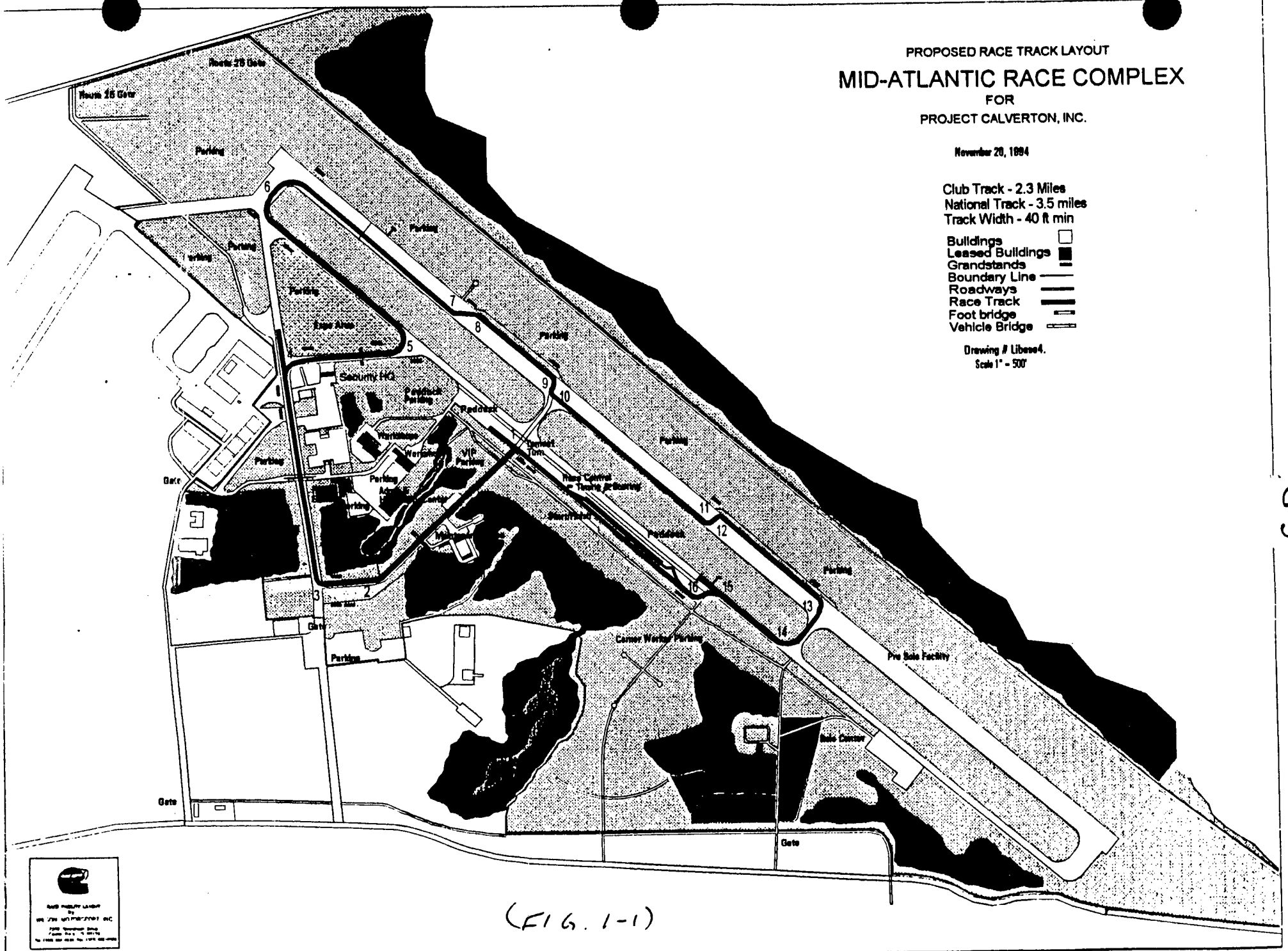
On April the 10th 1997, I addressed your scoping hearing in response to trees and buffer zones being cleared at the Calverton site. At that time, I stated that Project Calverton's plans called for no removal of trees from within our site plan and in fact, that we would most likely be planting additional trees to provide shade and wind-breaks.

(1) The TAMS report, primarily on summary page S-29, paragraph 4 , as well as elsewhere within the DEIS states: "The raceway alternative would lose 27 acres of natural area, a loss of wildlife habitat, for use as an industrial park . . ." You and the community should be aware that this stated loss of forested area results from your map as shown in your study. Conversely, Project Calverton's site plan never has, nor do we propose the elimination of forested areas or wildlife habitats.

For the record, please include our assertions on this point in your FEIS in addition to our proposed site plan that plainly shows no disruption of undisturbed areas.

Sincerely,
Project Calverton, Inc.

Thomas W. Gahan
Director of Marketing


PROPOSED RACE TRACK LAYOUT
MID-ATLANTIC RACE COMPLEX
FOR
PROJECT CALVERTON, INC.
November 20, 1994
Club Track - 2.3 Miles
National Track - 3.5 miles
Track Width - 40 ft min
Buildings
Leased Buildings
Grandstands
Boundary Line
Roadways
Race Track
Foot bridge
Vehicle Bridge
Drawing # Libese4.
Scale 1" = 500'
Route 25 Gate
Parking
Security HQ
Paddock Parking
Paddock
Warehouse
Warehouse
VIP Parking
Parking
Gate
Parking
Parking
Parking

G-6

**GREATER CALVERTON CIVIC ASSOCIATION, INC.**

P.O. BOX 33
CALVERTON
N.Y.. 11933

President: Bill Ceberek
Vice President: Nate Corwin
Treasurer: Rita Hodun
Secretary:
Trustees;
three year: Bill Roberts Steve Haislip
two year: Dan Donahue, Ann & Wm.Miloski
one year: Mary Kromhaut Dee Casper

Dear Navy

The Greater Calverton Civic Association finds exemption to many comments In the Draft Environmental Impact Study concerning the former Grumman Property on Route 25 in Calverton.

We are adamantly opposed to a regional airport, cargo port , or other aviation use except that which has been designated by our local commission...private corporation air traffic which supports a compatible business leasing site property.

(1) We also feel there is limited access to the site which will translate into traffic congestion for the entire Calverton/Ridge/Middle Island corridor.

Another concern is noise. We live adjacent to the site and our quality of life (rural country) would be adversely affected.

Plunging property values will erode the equity we have in our properties, which could translate into economic hardship, and change the character of our neighborhoods.

Sincerely,

President
May 8, 1997

BC/D.C

# ACT *NOW!* Inc.

Promoting Community Awareness
PO Box 879
Wading River, NY 11792
Telephone 516-929-5779 Fax 516-929-6643


April 30, 1997

Department of the Navy
Commanding Officer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
ATTN: Code 202, Envir Planning
Lester, Pennsylvania 19113-2090

Dear Sirs(s),

(1) This letter is in reference to the former Grumman-occupied property located in Calverton, New York. I have attended committee meetings and public hearings concerning the future of the property within the fence, and believe that it should remain in federal jurisdiction. Within one year this site proved invaluable at times of disaster.

Airplanes carrying precious water aided the devastating Pine Barrens forest fires, were able to utilize the former Grumman air strips. The available oversized airplane hangars provided a place in order to reconstruct TWA's Flight 800 disaster.

While these two incidents seem remote and next to impossible to occur again, we can not make this assumption, as that is why they are called accidents. We cannot plan when they will occur, but, living in a remote part of the country, surrounded by water, we can only prepare for the next disaster. The Navy does not necessarily have to hold the deed for this property. It may fall within reason to transfer the premises to another branch of the federal government. A suggested use, with respect to the considerable wildlife found in the area, would be a nature preserve with the assumed position that if and when a disaster strikes the eastern Long Island region, the property would be used for emergency purposes. Thank you for your time and consideration.

Sincerely,

Desiree Passantino

Desiree Passantino
Co-Chairperson

May 5, 1997

Department of the Navy
Commanding Officer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
ATTN: Code 202, Envir Planning
Lester, Pennsylvania 19113-2090

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Sincerely,

Signature Louis Passantino

Print Louis Passantino

Address P.O. Box 879 Wading River N.Y. 11792

Act **NOW!** Inc. PO Box 879, Wading River, NY 11792 516-929-5779/Fax 516-929-6643

May 5, 1997

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Sincerely,

Signature Marjorie Ehret Tribble

Print Marjorie Ehret-Tribble

Address Southview Ct. Wading River NY

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May 5, 1997

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Sincerely,

Signature Jack Guthy

Print Jack Guthy

Address Wading River NY. 11792

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May 5, 1997

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Sincerely,

Signature Amy C. Davidson

Print Amy C Davidson

Address 56 Laurin Road, Calverton NY 11933

Act ***NOW!*** Inc. PO Box 879, Wading River, NY 11792 516-929-5779/Fax 516-929-6643

May 5, 1997

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Commanding Officer
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Naval Facilities Engineering Command
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Sincerely,

Signature

Print JOSEPH F. Co, C O

Address 215 Old Northampton Rd RH 11901

Act ***NOW!*** Inc. PO Box 879, Wading River, NY 11792 516-929-5779/Fax 516-929-6643

May 5, 1997

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Commanding Officer
Northern Division
Naval Facilities Engineering Command
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Sincerely,

Signature Helga S. Guthy

Print HELGA S. GUTHY

Address 11 BAYBERRY RD., WADING RIVER, NY 11792

TO: Commanding Officer, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pa. 19113-2090
Attn: Mr. Kurt Frederick

FROM: Mr. & Mrs. Simione

DATE: May 9, 1997

Re: Draft DEIS - Calverton

Memo: We are sending a copy of a letter sent to the Riverhead Town Board regarding our feelings on the use of the Calverton property. Please take this into consideration in making your decision on the transfer of this property.

4 Heather Lane
Shoreham, N.Y. 11786

May 4, 1997

Riverhead Town Board
200 Howell Avenue
Riverhead, N.Y. 11901

Dear Board Members:

(1) We hope you will definitely consider "Project Calverton" as one of your proposed plans for the Calverton site. Due to the fact that the site is already set up for a racetrack since it has the pavement and the noise barriers, it seems that the racetrack would be an asset for us here on the East End. "Project Calverton's" plans are neighbor friendly and they would not disturb the trees or the natural surroundings. Extra noise barriers would be set in place in order to reduce the noise level which would not be an ongoing thing but would only be approximately four times a year when the big races occur. Other events that might occur throughout the season such as car shows bring good family fun and more importantly added income into the community. As participants in many car shows that have been held in rural areas, we have seen these communities welcome the participants with open arms. As far as the traffic in these areas, the local police departments were able to handle the traffic control and did exceptional jobs. Restaurants were crowded and all store owners enjoyed the added sales.

(2) As far as the so called "cargo" airport plan, we know from personal experience what it is like to live under the flight path of a major airport like Kennedy International and even though this airport would not be as large, we don't think that this is an option for the people in this beautiful rural area. Only this week, the news reported that children living near airports do not learn as well as children who do not live near them since every time a plane takes off or lands, the children are disturbed and loose their attention. As far as the Navy's report that there would not be any noise, who are they trying to kid! Tell the people in Elmont, Rosedale, Queens Village, Jamaica, Ozone Park, etc. this bogus information and we would be able to hear the laughter all the way out here to the East End. What a joke!

We understand that there are the nay-sayers who don't want to do anything with the property but we must move forward and not let this opportunity slip away. "Project Calverton" are the only people ready to deliver and the faster they do, the faster Riverhead will rise economically.

Sincerely,

Chris & Tony Simione

Commanding Officer, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090
Fax: 1-(610)-595-0778

11 Bayberry Rd.
Wading River, NY 11792
516-929-8287
April 24, 1997

Attn: Mr. Kurt Frederick

Thank you for making this property available for use by Riverhead, & East End residents, and asking for community input.

(1) I am a Riverhead resident, who represented the Wading River Civic Association on the Calverton Jetport study, done by Dr. Koppelman. I want you to know that our Civic Assn. has always opposed any commercial airport on this site. I am enclosing a copy of some of the concerns that I had when that study was done. I also want to add that, to my knowledge, nothing has changed to make those findings any less accurate than they were at that time

Since then, other deterrents can be added. One, is the many airplane & helicopter accidents these past few years in the USA, overseas, and of course right here on L.I., and at least two incidents of dry ice that have crashed through roofs of L.I. residents. Since the runway would have planes flying directly over Wading River, I'm frightened & concerned. Another is the drug traffic on airplane flights. This option should not be considered as an alternative, now or ever.

(2) In consideration of our Calverton neighbors, due to noise, & traffic from a race track, that option would not be a positive choice either. We would also hope that gambling casinos would never be built here. The negative effects these places have, would ruin our community, by bringing in drugs, & other crimes, in addition to the heartbreak, & destruction of families, from encouraging gamblers who really can't afford it.

(3) What we would like to see are technical facilities, museums, environmental programs, movie studios, etc. We need higher paying, challeging jobs, for our educated young residents. We have a wonderful opportunity to do something good with this land, I hope we have learned something from past mistakes, and don't repeat them.

Sincerely,

Helga S. Guthy

Helga S. Guthy

# My Analysis of the Draft Copy of the Calverton Study

Helga Guthy

In the Preface it states that Grumman jobs reached a high of 9,000 jobs, a loss of 6,000 jobs. In a letter from a Grumman official it says their high was 2,600 jobs and now have about 2,000, a loss of 600 jobs. *Gigantic mistake?*

The Advisory Committee names are listed in the front of the study. It looks like we put this study together. Where are the names of the people who worked on this report and what were they paid? It mentions the North Fork Environment and the Pine Barrens leaving the study, but does not mention that Mark Lembo from Citizens Against East End Jetports left, when he found that we had been given inaccurate information. His name is still listed. Was Gillham paid? Who put Joe Colao on the list? He wants to know. He was never at any meetings.

## Part 1 - U.S. Air Cargo Industry

p. 2-4 In Ch. 2 Table 2-1 Exports & Table 2-2 Imports; What % is from Eastern L.I. market? Most tonnage & money is from Nuclear Reactors & Boilers. How many from L.I.? How many a year?

p. 2-7 States that there is no need for new cargo facilities. Aircraft capacity will keep pace with demand for future cargo. Air Cargo industry now has significant over-capacity between 40% & 50%. By the time current capacity is reached, new, larger, aircraft will be on line to absorb additional growth.

## Part 2 - Aviation & Cargo in N.Y.

p. 2-15 States that all-cargo flights, from the 3 major airports, are not a problem.

p 2-16 Cargo at Calverton cannot be justified to alleviate airport congestion.

p. 2-9 Table 2-4 has direct & indirect and induced jobs & wage impact. The numbers look impressive, but most of the impacts are from passenger activity. Eating & Drinking, car rentals, hotel & personal services etc. There are no tables for cargo only. Stewart did not make money till they added passenger flights.

p. 2-10 Table 2-6 Lists economic impacts of L.I. Airports-MacArthur-passenger & related services. Republic-Corporate & private planes. Brookhaven, E. Hampton & Suffolk County, none are cargo facilities. (MacArthur used to have one cargo flight but stopped because they could not even fill one plane a day.)

This report is clouding the facts with non-relevant information.

p. 2-10 & 11 Table 2-9, p. 2-13, Table 2-10, p. 2-14, Table 2-11 & 12, p. 2-15, Table 2-13, all of these tables cover NY Metropolitan Region & NY Customs District etc.. Does not tell us what is from Eastern L.I. markets.

p. 2-17 Since 1983, Stewart Airport has cost $320 million in Federal & State money, plus $100 million in private funds and it lost money until passenger flights were added in 1990. In area it is the second largest airport in the U.S.. Why is it having such trouble growing? According to the study; "...it is difficult to attract freight forwarders and convince them to route freight to locations other than major airports..."

**Part 3 - Potential for Cargo N.Y. & L.I.**

p. 2-18 Says it is pinpointing potential geographic sources of export commodities, and yet in the same paragraph it covers such a broad area as N.Y. City, South West New England, and Northern suburbs of Westchester, Orange, Rockland, Putnum, Dutchess & Ulster Counties & L.I.. We still don't know what the L.I. market has.

p. 2-18 and many other pages, state that Calverton is well-suited to international cargo flights, but it never says why. Since, according to freight forwarders, in your interviews, the L.I. market is too small and most cargo will be trucked to & from the west on the crowded Expressway, how can you keep stating this?

p.2-29 I was upset to see the excerpts from the old cargo interviews still in the Draft report-when we all know that they misrepresent their companies positions, especially DHL.

If DHL was so interested in Calverton, why is there no reply from them the second time? Or did you get an answer you didn't like & not print it?

If cargo at Calverton was in anyway feasible, Cargo Carriers would be standing in line and have shown an interest long ago. You keep stating that there is a modest interest. I have seen no interest. You are almost begging companies to come out here.

p. 2-38 States that firms use a foreign trade zone to maintain cost-competitiveness of their U.S. based operations vis a vis their foreign based competitors. How will this be effected by Clinton's plan for making U.S. competitive with foreign markets?

p. 2-42 Claims 10,000 jobs will be created, yet Stewart airport is the second largest in the U.S., in area, and after 10 years operation, has only 4,300 jobs. (After spending $320 million in State & Federal money, and $100 million in private funds). (Why was this cost not mentioned in the Draft?). It was still loosing money until passenger operations bailed them out in 1990.

Why were we not given projections of what Calverton would cost us? You are guessing at everything else. You claim a certain number of jobs, buildings & road work & even how much per hr will be earned. You should be able to figure out the cost to the tax payers, unless you are afraid if they find out the cost, they will be very upset.

**Ch. 3 - Env. Setting and Developmental Constraints Analysis**

You wanted us to believe that you were doing the Env. study for us, but you had to do it to find out how much acreage you had to work with and where you could build.

p.3-5 The original drainage pattern has been interrupted by construction of the existing runways.

p. 3-11 Disturbance through previous land filling activities of the northernmost pond is evident.

p. 3-13 According to Nature Conservancy, more endangered species live here than anywhere else in the State of N.Y.

p. 3-19 Aircraft assembly & testing since the 1950's has polluted the ground water at 4 sites; North East Pond Disposal Area - Fire Training Area - Fuel Calibration Area & Fuel Depot. Three others worth mentioning are; former Coal Storage Area - former STP Leaching Field and North East Tower Area.

p. 3-20 You plan to build where there are moderate constraints. Apparently there is no place to build where there are no constraints.

p. 3-24 States that the Airport Study Area lies entirely in the Central Suffolk Special Ground Water Protection Area.

p. 3-26 Fig. 3-11 - Critical Env. Areas Map - the runways are just at the edge. Would they be included if Grumman had not altered the wetlands?

p. 3-29 The entire ASA is also located in the Pine Barrens. You have said many times, that if the airport had not been built before we knew its effects on our water, that it could not be built today. How can anyone with integrity enlarge it?

**Part 4 - Noise Analyses, and Regulatory**

The effects of noise is judged on a 24 hr. time frame, not each flight. This makes the impact seem much less. Also, since we have little background noise, the impact here would be even greater. You do admit, p. 3-66, that each noise level could reach 90 dec.

*It mentions closed doors and windows would make it better. By my observation, East-enders like to be outside. So, we have a problem.*

p. 3-45 States, in effect, there are at present no economically feasible examples of all-cargo airports in the U.S.

p. 3-48 Three airport examples are used: Alliance, Texas, is the only facility planned for all-cargo. The other two have passenger flights. Even with all Alliance's advantages (money, space & no ground water to worry about), the facility has not been successful in its primary mission and is now serving as a multi-purpose reliever airport to Dallas/Fort Worth International Airport. *What more do you need to show no-feasibility for Calverton Cargo?*

p. 3-56 States-None of the alternatives envisions any scheduled passenger service. This statement is not strong enough to prevent passenger flights from ever coming here.

p. 3-58 Another contradiction - you state in order to construct all the operational & support facilities from the ground up, it's possible the stage 3 deadline may be reached prior to initiation of cargo operations. That is 17 yrs from now. Yet in Ch. 6, p. 7 it states that one prime factor that leads the staff to believe industrial & freight operations could be feasible, is that the challenge is not to build a new facility. It is already there. (The only things there are the runways, and according to Grumman, they need $30 million in repair. That's why they need dual use.)

**Ch. 4 - Land Uses & Transportation**

p. 1 Claims the impact of the airport will decrease the effects on the quality of life on the East end of L.I.. Does that take into account the extra trucking & traffic? And, the possibility of 9,000 people moving closer to where they will work?

p. 6 Brookhaven's plan wants removal of excess industrial zones &

moved to less environmentally sensitive south Yaphank. How will a 10,000 job Industrial Park, at Calverton, effect the large Industrial Park planned for Yaphank?

p. 11 The purpose of this study was to create East-end jobs, but according to your estimates, 90% of the work force will come from the west.

p. 19 Table 4-1 still estimates almost 12,000 jobs. I find this impossible. At its peak Grumman only had 2,600 people, and has about 2,000 now. Brookhaven Labs has about 3,500 people, yet you claim a moderate facility, employing almost 3 1/2 times that of the Lab. What do you consider large?

p. 21 Table 4-4 Plans major road work that will need to be done, especially if you include The Breslin, Mega Development, on Rt 25, William Floyd, Wading River Rd. & Grumman Blvd. This will take millions more of our taxes.

**Ch. 5 - Site Alterations**

p. 11 You have stated many times that due to restraints, there will not be room for passenger flights. The acreage available for building is 948. The space you have accounted for in all 3 scenarios is 520 acres, that leaves 428 acres still usable. If you add the acres from the runways (592) that gives you a 1,020 acre airport, larger than LaGuardia, almost as large as MacArthur.

p. 21 The number of Grumman workers again is wrong, not 9,000, but should be 2,600 at peak & 2,000 now. That's a gross exaggeration.

**Ch. 6 - Administration & Infrastructure**

p. 1 States that: "It appears that the industrial development is the engine that would drive the use of the airport, rather than the reverse. Industrial Dev. could be built anywhere, (already planned for Yaphank), does not need to be in such a water sensitive area.

p. 9 States again Federal & State Funding for runways, taxi ways, aprons & improvement or construction of public roads.

p. 11 I'm very concerned how much this will cost us taxpayers. County Funding-Suff. Industrial Development Agency acts as a financing conduit through which loans take place. It issues the tax-exempt & taxable industrial development revenue bonds, but through a bank. It seems that the company and bank negotiate terms of the loan independent of the IDA. Why doesn't the company go directly to the bank for a loan? Or does the government have to back the loan because private companies will not invest their own capital? If the company folds, who is liable for the rest, if IDA is involved?

It says normally the loan is secured by a mortgage. Since the Navy owns the property there will be no mortgage. What is used as security?

p. 13 States again "The discussion of Federal & State funding sources indicate the possibility of grant or loan funds to cover most of the added infrastructure costs at Calverton."

**Ch. 7 - Citizen Participation Advisory Council**

p. 1 You have always made us feel that you were doing us a favor including us in this study. Now I read that "...any planing studies undertaken with Federal support must provide for citizen input..."

p. 7 Even though you have addressed some of our concerns, you have always done it in a condescending manner.

p. 10 You criticize our love for the East end, calling it a mythical & romanticized attitude analogous to Jerusalem "The Heavenly City" or Rome " The Eternal City". I have lived here in Wading River for almost 20 yrs, and I still feel very mythical & romantic about it, and so does everyone I know. That is why we are working so hard to keep it that way.

If growth comes slowly, and fills a need, it will fit into the community, If you force it, you end up with big problems that can't be solved. You are forcing this cargo facility on people that see no need for it and don't want it.

p. 17 It says again about the large job potential, which could immediately reduce the unemployment pattern in the East end. On p. 3-58 you say it may not be a reality till stage 3 comes on line, that's 2010, or later if they get an extension. Ms Kamer told us it would take 10-20 yrs or so depending on the improvement in the economy. An official at MacArthur told me that to reach to numbers of jobs etc., more realistically would be in 40-50 yrs. The whole area would have to build up a lot more to support this estimate.

p. 17 States that it's a myth that pilots dump fuel.

p. 18 In a letter from the FAA, states that fuel dumping is often a last resort effort to lower the weight of the aircraft to enable it to land safely.

*You claim if you fly high enough & dump, it will evaporate. But, pilots have told me, sometimes they don't have time if the aircraft is too disabled to ascend, they drop fuel wherever, whenever to get back safely.*

p. 23 Says the FAA Study of Cargo Airports does not categorically

state that cargo airports do not work. Then you have a quote. What you should have included is the material just before your quote. It says, that it's extremely difficult & inefficient to consider separating cargo from passenger flights.

*They knew this already, and could have saved $500,000 and 1 1/2 years of worry & work for a lot of people.*

I have found so much contradiction in this study, and left-out information that apparently did not suit your purpose. No matter what your own findings told you about cargo ports & the sensitive land in the Pine Barrens, you still insist that it is feasible. **Unbelievable!**

I hope no one uses this study and its conclusions, the information is very misleading and contradictory.

Digger O'Dell's Restaurant
58 West Main Street
Riverhead, NY 11901
516 - 369 - 3200

P-3

Naval Facilities Engineering Command
Mr. Kurt Fredericks (Code 202)
Department of The Navy
10 Industrial Highway- Mailstop, #82
Lester, PA 19113-2090

22 April 1997

Dear Mr. Fredericks:

In reviewing your DEIS for the Navy-Calverton facility, I was wondering why the DEIS preparers hadn't taken into account the tremendous tourism economic impact that the race complex proposal offers. If those economic numbers are injected into the forecast, the "raceway alternative" becomes the strongest economic reuse scenario. (1)

Also, please bear in mind that the town of Riverhead has accepted [August 6, 1996] by resolution a primary use of tourism and recreation. The raceway alternative is the only use consistent with this as it will attract extended stay tourism. As the owner of two businesses in town, I can tell you that a major tourist attraction such as the race complex would reap spontaneous rewards for the regions sagging economy. Also in line with spontaneity is; the race complex being able to start immediately, be up and running in six months and completely built out in three years. Compare this to the other twenty-plus year build-out scenarios stated by yourselves, H, R & A, and the Riverhead CDA for airport and/or industrial park use and the comparisons become even more favorable for the race complex.

I am looking forward to your inclusion of these tourism generated economic impact numbers in your FEIS. Thank you in advance for taking a second look at these aspects for reuse.

Yours truly:

Timothy G. Yousik
PO Box 573
3470 Delamr Drive
Laurel, NY

Owner - Digger O'Dell's Restaurant, 58 West Main St, Riverhead NY
Owner - Van Dyck & Yousik,Inc. Indp. Goodyear Tire Store, 1165 E.Main St Rvhd.

TGY:js

Mr. Kurt Frederick
Code 202
Northern Division, Naval Facilities Engineering Command
10 Industrial Highway, MSC 82
Lester, PA 19113

April 18, 1997

Dear Mr. Frederick,

I attended your presentation last night at the Ramada Inn in Riverhead and was both pleased and troubled by some of the things I heard. From what I heard to the reaction from the people who spoke after your slide presentation is that an impressive majority of the people want the raceway alternative and nobody wants the jet airport reuse. Not only do I favor the raceway alternative as the best reuse, since it brings tourism, recreation, and light industry all at the same time, but most people that I have talked to in Riverhead feel the same way. (1)

For the Navy to make a statement that an airport use would be "quiet" and "not like when the F14's flew overhead" is ridiculous. (2)

Yours truly,

Carlos Jimenez
54 Birch Court
Riverhead, NY 11901

Mr Frederick

The one topic not mention

(1) was the contamination clean up.

Please up date me on this matter

Thank You

Rita Hodun
178 Middle Road
Calverton NY
11933

4/24/97

Attn Naval Command
Ref: N.W.I.R.P. at Calverton
my concern is the concrete
(1) I worked there almost 35 yrs
the concrete roadways was
breaking up which I think
was due to the contractor in
1951 + 52 during Building
of the facilities I heard
the Federal Government
did or was going to Indict the
him + he took a mexican
Hay ride for 7 years
The entire Road way north
of Pl 6 was moved few feet
and new Road way paved
and portion of the Road way by
the fuel station + Lab was
Replaced At Riverhead town
has to Replace these Roads later
could be expensive Steel Highlp

Joseph Velazquez
141 Jobia Lane
Calverton, N.Y. 11933
May 8, 1997

Dear Sir:

I am against an Airport in
(1) Calverton. It would severely affect my quality of life which I moved here for.

I am 64 years old retired and like peace and tranquility which I hoped my high taxes would give me.

Respectfully submitted,
Joseph Velazquez

D. CASPER

159 JAKES LANE
CALVERTON
N.Y. 11933

Tuesday, May 06, 1997

Dear Sirs:

I am a resident of Calverton and I find fault with the D.E.I.S. report you commissioned for the former Grumman property.

My concerns have more to do with quality of life issues and the effects it would have to my community.

(1) I moved to Calverton because we were drawn to the open rural character of this area. We especially like to spend as much time as we can outside enjoying the vistas and quietness .

Having any airport usage in MY OPINION would destroy the peace and tranquillity of this neighborhood and also erode the equity we have in our home.

The resulting traffic and congestion would adversely affect my ability to get from here to there, and would increase auto and aircraft air pollution.

Another concern is the little air port that in the future becomes a major player .We do not want a major transportation center here therefore we will not support a limited use facility ....because of the expansion of Islip's runways and the threat of an accident.

(2) There are many effects and affects to the environment that your report either minimizes or fails to identify. ....we are talking about water and air quality...which does not have a price tag. Access to anywhere on Long Island is hampered by our geography. There are only east-west roadways that are congested already.

In closing I request you review the report the town of Riverhead prepared and accept those findings into your D.E.I.S. report.

(3) Also at this time I would like to request that "Super fund" moneys be utilized to clear the contamination that is already at this site and request strongly that you stop for a moment and recognize that Calverton citizens will eventually be breathing and drinking whatever usage is made of this property.

D. Casper

**Richard Quick** P-9
**6 Zdunko**
**Riverhead, NY 11901**

Department of The Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mailstop, #82
Lester, PA 19113-2090

YOUR REFERENCE: 11010
RE: DEIS / Calverton

April 19th, 1997

Dear Sirs -

On April the 17th your explanations of reuse strategies for the Grumman-Calverton site were somewhat unclear. So I hope the general public, at the same time, doesn't have a misunderstanding on the reuse strategy and the alternatives as presented. The fault lies in the explanations of water use and wastewater generated under the different reuse scenarios. Most particularly, the gallonages stated for the Calverton Enterprise Park / Raceway Alternative. As shown, these gallonages are for a total cumulative amount for the Enterprise Park AND Raceway. As this alternative was commonly referred to as the RACEWAY ALTERNATIVE, one might assume that these (1) figures are attributed solely to the Raceway. However, after extensive conversations with the principals of Project Calverton, Inc. / Mid Atlantic Race Complex and reviewing their plans, you need to understand that their day-to-day use at the property, even with their accompanying property users (race school, etc.) would be minimal and far below the numbers as presented. I therefore assume that the gallonages shown were primarily the consumption and discharge of the Enterprise Park.

I would ask that in future presentations and documents for the Enterprise Park / Raceway alternative that two numbers are shown, one set for the Enterprise Park and one set for the Raceway, and after listing these separately and distinctly, a cumulative number is shown.

Sincerely,

Richard Quick

Richard Quick

CC: Rick Hanley - Riverhead Planning Dept.

P-10

*Roy McDonnell*
*126 Williams Way South*
*Calverton, NY 11933*

Department of The Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mailstop, #82
Lester, PA 19113-2090

**REFERENCE: DEIS -**
**TRANSFER OF CALVERTON NWIRP TO RIVERHEAD TOWN**

Gentlemen: 20 April, 1997

Please be informed - Riverhead Town Officials do not represent the wants, needs, or vision of the people. Witness the allowance of the OMNI solid waste transfer station on Rte 25 in Calverton and the development of Rte 58 in Riverhead.

(1) Since there are more people that prefer a raceway to an airport - - why isn't the raceway shown as the Preferred Reuse for your Calverton property. And, since the raceway will only use one third of the property, and one of the runways, couldn't smaller scale aviation uses be there together. By using the remaining 7,000 foot runway for aviation (as you are well aware this runway is long enough to handle significant aircraft) it would eliminate the cargo aircraft that are the prime concern of the community. People don't seem too have a problem with an occasional corporate jet or light aircraft that might be serviced at Calverton or be there because of a business on the property. Most people accepted the F14, A6, Hawkeye, helicopter, etc. air traffic over the years.

The town needs tax relief in the form of commercial tax base which Grumman provided while at Calverton. Please expedite the process to allow new business (automotive?) to come to town as soon as possible. I understand about the delays caused by TWA Flight 800, but that seems to be moving along. I further recognize how slowly the town of Riverhead gets things done, but everybody has been waiting for something to happen since Grumman moved out in February of '96.

Sincerely,

Robert (Roy) McDonnell
126 Williams Way South
Calverton, NY 11933

P-11

SHERRY A. JOHNSON
213 HORTON COURT
MANORVILLE, NEW YORK 11949

April 17, 1997

David L. Spritke, Director
Planning Division
Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, MSC 82
Lester, PA 19113

Dear Mr. Spritke:

SUBJECT: Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of the Naval Weapons Industrial Reserve Plant, Calverton, New York

I would like to take this opportunity to submit the following comments on the DEIS for the Navy's Calverton facility. I expect to have additional comments which I will submit prior to the May 9 deadline.

(1) General comment: I was extremely disappointed that the document contained no direct discussion or acknowledgement of the impacts that are going to or likely to occur to the 50-odd homes that are located between 1 and 2 miles directly south of the fenced facility as a result of any one of these proposals for development. And I say development because I feel that reuse and re-development are terms that are being rather loosely applied here. A major portion of this facility was never used to begin with, so in effect this is first time, and big time, development.

(2) (3) General comment: I feel that the data in the document relating to traffic impacts is flawed. I hate to think that it was a deliberate attempt to deceive anyone but the fact is the maps that were used to show this information have consistently been altered. Roads, specifically, a portion of River Road, Old River Road, portions of Wading River-Manorville Road, North Street and County Road 111 at Exit 70 of the LIE, were whited out on the maps. This gives the appearance that the area to the south is totally undeveloped, which of course is not the case. <u>These maps should be corrected and the traffic impacts on those roads and the residents in the area must be discussed. A full discussion on the use of Exit 70, as an alternate route to the facility, the condition of the roads, and the current level of traffic must be included.</u>

**General comment:** As I read through the document I was trying to decide which of these proposals would have the least impact on me as a resident, and still allow for some use at the facility. I couldn't decide which would truly be the lesser of two evils, the aviation use or the race track. It may take longer for the aviation use to get established, but in the long run there would be more noise. With the race track, there would probably be noise sooner, but it might be less frequent and could be controlled through permit restrictions.

But what I really wondered is just how many people realize that the aviation use that has been proposed and discussed in this document is in reality Lee Koppelman's Jetport. The only difference is instead of a joint use with Grumman, there is now a joint use with a stadium, a theme park and a golf course. And, it might even be worse because what's actually being proposed is a mix of general aviation and cargo, and at one point the DEIS projects there to be 242 flights a day (pg 4.4.6). <u>If the DEIS can refer to Koppelman's LIRPB studies (pg 2-8), than I would expect that it would be entirely appropriate to also mention the total opposition on the East End to the idea of expanding aviation uses at this facility (See attached news articles).</u>

4

5 **General comment:** I totally support dedication of the buffer zones, or areas "outside of the fence" to the New York State Department of Environmental Conservation.

**General comment:** The estimation of direct jobs for the first two proposals should be broken down to show seasonal and year-round jobs, and the estimated earnings should be adjusted accordingly. This information should be included in the Socioeconomic discussions and on Table S-6.

6 **Pg S-13, Section S.3.3, first paragraph, last sentence.**
Peconic River Sportsmen's Club should be added to the list of private facilities.

7 **Pg S-23, third paragraph, last sentence.**
The Phase 1B archaeological survey should be described more fully, including cost.

8 **Pg S-25, first paragraph.**
This paragraph should also list federal designation as a sole source aquifer.

9 **Pg S-29, fifth paragraph, last sentence.**
A permit is also needed from the NYSDEC.

10 **Pg S-30, Section S.3.12.**
This section should mention the off-site contamination.

(11) **Pg S-31, third paragraph, last sentence.**
Include more discussion on asbestos. Has a survey been done, how many buildings are effected?

(12) **Table S-6**
Water usage impacts should be included on this table.

(13) **Pg 1-1, third line.**
Typo, should read GOCO not COGO.

**Pg 1-2, fourth bullet.**
Shouldn't (about 20-30 acres) be changed to conform with the 238 acres mentioned previously in the bullet?

(14) **Pg 2-6, Section 2.3.2, fourth paragraph.**
This paragraph should state that the proposed access road would have to comply with NYS Wild, Scenic and Recreational Rivers Act regulations for "scenic" river areas.

(15) **Pg 2.13, Section 2.3.6, sixth buliet.**
As proposed, this natural area forms a 27 acre island. A connecting wildlife corridor to the east should be considered.

(16) **Pg 3.3-4, last paragraph.**
Riverhead Ambulance is located on "Osborne Avenue" not Harrison Avenue.

(17) **Pg 3.4-2, first paragraph.**
The two days and peak times (as well as the locations) studied for the traffic counts were inadequate. Exit 70 should be counted, counts should be taken on Sunday evenings, and the time on the weekday studied should be extended to at least 7:00 pm and possibly 7:30 pm to make sure the commuters are counted.

(18) **Pg 3.6-6, Site 4.**
The location of the receptor on Figure 3.6-1 does not match the description of the location. The entrance to the Swan Lake Golf Course is located at the intersection of River Road and Old River Road, not across from the site Main Gate.

(19) **Pg 3.10-1, Section 3.10.1, second paragraph.**
The dam is located on Upper Mills Pond, not Peconic Lake.

(20) **Pg 3.10-2, first paragraph.**
Swan Pond should be added to the list of ponds that retain water in "drought" years.

(21) **Same page, third paragraph, last line.**
Typo - should read three, not thee.

**Pg 3.11-15, third paragraph.**
(22) Swan Pond should be added to the list of ponds supporting fisheries.

Thank you for considering my comments and suggestions. As soon as I have completed my review of the entire DEIS, I will send additional comments.

Sincerely,

Sherry A. Johnson

Attachments:
Copies of the incomplete maps
Two news articles from the Traveler-Watchman

cc: Ray Cowen, NYSDEC
SCDHS
Riverhead Town Board

# Traffic Count Locations

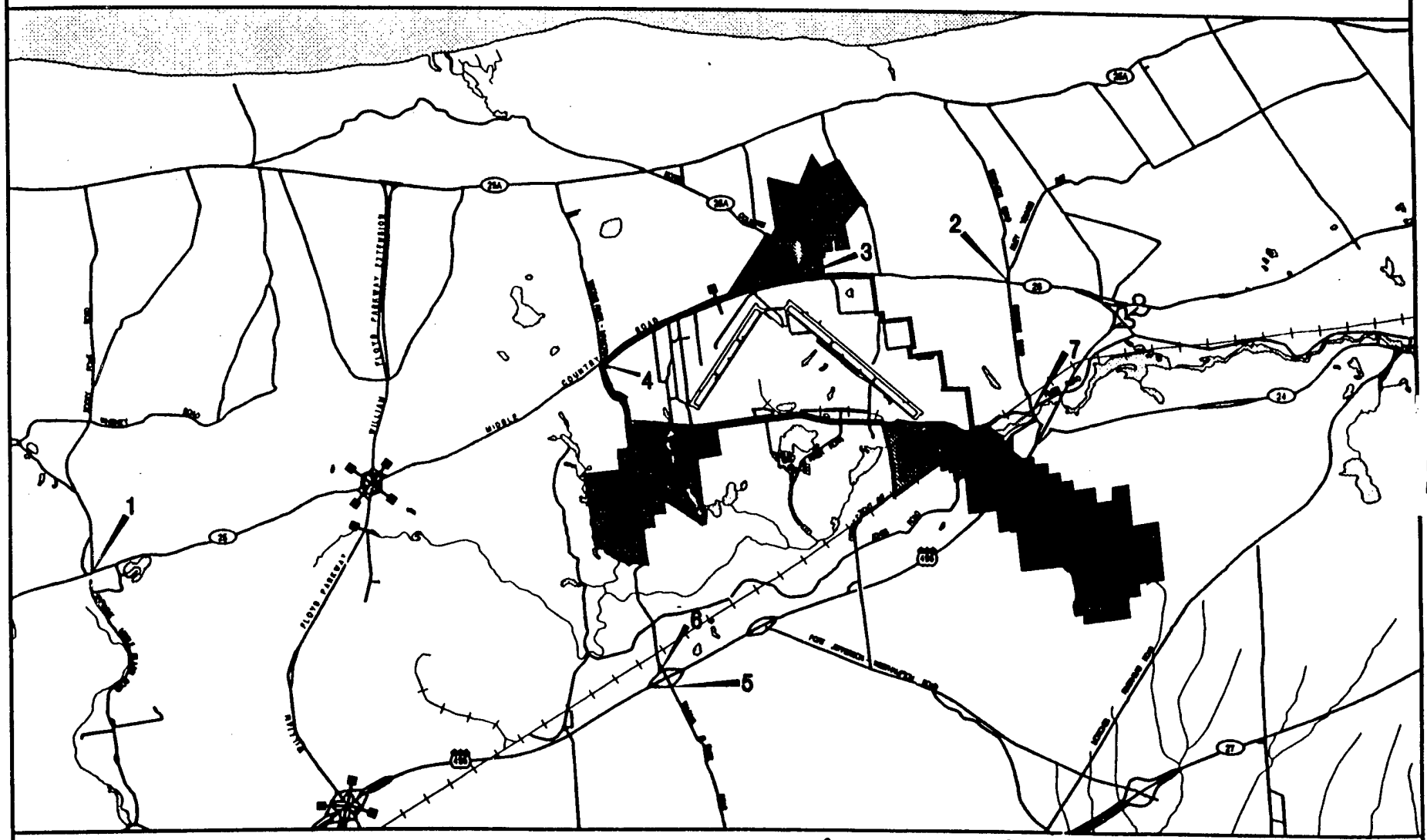


Figure 3.4-1

# Vehicle Trip Distribution

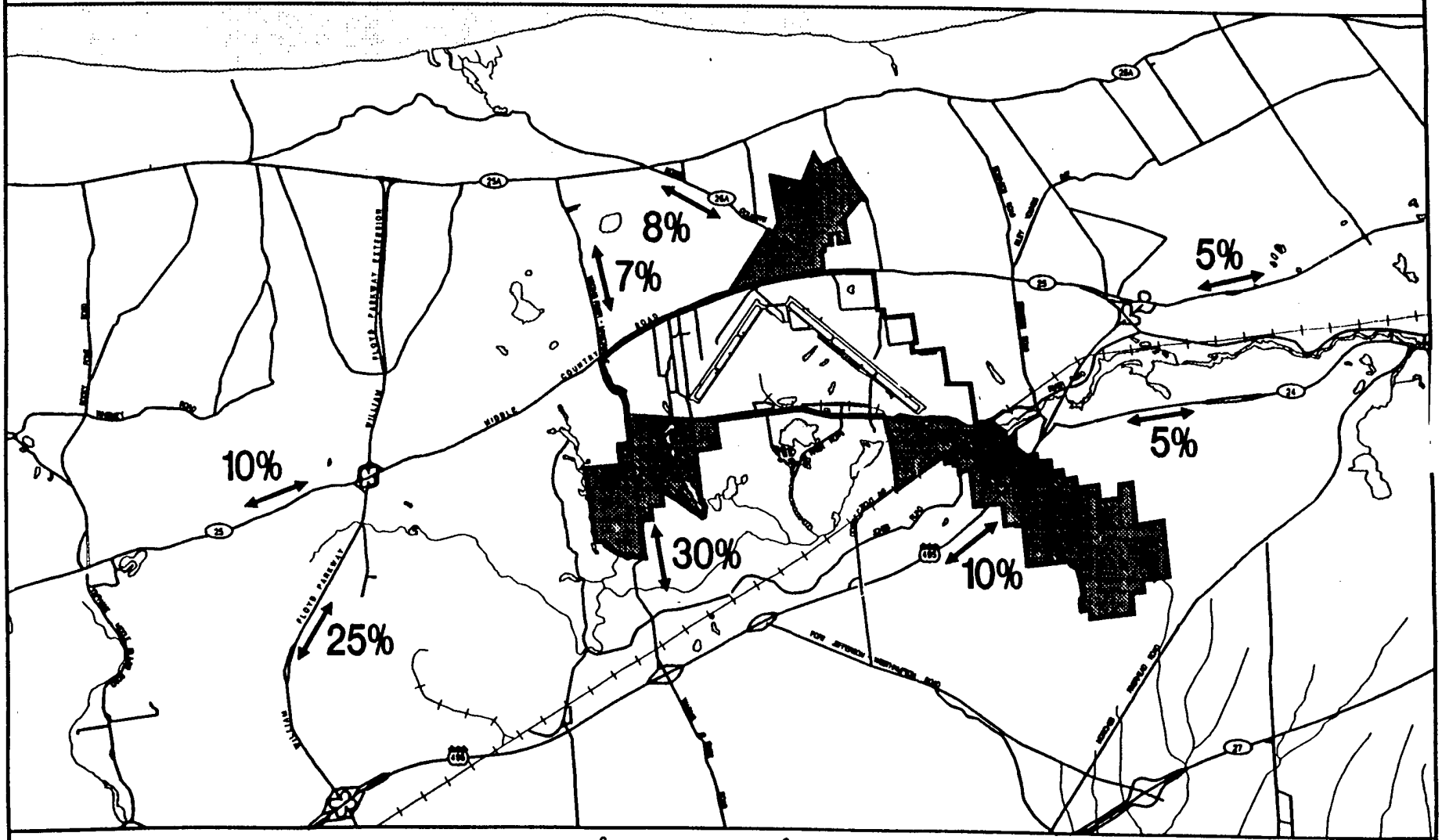


Figure 4.4-1

# Air Modeling Locations

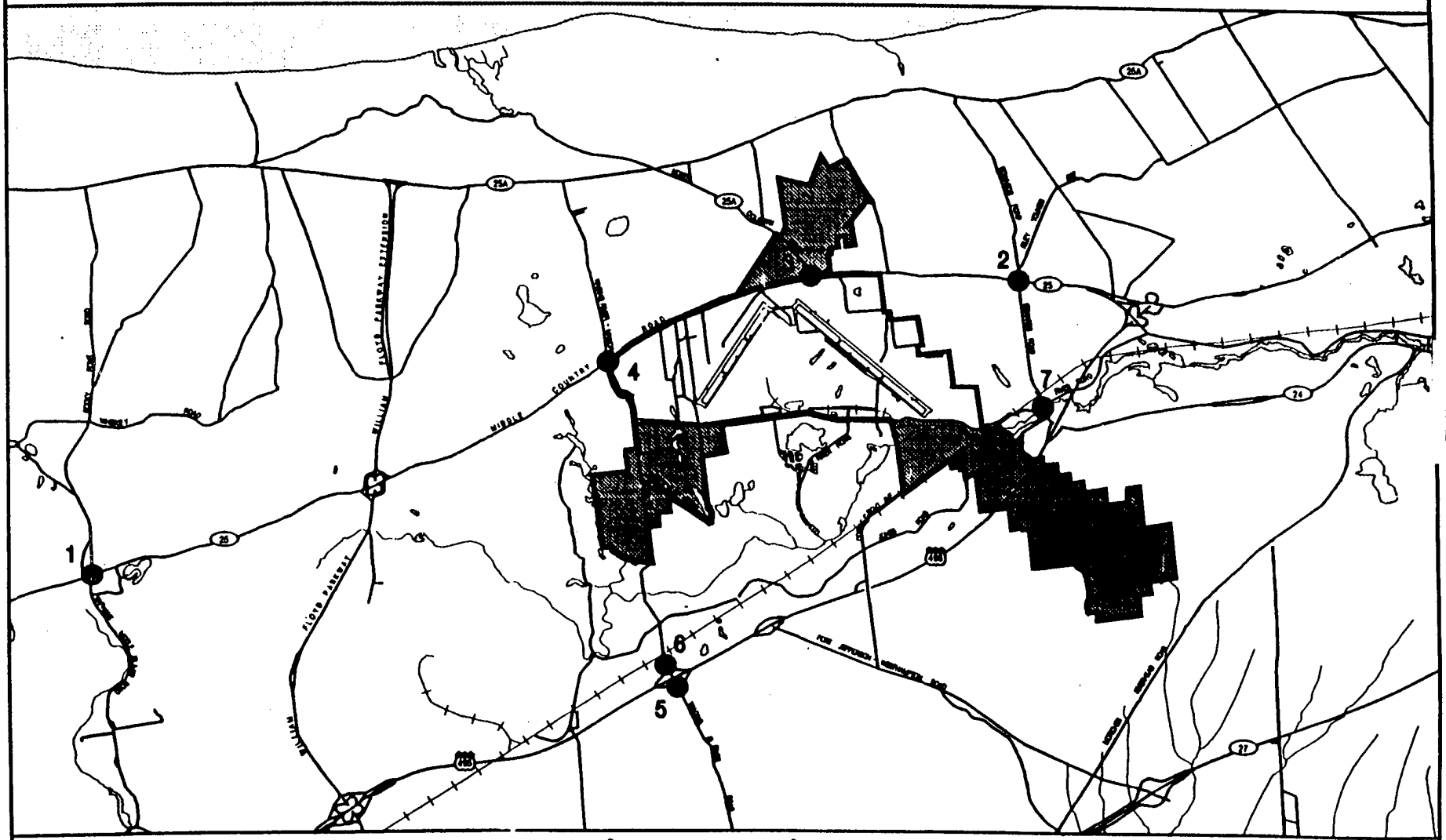


Figure 3.5-1

# Sawicki Poll Finds Jetport Opposition

In case anyone didn't notice, the Calverton jetport idea is now about as popular as the Shoreham nuclear plant.

Asking his constituents how they feel about the jetport, State Assemblyman Joseph Sawicki of Southold received reactions ranging from lukewarm support to resounding opposition.

Backing for the jetport was strongest in Southold and Shelter Island, with Riverhead ahead in antagonism.

"Without a doubt, it's clear that there is mounting opposition to this," said Sawicki, who recently released the results of his 1992 legislative questionnaire. A jetport foe, Sawicki believes an environmental review should follow the completion of the now pending economic feasibility study.

Earlier this year the assemblyman asked residents in Riverhead, Southold, Shelter Island and Brookhaven: "How do you feel about the proposed cargo airport at the current Grumman site in Calverton?"

Of those responding from Riverhead, 68 percent checked the "opposed" box with only 16 percent in favor. The results were far closer in Southold, where the opponents outnumbered the supporters by only five percentage points, 40 to 35.

In Brookhaven, the split of opponents to supporters was 44 percent to 27 percent, while on Shelter Island 58 percent are against the conversion with 35 percent in favor.

### *A New Ferry?*

The survey found support, however, for developing "another ferry site" with high speed vessels running between Long Island and Connecticut. The question did not make a direct reference to the ferry terminal proposed for Shoreham, an idea unpopular with some Shoreham and Wading River residents.

A slim majority — 54 percent — of Riverhead residents responding supported a new ferry site. In Southold, where a number of people object to the traffic moving through to the Cross Sound Ferry in Orient, 64 percent backed the additional ferry site.

The questionnaire touched on many other topics, from requiring students to recite the pledge of allegiance each day to abortion.

The pledge of allegiance suggestion was quite popular, and received wide support in each town. In Brookhaven

*Continued on Page 8*

St
the leg

## Jetport Opposition

*Continued from Page 4*

81 percent of the respondents believe it should be said at the start of each school day.

The abortion question drew a far more varied reaction. Shelter Islanders gave the only clear majority in support of abortion on demand with 61 percent. Brookhaven showed the only majority against it with 55 percent.

A 47 percent plurality in Southold favored the procedure with 40 percent opposed. In Riverhead, 47 percent said no to 42 percent yes.

But in each town a majority favored requiring parental consent for a minor to receive an abortion.

The survey also found high support — 90 percent in Southold — for prohibiting trawlers from fishing close to the beach. Even so, no such limits are expected to be approved by the State Legislature this session, the assemblyman said.

Single Copies 75¢

Thursday, March 18, 1993 P-11

the Incorporated Villages of Greenport and Westhampton Beach.

# A Resounding 'No' To East End Jetport

## *Lawmakers Hear Alternatives During Session in Riverhead*

CALVERTON — Officials and East End residents persistently preferred alternatives to operating any size cargoport at the Navy property leased by Grumman Corporation during a two-hour State Assembly hearing Friday night.

Those other uses include an agricultural and maritime research incubator program suggested by Riverhead Supervisor Joseph Janoski, a major golf and convention center, use of the facility to develop the Magnetic Levitation (MAGLEV) mono-rail, a wildlife refuge, and a museum or cultural center, Sherry Johnson, program director of the North Fork Environmental Council, told the hearing.

Riverhead Councilman James Stark also suggested encouraging Grumman and the federal government to continue building and testing the "best aircraft and spacecraft in the world," and working together with the Brookhaven National Laboratory to develop new technologies like MAGLEV.

The hearing was held at the Evans K. Griffing County Center, to give the people the opportunity to "voice their opinions on the proposed Calverton cargoport to a group of lawmakers from across the state," said Assemblyman John Behan of Montauk who attended the meeting along with Assemblyman Joseph Sawicki of Southold, both of whom have been opponents of the proposed cargoport since the concept was introduced three years ago, and lawmakers Richard Miller of Binghamton and Arnold Proskin of Albany.

### *Just Unacceptable*

Not short on opinions, East End officials and residents informed the State Legislators that a cargoport or jetport was unacceptable for Calverton or any place else on the East End.

"The majority of the Riverhead Town Board is 100 percent opposed to any conversion of the Calverton

*Continued on Page 8*

# *Town Scores Victory in Zahra Case*

## Judge Dismisses Most Charges

HAUPPAGUE — A Federal judge yesterday, Wednesday, dismissed entirely Charles Zahra's $10 million case against the Town of Southold, and reserved decision until today on the only remaining action against two building department officials.

Zahra was seeking $10.2 million against the town, and in a separate action charged that his due process was violated by Building Inspectors Victor Lessard and Curtis Horton over his efforts to renovate the Coffee Pot restaurant in Mattituck.

United States District Court Justice Leonard Wexler reserved decision on the town's motion to dismiss Zahra's $250,000 action against Lessard and Horton over the Coffee Pot. But Wexler dismissed the Mattituck builder's other contentions of selective enforcement and civil right violations against the town and the building department officials.

The federal trial started last Thursday. A jury of six women and t

*Continued on Pag*

# Jetport

*Continued from Page 1*

Navy property into any type of cargo or passenger air facility," said Stark, who spoke also for Supervisor Joseph Janoski and Councilman Victor Prusinowski who could not attend.

"With great determination, we believe in the concept of 'home rule,' which is at the very foundation of this Republic... Here, the people rule," said Stark, adding, "and the people of Riverhead and other East End communities say it is time to clip the wings of the jetport-cargoport concept."

Over the past 20 years, said Sid Bail, president of the Wading River Civic Association and member of the Long Island Regional Planning Board's citizens advisory committee, "There have been some government officials and development enthusiasts who have advocated a fourth major airport for the East End of Long Island."

About three years ago, he said, "Some of the same folks revived the project again because the time seemed right: Long Island's economy had been hard hit by the recession and we had become too dependent on defense-related industries."

As the planning panel nears the end of its $486,000 study with the presentation of a draft report released last week, "What does the big picture look like?" Bail continued. "Does the study provide us with objective findings that citizens can use as a basis for making decisions about the Calverton facility? Unfortunately, that is not the case," he said.

Bail faulted the report's Chapter Seven which, he said, "supposedly includes broad issue areas raised by the citizens advisory board, but in reality, our concerns were minimized and trivialized, while [Regional Planning director Lee] Koppelman's commentaries comprised the bulk of the section" which is "replete with distortions."

Desiree Passantino, co-director of the Calverton-based East End civic group ACT NOW, told the lawmakers "It is common knowledge that Koppelman has been a proponent of this jetport for more than 25 years, and we have always believed that the feasibility study conducted by the LIRPB would justify one flight a day to create 12,000 jobs."

Assemblyman Behan laughed and sarcastically advised the audience that Koppelman would now have to design a huge plane in order to establish 12,000 jobs with one cargo flight per day.

"In Grumman's heyday, we tolerated the noise from aircraft testing, not because we were not disturbed, but we managed with it because it was the sound of freedom overhead, not dollars for developers," said Passantino, who provided the Assemblymen with 12,426 signatures and letters opposing the cargoport proposal.

### *Supervisors: No*

On behalf of the East End Supervisors and Mayors Association, which encompasses the five towns and seven incorporated villages on the East End, "I would like to take this opportunity to express our continued opposition to the establishment of an air cargo facility of any size at the Navy-owned property in Calverton," said Southampton Supervisor Fred Thiele, Jr.

"The simple unalterable truth is that the Calverton site lies in the heart of the Long Island Pine Barrens, a state designated special groundwater protection area; it lies within the Peconic River Corridor, the Pine Barrens-Maritime Reserve, and the Peconic Estuary," said Thiele. "Our unique East End quality of life cannot endure the adverse impact that a commercial jetport would have on our traditional industries of farming, fishing, and tourism."

Carol Miskin, a member of the LIRPB advisory council, said that she does not understand "how anyone could possibly consider expanding an airport in an area where there never should have been one in the first place."

Grumman leases 3,000 of the 7,000 acres owned by the Navy and operates a 7,000-foot runway and a 10,000-foot runway, and the study suggests throughout that if someone besides government suggested to construct a two-runway airport at the Calverton site today, it could not be done without negatively impacting the environment.

Johnson said that Grumman's activities have already posed a threat to the area's environment. "The federal Department of Defense has identified nine areas in a 1992 site investigation report that have already been contaminated by existing operations," she said.

Grumman, she said, "has had to close two of its wells, but has not scheduled cleanup until 1995, while recent test wells drilled off-site revealed the presence of solvents that have migrated from previously unidentified dump sites at the facility."

Before even a reasonable alternative can be established at the facility as a joint use, "The site must be cleaned up," she said.

—Joey Mac Lellan

CALVERTON

Enviornmental Impact Statement

The TAMS/ EIS report shows the preferred Reuse Strategy as a Jet Cargo port with 400 flights per day on page 2-5, Table 2-1. The EIS states on page 2-8 paragraph 3, "Operations are assumed to occur during the nighttime hours of 10:00 pm and 7:00 am."

The TAMS report, page B-2 section B.2.1, further states:

"A key consideration in the vitality of a system of airports is the local, municipal or State sponsorship of these airports . . . The Town of Riverhead officials have recently indicated interest in becoming the public sponsor of Calverton as a mixed-use facility."

(1) Exactly which Riverhead Town officials stated interest in becoming the public sponsor?

Vincent G Villella
65 East Main St
Riverhead, N.Y. 11901

May 9th

REQUEST RESPONSE TO THIS.

ved@hearn
4/17/

Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop #82
Lester. PA 19113-2090

April 17, 1997

Dear Sirs

According to your Draft Environmental Impact Statement (DEIS) page S2, section PS2.1 " a general aviation and cargo airport is consistent with the community's long-term vision for the reuse plan."

Question - What portion of the Riverhead community wants a JET CARGO PORT at Calverton?

(1)

Question - What involvement does Suffolk County government have in the Jet Cargo Port Reuse plan?

Respectfully Submitted:

Tim Yousik
58 West Main Street
Riverhead, NY 11901

P-17

60 Triangle Lane
Calverton, NY 11933
5/8/97

Commanding Officer
Northern Division
Naval Facilities
Engineering Command
Att: Code 202 Enviormental Planning

Dear Sir:

I am writing to you about the Grumman Facility in Calverton. I attended the Riverhead Town meeting on May 7, 1997. Unfortunately I was unable to attend the Naval meeting that was held a few weeks ago regarding the Grumman site. I came home from the town meeting a bit upset. I did not realize that a reuse map for this site was even suggested by the navy. It was put up on display by the town board after most of the people attending left.

(1) I noticed that the navy's plan called for much of the existing trees to be left standing and plans for the race track were left out. Even though you put in plans for a cargo port, this plan was more appealing to me than the other reuse plans presented-cutting away the trees and putting in a theme park and raceway. Has any thought been given to how we in this community would be affected? What about the co-op lands? Many people use these lands for recreational activities. People really enjoy using our natural areas. Could these areas possibly be developed? If you listen to the race track people everything in sight would be taken down. All sorts of small businesses would be put up and it would be a blessing. Everyone would be rolling in money! I did not hear anyone mention anything about the surrounding areas being kept in their natural state. The beauty of this area will be destroyed. It will indeed be "The Black Hole" as I am hearing it being called by the race track people.

(2) What kind of study has been done on noise and air pollution? Who will pay for our roads? What will be left? Our roads are already too crowded. Bringing in people to a raceway and theme park would be a mistake.

Sincerely,
Harold & Kathy Lindstrom

Commanding Officer
Northern Division
Naval Facilities Engineering Command
ATT: Code 202, Envir Planning

| PREPARED BY | |
|---|---|
| DATE | May 4, 1997 |

Dear Sir,

Please be aware that the Calverton Community does not support an airport at the Grumman-Northrop Defense facility. (1)

When you took the farmland from the people who owned it, we were under the understanding that it was for the defense of our country and were willing to put up with noise and airplane testing.

Now that you no longer need it I believe you should respect the surrounding property owners wishes and not allow an airport on this land. We already have Suffolk County Airport.

We also request that trees in the Northeast Corner be left up as a buffer zone & not cut up into parcels & cleared. (2) There is enough open land in Grumman & along the North side of 25 that can be utilized without disturbing these trees. It should be left as a buffer zone.

We sincerely hope that when you turn over this land to an outside source, (3) you would consider putting in a covenant that addresses the above Calverton Residents deserve no less.

Thank You,
Ann M. Meloski

ATT: PG. 2

Lem M. Melahe.
149 South Path Rd
Calverton, N.Y.

Will Melahe

ATTACHED TO Letter Dated May 4, 1997

Commanding Officer
Northern Division
Naval Facilities Engineering Command
ATT: Code 202, Envir Planning

| PREPARED BY | Ann M. Mvoski |
|---|---|
| DATE | May 4, 1997 |

## Residents Signing This Letter

1 Ann M. Meloski 149 South Path Rd. Calverton, N.Y.
2 Will Meloski's Poultry Farm Rt 25 Calverton, N.Y.
3 D. Casper 159 JAKES LA. CALVERTON N.Y.
CODE 202 ENVIRON PLANNING AT Grumman
4 AL Casper 159 JAKES LANE CALVERTON N.Y.
5 James Langlois 1568 Middle Country Rd Calverton, NY 11933
6 RITA HODUN 178 MIDDLE ROAD CALVERTON NY 11933
7 Lou S Pleasant [illegible]
8 [illegible]
9 Kathy Lindstrom 60 Triangle Lane, Baiting Hollow
10 Harold Lindstrom 60 Triangle Lane Baiting Hollow
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# ACRONYMS

| | |
|---|---|
| ACM | Asbestos-Containing Material |
| ADSB | Aircraft Development Support Building |
| AOC | Area of Concern |
| AST | Above Ground Storage Tank |
| ASV | Annual Service Volumes |
| ATP | Aircraft Technical Publishers |
| ATR | Automatic Traffic Recorder |
| AV | Assessed Value |
| AVO | Average Vehicle Occupancy |
| AWSACS | Air Warning Support and Control Systems |
| BEA | Bureau of Economic Analysis |
| Bldg(s) | Building(s) |
| BLS | Bureau of Labor Statistics |
| BMP | Best Management Practices |
| BP | Before Present |
| BRAC | Base Closure and Realignment Act |
| BTCAMP | Brown Tide Comprehensive Assessment and Management Program |
| CAA | Clean Air Act |
| CAAA | Clean Air Act Amendments of 1990 |
| CART | Championship Auto Racing Teams |
| CCMP | Comprehensive Conservation and Management Plan |
| CDA | Community Development Agency |
| CEAs | Critical Environmental Areas |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERFA | Community Environmental Response Facilitation Act |
| CGA | Compatible Growth Area |
| CFR | Code of Federal Regulations |
| CLEAN | Comprehensive Long-Term Environmental Action Navy |
| CO | Carbon Monoxide |
| COE | Corps of Engineers (US Army) |
| CPA | Core Preservation Area |
| CPBJP&PC | Comprehensive Pine Barrens Joint Planning and Policy Commission |
| CWA | Clean Water Act |
| dB | Decibel |
| dBA | Decibel (A Scale) |
| DEIS | Draft Environmental Impact Statement |
| DNL | Day-night Average Sound Level |
| DoD | Department of Defense |

| | |
|---|---|
| EB | Eastbound |
| EBS | Environmental Baseline Survey |
| ECE | Environmental Compliance Evaluation |
| ECL | Environmental Conservation Law |
| EDA | Economic Development Administration |
| EIS | Environmental Impact Statement |
| EMS | Emergency Medical Services |
| EO | Executive Order |
| EPNL | Effective Perceived Noise Level |
| EW | Electronic Warfare |
| FAA | Federal Aviation Administration |
| FBO | Fixed Base Operators |
| FEIS | Final Environmental Impact Statement |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FIC | Federal Interagency Committee |
| FOSL | Finding of Suitability to Lease |
| FOST | Finding of Suitability to Transfer |
| FS | Feasibility Study |
| FTZ | Foreign Trade Zones |
| FY | Fiscal Year |
| GA | General Aviation |
| GIS | Geographic Information System |
| GOCO | Government Owned Contractor Operated |
| gpm | Gallons Per Minute |
| HCM | Highway Capacity Manual |
| HS | High School |
| HR&A | Hamilton, Rabinovitz & Alschuler, Inc. |
| HWSA | Hazardous and Solid Waste Amendment |
| HUD | Department of Housing and Urban Development |
| IAS | Initial Assessment Study |
| ICSP | Industrial Communities Site Program |
| ILS/MLS | Instrument Landing System/Microwave Landing System |
| IMSA | International Motorsports Association |
| INM | Integrated Noise Model |
| IR | Installation Restoration |
| ITE | Institute of Transportation Engineers |
| IWTF | Industrial Waste Treatment Facility |
| kv | Kilovolts |
| kw | Kilowatts |

| | |
|---|---|
| $L_{dn}$ | Day-Night Sound Level |
| $L_{eq}$ | Equivalent Sound Level |
| LBP | Lead-based Paint |
| LIE | Long Island Expressway |
| LILCO | Long Island Lighting Company |
| LIRPB | Long Island Regional Planning Board |
| LIRR | Long Island Railroad |
| LOS | Level of Service |
| MOA | Memorandum of Agreement |
| mph | Miles Per Hour |
| NAAQS | National Ambient Air Quality Standards |
| NAMU | Naval Aircraft Modification Unit |
| NAVFAC | Northern Division Naval Facilities |
| NAVFACINST | Naval Facilities Instruction |
| NB | Northbound |
| NEESA | Naval Energy and Environmental Support Activity |
| NEP | National Estuary Program |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| $NO_2$ | Nitrogen Dioxide |
| $NO_x$ | Nitrogen Oxides |
| NOI | Notice of Intent |
| NORTHNAVFACENGCOM | Northern Division Naval Facilities Engineering Command |
| NPDES | National Pollutant Discharge Elimination System |
| NUS | NUS Corporation |
| NWI | National Wetlands Inventory |
| NWIRP | Naval Weapons Industrial Reserve Plant |
| NYNHP | New York Natural Heritage Program |
| NYS | New York State |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOT | New York State Department of Transportation |
| NYSPDES | New York State Pollutant Discharge Elimination System |
| $O_3$ | Ozone |
| O&M | Operations and Maintenance |
| OPRHP | Office of Parks Recreation and Historic Preservation |
| OU | Operable Unit |

| | |
|---|---|
| PA | Preliminary Assessment |
| PASNY | Power Authority, State of New York |
| Pb | Lead |
| PBRC | Pine Barrens Review Commission |
| PCB | Polychlorinated Biphenyl |
| PDD | Planned Development District |
| PEM | Palustrine Emergent Wetlands |
| PEP | Peconic Estuary Program |
| PL | Public Law |
| PM | Particulate Matter |
| ppm | Parts per Million |
| PUD | Planned Unit Development |
| RA | Remedial Action |
| RASP | Regional Aviation System Plans |
| RFA | RCRA Facilities Assessment |
| RFI | RCRA Facility Investigation |
| RCRA | Resource Conservation and Recovery Act |
| RI/FS | Remedial Investigation/Feasibility Study |
| RIMS | Regional Input/Output Model System |
| RONA | Record of Non-applicability |
| ROD | Record of Decision |
| RDT&E | Research, Development, Test, and Evaluation |
| RV | Recreational Vehicle |
| RWD | Riverhead Water District |
| SB | Southbound |
| SCCA | Sports Car Club of America |
| SCDHS | Suffolk County Department of Health Services |
| SCWA | Suffolk County Water Authority |
| SDWA | Safe Drinking Water Act |
| SEL | Sound Exposure Level |
| SEQRA | State Environmental Quality Review Act |
| SGPA | Special Groundwater Protection Area |
| SHPO | State Historic Preservation Office |
| SI | Site Investigation |
| SIP | State Implementation Program |
| $SO_2$ | Sulfur Dioxide |
| STP | Sewage Treatment Plant |
| sq ft | Square Feet |
| sq m | Square Meters |
| SVOC | Semi-volatile Organics |
| SWMU | Solid Waste Management Unit |

| | |
|---|---|
| TAMS | TAMS Consultants, Inc. |
| TDR | Transfer of Development |
| TSCA | Toxic Substances Control Act |
| TIF | Tax Increment Financing Districts |
| tpy | Tons Per Year |
| TSD | Treatment, Storage, and Disposal |
| TSP | Total Suspended Particulates |
| USDA | United States Department of Agriculture |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USHUD | United States Department of Housing and Urban Development |
| UST | Underground Storage Tank |
| VMS | Variable Message Signs |
| VOC | Volatile Organic Chemicals |
| VORTAC | Visual Omnodirection Range Tactical Air Control |
| vph | Vehicles Per Hour |
| WB | Westbound |

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Office of Economic Adjustment
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Office of Intergovernmental Relations
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Division of Acquisition & Property Management
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Dr. Robert Holmes, Superintendent
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Chief, Office of Water Resources
Suffolk County Department of Health Services
225 Rabro Drive East
Hauppauge, NY 11788-4290

Mr. Stephen Jones, Director
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Riverhead, NY 11901-2596

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Yaphank, NY 11980

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Suffolk Community College
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Suffolk County Legislator
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Special Interest Groups

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PO Box 429
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Mr. Dennis Macchio
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12 West Main Street
Riverhead, NY 11901-2596

Act Now! Inc.
PO Box 879
Wading River, NY 11792

Dr. Stuart Lowrie
The Nature Conservancy
250 Lawrence Hill Road
Cold Spring Harbor, NY 11724

Environmental Business Publications
6 Seville Drive
Clifton Park, NY 12065

Greater Calverton Civic Association
PO Box 33
Calverton, NY 11933

Walter M. Dunn, Jr.
Dunn Engineering Associates
Consulting Engineers
66 Main Street
Westhampton Beach, NY 11978

Wading River Civic Association
16 Hill Street
Wading River, NY 11792

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Allen M. Smith

Ann M. Miloski

James R. Golden

Mr. & Mrs. J. H. Guthy

Clete Galasso

Kathy Lindstrom

R. A. Leuthardt

Rita Hodurn

Bill Goins

Carolyn Thorenz

Daniel L. Morris

Ellen Rajdl

C & R Brent

Patricia L. Hagen

Desiree Passantino

Tony Simione

Timothy G. Yousik

Carlos Jimenez

Joseph Velazquez

D. Casper

Richard Quick

Roy McDonnell

Vincent Villella

John M. Armentano

Bartlett L. Sargent

Allan M. Smith

Fred Bennet

# APPENDIX B

# CORRESPONDENCE

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wildlife Resources Center
700 Troy-Schenectady Road
Latham, NY 12110-2400

John P. Cahill
Acting Commissioner

(518) 783-3932

June 11, 1997

Marc J. Lawlor
TAMS Consultants Inc.
The TAMS Building
655 Third Avenue
New York, NY 10017

Dear Mr. Lawlor:

We have reviewed the New York Natural Heritage Program files with respect to your request for biological information concerning the former Grumman property, as indicated on your enclosed map, located in the Town of Riverhead, Suffolk County, New York State.

Enclosed is a computer printout covering the area you requested to be reviewed by our staff. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare animals and/or significant wildlife habitats. You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this proposed project is still active one year from now we recommend that you contact us again so that we may update this response.

Sincerely,

Nicholas Conrad

Nicholas B. Conrad
Information Services
NY Natural Heritage Program

Encs.
cc: Reg. 1, Wildlife Mgr.

**RECORD OF NON-APPLICABILITY**
**DISPOSAL AND REUSE OF THE NAVAL WEAPONS INDUSTRIAL RESERVE PLANT**
**CALVERTON, NEW YORK**

The Defense Authorization Act for Fiscal Year 1995 authorizes the Secretary of the Navy to convey the property at the Naval Weapons Industrial Reserve Plant (NWIRP), Calverton NY directly to the Community Development Agency of the Town of Riverhead, New York. Any part of the facility not conveyed to the Town would be disposed of by the General Services Administration (GSA) in accordance with the Federal Property and Administration Services Act of 1944. Therefore, the proposed action is the disposal and reuse of the NWIRP pursuant to the redevelopment/reuse plan prepared for the Town of Riverhead Joint Planning and Redevelopment Commission.

In accordance with 40 CFR 51.853,

(1) Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of transfer; and

(2) actions (or portions thereof) associated with transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement where the delivery of the deed is required to occur promptly after a specific reasonable condition is met and where the Federal agency does not retain continuing authority to control emissions with the lands, facilities, title, or real properties are clearly *de minimis* with regard to the General Conformity Rule of the Clean Air Act.

Accordingly, it is my determination that the proposed action conforms to the applicable State Implementation Plan (SIP) and is exempt from the conformity requirements of the Clean Air Act General Conformity Rule.

9/6/96
Date

S. R. BEATTIE
Capt., CEC, USN

# APPENDIX C

# TRAFFIC ANALYSES

Table C-1

Summary of LOS Analysis - Future Baseline Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Rocky Point Road (Location 1) | | | | | | | | | | | | |
| EB L | 71 | 0.553 | 19.5 | C | 149 | 1.059 | 100.3 | F | 177 | 1.368 | * | F |
| EB TR | 1343 | 1.204 | * | F | 1761 | 1.645 | * | F | 1855 | 1.616 | * | F |
| WB L | 380 | 1.798 | * | F | 232 | 1.079 | * | F | 236 | 1.118 | * | F |
| WB TR | 991 | 0.727 | 21.6 | C | 1648 | 1.372 | * | F | 1652 | 1.218 | * | F |
| NB L | 358 | 1.495 | * | F | 564 | 2.003 | * | F | 618 | 2.582 | * | F |
| NB TR | 532 | 1.089 | 86.7 | F | 1178 | 1.761 | * | F | 668 | 1.380 | * | F |
| SB L | 117 | 0.824 | 45.0 | E | 223 | 1.529 | * | F | 256 | 1.797 | * | F |
| SB TR | 789 | 1.759 | * | F | 534 | 0.965 | 51.7 | E | 445 | 1.024 | 72.1 | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | | | | |
| EB LTR | 1483 | 2.076 | * | F | 1342 | 1.930 | * | F | 1430 | 1.971 | * | F |
| WB LTR | 819 | 1.882 | * | F | 1625 | 2.892 | * | F | 1359 | 2.891 | * | F |
| NB LTR | 316 | 1.507 | * | F | 699 | 2.926 | * | F | 404 | 1.573 | * | F |
| SB LTR | 297 | 0.862 | 24.5 | C | 284 | 0.762 | 16.2 | C | 279 | 0.957 | 40.6 | E |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | | | | |
| EB LT | 750 | 0.662 | 6.4 | B | 849 | 1.233 | * | F | 944 | 0.951 | 20.0 | C |
| WB T | 586 | 0.596 | 5.8 | B | 1072 | 1.126 | 75.4 | F | 862 | 0.878 | 12.9 | B |
| WB R | 330 | 0.216 | 0.0 | A | 858 | 0.580 | 0.4 | A | 518 | 0.339 | 0.0 | A |
| SB L | 689 | 1.431 | * | F | 369 | 0.822 | 18.9 | C | 471 | 0.978 | 37.3 | D |
| SB R | 17 | 0.035 | 9.2 | B | 15 | 0.033 | 9.1 | B | 11 | 0.023 | 9.1 | B |
| Overall: | | | * | F | | | * | F | | | 17.1 | C |

Table C-1(continued)

Summary of LOS Analysis - Future Baseline Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | | | | |
| EB L | 71 | 0.692 | 17.0 | C | 142 | 1.300 | * | F | 114 | 1.108 | 116.9 | F |
| EB TR | 337 | 0.414 | 5.6 | B | 517 | 0.596 | 6.9 | B | 909 | 1.118 | 73.5 | F |
| WB L | 26 | 0.095 | 4.4 | A | 65 | 0.458 | 7.0 | B | 59 | 0.560 | 10.0 | B |
| WB TR | 591 | 0.728 | 8.8 | B | 976 | 1.127 | 77.8 | F | 915 | 1.126 | 77.4 | F |
| NB LT | 448 | 0.919 | 26.0 | D | 505 | 1.285 | * | F | 191 | 0.495 | 10.2 | B |
| NB R | 127 | 0.269 | 8.7 | B | 82 | 0.169 | 8.3 | B | 66 | 0.139 | 8.2 | B |
| SB LTR | 291 | 2.430 | * | F | 231 | 1.247 | * | F | 242 | 0.523 | 10.4 | B |
| Overall: | | | * | F | | | * | F | | | 62.9 | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | | | | | | | | | | | | |
| EB LR | 197 | | 5.7 | B | 529 | | 8.4 | B | 292 | | 6.6 | B |
| NB TR | 621 | | 5.7 | B | 279 | | 8.4 | B | 392 | | 9.0 | B |
| SB L | 20 | | 4.7 | A | 19 | | 3.0 | A | 30 | | 3.5 | A |
| SB T | 139 | | | A | 247 | | | A | 161 | | | A |
| Overall: | | | 1.3 | A | | | 4.1 | A | | | 2.3 | A |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | | | | | | | | | | | | |
| WB LR | 49 | | 14.6 | C | 136 | | 12.3 | C | 104 | | 11.6 | C |
| NB L | 412 | | 3.9 | A | 188 | | 3.1 | A | 224 | | 3.1 | A |
| NB T | 125 | | | A | 205 | | | A | 195 | | | A |
| SB TR | 175 | | | A | 182 | | | A | 170 | | | A |
| Overall: | | | 2.9 | A | | | 3.0 | A | | | 2.6 | A |

Table C-1(continued)

Summary of LOS Analysis - Future Baseline Conditions

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Edwards Avenue and River Road (Location 7) | | | | | | | | | | | | |
| EB LT | 28 | | 9.6 | B | 22 | | 13.5 | C | 23 | | 8.0 | B |
| EB R | 69 | | 9.6 | B | 37 | | 13.5 | C | 32 | | 8.0 | B |
| WB LTR | 48 | | 13.9 | C | 51 | | 29.9 | D | 76 | | 11.8 | C |
| NB LT | 441 | | 3.9 | A | 707 | | 4.2 | A | 416 | | 3.3 | A |
| NB R | 39 | | | A | 36 | | | A | 39 | | | A |
| SB LTR | 553 | | 3.4 | A | 568 | | 4.3 | A | 405 | | 3.3 | A |
| Overall: | | | 1.4 | A | | | 2 | A | | | 1.5 | A |

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn; T - Through. *Indicates an approach expected to operate at a v/c ratio greater than 1/peak hour factor. In such cases, the stop delay is not calculated, but LOS is "F".

Table C-2

Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Rocky Point Road (Location 1) | | | | | | | | | | | | |
| EB L | 71 | 0.553 | 19.9 | C | 149 | 1.059 | 100.3 | F | 177 | 1.368 | * | F |
| EB TR | 1543 | 1.373 | * | F | 1992 | 1.853 | * | F | 2105 | 1.827 | * | F |
| WB L | 380 | 1.798 | * | F | 232 | 1.079 | * | F | 236 | 1.118 | * | F |
| WB TR | 1044 | 0.766 | 22.5 | C | 1853 | 1.540 | * | F | 1993 | 1.465 | * | F |
| NB L | 358 | 1.495 | * | F | 564 | 2.003 | * | F | 618 | 2.582 | * | F |
| NB TR | 532 | 1.089 | 86.7 | F | 1178 | 1.761 | * | F | 667 | 1.376 | * | F |
| SB L | 117 | 0.824 | 45.0 | E | 223 | 1.529 | * | F | 256 | 1.797 | * | F |
| SB TR | 789 | 1.759 | * | F | 534 | 0.965 | 51.7 | E | 445 | 1.024 | 72.1 | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | | | | |
| EB LTR | 1505 | 2.102 | * | F | 1447 | 2.051 | * | F | 1600 | 2.166 | * | F |
| WB LTR | 919 | 2.025 | * | F | 1740 | 3.041 | * | F | 1484 | 3.089 | * | F |
| NB LTR | 316 | 1.507 | * | F | 699 | 2.926 | * | F | 404 | 1.573 | * | F |
| SB LTR | 297 | 0.862 | 24.5 | C | 284 | 0.762 | 16.2 | C | 279 | 0.957 | 40.6 | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | | | | |
| EB LT | 792 | 0.864 | 12.5 | B | 1013 | >2.0 | * | F | 1217 | >2.0 | * | F |
| WB T | 586 | 0.596 | 5.8 | B | 1072 | 1.126 | 75.4 | F | 862 | 0.878 | 12.9 | B |
| WB R | 330 | 0.216 | 0.0 | A | 858 | 0.580 | 0.4 | A | 518 | 0.339 | 0.0 | A |
| SB L | 689 | 1.431 | * | F | 369 | 0.822 | 18.9 | C | 471 | 0.978 | 37.3 | D |
| SB R | 177 | 0.363 | 10.4 | B | 200 | 0.440 | 10.9 | B | 211 | 0.433 | 10.8 | B |
| Overall: | | | * | F | | | * | F | | | * | F |

Table C-2 (continued)

Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | | | | |
| EB L | 71 | 0.692 | 17.0 | C | 142 | 1.300 | * | F | 114 | 1.108 | 116.9 | F |
| EB TR | 1038 | 1.267 | * | F | 1325 | 1.522 | * | F | 1783 | 2.183 | * | F |
| WB L | 79 | 0.747 | 20.8 | C | 270 | 2.388 | * | F | 400 | 3.781 | * | F |
| WB TR | 814 | 1.008 | 33.1 | D | 1839 | 2.139 | * | F | 2348 | 2.923 | * | F |
| NB LT | 448 | 1.264 | * | F | 505 | 2.195 | * | F | 191 | 0.836 | 24.8 | C |
| NB R | 327 | 0.691 | 12.9 | B | 313 | 0.647 | 12.0 | B | 316 | 0.668 | 12.4 | B |
| SB LTR | 431 | 4.937 | * | F | 392 | 4.593 | * | F | 417 | 1.341 | * | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | | | | | | | | | | | | |
| EB LR | 697 | | * | F | 1106 | | * | F | 791 | | * | F |
| NB TR | 721 | | | A | 394 | | | A | 517 | | | A |
| SB L | 20 | | 5.3 | B | 19 | | 3.5 | A | 30 | | 4.1 | A |
| SB T | 139 | | | A | 247 | | | A | 161 | | | A |
| Overall: | | | 680.0 | F | | | 1137.6 | F | | | 699.7 | F |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | | | | | | | | | | | | |
| WB LR | 49 | | 53.1 | F | 136 | | 579.7 | F | 104 | | * | F |
| NB L | 412 | | 5.2 | B | 188 | | 8.6 | B | 224 | | 23.8 | D |
| NB T | 625 | | | A | 782 | | | A | 780 | | | A |
| SB TR | 334 | | | A | 798 | | | A | 1193 | | | A |
| Overall: | | | 3.3 | A | | | 41.6 | E | | | 82.7 | F |

Table C- 2 (continued)

Summary of LOS Analysis - Calverton Enterprise Park Reuse Plan

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Edwards Avenue and River Road (Location 7) | | | | | | | | | | | | |
| EB LT | 28 | | 22.2 | D | 22 | | 863.4 | F | 23 | | 14.6 | C |
| EB R | 96 | | 22.2 | D | 140 | | 863.4 | F | 202 | | 14.6 | C |
| WB LTR | 48 | | 53.1 | F | 51 | | * | F | 1876 | | 146.2 | F |
| NB LT | 741 | | 6.0 | B | 1053 | | 7.7 | B | 791 | | 5.2 | B |
| NB R | 39 | | | A | 36 | | | A | 39 | | | A |
| SB LTR | 553 | | 3.4 | A | 568 | | 4.3 | A | 405 | | 3.3 | A |
| Overall: | | | 4.8 | A | | | 585 | F | | | 10.8 | C |

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn; T - Through. *Indicates an approach expected to operate at a v/c ratio greater than 1/peak hour factor. In such cases, the stop delay is not calculated, but LOS is "F".

Table C-3

Summary of LOS Analysis - Enterprise Park and Raceway

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Rocky Point Road (Location 1) | | | | | | | | | | | | |
| EB L | 71 | 0.553 | 19.7 | C | 149 | 1.059 | 100.3 | F | 177 | 1.368 | * | F |
| EB TR | 1490 | 1.328 | * | F | 1966 | 1.830 | * | F | 2336 | 2.021 | * | F |
| WB L | 380 | 1.798 | * | F | 232 | 1.079 | * | F | 236 | 1.118 | * | F |
| WB TR | 1017 | 0.747 | 22.0 | C | 1815 | 1.508 | * | F | 2017 | 1.483 | * | F |
| NB L | 358 | 1.495 | * | F | 564 | 2.003 | * | F | 618 | 2.582 | * | F |
| NB TR | 532 | 1.089 | 86.7 | F | 1178 | 1.761 | * | F | 668 | 1.380 | * | F |
| SB L | 117 | 0.824 | 45.0 | E | 223 | 1.529 | * | F | 256 | 1.797 | * | F |
| SB TR | 789 | 1.759 | * | F | 534 | 0.965 | 51.7 | E | 445 | 1.024 | 72.1 | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | | | | |
| EB LTR | 1496 | 2.092 | * | F | 1426 | 2.026 | * | F | 1613 | 2.170 | * | F |
| WB LTR | 893 | 1.989 | * | F | 1728 | 3.026 | * | F | 1600 | 3.242 | * | F |
| NB LTR | 316 | 1.507 | * | F | 699 | 2.926 | * | F | 404 | 1.573 | * | F |
| SB LTR | 297 | 0.862 | 24.5 | C | 284 | 0.762 | 16.2 | C | 279 | 0.957 | 40.6 | E |
| Overall: | | | * | F | | | | | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | | | | |
| EB LT | 771 | 0.749 | 8.0 | B | 983 | 1.427 | * | F | 1236 | >2.000 | * | F |
| WB T | 586 | 0.596 | 5.8 | B | 1072 | 1.126 | 75.4 | F | 862 | 0.878 | 12.9 | B |
| WB R | 330 | 0.216 | 0.0 | A | 858 | 0.580 | 0.4 | A | 518 | 0.339 | 0.0 | A |
| SB L | 689 | 1.431 | * | F | 369 | 0.822 | 18.9 | C | 471 | 0.978 | 37.3 | D |
| SB R | 135 | 0.276 | 10.0 | B | 179 | 0.394 | 10.6 | B | 396 | 0.811 | 18.2 | C |
| Overall: | | | * | F | | | * | F | | | * | F |

Table C-3 (continued)

Summary of LOS Analysis - Enterprise Park and Raceway

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | | | | |
| EB L | 71 | 0.692 | 17.0 | C | 142 | 1.300 | * | F | 114 | 1.108 | 116.9 | F |
| EB TR | 852 | 1.041 | 42.7 | E | 1235 | 1.420 | * | F | 2592 | 3.170 | * | F |
| WB L | 52 | 0.490 | 8.1 | B | 232 | 2.054 | * | F | 424 | 4.007 | * | F |
| WB TR | 700 | 0.866 | 13.7 | B | 1678 | 1.951 | * | F | 2449 | 3.051 | * | F |
| NB LT | 448 | 1.157 | 107.6 | F | 505 | 2.052 | * | F | 191 | 1.326 | * | F |
| NB R | 174 | 0.367 | 9.2 | B | 287 | 0.593 | 11.2 | B | 547 | 1.156 | 103.7 | F |
| SB LTR | 394 | 4.620 | * | F | 375 | 4.450 | * | F | 579 | 2.000 | * | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | | | | | | | | | | | | |
| EB LR | 565 | | 730.0 | F | 1041 | | * | F | 1494 | | * | F |
| NB TR | 695 | | | A | 382 | | | A | 633 | | | A |
| SB L | 20 | | 5.1 | B | 19 | | 3.4 | A | 30 | | 4.8 | A |
| SB T | 139 | | | A | 247 | | | A | 161 | | | A |
| Overall: | | | 285.7 | F | | | 918.1 | F | | | 3754.0 | F |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | | | | | | | | | | | | |
| WB LR | 49 | | 33.2 | E | 136 | | 197.1 | F | 104 | | * | F |
| NB L | 412 | | 4.5 | A | 188 | | 5.9 | B | 224 | | 30.3 | E |
| NB T | 493 | | | A | 717 | | | A | 1483 | | | A |
| SB TR | 252 | | | A | 583 | | | A | 1265 | | | A |
| Overall: | | | 2.8 | A | | | 16.9 | C | | | 348.1 | F |

Table C-3 (continued)

Summary of LOS Analysis - Enterprise Park and Raceway

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Edwards Avenue and River Road (Location 7) | | | | | | | | | | | | |
| EB LT | 28 | | 12.5 | C | 22 | | 27.4 | D | 23 | | 7.7 | B |
| EB R | 69 | | 12.5 | C | 121 | | 27.4 | D | 215 | | 7.7 | B |
| WB LTR | 48 | | 20.7 | D | 51 | | 355.1 | F | 76 | | 18.4 | C |
| NB LT | 563 | | 4.5 | A | 915 | | 5.8 | B | 416 | | 3.3 | A |
| NB R | 39 | | | A | 36 | | | A | 39 | | | A |
| SB LTR | 553 | | 3.4 | A | 568 | | 4.3 | A | 405 | | 3.3 | A |
| Overall: | | | 2.2 | A | | | 13.9 | C | | | 2.9 | A |

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn; T - Through. *Indicates an approach expected to operate at a v/c ratio greater than 1/peak hour factor. In such cases, the stop delay is not calculated, but LOS is "F".

Table C-4

Summary of LOS Analysis - Peconic Village

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Rocky Point Road (Location 1) | | | | | | | | | | | | |
| EB L | 71 | 0.553 | 19.8 | C | 149 | 1.059 | 100.3 | F | 177 | 1.368 | * | F |
| EB TR | 1458 | 1.302 | * | F | 1833 | 1.711 | * | F | 1921 | 1.672 | * | F |
| WB L | 380 | 1.798 | * | F | 232 | 1.079 | * | F | 236 | 1.118 | * | F |
| WB TR | 1036 | 0.761 | 22.4 | C | 1753 | 1.458 | * | F | 1714 | 1.264 | * | F |
| NB L | 358 | 1.495 | * | F | 564 | 2.003 | * | F | 618 | 2.582 | * | F |
| NB TR | 532 | 1.089 | 86.7 | F | 1178 | 1.761 | * | F | 668 | 1.380 | * | F |
| SB L | 117 | 0.824 | 45.0 | E | 223 | 1.529 | * | F | 256 | 1.797 | * | F |
| SB TR | 789 | 1.759 | * | F | 534 | 0.965 | 51.7 | E | 445 | 1.024 | 72.1 | F |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and Edwards Avenue (Location 2) | | | | | | | | | | | | |
| EB LTR | 1506 | 2.104 | * | F | 1394 | 1.990 | * | F | 1461 | 2.004 | * | F |
| WB LTR | 877 | 1.967 | * | F | 1661 | 2.941 | * | F | 1392 | 2.940 | * | F |
| NB LTR | 316 | 1.507 | * | F | 699 | 2.926 | * | F | 404 | 1.573 | * | F |
| SB LTR | 297 | 0.862 | 24.5 | C | 284 | 0.762 | 16.2 | C | 279 | 0.957 | 40.6 | E |
| Overall: | | | * | F | | | * | F | | | * | F |
| Middle Country Road and North Country Road (Location 3) | | | | | | | | | | | | |
| EB LT | 786 | 0.827 | 10.5 | B | 933 | >2.000 | * | F | 994 | >2.000 | * | F |
| WB T | 586 | 0.596 | 5.8 | B | 1072 | 1.126 | 75.4 | F | 862 | 0.878 | 12.9 | B |
| WB R | 330 | 0.216 | 0.0 | A | 858 | 0.580 | 0.4 | A | 518 | 0.339 | 0.0 | A |
| SB L | 689 | 1.431 | * | F | 369 | 0.822 | 18.9 | C | 471 | 0.978 | 37.3 | D |
| SB R | 109 | 0.224 | 9.8 | B | 72 | 0.158 | 9.5 | B | 64 | 0.132 | 9.5 | B |
| Overall: | | | * | F | | | * | F | | | * | F |

Table C-4 (continued)

Summary of LOS Analysis - Peconic Village

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Middle Country Road and Manorville Road (Location 4) | | | | | | | | | | | | |
| EB L | 71 | 0.692 | 17.0 | C | 142 | 1.300 | * | F | 114 | 1.108 | 116.9 | F |
| EB TR | 740 | 0.904 | 16.6 | C | 768 | 0.884 | 15.0 | B | 1140 | 1.400 | * | F |
| WB L | 71 | 0.669 | 14.9 | B | 170 | 1.502 | * | F | 121 | 1.144 | 132.9 | F |
| WB TR | 782 | 0.969 | 24.7 | C | 1416 | 1.643 | * | F | 1177 | 1.454 | * | F |
| NB LT | 448 | 1.093 | 74.9 | F | 505 | 1.492 | * | F | 191 | 0.562 | 11.1 | B |
| NB R | 242 | 0.511 | 10.2 | B | 154 | 0.319 | 8.9 | B | 132 | 0.280 | 8.7 | B |
| SB LTR | 372 | 4.438 | * | F | 281 | 3.099 | * | F | 288 | 0.729 | 14.6 | B |
| Overall: | | | * | F | | | * | F | | | * | F |
| RT 495 East (Long Island Expressway) and Schultz Road (Location 5) | | | | | | | | | | | | |
| EB LR | 485 | | 284.7 | F | 708 | | 68.5 | F | 457 | | 22.4 | D |
| NB TR | 679 | | | A | 315 | | | A | 425 | | | A |
| SB L | 20 | | 5.0 | B | 19 | | 3.2 | A | 30 | | 3.7 | A |
| SB T | 139 | | | A | 247 | | | A | 161 | | | A |
| Overall: | | | 102.5 | F | | | 37.0 | E | | | 9.5 | B |
| RT 495 West (Long Island Expressway) and Schultz Road (Location 6) | | | | | | | | | | | | |
| WB LR | 49 | | 37.3 | E | 136 | | 60.8 | F | 104 | | 34.2 | E |
| NB L | 412 | | 5.0 | A | 188 | | 5.1 | B | 224 | | 4.2 | A |
| NB T | 413 | | | A | 384 | | | A | 446 | | | A |
| SB TR | 311 | | | A | 497 | | | A | 356 | | | A |
| Overall: | | | 3.2 | A | | | 7.5 | A | | | 3.9 | A |

Table C-4 (continued)

Summary of LOS Analysis - Peconic Village

| Intersection | AM Peak Hour | | | | PM Peak Hour | | | | Weekend Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS | Appr. Volume | V/C Ratio | Stopped Delay | LOS |
| Edwards Avenue and River Road (Location 7) | | | | | | | | | | | | |
| EB LT | 28 | | 13.8 | C | 22 | | 16.0 | C | 23 | | 8.4 | B |
| EB R | 92 | | 13.8 | C | 89 | | 16.0 | C | 63 | | 8.4 | B |
| WB LTR | 48 | | 26.8 | D | 51 | | 72.9 | F | 76 | | 17.0 | C |
| NB LT | 614 | | 4.9 | A | 815 | | 4.9 | A | 515 | | 3.6 | A |
| NB R | 39 | | | A | 36 | | | A | 39 | | | A |
| SB LTR | 553 | | 3.4 | A | 568 | | 4.3 | A | 405 | | 3.3 | A |
| Overall: | | | 2.8 | A | | | 4.1 | A | | | 2.2 | A |

Notes: NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound. L - Left turn; R - Right turn; T - Through. *Indicates an approach expected to operate at a v/c ratio greater than 1/peak hour factor. In such cases, the stop delay is not calculated, but LOS is "F".

# APPENDIX D

# NOISE ANALYSES

# D.1 AIRCRAFT NOISE ANALYSIS MODEL PARAMETERS

# Aircraft Noise Analysis Assumptions

An assumption was made that operations at night (occurring between 10:00 pm and 7:00 am) would be limited to the following percentages of total activity:

- Single-Engine Piston (SEP), one percent;
- Multi-Engine Piston (MEP), 1.5 percent;
- Turboprop (TR), ten percent; and
- Turbojet (TJ), ten percent.

The FAA-preferred computer model, Integrated Noise Model (INM, version 5.0), was utilized to predict the noise impact from the forecasted high-, mid-, and low-range aircraft operations. INM was developed by the FAA as a planning tool for determining approximate aircraft noise levels at and around airports. The model incorporates a database of known sound levels from various aircraft and uses mathematical processes which consider the degradation of sound energy over distance.

The model requires inputs such as:

- Annual average daily operational characteristics at the airport, including the type of aircraft and the number of aircraft operations;
- Runway layout and its utilization rates; and
- Flight track configuration and its usage.

The model output comes in the form of noise contour plots, graphs, and tabular data on the noise levels at specific receptor locations.

Flight track usage (Table D.1-1) and airport site specific parameters (Table D.1-2) were incorporated in the modeling.

Table D.1-1

Assignment of Aircraft Operations By Type To Arrival & Departure Flight Tracks

| Track No. | Aircraft percent Usage |
|---|---|
| A1 | MEP = 30%<br>TP = 70%<br>TJ = 40% |
| A2 | MEP = 20%<br>TP = 20%<br>TJ = 60% |
| A3 | SEP = 20%<br>MEP = 30%<br>TP = 10% |
| A4 | SEP = 40%<br>MEP = 10% |
| A5 | SEP = 40%<br>MEP = 10% |
| D1 | MEP = 25%<br>TP = 40%<br>TJ = 40% |
| D2 | MEP = 25%<br>TP = 20%<br>TJ = 60% |
| D3 | SEP = 50%<br>MEP = 25%<br>TP = 20% |
| D4 | SEP = 50%<br>MEP = 25%<br>TP = 20% |

Table D.1-2

NWIRP Calverton Site Information

| Data Classification | Data Value |
|---|---|
| Temperature | 58.97 Fahrenheit |
| Latitude | 40-55-27.080 N |
| Longitude | 72-47-40.810 W |
| Elevation | 75 MSL |
| Average Headwinds | 8.0 knots |
| Change in Average Headwinds | none |
| Displaced Thresholds | none |
| Glide Slope | 5 degrees |
| Threshold Crossing Height | 50 feet |
| Atmospheric Pressure | 29.9 Hg |

## D.2 RESULTS OF NOISE MONITORING SURVEY

Table D.2 -1
Site 1: Route 25 (southside) - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 66 | 57 | 65 | 69 | 76 |
| Midday | 65 | 57 | 64 | 68 | 77 |
| PM Peak | 68 | 57 | 67 | 70 | 78 |
| Pre Mid | 60 | 48 | 58 | 63 | 70 |

Table D.2 -2
Site 2: Wading River Motel - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 68 | 57 | 65 | 71 | 79 |
| Midday | 65 | 55 | 63 | 68 | 77 |
| PM Peak | 66 | 55 | 62 | 69 | 78 |
| Pre Mid | 61 | 52 | 58 | 64 | 73 |

Table D.2 -3
Site 3: Wading River Manor Road - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 63 | 52 | 61 | 66 | 71 |
| Midday | 61 | 50 | 59 | 64 | 70 |
| PM Peak | 64 | 52 | 61 | 67 | 73 |
| Pre Mid | 59 | 48 | 58 | 62 | 68 |

Table D.2 -4
Site 4: Swan Lake Golf Club - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 62 | 53 | 61 | 66 | 72 |
| Midday | 60 | 52 | 58 | 64 | 70 |
| PM Peak | 61 | 53 | 60 | 63 | 68 |
| Pre Mid | 57 | 47 | 55 | 60 | 67 |

Table D.2 -5
Site 5: River Road - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 63 | 54 | 61 | 66 | 75 |
| Midday | 59 | 50 | 58 | 63 | 71 |
| PM Peak | 61 | 51 | 60 | 65 | 74 |
| Pre Mid | 56 | 44 | 53 | 59 | 68 |

Table D.2 -6
Site 6: Edwards Avenue - Weekday

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 67 | 58 | 65 | 70 | 79 |
| Midday | 65 | 56 | 63 | 69 | 80 |
| PM Peak | 68 | 59 | 66 | 72 | 81 |
| Pre Mid | 61 | 51 | 58 | 64 | 72 |

Table D.2 -7
Site 1: Route 25 (southside) - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 64 | 55 | 62 | 67 | 74 |
| Midday | 61 | 52 | 59 | 64 | 72 |
| PM Peak | 65 | 55 | 62 | 68 | 75 |
| Pre Mid | 60 | 51 | 57 | 63 | 70 |

Table D.2 -8
Site 2: Wading River Motel - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 64 | 54 | 61 | 67 | 74 |
| Midday | 64 | 54 | 60 | 67 | 75 |
| PM Peak | 66 | 56 | 63 | 70 | 77 |
| Pre Mid | 60 | 51 | 57 | 63 | 71 |

Table D.2 -9
Site 3: Wading River Manor Road - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 62 | 53 | 60 | 65 | 71 |
| Midday | 59 | 50 | 58 | 63 | 70 |
| PM Peak | 61 | 50 | 59 | 64 | 70 |
| Pre Mid | 58 | 46 | 57 | 61 | 68 |

Table D.2 -10
Site 4: Swan Lake Golf Club - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 61 | 52 | 60 | 64 | 70 |
| Midday | 60 | 51 | 58 | 63 | 71 |
| PM Peak | 59 | 51 | 59 | 63 | 71 |
| Pre Mid | 56 | 46 | 54 | 59 | 67 |

Table D.2 -11
Site 5: River Road - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 61 | 53 | 59 | 64 | 74 |
| Midday | 60 | 51 | 58 | 63 | 72 |
| PM Peak | 62 | 51 | 60 | 66 | 75 |
| Pre Mid | 57 | 44 | 54 | 60 | 68 |

Table D.2 -12
Site 6: Edwards Avenue - Weekend

| | $L_{eq}$ | $L_{90}$ | $L_{50}$ | $L_{10}$ | $L_1$ |
|---|---|---|---|---|---|
| AM Peak | 66 | 57 | 64 | 69 | 78 |
| Midday | 65 | 56 | 63 | 68 | 76 |
| PM Peak | 65 | 56 | 64 | 69 | 78 |
| Pre Mid | 60 | 49 | 58 | 63 | 71 |

# D.3 PREDICTED NOISE LEVELS

# TABLE 1

## PREDICTED NOISE LEVELS
## SITE 1
## Weekday
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 91 | 137 | 143 | 53.4 | 55.2 | 1.8 | 55.4 | 0.2 |
| 1 AM - 2 AM | 59 | 88 | 89 | 51.5 | 53.3 | 1.8 | 53.3 | 0.0 |
| 2 AM - 3 AM | 35 | 52 | 53 | 49.3 | 51.0 | 1.7 | 51.1 | 0.1 |
| 3 AM - 4 AM | 46 | 68 | 69 | 50.5 | 52.2 | 1.7 | 52.2 | 0.0 |
| 4 AM - 5 AM | 61 | 201 | 211 | 51.7 | 56.9 | 5.2 | 57.1 | 0.2 |
| 5 AM - 6 AM | 191 | 666 | 697 | 56.6 | 62.1 | 5.5 | 62.3 | 0.2 |
| 6 AM - 7 AM | 590 | 1405 | 1477 | 63.7 | 67.5 | 3.8 | 67.7 | 0.2 |
| 7 AM - 8 AM | 995 | 2033 | 2160 | 66.0 | 69.1 | 3.1 | 69.3 | 0.2 |
| 8 AM - 9 AM | 1002 | 1993 | 2089 | 66.0 | 69.0 | 3.0 | 69.2 | 0.2 |
| 9 AM - 10 AM | 781 | 1671 | 1751 | 64.9 | 68.2 | 3.3 | 68.4 | 0.2 |
| 10 AM - 11 AM | 900 | 1790 | 1891 | 65.5 | 68.5 | 3.0 | 68.8 | 0.3 |
| 11 AM - 12 PM | 1106 | 2209 | 2339 | 64.7 | 67.7 | 3.0 | 67.9 | 0.2 |
| 12 PM - 1 PM | 1193 | 2339 | 2458 | 65.0 | 67.9 | 2.9 | 68.1 | 0.2 |
| 1 PM - 2 PM | 1052 | 2068 | 2183 | 64.5 | 67.4 | 2.9 | 67.6 | 0.2 |
| 2 PM - 3 PM | 1055 | 2084 | 2161 | 64.5 | 67.4 | 2.9 | 67.6 | 0.2 |
| 3 PM - 4 PM | 974 | 2061 | 2134 | 64.1 | 67.4 | 3.3 | 67.5 | 0.1 |
| 4 PM - 5 PM | 1193 | 2389 | 2507 | 68.3 | 71.3 | 3.0 | 71.5 | 0.2 |
| 5 PM - 6 PM | 1115 | 2272 | 2415 | 68.0 | 71.1 | 3.1 | 71.4 | 0.3 |
| 6 PM - 7 PM | 805 | 1747 | 1932 | 66.6 | 70.0 | 3.4 | 70.4 | 0.4 |
| 7 PM - 8 PM | 581 | 1372 | 1538 | 65.2 | 68.9 | 3.7 | 69.4 | 0.5 |
| 8 PM - 9 PM | 473 | 1209 | 1299 | 60.6 | 64.7 | 4.1 | 65.0 | 0.3 |
| 9 PM - 10 PM | 414 | 801 | 879 | 60.0 | 62.9 | 2.9 | 63.3 | 0.4 |
| 10 PM - 11 PM | 269 | 403 | 549 | 58.1 | 59.9 | 1.8 | 61.2 | 1.3 |
| 11 PM - 12 AM | 180 | 270 | 462 | 56.4 | 58.1 | 1.7 | 60.5 | 2.4 |
| Leq(24) | | | | 63.7 | 66.9 | 3.2 | 67.2 | 0.3 |
| Ldn | | | | 66.1 | 69.4 | 3.3 | 69.8 | 0.4 |

# TABLE 2

## PREDICTED NOISE LEVELS
## SITE 2
## Weekday
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 40 | 59 | 122 | 54.5 | 56.2 | 1.7 | 59.3 | 3.1 |
| 1 AM - 2 AM | 25 | 38 | 49 | 52.4 | 54.2 | 1.8 | 55.3 | 1.1 |
| 2 AM - 3 AM | 15 | 23 | 30 | 50.2 | 52.1 | 1.9 | 53.2 | 1.1 |
| 3 AM - 4 AM | 20 | 30 | 37 | 51.5 | 53.2 | 1.7 | 54.1 | 0.9 |
| 4 AM - 5 AM | 26 | 140 | 244 | 52.6 | 59.9 | 7.3 | 62.3 | 2.4 |
| 5 AM - 6 AM | 83 | 464 | 782 | 57.6 | 65.1 | 7.5 | 67.4 | 2.3 |
| 6 AM - 7 AM | 256 | 845 | 1599 | 65.7 | 70.9 | 5.2 | 73.6 | 2.7 |
| 7 AM - 8 AM | 433 | 1129 | 2447 | 68.0 | 72.1 | 4.1 | 75.5 | 3.4 |
| 8 AM - 9 AM | 436 | 1093 | 2088 | 68.0 | 72.0 | 4.0 | 74.8 | 2.8 |
| 9 AM - 10 AM | 339 | 969 | 1795 | 66.9 | 71.5 | 4.6 | 74.1 | 2.6 |
| 10 AM - 11 AM | 391 | 987 | 2036 | 67.5 | 71.5 | 4.0 | 74.7 | 3.2 |
| 11 AM - 12 PM | 481 | 1221 | 2569 | 64.7 | 68.7 | 4.0 | 71.9 | 3.2 |
| 12 PM - 1 PM | 519 | 1278 | 2516 | 65.0 | 68.9 | 3.9 | 71.9 | 3.0 |
| 1 PM - 2 PM | 457 | 1126 | 2326 | 64.4 | 68.4 | 4.0 | 71.5 | 3.1 |
| 2 PM - 3 PM | 459 | 1129 | 1931 | 64.5 | 68.4 | 3.9 | 70.7 | 2.3 |
| 3 PM - 4 PM | 423 | 1175 | 1942 | 64.1 | 68.5 | 4.4 | 70.7 | 2.2 |
| 4 PM - 5 PM | 519 | 1318 | 2547 | 66.3 | 70.3 | 4.0 | 73.2 | 2.9 |
| 5 PM - 6 PM | 485 | 1257 | 2756 | 66.0 | 70.1 | 4.1 | 73.5 | 3.4 |
| 6 PM - 7 PM | 350 | 1005 | 2925 | 64.6 | 69.2 | 4.6 | 73.8 | 4.6 |
| 7 PM - 8 PM | 253 | 819 | 2547 | 63.2 | 68.3 | 5.1 | 73.2 | 4.9 |
| 8 PM - 9 PM | 206 | 748 | 1677 | 61.6 | 67.2 | 5.6 | 70.7 | 3.5 |
| 9 PM - 10 PM | 180 | 430 | 1241 | 61.0 | 64.8 | 3.8 | 69.4 | 4.6 |
| 10 PM - 11 PM | 117 | 175 | 1688 | 59.1 | 60.9 | 1.8 | 70.7 | 9.8 |
| 11 PM - 12 AM | 78 | 117 | 2117 | 57.4 | 59.1 | 1.7 | 71.7 | 12.6 |
| Leq(24) | | | | 64.0 | 68.3 | 4.3 | 71.7 | 3.4 |
| Ldn | | | | 66.9 | 71.5 | 4.6 | 75.7 | 4.2 |

## TABLE 3

## PREDICTED NOISE LEVELS
## SITE 3
## Weekday
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 36 | 55 | 67 | 52.4 | 54.2 | 1.8 | 55.1 | 0.9 |
| 1 AM - 2 AM | 23 | 35 | 37 | 50.4 | 52.3 | 1.9 | 52.5 | 0.2 |
| 2 AM - 3 AM | 14 | 21 | 22 | 48.3 | 50.0 | 1.7 | 50.2 | 0.2 |
| 3 AM - 4 AM | 18 | 27 | 29 | 49.4 | 51.1 | 1.7 | 51.4 | 0.3 |
| 4 AM - 5 AM | 24 | 76 | 96 | 50.6 | 55.6 | 5.0 | 56.6 | 1.0 |
| 5 AM - 6 AM | 76 | 194 | 255 | 55.6 | 59.7 | 4.1 | 60.9 | 1.2 |
| 6 AM - 7 AM | 235 | 473 | 618 | 60.7 | 63.7 | 3.0 | 64.9 | 1.2 |
| 7 AM - 8 AM | 397 | 716 | 969 | 63.0 | 65.5 | 2.5 | 66.8 | 1.3 |
| 8 AM - 9 AM | 400 | 700 | 891 | 63.0 | 65.4 | 2.4 | 66.5 | 1.1 |
| 9 AM - 10 AM | 312 | 567 | 726 | 61.9 | 64.5 | 2.6 | 65.6 | 1.1 |
| 10 AM - 11 AM | 359 | 639 | 840 | 62.5 | 65.0 | 2.5 | 66.2 | 1.2 |
| 11 AM - 12 PM | 441 | 782 | 1041 | 60.7 | 63.2 | 2.5 | 64.4 | 1.2 |
| 12 PM - 1 PM | 476 | 854 | 1092 | 61.0 | 63.5 | 2.5 | 64.6 | 1.1 |
| 1 PM - 2 PM | 420 | 750 | 981 | 60.5 | 63.0 | 2.5 | 64.1 | 1.1 |
| 2 PM - 3 PM | 421 | 752 | 906 | 60.5 | 63.0 | 2.5 | 63.8 | 0.8 |
| 3 PM - 4 PM | 389 | 723 | 870 | 60.1 | 62.8 | 2.7 | 63.6 | 0.8 |
| 4 PM - 5 PM | 476 | 854 | 1090 | 64.3 | 66.8 | 2.5 | 67.9 | 1.1 |
| 5 PM - 6 PM | 445 | 807 | 1094 | 64.0 | 66.6 | 2.6 | 67.9 | 1.3 |
| 6 PM - 7 PM | 321 | 582 | 951 | 62.6 | 65.2 | 2.6 | 67.3 | 2.1 |
| 7 PM - 8 PM | 232 | 426 | 760 | 61.2 | 63.8 | 2.6 | 66.3 | 2.5 |
| 8 PM - 9 PM | 189 | 323 | 502 | 59.6 | 61.9 | 2.3 | 63.8 | 1.9 |
| 9 PM - 10 PM | 165 | 248 | 404 | 59.0 | 60.8 | 1.8 | 62.9 | 2.1 |
| 10 PM - 11 PM | 107 | 161 | 452 | 57.1 | 58.9 | 1.8 | 63.4 | 4.5 |
| 11 PM - 12 AM | 72 | 108 | 492 | 55.4 | 57.2 | 1.8 | 63.7 | 6.5 |
| Leq(24) | | | | 60.3 | 62.9 | 2.6 | 64.4 | 1.5 |
| Ldn | | | | 63.4 | 66.1 | 2.7 | 68.2 | 2.1 |

# TABLE 4

## PREDICTED NOISE LEVELS
## SITE 4
## Weekday
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 5 | 8 | 32 | 50.0 | 52.1 | 2.1 | 58.1 | 6.0 |
| 1 AM - 2 AM | 3 | 5 | 9 | 47.8 | 50.0 | 2.2 | 52.6 | 2.6 |
| 2 AM - 3 AM | 2 | 3 | 6 | 46.0 | 47.8 | 1.8 | 50.8 | 3.0 |
| 3 AM - 4 AM | 3 | 4 | 7 | 47.8 | 49.0 | 1.2 | 51.5 | 2.5 |
| 4 AM - 5 AM | 4 | 5 | 45 | 49.0 | 50.0 | 1.0 | 59.6 | 9.6 |
| 5 AM - 6 AM | 11 | 17 | 139 | 53.4 | 55.3 | 1.9 | 64.5 | 9.2 |
| 6 AM - 7 AM | 35 | 53 | 343 | 59.7 | 61.5 | 1.8 | 69.6 | 8.1 |
| 7 AM - 8 AM | 59 | 89 | 596 | 61.9 | 63.7 | 1.8 | 72.0 | 8.3 |
| 8 AM - 9 AM | 60 | 90 | 472 | 62.0 | 63.8 | 1.8 | 71.0 | 7.2 |
| 9 AM - 10 AM | 47 | 70 | 368 | 60.9 | 62.7 | 1.8 | 69.9 | 7.2 |
| 10 AM - 11 AM | 54 | 80 | 484 | 61.5 | 63.2 | 1.7 | 71.1 | 7.9 |
| 11 AM - 12 PM | 65 | 99 | 617 | 59.6 | 61.4 | 1.8 | 69.4 | 8.0 |
| 12 PM - 1 PM | 71 | 107 | 583 | 60.0 | 61.8 | 1.8 | 69.1 | 7.3 |
| 1 PM - 2 PM | 63 | 94 | 555 | 59.5 | 61.2 | 1.7 | 68.9 | 7.7 |
| 2 PM - 3 PM | 63 | 94 | 403 | 59.5 | 61.2 | 1.7 | 67.5 | 6.3 |
| 3 PM - 4 PM | 58 | 87 | 382 | 59.1 | 60.9 | 1.8 | 67.3 | 6.4 |
| 4 PM - 5 PM | 71 | 107 | 579 | 61.3 | 63.1 | 1.8 | 70.4 | 7.3 |
| 5 PM - 6 PM | 66 | 100 | 672 | 61.0 | 62.8 | 1.8 | 71.1 | 8.3 |
| 6 PM - 7 PM | 48 | 72 | 810 | 59.6 | 61.4 | 1.8 | 71.9 | 10.5 |
| 7 PM - 8 PM | 35 | 52 | 717 | 58.2 | 60.0 | 1.8 | 71.4 | 11.4 |
| 8 PM - 9 PM | 26 | 42 | 399 | 57.2 | 59.3 | 2.1 | 69.0 | 9.7 |
| 9 PM - 10 PM | 25 | 37 | 349 | 57.0 | 58.7 | 1.7 | 68.4 | 9.7 |
| 10 PM - 11 PM | 16 | 24 | 606 | 55.1 | 56.8 | 1.7 | 70.8 | 14.0 |
| 11 PM - 12 AM | 11 | 16 | 785 | 53.4 | 55.1 | 1.7 | 72.0 | 16.9 |
| Leq(24) | | | | 58.6 | 60.4 | 1.8 | 69.1 | 8.7 |
| Ldn | | | | 61.7 | 63.5 | 1.8 | 73.8 | 10.3 |

## TABLE 5

## PREDICTED NOISE LEVELS
## SITE 5
## Weekday
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 6 | 8 | 26 | 49.8 | 51.1 | 1.3 | 56.2 | 5.1 |
| 1 AM - 2 AM | 3 | 5 | 8 | 46.8 | 49.0 | 2.2 | 51.1 | 2.1 |
| 2 AM - 3 AM | 2 | 3 | 5 | 45.0 | 46.8 | 1.8 | 49.0 | 2.2 |
| 3 AM - 4 AM | 3 | 4 | 6 | 46.8 | 48.0 | 1.2 | 49.8 | 1.8 |
| 4 AM - 5 AM | 4 | 5 | 36 | 48.0 | 49.0 | 1.0 | 57.6 | 8.6 |
| 5 AM - 6 AM | 11 | 17 | 109 | 52.4 | 54.3 | 1.9 | 62.4 | 8.1 |
| 6 AM - 7 AM | 35 | 53 | 270 | 60.7 | 62.5 | 1.8 | 69.5 | 7.0 |
| 7 AM - 8 AM | 59 | 89 | 469 | 62.9 | 64.7 | 1.8 | 71.9 | 7.2 |
| 8 AM - 9 AM | 60 | 90 | 376 | 63.0 | 64.8 | 1.8 | 71.0 | 6.2 |
| 9 AM - 10 AM | 47 | 70 | 308 | 61.9 | 63.7 | 1.8 | 70.1 | 6.4 |
| 10 AM - 11 AM | 54 | 80 | 383 | 62.5 | 64.2 | 1.7 | 71.1 | 6.9 |
| 11 AM - 12 PM | 66 | 99 | 488 | 58.7 | 60.4 | 1.7 | 67.4 | 7.0 |
| 12 PM - 1 PM | 71 | 107 | 464 | 59.0 | 60.8 | 1.8 | 67.2 | 6.4 |
| 1 PM - 2 PM | 63 | 94 | 440 | 58.5 | 60.2 | 1.7 | 66.9 | 6.7 |
| 2 PM - 3 PM | 63 | 94 | 326 | 58.5 | 60.2 | 1.7 | 65.6 | 5.4 |
| 3 PM - 4 PM | 58 | 87 | 308 | 58.1 | 59.9 | 1.8 | 65.4 | 5.5 |
| 4 PM - 5 PM | 71 | 107 | 461 | 61.3 | 63.1 | 1.8 | 69.4 | 6.3 |
| 5 PM - 6 PM | 66 | 100 | 529 | 61.0 | 62.8 | 1.8 | 70.0 | 7.2 |
| 6 PM - 7 PM | 48 | 72 | 626 | 59.6 | 61.4 | 1.8 | 70.8 | 9.4 |
| 7 PM - 8 PM | 35 | 52 | 551 | 58.2 | 60.0 | 1.8 | 70.2 | 10.2 |
| 8 PM - 9 PM | 28 | 42 | 310 | 56.5 | 58.3 | 1.8 | 66.9 | 8.6 |
| 9 PM - 10 PM | 25 | 37 | 271 | 56.0 | 57.7 | 1.7 | 66.4 | 8.7 |
| 10 PM - 11 PM | 16 | 24 | 460 | 54.1 | 55.8 | 1.7 | 68.6 | 12.8 |
| 11 PM - 12 AM | 11 | 16 | 593 | 52.4 | 54.1 | 1.7 | 69.8 | 15.7 |
| Leq(24) | | | | 58.8 | 60.5 | 1.7 | 68.0 | 7.5 |
| Ldn | | | | 61.8 | 63.6 | 1.8 | 72.3 | 8.7 |

## TABLE 6

## PREDICTED NOISE LEVELS
## SITE 6
## Weekday
## Enterprise Park Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| Hour | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 54 | 82 | 85 | 54.4 | 56.2 | 1.8 | 56.4 | 0.2 |
| 1 AM - 2 AM | 35 | 52 | 53 | 52.5 | 54.2 | 1.7 | 54.3 | 0.1 |
| 2 AM - 3 AM | 21 | 31 | 31 | 50.3 | 52.0 | 1.7 | 52.0 | 0.0 |
| 3 AM - 4 AM | 27 | 41 | 41 | 51.4 | 53.2 | 1.8 | 53.2 | 0.0 |
| 4 AM - 5 AM | 36 | 94 | 100 | 52.6 | 56.8 | 4.2 | 57.1 | 0.3 |
| 5 AM - 6 AM | 114 | 251 | 269 | 57.6 | 61.1 | 3.5 | 61.4 | 0.3 |
| 6 AM - 7 AM | 352 | 648 | 691 | 64.7 | 67.3 | 2.6 | 67.6 | 0.3 |
| 7 AM - 8 AM | 594 | 1011 | 1087 | 67.0 | 69.3 | 2.3 | 69.6 | 0.3 |
| 8 AM - 9 AM | 598 | 997 | 1054 | 67.0 | 69.2 | 2.2 | 69.5 | 0.3 |
| 9 AM - 10 AM | 466 | 799 | 846 | 65.9 | 68.3 | 2.4 | 68.5 | 0.2 |
| 10 AM - 11 AM | 537 | 905 | 966 | 66.5 | 68.8 | 2.3 | 69.1 | 0.3 |
| 11 AM - 12 PM | 660 | 1110 | 1187 | 64.7 | 66.9 | 2.2 | 67.2 | 0.3 |
| 12 PM - 1 PM | 712 | 1207 | 1279 | 65.0 | 67.3 | 2.3 | 67.5 | 0.2 |
| 1 PM - 2 PM | 527 | 1061 | 1130 | 63.7 | 66.7 | 3.0 | 67.0 | 0.3 |
| 2 PM - 3 PM | 639 | 1065 | 1111 | 64.5 | 66.7 | 2.2 | 66.9 | 0.2 |
| 3 PM - 4 PM | 581 | 1011 | 1056 | 64.1 | 66.5 | 2.4 | 66.7 | 0.2 |
| 4 PM - 5 PM | 712 | 1207 | 1278 | 68.3 | 70.6 | 2.3 | 70.8 | 0.2 |
| 5 PM - 6 PM | 665 | 1137 | 1223 | 68.0 | 70.3 | 2.3 | 70.6 | 0.3 |
| 6 PM - 7 PM | 480 | 820 | 931 | 66.6 | 68.9 | 2.3 | 69.5 | 0.6 |
| 7 PM - 8 PM | 347 | 600 | 700 | 65.2 | 67.6 | 2.4 | 68.2 | 0.6 |
| 8 PM - 9 PM | 302 | 463 | 517 | 61.9 | 63.7 | 1.8 | 64.2 | 0.5 |
| 9 PM - 10 PM | 247 | 371 | 417 | 61.0 | 62.8 | 1.8 | 63.3 | 0.5 |
| 10 PM - 11 PM | 160 | 241 | 328 | 59.1 | 60.9 | 1.8 | 62.2 | 1.3 |
| 11 PM - 12 AM | 107 | 151 | 276 | 57.4 | 58.9 | 1.5 | 61.5 | 2.6 |
| Leq(24) | | | | 64.1 | 66.4 | 2.3 | 66.8 | 0.4 |
| Ldn | | | | 66.8 | 69.2 | 2.4 | 69.6 | 0.4 |

# TABLE 7

## PREDICTED NOISE LEVELS
## SITE 1
## Weekend
## Enterprise Park Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | DIFFERENCE | | DIFFERENCE |
| Hour | Existing | No Build | Build | Existing | No Build | (Exist-No Build) | Build | (No Build-Build) |
| 12 AM - 1 AM | 135 | 202 | 214 | 56.6 | 58.4 | 1.8 | 58.6 | 0.2 |
| 1 AM - 2 AM | 82 | 122 | 123 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 75 | 113 | 114 | 54.1 | 55.8 | 1.7 | 55.9 | 0.1 |
| 3 AM - 4 AM | 50 | 75 | 76 | 52.3 | 54.1 | 1.8 | 54.1 | 0.0 |
| 4 AM - 5 AM | 66 | 209 | 216 | 53.5 | 58.5 | 5.0 | 58.6 | 0.1 |
| 5 AM - 6 AM | 160 | 620 | 634 | 57.3 | 63.2 | 5.9 | 63.3 | 0.1 |
| 6 AM - 7 AM | 289 | 953 | 964 | 61.1 | 66.3 | 5.2 | 66.3 | 0.0 |
| 7 AM - 8 AM | 470 | 1246 | 1296 | 63.2 | 67.4 | 4.2 | 67.6 | 0.2 |
| 8 AM - 9 AM | 564 | 1337 | 1399 | 64.0 | 67.7 | 3.7 | 67.9 | 0.2 |
| 9 AM - 10 AM | 750 | 1624 | 1708 | 65.2 | 68.6 | 3.4 | 68.8 | 0.2 |
| 10 AM - 11 AM | 844 | 1705 | 1839 | 65.8 | 68.8 | 3.0 | 69.1 | 0.3 |
| 11 AM - 12 PM | 825 | 1787 | 1955 | 61.1 | 64.4 | 3.3 | 64.8 | 0.4 |
| 12 PM - 1 PM | 809 | 1764 | 1908 | 61.0 | 64.4 | 3.4 | 64.7 | 0.3 |
| 1 PM - 2 PM | 856 | 1774 | 1913 | 61.2 | 64.4 | 3.2 | 64.7 | 0.3 |
| 2 PM - 3 PM | 865 | 1798 | 1924 | 61.3 | 64.5 | 3.2 | 64.8 | 0.3 |
| 3 PM - 4 PM | 750 | 1724 | 1837 | 60.7 | 64.3 | 3.6 | 64.6 | 0.3 |
| 4 PM - 5 PM | 790 | 1785 | 1903 | 65.9 | 69.5 | 3.6 | 69.7 | 0.2 |
| 5 PM - 6 PM | 640 | 1560 | 1685 | 65.0 | 68.9 | 3.9 | 69.2 | 0.3 |
| 6 PM - 7 PM | 480 | 1250 | 1438 | 63.8 | 67.9 | 4.1 | 68.5 | 0.6 |
| 7 PM - 8 PM | 436 | 1154 | 1326 | 63.3 | 67.6 | 4.3 | 68.2 | 0.6 |
| 8 PM - 9 PM | 298 | 947 | 1043 | 60.0 | 65.1 | 5.1 | 65.5 | 0.4 |
| 9 PM - 10 PM | 295 | 622 | 700 | 60.0 | 63.2 | 3.2 | 63.8 | 0.6 |
| 10 PM - 11 PM | 260 | 390 | 542 | 59.5 | 61.2 | 1.7 | 62.6 | 1.4 |
| 11 PM - 12 AM | 226 | 339 | 538 | 58.8 | 60.6 | 1.8 | 62.6 | 2.0 |
| Leq(24) | | | | 61.8 | 65.5 | 3.7 | 65.9 | 0.4 |
| Ldn | | | | 65.2 | 68.9 | 3.7 | 69.3 | 0.4 |

# TABLE 8

## PREDICTED NOISE LEVELS
## SITE 2
## Weekend
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 95 | 142 | 261 | 56.6 | 58.4 | 1.8 | 61.0 | 2.6 |
| 1 AM - 2 AM | 57 | 86 | 96 | 54.4 | 56.2 | 1.8 | 56.7 | 0.5 |
| 2 AM - 3 AM | 53 | 79 | 86 | 54.1 | 55.8 | 1.7 | 56.2 | 0.4 |
| 3 AM - 4 AM | 35 | 53 | 63 | 52.3 | 54.1 | 1.8 | 54.8 | 0.7 |
| 4 AM - 5 AM | 45 | 169 | 249 | 53.4 | 59.1 | 5.7 | 60.8 | 1.7 |
| 5 AM - 6 AM | 112 | 508 | 654 | 57.3 | 63.9 | 6.6 | 65.0 | 1.1 |
| 6 AM - 7 AM | 202 | 764 | 1083 | 61.1 | 66.9 | 5.8 | 68.4 | 1.5 |
| 7 AM - 8 AM | 330 | 975 | 1518 | 63.2 | 67.9 | 4.7 | 69.8 | 1.9 |
| 8 AM - 9 AM | 396 | 1034 | 1680 | 64.0 | 68.2 | 4.2 | 70.3 | 2.1 |
| 9 AM - 10 AM | 526 | 1249 | 2114 | 65.2 | 69.0 | 3.8 | 71.3 | 2.3 |
| 10 AM - 11 AM | 592 | 1288 | 2763 | 65.7 | 69.1 | 3.4 | 72.4 | 3.3 |
| 11 AM - 12 PM | 578 | 1368 | 3115 | 64.1 | 67.8 | 3.7 | 71.4 | 3.6 |
| 12 PM - 1 PM | 567 | 1351 | 2848 | 64.0 | 67.8 | 3.8 | 71.0 | 3.2 |
| 1 PM - 2 PM | 600 | 1341 | 2780 | 64.2 | 67.7 | 3.5 | 70.9 | 3.2 |
| 2 PM - 3 PM | 608 | 1351 | 2662 | 64.3 | 67.8 | 3.5 | 70.7 | 2.9 |
| 3 PM - 4 PM | 526 | 1329 | 2496 | 63.7 | 67.7 | 4.0 | 70.4 | 2.7 |
| 4 PM - 5 PM | 554 | 1371 | 2596 | 65.9 | 69.8 | 3.9 | 72.6 | 2.8 |
| 5 PM - 6 PM | 449 | 1213 | 2516 | 65.0 | 69.3 | 4.3 | 72.5 | 3.2 |
| 6 PM - 7 PM | 337 | 985 | 2841 | 63.8 | 68.4 | 4.6 | 73.0 | 4.6 |
| 7 PM - 8 PM | 306 | 899 | 2686 | 63.3 | 68.0 | 4.7 | 72.8 | 4.8 |
| 8 PM - 9 PM | 209 | 753 | 1750 | 60.0 | 65.6 | 5.6 | 69.3 | 3.7 |
| 9 PM - 10 PM | 207 | 470 | 1283 | 60.0 | 63.6 | 3.6 | 67.9 | 4.3 |
| 10 PM - 11 PM | 183 | 274 | 1851 | 59.5 | 61.2 | 1.7 | 69.5 | 8.3 |
| 11 PM - 12 AM | 158 | 238 | 2309 | 58.8 | 60.6 | 1.8 | 70.5 | 9.9 |
| Leq(24) | | | | 62.5 | 66.5 | 4.0 | 69.9 | 3.4 |
| Ldn | | | | 65.6 | 69.6 | 4.0 | 73.5 | 3.9 |

## TABLE 9

## PREDICTED NOISE LEVELS
## SITE 3
## Weekend
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 33 | 50 | 73 | 54.6 | 56.4 | 1.8 | 58.0 | 1.6 |
| 1 AM - 2 AM | 20 | 30 | 32 | 52.4 | 54.1 | 1.7 | 54.4 | 0.3 |
| 2 AM - 3 AM | 19 | 28 | 29 | 52.2 | 53.8 | 1.6 | 54.0 | 0.2 |
| 3 AM - 4 AM | 12 | 19 | 21 | 50.2 | 52.2 | 2.0 | 52.6 | 0.4 |
| 4 AM - 5 AM | 16 | 64 | 80 | 51.4 | 57.4 | 6.0 | 58.4 | 1.0 |
| 5 AM - 6 AM | 40 | 139 | 167 | 55.4 | 60.8 | 5.4 | 61.6 | 0.8 |
| 6 AM - 7 AM | 71 | 227 | 289 | 59.1 | 64.1 | 5.0 | 65.1 | 1.0 |
| 7 AM - 8 AM | 116 | 295 | 399 | 61.2 | 65.2 | 4.0 | 66.5 | 1.3 |
| 8 AM - 9 AM | 140 | 310 | 434 | 62.0 | 65.5 | 3.5 | 66.9 | 1.4 |
| 9 AM - 10 AM | 186 | 378 | 545 | 63.2 | 66.3 | 3.1 | 67.9 | 1.6 |
| 10 AM - 11 AM | 209 | 413 | 680 | 63.7 | 66.7 | 3.0 | 68.9 | 2.2 |
| 11 AM - 12 PM | 204 | 426 | 762 | 59.1 | 62.3 | 3.2 | 64.8 | 2.5 |
| 12 PM - 1 PM | 200 | 440 | 728 | 59.0 | 62.4 | 3.4 | 64.6 | 2.2 |
| 1 PM - 2 PM | 212 | 438 | 715 | 59.3 | 62.4 | 3.1 | 64.5 | 2.1 |
| 2 PM - 3 PM | 214 | 441 | 694 | 59.3 | 62.4 | 3.1 | 64.4 | 2.0 |
| 3 PM - 4 PM | 185 | 418 | 643 | 58.7 | 62.2 | 3.5 | 64.1 | 1.9 |
| 4 PM - 5 PM | 196 | 433 | 669 | 61.9 | 65.4 | 3.5 | 67.3 | 1.9 |
| 5 PM - 6 PM | 158 | 378 | 628 | 61.0 | 64.8 | 3.8 | 67.0 | 2.2 |
| 6 PM - 7 PM | 119 | 278 | 635 | 59.8 | 63.5 | 3.7 | 67.0 | 3.5 |
| 7 PM - 8 PM | 108 | 242 | 586 | 59.3 | 62.9 | 3.6 | 66.7 | 3.8 |
| 8 PM - 9 PM | 74 | 151 | 342 | 58.1 | 61.2 | 3.1 | 64.7 | 3.5 |
| 9 PM - 10 PM | 73 | 109 | 266 | 58.0 | 59.7 | 1.7 | 63.6 | 3.9 |
| 10 PM - 11 PM | 64 | 97 | 400 | 57.4 | 59.2 | 1.8 | 65.4 | 6.2 |
| 11 PM - 12 AM | 56 | 84 | 482 | 56.8 | 58.6 | 1.8 | 66.2 | 7.6 |
| Leq(24) | | | | 59.3 | 62.7 | 3.4 | 65.1 | 2.4 |
| Ldn | | | | 63.0 | 66.5 | 3.5 | 69.3 | 2.8 |

## TABLE 10

## PREDICTED NOISE LEVELS
## SITE 4
## Weekend
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 61 | 52.8 | 54.5 | 1.7 | 60.6 | 6.1 |
| 1 AM - 2 AM | 6 | 9 | 13 | 50.6 | 52.3 | 1.7 | 53.9 | 1.6 |
| 2 AM - 3 AM | 5 | 8 | 11 | 49.8 | 51.8 | 2.0 | 53.2 | 1.4 |
| 3 AM - 4 AM | 4 | 5 | 9 | 48.8 | 49.8 | 1.0 | 52.3 | 2.5 |
| 4 AM - 5 AM | 5 | 7 | 38 | 49.8 | 51.2 | 1.4 | 58.6 | 7.4 |
| 5 AM - 6 AM | 12 | 17 | 73 | 53.6 | 55.1 | 1.5 | 61.4 | 6.3 |
| 6 AM - 7 AM | 21 | 31 | 154 | 58.1 | 59.8 | 1.7 | 66.7 | 6.9 |
| 7 AM - 8 AM | 34 | 51 | 250 | 60.2 | 61.9 | 1.7 | 68.9 | 7.0 |
| 8 AM - 9 AM | 41 | 61 | 310 | 61.0 | 62.7 | 1.7 | 69.8 | 7.1 |
| 9 AM - 10 AM | 54 | 81 | 414 | 62.2 | 64.0 | 1.8 | 71.0 | 7.0 |
| 10 AM - 11 AM | 61 | 91 | 624 | 62.7 | 64.5 | 1.8 | 72.8 | 8.3 |
| 11 AM - 12 PM | 59 | 89 | 761 | 60.1 | 61.9 | 1.8 | 71.2 | 9.3 |
| 12 PM - 1 PM | 58 | 87 | 663 | 60.0 | 61.8 | 1.8 | 70.6 | 8.8 |
| 1 PM - 2 PM | 62 | 93 | 646 | 60.3 | 62.1 | 1.8 | 70.5 | 8.4 |
| 2 PM - 3 PM | 62 | 94 | 598 | 60.3 | 62.1 | 1.8 | 70.1 | 8.0 |
| 3 PM - 4 PM | 54 | 81 | 530 | 59.7 | 61.5 | 1.8 | 69.6 | 8.1 |
| 4 PM - 5 PM | 57 | 85 | 556 | 59.9 | 61.7 | 1.8 | 69.8 | 8.1 |
| 5 PM - 6 PM | 46 | 69 | 570 | 59.0 | 60.8 | 1.8 | 69.9 | 9.1 |
| 6 PM - 7 PM | 35 | 52 | 766 | 57.8 | 59.5 | 1.7 | 71.2 | 11.7 |
| 7 PM - 8 PM | 31 | 47 | 735 | 57.3 | 59.1 | 1.8 | 71.0 | 11.9 |
| 8 PM - 9 PM | 21 | 32 | 416 | 56.0 | 57.8 | 1.8 | 69.0 | 11.2 |
| 9 PM - 10 PM | 21 | 32 | 345 | 56.0 | 57.8 | 1.8 | 68.2 | 10.4 |
| 10 PM - 11 PM | 19 | 28 | 635 | 55.6 | 57.2 | 1.6 | 70.8 | 13.6 |
| 11 PM - 12 AM | 16 | 24 | 821 | 54.8 | 56.6 | 1.8 | 71.9 | 15.3 |
| Leq(24) | | | | 58.4 | 60.2 | 1.8 | 69.2 | 9.0 |
| Ldn | | | | 61.7 | 63.4 | 1.7 | 73.4 | 10.0 |

# TABLE 11

## PREDICTED NOISE LEVELS
## SITE 5
## Weekend
## Enterprise Park Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 49 | 53.8 | 55.5 | 1.7 | 60.7 | 5.2 |
| 1 AM - 2 AM | 6 | 9 | 12 | 51.6 | 53.3 | 1.7 | 54.6 | 1.3 |
| 2 AM - 3 AM | 5 | 8 | 10 | 50.8 | 52.8 | 2.0 | 53.8 | 1.0 |
| 3 AM - 4 AM | 4 | 5 | 8 | 49.8 | 50.8 | 1.0 | 52.8 | 2.0 |
| 4 AM - 5 AM | 5 | 7 | 30 | 50.8 | 52.2 | 1.4 | 58.5 | 6.3 |
| 5 AM - 6 AM | 12 | 17 | 59 | 54.6 | 56.1 | 1.5 | 61.5 | 5.4 |
| 6 AM - 7 AM | 21 | 31 | 123 | 58.1 | 59.8 | 1.7 | 65.8 | 6.0 |
| 7 AM - 8 AM | 34 | 51 | 208 | 60.2 | 61.9 | 1.7 | 68.1 | 6.2 |
| 8 AM - 9 AM | 41 | 61 | 247 | 61.0 | 62.7 | 1.7 | 68.8 | 6.1 |
| 9 AM - 10 AM | 54 | 81 | 331 | 62.2 | 64.0 | 1.8 | 70.1 | 6.1 |
| 10 AM - 11 AM | 61 | 91 | 491 | 62.7 | 64.5 | 1.8 | 71.8 | 7.3 |
| 11 AM - 12 PM | 59 | 89 | 593 | 60.1 | 61.9 | 1.8 | 70.1 | 8.2 |
| 12 PM - 1 PM | 58 | 87 | 519 | 60.0 | 61.8 | 1.8 | 69.5 | 7.7 |
| 1 PM - 2 PM | 62 | 93 | 508 | 60.3 | 62.1 | 1.8 | 69.4 | 7.3 |
| 2 PM - 3 PM | 62 | 94 | 472 | 60.3 | 62.1 | 1.8 | 69.1 | 7.0 |
| 3 PM - 4 PM | 54 | 81 | 418 | 59.7 | 61.5 | 1.8 | 68.6 | 7.1 |
| 4 PM - 5 PM | 57 | 85 | 439 | 62.9 | 64.7 | 1.8 | 71.8 | 7.1 |
| 5 PM - 6 PM | 46 | 69 | 445 | 62.0 | 63.8 | 1.8 | 71.9 | 8.1 |
| 6 PM - 7 PM | 35 | 52 | 587 | 60.8 | 62.5 | 1.7 | 73.1 | 10.6 |
| 7 PM - 8 PM | 31 | 47 | 563 | 60.3 | 62.1 | 1.8 | 72.9 | 10.8 |
| 8 PM - 9 PM | 21 | 32 | 320 | 57.0 | 58.8 | 1.8 | 68.8 | 10.0 |
| 9 PM - 10 PM | 21 | 32 | 266 | 57.0 | 58.8 | 1.8 | 68.0 | 9.2 |
| 10 PM - 11 PM | 19 | 28 | 483 | 56.6 | 58.2 | 1.6 | 70.6 | 12.4 |
| 11 PM - 12 AM | 16 | 24 | 622 | 55.8 | 57.6 | 1.8 | 71.7 | 14.1 |
| Leq(24) | | | | 59.3 | 61.0 | 1.7 | 69.2 | 8.2 |
| Ldn | | | | 62.5 | 64.2 | 1.7 | 73.3 | 9.1 |

# TABLE 12

## PREDICTED NOISE LEVELS
## SITE 6
## Weekend
## Enterprise Park Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| Hour | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 69 | 104 | 111 | 56.6 | 58.4 | 1.8 | 58.7 | 0.3 |
| 1 AM - 2 AM | 42 | 63 | 63 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 39 | 58 | 58 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 26 | 39 | 39 | 52.4 | 54.1 | 1.7 | 54.1 | 0.0 |
| 4 AM - 5 AM | 34 | 91 | 95 | 53.5 | 57.8 | 4.3 | 58.0 | 0.2 |
| 5 AM - 6 AM | 82 | 203 | 212 | 57.3 | 61.3 | 4.0 | 61.5 | 0.2 |
| 6 AM - 7 AM | 146 | 342 | 361 | 63.0 | 66.7 | 3.7 | 67.0 | 0.3 |
| 7 AM - 8 AM | 241 | 482 | 514 | 65.2 | 68.2 | 3.0 | 68.5 | 0.3 |
| 8 AM - 9 AM | 290 | 535 | 572 | 66.0 | 68.7 | 2.7 | 68.9 | 0.2 |
| 9 AM - 10 AM | 385 | 677 | 727 | 67.2 | 69.7 | 2.5 | 70.0 | 0.3 |
| 10 AM - 11 AM | 433 | 749 | 829 | 67.7 | 70.1 | 2.4 | 70.6 | 0.5 |
| 11 AM - 12 PM | 423 | 755 | 856 | 65.1 | 67.6 | 2.5 | 68.1 | 0.5 |
| 12 PM - 1 PM | 415 | 763 | 849 | 65.0 | 67.6 | 2.6 | 68.1 | 0.5 |
| 1 PM - 2 PM | 439 | 779 | 862 | 65.2 | 67.7 | 2.5 | 68.2 | 0.5 |
| 2 PM - 3 PM | 444 | 785 | 862 | 65.3 | 67.8 | 2.5 | 68.2 | 0.4 |
| 3 PM - 4 PM | 365 | 717 | 784 | 64.4 | 67.4 | 3.0 | 67.8 | 0.4 |
| 4 PM - 5 PM | 406 | 748 | 819 | 65.9 | 68.6 | 2.7 | 69.0 | 0.4 |
| 5 PM - 6 PM | 328 | 633 | 708 | 65.0 | 67.9 | 2.9 | 68.3 | 0.4 |
| 6 PM - 7 PM | 248 | 469 | 577 | 63.8 | 66.6 | 2.8 | 67.5 | 0.9 |
| 7 PM - 8 PM | 224 | 416 | 519 | 63.3 | 66.0 | 2.7 | 67.0 | 1.0 |
| 8 PM - 9 PM | 153 | 269 | 327 | 60.1 | 62.5 | 2.4 | 63.4 | 0.9 |
| 9 PM - 10 PM | 151 | 227 | 274 | 60.0 | 61.8 | 1.8 | 62.6 | 0.8 |
| 10 PM - 11 PM | 134 | 200 | 291 | 59.5 | 61.2 | 1.7 | 62.8 | 1.6 |
| 11 PM - 12 AM | 116 | 174 | 293 | 58.9 | 60.6 | 1.7 | 62.9 | 2.3 |
| Leq(24) | | | | 63.5 | 66.1 | 2.6 | 66.6 | 0.5 |
| Ldn | | | | 66.4 | 69.1 | 2.7 | 69.7 | 0.6 |

## TABLE 13

## PREDICTED NOISE LEVELS
## SITE 1
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 91 | 137 | 147 | 53.4 | 55.2 | 1.8 | 55.5 | 0.3 |
| 1 AM - 2 AM | 59 | 88 | 88 | 51.5 | 53.3 | 1.8 | 53.3 | 0.0 |
| 2 AM - 3 AM | 35 | 52 | 52 | 49.3 | 51.0 | 1.7 | 51.0 | 0.0 |
| 3 AM - 4 AM | 46 | 68 | 68 | 50.5 | 52.2 | 1.7 | 52.2 | 0.0 |
| 4 AM - 5 AM | 61 | 201 | 209 | 51.7 | 56.9 | 5.2 | 57.0 | 0.1 |
| 5 AM - 6 AM | 191 | 666 | 687 | 56.6 | 62.1 | 5.5 | 62.2 | 0.1 |
| 6 AM - 7 AM | 590 | 1405 | 1457 | 63.7 | 67.5 | 3.8 | 67.6 | 0.1 |
| 7 AM - 8 AM | 995 | 2033 | 2123 | 66.0 | 69.1 | 3.1 | 69.3 | 0.2 |
| 8 AM - 9 AM | 1002 | 1993 | 2071 | 66.0 | 69.0 | 3.0 | 69.2 | 0.2 |
| 9 AM - 10 AM | 781 | 1671 | 1752 | 64.9 | 68.2 | 3.3 | 68.4 | 0.2 |
| 10 AM - 11 AM | 900 | 1790 | 1911 | 65.5 | 68.5 | 3.0 | 68.8 | 0.3 |
| 11 AM - 12 PM | 1106 | 2209 | 2392 | 64.7 | 67.7 | 3.0 | 68.0 | 0.3 |
| 12 PM - 1 PM | 1193 | 2339 | 2501 | 65.0 | 67.9 | 2.9 | 68.2 | 0.3 |
| 1 PM - 2 PM | 1052 | 2068 | 2193 | 64.5 | 67.4 | 2.9 | 67.6 | 0.2 |
| 2 PM - 3 PM | 1055 | 2084 | 2202 | 64.5 | 67.4 | 2.9 | 67.7 | 0.3 |
| 3 PM - 4 PM | 974 | 2061 | 2178 | 64.1 | 67.4 | 3.3 | 67.6 | 0.2 |
| 4 PM - 5 PM | 1193 | 2389 | 2524 | 68.3 | 71.3 | 3.0 | 71.5 | 0.2 |
| 5 PM - 6 PM | 1115 | 2272 | 2433 | 68.0 | 71.1 | 3.1 | 71.4 | 0.3 |
| 6 PM - 7 PM | 805 | 1747 | 1948 | 66.6 | 70.0 | 3.4 | 70.4 | 0.4 |
| 7 PM - 8 PM | 581 | 1372 | 1553 | 65.2 | 68.9 | 3.7 | 69.4 | 0.5 |
| 8 PM - 9 PM | 473 | 1209 | 1309 | 60.6 | 64.7 | 4.1 | 65.0 | 0.3 |
| 9 PM - 10 PM | 414 | 801 | 873 | 60.0 | 62.9 | 2.9 | 63.2 | 0.3 |
| 10 PM - 11 PM | 269 | 403 | 543 | 58.1 | 59.9 | 1.8 | 61.2 | 1.3 |
| 11 PM - 12 AM | 180 | 270 | 463 | 56.4 | 58.1 | 1.7 | 60.5 | 2.4 |
| Leq(24) | | | | 63.7 | 66.9 | 3.2 | 67.2 | 0.3 |
| Ldn | | | | 66.1 | 69.4 | 3.3 | 69.8 | 0.4 |

## TABLE 14

## PREDICTED NOISE LEVELS
## SITE 2
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 40 | 59 | 163 | 54.5 | 56.2 | 1.7 | 60.6 | 4.4 |
| 1 AM - 2 AM | 25 | 38 | 38 | 52.4 | 54.2 | 1.8 | 54.2 | 0.0 |
| 2 AM - 3 AM | 15 | 23 | 23 | 50.2 | 52.1 | 1.9 | 52.1 | 0.0 |
| 3 AM - 4 AM | 20 | 30 | 30 | 51.5 | 53.2 | 1.7 | 53.2 | 0.0 |
| 4 AM - 5 AM | 26 | 140 | 220 | 52.6 | 59.9 | 7.3 | 61.9 | 2.0 |
| 5 AM - 6 AM | 83 | 464 | 680 | 57.6 | 65.1 | 7.5 | 66.8 | 1.7 |
| 6 AM - 7 AM | 256 | 845 | 1389 | 65.7 | 70.9 | 5.2 | 73.0 | 2.1 |
| 7 AM - 8 AM | 433 | 1129 | 2063 | 68.0 | 72.1 | 4.1 | 74.8 | 2.7 |
| 8 AM - 9 AM | 436 | 1093 | 1902 | 68.0 | 72.0 | 4.0 | 74.4 | 2.4 |
| 9 AM - 10 AM | 339 | 969 | 1814 | 66.9 | 71.5 | 4.6 | 74.2 | 2.7 |
| 10 AM - 11 AM | 391 | 987 | 2247 | 67.5 | 71.5 | 4.0 | 75.1 | 3.6 |
| 11 AM - 12 PM | 481 | 1221 | 3124 | 64.7 | 68.7 | 4.0 | 72.8 | 4.1 |
| 12 PM - 1 PM | 519 | 1278 | 2963 | 65.0 | 68.9 | 3.9 | 72.6 | 3.7 |
| 1 PM - 2 PM | 457 | 1126 | 2425 | 64.4 | 68.4 | 4.0 | 71.7 | 3.3 |
| 2 PM - 3 PM | 459 | 1129 | 2354 | 64.5 | 68.4 | 3.9 | 71.6 | 3.2 |
| 3 PM - 4 PM | 423 | 1175 | 2395 | 64.1 | 68.5 | 4.4 | 71.6 | 3.1 |
| 4 PM - 5 PM | 519 | 1318 | 2718 | 66.3 | 70.3 | 4.0 | 73.5 | 3.2 |
| 5 PM - 6 PM | 485 | 1257 | 2935 | 66.0 | 70.1 | 4.1 | 73.8 | 3.7 |
| 6 PM - 7 PM | 350 | 1005 | 3100 | 64.6 | 69.2 | 4.6 | 74.1 | 4.9 |
| 7 PM - 8 PM | 253 | 819 | 2703 | 63.2 | 68.3 | 5.1 | 73.5 | 5.2 |
| 8 PM - 9 PM | 206 | 748 | 1783 | 61.6 | 67.2 | 5.6 | 71.0 | 3.8 |
| 9 PM - 10 PM | 180 | 430 | 1179 | 61.0 | 64.8 | 3.8 | 69.2 | 4.4 |
| 10 PM - 11 PM | 117 | 175 | 1630 | 59.1 | 60.9 | 1.8 | 70.6 | 9.7 |
| 11 PM - 12 AM | 78 | 117 | 2120 | 57.4 | 59.1 | 1.7 | 71.7 | 12.6 |
| Leq(24) | | | | 64.0 | 68.3 | 4.3 | 71.8 | 3.5 |
| Ldn | | | | 66.9 | 71.5 | 4.6 | 75.5 | 4.0 |

## TABLE 15

## PREDICTED NOISE LEVELS
## SITE 3
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 36 | 55 | 75 | 52.4 | 54.2 | 1.8 | 55.6 | 1.4 |
| 1 AM - 2 AM | 23 | 35 | 35 | 50.4 | 52.3 | 1.9 | 52.3 | 0.0 |
| 2 AM - 3 AM | 14 | 21 | 21 | 48.3 | 50.0 | 1.7 | 50.0 | 0.0 |
| 3 AM - 4 AM | 18 | 27 | 27 | 49.4 | 51.1 | 1.7 | 51.1 | 0.0 |
| 4 AM - 5 AM | 24 | 76 | 92 | 50.6 | 55.6 | 5.0 | 56.5 | 0.9 |
| 5 AM - 6 AM | 76 | 194 | 236 | 55.6 | 59.7 | 4.1 | 60.6 | 0.9 |
| 6 AM - 7 AM | 235 | 473 | 578 | 60.7 | 63.7 | 3.0 | 64.6 | 0.9 |
| 7 AM - 8 AM | 397 | 716 | 895 | 63.0 | 65.5 | 2.5 | 66.5 | 1.0 |
| 8 AM - 9 AM | 400 | 700 | 855 | 63.0 | 65.4 | 2.4 | 66.3 | 0.9 |
| 9 AM - 10 AM | 312 | 567 | 730 | 61.9 | 64.5 | 2.6 | 65.6 | 1.1 |
| 10 AM - 11 AM | 359 | 639 | 881 | 62.5 | 65.0 | 2.5 | 66.4 | 1.4 |
| 11 AM - 12 PM | 441 | 782 | 1148 | 60.7 | 63.2 | 2.5 | 64.8 | 1.6 |
| 12 PM - 1 PM | 476 | 854 | 1178 | 61.0 | 63.5 | 2.5 | 64.9 | 1.4 |
| 1 PM - 2 PM | 420 | 750 | 1000 | 60.5 | 63.0 | 2.5 | 64.2 | 1.2 |
| 2 PM - 3 PM | 421 | 752 | 988 | 60.5 | 63.0 | 2.5 | 64.2 | 1.2 |
| 3 PM - 4 PM | 389 | 723 | 957 | 60.1 | 62.8 | 2.7 | 64.0 | 1.2 |
| 4 PM - 5 PM | 476 | 854 | 1123 | 64.3 | 66.8 | 2.5 | 68.0 | 1.2 |
| 5 PM - 6 PM | 445 | 807 | 1128 | 64.0 | 66.6 | 2.6 | 68.0 | 1.4 |
| 6 PM - 7 PM | 321 | 582 | 984 | 62.6 | 65.2 | 2.6 | 67.4 | 2.2 |
| 7 PM - 8 PM | 232 | 426 | 790 | 61.2 | 63.8 | 2.6 | 66.5 | 2.7 |
| 8 PM - 9 PM | 189 | 323 | 522 | 59.6 | 61.9 | 2.3 | 64.0 | 2.1 |
| 9 PM - 10 PM | 165 | 248 | 392 | 59.0 | 60.8 | 1.8 | 62.8 | 2.0 |
| 10 PM - 11 PM | 107 | 161 | 441 | 57.1 | 58.9 | 1.8 | 63.3 | 4.4 |
| 11 PM - 12 AM | 72 | 108 | 493 | 55.4 | 57.2 | 1.8 | 63.8 | 6.6 |
| Leq(24) | | | | 60.3 | 62.9 | 2.6 | 64.5 | 1.6 |
| Ldn | | | | 63.4 | 66.1 | 2.7 | 68.1 | 2.0 |

## TABLE 16

## PREDICTED NOISE LEVELS
## SITE 4
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 5 | 8 | 48 | 50.0 | 52.1 | 2.1 | 59.8 | 7.7 |
| 1 AM - 2 AM | 3 | 5 | 5 | 47.8 | 50.0 | 2.2 | 50.0 | 0.0 |
| 2 AM - 3 AM | 2 | 3 | 3 | 46.0 | 47.8 | 1.8 | 47.8 | 0.0 |
| 3 AM - 4 AM | 3 | 4 | 4 | 47.8 | 49.0 | 1.2 | 49.0 | 0.0 |
| 4 AM - 5 AM | 4 | 5 | 36 | 49.0 | 50.0 | 1.0 | 58.6 | 8.6 |
| 5 AM - 6 AM | 11 | 17 | 100 | 53.4 | 55.3 | 1.9 | 63.0 | 7.7 |
| 6 AM - 7 AM | 35 | 53 | 262 | 59.7 | 61.5 | 1.8 | 68.4 | 6.9 |
| 7 AM - 8 AM | 59 | 89 | 448 | 61.9 | 63.7 | 1.8 | 70.7 | 7.0 |
| 8 AM - 9 AM | 60 | 90 | 401 | 62.0 | 63.8 | 1.8 | 70.2 | 6.4 |
| 9 AM - 10 AM | 47 | 70 | 395 | 60.9 | 62.7 | 1.8 | 70.2 | 7.5 |
| 10 AM - 11 AM | 54 | 80 | 565 | 61.5 | 63.2 | 1.7 | 71.7 | 8.5 |
| 11 AM - 12 PM | 65 | 99 | 831 | 59.6 | 61.4 | 1.8 | 70.7 | 9.3 |
| 12 PM - 1 PM | 71 | 107 | 755 | 60.0 | 61.8 | 1.8 | 70.3 | 8.5 |
| 1 PM - 2 PM | 63 | 94 | 594 | 59.5 | 61.2 | 1.7 | 69.2 | 8.0 |
| 2 PM - 3 PM | 63 | 94 | 566 | 59.5 | 61.2 | 1.7 | 69.0 | 7.8 |
| 3 PM - 4 PM | 58 | 87 | 556 | 59.1 | 60.9 | 1.8 | 68.9 | 8.0 |
| 4 PM - 5 PM | 71 | 107 | 645 | 61.3 | 63.1 | 1.8 | 70.9 | 7.8 |
| 5 PM - 6 PM | 66 | 100 | 741 | 61.0 | 62.8 | 1.8 | 71.5 | 8.7 |
| 6 PM - 7 PM | 48 | 72 | 878 | 59.6 | 61.4 | 1.8 | 72.2 | 10.8 |
| 7 PM - 8 PM | 35 | 52 | 777 | 58.2 | 60.0 | 1.8 | 71.7 | 11.7 |
| 8 PM - 9 PM | 26 | 42 | 440 | 57.2 | 59.3 | 2.1 | 69.5 | 10.2 |
| 9 PM - 10 PM | 25 | 37 | 325 | 57.0 | 58.7 | 1.7 | 68.1 | 9.4 |
| 10 PM - 11 PM | 16 | 24 | 583 | 55.1 | 56.8 | 1.7 | 70.7 | 13.9 |
| 11 PM - 12 AM | 11 | 16 | 786 | 53.4 | 55.1 | 1.7 | 72.0 | 16.9 |
| Leq(24) | | | | 58.6 | 60.4 | 1.8 | 69.3 | 8.9 |
| Ldn | | | | 61.7 | 63.5 | 1.8 | 73.6 | 10.1 |

# TABLE 17

## PREDICTED NOISE LEVELS
## SITE 5
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 6 | 8 | 38 | 49.8 | 51.1 | 1.3 | 57.8 | 6.7 |
| 1 AM - 2 AM | 3 | 5 | 5 | 46.8 | 49.0 | 2.2 | 49.0 | 0.0 |
| 2 AM - 3 AM | 2 | 3 | 3 | 45.0 | 46.8 | 1.8 | 46.8 | 0.0 |
| 3 AM - 4 AM | 3 | 4 | 4 | 46.8 | 48.0 | 1.2 | 48.0 | 0.0 |
| 4 AM - 5 AM | 4 | 5 | 29 | 48.0 | 49.0 | 1.0 | 56.6 | 7.6 |
| 5 AM - 6 AM | 11 | 17 | 79 | 52.4 | 54.3 | 1.9 | 61.0 | 6.7 |
| 6 AM - 7 AM | 35 | 53 | 210 | 60.7 | 62.5 | 1.8 | 68.4 | 5.9 |
| 7 AM - 8 AM | 59 | 89 | 358 | 62.9 | 64.7 | 1.8 | 70.8 | 6.1 |
| 8 AM - 9 AM | 60 | 90 | 323 | 63.0 | 64.8 | 1.8 | 70.3 | 5.5 |
| 9 AM - 10 AM | 47 | 70 | 314 | 61.9 | 63.7 | 1.8 | 70.2 | 6.5 |
| 10 AM - 11 AM | 54 | 80 | 444 | 62.5 | 64.2 | 1.7 | 71.7 | 7.5 |
| 11 AM - 12 PM | 66 | 99 | 648 | 58.7 | 60.4 | 1.7 | 68.6 | 8.2 |
| 12 PM - 1 PM | 71 | 107 | 593 | 59.0 | 60.8 | 1.8 | 68.2 | 7.4 |
| 1 PM - 2 PM | 63 | 94 | 469 | 58.5 | 60.2 | 1.7 | 67.2 | 7.0 |
| 2 PM - 3 PM | 63 | 94 | 448 | 58.5 | 60.2 | 1.7 | 67.0 | 6.8 |
| 3 PM - 4 PM | 58 | 87 | 439 | 58.1 | 59.9 | 1.8 | 66.9 | 7.0 |
| 4 PM - 5 PM | 71 | 107 | 510 | 61.3 | 63.1 | 1.8 | 69.9 | 6.8 |
| 5 PM - 6 PM | 66 | 100 | 581 | 61.0 | 62.8 | 1.8 | 70.4 | 7.6 |
| 6 PM - 7 PM | 48 | 72 | 676 | 59.6 | 61.4 | 1.8 | 71.1 | 9.7 |
| 7 PM - 8 PM | 35 | 52 | 596 | 58.2 | 60.0 | 1.8 | 70.6 | 10.6 |
| 8 PM - 9 PM | 28 | 42 | 341 | 56.5 | 58.3 | 1.8 | 67.3 | 9.0 |
| 9 PM - 10 PM | 25 | 37 | 253 | 56.0 | 57.7 | 1.7 | 66.1 | 8.4 |
| 10 PM - 11 PM | 16 | 24 | 444 | 54.1 | 55.8 | 1.7 | 68.5 | 12.7 |
| 11 PM - 12 AM | 11 | 16 | 594 | 52.4 | 54.1 | 1.7 | 69.8 | 15.7 |
| Leq(24) | | | | 58.8 | 60.5 | 1.7 | 68.2 | 7.7 |
| Ldn | | | | 61.8 | 63.6 | 1.8 | 72.1 | 8.5 |

## TABLE 18

## PREDICTED NOISE LEVELS
## SITE 6
## Weekday
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 54 | 82 | 88 | 54.4 | 56.2 | 1.8 | 56.5 | 0.3 |
| 1 AM - 2 AM | 35 | 52 | 52 | 52.5 | 54.2 | 1.7 | 54.2 | 0.0 |
| 2 AM - 3 AM | 21 | 31 | 31 | 50.3 | 52.0 | 1.7 | 52.0 | 0.0 |
| 3 AM - 4 AM | 27 | 41 | 41 | 51.4 | 53.2 | 1.8 | 53.2 | 0.0 |
| 4 AM - 5 AM | 36 | 94 | 99 | 52.6 | 56.8 | 4.2 | 57.0 | 0.2 |
| 5 AM - 6 AM | 114 | 251 | 263 | 57.6 | 61.1 | 3.5 | 61.3 | 0.2 |
| 6 AM - 7 AM | 352 | 648 | 679 | 64.7 | 67.3 | 2.6 | 67.6 | 0.3 |
| 7 AM - 8 AM | 594 | 1011 | 1065 | 67.0 | 69.3 | 2.3 | 69.5 | 0.2 |
| 8 AM - 9 AM | 598 | 997 | 1043 | 67.0 | 69.2 | 2.2 | 69.4 | 0.2 |
| 9 AM - 10 AM | 466 | 799 | 847 | 65.9 | 68.3 | 2.4 | 68.5 | 0.2 |
| 10 AM - 11 AM | 537 | 905 | 978 | 66.5 | 68.8 | 2.3 | 69.1 | 0.3 |
| 11 AM - 12 PM | 660 | 1110 | 1219 | 64.7 | 66.9 | 2.2 | 67.3 | 0.4 |
| 12 PM - 1 PM | 712 | 1207 | 1305 | 65.0 | 67.3 | 2.3 | 67.6 | 0.3 |
| 1 PM - 2 PM | 527 | 1061 | 1136 | 63.7 | 66.7 | 3.0 | 67.0 | 0.3 |
| 2 PM - 3 PM | 639 | 1065 | 1136 | 64.5 | 66.7 | 2.2 | 67.0 | 0.3 |
| 3 PM - 4 PM | 581 | 1011 | 1082 | 64.1 | 66.5 | 2.4 | 66.8 | 0.3 |
| 4 PM - 5 PM | 712 | 1207 | 1288 | 68.3 | 70.6 | 2.3 | 70.9 | 0.3 |
| 5 PM - 6 PM | 665 | 1137 | 1234 | 68.0 | 70.3 | 2.3 | 70.7 | 0.4 |
| 6 PM - 7 PM | 480 | 820 | 941 | 66.6 | 68.9 | 2.3 | 69.5 | 0.6 |
| 7 PM - 8 PM | 347 | 600 | 709 | 65.2 | 67.6 | 2.4 | 68.3 | 0.7 |
| 8 PM - 9 PM | 302 | 463 | 523 | 61.9 | 63.7 | 1.8 | 64.3 | 0.6 |
| 9 PM - 10 PM | 247 | 371 | 414 | 61.0 | 62.8 | 1.8 | 63.2 | 0.4 |
| 10 PM - 11 PM | 160 | 241 | 325 | 59.1 | 60.9 | 1.8 | 62.2 | 1.3 |
| 11 PM - 12 AM | 107 | 151 | 277 | 57.4 | 58.9 | 1.5 | 61.5 | 2.6 |
| Leq(24) | | | | 64.1 | 66.4 | 2.3 | 66.8 | 0.4 |
| Ldn | | | | 66.8 | 69.2 | 2.4 | 69.6 | 0.4 |

## TABLE 19

## PREDICTED NOISE LEVELS
## SITE 1
## Weekend
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 135 | 202 | 212 | 56.6 | 58.4 | 1.8 | 58.6 | 0.2 |
| 1 AM - 2 AM | 82 | 122 | 122 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 75 | 113 | 113 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 50 | 75 | 76 | 52.3 | 54.1 | 1.8 | 54.1 | 0.0 |
| 4 AM - 5 AM | 66 | 209 | 213 | 53.5 | 58.5 | 5.0 | 58.6 | 0.1 |
| 5 AM - 6 AM | 160 | 620 | 629 | 57.3 | 63.2 | 5.9 | 63.3 | 0.1 |
| 6 AM - 7 AM | 289 | 953 | 979 | 61.1 | 66.3 | 5.2 | 66.4 | 0.1 |
| 7 AM - 8 AM | 470 | 1246 | 1295 | 63.2 | 67.4 | 4.2 | 67.6 | 0.2 |
| 8 AM - 9 AM | 564 | 1337 | 1401 | 64.0 | 67.7 | 3.7 | 68.0 | 0.3 |
| 9 AM - 10 AM | 750 | 1624 | 1750 | 65.2 | 68.6 | 3.4 | 68.9 | 0.3 |
| 10 AM - 11 AM | 844 | 1705 | 1938 | 65.8 | 68.8 | 3.0 | 69.4 | 0.6 |
| 11 AM - 12 PM | 825 | 1787 | 2081 | 61.1 | 64.4 | 3.3 | 65.1 | 0.7 |
| 12 PM - 1 PM | 809 | 1764 | 2029 | 61.0 | 64.4 | 3.4 | 65.0 | 0.6 |
| 1 PM - 2 PM | 856 | 1774 | 1987 | 61.2 | 64.4 | 3.2 | 64.9 | 0.5 |
| 2 PM - 3 PM | 865 | 1798 | 1936 | 61.3 | 64.5 | 3.2 | 64.8 | 0.3 |
| 3 PM - 4 PM | 750 | 1724 | 1943 | 60.7 | 64.3 | 3.6 | 64.8 | 0.5 |
| 4 PM - 5 PM | 790 | 1785 | 2073 | 65.9 | 69.5 | 3.6 | 70.1 | 0.6 |
| 5 PM - 6 PM | 640 | 1560 | 1826 | 65.0 | 68.9 | 3.9 | 69.6 | 0.7 |
| 6 PM - 7 PM | 480 | 1250 | 1392 | 63.8 | 67.9 | 4.1 | 68.4 | 0.5 |
| 7 PM - 8 PM | 436 | 1154 | 1266 | 63.3 | 67.6 | 4.3 | 68.0 | 0.4 |
| 8 PM - 9 PM | 298 | 947 | 1044 | 60.0 | 65.1 | 5.1 | 65.5 | 0.4 |
| 9 PM - 10 PM | 295 | 622 | 691 | 60.0 | 63.2 | 3.2 | 63.7 | 0.5 |
| 10 PM - 11 PM | 260 | 390 | 465 | 59.5 | 61.2 | 1.7 | 62.0 | 0.8 |
| 11 PM - 12 AM | 226 | 339 | 464 | 58.8 | 60.6 | 1.8 | 62.0 | 1.4 |
| Leq(24) | | | | 61.8 | 65.5 | 3.7 | 65.9 | 0.4 |
| Ldn | | | | 65.2 | 68.9 | 3.7 | 69.3 | 0.4 |

## TABLE 20

## PREDICTED NOISE LEVELS
## SITE 2
## Weekend
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 95 | 142 | 246 | 56.6 | 58.4 | 1.8 | 60.7 | 2.3 |
| 1 AM - 2 AM | 57 | 86 | 86 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 53 | 79 | 79 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 35 | 53 | 55 | 52.3 | 54.1 | 1.8 | 54.2 | 0.1 |
| 4 AM - 5 AM | 45 | 169 | 215 | 53.4 | 59.1 | 5.7 | 60.2 | 1.1 |
| 5 AM - 6 AM | 112 | 508 | 600 | 57.3 | 63.9 | 6.6 | 64.6 | 0.7 |
| 6 AM - 7 AM | 202 | 764 | 1038 | 61.1 | 66.9 | 5.8 | 68.2 | 1.3 |
| 7 AM - 8 AM | 330 | 975 | 1486 | 63.2 | 67.9 | 4.7 | 69.7 | 1.8 |
| 8 AM - 9 AM | 396 | 1034 | 1704 | 64.0 | 68.2 | 4.2 | 70.3 | 2.1 |
| 9 AM - 10 AM | 526 | 1249 | 2557 | 65.2 | 69.0 | 3.8 | 72.1 | 3.1 |
| 10 AM - 11 AM | 592 | 1288 | 3701 | 65.7 | 69.1 | 3.4 | 73.7 | 4.6 |
| 11 AM - 12 PM | 578 | 1368 | 4428 | 64.1 | 67.8 | 3.7 | 72.9 | 5.1 |
| 12 PM - 1 PM | 567 | 1351 | 4107 | 64.0 | 67.8 | 3.8 | 72.6 | 4.8 |
| 1 PM - 2 PM | 600 | 1341 | 3556 | 64.2 | 67.7 | 3.5 | 72.0 | 4.3 |
| 2 PM - 3 PM | 608 | 1351 | 2779 | 64.3 | 67.8 | 3.5 | 70.9 | 3.1 |
| 3 PM - 4 PM | 526 | 1329 | 3602 | 63.7 | 67.7 | 4.0 | 72.0 | 4.3 |
| 4 PM - 5 PM | 554 | 1371 | 4364 | 65.9 | 69.8 | 3.9 | 74.9 | 5.1 |
| 5 PM - 6 PM | 449 | 1213 | 3984 | 65.0 | 69.3 | 4.3 | 74.5 | 5.2 |
| 6 PM - 7 PM | 337 | 985 | 2364 | 63.8 | 68.4 | 4.6 | 72.2 | 3.8 |
| 7 PM - 8 PM | 306 | 899 | 2068 | 63.3 | 68.0 | 4.7 | 71.6 | 3.6 |
| 8 PM - 9 PM | 209 | 753 | 1766 | 60.0 | 65.6 | 5.6 | 69.3 | 3.7 |
| 9 PM - 10 PM | 207 | 470 | 1189 | 60.0 | 63.6 | 3.6 | 67.6 | 4.0 |
| 10 PM - 11 PM | 183 | 274 | 1047 | 59.5 | 61.2 | 1.7 | 67.0 | 5.8 |
| 11 PM - 12 AM | 158 | 238 | 1541 | 58.8 | 60.6 | 1.8 | 68.7 | 8.1 |
| Leq(24) | | | | 62.5 | 66.5 | 4.0 | 70.5 | 4.0 |
| Ldn | | | | 65.6 | 69.6 | 4.0 | 73.2 | 3.6 |

# TABLE 21

## PREDICTED NOISE LEVELS
## SITE 3
## Weekend
## Enterprise Park & Race Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 33 | 50 | 70 | 54.6 | 56.4 | 1.8 | 57.8 | 1.4 |
| 1 AM - 2 AM | 20 | 30 | 30 | 52.4 | 54.1 | 1.7 | 54.1 | 0.0 |
| 2 AM - 3 AM | 19 | 28 | 28 | 52.2 | 53.8 | 1.6 | 53.8 | 0.0 |
| 3 AM - 4 AM | 12 | 19 | 19 | 50.2 | 52.2 | 2.0 | 52.2 | 0.0 |
| 4 AM - 5 AM | 16 | 64 | 73 | 51.4 | 57.4 | 6.0 | 58.0 | 0.6 |
| 5 AM - 6 AM | 40 | 139 | 157 | 55.4 | 60.8 | 5.4 | 61.3 | 0.5 |
| 6 AM - 7 AM | 71 | 227 | 280 | 59.1 | 64.1 | 5.0 | 65.0 | 0.9 |
| 7 AM - 8 AM | 116 | 295 | 393 | 61.2 | 65.2 | 4.0 | 66.5 | 1.3 |
| 8 AM - 9 AM | 140 | 310 | 438 | 62.0 | 65.5 | 3.5 | 67.0 | 1.5 |
| 9 AM - 10 AM | 186 | 378 | 630 | 63.2 | 66.3 | 3.1 | 68.5 | 2.2 |
| 10 AM - 11 AM | 209 | 413 | 877 | 63.7 | 66.7 | 3.0 | 70.0 | 3.3 |
| 11 AM - 12 PM | 204 | 426 | 1015 | 59.1 | 62.3 | 3.2 | 66.1 | 3.8 |
| 12 PM - 1 PM | 200 | 440 | 970 | 59.0 | 62.4 | 3.4 | 65.9 | 3.5 |
| 1 PM - 2 PM | 212 | 438 | 864 | 59.3 | 62.4 | 3.1 | 65.4 | 3.0 |
| 2 PM - 3 PM | 214 | 441 | 716 | 59.3 | 62.4 | 3.1 | 64.5 | 2.1 |
| 3 PM - 4 PM | 185 | 418 | 855 | 58.7 | 62.2 | 3.5 | 65.3 | 3.1 |
| 4 PM - 5 PM | 196 | 433 | 1009 | 61.9 | 65.4 | 3.5 | 69.1 | 3.7 |
| 5 PM - 6 PM | 158 | 378 | 910 | 61.0 | 64.8 | 3.8 | 68.6 | 3.8 |
| 6 PM - 7 PM | 119 | 278 | 543 | 59.8 | 63.5 | 3.7 | 66.4 | 2.9 |
| 7 PM - 8 PM | 108 | 242 | 467 | 59.3 | 62.9 | 3.6 | 65.7 | 2.8 |
| 8 PM - 9 PM | 74 | 151 | 345 | 58.1 | 61.2 | 3.1 | 64.7 | 3.5 |
| 9 PM - 10 PM | 73 | 109 | 248 | 58.0 | 59.7 | 1.7 | 63.3 | 3.6 |
| 10 PM - 11 PM | 64 | 97 | 245 | 57.4 | 59.2 | 1.8 | 63.3 | 4.1 |
| 11 PM - 12 AM | 56 | 84 | 335 | 56.8 | 58.6 | 1.8 | 64.6 | 6.0 |
| Leq(24) | | | | 59.3 | 62.7 | 3.4 | 65.4 | 2.7 |
| Ldn | | | | 63.0 | 66.5 | 3.5 | 68.9 | 2.4 |

## TABLE 22

## PREDICTED NOISE LEVELS
## SITE 4
## Weekend
## Enterprise Park & Raceway Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| Hour | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 55 | 52.8 | 54.5 | 1.7 | 60.2 | 5.7 |
| 1 AM - 2 AM | 6 | 9 | 9 | 50.6 | 52.3 | 1.7 | 52.3 | 0.0 |
| 2 AM - 3 AM | 5 | 8 | 8 | 49.8 | 51.8 | 2.0 | 51.8 | 0.0 |
| 3 AM - 4 AM | 4 | 5 | 6 | 48.8 | 49.8 | 1.0 | 50.6 | 0.8 |
| 4 AM - 5 AM | 5 | 7 | 25 | 49.8 | 51.2 | 1.4 | 56.8 | 5.6 |
| 5 AM - 6 AM | 12 | 17 | 52 | 53.6 | 55.1 | 1.5 | 59.9 | 4.8 |
| 6 AM - 7 AM | 21 | 31 | 137 | 58.1 | 59.8 | 1.7 | 66.2 | 6.4 |
| 7 AM - 8 AM | 34 | 51 | 247 | 60.2 | 61.9 | 1.7 | 68.8 | 6.9 |
| 8 AM - 9 AM | 41 | 61 | 319 | 61.0 | 62.7 | 1.7 | 69.9 | 7.2 |
| 9 AM - 10 AM | 54 | 81 | 584 | 62.2 | 64.0 | 1.8 | 72.5 | 8.5 |
| 10 AM - 11 AM | 61 | 91 | 1020 | 62.7 | 64.5 | 1.8 | 75.0 | 10.5 |
| 11 AM - 12 PM | 59 | 89 | 1266 | 60.1 | 61.9 | 1.8 | 73.4 | 11.5 |
| 12 PM - 1 PM | 58 | 87 | 1147 | 60.0 | 61.8 | 1.8 | 73.0 | 11.2 |
| 1 PM - 2 PM | 62 | 93 | 945 | 60.3 | 62.1 | 1.8 | 72.1 | 10.0 |
| 2 PM - 3 PM | 62 | 94 | 643 | 60.3 | 62.1 | 1.8 | 70.4 | 8.3 |
| 3 PM - 4 PM | 54 | 81 | 955 | 59.7 | 61.5 | 1.8 | 72.2 | 10.7 |
| 4 PM - 5 PM | 57 | 85 | 1236 | 59.9 | 61.7 | 1.8 | 73.3 | 11.6 |
| 5 PM - 6 PM | 46 | 69 | 1135 | 59.0 | 60.8 | 1.8 | 72.9 | 12.1 |
| 6 PM - 7 PM | 35 | 52 | 582 | 57.8 | 59.5 | 1.7 | 70.0 | 10.5 |
| 7 PM - 8 PM | 31 | 47 | 497 | 57.3 | 59.1 | 1.8 | 69.3 | 10.2 |
| 8 PM - 9 PM | 21 | 32 | 422 | 56.0 | 57.8 | 1.8 | 69.0 | 11.2 |
| 9 PM - 10 PM | 21 | 32 | 308 | 56.0 | 57.8 | 1.8 | 67.7 | 9.9 |
| 10 PM - 11 PM | 19 | 28 | 326 | 55.6 | 57.2 | 1.6 | 67.9 | 10.7 |
| 11 PM - 12 AM | 16 | 24 | 526 | 54.8 | 56.6 | 1.8 | 70.0 | 13.4 |
| Leq(24) | | | | 58.4 | 60.2 | 1.8 | 70.2 | 10.0 |
| Ldn | | | | 61.7 | 63.4 | 1.7 | 72.8 | 9.4 |

## TABLE 23

## PREDICTED NOISE LEVELS
## SITE 5
## Weekend
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 45 | 53.8 | 55.5 | 1.7 | 60.3 | 4.8 |
| 1 AM - 2 AM | 6 | 9 | 9 | 51.6 | 53.3 | 1.7 | 53.3 | 0.0 |
| 2 AM - 3 AM | 5 | 8 | 8 | 50.8 | 52.8 | 2.0 | 52.8 | 0.0 |
| 3 AM - 4 AM | 4 | 5 | 6 | 49.8 | 50.8 | 1.0 | 51.6 | 0.8 |
| 4 AM - 5 AM | 5 | 7 | 20 | 50.8 | 52.2 | 1.4 | 56.8 | 4.6 |
| 5 AM - 6 AM | 12 | 17 | 44 | 54.6 | 56.1 | 1.5 | 60.2 | 4.1 |
| 6 AM - 7 AM | 21 | 31 | 110 | 58.1 | 59.8 | 1.7 | 65.3 | 5.5 |
| 7 AM - 8 AM | 34 | 51 | 196 | 60.2 | 61.9 | 1.7 | 67.8 | 5.9 |
| 8 AM - 9 AM | 41 | 61 | 254 | 61.0 | 62.7 | 1.7 | 68.9 | 6.2 |
| 9 AM - 10 AM | 54 | 81 | 458 | 62.2 | 64.0 | 1.8 | 71.5 | 7.5 |
| 10 AM - 11 AM | 61 | 91 | 788 | 62.7 | 64.5 | 1.8 | 73.8 | 9.3 |
| 11 AM - 12 PM | 59 | 89 | 972 | 60.1 | 61.9 | 1.8 | 72.2 | 10.3 |
| 12 PM - 1 PM | 58 | 87 | 882 | 60.0 | 61.8 | 1.8 | 71.8 | 10.0 |
| 1 PM - 2 PM | 62 | 93 | 732 | 60.3 | 62.1 | 1.8 | 71.0 | 8.9 |
| 2 PM - 3 PM | 62 | 94 | 506 | 60.3 | 62.1 | 1.8 | 69.4 | 7.3 |
| 3 PM - 4 PM | 54 | 81 | 737 | 59.7 | 61.5 | 1.8 | 71.0 | 9.5 |
| 4 PM - 5 PM | 57 | 85 | 949 | 62.9 | 64.7 | 1.8 | 75.1 | 10.4 |
| 5 PM - 6 PM | 46 | 69 | 868 | 62.0 | 63.8 | 1.8 | 74.8 | 11.0 |
| 6 PM - 7 PM | 35 | 52 | 450 | 60.8 | 62.5 | 1.7 | 71.9 | 9.4 |
| 7 PM - 8 PM | 31 | 47 | 384 | 60.3 | 62.1 | 1.8 | 71.2 | 9.1 |
| 8 PM - 9 PM | 21 | 32 | 324 | 57.0 | 58.8 | 1.8 | 68.9 | 10.1 |
| 9 PM - 10 PM | 21 | 32 | 239 | 57.0 | 58.8 | 1.8 | 67.6 | 8.8 |
| 10 PM - 11 PM | 19 | 28 | 251 | 56.6 | 58.2 | 1.6 | 67.8 | 9.6 |
| 11 PM - 12 AM | 16 | 24 | 400 | 55.8 | 57.6 | 1.8 | 69.8 | 12.2 |
| Leq(24) | | | | 59.3 | 61.0 | 1.7 | 70.1 | 9.1 |
| Ldn | | | | 62.5 | 64.2 | 1.7 | 72.7 | 8.5 |

# TABLE 24

## PREDICTED NOISE LEVELS
## SITE 6
## Weekend
## Enterprise Park & Raceway Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 69 | 104 | 110 | 56.6 | 58.4 | 1.8 | 58.6 | 0.2 |
| 1 AM - 2 AM | 42 | 63 | 63 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 39 | 58 | 58 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 26 | 39 | 39 | 52.4 | 54.1 | 1.7 | 54.1 | 0.0 |
| 4 AM - 5 AM | 34 | 91 | 93 | 53.5 | 57.8 | 4.3 | 57.9 | 0.1 |
| 5 AM - 6 AM | 82 | 203 | 208 | 57.3 | 61.3 | 4.0 | 61.4 | 0.1 |
| 6 AM - 7 AM | 146 | 342 | 358 | 63.0 | 66.7 | 3.7 | 66.9 | 0.2 |
| 7 AM - 8 AM | 241 | 482 | 512 | 65.2 | 68.2 | 3.0 | 68.5 | 0.3 |
| 8 AM - 9 AM | 290 | 535 | 573 | 66.0 | 68.7 | 2.7 | 69.0 | 0.3 |
| 9 AM - 10 AM | 385 | 677 | 753 | 67.2 | 69.7 | 2.5 | 70.1 | 0.4 |
| 10 AM - 11 AM | 433 | 749 | 889 | 67.7 | 70.1 | 2.4 | 70.9 | 0.8 |
| 11 AM - 12 PM | 423 | 755 | 932 | 65.1 | 67.6 | 2.5 | 68.5 | 0.9 |
| 12 PM - 1 PM | 415 | 763 | 922 | 65.0 | 67.6 | 2.6 | 68.5 | 0.9 |
| 1 PM - 2 PM | 439 | 779 | 907 | 65.2 | 67.7 | 2.5 | 68.4 | 0.7 |
| 2 PM - 3 PM | 444 | 785 | 869 | 65.3 | 67.8 | 2.5 | 68.2 | 0.4 |
| 3 PM - 4 PM | 365 | 717 | 848 | 64.4 | 67.4 | 3.0 | 68.1 | 0.7 |
| 4 PM - 5 PM | 406 | 748 | 921 | 65.9 | 68.6 | 2.7 | 69.5 | 0.9 |
| 5 PM - 6 PM | 328 | 633 | 792 | 65.0 | 67.9 | 2.9 | 68.8 | 0.9 |
| 6 PM - 7 PM | 248 | 469 | 549 | 63.8 | 66.6 | 2.8 | 67.2 | 0.6 |
| 7 PM - 8 PM | 224 | 416 | 483 | 63.3 | 66.0 | 2.7 | 66.7 | 0.7 |
| 8 PM - 9 PM | 153 | 269 | 328 | 60.1 | 62.5 | 2.4 | 63.4 | 0.9 |
| 9 PM - 10 PM | 151 | 227 | 268 | 60.0 | 61.8 | 1.8 | 62.5 | 0.7 |
| 10 PM - 11 PM | 134 | 200 | 245 | 59.5 | 61.2 | 1.7 | 62.1 | 0.9 |
| 11 PM - 12 AM | 116 | 174 | 249 | 58.9 | 60.6 | 1.7 | 62.2 | 1.6 |
| Leq(24) | | | | 63.5 | 66.1 | 2.6 | 66.8 | 0.7 |
| Ldn | | | | 66.4 | 69.1 | 2.7 | 69.7 | 0.6 |

# TABLE 25

## PREDICTED NOISE LEVELS
## SITE 1
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 91 | 137 | 137 | 53.4 | 55.2 | 1.8 | 55.2 | 0.0 |
| 1 AM - 2 AM | 59 | 88 | 88 | 51.5 | 53.3 | 1.8 | 53.3 | 0.0 |
| 2 AM - 3 AM | 35 | 52 | 52 | 49.3 | 51.0 | 1.7 | 51.0 | 0.0 |
| 3 AM - 4 AM | 46 | 68 | 68 | 50.5 | 52.2 | 1.7 | 52.2 | 0.0 |
| 4 AM - 5 AM | 61 | 201 | 209 | 51.7 | 56.9 | 5.2 | 57.0 | 0.1 |
| 5 AM - 6 AM | 191 | 666 | 690 | 56.6 | 62.1 | 5.5 | 62.2 | 0.1 |
| 6 AM - 7 AM | 590 | 1405 | 1463 | 63.7 | 67.5 | 3.8 | 67.6 | 0.1 |
| 7 AM - 8 AM | 995 | 2033 | 2117 | 66.0 | 69.1 | 3.1 | 69.2 | 0.1 |
| 8 AM - 9 AM | 1002 | 1993 | 2053 | 66.0 | 69.0 | 3.0 | 69.1 | 0.1 |
| 9 AM - 10 AM | 781 | 1671 | 1705 | 64.9 | 68.2 | 3.3 | 68.3 | 0.1 |
| 10 AM - 11 AM | 900 | 1790 | 1821 | 65.5 | 68.5 | 3.0 | 68.6 | 0.1 |
| 11 AM - 12 PM | 1106 | 2209 | 2273 | 64.7 | 67.7 | 3.0 | 67.8 | 0.1 |
| 12 PM - 1 PM | 1193 | 2339 | 2404 | 65.0 | 67.9 | 2.9 | 68.0 | 0.1 |
| 1 PM - 2 PM | 1052 | 2068 | 2099 | 64.5 | 67.4 | 2.9 | 67.5 | 0.1 |
| 2 PM - 3 PM | 1055 | 2084 | 2120 | 64.5 | 67.4 | 2.9 | 67.5 | 0.1 |
| 3 PM - 4 PM | 974 | 2061 | 2107 | 64.1 | 67.4 | 3.3 | 67.5 | 0.1 |
| 4 PM - 5 PM | 1193 | 2389 | 2459 | 68.3 | 71.3 | 3.0 | 71.4 | 0.1 |
| 5 PM - 6 PM | 1115 | 2272 | 2362 | 68.0 | 71.1 | 3.1 | 71.3 | 0.2 |
| 6 PM - 7 PM | 805 | 1747 | 1817 | 66.6 | 70.0 | 3.4 | 70.1 | 0.1 |
| 7 PM - 8 PM | 581 | 1372 | 1422 | 65.2 | 68.9 | 3.7 | 69.1 | 0.2 |
| 8 PM - 9 PM | 473 | 1209 | 1241 | 60.6 | 64.7 | 4.1 | 64.8 | 0.1 |
| 9 PM - 10 PM | 414 | 801 | 821 | 60.0 | 62.9 | 2.9 | 63.0 | 0.1 |
| 10 PM - 11 PM | 269 | 403 | 416 | 58.1 | 59.9 | 1.8 | 60.0 | 0.1 |
| 11 PM - 12 AM | 180 | 270 | 274 | 56.4 | 58.1 | 1.7 | 58.2 | 0.1 |
| Leq(24) | | | | 63.7 | 66.9 | 3.2 | 67.0 | 0.1 |
| Ldn | | | | 66.1 | 69.4 | 3.3 | 69.5 | 0.1 |

# TABLE 26

## PREDICTED NOISE LEVELS
## SITE 2
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 40 | 59 | 59 | 54.5 | 56.2 | 1.7 | 56.2 | 0.0 |
| 1 AM - 2 AM | 25 | 38 | 38 | 52.4 | 54.2 | 1.8 | 54.2 | 0.0 |
| 2 AM - 3 AM | 15 | 23 | 23 | 50.2 | 52.1 | 1.9 | 52.1 | 0.0 |
| 3 AM - 4 AM | 20 | 30 | 30 | 51.5 | 53.2 | 1.7 | 53.2 | 0.0 |
| 4 AM - 5 AM | 26 | 140 | 225 | 52.6 | 59.9 | 7.3 | 62.0 | 2.1 |
| 5 AM - 6 AM | 83 | 464 | 714 | 57.6 | 65.1 | 7.5 | 67.0 | 1.9 |
| 6 AM - 7 AM | 256 | 845 | 1450 | 65.7 | 70.9 | 5.2 | 73.2 | 2.3 |
| 7 AM - 8 AM | 433 | 1129 | 1997 | 68.0 | 72.1 | 4.1 | 74.6 | 2.5 |
| 8 AM - 9 AM | 436 | 1093 | 1717 | 68.0 | 72.0 | 4.0 | 74.0 | 2.0 |
| 9 AM - 10 AM | 339 | 969 | 1316 | 66.9 | 71.5 | 4.6 | 72.8 | 1.3 |
| 10 AM - 11 AM | 391 | 987 | 1304 | 67.5 | 71.5 | 4.0 | 72.8 | 1.3 |
| 11 AM - 12 PM | 481 | 1221 | 1882 | 64.7 | 68.7 | 4.0 | 70.6 | 1.9 |
| 12 PM - 1 PM | 519 | 1278 | 1948 | 65.0 | 68.9 | 3.9 | 70.7 | 1.8 |
| 1 PM - 2 PM | 457 | 1126 | 1446 | 64.4 | 68.4 | 4.0 | 69.5 | 1.1 |
| 2 PM - 3 PM | 459 | 1129 | 1500 | 64.5 | 68.4 | 3.9 | 69.6 | 1.2 |
| 3 PM - 4 PM | 423 | 1175 | 1653 | 64.1 | 68.5 | 4.4 | 70.0 | 1.5 |
| 4 PM - 5 PM | 519 | 1318 | 2041 | 66.3 | 70.3 | 4.0 | 72.2 | 1.9 |
| 5 PM - 6 PM | 485 | 1257 | 2205 | 66.0 | 70.1 | 4.1 | 72.6 | 2.5 |
| 6 PM - 7 PM | 350 | 1005 | 1731 | 64.6 | 69.2 | 4.6 | 71.5 | 2.3 |
| 7 PM - 8 PM | 253 | 819 | 1339 | 63.2 | 68.3 | 5.1 | 70.4 | 2.1 |
| 8 PM - 9 PM | 206 | 748 | 1075 | 61.6 | 67.2 | 5.6 | 68.8 | 1.6 |
| 9 PM - 10 PM | 180 | 430 | 639 | 61.0 | 64.8 | 3.8 | 66.5 | 1.7 |
| 10 PM - 11 PM | 117 | 175 | 305 | 59.1 | 60.9 | 1.8 | 63.3 | 2.4 |
| 11 PM - 12 AM | 78 | 117 | 154 | 57.4 | 59.1 | 1.7 | 60.3 | 1.2 |
| Leq(24) | | | | 64.0 | 68.3 | 4.3 | 70.1 | 1.8 |
| Ldn | | | | 66.9 | 71.5 | 4.6 | 73.5 | 2.0 |

# TABLE 27

## PREDICTED NOISE LEVELS
## SITE 3
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 36 | 55 | 55 | 52.4 | 54.2 | 1.8 | 54.2 | 0.0 |
| 1 AM - 2 AM | 23 | 35 | 35 | 50.4 | 52.3 | 1.9 | 52.3 | 0.0 |
| 2 AM - 3 AM | 14 | 21 | 21 | 48.3 | 50.0 | 1.7 | 50.0 | 0.0 |
| 3 AM - 4 AM | 18 | 27 | 27 | 49.4 | 51.1 | 1.7 | 51.1 | 0.0 |
| 4 AM - 5 AM | 24 | 76 | 93 | 50.6 | 55.6 | 5.0 | 56.5 | 0.9 |
| 5 AM - 6 AM | 76 | 194 | 242 | 55.6 | 59.7 | 4.1 | 60.7 | 1.0 |
| 6 AM - 7 AM | 235 | 473 | 589 | 60.7 | 63.7 | 3.0 | 64.7 | 1.0 |
| 7 AM - 8 AM | 397 | 716 | 883 | 63.0 | 65.5 | 2.5 | 66.4 | 0.9 |
| 8 AM - 9 AM | 400 | 700 | 820 | 63.0 | 65.4 | 2.4 | 66.1 | 0.7 |
| 9 AM - 10 AM | 312 | 567 | 634 | 61.9 | 64.5 | 2.6 | 65.0 | 0.5 |
| 10 AM - 11 AM | 359 | 639 | 700 | 62.5 | 65.0 | 2.5 | 65.4 | 0.4 |
| 11 AM - 12 PM | 441 | 782 | 909 | 60.7 | 63.2 | 2.5 | 63.8 | 0.6 |
| 12 PM - 1 PM | 476 | 854 | 983 | 61.0 | 63.5 | 2.5 | 64.1 | 0.6 |
| 1 PM - 2 PM | 420 | 750 | 811 | 60.5 | 63.0 | 2.5 | 63.3 | 0.3 |
| 2 PM - 3 PM | 421 | 752 | 824 | 60.5 | 63.0 | 2.5 | 63.4 | 0.4 |
| 3 PM - 4 PM | 389 | 723 | 815 | 60.1 | 62.8 | 2.7 | 63.3 | 0.5 |
| 4 PM - 5 PM | 476 | 854 | 993 | 64.3 | 66.8 | 2.5 | 67.5 | 0.7 |
| 5 PM - 6 PM | 445 | 807 | 988 | 64.0 | 66.6 | 2.6 | 67.5 | 0.9 |
| 6 PM - 7 PM | 321 | 582 | 721 | 62.6 | 65.2 | 2.6 | 66.1 | 0.9 |
| 7 PM - 8 PM | 232 | 426 | 528 | 61.2 | 63.8 | 2.6 | 64.7 | 0.9 |
| 8 PM - 9 PM | 189 | 323 | 386 | 59.6 | 61.9 | 2.3 | 62.7 | 0.8 |
| 9 PM - 10 PM | 165 | 248 | 288 | 59.0 | 60.8 | 1.8 | 61.4 | 0.6 |
| 10 PM - 11 PM | 107 | 161 | 186 | 57.1 | 58.9 | 1.8 | 59.5 | 0.6 |
| 11 PM - 12 AM | 72 | 108 | 115 | 55.4 | 57.2 | 1.8 | 57.4 | 0.2 |
| Leq(24) | | | | 60.3 | 62.9 | 2.6 | 63.6 | 0.7 |
| Ldn | | | | 63.4 | 66.1 | 2.7 | 66.8 | 0.7 |

## TABLE 28

## PREDICTED NOISE LEVELS
## SITE 4
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 5 | 8 | 8 | 50.0 | 52.1 | 2.1 | 52.1 | 0.0 |
| 1 AM - 2 AM | 3 | 5 | 5 | 47.8 | 50.0 | 2.2 | 50.0 | 0.0 |
| 2 AM - 3 AM | 2 | 3 | 3 | 46.0 | 47.8 | 1.8 | 47.8 | 0.0 |
| 3 AM - 4 AM | 3 | 4 | 4 | 47.8 | 49.0 | 1.2 | 49.0 | 0.0 |
| 4 AM - 5 AM | 4 | 5 | 38 | 49.0 | 50.0 | 1.0 | 58.8 | 8.8 |
| 5 AM - 6 AM | 11 | 17 | 113 | 53.4 | 55.3 | 1.9 | 63.6 | 8.3 |
| 6 AM - 7 AM | 35 | 53 | 286 | 59.7 | 61.5 | 1.8 | 68.8 | 7.3 |
| 7 AM - 8 AM | 59 | 89 | 423 | 61.9 | 63.7 | 1.8 | 70.5 | 6.8 |
| 8 AM - 9 AM | 60 | 90 | 329 | 62.0 | 63.8 | 1.8 | 69.4 | 5.6 |
| 9 AM - 10 AM | 47 | 70 | 203 | 60.9 | 62.7 | 1.8 | 67.3 | 4.6 |
| 10 AM - 11 AM | 54 | 80 | 202 | 61.5 | 63.2 | 1.7 | 67.3 | 4.1 |
| 11 AM - 12 PM | 65 | 99 | 353 | 59.6 | 61.4 | 1.8 | 67.0 | 5.6 |
| 12 PM - 1 PM | 71 | 107 | 364 | 60.0 | 61.8 | 1.8 | 67.1 | 5.3 |
| 1 PM - 2 PM | 63 | 94 | 217 | 59.5 | 61.2 | 1.7 | 64.9 | 3.7 |
| 2 PM - 3 PM | 63 | 94 | 237 | 59.5 | 61.2 | 1.7 | 65.2 | 4.0 |
| 3 PM - 4 PM | 58 | 87 | 271 | 59.1 | 60.9 | 1.8 | 65.8 | 4.9 |
| 4 PM - 5 PM | 71 | 107 | 385 | 61.3 | 63.1 | 1.8 | 68.7 | 5.6 |
| 5 PM - 6 PM | 66 | 100 | 461 | 61.0 | 62.8 | 1.8 | 69.4 | 6.6 |
| 6 PM - 7 PM | 48 | 72 | 351 | 59.6 | 61.4 | 1.8 | 68.3 | 6.9 |
| 7 PM - 8 PM | 35 | 52 | 252 | 58.2 | 60.0 | 1.8 | 66.8 | 6.8 |
| 8 PM - 9 PM | 26 | 42 | 168 | 57.2 | 59.3 | 2.1 | 65.3 | 6.0 |
| 9 PM - 10 PM | 25 | 37 | 117 | 57.0 | 58.7 | 1.7 | 63.7 | 5.0 |
| 10 PM - 11 PM | 16 | 24 | 74 | 55.1 | 56.8 | 1.7 | 61.7 | 4.9 |
| 11 PM - 12 AM | 11 | 16 | 30 | 53.4 | 55.1 | 1.7 | 57.8 | 2.7 |
| Leq(24) | | | | 58.6 | 60.4 | 1.8 | 66.1 | 5.7 |
| Ldn | | | | 61.7 | 63.5 | 1.8 | 69.5 | 6.0 |

## TABLE 29

## PREDICTED NOISE LEVELS
## SITE 5
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 6 | 8 | 8 | 49.8 | 51.1 | 1.3 | 51.1 | 0.0 |
| 1 AM - 2 AM | 3 | 5 | 5 | 46.8 | 49.0 | 2.2 | 49.0 | 0.0 |
| 2 AM - 3 AM | 2 | 3 | 3 | 45.0 | 46.8 | 1.8 | 46.8 | 0.0 |
| 3 AM - 4 AM | 3 | 4 | 4 | 46.8 | 48.0 | 1.2 | 48.0 | 0.0 |
| 4 AM - 5 AM | 4 | 5 | 30 | 48.0 | 49.0 | 1.0 | 56.8 | 7.8 |
| 5 AM - 6 AM | 11 | 17 | 89 | 52.4 | 54.3 | 1.9 | 61.5 | 7.2 |
| 6 AM - 7 AM | 35 | 53 | 227 | 60.7 | 62.5 | 1.8 | 68.8 | 6.3 |
| 7 AM - 8 AM | 59 | 89 | 339 | 62.9 | 64.7 | 1.8 | 70.5 | 5.8 |
| 8 AM - 9 AM | 60 | 90 | 269 | 63.0 | 64.8 | 1.8 | 69.5 | 4.7 |
| 9 AM - 10 AM | 47 | 70 | 170 | 61.9 | 63.7 | 1.8 | 67.5 | 3.8 |
| 10 AM - 11 AM | 54 | 80 | 172 | 62.5 | 64.2 | 1.7 | 67.6 | 3.4 |
| 11 AM - 12 PM | 66 | 99 | 289 | 58.7 | 60.4 | 1.7 | 65.1 | 4.7 |
| 12 PM - 1 PM | 71 | 107 | 300 | 59.0 | 60.8 | 1.8 | 65.3 | 4.5 |
| 1 PM - 2 PM | 63 | 94 | 186 | 58.5 | 60.2 | 1.7 | 63.2 | 3.0 |
| 2 PM - 3 PM | 63 | 94 | 202 | 58.5 | 60.2 | 1.7 | 63.5 | 3.3 |
| 3 PM - 4 PM | 58 | 87 | 225 | 58.1 | 59.9 | 1.8 | 64.0 | 4.1 |
| 4 PM - 5 PM | 71 | 107 | 315 | 61.3 | 63.1 | 1.8 | 67.8 | 4.7 |
| 5 PM - 6 PM | 66 | 100 | 370 | 61.0 | 62.8 | 1.8 | 68.5 | 5.7 |
| 6 PM - 7 PM | 48 | 72 | 281 | 59.6 | 61.4 | 1.8 | 67.3 | 5.9 |
| 7 PM - 8 PM | 35 | 52 | 202 | 58.2 | 60.0 | 1.8 | 65.9 | 5.9 |
| 8 PM - 9 PM | 28 | 42 | 136 | 56.5 | 58.3 | 1.8 | 63.4 | 5.1 |
| 9 PM - 10 PM | 25 | 37 | 97 | 56.0 | 57.7 | 1.7 | 61.9 | 4.2 |
| 10 PM - 11 PM | 16 | 24 | 62 | 54.1 | 55.8 | 1.7 | 59.9 | 4.1 |
| 11 PM - 12 AM | 11 | 16 | 27 | 52.4 | 54.1 | 1.7 | 56.3 | 2.2 |
| Leq(24) | | | | 58.8 | 60.5 | 1.7 | 65.3 | 4.8 |
| Ldn | | | | 61.8 | 63.6 | 1.8 | 68.8 | 5.2 |

## TABLE 30

## PREDICTED NOISE LEVELS
## SITE 6
## Weekday
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 54 | 82 | 82 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 1 AM - 2 AM | 35 | 52 | 52 | 52.5 | 54.2 | 1.7 | 54.2 | 0.0 |
| 2 AM - 3 AM | 21 | 31 | 31 | 50.3 | 52.0 | 1.7 | 52.0 | 0.0 |
| 3 AM - 4 AM | 27 | 41 | 41 | 51.4 | 53.2 | 1.8 | 53.2 | 0.0 |
| 4 AM - 5 AM | 36 | 94 | 99 | 52.6 | 56.8 | 4.2 | 57.0 | 0.2 |
| 5 AM - 6 AM | 114 | 251 | 265 | 57.6 | 61.1 | 3.5 | 61.3 | 0.2 |
| 6 AM - 7 AM | 352 | 648 | 683 | 64.7 | 67.3 | 2.6 | 67.6 | 0.3 |
| 7 AM - 8 AM | 594 | 1011 | 1061 | 67.0 | 69.3 | 2.3 | 69.5 | 0.2 |
| 8 AM - 9 AM | 598 | 997 | 1033 | 67.0 | 69.2 | 2.2 | 69.4 | 0.2 |
| 9 AM - 10 AM | 466 | 799 | 819 | 65.9 | 68.3 | 2.4 | 68.4 | 0.1 |
| 10 AM - 11 AM | 537 | 905 | 924 | 66.5 | 68.8 | 2.3 | 68.9 | 0.1 |
| 11 AM - 12 PM | 660 | 1110 | 1148 | 64.7 | 66.9 | 2.2 | 67.1 | 0.2 |
| 12 PM - 1 PM | 712 | 1207 | 1246 | 65.0 | 67.3 | 2.3 | 67.4 | 0.1 |
| 1 PM - 2 PM | 527 | 1061 | 1080 | 63.7 | 66.7 | 3.0 | 66.8 | 0.1 |
| 2 PM - 3 PM | 639 | 1065 | 1087 | 64.5 | 66.7 | 2.2 | 66.8 | 0.1 |
| 3 PM - 4 PM | 581 | 1011 | 1039 | 64.1 | 66.5 | 2.4 | 66.6 | 0.1 |
| 4 PM - 5 PM | 712 | 1207 | 1249 | 68.3 | 70.6 | 2.3 | 70.7 | 0.1 |
| 5 PM - 6 PM | 665 | 1137 | 1192 | 68.0 | 70.3 | 2.3 | 70.5 | 0.2 |
| 6 PM - 7 PM | 480 | 820 | 862 | 66.6 | 68.9 | 2.3 | 69.1 | 0.2 |
| 7 PM - 8 PM | 347 | 600 | 630 | 65.2 | 67.6 | 2.4 | 67.8 | 0.2 |
| 8 PM - 9 PM | 302 | 463 | 482 | 61.9 | 63.7 | 1.8 | 63.9 | 0.2 |
| 9 PM - 10 PM | 247 | 371 | 383 | 61.0 | 62.8 | 1.8 | 62.9 | 0.1 |
| 10 PM - 11 PM | 160 | 241 | 248 | 59.1 | 60.9 | 1.8 | 61.0 | 0.1 |
| 11 PM - 12 AM | 107 | 151 | 163 | 57.4 | 58.9 | 1.5 | 59.2 | 0.3 |
| Leq(24) | | | | 64.1 | 66.4 | 2.3 | 66.6 | 0.2 |
| Ldn | | | | 66.8 | 69.2 | 2.4 | 69.3 | 0.1 |

# TABLE 31

## PREDICTED NOISE LEVELS
## SITE 1
## Weekend
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 135 | 202 | 202 | 56.6 | 58.4 | 1.8 | 58.4 | 0.0 |
| 1 AM - 2 AM | 82 | 122 | 122 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 75 | 113 | 113 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 50 | 75 | 76 | 52.3 | 54.1 | 1.8 | 54.1 | 0.0 |
| 4 AM - 5 AM | 66 | 209 | 216 | 53.5 | 58.5 | 5.0 | 58.6 | 0.1 |
| 5 AM - 6 AM | 160 | 620 | 634 | 57.3 | 63.2 | 5.9 | 63.3 | 0.1 |
| 6 AM - 7 AM | 289 | 953 | 976 | 61.1 | 66.3 | 5.2 | 66.4 | 0.1 |
| 7 AM - 8 AM | 470 | 1246 | 1279 | 63.2 | 67.4 | 4.2 | 67.6 | 0.2 |
| 8 AM - 9 AM | 564 | 1337 | 1368 | 64.0 | 67.7 | 3.7 | 67.8 | 0.1 |
| 9 AM - 10 AM | 750 | 1624 | 1656 | 65.2 | 68.6 | 3.4 | 68.7 | 0.1 |
| 10 AM - 11 AM | 844 | 1705 | 1741 | 65.8 | 68.8 | 3.0 | 68.9 | 0.1 |
| 11 AM - 12 PM | 825 | 1787 | 1838 | 61.1 | 64.4 | 3.3 | 64.6 | 0.2 |
| 12 PM - 1 PM | 809 | 1764 | 1807 | 61.0 | 64.4 | 3.4 | 64.5 | 0.1 |
| 1 PM - 2 PM | 856 | 1774 | 1815 | 61.2 | 64.4 | 3.2 | 64.5 | 0.1 |
| 2 PM - 3 PM | 865 | 1798 | 1837 | 61.3 | 64.5 | 3.2 | 64.6 | 0.1 |
| 3 PM - 4 PM | 750 | 1724 | 1766 | 60.7 | 64.3 | 3.6 | 64.4 | 0.1 |
| 4 PM - 5 PM | 790 | 1785 | 1830 | 65.9 | 69.5 | 3.6 | 69.6 | 0.1 |
| 5 PM - 6 PM | 640 | 1560 | 1606 | 65.0 | 68.9 | 3.9 | 69.0 | 0.1 |
| 6 PM - 7 PM | 480 | 1250 | 1302 | 63.8 | 67.9 | 4.1 | 68.1 | 0.2 |
| 7 PM - 8 PM | 436 | 1154 | 1192 | 63.3 | 67.6 | 4.3 | 67.7 | 0.1 |
| 8 PM - 9 PM | 298 | 947 | 974 | 60.0 | 65.1 | 5.1 | 65.2 | 0.1 |
| 9 PM - 10 PM | 295 | 622 | 643 | 60.0 | 63.2 | 3.2 | 63.4 | 0.2 |
| 10 PM - 11 PM | 260 | 390 | 406 | 59.5 | 61.2 | 1.7 | 61.4 | 0.2 |
| 11 PM - 12 AM | 226 | 339 | 342 | 58.8 | 60.6 | 1.8 | 60.6 | 0.0 |
| Leq(24) | | | | 61.8 | 65.5 | 3.7 | 65.6 | 0.1 |
| Ldn | | | | 65.2 | 68.9 | 3.7 | 69.0 | 0.1 |

## TABLE 32

## PREDICTED NOISE LEVELS
## SITE 2
## Weekend
## Peconic Village Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| Hour | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 95 | 142 | 142 | 56.6 | 58.4 | 1.8 | 58.4 | 0.0 |
| 1 AM - 2 AM | 57 | 86 | 86 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 53 | 79 | 79 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 35 | 53 | 57 | 52.3 | 54.1 | 1.8 | 54.4 | 0.3 |
| 4 AM - 5 AM | 45 | 169 | 244 | 53.4 | 59.1 | 5.7 | 60.7 | 1.6 |
| 5 AM - 6 AM | 112 | 508 | 654 | 57.3 | 63.9 | 6.6 | 65.0 | 1.1 |
| 6 AM - 7 AM | 202 | 764 | 1008 | 61.1 | 66.9 | 5.8 | 68.1 | 1.2 |
| 7 AM - 8 AM | 330 | 975 | 1321 | 63.2 | 67.9 | 4.7 | 69.2 | 1.3 |
| 8 AM - 9 AM | 396 | 1034 | 1364 | 64.0 | 68.2 | 4.2 | 69.4 | 1.2 |
| 9 AM - 10 AM | 526 | 1249 | 1583 | 65.2 | 69.0 | 3.8 | 70.0 | 1.0 |
| 10 AM - 11 AM | 592 | 1288 | 1662 | 65.7 | 69.1 | 3.4 | 70.2 | 1.1 |
| 11 AM - 12 PM | 578 | 1368 | 1896 | 64.1 | 67.8 | 3.7 | 69.2 | 1.4 |
| 12 PM - 1 PM | 567 | 1351 | 1797 | 64.0 | 67.8 | 3.8 | 69.0 | 1.2 |
| 1 PM - 2 PM | 600 | 1341 | 1765 | 64.2 | 67.7 | 3.5 | 68.9 | 1.2 |
| 2 PM - 3 PM | 608 | 1351 | 1756 | 64.3 | 67.8 | 3.5 | 68.9 | 1.1 |
| 3 PM - 4 PM | 526 | 1329 | 1760 | 63.7 | 67.7 | 4.0 | 68.9 | 1.2 |
| 4 PM - 5 PM | 554 | 1371 | 1830 | 65.9 | 69.8 | 3.9 | 71.1 | 1.3 |
| 5 PM - 6 PM | 449 | 1213 | 1691 | 65.0 | 69.3 | 4.3 | 70.8 | 1.5 |
| 6 PM - 7 PM | 337 | 985 | 1429 | 63.8 | 68.4 | 4.6 | 70.0 | 1.6 |
| 7 PM - 8 PM | 306 | 899 | 1299 | 63.3 | 68.0 | 4.7 | 69.6 | 1.6 |
| 8 PM - 9 PM | 209 | 753 | 1039 | 60.0 | 65.6 | 5.6 | 67.0 | 1.4 |
| 9 PM - 10 PM | 207 | 470 | 684 | 60.0 | 63.6 | 3.6 | 65.2 | 1.6 |
| 10 PM - 11 PM | 183 | 274 | 431 | 59.5 | 61.2 | 1.7 | 63.2 | 2.0 |
| 11 PM - 12 AM | 158 | 238 | 272 | 58.8 | 60.6 | 1.8 | 61.2 | 0.6 |
| Leq(24) | | | | 62.5 | 66.5 | 4.0 | 67.8 | 1.3 |
| Ldn | | | | 65.6 | 69.6 | 4.0 | 70.8 | 1.2 |

# TABLE 33

## PREDICTED NOISE LEVELS
## SITE 3
## Weekend
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 33 | 50 | 50 | 54.6 | 56.4 | 1.8 | 56.4 | 0.0 |
| 1 AM - 2 AM | 20 | 30 | 30 | 52.4 | 54.1 | 1.7 | 54.1 | 0.0 |
| 2 AM - 3 AM | 19 | 28 | 28 | 52.2 | 53.8 | 1.6 | 53.8 | 0.0 |
| 3 AM - 4 AM | 12 | 19 | 19 | 50.2 | 52.2 | 2.0 | 52.2 | 0.0 |
| 4 AM - 5 AM | 16 | 64 | 79 | 51.4 | 57.4 | 6.0 | 58.3 | 0.9 |
| 5 AM - 6 AM | 40 | 139 | 167 | 55.4 | 60.8 | 5.4 | 61.6 | 0.8 |
| 6 AM - 7 AM | 71 | 227 | 274 | 59.1 | 64.1 | 5.0 | 64.9 | 0.8 |
| 7 AM - 8 AM | 116 | 295 | 361 | 61.2 | 65.2 | 4.0 | 66.1 | 0.9 |
| 8 AM - 9 AM | 140 | 310 | 373 | 62.0 | 65.5 | 3.5 | 66.3 | 0.8 |
| 9 AM - 10 AM | 186 | 378 | 443 | 63.2 | 66.3 | 3.1 | 67.0 | 0.7 |
| 10 AM - 11 AM | 209 | 413 | 485 | 63.7 | 66.7 | 3.0 | 67.4 | 0.7 |
| 11 AM - 12 PM | 204 | 426 | 528 | 59.1 | 62.3 | 3.2 | 63.2 | 0.9 |
| 12 PM - 1 PM | 200 | 440 | 526 | 59.0 | 62.4 | 3.4 | 63.2 | 0.8 |
| 1 PM - 2 PM | 212 | 438 | 519 | 59.3 | 62.4 | 3.1 | 63.1 | 0.7 |
| 2 PM - 3 PM | 214 | 441 | 519 | 59.3 | 62.4 | 3.1 | 63.1 | 0.7 |
| 3 PM - 4 PM | 185 | 418 | 501 | 58.7 | 62.2 | 3.5 | 63.0 | 0.8 |
| 4 PM - 5 PM | 196 | 433 | 522 | 61.9 | 65.4 | 3.5 | 66.2 | 0.8 |
| 5 PM - 6 PM | 158 | 378 | 470 | 61.0 | 64.8 | 3.8 | 65.7 | 0.9 |
| 6 PM - 7 PM | 119 | 278 | 364 | 59.8 | 63.5 | 3.7 | 64.6 | 1.1 |
| 7 PM - 8 PM | 108 | 242 | 319 | 59.3 | 62.9 | 3.6 | 64.1 | 1.2 |
| 8 PM - 9 PM | 74 | 151 | 206 | 58.1 | 61.2 | 3.1 | 62.5 | 1.3 |
| 9 PM - 10 PM | 73 | 109 | 151 | 58.0 | 59.7 | 1.7 | 61.2 | 1.5 |
| 10 PM - 11 PM | 64 | 97 | 127 | 57.4 | 59.2 | 1.8 | 60.4 | 1.2 |
| 11 PM - 12 AM | 56 | 84 | 90 | 56.8 | 58.6 | 1.8 | 58.9 | 0.3 |
| Leq(24) | | | | 59.3 | 62.7 | 3.4 | 63.5 | 0.8 |
| Ldn | | | | 63.0 | 66.5 | 3.5 | 67.3 | 0.8 |

## TABLE 34

## PREDICTED NOISE LEVELS
## SITE 4
## Weekend
## Peconic Village Alternative

| | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| Hour | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 15 | 52.8 | 54.5 | 1.7 | 54.5 | 0.0 |
| 1 AM - 2 AM | 6 | 9 | 9 | 50.6 | 52.3 | 1.7 | 52.3 | 0.0 |
| 2 AM - 3 AM | 5 | 8 | 8 | 49.8 | 51.8 | 2.0 | 51.8 | 0.0 |
| 3 AM - 4 AM | 4 | 5 | 7 | 48.8 | 49.8 | 1.0 | 51.2 | 1.4 |
| 4 AM - 5 AM | 5 | 7 | 36 | 49.8 | 51.2 | 1.4 | 58.3 | 7.1 |
| 5 AM - 6 AM | 12 | 17 | 73 | 53.6 | 55.1 | 1.5 | 61.4 | 6.3 |
| 6 AM - 7 AM | 21 | 31 | 125 | 58.1 | 59.8 | 1.7 | 65.8 | 6.0 |
| 7 AM - 8 AM | 34 | 51 | 184 | 60.2 | 61.9 | 1.7 | 67.5 | 5.6 |
| 8 AM - 9 AM | 41 | 61 | 188 | 61.0 | 62.7 | 1.7 | 67.6 | 4.9 |
| 9 AM - 10 AM | 54 | 81 | 210 | 62.2 | 64.0 | 1.8 | 68.1 | 4.1 |
| 10 AM - 11 AM | 61 | 91 | 235 | 62.7 | 64.5 | 1.8 | 68.6 | 4.1 |
| 11 AM - 12 PM | 59 | 89 | 292 | 60.1 | 61.9 | 1.8 | 67.0 | 5.1 |
| 12 PM - 1 PM | 58 | 87 | 259 | 60.0 | 61.8 | 1.8 | 66.5 | 4.7 |
| 1 PM - 2 PM | 62 | 93 | 256 | 60.3 | 62.1 | 1.8 | 66.4 | 4.3 |
| 2 PM - 3 PM | 62 | 94 | 250 | 60.3 | 62.1 | 1.8 | 66.3 | 4.2 |
| 3 PM - 4 PM | 54 | 81 | 247 | 59.7 | 61.5 | 1.8 | 66.3 | 4.8 |
| 4 PM - 5 PM | 57 | 85 | 262 | 59.9 | 61.7 | 1.8 | 66.6 | 4.9 |
| 5 PM - 6 PM | 46 | 69 | 253 | 59.0 | 60.8 | 1.8 | 66.4 | 5.6 |
| 6 PM - 7 PM | 35 | 52 | 223 | 57.8 | 59.5 | 1.7 | 65.9 | 6.4 |
| 7 PM - 8 PM | 31 | 47 | 201 | 57.3 | 59.1 | 1.8 | 65.4 | 6.3 |
| 8 PM - 9 PM | 21 | 32 | 142 | 56.0 | 57.8 | 1.8 | 64.3 | 6.5 |
| 9 PM - 10 PM | 21 | 32 | 114 | 56.0 | 57.8 | 1.8 | 63.3 | 5.5 |
| 10 PM - 11 PM | 19 | 28 | 89 | 55.6 | 57.2 | 1.6 | 62.3 | 5.1 |
| 11 PM - 12 AM | 16 | 24 | 38 | 54.8 | 56.6 | 1.8 | 58.6 | 2.0 |
| Leq(24) | | | | 58.4 | 60.2 | 1.8 | 65.1 | 4.9 |
| Ldn | | | | 61.7 | 63.4 | 1.7 | 68.2 | 4.8 |

## TABLE 35

## PREDICTED NOISE LEVELS
## SITE 5
## Weekend
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 10 | 15 | 15 | 53.8 | 55.5 | 1.7 | 55.5 | 0.0 |
| 1 AM - 2 AM | 6 | 9 | 9 | 51.6 | 53.3 | 1.7 | 53.3 | 0.0 |
| 2 AM - 3 AM | 5 | 8 | 8 | 50.8 | 52.8 | 2.0 | 52.8 | 0.0 |
| 3 AM - 4 AM | 4 | 5 | 7 | 49.8 | 50.8 | 1.0 | 52.2 | 1.4 |
| 4 AM - 5 AM | 5 | 7 | 29 | 50.8 | 52.2 | 1.4 | 58.4 | 6.2 |
| 5 AM - 6 AM | 12 | 17 | 59 | 54.6 | 56.1 | 1.5 | 61.5 | 5.4 |
| 6 AM - 7 AM | 21 | 31 | 102 | 58.1 | 59.8 | 1.7 | 65.0 | 5.2 |
| 7 AM - 8 AM | 34 | 51 | 151 | 60.2 | 61.9 | 1.7 | 66.7 | 4.8 |
| 8 AM - 9 AM | 41 | 61 | 156 | 61.0 | 62.7 | 1.7 | 66.8 | 4.1 |
| 9 AM - 10 AM | 54 | 81 | 178 | 62.2 | 64.0 | 1.8 | 67.4 | 3.4 |
| 10 AM - 11 AM | 61 | 91 | 199 | 62.7 | 64.5 | 1.8 | 67.9 | 3.4 |
| 11 AM - 12 PM | 59 | 89 | 241 | 60.1 | 61.9 | 1.8 | 66.2 | 4.3 |
| 12 PM - 1 PM | 58 | 87 | 216 | 60.0 | 61.8 | 1.8 | 65.7 | 3.9 |
| 1 PM - 2 PM | 62 | 93 | 215 | 60.3 | 62.1 | 1.8 | 65.7 | 3.6 |
| 2 PM - 3 PM | 62 | 94 | 211 | 60.3 | 62.1 | 1.8 | 65.6 | 3.5 |
| 3 PM - 4 PM | 54 | 81 | 206 | 59.7 | 61.5 | 1.8 | 65.5 | 4.0 |
| 4 PM - 5 PM | 57 | 85 | 218 | 62.9 | 64.7 | 1.8 | 68.8 | 4.1 |
| 5 PM - 6 PM | 46 | 69 | 207 | 62.0 | 63.8 | 1.8 | 68.5 | 4.7 |
| 6 PM - 7 PM | 35 | 52 | 180 | 60.8 | 62.5 | 1.7 | 67.9 | 5.4 |
| 7 PM - 8 PM | 31 | 47 | 163 | 60.3 | 62.1 | 1.8 | 67.5 | 5.4 |
| 8 PM - 9 PM | 21 | 32 | 115 | 57.0 | 58.8 | 1.8 | 64.4 | 5.6 |
| 9 PM - 10 PM | 21 | 32 | 94 | 57.0 | 58.8 | 1.8 | 63.5 | 4.7 |
| 10 PM - 11 PM | 19 | 28 | 73 | 56.6 | 58.2 | 1.6 | 62.4 | 4.2 |
| 11 PM - 12 AM | 16 | 24 | 34 | 55.8 | 57.6 | 1.8 | 59.1 | 1.5 |
| Leq(24) | | | | 59.3 | 61.0 | 1.7 | 65.2 | 4.2 |
| Ldn | | | | 62.5 | 64.2 | 1.7 | 68.2 | 4.0 |

# TABLE 36

## PREDICTED NOISE LEVELS
## SITE 6
## Weekend
## Peconic Village Alternative

| Hour | Traffic Volumes | | | NOISE LEVELS (dBA) | | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | No Build | Build | Existing | No Build | DIFFERENCE (Exist-No Build) | Build | DIFFERENCE (No Build-Build) |
| 12 AM - 1 AM | 69 | 104 | 104 | 56.6 | 58.4 | 1.8 | 58.4 | 0.0 |
| 1 AM - 2 AM | 42 | 63 | 63 | 54.4 | 56.2 | 1.8 | 56.2 | 0.0 |
| 2 AM - 3 AM | 39 | 58 | 58 | 54.1 | 55.8 | 1.7 | 55.8 | 0.0 |
| 3 AM - 4 AM | 26 | 39 | 39 | 52.4 | 54.1 | 1.7 | 54.1 | 0.0 |
| 4 AM - 5 AM | 34 | 91 | 95 | 53.5 | 57.8 | 4.3 | 58.0 | 0.2 |
| 5 AM - 6 AM | 82 | 203 | 212 | 57.3 | 61.3 | 4.0 | 61.5 | 0.2 |
| 6 AM - 7 AM | 146 | 342 | 356 | 63.0 | 66.7 | 3.7 | 66.9 | 0.2 |
| 7 AM - 8 AM | 241 | 482 | 502 | 65.2 | 68.2 | 3.0 | 68.4 | 0.2 |
| 8 AM - 9 AM | 290 | 535 | 554 | 66.0 | 68.7 | 2.7 | 68.8 | 0.1 |
| 9 AM - 10 AM | 385 | 677 | 696 | 67.2 | 69.7 | 2.5 | 69.8 | 0.1 |
| 10 AM - 11 AM | 433 | 749 | 771 | 67.7 | 70.1 | 2.4 | 70.2 | 0.1 |
| 11 AM - 12 PM | 423 | 755 | 785 | 65.1 | 67.6 | 2.5 | 67.8 | 0.2 |
| 12 PM - 1 PM | 415 | 763 | 789 | 65.0 | 67.6 | 2.6 | 67.8 | 0.2 |
| 1 PM - 2 PM | 439 | 779 | 804 | 65.2 | 67.7 | 2.5 | 67.9 | 0.2 |
| 2 PM - 3 PM | 444 | 785 | 810 | 65.3 | 67.8 | 2.5 | 67.9 | 0.1 |
| 3 PM - 4 PM | 365 | 717 | 742 | 64.4 | 67.4 | 3.0 | 67.5 | 0.1 |
| 4 PM - 5 PM | 406 | 748 | 775 | 65.9 | 68.6 | 2.7 | 68.7 | 0.1 |
| 5 PM - 6 PM | 328 | 633 | 660 | 65.0 | 67.9 | 2.9 | 68.0 | 0.1 |
| 6 PM - 7 PM | 248 | 469 | 495 | 63.8 | 66.6 | 2.8 | 66.8 | 0.2 |
| 7 PM - 8 PM | 224 | 416 | 439 | 63.3 | 66.0 | 2.7 | 66.3 | 0.3 |
| 8 PM - 9 PM | 153 | 269 | 286 | 60.1 | 62.5 | 2.4 | 62.8 | 0.3 |
| 9 PM - 10 PM | 151 | 227 | 239 | 60.0 | 61.8 | 1.8 | 62.0 | 0.2 |
| 10 PM - 11 PM | 134 | 200 | 209 | 59.5 | 61.2 | 1.7 | 61.4 | 0.2 |
| 11 PM - 12 AM | 116 | 174 | 176 | 58.9 | 60.6 | 1.7 | 60.7 | 0.1 |
| Leq(24) | | | | 63.5 | 66.1 | 2.6 | 66.3 | 0.2 |
| Ldn | | | | 66.4 | 69.1 | 2.7 | 69.3 | 0.2 |