DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

for

THE MEADOWS AT YAPHANK

Planned Development District Application

Town File #2010-011-CZ

Hamlet of Yaphank, Town of Brookhaven
Suffolk County, New York

Volume 2 of 2
Appendices

NP&V Project No. 09176

April 2011

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Hamlet of Yaphank, Town of Brookhaven
Suffolk County, New York

Prepared for:

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Date of Acceptance by Lead Agency: _____

Comments to the Lead Agency are to be Submitted By: _____

January 2011

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Nelson, Pope & Voorhis, LLC

Revised October 2010

NELSON POPE & VOORHIS, LLC
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1.0 BACKGROUND AND PETITION FOR ZONE CHANGE

This document is a Phase I Planned Development District (PDD) submission for a project known as **The Meadows at Yaphank**. The proposed change of zone and this Phase I PDD are submitted as a continuation of the land use application process for the proposed PDD. The Petition for Zone Change for the proposed PDD will be submitted to the Brookhaven Town Board under separate cover, and is included by reference herein. The Petition and Phase I application were prepared by the applicant and consulting team members and conforms to the requirements for a change of zone and the PDD district as presented in Article XXXIIA, Chapter 85; §85-339.1 C. of the Brookhaven Town Zoning Code.

A number of steps precede this submission, summarized as follows:

- Public Outreach - three separate public outreach sessions were conducted by the applicant (see **Section 2.1**)
- PDD Pre -Application document - submitted on March 24, 2010
- PDD Pre-Application meeting - held April 7, 2010
- Current submission - PDD Phase I document submitted May 19, 2010

This document contains the required information for a Phase I PDD submission in order to continue the land use application process for the Meadows at Yaphank PDD. The following sections outline the Written Statement supporting the PDD submission as well as Zoning Incentives and Special Public Benefits and other required materials and information.

This submission is intended to address the Town Code requirement for the second step of the PDD application process (Phase I application), and presents any revisions to the project that resulted from the required meeting for the prior Pre-Application document (held on April 7, 2010), which was submitted to the Town Board on March 24, 2010. Attachment A contains a transcript of that meeting.

2.0 WRITTEN STATEMENT

The applicants, Rose-Breslin Associates, LLC and Dorade, Inc. are pleased to submit this PDD Phase I Application package to the Town Board for consideration of a unique development on a 322.37-acre property located on the west side of William Floyd Parkway and north of the Long Island Expressway (SR 495) in the hamlet of Yaphank. The application also includes the 11.09-acre existing site of the Dorade Sewage Treatment Plant (STP), for a total of 333.46 acres; however, a change of zone is not being requested for the STP parcel. Figure 1 locates the subject site in relation to adjacent and local roadways.

The Meadows site is an assemblage of three tax lots, the former Suffolk Downs Race Track (aka Parr Meadows) site, the former Brookhaven Walk mall site, and the Dorade STP site. More specifically, the western 172.20-acre parcel (SCTM No. 0200-552-1-1.3) is currently undeveloped but was previously in use as the Suffolk Downs Race Track and was later operated as a flea market site until approximately 1995 (zoned L-1). The eastern 150.17 acre parcel (SCTM No. 0200-584-2-1.3) which is undeveloped, was previously cleared with partial foundations installed in connection with a 1997 site plan approval (Brookhaven Town Center), and later received site plan approval for an 850,000 square feet (SF) retail development known as Brookhaven Walk (zoned J-2) in 2007. The Dorade STP site is 11.09 acres in size and is identified as SCTM No. 200-552-01-03; the existing STP currently receives flow from the Whispering Pines/Colonial Woods developments, and Suffolk County Sewer District (SCSC) No. 8, and holds a State Pollutant Discharge Elimination System (SPDES) permit for 140,000 gallons per day (gpd). This facility was previously designed for a wastewater flow of 450,000 gpd of which 190,000 gpd was allocated to the Race Track site (50,000 gpd) and the Mall site (140,000 gpd). The proposed project will upgrade the STP to the original permitted flow of 450,000 gpd in order to improve the treatment process for the existing flow and the proposed project wastewater.

The proposed project would change the zoning of 322.37 acres from L-1 and J-2 to PDD for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the proposed project include approximately 1,032,500 square feet (SF) of space made up of hotel, retail, restaurant and office/flex uses. The residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

A more detailed breakdown of proposed uses is as follows:

Commercial	
• Hotel	150,000 SF
• Restaurant	5,000 SF
• Retail	327,500 SF
Industrial	
• Class A Office Space	250,000 SF
• Office/Flex Space	300,000 SF

Residential

- 1- and 2-Bedroom Rentals 144 units
- 1- and 2-Bedroom Condominiums 486 units
- 2- and 3-Bedroom Townhouses 220 units

Notes:
Of the 220 townhouse units; 68 are 3-bedroom
The 303 senior units are dispersed among the rental, condos and townhouses
The 85 work force housing units are dispersed among the rental units and condos

The Land Use and Development Plan, prepared by Simone Design Group, envisions a sustainable community including Smart Growth elements such as a mix of residential, commercial (retail, office, office/flex), hospitality and public open spaces. As a result, the community will provide for itself as well as the greater community. With efficient building design and proper planning, more open space is preserved and the community becomes a vibrant and successful place combating the elements of sprawl. At the Meadows at Yaphank, residents will be able to step out their door to find shopping, entertainment and employment opportunities, providing freedom on-foot for all necessities as well as vibrant public spaces and parks.

The project will feature attractive, coordinated architectural styling for the residential structures and commercial areas, as well as for all street furniture and amenities (e.g., lighting fixtures, signage, benches, trash receptacles, kiosks, fountains, etc.). It is intended and expected that the project's architecture would, in coordination with landscaping, create a visually interesting and desirable environment for residents and visitors, and will enhance the community in general. Quality-of-life will be a focus of the project, and this emphasis will be evident in its use of thoughtful building design, appropriate landscaping, well-equipped private residential recreational spaces and installation of attractive site entrances. The use of an internal boulevard-style roadway linking the commercial and residential areas provides the needed vibrancy and unifying feature of this community. Attachment B presents colored renderings of the anticipated structures and street scenes illustrating the proposed design concepts.

Critical elements of design include retention of open space and energy efficient design to achieve conservation and energy reduction goals. Approximately 35 percent of the overall site will be retained as natural open space in conformance with the Vegetation Clearance Limits outlined in the Central Pine Barrens Comprehensive Land Use Plan (CPBCLUP or Pine Barrens Plan). The project will comply with the Standards and Guidelines for a Development of Regional Significance (DRS). Open space will be permanently preserved through site plan approval and conservation easements, and will be publicly accessible for passive enjoyment (nature trails, hiking, etc.). Stormwater handling will feature innovative stormwater handling methods to enhance surface treatment and quality recharge. The project includes construction of public buildings (a 3,000 SF community center at the proposed Multi-purpose Field and a 1,500 SF Pavilion and Restrooms at the Civic Square) which will be LEED (Leadership in Energy and Environmental Design) certified, and all construction on site will involve energy efficient design and water conserving measures.

The project has been evaluated pursuant to §85-340 A. Permitted uses of the Town Code, and is submitted to conform with §85-340 A. (3) in support of this proposed change of zone. The

project is also designed to include a number of public benefits to meet the specific needs of the local and regional community. In addition to significant tax ratables and job creation, the project will include the following local benefits: a Towne Square public gathering area, nature/hiking trails; a community center, public pavilion and restrooms and land for athletic fields. The following regional benefits are also provided as a result of this plan: private roads featuring sidewalks and landscaping that will be open to the public but maintained privately; the existing 140,000 gpd of flow from Whispering Pines/Colonial Woods and SCSD No. 8 which is conveyed to the Dorade STP will be upgraded in terms of treatment process to reduce nitrogen load; and the project will involve redemption of Pine Barrens Credits (PBC's).

Public benefits are outlined in more detail in **Section 3.2** of this document; **Table 3-3** provides a list of those special public benefits that can be quantified.

In summary, the Meadows at Yaphank PDD development will result in the following overall design and use objectives:

- Meets a need for a lifestyle center in the hamlet of Yaphank, providing a location for community, culture and commerce.
- Meets the Town of Brookhaven Comprehensive Plan goal for providing work force and age-restricted housing opportunities.
- Addresses the objectives of Smart Growth principles by incorporating features and characteristics including: internal walkability; safe and convenient pedestrian access to public transit and consumer shopping needs; an appropriate, attractive and cohesive architectural theme; on-site recreational facilities; sufficient parking and convenient vehicle access and traffic flow.
- Will have peak trip generation hours different from those of a single-use development such as development per existing zoning. This difference would tend to reduce traffic during rush hour periods, and thereby incrementally improve traffic flow and safety.
- Will incorporate superior design elements including attractive coordinated architectural treatments, extensive site improvements and landscaping features in a mix of uses including housing, restaurant spaces, a commercial center and a public gathering place.
- Provides significant tax revenues to the Town of Brookhaven and other local taxing entities without significant increase in the need for additional services.
- Minimizes the number of school-age children by providing residential units with less bedrooms than other types of residential units and a senior citizen component to the project.
- Will attract the variety of retail and mixed-use commercial uses (such as restaurants, bookstores, boutiques, ice cream and coffee shops, shoe repair/tailor, dance studio) to meet the local community needs.
- Provides a natural buffer along the site's boundaries and protects stands of existing large trees.
- Protects NYSDEC freshwater wetlands on the site.
- Will generate full time professional office-related jobs and jobs in the retail and service-oriented businesses.
- Provides a public plaza space that will be constructed to encourage use for community events, including an area for a concert green.
- Provides a link to the Town greenbelt trail, fostering appreciation for the natural resources in the area.
- Promotes healthy lifestyle through encouraging walking, bicycling, and activities in the passive recreation areas and athletic fields.

- Locates development on previously disturbed property. The racetrack parcel has been identified as a blighted parcel by Town government and is scarred with the remains of the former use, including large tracts of asphalt and dirt trails used by off-road and ATV vehicles.
- The proposed PDD would rehabilitate the property into a vibrant community, replacing nuisance activities with a sense of place and enjoyment for local residents.
- Locates development on major roadways, at a major interchange, thereby improving accessibility and reducing traffic impacts on existing neighborhoods.
- Will reduce trip generation as compared with the existing zoning.
- Will generate additional purchasing power in the area benefiting existing local retailers and businesses.
- The project will generate much needed jobs in the area, including temporary construction jobs and permanent jobs.
- In addition to real property tax revenues, the proposed PDD will generate additional sales tax revenue and mortgage recording tax revenues.

The public benefits of the proposed project are abundant and are based upon significant input from the community. In summary, the proposed Meadows at Yaphank PDD meets the needs of the community, provides a beneficial and desirable land use on the property, and meets Town goals for diverse and affordable (work force) housing opportunities.

2.1 Basic Concept and Rationale of the Proposed PDD Master Plan

The guiding principle of this proposed PDD is to locate a high quality mix of residential, commercial and office land uses on the property, while providing the community with numerous benefits that could not be realized absent the use of the overarching PDD concept. The project sponsor has invested considerable resources in site reconnaissance, conceptual planning and meetings with community representatives including civic leaders and school board members, to fully involve the stakeholders in the development of a PDD concept that meets the goals of the Yaphank community. A comprehensive list of the community outreach conducted to-date is as follows:

<u>Government Officials/Agencies</u>

- NYS Assemblyman Marc Alessi
- NYSDEC, Region 1
- Suffolk County Legislator Kate Browning
- SCDPW Transportation (Bus)
- Brookhaven National Laboratory
- NYS Senator Kenneth LaValle
- NYS Senator Brian Foley
- NYS Assemblyman Dean Murray

<u>Schools & Youth</u>

- Longwood Central School District
- Longwood Youth Sports Association

Fire

- Ridge Fire District
- Yaphank Fire District

Environmental

- Pine Barrens Commission Administration
- Long Island Pine Barrens Society
- Brookhaven National Laboratory Biology Department

Utilities

- Suffolk County Water Authority
- Long Island Power Authority

Community and Business Organizations

- Colonial Woods/Whispering Pines Condo Board Presidents
- Colonial Woods/Whispering Pines Homeowners Assoc.
- Yaphank Civic Association
- East Yaphank Civic Association
- South Yaphank Civic Association
- ABCO
- East Yaphank Chamber of Commerce
- Long Island Housing Partnership
- Manor Park Civic Association
- Ridge Civic Association
- Middle Island Civic Association
- Coram Civic Association
- Mastic Park Civic Association

The proposed project incorporates Smart Growth elements, high quality architectural features and a mix of uses. The project is designed to promote walking between the residential portion of the development and the commercial and recreational portions of the site and to provide public spaces incorporated into the commercial nodes that will be available for residents of the community and visitors.

The Smart Growth philosophy of development is based upon the benefits resulting from locating places where people live, work and play within one community. This concentration of complementary uses allows people to be a part of a community wherein they can walk and bicycle for recreation, visit nearby public open spaces, live in close and convenient proximity to shopping and employment, and to reduce their reliance on automobiles. The benefits of Smart Growth developments are multi-faceted and include the following points:

- *reduced use of and stress on environmental resources* (by reducing traffic congestion and reducing impacts on air quality);
- *quality-of-life benefits related to enhanced community interaction*;
- *improved health* (based on studies indicating reduced incidence of obesity due to walkability of Smart Growth communities);

- *improvements in satisfaction* (related to increased time for recreation, shorter commuting times, and availability of goods and services in close proximity); and
- *increased involvement with one's community.*

The Meadows at Yaphank PDD will consist of retail, mixed-use commercial space, office/flex space and housing. The commercial components of the proposed project include approximately 1,032,500 SF of space made up of hotel, retail, restaurant and office/flex uses. The residential component includes 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

Quality-of-life will be a focus of the development and will be evident in thoughtful architectural design, landscaping, recreational space features, an attractive site entrance and use of natural views from the site to the surrounding woodlands. High quality developments attract high quality businesses; it is anticipated that a major national retailer will occupy the anchor stores, and that the supermarket will be occupied by one of the region's well-known grocers.

In consideration of this design, the proposed project meets the goals of a PDD by providing a development pattern that achieves the following:

> *Minimizes environmental impacts and maximizes permanent preservation and protection of significant site environmental features such as wetlands, waterbodies, watercourses, flood hazard areas, steep slopes, groundwater recharge areas, areas of natural vegetation, special habitat areas, significant scenic vistas, erodible soils and sites or structures of historic or archaeological significance*

This is accomplished as follows:

- The proposed project will be the subject of a Draft Generic Environmental Impact Statement (DGEIS), which will include public scoping for analyses and content of the document, Town review and acceptance, public hearings, response to comments (Final GEIS) and ultimately a determination by the Town and other involved agencies which weighs and balances environmental, social and economic issues to reach a decision with respect to the project.
- The project is subject to review by the following additional agencies, and will be subject to compliance and applicable permits: CPBJPPC for DRS, Suffolk County Department of Health Services (SCDHS) for sanitary and water supply and subdivision approval, Town of Brookhaven (site plan, subdivision, Chapter 86 and Unit Designation Map approval), New York State Department of Environmental Conservation (NYSDEC) for SPDES, New York State Department of Transportation (NYSDOT) for State highway approvals, Suffolk County Department of Public Works (SCDPW) for County highway approvals, Federal Highway Administration (FHA) for Federal highway approvals.
- The project protects a small freshwater wetlands on site and has received letters of non-jurisdiction from NYSDEC and Town of Brookhaven due to protection of wetlands setbacks in connection with the prior Brookhaven Walk approvals; there are no other waterbodies/watercourses, flood hazard areas or other water resource features on the site (see Attachment C)
- The project protects steep slopes and erodible soils by developing almost entirely within existing disturbed areas, thereby protecting nearly all natural slopes on the property.

- The project protections water resources by featuring innovative stormwater handling methods to enhance surface treatment and quality recharge, and will convey sanitary wastewater to an existing STP that will be upgraded to meet stringent discharge limitations; the STP is farther from the contributing area to the Carmans River than the proposed development area, thereby providing further protection of the surface waters of the Carmans River.
- The project protects natural vegetation and habitat areas by placing nearly all development within existing cleared areas, and protecting at least 35 percent of the site as contiguous natural open space pursuant to the Pine Barrens Plan.
- The project protects scenic vistas by placing development within the parcel thereby preserving large natural setbacks around the site.
- No historic resources exist on the site and there are no known archaeological resources; the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) will be consulted and further study conducted if necessary with respect to archaeological resources.

As a result, the proposed project is intended to serve the legislative intent, purpose and goals of the Town's PDD district.

2.2 Quantitative Analysis

Property Location and Setting

The Meadows property is 322.37 acres in size and is comprised of two Suffolk County Tax lots (SCTM No. 0200-552-1-1.3; 0200-584-2-1.3) and is located on the northwest corner of William Floyd Parkway and the Long Island Expressway. The Dorade STP site is identified as SCTM No. 200-552-01-03 and is 11.09 acres in size.

Figure 1 provides a Site Location Map of the subject property as an overlay on a 2007 aerial photograph to illustrate the existing conditions of the site and vicinity within the context of the area land uses, as well as the size of the subject parcels and existing zoning. As can be seen, the western parcel of the site was previously developed as a racetrack, and the eastern parcels are undeveloped but previously cleared. The site is within Suffolk County Department of Health Services (SCDHS) Groundwater Management Zone (Zone III) and the Compatible Growth Area of the Central Pine Barrens Zone.

Conceptual Site Plan

The Land Use and Development Plan has been prepared by professional designers from Simone Design Group to represent a concept for site development/construction. The plan, although not a fully engineered site plan, is considered to be a feasible plan, and provides the Town Planning Division and Town Board with sufficient detail to allow review of the concept in association with a change of zone petition. **Tables 2-1** provide listings of the proposed land use types, proposed gross square feet, number of residential units and bedroom breakdown.

Buildings and Amenities/Use and Types

The proposed Meadows at Yaphank PDD will consist of 1,032,500 SF of commercial area made up of a hotel (150,000 SF), retail space (327,500 SF, total), restaurant space (5,000 SF, total) and office space (550,000 SF, total). In addition, 850 residential units are proposed including 144 rental units, 486 condominium units and 220 townhouse units. Of the 850 residential units, a

total of 85 units will be for work force housing and 303 units will be age restricted for persons aged 55 and older. As noted, the residences will include a mix of 1-bedroom, 2-bedroom and 3-bedroom units (68 of the townhomes are three-bedroom). A conservative estimate of 110 school-age children are assumed to be generated by the project (see Attachment D).

Amenities on the site will include tennis courts, recreational buildings and pocket parks for residents, as well as several public areas including a great lawn, village square, reflection pool, civic square and civic building, ball fields, public green, multi-purpose field, basketball court and walking trail. The Dorade STP will serve the site and all necessary upgrades to the STP will be made by the property owner. The property owner or future property owners associations will own and maintain internal roadways, as well as parking areas for the residences as well as the on-site drainage system. Approximately seven (7) acres of land will be dedicated to the Town for future development of athletic fields, basketball courts, access to the Greenbelt trail and parking area.

A boulevard-style roadway with a landscaped center median will provide access directly from the main site access on William Floyd Parkway (CR 46A) and run east-west through the development. The hotel and retail uses will be located on the south side of the main roadway, immediately upon entering the site. Residential uses will be located north of the main roadway. The public green areas including the great lawn, village square, reflecting pool and civic square will be situated north-south, connecting the retail and residential portions of the two eastern parcels. A freshwater wetland is located on the northern periphery of the eastern parcel. Moving west within the subject site, office uses will be located south of the main roadway and residential units will be located north of the roadway. A large green space area will be located in the northern portion of the parcel in the vicinity of the residential units and two ball fields and associated parking is located directly north of the green space. The main roadway will terminate with a public park area consisting of a multi purpose field, civic building, restroom facility, basketball court and associated parking area.

The applicant proposes to provide a high-quality, attractive, well-planned development that will create a desirable shopping atmosphere and enjoyable environment for the residents that will live in the residential units. It is well documented that Long Island is experiencing a “brain drain” - the loss of young professionals to other areas of the country where housing and the general cost of living is more affordable. However, another aspect of this decision for many is quality of life. People are generally waiting longer to get married and have children. Young professionals, particularly those that do not wish to marry in their twenties/early thirties, seek a different type of residential setting than previous generations did (e.g., a single-family home in a subdivision). Many young professionals are seeking a place to live in a vibrant downtown area with restaurants, shopping and things to do. Few areas provide such opportunities for living in an area that provides a mix of activities and residential units in one development. The proposed PDD will provide such an opportunity by including 850 residential units made up of a mix of one and two bedroom rentals, townhouse units and condominium units with both age restricted and work force housing units included. These types of units will provide an affordable opportunity for young professionals who wish to remain in the community, as well as other community members seeking alternatives to single-family home living.

Quality-of-life will be a focus of the development and will be evident in outstanding architectural design, landscaping, recreational space/public plaza features, and retention of a significant amount of natural area. High quality developments attract high quality businesses; it is anticipated that a major national retailer will occupy the anchor store.

The proposed project will be integrated into the community as much as is feasible, and there will be public areas included in the development in addition to a buffer along the property boundaries. Walking will be encouraged through the incorporation of sidewalks and crosswalks throughout the development.

As noted above, conformance to Chapter 86 of the Town Code and to the requirements of NYSDEC SPDES review of stormwater control measures is necessary, to be consistent with Phase II stormwater permitting requirements for construction sites in excess of 1-acre (the SPDES GP-0-10-001 permit). Under this program, a site-specific Stormwater Pollution Prevention Plan (SWPPP) must be prepared and submitted to the Town for review and approval prior to final site plan approval.[1] Once the SWPPP has been prepared and approved by the Town, the applicant will need to file a Notice of Intent with the NYSDEC to obtain coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). Additionally, the GP-0-10-001 permit requires that inspections of the construction site be performed under the supervision of a qualified professional to ensure that erosion controls are properly maintained during the construction period.

[1] The SWPPP must include: a description of the existing site conditions including topography, soils, potential receiving water bodies and stormwater runoff characteristics, a description of the proposed construction project, construction schedule, the erosion and sediment controls planned during construction activities and the details of the post construction stormwater management system design and consistency of said system with the *NYS Stormwater Design Manual*, appropriate maintenance procedures for the erosion and sediment controls and each component of the post construction drainage system, pollution prevention measures during construction activities, a post-construction hydrologic and hydraulic analysis for all structural components of the post construction stormwater management system for a 1, 10 and 100 year storm event, and comparison of existing and post construction peak stormwater discharges. The SWPPP must demonstrate that the proposed stormwater management system is sized adequately to ensure that there is no net increase in peak stormwater discharges from a property once developed.

Table 2-1
GENERAL PROJECT CHARACTERISTICS

COMMERCIAL COMPONENT		PROPOSED GROSS SQUARE FEET
Hotel		**150,000**
Retail		**327,500**
Large Retail		*150,000*
Pharmacy		*14,700*
Bank		*3,500*
Neighborhood Retail		*159,300*
(Supermarket)		*(65,000)*
(Other Neighborhood Retail)		*(94,300)*
Restaurant		**5,000**
Class A Office & Office/Flex		**550,000**
Office/Flex (15% office, 85% warehouse & distribution)		*250,000*
Class A Office		*300,000*
TOTAL		**1,032,500**
RESIDENTIAL COMPONENT	**BEDROOMS**	**NUMBER OF UNITS**
Rental Units		**144**
Senior Rental	*1*	*38*
Senior Rental, Affordable	*1*	*10*
Rental	*1*	*38*
Rental, Work Force	*1*	*10*
Rental	*2*	*38*
Rental, Workforce	*2*	*10*
Condominium Units		**486**
Senior Condo	*2*	*174*
Senior Condo, Affordable	*2*	*30*
Condo	*1*	*25*
Condo	*2*	*232*
Condo, Work Force	*2*	*25*
Townhouse Units (all market rate)		**220**
Senior Townhouse	*2*	*51*
Townhouse	*2*	*101*
Townhouse	*3*	*68*
TOTAL		**850**

Preserved Areas and Proposed Land Use Coverages

The proposed project will result in significant preserved land, consisting of the wetland and Pine Barrens protection areas. **Table 2-2** provides the acreage and percentages for the site's land use types for the proposed PDD, including the Dorade STP parcel. The table indicates that approximately 126.73 acres or 38 percent of preserved land is proposed to remain natural. The balance of the property will be developed with the coverages indicated in the table.

Table 2-2
SITE ACREAGES

Coverage Type	Proposed Project	Percentage
Pitch Pine-Oak Forest	117.79 acres	35.32%
Successional Field	8.18 acres	2.45%
Unvegetated	2.58 acres [1]	0.77%
Buildings & Paved	99.12 acres [2]	29.76%
Lawn/Landscaped	95.25 acres [3]	28.56%
Recharge Areas	9.78 acres	2.93%
Freshwater Wetlands	0.76 acre	0.23%
Totals	**333.46 acres**	**100%**

Notes:

1- 2.58 acres at Dorade STP to remain
2- 3.50 acres of Yaphank Woods Boulevard to remain
3- Of which 16.00 acres will be fertilized and irrigated

Sanitary Wastewater Treatment

In order to meet SCDHS requirements, the site development will be connected to the Dorade STP, an existing STP located on 11.09 acres owned by the applicant and located north of the part of the site subject to the proposed rezoning. The subject property was the subject of a Construction Agreement signed in 1973, which anticipated the construction of the Dorade STP to treat 450,000 gpd of sanitary waste to be generated by the Mall and Racetrack parcels along with the Whispering Pines/Colonial Woods condominiums. This agreement also prohibited the use of on-site sanitary systems once the regional sewage treatment plant was built to serve the specified parcels. Since the Agreement was executed, the Dorade STP was constructed and the Whispering Pines/Colonial Woods condominiums connected to it. Due to operational difficulties, numerous consent orders were entered into with the NYSDEC, the last one in 1998 resulting in the issuance of a revised SPDES permit reducing the permitted flow from 450,000 gpd to 140,000 gpd. Thereafter, effective January 1, 1999, an amendment to the Construction Agreement was executed permitting the County to divert 50,000 gpd from Suffolk County Sewer District No. 8 (Strathmore Ridge), which gallonage took up the remaining authorized flow allowed by the consent order/revised SPDES permit. When the Brookhaven Walk project was under review, the Suffolk County Sewer Agency (SCSA) adopted a resolution on May 15, 2006 rescinding the prohibition of on-site systems, subject to filing covenants and restrictions on the land which state: "…that Brookhaven Town Center (Brookhaven Walk) be permitted to suspend the provision regarding the connection to a regional treatment plant unit a regional treatment plant is available, as determined by the Suffolk County Sewer Agency." As a result, the Racetrack and Mall parcels (The Meadows at Yaphank) must connect to the Dorade STP at such time as it provides regional sewage treatment, as provided for in the 1973 Construction Agreement. Copies of these agreements are included in Attachment E.

It is interesting to note that the Dorade STP does not receive wastewater flow from any developments associated with the owner of the plant. However, the Dorade STP was always anticipated to handle the wastewater flow from the Racetrack and Mall parcels. The original Engineering Report for Water Pollution Control Plant and Collection System, Parr Village,

Brookhaven, NY, last revised February, 1973, provided the basis for the 450,000 gpd design flow and the allocation of sanitary waste at that time. The design allocated 50,000 gpd to the Parr Meadows Race Track, and 140,000 gpd to the Mall site, totaling 190,000 gpd of flow allocated for treatment at the Dorade STP. Attachment F provides a copy of the Engineering Report. Given the allocation of flow and the contract which requires connection to this regional STP, the applicant could reasonably expect to gain the benefit of this sanitary flow.

The plant will be upgraded to treat the existing flow (140,000 gpd) and the anticipated flow from the proposed Meadows at Yaphank project, which is expected to be 275,050 gpd. This provides a direct benefit of improving the quality of discharge associated with the existing 140,000 gpd that enters the STP from Whispering Pines/Colonial Woods and SCSD No. 8. Therefore, as a result of this project the Dorade STP will have the capacity to treat all wastewater generated on-site and from the existing developments, and its maintenance will continue to be subject to review and approval by the SCDHS and NYSDEC. The Dorade STP is an existing facility and is located in the Central Pine Barrens. The CPBJPPC discourages location of new STP's in the Central Pine Barrens; however, the Dorade STP exists and currently receives sanitary waste flow from existing developments. In addition to ensuring upgraded treatment of the existing flow to the Dorade STP, the increased flow of the proposed project has been evaluated and the total nitrogen load (pounds per year of nitrogen) will be reduced as compared with "as-of-right" industrial/commercial development with on-site discharge. Finally, the Meadows at Yaphank project has been subject to preliminary nitrogen budget modeling and will comply with the Pine Barrens Plan Guideline of no more than 2.5 milligrams per liter (mg/l) of nitrogen in recharge for projects in proximity to wetlands and surface water.

Parking and Access

The main vehicle access point is proposed, from William Floyd Parkway, in the central portion of the eastern parcel. Secondary access will be provided to the site via the northern service road of the LIE as well as an extension of the existing Yaphank Woods Boulevard. As previously mentioned, a boulevard-style roadway with a landscaped center median will provide access through the development. Adequate parking to serve the related uses will be provided throughout the development. Separate parking areas for the ballfields as well as the multi-purpose field, basketball court and civic building will be provided, separate from the parking areas for residential and commercial uses.

Recreational Features

Amenities on the site will include tennis courts, recreational buildings and pocket parks for residents, as well as several public areas including a great lawn, village square, reflection pool, civic square and civic building, ball fields, public green, multi-purpose field, basketball court and walking trail. Approximately seven acres of land will be dedicated to the Town for future development of athletic fields, basketball courts, access to the Greenbelt trail and parking area.

2.3 Proposals for Utilities and Infrastructure

Rose-Breslin Associates, LLC will own and maintain the development site and Dorade, Inc. will own the STP site. The STP improvements will be performed by the owner, who will be

responsible for continuing operation. Infrastructure and utility connections will be constructed by the developer/owner/applicant. It is intended that most roads be privately owned and maintained; however, if the Town is interested, the main access boulevard(s) could be offered for dedication. It is expected that there will be an umbrella condominium association, with sub-condominium associations for various components of the development. This will ensure that common utilities and infrastructure are properly operated and maintained. For the commercial portion of the project, pads will be either purchased or leased, and the occupant will be responsible for maintenance of those portions of the site.

2.4 Proposals for Ownership, Use and Maintenance of Public Space

The project proposes dedication of parkland for athletic fields, civic building, basketball court and associated parking to the Town, as well as the access area to the Greenbelt Trail. However, the community center building, pavilion and restrooms at the civic square (public plaza, great lawn and reflecting pool) will remain in private ownership.

2.5 Proposed Covenants and Restrictions

The petitioner, Rose-Breslin Associates, LLC, intends to offer an appropriate Declaration of Covenants and Restrictions with regard to the Change of Zone Application to "Planned Development District" zoning district once C&R's are formulated through the review process. Possible C&R's and/or agreements could include: measures to ensure that the proposed workforce housing units remain affordable and are administered properly under the auspices of the Town and/or LIHP; retention of open space, cross-access within the facility; and related matters.

3.0 ZONING INCENTIVES AND SPECIAL PUBLIC BENEFITS

3.1 Statement of Zoning Incentives

The proposed Meadows at Yaphank PDD is a change of use from the existing approved 850,000 SF Brookhaven Walk mall project, and the existing L-1 zoned former Suffolk Downs Race Track site, to a mixed-use development project. Chapter 85, §339.1 C. outlines the procedural submissions for a Phase I application, wherein, under subsection (c), the application shall include: "a description of any proposed changes of use, including the required analysis of the basis for such change as set forth in §85-340 A. Pursuant to §85-340 A. (3), "…the applicant shall present a calculation of the estimated daily sewage generation and daily traffic generation for the proposed use and for the permitted use which it is intended to replace."

The following information is submitted in fulfillment of the required information:

Table 3-1
CHANGE IN USE DATA

Parameter	L-1 Zone	J-2 Zone	Total L-1 and J-2	PDD	Change in Value
Use/Yield (SF) Maximum building area (SF)	Industrial/ 1,180,000 SF	Retail/ 850,000 SF	2,030,000 of commercial & industrial space	1,032,500 SF commercial & 850 unit (1,149,620 SF) residential	+152,120
Building Area Minus Affordable (SF)	1,180,000	850,000	2,030,000	2,098,870	+68,870
Sanitary Flow Increase by SF (gpd)[1]	--	--	0	8,953.1	+8,953
Size of Property (acres)	172.20	150.17	322.37	322.37	=
Maximum Article 6 Flow (gpd)[2]	51,660	45,051	96,711	280,000	+183,289
Dorade STP Wastewater Flow (gpd)[3]	50,000	140,000	190,000	280,000	+90,000
Weekday Daily Vehicle Trips[4]	--	--	35,430	21,940	-13,490
Saturday Daily Vehicle Trips[4]	--	--	37,930	23,430	-14,500
Total AM Peak Hour Vehicle Trips[4]	--	--	1,754	1,455	-299
Total PM Peak Hour Vehicle Trips[4]	--	--	3,773	2,233	-1,540
Total Saturday Peak Hour Trips[4]	--	--	3,820	2,208	-1,612

Notes;
1. Based on increase in square footage of 68,870 SF, times average flow factor for new development [275,050 gpd (proposed flow (see Attachment G))/2,098,870 SF (building area minus affordable) = 0.13 gpd/SF]; existing zoning is baseline or zero (0); increase is 68,870 SF x 0.13 gpd/SF = 8,953 gpd.
2. Based on 300 gpd/acre; Zone III Article 6 requirement; however, property is sewered pursuant to Attachment E.
3. Based on Engineering Report (see Attachment F).
4. Based on Trip Generation Assessment memo prepared by FST of May 13, 2010 (see Attachment H)

Table 3-1 indicates that the change in square footage of development is 3.39 percent, or 68,870 SF. While sanitary flow increases, the number of daily and peak hour vehicle trips decreases. Both factors must be considered in connection with a PDD pursuant to: §85-340 A. (3), specifically: "The Town Board, subject to its determination that the change of use is appropriate in helping to implement the legislative intent of PDD zoning, may permit such change, provided that the resultant final impacts in terms of sewage and traffic generation are not adverse."

With respect to potential impacts, both sanitary flow aspects and vehicle trip generation will be considered in the Draft GEIS and Traffic Impact Study that will be prepared for this project. The following can be stated at this time with respect to sanitary flow and vehicle trips:

- The proposed project will discharge to an existing STP that will be upgraded and expanded to accommodate the proposed sanitary flow. These upgrades are a cost that will be borne by the applicant.
- The proposed project will result in the upgraded treatment of 140,000 gpd of existing flow, not related to the project, specifically originating from Whispering Pines/Colonial Woods and SCSD No. 8.
- The proposed project will conform with the Pine Barrens Plan Guideline of no more than 2.5 mg/l of nitrogen in recharge for projects in proximity to wetlands and surface water.
- In addition to ensuring upgraded treatment of the existing flow to the Dorade STP, the increased flow of the proposed project has been evaluated and the total nitrogen load (pounds per year of nitrogen) will be reduced as compared with "as-of-right" industrial/commercial development with on-site discharge. Finally, the Meadows at Yaphank project has been subject to preliminary nitrogen budget modeling and will comply
- The proposed project will offer mitigation for any decrease in level of service identified in the Traffic Impact Study. Off-site traffic mitigation is a cost that will be borne by the applicant commensurate with the impacts and shared-costs identified in the Traffic Impact Study.
- The proposed project will reduce the vehicle trips as compared with the as-of-right zoning.

The DGEIS will provide further information for more detailed analysis of these potential impacts.

Chapter 85, §85-340 A. (5) goes on to state: "In lieu of some PBC's, applicant may request, and the Town Board may grant, zoning incentives in the form of increased density or change of use in return for the provision of special public benefits as defined in this article." Chapter 85, §85-340 B. (1) further reinforces the concept that PBC's combined with special public benefits may be used to allow requested changes of use, and §85-340 B. (2) outlines the relevant economic analyses that should be provided to assist the Town Board in making a determination.

The Meadows at Yaphank PDD proposes numerous tangible and quantifiable public benefits that will benefit the Yaphank community as well as the region. Public benefits are proposed in several forms; those special public benefits that can be quantified are presented in **Table 3-2,** and provide financially based justification for the proposed PDD. The full suite of benefits, both quantitative and qualitative, are listed in **Section 3.5**, Summary of Special Public Benefits.

Table 3-2
PROJECTED QUANTIFICATION OF SPECIAL PUBLIC BENEFITS

Special Public Benefit	Unit Cost/Factor	Per (Unit)	Quantity	Unit	Economic Benefit
LOCAL BENEFITS					
Towne Square Improvements (reflecting pool, concert gazebo, landscaping & seating)	$450,000	Lump Sum	1.00	each	$450,000
Energy Efficient Shuttle Linkage (not including operation)	$250,000	Lump Sum	1	unit	$250,000
Construction of Public Buildings (3,000 SF community center @ MPF & 1,500 SF Pavilion & Restrooms @ Civic Square - LEED CERTIFIED)	$225	SF	4500	SF	$1,012,500
Multi-use path through open space for public use if acceptable to PBC (no removal of trees, underbrush removed) based upon 4' wide by 2.5 miles long loop	$5	SF	52,800	SF	$264,000
Dedication of Parkland for athletic fields, civic building, basketball and parking to Town, - including access to Greenbelt	$250,000	acre	7	estimated acres	$1,750,000
Towne Square (public plaza, great lawn, reflecting pool, and civic square)	$250,000	acre	5	estimated acres	$1,250,000
SUBTOTAL					$4,976,500
REGIONAL BENEFITS					
Road maintenance in residential portion (if not dedicating roads) (plowing, sanding, sweeping, emptying catch basins, repair and repave) - 20 years at 9%	$50,000	year	9%	Rate	$2,558,006
Improvements to Dorade STP	$30	gallon	140,000	gallons/day	$4,200,000
Purchase of Pine Barrens Credits	$76,500	credit	5	credits	$382,500
SUBTOTAL					$7,140,506
Total	---				**$12,117,006**

Based on the above analysis, the public would receive approximately $12,117,006 in benefits as a result of this PDD. This would be a substantial fiscal benefit to the community, and is a primary aspect of the PDD concept. The applicant will expend additional construction dollars and other costs in order to provide these public benefits. Therefore, when considering the existing potential use of the site, there is a quantitative basis to support the proposed change of land use in combination with the special public benefits associated with the proposed project.

Chapter 85, §85-340 B. (2) requires consideration of economic factors. The following information is provided to address this requirement:

- *Estimated cost to applicant* – The cost to the applicant is based on the value of benefits for which cost will be incurred by the applicant; as outlined in **Table 3-2** above, this cost is: $12,117,006.
- *Estimated economic gain to applicant* – The change in land use will increase the potential square footage that can be placed on the property by approximately 68,870 SF. The change of use also provides diversity of product that can be offered for sale or rent; specifically, the mixed-use of various types of rental and "for-sale" housing, office, industrial, retail, hotel and restaurants, provides the applicant with the ability to construct in phases, and offer various land use types thus providing an economic gain over the existing zoning. Based on proprietary pro-forma analysis, the project is more economically viable than the existing use potential and is worth pursuing. Conversely, in the current market, the existing zoning for the 850,000 SF shopping center and 1.18 million SF of office/industrial is not worth pursuing.
- *Estimated changes in land value and development cost* – The value of the property will be enhanced by the change in use. This is balanced with substantial risk as related to cost of improvements, market factors over time and potential revenues and timing of revenues. The applicant is the only party that is at financial risk, yet proposes to make a beneficial investment in the community that will establish a vibrant mixed-use community on the site which will generate tax revenue and substantial employment. Once approved, construction requires capital investment, which is only recouped through occupancy of a successful project. A mixed-use development with parks, extensive road systems, sidewalks, quality architecture, landscaping and infrastructure improvements is much more costly to construct than a shopping center or industrial facility. The applicant must also incur costs with the STP upgrade and expansion as well as off-site transportation improvements. Based on a proprietary pro-forma analysis, the project is more financially feasible as a result of the mixed-uses that can be offered as noted in item 2 above.
- *Estimated assessed value for proposed PDD versus as-of-right development* - Applying the 2009-2010 equalization rate of 0.0073, the total assessed value of the proposed PDD is $3,142,013 compared to $2,120,701 for the as-of-right development of 850,000 SF of retail and 1,180,000 SF of industrial development.

The intent of a PDD is clearly to provide a more suitable development proposal that gives back to the community by providing special public benefits that meet the individual needs of the surrounding community as well as the inherent benefits of creating a village center for the entire community to enjoy. The more "qualitative" benefits are discussed in the next section.

3.2 Tax Benefit Analysis

Relative increases in tax revenue are an indirect economic benefit that will result from the construction of the proposed PDD in lieu of as-of-right development. These increases are long-term benefits that accrue annually to the various taxing jurisdictions.

Based on preliminary analyses prepared by PMKB Consulting Associates LLC (see Appendix C), it is expected that the Meadows at Yaphank PDD will generate significantly greater tax revenues for each taxing jurisdiction that applies to the site than are generated by its existing, vacant use as well as under as-of-right development. In general these jurisdictions include (but are not limited to):

- Town of Brookhaven (General & Highway)
- Suffolk County
- Suffolk County Police Department
- Yaphank and Ridge Fire Districts
- Longwood CSD
- Longwood Library District
- other special taxing districts

While the project would significantly increase revenues disbursed to its service providers (and thereby compensate for the costs of any increased services), it is expected that the need for those services would only be incrementally increased. The project would minimize the need for additional protective and emergency services by its use of internal security and fire safety measures, and would generate a minimal number of school-age children (see below). Additionally, for some of those services that are not presently used (such as road maintenance), there would be no increase in maintenance demands, as these public services would not be used by the project. For example, the site's internal roadways will be privately maintained so that the Town will have no increased maintenance responsibilities such as for waste removal, snow removal, street sweeping and drainage system maintenance. Therefore, that portion of the increased taxes allocated to the Town Highway and Park Departments may be utilized for other maintenance and improvements Town-wide. In general, the project would maintain a demand for services similar to that of other forms of mixed-use development.

The continued vacant use of this site, or its redevelopment as detailed in the yield analysis under its business and industrial zoning, would maintain the existing non-impact in enrollment on the Longwood CSD. With respect to the type of residence and school child generation rates, it is well documented that smaller units with fewer bedrooms generate fewer school-aged children than other, larger housing types (e.g., a 4-bedroom home may generate 1.41 school-age children, but studio and 1-bedroom units typically generate no school-aged children). The proposed development will include several housing unit types, but no single family detached houses are included which generate the highest number of school children per unit.

Nevertheless, **Table 3-3** outlines the assumptions for estimating the number of school children generated by the proposed project.

Table 3-3
ESTIMATED SCHOOL-AGE CHILDREN

Unit Type	Number of Units	School-Age Children/Unit	Total School-Age Children
Rental Units	**96**	--	--
Market rate 1-bedroom	*38*	*0.08*	*3*
Work Force 1-bedroom	*10*	*0.08*	*1*
Market rate 2-bedroom	*38*	*0.23*	*9*
Work Force 2-bedroom	*10*	*0.23*	*2*
Condominium Units	**282**	--	--
Market rate 1-bedroom	*25*	*0.19*	*5*
Market rate 2-bedroom	*232*	*0.19*	*45*
Work Force 2-bedroom	*25*	*0.19*	*5*
Townhouse Units	**169**	--	--
3-bedroom	*68*	*0.39*	*27*
2-bedroom	*101*	*0.14*	*14*
TOTAL	**547**	--	**110**

Source: Revised Tax Impact/School District Analysis, PMKB Consulting Associates LLC

Based upon the above assumptions assumption, the Meadows at Yaphank PDD would generate approximately 110 school-aged children. Based upon initial projections, the PDD is expected to generate approximately $6,402,779/year in taxes for the school district, which is well in excess of the estimated cost to educate the proposed students ($2,456,510). Based upon preliminary calculations, the school district tax surplus will be approximately $3,946,269 per year, assuming that the State of New York does not provide any State Aid. At the current level of State Aid, the school district surplus is estimated to be $4,995,989 per year.

While it is recognized that commercial and industrial development of the site would conform to its existing zoning it would not include the public benefits that would be provided by the Meadows at Yaphank PDD. Thus, while commercial and industrial uses alone would generate no school-age children (whereas the project is conservatively assumed to generate 110), and both development scenarios would substantially increase taxes generated by the site from its existing level, the addition of public benefits renders the proposed PDD as a preferably option to the existing zoning scenarios.

3.3 Intangible Benefits

There are numerous benefits incurred through development of the Meadows at Yaphank PDD that cannot be quantified with respect to their socio-economic value, but are nevertheless of value to the members of the community, including residents, young and old, business owners, employees and visitors to the area.

The smart growth philosophy for development is based upon the need for locating places where people live, work and play within one community. This allows people to be a part of a community where they can walk and bicycle for recreation, be in close proximity to shopping

and rely less on automobiles overall. The benefits of smart growth developments are many, including environmental benefits related to reduced traffic congestion (such as improved air quality) and quality-of-life benefits related to enhanced community interaction, improved health (based upon studies which illustrate reduced incidence in obesity due to walkability of smart growth communities) and improvements in satisfaction (related to having more time for recreation – shorter commuting times, availability of goods and services within close proximity) and increased involvement with ones community.

The Meadows at Yaphank PDD will be a community that provides many benefits for the people that will live and work in or near it, as well as for the residents of nearby hamlets and local employees such as Brookhaven National Lab and Clare Rose. The physical enhancements proposed for the PDD and the non-physical public benefits to be derived from the project will provide enjoyment for the community and will be an accomplishment of which the community would be proud.

3.4 Summary of Benefits

The project will create a new town environment, which includes a public plaza and mix of uses. The following provides a summary of the "qualitative" public benefits of the Meadows at Yaphank PDD to be included, in part contributed by the community.

The proposed PDD:

- Meets a need for a lifestyle center in the hamlet of Yaphank, providing a location for community, culture and commerce.
- Meets the Town of Brookhaven Comprehensive Plan goal for providing work force and age-restricted housing opportunities.
- Addresses the objectives of Smart Growth principles by incorporating features and characteristics including: internal walkability; safe and convenient pedestrian access to public transit and consumer shopping needs; an appropriate, attractive and cohesive architectural theme; on-site recreational facilities; sufficient parking and convenient vehicle access and traffic flow.
- Will have peak trip generation hours different from those of a single-use development such as development per existing zoning. This difference would tend to reduce traffic during rush hour periods, and thereby incrementally improve traffic flow and safety.
- Will incorporate superior design elements including attractive coordinated architectural treatments, extensive site improvements and landscaping features in a mix of uses including housing, restaurant spaces, a commercial center and a public gathering place.
- Provides significant tax revenues to the Town of Brookhaven and other local taxing entities without significant increase in the need for additional services.
- Generates few school-aged children. Based upon these conservative estimates, a maximum of 110 children would live in the residential units.
- Will attract the variety of retail and mixed-use commercial uses (such as restaurants, bookstores, boutiques, ice cream and coffee shops, shoe repair/tailor, dance studio) to meet the local community needs.
- Provides a natural buffer along the site's boundaries and protects stands of existing large trees.
- Protects DEC freshwater wetlands on the site.

- Will generate full time professional office-related jobs and jobs in the retail and service-oriented businesses.
- Provides a public plaza space that will be constructed to encourage use for community events, including an area for a concert green and farmers market.
- Provides a link to the greenbelt trail, fostering appreciation for the natural resources in the area.
- Promotes healthy lifestyle through encouraging walking, bicycling, and activities in the passive recreation areas and athletic fields.
- Locates development on previously disturbed property. The racetrack parcel is scarred with the remains of the former use, including large tracts of asphalt and dirt trails used by off-road and ATV vehicles.
- The proposed PDD would improve this property to a vibrant community, replacing nuisance activities with a sense of place and enjoyment for local residents.
- Locates development on major roadways, at a major interchange, improving accessibility and reducing traffic impacts on existing neighborhoods.
- Will generate additional purchasing power in the area benefiting existing local retailers and businesses.
- The project will generate much-needed jobs in the area, including construction jobs and permanent jobs.
- In addition to real property tax revenues, the proposed PDD will generate additional sales tax revenue and mortgage recording tax revenues.

4.0 PROPOSED CHANGES OF USE

The current zoning of the site allows for industrial uses. The proposed PDD would involve a change in use for the parcel that is currently a commercial and vacant site to a mix of residential and commercial uses.

§85-340A(1) indicates that permitted uses authorized shall be the same as that permitted in the underlying zoning district. The proposed project includes the following uses, allowed within the respective underlying zoning districts:

J-Business-2

1. Bank without accessory drive-through facility
2. Commercial center
3. Pharmacy without accessory drive-through facility
4. Major restaurant as an accessory use to a commercial center (Town Board special permit for accessory use)
5. Drive-through facility as an accessory use to a bank or pharmacy (Planning Board special permit for accessory use)

L-Industrial-1

1. Office
2. Warehouse
3. Office/Flex space

Within the eastern parcel (zoned J-2), the Meadows at Yaphank proposes a bank, commercial center, pharmacy and major restaurant, all of which are allowed as-of right. It should be noted that the proposed PDD includes a drive-through for both the bank and pharmacy, which would require a Planning Board Special Permit for an accessory use under the existing J-2 zoning. The proposed hotel is not allowed in J-2 but is a complimentary commercial use that is proposed as part of the PDD. Multi-family residences are not allowed as-of-right and this is the basis for the proposed land use conversion on the north part of the J-2 parcel. For the western parcel (zoned L-1), office, or office/flex space are proposed, all of which are allowed as-of-right. Multi-family residences are not allowed as-of-right but are proposed as part of the mixed-use PDD through the change of use on the north part of the L-1 parcel. The areas of development allowed as-of-right and not allowed as-of-right within each of the parcels and zoning districts on the subject site are provided below. These areas do not include roadways, recharge, open space, parks, etc. which are accessory uses. Generally, the developed area is made up of roughly 50% as-of-right uses and 50% changes of use to facilitate the proposed mixed-use PDD.

J-Business-2
Allowed as-of-right: 33 acres +/-
Not Allowed as-of-right: 28 acres +/-

L-Industrial-1
Allowed as-of-right: 35 acres +/-
Not Allowed as-of-right: 36 acres +/-

§85-340A(3) indicates that the Town Board may approve a change of use, as presented in a calculation of the estimated daily sewage generation and daily traffic generation for the proposed use and for the permitted use which it is intended to replace. **Table 3-1** illustrates the proposed change in use, including analysis of daily sewage generation and daily traffic generation. The as-of-right versus proposed PDD would generate 96,711-150,000 gpd (allocated flow into Dorade STP for racetrack and mall parcel) versus 280,000 gpd of daily sewage generation as estimated for the proposed project. In terms of trip generation, the weekday daily trips decrease from 35,430 to 21,940 trips when comparing as-of-right use to the proposed PDD.

Town Zoning Code Section 85-340A requires a detailed analysis of comparable impacts to justify Town Board approval of a zone change and associated land use change, or an analysis of the proposed special public benefits inherent to the proposed PDD that would justify such an approval [Section 85-340A(5)]. The latter requirement is addressed in **Section 3.0**; the Summary of Benefits contained **Section 3.5** lists these benefits, which would tend to support a conclusion that the proposed PDD would provide benefits sufficient to justify its approval.

5.0 LISTING OF REQUIRED APPROVALS

In general, prior to the issuance of any permits or approvals, the Applicant and the SEQRA-designated Lead Agency must fulfill the requirements of SEQRA. Among these requirements, the Applicant must prepare an acceptable Environmental Assessment Form (EAF), which identifies the general project characteristics and potential impacts. Once the EAF is completed, the Lead Agency determines whether or not an Environmental Impact Statement (EIS) is required, and issues either a positive declaration (indicating potential significant environmental effects that must be further evaluated), or a negative declaration (indicating no potentially significant environmental effects).

A public hearing will be scheduled following the submission of a complete application as determined by the Town Planning Division. The hearing would typically be a combined hearing on the change of zone application and Draft EIS. The Town Board then would complete the SEQRA process and determine the suitability of the proposed PDD application. Following this, the Town Board shall approve, conditionally approve, or disapprove the proposed PDD change of zone and Master Plan Application. If the proposed project is approved or conditionally approved, the applicant may proceed to Phase 2 Subdivision/Site Plan Application to the Planning Board.

The following are the required approvals and permits required for the proposed PDD:

- PDD zone change approval and Master Plan approval from the Town Board
- PDD Subdivision and Site Plan approvals from the Town Planning Board
- Town Building Department approval of Building Permit
- Town Highway Department approval of Roadwork Permit
- Town Assessor for Unit Designation Map
- Water/Sanitary and subdivision Approvals from the SCDHS
- Suffolk County Planning Commission review under Section 239m
- New York State Department of Environmental Conservation (NYSDEC) approval for SPDES permit (with Suffolk County Department of Public Works [SCDPW] review)
- Suffolk County Department of Public Works for Dorade STP
- Road Access Authorization from the NYSDOT
- Road Access Authorization from SCDPW

6.0 PROOF OF OWNERSHIP

6.1 Title

The title for the subject property will be submitted under separate cover by the project attorney.

6.2 Affidavit of Ownership

The Affidavit of Ownership for the project site will be submitted under separate cover by the project attorney.

6.3 Disclosure Affidavit

A copy of the required Disclosure Affidavit, including the Town Ethics Code, is located in this document, in Attachment I.

7.0 APPLICANT QUALIFICATIONS

Copies of the applicant's team qualifications and experience are located in this document, in Attachment J.

8.0 ACCESS AGREEMENT

The owner agrees to permit governmental review agencies, their staff and consultants to access the property for the purpose of inspection.

9.0 PROPOSED PDD MASTER PLAN

As required under the PDD requirements for a Phase I submission, the following plans are provided in pockets at the end of this document as part of the Proposed PDD Master Plan. For convenience, additional figures are included in a separate section immediately following the main text of this submission.

9.1 Site Location Map

The Site Location Map shows the proposed PDD in relation to existing roads, developed properties, structures, land uses, zoning districts, school districts, service and utility districts, and SCDHS Groundwater Management Zone boundaries, an SGPA, Pine Barrens Zone and any other significant information for the subject property itself and all areas within 1,000 feet of it. The site and surrounding areas are not located within a Wild, Scenic and Recreational River (WSRR) boundary, a flood hazard area, or a Historic District.

9.2 Environmental Conditions Map

This map is based on the site's current topography and indicates all significant environmental conditions including topography (with a maximum vertical contour interval of two feet), wetlands (by type and function), patterns of existing vegetation and habitat, soil conditions, buildings or sites of historical or archaeological significance, habitat areas for rare, endangered, threatened or special concern species of flora and fauna, existing watercourses and drainage patterns, flood hazard areas and flood elevations, and the boundaries of any Groundwater Management Zones, SGPAs, Pine Barrens Zones, WSRR boundaries, South Shore and Peconic River estuary boundaries or other such classifications which relate to the subject property. As noted in **Section 9.1** above, the site and surrounding areas are not located within a WSRR boundary, a flood hazard area, or a Historic District. A separate steep slope analysis illustrating slopes on the subject property with categories of 0 to 10%, 11% to 15%, and over 15% is provided in a pocket at the end of the document.

9.3 Yield Study

The Yield Study for the Racetrack parcel was prepared in accordance with standard Planning Division procedures, and indicates the potential development of the property under its existing zoning, with a breakdown of the acreages (as the site is within only one school district and one zoning district, only one statistical summary is necessary). A copy of the approved plan for Brookhaven Walk is also included and provides the yield for the eastern parcel for the subject site. An industrial yield analysis has been completed for the Racetrack parcel. Both the existing approved Brookhaven Walk site plan, and the Racetrack yield plan are included in pouches at the end of this document.

9.4 Land Use and Development Plan

The Land Use and Development Plan illustrates the applicant's land preservation, land use and development concepts for the entire property, including a statistical summary of the total proposed quantity and type of each land use (as the site is within only one school district, only one statistical summary is necessary).

9.5 Phasing Plan

The Phasing Plan indicates the approximate phasing of land dedication, site development and infrastructure improvements, both on and off-site, including the general order of construction and the estimated timing of each phase.

It is anticipated that the project will be constructed in multiple phases; the exact number of phases and their sequence of development will depend on economic conditions that cannot be definitively determined at this time. The following is a general description of the overall phasing of the project, and has been adapted from the Phasing Plan.

The phased development planned for the Meadows at Yaphank PDD proposes five phases, which consist of the following. However, it should be understood that market conditions at the time of final approval may modify the phasing plan to some degree and the immediate need for additional commercial development in the early stages of the project may lead to an accelerated schedule and/or phasing shift.

Phase 1- Consists of approximately 304 residential units in a mix of one and two bedroom apartments (i.e. rental units) and condominiums. In addition, approximately 52,000 SF of neighborhood retail will be phased in based on market conditions along Meadows Boulevard East. The village square and great lawn will be constructed as part of the residential phase and the reflecting pool will be constructed as part of the retail. Primary access will be through Yaphank Woods Boulevard with phased access improvements from Meadows Boulevard to William Floyd Parkway as determined by SCDPW. Required improvements to Yaphank Woods Boulevard shall also be made during this phase. Time frame: approximately three years.

Phase 2- Consists primarily of 416 residential units in a mix of one, two and three bedroom condominiums and townhouses. In addition, approximately 150,000 SF of office space will be developed based on market conditions along Meadows Boulevard West. As part of this phase, a secondary access point will be constructed to Yaphank Woods Boulevard on the Long Island Expressway access road, which will eventually connect to the Long Island Expressway service road. The village green will be constructed and the ball field area prepared for dedication as part of the residential phase. Time frame: approximately four years.

Phase 3- Consists of approximately 130 residential units in a mix of one, two and three bedroom condominiums and townhouses. In addition, 275,000 SF of retail including the supermarket, major retail anchor, hotel and restaurant will be developed as part of this phase. All commercial development will be phased based on market conditions. The community (civic) building will be constructed and the multi-purpose field area prepared for dedication as part of this phase. In addition, connection shall be made through the project from Yaphank Woods Boulevard to Long

Island Expressway. Phased off-site traffic improvements will be constructed as required based upon NYSDOT and SCDPW recommendations. Time frame: approximately three years.

Phase 4- Consists of approximately 150,000 SF office space and additional off-site improvements will be phased in. Time frame: approximately two years.

Phase 5- Consists of approximately 250,000 SF office/industrial flex and any remaining off-site improvements. Time frame: approximately two years.

10.0 DESIGN CONCEPTS

The Land Use and Development Plan depicts the proposed site layout. The applicant expects that specific building architectures, use of materials, building orientations, landscaping design and species used, street furniture, signage requirements etc. will evolve as the PDD and site plan review process proceed. In general, the applicant is committed to providing a well-conceived mixed-use project wherein residents would choose to work and play in an attractive, diverse community and yet remain in proximity to their homes. Such a development would foster the type of positive "sense of place" sought by the public and as documented in current planning literature. The proposed Meadows at Yaphank PDD meets the needs of the community while providing a beneficial land use on the property and meeting Town goals for affordable and workforce housing.

In conclusion, it is expected that the proposed project as envisioned will provide a suitable land use in the context of the surrounding community while providing enormous public benefits.

11.0 ENVIRONMENTAL ASSESSMENT FORM, PART 1

Attachment K contains the EAF, Part I prepared for the proposed PDD.

Appendix A-10
Renderings

Site Rendering #1- Towne Center

Site Rendering #2- Residential Green

Site Rendering #3- Office Park

Appendix A-12
Engineering Report for Water Pollution Control Plant and Collection System, Parr Village, Brookhaven, NY

February 1973

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

APPLICATION FOR PUBLIC ACCESS TO RECORDS
SUFFOLK COUNTY

TO FREEDOM OF INFORMATION OFFICER/DESIGNEE:
Suffolk County Dept. of Health Services, Office of Wastewater Management
360 Yaphank Avenue, Suite 2C, Yaphank, New York 11980

SECTION I: TO BE COMPLETED BY APPLICANT

INSTRUCTIONS TO APPLICANT: Please complete Section I of this form (type or print legibly). SUBMIT THE ORIGINAL FORM to the agency Freedom of Information Officer. The Freedom of Information Officer or Designee will respond to your request as soon as possible.

I HEREBY APPLY TO: CHECK ONE ☒ Inspect the following record ☐ Receive a copy of the following document(s)

(Please describe the record sought and include the complete tax map number. Supply a date, a file title, and any other information that will help locate the record desired:) _____

Records for site plan, sanitary system, sewer system, as built suveys for the following property:

SCTM: 200 - 552 - 01 - 1.3 Formerly known as Parr Meadows

SIGNATURE OF APPLICANT:	Applicant Represents	Telephone #
PRINT NAME: Kenneth S. Lindauer, P.E.	Property owner	363-2683
APPLICANT'S MAILING ADDRESS (MUST BE COMPLETED): Vollmuth and Brush 200 Blue Point Ave Blue Point, NY 11715		Date of Application 4/29/10

SECTION II: FOR USE BY AGENCY FREEDOM OF INFORMATION OFFICER/DESIGNEE ONLY

☐ Approved. Call to arrange an appointment to inspect the requested record.

Contact Person _____ Phone # _____

☐ Records not possessed or maintained by this agency.

☐ Records cannot be found after diligent search.

☐ Denied. Reason for denial. _____ (See Attached).

☐ Receipt of this request is acknowledged. There will be a delay in supplying the requested record until:

☒ Payment of Reproduction Fee $ 4.00 ☐ Other _____

☒ Document(s) enclosed, as requested. Parr Village Eng. Report

☐ Other _____

Signature of FOI Designee	Title	Date
[illegible]	Secretary	5-4-10

SECTION III. NOTICE TO APPLICANT

YOU HAVE A RIGHT TO APPEAL A DENIAL OF THIS APPLICATION IN WRITING TO THE OFFICE OF THE COUNTY ATTORNEY WITHIN 30 DAYS OF THE DENIAL. INFORMATION AS TO THE PERSON TO CONTACT IS SHOWN BELOW. THE CONTACTED PERSON MUST RESPOND TO YOU IN WRITING WITHIN TEN BUSINESS DAYS OF RECEIPT OF YOUR APPEAL.

Suffolk County Attorney H. Lee Dennison Bldg. 6th Fl. Veterans Memorial Hwy., Hauppauge, NY 11788	Business Telephone (631) 853-4049
WWM- 074 (8/05)	Tracking #

RECEIVED
APR 30 2010
SUFF. CO. HEALTH SERVICES
OFFICE OF WASTEWATER MGT.

ENVIRONMENTAL CONTROL
JOB NO. BR253

ENGINEERING REPORT

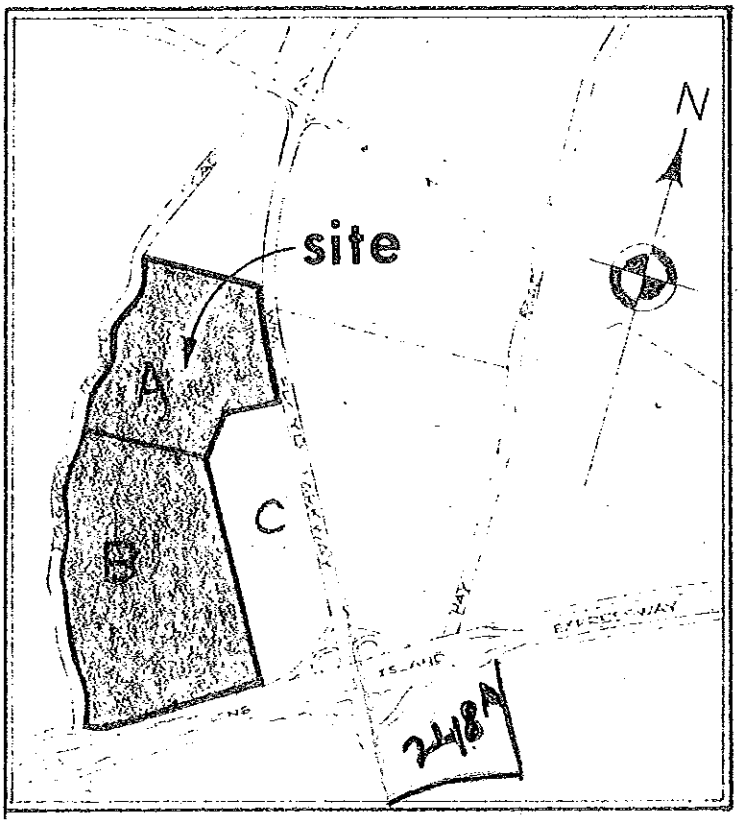
for

WATER POLLUTION

CONTROL PLANT

and

COLLECTION SYSTEM



PARR VILLAGE
Brookhaven, New York

THE PARR COMPANY OF SUFFOLK, INC.
Ronkonkoma, New York

by

John A. Jacobsen, Associates
Engineers and Architects
Bay Shore, New York

JOB #72011 STP

March 1972
Rev. 7/72
Rev. 10/72
Rev. 11/72
REV. 2/73

MAY 4 1973

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SUMMARY

Site Immediately Served

Area	Condominiums	200 acres
Number of units	3BR: 381 units & 2BR=163 units	544
Population immediately served		2204 people
Design population equivalent		4500 people
Soil		Sand & gravel
Ground water depth		44 feet elevation
Topography		Rolling

Design Criteria

		Per Plant	Total
Population		2,250	4,500
Average flow		225,000 gpd	450,000 gpd
Peak flow	(aver. x 4)	900,000 gpd	1,800,000 gpd
BOD	(0.17/cap)	382.5 #/d	765 #/d
BOD reduced loading*	(0.15/cap)	337.5 #/d	675 #/d
S.S.	(0.20/cap)	450 #/d	900 #/d
Process		Extended Aeration	

Aeration

Design criteria		12.5 #BOD/1000 C.F.	
Capacity	(total 24 hr.)	228,888 gal.	457,776 gal.
Air supply	(2000 cu. ft./#BOD)	532 cfm.	1,064 cfm.

Clarification

Surface area	(total 1.0 sf/300 gpd)	804 $ft.^2$	1,608 $ft.^2$
Rention period		5.0 hrs.	5.0 hrs.

Sludge Storage

Capacity	(3 cf/cap total)	6,750 c.f.	13,500 c.f.
Air supply	(27 cfm/1000 c.f.)	182 cfm.	364 cfm.

Chlorination

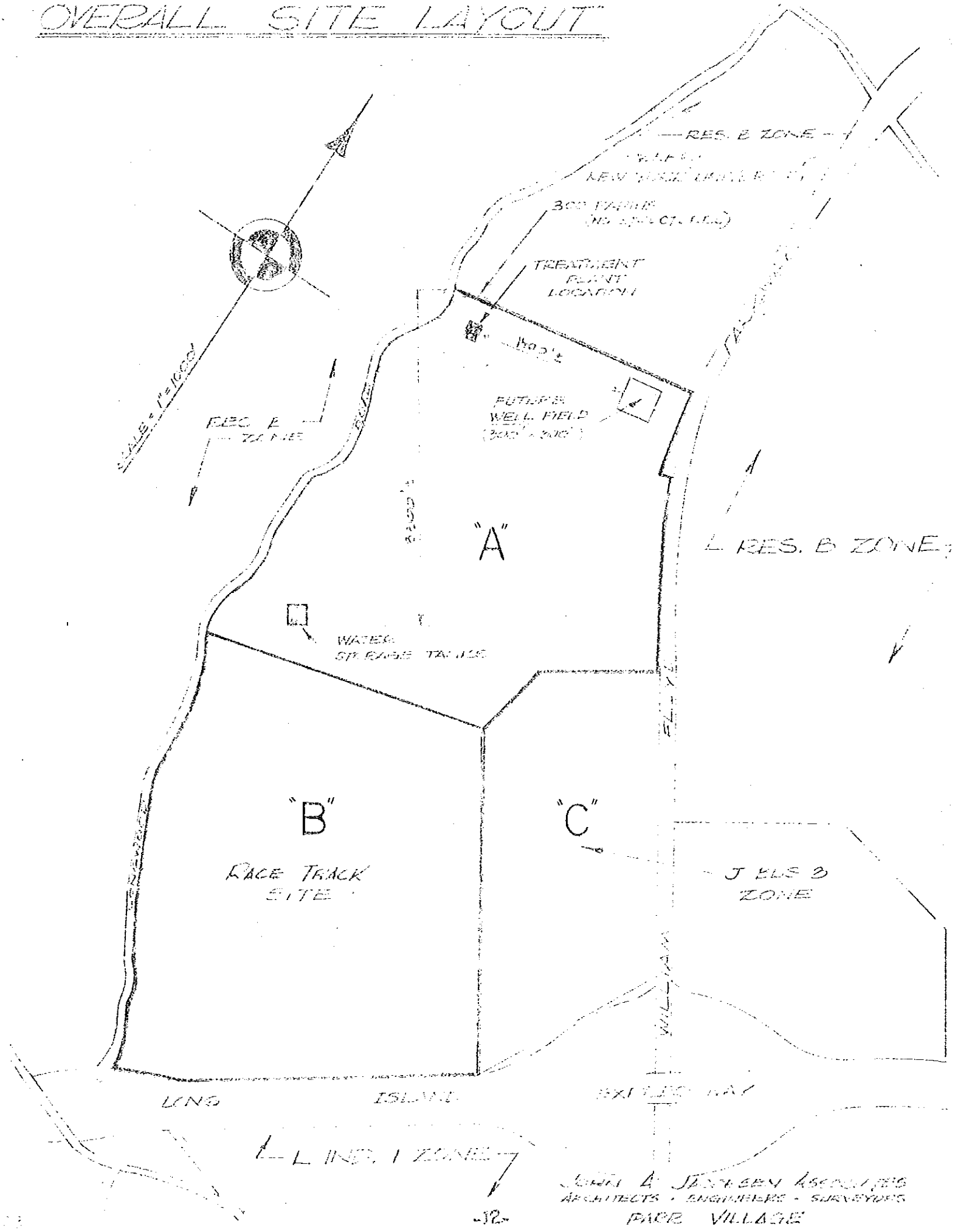
	Per Plant		Total
Hypochlorinator capacity	0-2.5 gph		0-5 gph
Design requirement		10 mg/l	
Retention period (min. 15 min. @ peak flow)		15.7 min.	
Chamber volume	1,255 c.f.		2,510 c.g.

*If/when dewatering screen is installed.

Recharge	PER PLANT		Total
Design rate			10 gal./sq. ft.
Number of beds	4		8
Bed leaching area	7,032 ft.		
Total leaching area	22,500 sq. ft.		45,000 sq. ft.

Advanced Treatment			
Filtration tank area	156 sq. ft.		312 sq. ft.
Filter leaching rate (avg.)		1 gpm/s.f.	
Backwash rate		8 gpm/s.f.	
Air purge rate		5 SCFM/s.f.	
Additional aeration	133 cfm		266 cfm

OVERALL SITE LAYOUT



Site

The Parr Company of Suffolk, Inc. is a principal owner of approximately 550 acres located north of the Long Island Expressway and west of William Floyd Parkway, Yaphank, Town of Brookhaven. The site is divided into three general parcels:

Parcel (A): 200 acres yielding 544 condominium units will be controlled by Parr Village Home Owners, Inc.

Parcel (B): 200 acre racetrack site under the operation of Suffolk Meadows Racing Association, Inc.

Parcel (C): 150 acre regional shopping mall under the direciton of the Parr Company of Suffolk, Inc.

The site is generally rolling with higher elevations in the central portion and lower elevations to the north and south.

The entire site will be developed under a Special Town Board Resolution stipulating density and setback. The overall site setbacks are as follows:

SETBACKS

DIRECTION	ZONE	FRONT YARD	SIDE YARD	REAR YARD
North	Res. B	40'	18'	50'
South	L ind. I	30'	10'	50'
East	Res. B & Bus. 3	30'	n/a	30'
West	Res. B	40'	18'	50'

It should be noted that the land to the north is zoned Res. B, however, the site is owned by New York University. Similarly, the land to the east is zoned Res. B & J Bus. 3, but is the present site of the Brookhaven National Laboratory.

The proposed Water Pollution Control Plant will be located at the northwest corner of the property.

The facilities will be located in accordance with County minimum distances

and the 10.9 acre site exceeds the minimum area necessary for the effluent disposal facilities. Nitrogen removal facilities as well as filtration will be provided in the original design and construction phase, however, sufficient additional space does exist for general plant expansion. The entire water pollution control project will be in accordance with a typical Suffolk County Sewer Agency Type "A" contract.

Parcel (A) will yield 544 condominium units with a density which has been stipulated in accordance with the requirements of the Town of Brookhaven. The townhouse building will be two (2) stories in height, built in clusters containing four (4) residential units per cluster. Construction will conform to all local codes and requirements.. The condominiums will be developed in two sections with construction over a 2 year period. GARBAGE DISPOSAL UNITS WILL NOT BE INSTALLED.

Parcl (B) will contain the Quarter Horse Race Track which will operate in accordance with the rules and regulations of the New York Racing Commission. The track will seat 6,000 people and have a food service establishment. The track has been licensed to operate eighty-eight days (88) each year.

Parcl (C) will contain a 1,400,000 square foot regional shopping mall and will contain major department stores and varied support stores.

Water Supply

Water supply to serve this project, together with sufficient capacity to serve future areas, will be developed by the Suffolk County Water Authority. An elevated storage tank will be constructed in the central portion of the property on a one acre site located at the highest elevation of approximately 170 feet. A well field is proposed for development on a 3 acre site in the north portion of the property.

The entire water supply system will be developed by the Suffolk County Water Authority and they will own and maintain the supply as part of their County wide system.

Population

The population for the entire site has been developed in accordance with Township and County design criteria.

Parcel (A)

2 bedroom	163	x	3.0	=	489 people
3 bedroom	381	x	4.5	=	1715 people
	544				2204 people

Parcel (B)

Six thousand seats will be provided in addition to a restaurant and cocktail lounge facility. The track will only operate eighty-eight (88) days per year.

Parcel (C)

The regional shopping mall will contain 1,400,000 square feet and generate population in accordance with SCDEC criteria.

Hydraulic Flow

The hydraulic loading has been computed in accordance with Suffolk County Department of Environmental Control design criteria.

Parcel (A)

2 bedroom - 163 units	x	300 GPD	=	48,900
3 bedroom - 381 units	x	450 GPD	=	171,450
				220,350

Parcel (B)

6000 seat x 5 GPD	=	30,000 GPD
Restaurant	=	10,000 GPD
Miscellaneous	=	10,000 GPD
		50,000 GPD

Parcel (C)

1,400,000 s.f. x 0.10 GPD = 140,000 GPD

Total Hydraulic Flow = 410,350 GPD

Plant Design = 450,000 GPD

General Design Criteria

Population equivalent	4,500
Design flow	450,000 GPD
Peak flow (design x 4)	1.8 MGD
	1,250 GPM
BOD_5 #/day (pop. x 0.17)	765 #/d
Sus. Solids #/day (pop. x 0.20)	900 #/d

The waste from the collection system will flow by gravity to the Water Pollution Control Plant. After treatment, filtration, and disinfection the effluent will flow by gravity to surface leaching beds.

Inspection and observation of final testing will be performed by the Suffolk County Department of Environmental Control.

During construction, it is understood that a SCDEC representative will be present, and all interpretation of plans and specifications will be coordinated with him.

House sewers will be of 6" diameter AC pipe, class 2400 minimum, and be laid on a minimum 2% slope.

Preliminary Treatment

Preliminary treatment will be provided by a comminutor sized to handle up to 1250 GPM of incoming raw sewage. Parallel to this will be a bar screen, sized and designed in accordance with the latest requirements of the Suffolk County Department of Environmental Control.

Aeration

Based on a Treatment system composed of two separate plants, each unit would be 228,888 GPD aeration chamber with a total of 457,776 GPD.

The hydraulic requirements of 228,888 GPD will dictate since it is equivalent to the biological criteria of 12.5 #BOD/1000 c.f.

Each aeration unit will be supplied with individually controlled air headers and diffusers which will achieve a minimum of 9% oxygen transfer. A water spray foam control will be provided on the aeration tanks and aerated sludge holding tanks utilizing recycled plant effluent.

Clarification

Clarification of each plant will be based on a settling rate of 300 gal./sq. ft. which will result in a design surface area of approximately 750 s.f. Each clarifier will be provided with a scum collector, sloped bottom, and air lift sludge return pumps. Surface scum will be diverted to the aerated sludge holding tank. The clarifiers will have minimum SWD of 8' and provide a retention time of 5.0 hours.

Advanced Treatment

In accordance with the Suffolk County Department of Environmental Control criteria, advance treatment for this facility will be provided in the form of Total-nitrogen removal. In addition to the nitrogen removal, downflow, deep bed sand filters will polish the effluent and therefore the combination of treatment will provide an extremely high quality discharge for disinfection and distribution to the leaching pools. Basically, we will be utilizing two separate plants with activated sludge, clarification, filtration, denitrification, disinfection and discharged to leaching beds. Filtration tanks will provide approximately 312 square feet of surface area which will facilitate an average surface leaching rate of 1 GPM. Provisions will be made to "bump" the filters automatically so as to purge the deep filter bed of gas build-up. Piping will be arranged so that any filter can be utilized or backwashed independently of the others.

The concentration of total nitrogen to the plant will be about 50 to 55 mg/l. This quantity is made up of approximately 20 mg/l organic and 30 to 35 mg/l ammonia. The initial BOD loading of 108 mg/l will be reduced to below 50 mg/l near the head of the aeration tanks to allow, with the excess oxygen present, nitrification to take place efficiently.

Loadings

Average NH_3-N =	113 lbs./day
Oxygen required	
4.5 lbs. O_2/lb. NH_3-N =	518 lbs./day
Air required	

$$\frac{518 \text{ \# } O_2/\text{day}}{(0.075 \text{ \# air/FT}^3)(0.2 \text{ \# } O_2/\text{\# air})\ (9.0\%)\ (1440 \text{ min./day})} = 266 \text{ cfm}$$

It is anticipated that the nitrate compounds entering the sand filters will be on the order of 50 mg/l. This will amount to an average of 187 lbs./day. To insure a 3 to 1 ratio of methonal to nitrate-nitrogen, a feed rate of up to 561 lbs./day will be available (86 gpd). Automatic mechanical feed equipment will be provided beyond, but near the control building to maintain this carbon source, in the form of methanol, in the filters. This should produce in excess of 90% denitrification which we believe will result in a final nitrate discharge of no greater than 5 mg/l.

Sludge Storage

Each aerated sludge holding tank will have a capacity of 6,750 c.f. based on a population of 2,250 people first stage construction, and 3 c.f. of sludge per capita resulting in a minimum required capacity of 6,750. Decant withdrawal piping will be provided to extract supernatent for discharge to the head of the plant. Final settled sludge will be removed by a pump truck to a deposit area approved by the Town and County.

Air Compressors

Three compressors will be provided, each yielding an air supply in accordance with the following capacities:

Aeration Stage	532 cfm	@	2000 cf/#BOD
Nitrification Air	133 cfm	@	4.6 # O_2/# NH_3
Sludge Storage	182 cfm	@	27 cfm/1000 cf
Air Lift Pumps	36 cfm		
TOTAL	883 cfm		

Actual compressor yield shall be 900 cfm at 7 psi at 100 degrees F. driven by a 40 HP motor. Individual flow rates will be controlled by valves in the diffuser air headers. A separate compressor rated at 250 SCFM minimum at 7 psig will be supplied for filter backwashing.

Chlorinator

A positive feed liquid hypochlorinator will provide sufficient capacity to deliver a maximum of at least 5 gph of chlorine solution which will be adequate to supply 6 mg./liter. The chlorine capacity has been computed based on the ultimate peak flow of 1,250 gpm.

The chlorine solution will be paced by a flow meter and introduced into a chlorine contact tank of 1670 c.f. capacity for each 225,000 gpd unit. An excess of fifteen minute retention time will be provided.

Recharge

Recharge will be accomplished by surface leaching beds which will develop a total of 45,000 sq. ft. of surface leaching area based on a leaching rate for filtered effluent of 10 gallons/sq. ft./day. The surface area will be divided into 8 individual beds each containing 5,625 sq. ft. Each bed will be piped for individual dosing. An area for 50% expansion is indicated on the plans.

Test Well

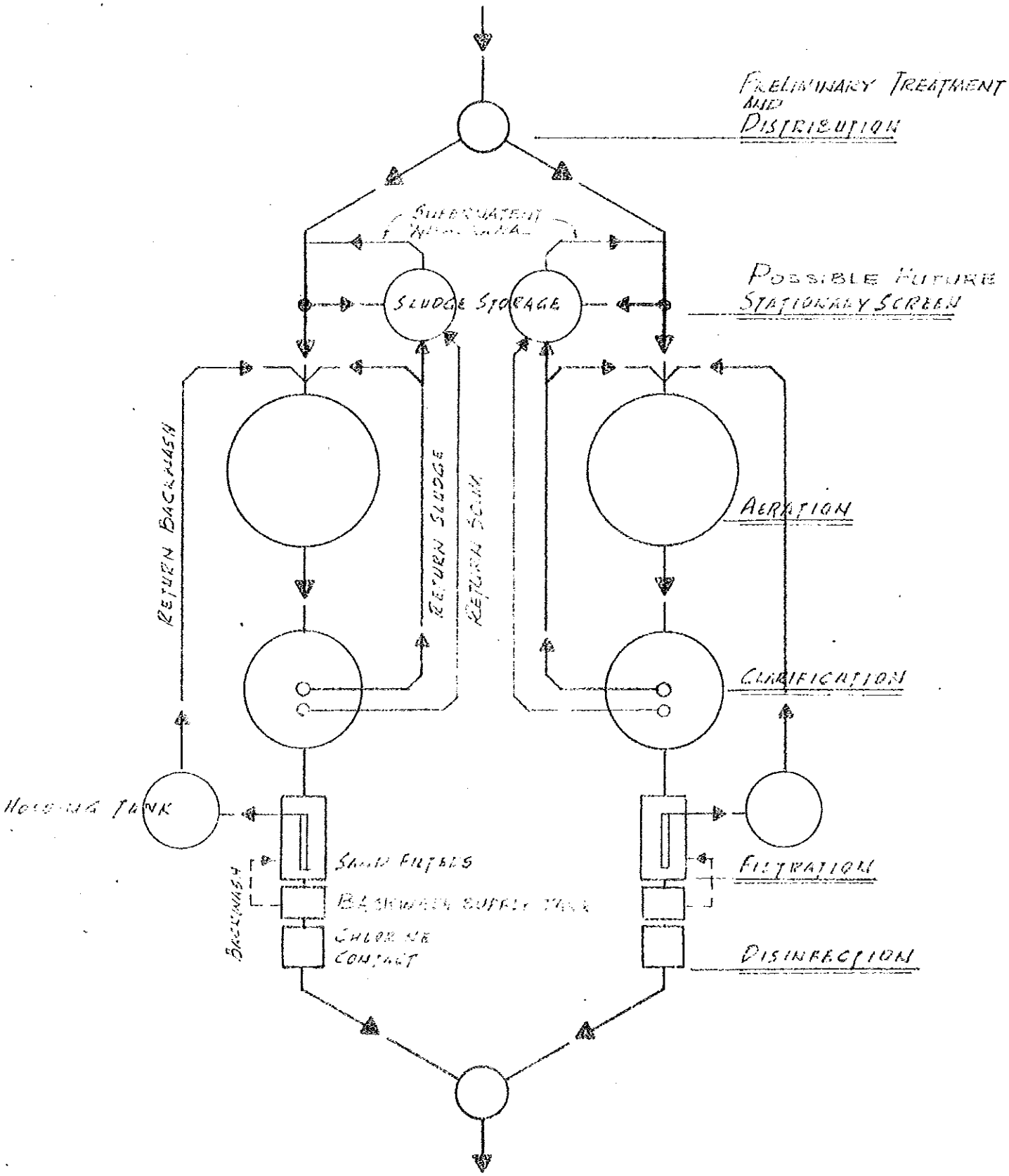
A test well casing and screen will be installed in the vicinity of the recharge area as directed by the Suffolk County Department of Environmental Control so that periodic samples can be collected to nomitor the state of the ground water.

Control Building

A water pollution control building will be provided, which will house the blowers, controls, flow receivers, (Indicating, Recording, & Totalizing), and disinfection and caustic feed equipment. Toilet facilities, shower room and hot water heaters, laboratory equipment per Suffolk County Department Environmental Control Memo # 3, desk, work shop, and special tools will also be provided in the central building. BATTERY OPERATED EMER. LIGHTING IS PROVIDED IN FLDS & HEAT AREA.

PH Control:

A caustic supply tank and metering pump is provided in the control building to supply up to 6 Gal./Hr. of caustic solution. A separate system is provided for each plant.



FLOW SCHEMATIC DIAGRAM

Appendix A-13
LEED® Features that May be Considered

LEED® FEATURES THAT MAY BE CONSIDERED
per LEED® for New Construction and Major Renovations, v. 2009

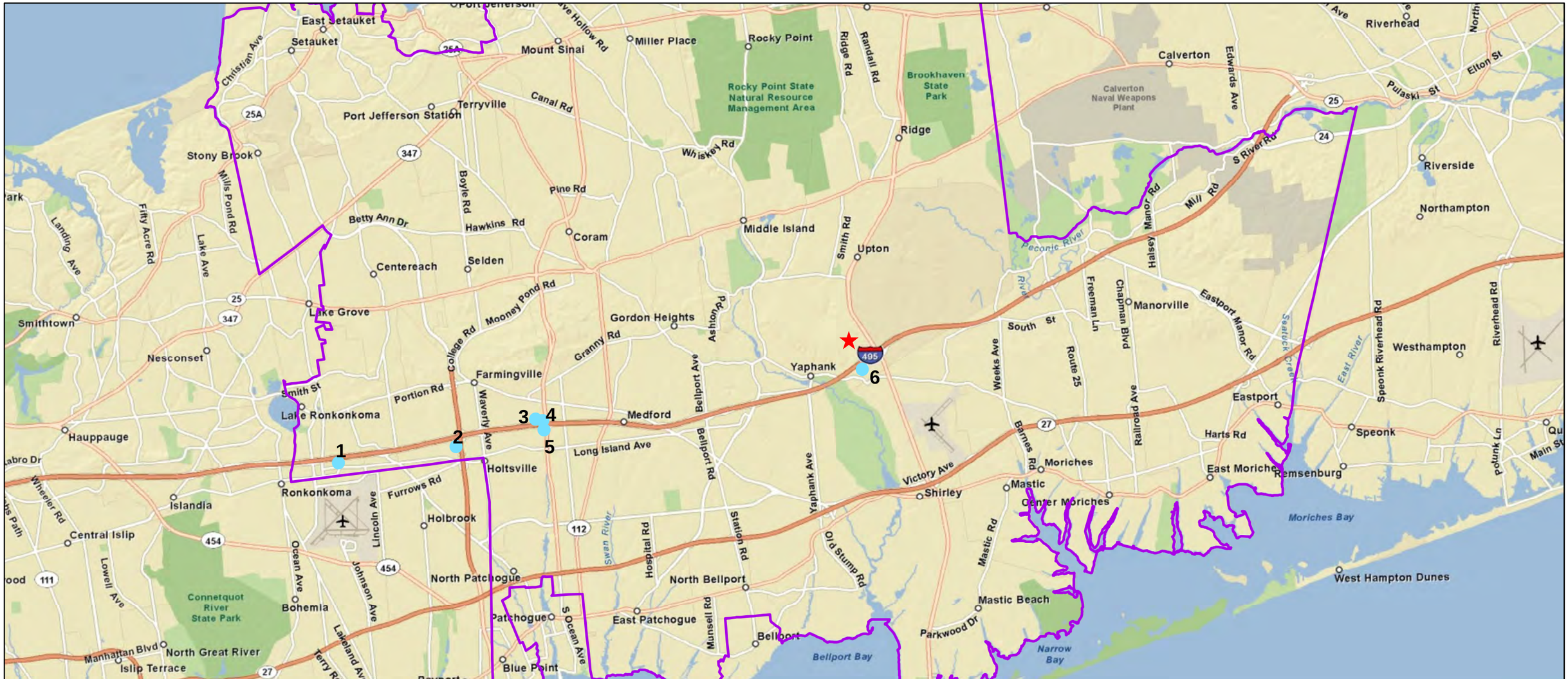
Prerequisite/Credit Designation	Prerequisite/Credit Name	Required to Satisfy Prerequisite/Credit	Project Feature to Satisfy Prerequisite/Credit	Points Awarded
Sustainable Sites (SS)				
Prerequisite 1	Construction Activity Pollution Prevention	Create & implement Erosion and Sediment Control Plan per EPA or state requirements, whichever is more stringent.	Prepare & implement Erosion and Sedimentation Control Plan/SWPPP.	
Credit 4.2	Bicycle Storage and Changing Rooms	Bicycle racks/storage within 200 yards of entrance for 5% of users, or shower & changing facilities in bldg within 200 yards of entrance for 0.5% of FTE.	Install bicycle racks, include shower/changing facility.	
Credit 4.3	Low-Emitting and Fuel-Efficient Vehicles	Preferred parking for low-emitting vehicles (LEV) and fuel-efficient vehicles (FEV) for 5% of parking capacity. Install alternative-fuel fueling stations for 3% of parking capacity.	Set aside parking spaces for LEV and FEV, install fueling station for such vehicles; solar-electric charging stations.	
Credit 4.4	Parking Capacity	Parking must not exceed minimum zoning requirements. Preferred parking for car and vanpools for 5% of total parking capacity.	Construct only min. required parking spaces. Designate preferred parking for car/van pools.	
Credit 5.1	Protect or Restore Habitat	Restore or protect 50% of site excluding footprints, or 20% of total site including footprints, whichever is greater. Limit disturbance as specified	Restore or protect or limit disturbance as required.	
Credit 5.2	Maximize Open Space	Provide 20% open space.	Provide 20% of entire site as open space.	
Credit 6.1	Stormwater Design: Quantity Control	SMP that includes stream channel protection & quantity control measures.	Prepare & implement SMP.	
Credit 6.2	Quality Control	Reduce impervious cover, promote infiltration of 90% of runoff & remove 80% of total suspended solids (TSS).	Pervious pavement, grass paver or other pervious surfaces	
Credit 7.1	Heat Island Effect: Nonroof	50% of hardscape must be shaded by trees or architectural features; use high SRI materials.	Shade 50% of hardscape, use high SRI materials, shaded parking.	
Credit 7.2	Heat Island Effect: Roofs	75% of roof with high SRI or 50% vegetated roof or combination.	Green roof, solar panels	
Credit 8	Light Pollution Reduction	Minimize indoor & outdoor trespass per ANSI/IESNA/ASHRAE* standard.	Use "dark-sky" compliant fixtures.	
Water Efficiency (WE)				
Prerequisite 1	Water Use Reduction	Use 20% less water than baseline.	Low flow faucets, gray water recycling, rain water harvesting.	-
Credit 1	Water Efficient Landscaping	Reduce irrigation with potable water by 50%, as compared to baseline.	Use non-potable water for at least 50% of irrigation demand; rain gardens, rain water harvesting, cisterns.	2-4
Credit 2	Innovative Wastewater Technologies	Reduce potable water for sewage conveyance by 50%, as compared to baseline or treat same on-site.	Use non-potable water for at least 50% of sanitary flushwater; gray water recycling, rain water harvesting.	2
Credit 3	Water Use Reduction	Use less water than baseline.	Demonstrate reduced water use through modeling	2-4
Energy and Atmosphere (EA)				
Prerequisite 1	Fundamental Commissioning of Building Energy Systems	Verify that energy-related systems function optimally.	Employ certified Commissioning Agent.	-
Prerequisite 2	Minimum Energy Performance	10% improvement in energy performance, as compared to baseline.	Modeling	-
Prerequisite 3	Fundamental Refrigerant Management	Use no CFCs.	Ensure that no CFC-bearing equipment or materials are used.	-
Credit 1	Optimize Energy Performance	Energy performance compliance paths.	Modeling	1-19
Credit 2	On-Site Renewable Energy	Generate renewable energy on-site.	Use photovoltaics, wind energy, geothermal, etc.	1-7
Credit 3	Enhanced Commissioning	Enhanced commissioning.	Employ certified Commissioning Agent.	2
Credit 4	Enhanced Refrigerant Management	Reduce refrigerant use.		2
Credit 5	Measurement and Verification	Verify energy systems performance for at least 1 yr.		3

Credit 6	Green Power	Purchase renewable energy.	Renewable energy purchase agreement	2
Materials and Resources (MR)				
Prerequisite 1	Storage and Collection of Recyclables	Provide recyclable storage and collection area.	Install recycling storage & collection area.	-
Credit 2	Construction Waste Management	Construction Management Plan.	Recycle construction materials/waste & divert from landfill	1-2
Credit 4	Recycled Content	Use building materials with recycled content.	Use building materials that have a minimum recycled content.	1-2
Credit 5	Regional Materials	Use materials manufactured within delineated distance of project site.	500 miles	1-2
Credit 6	Rapidly Renewable Materials	Use specific building materials composed of rapidly-renewable materials.	Use bamboo, cork, etc.	1
Credit 7	Certified Wood	Use wood-based building materials manufactured from certified forests.	Use certified wood	1
Indoor Environmental Quality (IEQ)				
Prerequisite 1	Minimum Indoor Air Quality Performance	Comply with ASHRAE Standard 62.1-2007.		-
Prerequisite 2	Environmental Tobacco Smoke (ETS) Control	Eliminate exposure of building occupants and interior materials from tobacco smoke.	Limit smoking to greater than 25 feet of entries, air intakes, etc.	-
Credit 1	Outdoor Air Delivery Monitoring	Monitor CO2 concentrations and provide for outdoor airflow measurement		1
Credit 2	Increased Ventilation	Increase ventilation rates		1
Credit 3.1	Construction Indoor Air Quality Management Plan - During Construction	Develop an indoor air quality (IAQ) Management Plan for construction and preoccupancy.	IAQ Management Plan	1
Credit 3.2	Construction Indoor Air Quality Management Plan - Before Occupancy	Develop an IAQ Management Plan and implement after all finishes have been installed and after cleaning.	Flush-out or air quality testing	1
Credit 4.1	Low-Emitting Materials-Adhesives and Sealants	All adhesives, sealants & sealant primers must comply with SCAQMD Rule #1168	Use low VOC materials	1
Credit 4.2	Low-Emitting Materials-Paints and Coatings	Paints, coatings, finishes, primers, etc must not exceed VOC content specified by Green Seal Standard GS-11, 1993	Use low VOC materials	1
Credit 4.3	Low-Emitting Materials-Flooring Systems	Carpet, carpet adhesives, etc must meet testing by Carpet and Rug Institute Green Label Plus program or FloorScore for hard surface flooring.	Use low VOC materials	1
Credit 4.4	Low-Emitting Materials-Composite Wood and Agrifiber Products	Composite wood & agrifiber products must contain added urea-formaldehyde resins	Materials must not contain added urea-formaldehyde resins	1
Credit 5	Indoor Chemical and Pollutant Source Control	Design to minimize and control entry of pollutants and cross contamination	Use entryway systems at least 10 feet long; exhaust chemical storage areas to create negative pressure; provide appropriate disposal for hazardous waste.	1
Credit 6.1	Controllability of Systems-Lighting	Provide lighting control for 90% of occupants	Task lighting, occupancy sensors, etc	1
Credit 6.2	Controllability of Systems-Thermal Comfort	Provide individual comfort control for 50% of occupants. Refer to ASHRAE 55-2004	Operable windows, thermostats, diffusers at floor, desk or overhead levels, radiant floor heating	1
Credit 7.1	Thermal Comfort-Design	Design heating, ventilation and air conditioning (HVAC) to meet ASHRAE 55-2004	Monitor air temperature, radiant temperature, humidity and air speed	1
Credit 7.2	Thermal Comfort-Verification	Survey occupants within 6-18 months of occupancy	Corrective action if more than 20% of occupants are dissatisfied with thermal comfort; provide monitoring system	1
Credit 8.1	Daylight and Views-Daylight	Achieve daylighting in 75% of spaces	Glazing, light shelves, north facing sky lights,	1
Credit 8.2	Daylight and Views-Views	Achieve direct line of sight to outdoors for 90% of regularly occupied spaces	Locate private offices in core of structure;	1

Innovation in Design (ID)				
Credit 1	Innovation in Design	Achievement above and beyond LEED specifications	Document increased environmental benefit	1-5
Credit 2	LEED Accredited Professional	LEED AP team member	LEED AP	1
Regional Priority (RP)				
Credit 1	Regional Priority	Based on region		1-4

* ANSI/IESNA/ASHRAE - ANSI: American National Standards Institute; IESNA: Illumination Engineering Society of North America; ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers.

Appendix A-14
Photographs Depicting Building Heights Along the LIE



Legend

★ The Meadows at Yaphank PDD

Town of Brookhaven

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Building Height Analysis

Source: ESRI Web Mapping Serivce, NP&V
Scale: 1 inch = 2 miles

N

The Meadows at Yaphank PDD

Building Height Analysis

SITE 1

Courtyard Marriott, Ronkonkoma
(south of LIE, just east of exit 60 on LIE)

1. Looking southwest from the LIE south service road towards the Courtyard Marriott. Building is seven stories, approximately 71 feet tall.

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 1
Aerial Photograph / Building Setback

Source: ESRI Web Mapping Serivce, 2007 Suffolk County Aerials, NP&V
Scale: 1 inch = 150 feet

N

The Meadows at Yaphank PDD

Building Height Analysis

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 1
Zoning Map

Source: Town of Brookhaven Zoning, NPV
Scale: 1" = 400'

NORTH

The Meadows At Yaphank PDD

SITE 2

Residence Inn Marriott, Holtsville
(south of LIE, just west of Nicoll's Road)

1. Looking southeast towards the Residence Inn Marriott from the parking area associated with the movie theatre development. Building is four stories, approximately 42 feet tall.

2. Looking east towards the Residence Inn Marriott from the parking area associated with the movie theatre development.

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 2
Aerial Photograph / Building Setback

Source: ESRI Web Mapping Serivce, 2007 Suffolk County Aerials, NP&V
Scale: 1 inch = 150 feet

N

The Meadows at Yaphank PDD

Building Height Analysis

Legend

A	A10	D	PRC	CR	J2	J8	L4								
A1	B	RD	PRCHC	PC	J4	K	OF								
A2	B1	MF	NHH	HF	J5	L1	Village								
A5	C	PDD	CD	J	J6	L2									

Long Island R.R. — HD - Historic District Line — 317 Tax Map Sections

School District Line — TZ - Transition Zone Line

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 2
Zoning Map

Source: Town of Brookhaven Zoning, NPV
Scale: 1" = 500'

NORTH

The Meadows At Yaphank PDD

SITE 3

Island Nursing and Rehab Center, Holtsville

(north of LIE, just west of exit 63 on LIE and North Ocean Avenue)

1. Looking north towards the Island Nursing and Rehab Center from the driveway/LIE north service road. Building is three stories, approximately 34 feet tall.

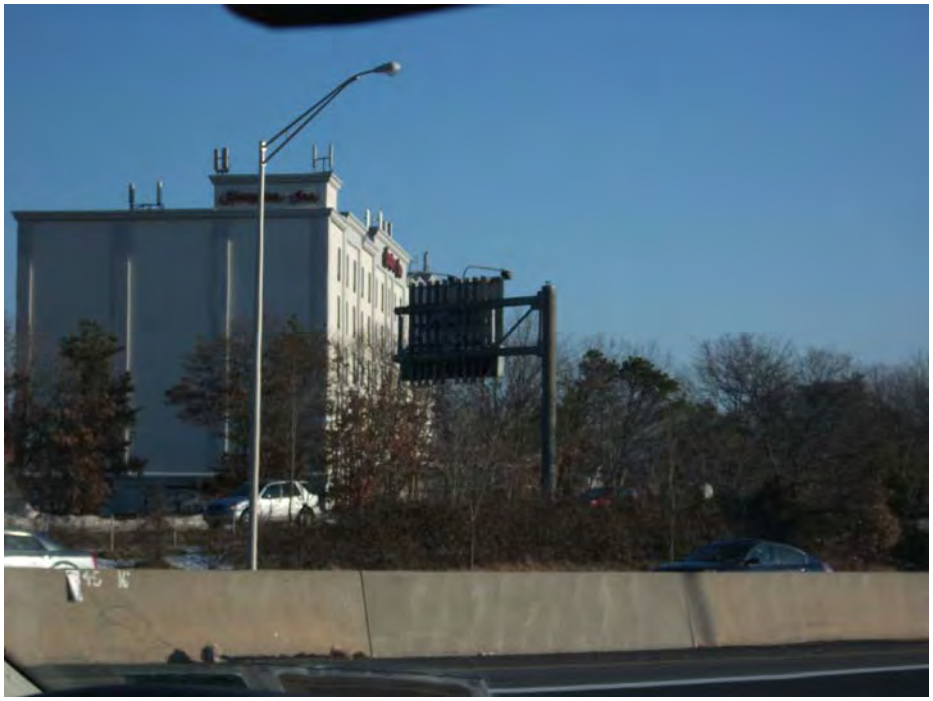
2. Looking north towards the Island Nursing and Rehab Center from the east-bound lane of the LIE. .

SITE 4

Hampton Inn, Farmingville

(north of LIE, c/o LIE North Service Road and North Ocean Avenue)

1. Looking northwest towards Hampton Inn, from the LIE north service road, east of North Ocean Avenue. Building is six stories, approximately 65 feet tall.



2. Looking northeast towards Hampton Inn, from the east-bound lane of the LIE.

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 3 / 4
Aerial Photograph / Building Setback

Source: ESRI Web Mapping Serivce, 2007 Suffolk County Aerials, NP&V
Scale: 1 inch = 150 feet

N

The Meadows at Yaphank PDD

Building Height Analysis

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 3,4,5 Zoning Map

Source: Town of Brookhaven Zoning, NPV
Scale: 1" = 500'

NORTH

The Meadows At Yaphank PDD

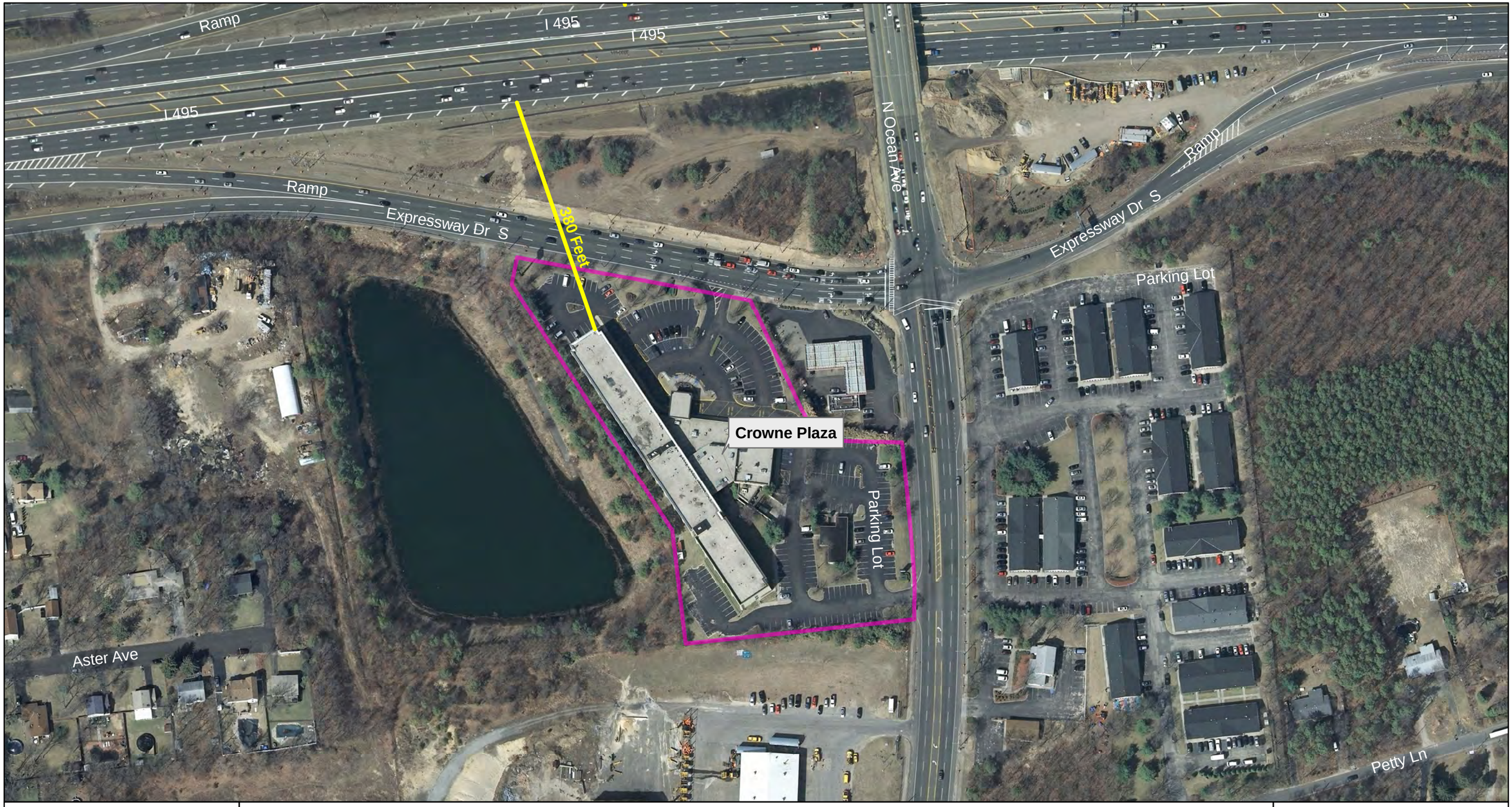
SITE 5

Crowne Plaza, Holtsville

(south of LIE, c/o LIE South Service Road and North Ocean Avenue)

1. Looking west towards Crowne Plaza, from the parking area south of the LIE south service road, west of North Ocean Avenue. Building is three stories, approximately 35 feet tall.

2. View of Crowne Plaza, looking south from the east-bound lane of the LIE.



NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 5
Aerial Photograph / Building Setback

Source: ESRI Web Mapping Serivce, 2007 Suffolk County Aerials, NP&V
Scale: 1 inch = 150 feet

N

The Meadows at Yaphank PDD

Building Height Analysis

SITE 6

Clare Rose, Yaphank

(south of LIE, west of William Floyd Parkway, exit 68 on LIE)

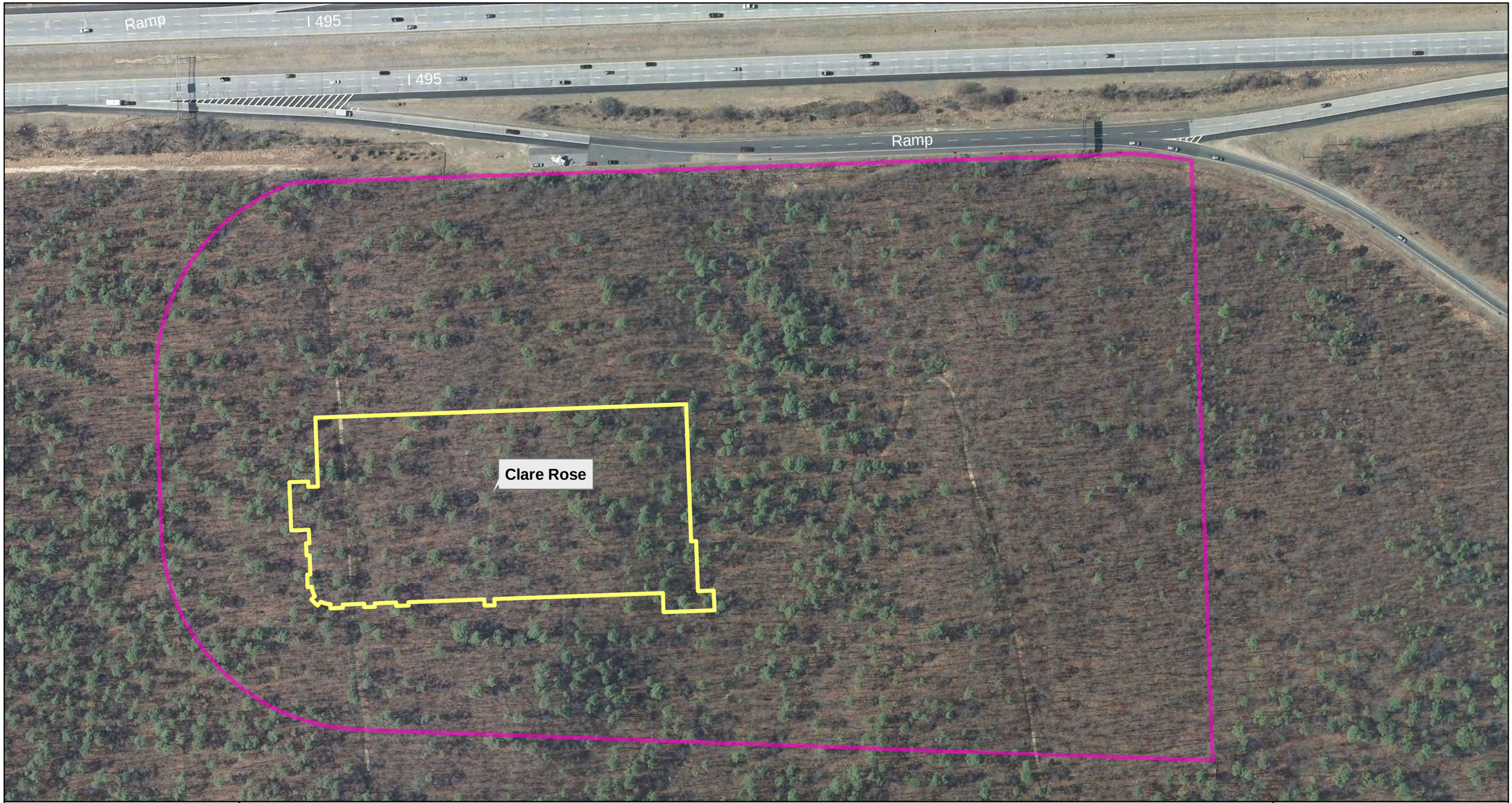
1. Looking southwest towards Clare Rose, from the LIE south service road. Building is approximately three stories, approximately 41 feet tall.

2. Looking south towards Clare Rose, from the west-bound lane of the LIE.

3. Looking southeast towards Clare Rose, from the east-bound lane of the LIE.

4. Looking along the southern side of the Clare Rose building from access roadway.

5. Looking east towards the Clare Rose building from access roadway.



NELSON, POPE & VOORHIS, LLC
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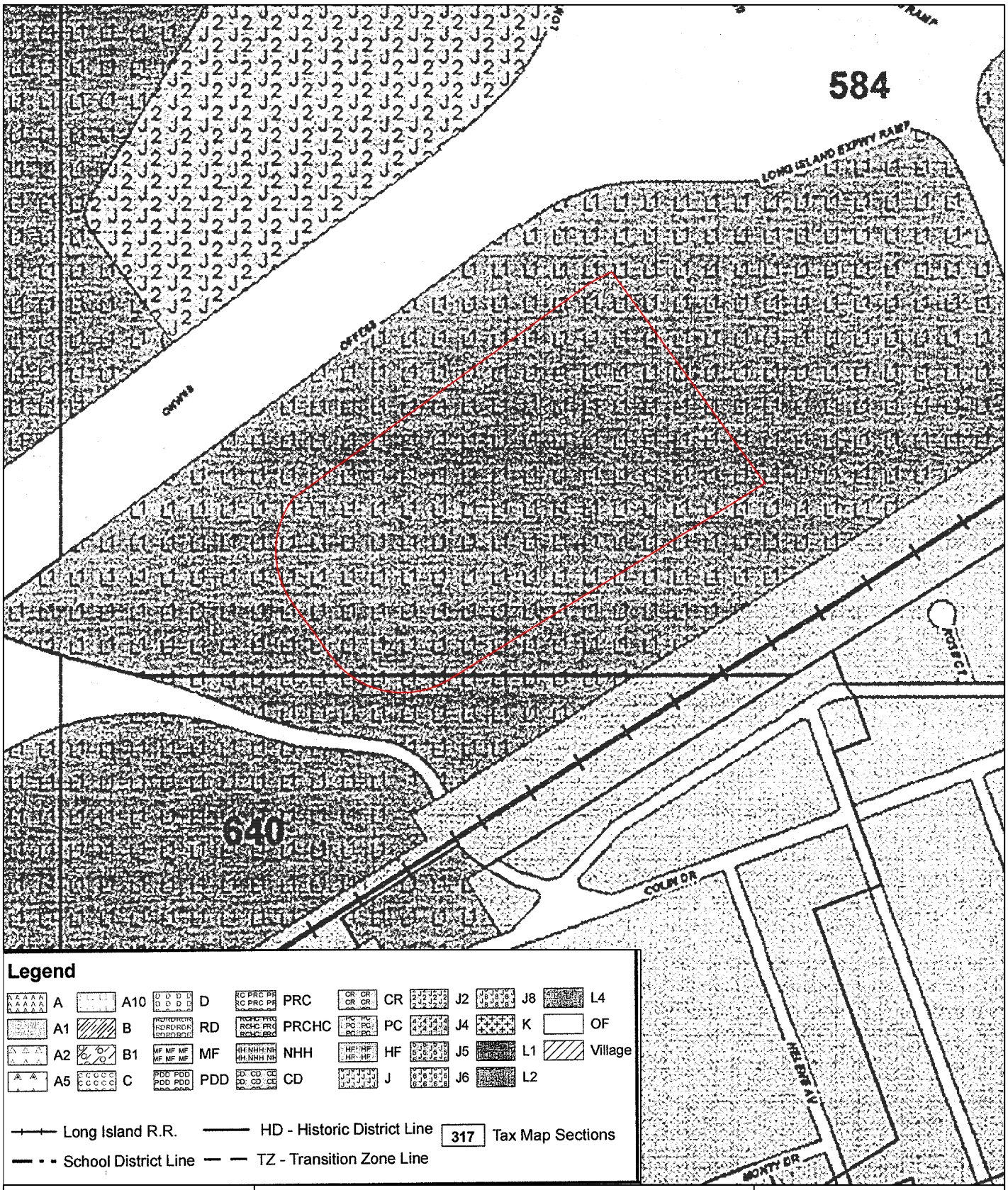
Site 6
Aerial Photograph / Building Setback

Source: ESRI Web Mapping Serivce, 2007 Suffolk County Aerials, NP&V
Scale: 1 inch = 150 feet

The Meadows at Yaphank PDD

Building Height Analysis



NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Site 6
Zoning Map

Source: Town of Brookhaven Zoning, NPV
Scale: 1" = 500'

NORTH

The Meadows At Yaphank PDD

Appendix A-15
Revised Tax Impact/School District Analysis - As of Right Development versus The Meadows at Yaphank PDD

Pearl M. Kamer, Ph.D.

January 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Revised Tax Impact/School District Analysis – January 2010
As of Right Development versus The Meadows At Yaphank PDD

By Pearl M. Kamer, Ph.D.
President and Chief Economist, PMKB Consulting Associates LLC

The Proposed Development

The following analysis compares projected taxes under current zoning with taxes under a Planned Development District to be called The Meadows At Yaphank. Both parcels are in the Town of Brookhaven. The first parcel of approximately 150 acres is zoned J-2 and has been approved for an 850,000 square foot retail center. The parcel is currently vacant. The second parcel, consisting of approximately 170 acres, is zoned L-1. 1,180,000 square feet of industrial space can be built on this parcel as-of-right. It is currently vacant. A planned development district, incorporating a mix of uses, has been proposed for the foregoing 320 acres. The proposed PDD will contain 850 residential units and 1,032,500 square feet of commercial uses as described in the following tables.

Proposed Commercial Components of the Proposed Meadows At Yaphank PDD

Component	Proposed Gross Square Feet
Hotel	**150,000**
Retail	**327,500**
Big Box	150,000
Pharmacy	14,700
Bank	3,500
Neighborhood Retail	159,300
Supermarket	65,000
Other Neighborhood Retail	94,300
Restaurant	**5,000**
Class A Office & Office/Flex	**550,000**
Office/Flex (15% office, 85% wrhs. & dstibtn.)	250,000
Class A Office	300,000
Total Commercial	**1,032,500**

Source: Rose-Breslin LLC

Residential Components of The Proposed Meadows At Yaphank PDD

Component	Number of Units
Rental Units	144
Condominiums	486
Townhouses	220
Total	**850**

Source: Rose-Breslin LLC

1. Estimated Taxes From the Commercial Component of the Proposed PDD

The Retail Component. The retail component will consist primarily of neighborhood and "big box" retailing. The neighborhood retail component will encompass a 65,000 square foot supermarket designed to serve the needs of residents of The Meadows At Yaphank as well as the communities of Colonial Woods/Whispering Pines. Other retail elements will include a pharmacy, a bank and a restaurant. In the following analysis, big box retailers are presumed to pay an average annual rent of $22 per square foot; the supermarket is presumed to pay an annual rent of $23 per square foot; the pharmacy and bank are presumed to pay an annual rent of $39 per square foot; and, other neighborhood retailers are projected to pay annual rents averaging $32 per square foot. These are relatively conservative figures and reflect today's depressed retail market. These assumptions result in a weighted average rent of $26.

Derivation of Average Rent Per Retail Square Foot

Retail Component	Square Feet	Average Annual Rent ($/SF)	Est. Annual Rent ($)
Big Box	150,000	$22	3,300,000
Pharmacy	14,700	39	573,300
Bank	3,500	39	136,500
Neighborhood Retail	159,300	---	---
Supermarket	65,000	23	1,495,000
Other	94,300	32	3,017,600
Total Retail	**327,500**	**---**	**8,522,400**
Average Rent/SF	**---**	**---**	**26**

Source: Consultant's estimates

With an average annual rent of $26 per square foot, the proposed retail space would generate a gross income of more than $8.5 million. With expenses and losses from vacancies of about 25% of gross income, net income would be about $6,386,250. With a capitalization rate of 0.09, the market value of the retail space would be almost $71 million. Applying the 2009-10 equalization rate results in an assessed value of $517,996. Applying the 2009-10 school and town tax rate for properties in the Longwood CSD results in estimated annual property taxes of almost $1.6 million.

Estimated Annual Property Tax Revenues From the Retail Component

Average Gross Annual Rent Per Square Foot	$26
Estimated Square Feet	327,500
Estimated Gross Income	$8,515,000
Loss From Vacancies; Expenses	25%
Net Income	$6,386,250
Capitalization Rate	0.09
Estimated Market Value	$70,958,333
2009-10 Equalization Rate	0.0073
Assessed Value	$517,996
2009-10 Tax Rate	304.450/$100 of AV
Total Taxes	**$1,577,038**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

The Restaurant. Assuming that the 5,000 square foot restaurant would generate annual rents of $40 per square foot, gross income from the restaurant would be about $200,000 annually. With an expense ratio of 20%, net income would be about $160,000. With a capitalization rate of 9%, the market value of the restaurant would be about $1,777,778. Applying 2009-10 equalization and school and town tax rates results in estimated annual property taxes of $39,511.

Estimated Annual Property Tax Revenues From the Restaurant

Average Gross Annual Rent Per Square Foot	$40
Estimated Square Feet	5,000
Estimated Gross Income	$200,000
Expenses	20%
Net Income	$160,000
Capitalization Rate	0.09
Estimated Market Value	$1,777,778
2009-10 Equalization Rate	0.0073
Assessed Value	$12,978
2009-10 Tax Rate	304.450/$100 of AV
Total Taxes	**$39,511**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

The Hotel. A 150,000 square foot limited-service hotel similar to a Hampton Inn is proposed. Assuming an annual gross income of $85 per square foot, the gross income of the proposed hotel would be about $12,750,000. With an expense ratio of 50%, the net income of the hotel would be about $6,375,000. With a capitalization rate of 0.09, the estimated market value of the hotel would be about $70.8 million. Applying 2009-10 equalization and tax rates results in estimated annual property taxes of $1,574,260.

Estimated Annual Property Tax Revenues From Proposed Hotel

Square Feet of Hotel	150,000
Gross Income Per Square Foot	$85
Estimated Annual Gross Income	$12,750,000
Expense Ratio	50%
Net Income	$6,375,000
Capitalization Rate	0.09
Estimated Market Value	$70,833,333
2009-10 Equalization Rate	0.0073
Assessed Value	$517,083
2009-10 Tax Rate	304.450/$100 of AV
Total Taxes	**$1,574,260**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

The Office/Flex Component. The proposed PDD will contain 250,000 square feet of office/flex space. Approximately 15% or 37,500 square feet will consist of office space and the remaining 212,500 square feet will be warehouse and distribution space. There will also be 300,000 square feet of Class A office space. According to Grubb & Ellis Research, the asking rent for wholesale and distribution space in the Town of Brookhaven during the third quarter of 2009 was $7.55 per square foot. (See Grubb &

Ellis, Industrial Trends Report – Third Quarter 2009, Long Island, NY). The third quarter 2009 asking rent for Class A office space in the Town of Brookhaven was $20.83 per square foot. (See Grubb & Ellis, Office Trends Report – Third Quarter 2009, Long Island, NY). This asking rate was applied to the 300,000 square feet of office space and to the 37,500 square feet of office space associated with the proposed office/flex use. These asking rents are full service rents incorporating all costs of operation paid for by the landlord. Application of these rents to proposed uses at The Meadows At Yaphank results in an annual average rent per square foot of about $15.70 for the proposed office space.

Projected Office Uses

Use	Square Feet	Average Annual Rent/SF	Gross Rent
Office/Flex	250,000		
Office	37,500	$20.83	$781,125
Warehouse/Distribution	212,500	$7.55	1,604,375
Class A Office Space	300,000	$20.83	6,249,000
Total Office Space	**550,000**		**8,634,500**
Average Rent/SF			$15.70

Source: Rose-Breslin LLC and Grubb & Ellis Research

Assuming average rents of $15.70 per square foot, estimated gross income for the 550,000 square feet of office/flex space would be about $8,635,000. With a 15% expense ratio, net income would be about $7,339,750. With a 9% capitalization rate, the estimated market value is about $81.6 million. Applying current equalization rates results in estimated annual property taxes of slightly more than $1.8 million.

Estimated Annual Property Tax Revenue From Office Space

Average Annual Rent Per Square Foot	$15.70
Estimated Square Feet	550,000
Estimated Gross Income	$8,635,000
Expense Ratio	15%
Net Income	$7,339,750
Capitalization Rate	0.09
Estimated Market Value	$81,552,778
2009-10 Equalization Rate	0.0073
Assessed Value	$595,335
2009-10 Tax Rate	302.901/$100 of AV
Total Taxes	**$1,803,277**

Source: Consultant's estimates based on 2009-10 equalization & tax rates

Summary: Estimated Taxes From the Commercial Component of The Meadows At Yaphank PDD. Aggregating the foregoing tax estimates shows that the commercial component of The Meadows At Yaphank PDD could generate annual real property taxes of almost $5.0 million.

Estimated Taxes From the Commercial Component

Estimated Taxes From	Amount
Retail Component	$1,577,038
Restaurant	$39,511
Hotel	$1,574,260
Office/Flex	$1,803,277
Total	**$4,994,086**

Source: Consultant's estimates based on 2008-09 equalization and tax rates

2. Taxes Generated by the Residential Component of the Proposed Project

The Rental Units. The proposal calls for 144 rental units to be built on what is currently the mall property. Of these, 20% or 30 units will be affordable rental units and the remaining 80% will be market rate units. Ten of the 30 affordable one-bedroom units will be reserved for seniors. This 80-20 ratio is in accordance with guidelines of the Suffolk County Department of Economic Development and Workforce Housing.

Of the 144 rental units, 96 would be one-bedroom apartments, including 38 market-rate senior units, and the remaining 48 would be two-bedroom units. The market-rate one-bedroom units would rent for $1,600 monthly. The market-rate two-bedroom units would rent for $2,000 monthly. Rents for the affordable units have been pegged at 80% of the market-rate rents. This means that the one-bedroom affordable units would rent for $1,280 monthly and the two-bedroom affordable units would rent for $1,600 monthly.

HUD guidelines state that rental units are affordable if they consume no more than 30% of household income. This means that the one-bedroom market-rate units would be affordable to those with an annual income of at least $64,000 and the two- bedroom market-rate units would be affordable to those with an annual income of at least $80,000. The affordable one-bedroom units would be affordable for those with annual incomes of at least $51,200. The affordable two-bedroom units would be affordable for those with annual incomes of at least $64,000. The majority of households in the Town meet these income requirements. (See Appendix A) The findings, shown in the following table, indicate a gross annual rent of $2,870,400 for the rental units.

Estimated Gross Annual Rents From 144 Rental Units

Size and Type of Unit	Units	Monthly Rent	Annual Rent	Gross Annual Rent
Market Rate: One-Bdrm*	76	$1,600	$19,200	1,459,200
Two-Bdrm	38	$2,000	$24,000	912,000
Total	**114**			**2,371,200**
Affordable: One-Bdrm	20	$1,280	$15,360	307,200
Two-Bdrm	10	$1,600	$19,200	192,000
Total	**30**			**499,200**
Total: One-Bdrm	96			1,766,400
Two-Bdrm	48			1,104,000
Grand Total	**144**			**2,870,400**

* Includes 38 market rate senior units. Source: Rose-Breslin LLC; consultant's estimates

Assuming a loss from vacancies of 5% and an expense ratio of 20%, net income from these apartments would be about $2,152,800. With a capitalization rate of .10, the market value of the rental units would be about $21.5 million. Applying current equalization and town and school tax rates results in projected annual property taxes of $478,457 from the rental units.

Estimated Annual Property Tax Revenues From 144 Rental Units

Gross Annual Rents	$2,870,400
Estimated Loss From Vacancies	5%
Expense Ratio	20%
Net Income	$2,152,800
Capitalization Rate	0.10
Estimated Market Value	$21,528,000
2009-10 Equalization Rate	0.0073
Assessed Value	$157,154
2009-10 Tax Rate	304.450/$100 of AV
Projected Annual Property Taxes for Rental Apartments	**$478,457**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

The Townhouses. The 220 townhouses will be built on what is currently the racetrack property. Of the 220 proposed townhouses, 152 will be two-bedroom units and the remaining 68 will be three-bedroom units. Of the 152 two-bedroom townhouses, 51 will be reserved for seniors. All of the townhouses will sell at market rates. The 51 senior two-bedroom townhouses will sell for $385,000. The 101 non-age restricted two-bedroom townhouses would sell for $360,000. The 68 three-bedroom non-age restricted units will sell for $385,000.

The estimated market value of the 220 proposed townhouses would be about $82,175,000 as shown below.

Projected Market Value of 220 Townhouses

Size and Type of Unit	No. of Units	Sales Price	Market Value
Two-Bedroom Senior Units	51	$385,000	19,635,000
Two-Bedroom Non-Age Restricted	101	360,000	36,360,000
Three Bedroom Non-Age Restricted	68	385,000	26,180,000
Total	**220**		**82,175,000**

Source: Rose-Breslin LLC; consultant's estimates

Applying current equalization and town and school district tax rates to this amount results in projected annual property tax revenues of $1,817,575 from the proposed townhouses.

Estimated Annual Property Tax Revenues From 220 Townhouses

Projected Market Value	$82,175,000
2009-10 Equalization Rate	0.0073
Assessed Value of Townhouses	$599,878
2009-10 Town & School Tax Rate	302.991/$100 of AV
Projected Annual Property Taxes from Townhouses	**$1,817,575**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

The Condominiums. The 486 condominiums will be dispersed throughout the proposed PDD. Of the proposed condominiums, 25 will be one-bedroom units and the remaining 461 will be two-bedroom units. Fifty-five of the proposed condos would be affordable. In the following analysis, the imputed monthly rents for each of these units was used to estimated the total market value of the condominiums. The imputed rents are shown in the following table. Based on these imputed rents, the imputed gross income for the condominium units would be $13,545,000.

Projected Market Value of 486 Condominiums

Size Of Unit	Units	Imputed Rent	Annual Rent/Unit	Gross Annual Rent
Market Rate: One-Bdrm	25	$1,950	$23,400	$585,000
Two-Bdrm Senior	174	$2,400	$28,800	$5,011,200
Two-Bdrm Non-Age Restricted	232	$2,400	$28,800	$6,681,600
Total	**431**			**$12,277,800**
Affordable: Two-Bdrm Senior	30	$1,920	$23,040	$691,200
Two-Bdrm Non-Age Restricted	25	$1,920	$23,040	$576,000
Total	**55**			**$1,267,200**
Total: One-Bdrm	25			$585,000
Two-Bdrm	461			$12,960,000
Grand Total	**486**			**$13,545,000**

Source: Rose-Breslin LLC; consultant's estimates

In the following analysis, a loss of 5% for vacancies and unrecovered debt and a loss of 20% for expenses were assumed. This results in a net income of $10,158,750. With a capitalization rate of 10%, the estimated market value would be $101,587,500.

Applying the 2009-10 equalization rate results in an assessed value of $741,589. The proposed condominiums would be dispersed throughout the proposed PDD. Current tax rates for the mall parcel and the racetrack parcel are slightly different: $302.901 per $100 of assessed value for the racetrack parcel and $304.450 per $100 of assessed value for the mall parcel. Therefore, an average of these tax rates, $303.676 per $100 of assessed value, was used to estimate potential real property taxes from the proposed condominiums. Applying this rate results in estimated real property taxes for the condominiums of $2,252,027.

Estimated Annual Property Tax Revenues From Condominiums

Gross Annual Rents	$13,545,000
Estimated Loss From Vacancies	5%
Expense Ratio	20%
Net Income	$10,158,750
Capitalization Rate	0.10
Estimated Market Value	$101,587,500
2009-10 Equalization Rate	0.0073
Assessed Value	$741,589
2009-10 Tax Rate	303.676/$100 of AV
Projected Annual Property Taxes for Rental Apartments	**$2,252,027**

Source: Consultant's estimates based on 2009-10 equalization and tax rates

Summary: Estimated Taxes From the Residential Component of The Meadows At Yaphank PDD. Aggregating projected tax revenues from the proposed rental units, townhouses and condominiums results in projected annual tax revenues of $5,370,040 from the residential component of the proposed PDD

Summary Table: Estimated Annual Property Tax Revenues From 850 Residential Units

Projected Taxes From:	Amount
Rental Units	$478,457
Townhouses	$1,817,575
Condominiums	$2,252,027
Total	**$4,548,059**

Source: Consultant's estimates

Grand Total: Projected Annual Property Taxes Generated by The Meadows At Yaphank PDD. At full development, The Meadows At Yaphank PDD could generate taxes of $4,994,086 from the commercial component and $4,548,059 from the residential component for a total of $9,542,145

Projected Property Taxes

Proposed The Meadows At Yaphank PDD	Projected Taxes
Commercial Component	$4,994,086
Residential Component	$4,548,059
Total	**$9,542,145**

Source: Consultant's Estimates

3. Taxes Generated Under As-Of-Right Development

Retail Development on the J-2 Parcel. The J-2 parcel can accommodate 850,000 square feet of retail development. The typical retail mall in Suffolk County contains one or more anchor stores and a mix of specialty retailers, banks and restaurants. For purposes of analysis, average gross annual rent per square foot is estimated at $26, the same weighted average rent used in the analysis of the proposed PDD. This yields gross income of $22,100,000. After accounting for vacancies and expenses, net income would be about $16,575,000. With a capitalization rate of 0.09, the estimated market value would be about $184,166,667. Applying 2009-10 equalization and tax rates results in estimated annual property taxes of about $4,093,077 at full development.

Estimated Annual Property Taxes From 850,000 Square Feet of Retail Development

Average Gross Annual Rent Per Square Foot	$26
Square Feet of Retail Development	850,000
Estimated Gross Income	$22,100,000
Loss From Vacancies, Expenses	25%
Net Income	$16,575,000
Capitalization Rate	0.09
Estimated Market Value	$184,166,667
2009-10 Equalization Rate	0.0073
Assessed Value	$1,344,417
2009-10 Tax Rate	304.450/$100 of AV
Estimated Real Property Taxes	**$4,093,077**

Source: Consultant's estimates based on 2009-10 equalization & tax rates

Industrial Development on the L-1 Parcel. The L-1 parcel can accommodate 1,180,000 square feet of industrial development. For purposes of analysis, it was assumed that 15% of this space, 177,000 square feet, would be office space and the remaining 85%, 1,003,000 square feet, would be warehouse/distribution space. Grubb & Ellis third quarter 2009 asking rents for Class A office space and warehouse/distribution space in Brookhaven Town were applied to these square footages to obtain an average rent per square foot of $9.54 With a 15% expense ratio, net income would be about $9,570,626. With a capitalization rate of 9%, market value would be about $106,340,289. Applying current equalization and tax rates results in estimated real property taxes from as-of-right industrial development of $2,351,372.

Average Asking Rent Per Square Foot, As of Right Industrial Development

Use	Square Feet	Average Annual Rent/SF	Gross Rent
Office Space (15%)	177,000	$20.83	3,686,910
Warehouse/Distribution (85%)	1,003,000	$7.55	7,572,650
Total	**1,180,000**		**11,259,560**
Average Rent/SF			**9.542**

Est. Annual Property Taxes from 1,180,000 Square Feet of Industrial Development

Average Annual Rent Per Square Foot	$9.542
Estimated Square Feet	1,180,000
Estimated Gross Income	$11,259,560
Expense Ratio	15%
Net Income	$9,570,626
Capitalization Rate	0.09
Estimated Market Value	$106,340,289
2009-10 Equalization Rate	0.0073
Assessed Value	$776,284
2009-10 Tax Rate	302.901/$100 of AV
Total Taxes	**$2,351,372**

Source: Consultant's estimates based on 2009-10 equalization & tax rates

Aggregate Annual Property Taxes Under Current Zoning. The subject property could generate $6,444,449 in annual real property taxes under current zoning based on the foregoing analysis.

Estimated Annual Property Taxes Under Current Zoning

Estimated Property Taxes From Retail Development	$4,093,077
Estimated Property Taxes From Industrial Development	$2,351,372
Estimated Annual Property Taxes	**$6,444,449**

Source: Consultant's estimates based on 2009-10 equalization & tax rates

Tax Comparisons: Current Taxes, Taxes Under As-of-Right Development and Taxes Under the Proposed Meadows At Yaphank PDD

While as-of-right development could generate as much as $6,444,449 in annual property taxes, the proposed Meadows At Yaphank PDD could generate an estimated $9,542,145 in annual property taxes, a difference of almost $3.1 million annually. In the following analysis, taxes under the proposed PDD and under as-of-right development have been compared with current taxes being paid on the subject property. Taxes under all three scenarios were then allocated to affected tax districts based on the latest tax bills for the subject property. ***The findings show that the proposed PDD would generate excess annual tax revenue of almost $3.1 million when compared with taxes generated under as-of-right development. The proposed PDD would also generate excess tax revenue of more than $8.7 million when compared with taxes currently being paid by the subject property.***

Allocation of Annual Tax Revenues
Proposed PDD, As-of-Right Development, Current Taxes

Tax District	Tax Rate	% of Total	Taxes From Proposed	As-of-Right Taxes	Current Taxes
School District - LCSD	203.896	67.1	$6,402,779	$4,326,979	$559,403
Library District - LCSD	10.319	3.4	$324,433	$218,985	$28,311
County of Suffolk	2.861	0.9	$85,879	$60,715	$7,849
County of Suffolk - Police	33.06	10.9	$1,040,094	$701,583	$90,702
New York State MTA Tax	0.168	0.1	$9,542	$3,565	$461
Town General - Town Wide	4.464	1.5	$143,132	$94,733	$12,247
Highway - Town Wide Fund	2.59	0.9	$85,879	$54,964	$7,106
Town General - Part Town	1.39	0.5	$47,711	$29,498	$3,814
Highway - Part Town Fund	11.436	3.8	$362,602	$242,689	$31,375
$100M Bond Act of 2004	1.588	0.5	$47,711	$33,700	$4,357
Fire Dists. - Yaphank & Ridge*	23.1445	7.6	$725,203	$491,161	$63,499
Lighting District	1.703	0.6	$57,253	$36,140	$4,672
Real Property Tax Law - Art. 7	0.935	0.3	$28,626	$19,842	$2,565
Real Property Tax Law	6.121	1.9	$181,301	$129,897	$16,793
Total	**303.6755**	**100.0**	**$9,542,145**	**$6,444,449**	**$833,155**

*The PDD will be served both by the Yaphank & Ridge Fire Departments;
Source: Consultant's estimates based on latest tax bill for subject property

Net Difference, Current & As-of-Right Taxes vs. Taxes From Proposed PDD

Tax District	Proposed PDD Taxes Minus Current Taxes	Proposed PDD Taxes Minus As-Of-Right Taxes
School District - LCSD	$5,843,376	$2,075,800
Library District - LCSD	$296,122	$105,448
County of Suffolk	$78,030	$25,164
County of Suffolk - Police	$949,392	$338,511
New York State MTA Tax	$9,081	$5,977
Town General - Town Wide	$130,885	$48,399
Highway - Town Wide	$78,773	$30,915
Town General - Part Town F	$43,897	$18,213
Highway - Part Town Fund	$331,227	$119,913
$100M Bond Act of 2004	$43,354	$14,011
Fire Dists. - Yaphank & Ridge*	$661,704	$234,042
Lighting District	$52,581	$21,113
Real Property Tax Law – Art. 7	$26,061	$8,784
Real Property Tax Law	$164,508	$51,404
Total	**$8,708,991**	**$3,097,694**

*The PDD will be served both by the Yaphank & Ridge Fire Departments;
Source: Consultant's estimates based on latest tax bill for subject property.

Projected School-Age Children, The Meadows At Yaphank

In estimating the number of school-age children likely to be generated by the residential component of The Meadows At Yaphank at full development, coefficients from a special study by the Rutgers University Center for Urban Policy Research were used. (See Rutgers University, Residential Demographic Multipliers, June 2006). This study contains multipliers, based on U.S. Census data, that indicate the number of school age children likely to be generated by different types of residential units, single-family homes, condominiums, townhouses and/or rental units at various rent levels and price points. ***In the following analysis, it is assumed that the 303 senior age-restricted units will not contain any school-age children. In reality, some units may contain school-age children, principally at the high school level. However, this would be a relatively rare occurrence and would be the exception rather than the rule.***

Estimated School-Age Children From the 96 Non-Age Restricted Rental Units. The Rutgers coefficients for one and two-bedroom rental units in structures containing five or more rental units are shown below. These coefficients were applied to the market rate and affordable rental units proposed for The Meadows At Yaphank. The findings show that the 96 non-age restricted rental units could generate as many as 15 school-age children.

School-Age Children Per Rental Unit in Structures Containing Five or More Units

Size and Cost of Rental Unit	School-Age Children Per Rental Unit
One-Bedroom	
All Rents	0.16
Less than $500	0.10
$500 to $1,000	0.30
More than $1,000	0.08
Two-Bedroom	
All Rents	0.49
Less Than $750	0.74
$750 to $1,100	0.51
More than $1,100	0.23

Source: Burchell, Listokin and Dolphin, Center for Urban Policy Research, Rutgers, The State University of New Jersey, June 2006

Estimated School-Age Children, Rental Units

Size of Unit	No. Of Units	Proposed Rents	School-Age Children/Unit	Total School-Age Children
One-Bedroom Market Rate	38	$1,500	0.08	3
One-Bedroom Affordable	10	$1,200	0.08	1
Two-Bedroom Market Rate	38	$1,850	0.23	9
Two-Bedroom Affordable	10	$1,480	0.23	2
Total	**96**			**15**

Source: Consultant's estimates based on Rutgers coefficients

Estimated School-Age Children From 169 Non-Age Restricted Townhouses. The Rutgers coefficients also cover two and three-bedroom owner-occupied, single-family attached residential structures such as the townhouses proposed for The Meadows At Yaphank PDD. These coefficients are shown below. When applied to the 169 non-age restricted townhouses, they suggest that as many as 41 school-age children could be generated.

School-Age Children Generated by Single-Family Attached Residences

Size and Sales Price of Townhouse	School-Age Children
Two-Bedroom	
All Values	0.22
Less Than $135,000	0.25
$135,000 to $194,500	0.25
More than $194,500	0.14
Three-Bedroom	
All Values	0.62
Less than $164,500	0.81
$164,500 to $269,500	0.64
More than $269,500	0.39

Source: Burchell, Listokin and Dolphin, Center for Urban Policy Research, Rutgers, The State University of New Jersey, June 2006.

School-Age Children From 220 Market-Rate Townhouses

Size of Unit	No. of Units	Proposed Sale Price	School-Age Children/Unit	Total School Age Children
Two-Bedroom	101	$350,000	0.14	14
Three-Bedroom	68	$375,000	0.39	27
Total	**169**			**41**

Source: Consultant's estimates based on Rutgers coefficients

School-Age Children From the 282 Non-Age Restricted Condominiums. The Rutgers coefficients are also available for owner-occupied one and two-bedroom condominium units in structures containing five or more units. These coefficients, shown below, were applied to the 282 proposed condominiums at The Meadows At Yaphank. The results show that as many as 54 school-age children could be generated by the 282 non-age restricted condominiums.

School-Age Children Per Condo Unit in Structures Containing Five or More Units

Size and Sales Price of Condo Unit	School-Age Children Per Rental Unit
One-Bedroom	
All Values	0.18
Less than $164,500	0.21
$164,500 to $269,500	0.19
More than $269,500	0.14
Two-Bedroom	
All Values	0.15
Less than $135,000	0.09
$135,000 to $329,500	0.19
More than $329,500	0.14

Source: Burchell, Listokin and Dolphin, Center for Urban Policy Research, Rutgers, The State University of New Jersey, June 2006

School-Age Children From 282 Non-Age Restricted Condominiums

Size of Unit	No. Of Units	Proposed Sales Price	School-Age Children/Unit	Total School-Age Children
One-Bdrm Condos	25	$250,000	0.19	5
Two-Bdrm Market Rate	232	$290,000	0.19	44
Two-Bdrm Affordable	25	$232,000	0.19	5
Total	**282**			**54**

Source: Consultant's estimates based on Rutgers coefficients

Total Number of School Age-Children Generated. Aggregating the foregoing findings suggests that the 547 non-age restricted residential units proposed for The Meadows At Yaphank could generate as many as 110 school-age children.

Estimated School-Age Children Generated by Residential Component

Type of Unit	Est. Number of School-Age Children
96 Rental Units	15
169 Townhouses	41
282 Condominiums	54
Total	**110**

Source: Consultant's estimates based on Rutgers coefficients

Costs vs. Benefits to Longwood Central School District

The estimated cost per pupil in the Longwood Central School District (LCSD) as of the current 2009-10 school year is $22,332. This figure was computed as follows:

Computation of Per Pupil Cost in the LCSD, 2009-10 School Year

2009-10 Budgeted Spending	$203,600,000
Student Enrollment	9,117
Per Pupil Cost	$22,332

Source: New York State Education Department

The added cost of 110 school age children would therefore be $2,456,510 annually. This compares with additional annual tax revenues from The Meadows At Yaphank PDD of $6,402,779, resulting in surplus tax revenues to the school district of $3,946,269. However, the LCSD received or will receive $87,003,339 in state and federal aid during the 2009-10 school year. This reduces school expenditures attributable to the local tax base to only $116,596,661. When divided by 9,117 students, the cost per student is only $12,789. This in turn reduces the cost for 110 students to only $1,406,790 and results in surplus revenues from The Meadows At Yaphank PDD of more than $4.9 million annually.

Annual Tax Impact of The Meadows At Yaphank PDD on LCSD

Without State Aid	Amount	With State Aid	Amount
Cost Per Student	$22,332	Cost Per Student	$12,789
Cost for 110 Students	$2,456,510	Cost for 110 Students	$1,406,790
Additional Tax Revenue from PDD	$6,402,779	Additional Tax Revenue from PDD	$6,402,779
Surplus Revenue to School District	$3,946,269	Surplus Revenue to School District	$4,995,989

Source: Consultant's estimates based on latest school statistics

Projected Permanent Jobs and Payrolls

In estimating the number of permanent jobs likely to be created at The Meadows at Yaphank, the following ratios were used. Planners often use these ratios in estimating the potential jobs created by new developments. These ratios result in estimated full-time equivalent employment of 2,648 jobs at The Meadows at Yaphank at full development and full occupancy.

Projected Job Creation

Component	Proposed Gross SF	Employee Ratios Used	Estimated Permanent FTE Jobs
Hotel (Limited Service)	**150,000**	1 Employee/3000 SF	50
Retail	**327,500**	---	---
Big Box	150,000	1 Employee/600 SF	250
Pharmacy	14,700	1 Employee/400 SF	37
Bank	3,500	1 Employee/300 SF	12
Neighborhood Retail	159,300	---	---
Supermarket	65,000	1 Employee/500 SF	130
Other Neighborhood Retail	94,300	1 Employee/350 SF	269
Restaurant	**5,000**	1 Employee/350 SF	14
Class A Office & Office/Flex	**550,000**	---	---
Office/Flex	250,000	1 Employee/1000 SF	250
Class A Office	300,000	1 Employee/200 SF	1,500
850 Units @ 1,200 SF/Unit	**1,020,000**	1 Employee/7500 SF	136
Total FTE Jobs	**---**	---	**2,648**

Source: Consultant's estimates based on Rose-Breslin Square Footage

In order to estimate the potential payrolls associated with these jobs, a hypothetical industry mix of jobs typically found in such mixed-use developments was constructed. Long Island industry wage data as of the second quarter of 2009, compiled by the New York State Labor Department, was applied to this industry mix to estimate annual payrolls at The Meadows at Yaphank at full development and full occupancy. Application of these wages results in a potential annual payroll of almost $111 million in current dollars. This is equivalent to average annual wages of approximately $41,777 in current dollars. The actual dollar impact will be much greater because wages are expected to rise between now and full buildout of the Meadows at Yaphank. Therefore, the payroll estimates in this report are conservative.

Direct jobs and payrolls are only the tip of the iceberg in terms of the economic impact of The Meadows at Yaphank. These direct jobs will support a broad array of secondary jobs in a wide range of local industries as a result of the multiplier process. Similarly, direct payrolls will support secondary payroll spending throughout the local economy. The multiplier effect works as follows: employees at The Meadows will spend their earnings in local restaurants, clothing stores, medical offices and other facilities. These establishments will, in turn, hire workers and purchase supplies from other local businesses and the process continues through several rounds of "respending". As a result, the ultimate economic impact is a multiple of the original expenditure. Hence, the term "multiplier".

Projected Industry Mix of Jobs and Payrolls Associated With Employment

Industry	Projected Employment	2Q 2009 Average Annual Wage	Total Payrolls
Food Retailing	130	$ 24,796	$ 3,223,480
Miscellaneous Retail	818	$ 24,116	$ 19,726,888
Information	100	$ 71,988	$ 7,198,800
Credit Intermediation	20	$ 57,760	$ 1,155,200
Financial Investment	100	$ 113,484	$ 11,348,400
Insurance Carriers	100	$ 64,476	$ 6,447,600
Real Estate Firms	80	$ 46,532	$ 3,722,560
Professional & Technical Services	300	$ 60,060	$ 18,018,000
Admin. Support Srvcs. (Clerical & Related)	400	$ 35,324	$ 14,129,600
Ambulatory Health Care Srvcs. (Medical Office)	150	$ 50,440	$ 7,566,000
Hotels & Accommodations	50	$ 25,928	$ 1,296,400
Food Services & Drinking Places	14	$ 18,836	$ 263,704
Warehousing & Storage	200	$ 46,752	$ 9,350,400
Truck Transportation	50	$ 47,556	$ 2,377,800
Repair & Maintenance Services	136	$ 35,296	$ 4,800,256
Total Employment	**2,648**		**$ 110,625,088**

Source: Consultant's Estimates; NYS Labor Department wage data

In the following analysis, the ripple or multiplier effect was estimated by means of employment and earnings multipliers from the RIMS II input-output model for Long Island. The Bureau of Economic Analysis of the U.S. Commerce Department developed the model. It is specific to Long Island and depicts interindustry relationship in Nassau and Suffolk Counties. In other words, it shows the industries from which a given industry purchases its inputs and the industries to which it sells its output. Each industry has its own unique set of employment and earnings multipliers as shown in the tables below.

The findings show that 2,648 direct jobs at The Meadows at Yaphank could result in total employment growth of almost 5,500 jobs in the immediate vicinity when the multiplier effect is factored in. This is equivalent to a net gain of more than 2,800 secondary jobs. The $110.6 million in direct on-site payrolls could boost area payrolls by almost $208 million, including the multiplier effect. This is equivalent to secondary earnings growth of more than $97 million. Much of this growth will occur in the immediate vicinity of The Meadows at Yaphank.

The Secondary Employment Impact of Permanent Jobs

Industry	Projected Employment	Employment Multiplier	Direct & Secondary Jobs	Secondary Jobs
Food Retailing	130	1.5281	199	69
Miscellaneous Retail	818	1.5281	1,250	432
Information	100	1.9054	191	91
Credit Intermediation	20	2.4276	49	29
Financial Investment	100	2.7590	276	176
Insurance Carriers	100	3.3624	336	236
Real Estate Firms	80	2.0957	168	88
Professional & Tech Srvcs.	300	3.9398	1,182	882
Clerical & Related	400	2.0245	810	410
Medical Offices	150	1.9832	297	147
Hotels & Accommodations	50	1.5347	77	27
Food Srvcs & Drinking Places	14	1.2866	18	4
Warehousing & Storage	200	1.5512	310	110
Truck Transportation	50	2.0081	100	50
Repair & Maintenance Srvcs	136	1.4836	202	66
Total Employment	**2,648**		**5,464**	**2,816**

Source: Consultant's estimates based on RIMS II multipliers

The Secondary Earnings Impact of Permanent Jobs

Industry	Projected Earnings	Earnings Multiplier	Direct & Secondary Earnings	Secondary Earnings
Food Retailing	$ 3,223,480	1.8498	$5,962,793	$2,739,313
Miscellaneous Retail	$ 19,726,888	1.8498	$36,490,797	$16,763,909
Information	$ 7,198,800	1.6183	$11,649,818	$4,451,018
Credit Intermediation	$ 1,155,200	1.9764	$2,283,137	$1,127,937
Financial Investment	$ 11,348,400	1.9181	$21,767,366	$10,418,966
Insurance Carriers	$ 6,447,600	2.5889	$16,692,192	$10,244,592
Real Estate Firms	$ 3,722,560	2.6347	$9,807,829	$6,085,269
Professional & Tech Srvcs	$ 18,018,000	1.9689	$35,475,640	$17,457,640
Clerical & Related	$ 14,129,600	1.6211	$22,905,495	$8,775,895
Medical Offices	$ 7,566,000	1.8210	$13,777,686	$6,211,686
Hotels & Accommodations	$ 1,296,400	1.7032	$2,208,028	$911,628
Food Srvcs & Drinking Places	$ 263,704	1.6711	$440,676	$176,972
Warehousing & Storage	$ 9,350,400	1.5810	$14,782,982	$5,432,582
Truck Transportation	$ 2,377,800	2.0090	$4,777,000	$2,399,200
Repair & Maintenance Srvcs	$ 4,800,256	1.8216	$8,744,146	$3,943,890
Total Employment	**$ 110,625,088**		**$207,765,586**	**$97,140,498**

Source: Consultant's estimates based on RIMS II multipliers

In interpreting these findings, it should be noted that the analysis assumes that all of the earnings generated by jobs at The Meadows will remain within the Long Island economy and subject to the multiplier process. To the extent that workers spend their earnings off Long Island, the multiplier effect would be commensurately reduced.

Purchasing Power Generated by The Meadows at Yaphank

Residents of the 850 rental units, condominiums and townhouses will bring considerable purchasing power to the community. Estimates of purchasing power for renters were based on proposed annual rents. Using the HUD guideline that rents should consume no more than 30% of household income, the renters of the market rate units would have incomes between $60,000 and $74,000 and the renters of the affordable units would have incomes between $48,000 and $59,200. Assuming that 10% of these gross incomes would be available for discretionary purchases, the annual discretionary purchasing power of the renters would exceed $892,000 in current dollars.

Estimated Annual Purchasing Power Generated by the 144 Rental Units

Size & Type Of Unit	Units	Monthly Rent	Annual Rent/Unit	Est. Gross Household Income/Unit	Discretionary Spending/Unit	Total Discretionary Spending
Market Rate Units						
One-Bdrm	76	$1,500	$18,000	$60,000	$6,000	$456,000
Two-Bdrm	38	$1,850	$22,200	$74,000	$7,400	$281,200
Total	**114**					
Affordable Units						
One-bdrm	20	$1,200	$14,400	$48,000	$4,800	$96,000
Two-bdrm	10	$1,480	$17,760	$59,200	$5,920	$59,200
Total	**30**					**$892,400**

Source: Consultant's estimates

A similar methodology was used to estimate the purchasing power of purchasers of the 486 condominiums. Fifty-five of the 486 condominiums will be affordable. Using the HUD guideline that rents should consume no more than 30% of household income, the annual incomes of those purchasing the market rate condos would be between $78,000 and $96,000 and the purchasers of the affordable condos would have an annual income of about $76,800. It was further assumed that 15% of household income would be available for discretionary purchases. This resulted estimated annual discretionary purchasing power of almost $6.8 million for the condo owners in current dollars.

Estimated Annual Purchasing Power Generated by 486 Condominiums

Size & Type Of Unit	Units	Imputed Annual Rent	Est. Gross Household Income/Unit	Discretionary Spending/Unit	Total Discretionary Spending
Market Rate					
One-Bdrm	25	$23,400	$78,000	$11,700	$292,500
Two-Bdrm Senior	174	$28,800	$96,000	$14,400	$2,505,600
Two-Bdrm Non-Senior	232	$28,800	$96,000	$14,400	$3,340,800
Total	**431**				
Affordable					
Two-Bdrm Senior	30	$23,040	$76,800	$11,520	$345,600
Two-Bdrm Non-Senior	25	$23,040	$76,800	$11,520	$288,000
Total	**55**				**$6,772,500**

Source: Consultant's estimates

All of the proposed townhouses will be market rate units. For purposes of analysis, it was assumed that the purchase prices shown below were 2.5 times annual household income. It was further assumed that 15% of the annual household income of townhouse owners would be available for discretionary purchases. These assumptions result in estimated annual purchasing power for owners of the townhouses of more than $4.9 million in current dollars.

Estimated Annual Purchasing Power Generated by 220 Townhouses

Size &Type Of Unit	Units	Sales Price	Est. Gross Household Income/Unit	Discretionary Spending/Unit	Total Discretionary Spending
Two-Bdrm Senior Units	51	$385,000	$154,000	$23,100	$1,178,100
Two-Bdrm Non-Senior	101	360,000	$144,000	$21,600	$2,181,600
Three Bdrm Non-Senior	68	385,000	$154,000	$23,100	$1,570,800
Total	**220**				**$ 4,930,500**

Source: Consultant's estimates

Based on the foregoing assumptions, the annual purchasing power of residents of The Meadows at Yaphank could be almost $12.6 million in current dollars.

Estimated Annual Purchasing Power of Residents

Type of Unit	Estimated Annual Discretionary Spending
Rental Units	$892,400
Condominiums	$6,772,500
Townhouses	$4,930,500
Total	**$12,595,400**

Source: Consultant's estimates

Those employed on-site at the Meadows at Yaphank would be another source of purchasing power. They might purchase their lunch at the on-site restaurant or in the immediate vicinity. They could purchase groceries at the on-site supermarket and patronize retailers and service firms elsewhere in the community. For purposes of analysis, it was assumed that 10% of the gross on-site payroll of $110,625,088 would be spent on-site or within the nearby community. This is equivalent to about $11 million. Aggregating the purchasing power brought to the community by residents of The Meadows with that brought by employees at The Meadows results in estimated annual purchasing power of almost $24 million in current dollars.

Aggregate Annual Purchasing Power Created

Source of Purchasing Power	Estimated Annual Discretionary Spending
Residential Units	$ 12,595,400
On-Site Employees	$ 11,062,509
Total	**$ 23,657,909**

Source: Consultant's estimates

Direct spending of almost $24 million would have an even greater positive impact on the local economy through the multiplier process. That is, this amount would be spent and

respent so that the ultimate impact would be a multiple of the original expenditure. To estimate this multiplier effect, multipliers for household spending were applied to the $23,657,909 in estimated annual discretionary spending. The results show that this spending could cause Long Island's output of goods and services, its gross metropolitan product, to increase by more than $29.4 million. This is equivalent to a net output increase of almost $5.8 million. Long Island earnings could increase by almost $7.9 million and as many as 221 jobs could be created in a broad array of industries. Most of this impact would occur in the immediate vicinity of The Meadows at Yaphank.

Economic Impact of Annual Discretionary Spending of $23,657,909

Impact on	Household Multiplier	Estimated Increase
Gross Output	1.2433*	$29,413,878
Net Output	0.2433*	$5,755,969
Earnings	0.3331*	$7,880,449
Employment	9.3580**	221

*Multiplier for each dollar of direct spending. **Multiplier for each million dollars of Direct Spending
Source: Consultant's estimates based on RIMS II multipliers

Projected Sales Tax Revenues

According to the International Council of Shopping Centers, stores at conventional shopping malls generate annual sales of $330 per square foot. The Meadows at Yaphank proposes to build 327,500 square feet of consumer-related space as well as a 5,000 square foot restaurant, for a total of 332,500 square feet. The types of retailers proposed include "big box" retailers, a pharmacy, bank, supermarket and various neighborhood-type retail establishments. However, not all of this square footage will sell merchandise that is subject to county and state sales taxes. For example, prescription drugs are not subject to sales taxes. Therefore, only 75% of the proposed pharmacy square footage was deemed to be tax producing. Only 25% of the supermarket square footage was deemed to be tax producing since food purchases are not subject to sales taxes. None of the square footage earmarked for a bank will produce sales taxes. Therefore, the total square footage estimated to produce sales taxes was reduced to 276,575. Assuming sales of $330 per square foot, the 276,575 square feet of consumer-related space at the Meadows at Yaphank would produce annual sales of $91,269,750 subject to sales taxes

Proposed Consumer-Related Businesses

	Total Square Feet	Sq. Ft. Subject to Sales Tax
Retail	**327,500**	**271,575**
Big Box	150,000	150,000
Pharmacy	14,700	11,025
Bank	3,500	0
Neighborhood Retail	159,300	110,550
Supermarket	65,000	16,250
Other Neighborhood Retail	94,300	94,300
Restaurant	**5,000**	**5,000**
Total	**332,500**	**276,575**

The current sales tax rate in Suffolk County is 8.625%. This includes a 4.0% New York State sales tax rate, a 4.25% Suffolk County sales tax rate and a 0.375% MTA sales tax rate. Therefore, annual sales of $92,269,750 would produce annual sales taxes of $7,872,016. Of this amount, $3.65 million would go to New York State, almost $3.88 million would go to Suffolk County and more than $342 thousand would go to the Metropolitan Transportation Authority.

Annual Sales Taxes Attributable to New York State, Suffolk County, & the MTA From The Meadows at Yaphank

Taxing Jurisdiction	Sales Tax Rate (%)	Dollar Amount
New York State	4.00	$3,650,790
Suffolk County	4.25	3,878,964
MTA	0.375	342,262
Total	**8.625**	**7,872,016**

Source: Consultant's estimates based on current sales tax rates

Projected Mortgage Recording Taxes

According to the Suffolk County Clerk, the county mortgage recording tax is equal to 1.05% of the absolute mortgage amount for both commercial and residential properties. However, there is a tax reduction of $30.00 per unit for one and two-family residential units.

The Residential Mortgage Recording Tax. The Meadows at Yaphank will contain 220 townhouses and 486 condominiums for a total of 706 units. The rental units are considered commercial property and will be discussed in the next section.

In the following analysis, it was assumed that potential buyers would make a down payment of 10% and obtain a mortgage for the remainder of the purchase price. Given the proposed sales prices shown below, the aggregate sales price for the 706 townhouses and condominiums would be $223,655,000.

Assuming a 10% down payment, the actual mortgage amount for the 706 townhouses and condominiums would be $201,289,500. 1.05% of this amount would be $2,113,540. However, each of the 706 units is entitled to a $30 reduction in the mortgage recording tax. This amounts to $21,180 for the 706 units. This brings the estimated mortgage recording tax for the 706 townhouses and condominiums to $2,092,360.

Estimated Mortgage Recording Tax on 706 Residential Units

Townhouses	Units	Est. Sales Price Per Unit	Total Sales Price
Two-Bedroom Senior Units	51	$375,000	$19,125,000
Two-Bedroom Non-Senior	101	350,000	35,350,000
Three Bedroom Non-Senior	68	375,000	25,500,000
Condominiums			
Market Rate			
One-Bedroom	25	$250,000	6,250,000
Two-Bedroom Senior	174	$325,000	56,550,000
Two-Bedroom Non-Senior	232	$290,000	67,280,000
Affordable			
Two-Bedroom Senior	30	$260,000	7,800,000
Two-Bedroom Non-Senior	25	$232,000	5,800,000
Aggregate Sales Price	**706**		**$223,655,000**
Est. Mortgage Amount			**$201,289,500**
1.05% of $201,289,500			**$2,113,540**
$30 Tax Reduction*706 Units			**$21,180**
Est. Mortgage Recording Tax			**$2,092,360**

Source: Consultants estimates based on information from Suffolk County Clerk

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Appendix A
Distribution of Household Income, by Income Category, 2008
Town of Brookhaven

Income Category	Number of Households	Percent Distribution
Less Than $10,000	5,583	3.7%
$10,000 to $14,999	3,316	2.2
$15,000 to $24,999	10,130	6.7
$25,000 to $34,999	9,395	6.2
$35,000 to $49,999	11,947	7.9
$50,000 to $74,999	27,891	18.5
$75,000 to $99,999	23,392	15.5
$100,000 to $149,999	34,005	22.5
$150,000 to $199,999	16,226	10.7
$200,000 or More	9,071	6.0
Total Households	**150,956**	**100.0**

Source: U.S. Census Bureau, American Community Survey, 2008

Appendix A-2
Brookhaven Walk Findings Statement

Town Planning Board

June 20, 2007

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

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TOWN OF BROOKHAVEN
PLANNING BOARD

State Environmental Quality Review
FINDINGS STATEMENT FOR THE SITE PLAN APPLICATION OF BROOKHAVEN WALK
(FORMALLY KNOWN AS BROOKHAVEN TOWN CENTER)

Pursuant to Article 8 of the New York State Environmental Conservation Law (NYS ECL) and Title 6, New York Code of Rules and Regulations (6 NYCRR) Part 617, the Planning Board of the Town of Brookhaven, hereby adopts the following findings.

Name of Action:	Site Plan Application for Brookhaven Walk Formally know as Brookhaven Town Center
Log Number	2000-061-SP
Location:	Northwestern corner of the Long Island Expressway (LIE) North Service Road/William Floyd Parkway (County Route, CR, 46) interchange, in the hamlet of Yaphank.
Applicant:	Rose-Breslin, LLC One Executive Boulevard Yonkers, New York 10701 Contact: Thomas F. Perna, Vice President
Lead Agency:	Town of Brookhaven Planning Board One Independence Hill Farmingville, NY 11738
Contact Person:	Ralph F. Wiebelt, Site Plan Review Group Division of Planning, Department of Planning, Environment and Land Management
Telephone:	(631) 451-6455
SEQR Status:	Type I
Date Final EIS Filed:	September 25, 2006
Suffolk County Tax Lot Numbers:	0200-553-1-1.3 0200-584-2-1.2

CERTIFICATE OF FINDINGS TO APPROVE:

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review) of the Environmental Conservation Law. This Board, having considered the Draft and Final EIS, and having considered the following written facts and conclusions, this Finding Statement certifies that:

(1) The Board has considered the relevant environmental impacts, facts and conclusions disclosed in the final EIS.

(2) The Board has weighed and balanced the relevant environmental impacts with social, economic and other considerations.

(3) The Board has provided a rationale for its decision by the written facts and conclusions contained herein and in the Final EIS.

(4) The Board certifies that the requirements of this Part have been met.

(5) The Board certifies that consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.

Project History:

The subject site has been zoned and intended for retail development dating back to at least 1973, when the Parr Company owned it. In the 1980's, the site was owned by the Grant Cliffs Corporation who made a retail mall application known as the "Grant Park Mall". This application received a SEQR Positive Declaration, had a DEIS prepared (December 1985) and was the subject of a SEQR public hearing DEIS. However, the Grant Park Mall application was ultimately not pursued by the project sponsor, and the site came under the control of Breslin Realty Development Corporation in the late 1980's.

In October 1989, the Breslin Realty Development Corporation submitted a site plan application for Brookhaven Town Center, a 1.97 million SF, two-phase regional shopping mall. That application was subject to full review under SEQRA, for which this Board was designated as lead agency. A DEIS was prepared and accepted as complete in June, 1990, and site plan/SEQRA DEIS hearings were held by this Board in August and September of 1990. The FEIS was accepted in August 1990 and this Board adopted a Findings Statement and subsequently the site plan application. However, both these documents were rescinded by court order in late 1999. The court order stated that, as the Brookhaven Town Center project was included in the on-going North Shore Properties Generic EIS, no final decision could be made on the Brookhaven Town Center application until completion of the North Shore Properties GEIS.

The North Shore Properties Conceptual Master Plan application was submitted to the Town Board by Breslin Realty Development Corporation in April 1989. North Shore Properties was a mixed retail, residential and office/industrial project involving a total of approximately 2,150 acres (in parcels numbered 1-21 and a Greenbelt). The Town Board assumed SEQR lead agency status for North Shore Properties because the project sponsor proposed various zone change

and density transfers. Consequently, on February 20, 1992 the Town Board issued a Positive Declaration, causing a Generic EIS to be prepared and on December of 1994, adopted the North Shore Properties Findings Statement.

The Brookhaven Town Center site was identified as Parcel 20 of North Shore Properties and the information from the prior Brookhaven Town Center EIS was incorporated into the North Shore Properties GEIS. Consequently, site-specific findings for the Brookhaven Town Center project were included in the Town Board's North Shore Properties Findings Statement.

Following issuance of the North Shore Properties Findings Statement, a site plan application for Phase I of the Brookhaven Town Center project was re-submitted to the Town Planning Board and was conditionally approved in early 1995.

The phased approval envisioned a total of six (6) major department stores; two such tenants were anticipated in Phase I (a total of 650,000 square feet, SF, of retail space), and an additional four in Phase II (for 1.60 million SF of retail space). A building permit was obtained and clearing for construction of the Phase I building foundation commenced on the site in August 1997. However, during early 1997, the Applicant submitted an amended phase I site plan application (with accompanying Draft Supplemental EIS) for a larger phase I project (3 major tenants in a total of 958,322 SF of retail space). It was proposed that the eventual phase II application would provide the remaining 3 major tenants, for the same total of 1.60 million SF of retail space. A public hearing was held on the amended application and Draft Supplemental EIS on December 21, 1998.

The construction process, which had been ongoing during this period and still only involved site clearing operations, was halted at this point due to the filing of a lawsuit on the Phase I Site Plan approval. In late 1999, the NYS Supreme Court decision on this lawsuit resulted in the rescission of the Phase I Site Plan Approval and the Findings Statement for the Brookhaven Town Center portion of North Shore Properties. This decision stated that the respondents (the Town Board and the Town Planning Board) had "*...acted in violation of the State Environmental Quality Review Act and the regulations promulgated thereunder by, inter alia, failing to consider alternative sites for the Regional Shopping Mall and, further, by failing to address the severe secondary impacts which the project will have upon the surrounding communities.*" Additional factors in the decision included: the Town Planning Board did not prepare its own Findings; the Findings Statement was too vague and left too much to the discretion of the applicant; it did not satisfactorily consider the increase in traffic as well as the increase in the number of people who would be attracted to the area; it did not note the conflict with the community's goals for the site; it did not note the increased intensity of use of the site; it did not note the absence of other nearby large retail centers; and the Findings did not address the existing contaminant plume beneath Brookhaven National Laboratory (BNL).

The court decision also implied that the portion of the North Shore Properties Findings Statement addressing the Brookhaven Town Center project was to be considered null and void. However, as the parcels comprising the North Shore Properties project had been dismantled by this time, there was no SEQRA Findings framework within which a new Brookhaven Town Center application could be examined. Therefore, in conformance with the court decision the current applicant, determined to proceed with the Brookhaven Town Center project as a new application with full SEQRA review.

Therefore, a new site plan application for Brookhaven Town Center was submitted to the Town in

May 2000. The new owner/applicant Rose-Breslin LLC, maintained that the parcels comprising the North Shore Properties project had been dismantled and requested to proceed with the Brookhaven Town Center project as a new application with a full SEQRA review.

The new site plan application for Brookhaven Town Center proposed a regional shopping mall having:

- 1.043± million SF of retail floor space in an overall 1.385± million SF building;
- three department stores and a fourth major tenant, an auto center, a 2,930-seat cinema and numerous smaller shops;
- on-site parking for 5,272 cars was provided and a variance for 2,179 parking stalls was requested (Town Code required 7,451 spaces).

In addition to site plan approval, variances were proposed for building height and amount of parking spaces, as well as a subdivision for two of the anchor stores and a special permit to allow a theater use.

A Positive Declaration requiring the preparation of a DEIS was adopted by this Board on August 21, 2000, and it was determined that public scoping would be conducted. As required by the SEQR regulations, the project sponsor prepared and submitted for adoption a draft scope for the DEIS, A public scoping meeting was held on March 12, 2001, and written comments were accepted until April 2, 2001. Based upon some of the comments received, this Board determined to continue to accept written comments until June 1, 2001. To ensure that the public had sufficient opportunity to provide comments during this extended review period, the project sponsor advertised in 13 local and regional newspapers on May 10, 2001. An amended draft scope was submitted on July 13, 2001 which addressed the issues raised during the entire public scoping comment period as well as the NYS Supreme Court decision on the prior Phase I Site Plan Approval for Brookhaven Town Center. Comments on the amended scope were accepted until on or about September 12, 2001 and a Final Scope was adopted on October 1, 2001.

The DEIS for Brookhaven Town Center was adopted in March 2002, and a public hearing was held on the DEIS and site plan on April 22, 2002. The Brookhaven Town Center DEIS contained six (6) alternatives, as follows:

1. No Action - the site remains in its present use and condition.
2. Alternative Site Design and Yield 1 - the site is developed in accordance with the Prior Approved Phase I Site Plan, providing 650,000 SF of retail space.
3. Alternative Site Design and Yield 2 - the site is developed with 850,000 SF of retail space, in a plan incorporating "main street" design features.
4. Alternative Site Design and Yield 3 - the site is developed with 865,000 SF of retail space and a 10,000 SF Community Center.
5. Alternative Locations for the Proposed Project - the potential for use of the Racetrack Parcel and the Arrow Parcel for the proposed project are analyzed.
6. Smart Growth Alternative - the potential for alternative development of the site using "Smart Growth" principles is analyzed.

Subsequent to the hearing and in response to comments on the Brookhaven Town Center DEIS, the applicant prepared and submitted a draft FEIS in September 2002. This FEIS outlined a reduced-scale "Preferred Alternative" that was similar to Alternative 3, which served as the basis for the responses to comments. In amending their site plan application, the applicant indicated

that "this reduced-scale alternative would achieve both the applicant's goals and better address comments and concerns from the Town, County, State and public, in a way that significantly reduces those characteristics of the project which gave rise to these concerns". The amended proposal also indicated that the "potential for adverse impacts to the various human and environmental factors of the vicinity would be further reduced (providing an increased level of environmental protection, which would be attractive to the community), without a corresponding decrease in the legitimate economic interests of the applicant (by retaining his ability to build an appropriate, attractive and successful commercial facility)." The "Preferred Alternative" included the following:

- a total floor area of 850,000 SF, of which 256,044 SF was in two department stores, 521,956 SF was in small shops and 72,000 SF was a 2,930-seat cinema.
- seven separate structures, distributed along the proposed north-south and east-west axes, of which only the north-south axis features a paved roadway.
- the structures would vary between one and two stories in height, and were not anticipated to exceed the 35-foot height limit of the J-3 zone.
- if non-occupied portions of the structures (e.g., clock or bell tower, dome, etc.) or anchor store tenant-required second floors exceed this limit, a height variance would be required.
- no auto center or restaurants were proposed.
- on-site parking for 4,288 cars would be provided; as the Town Code requires 6,163 spaces, a parking variance was required.

However, the Town Planning Board determined that the "Preferred Alternative" described in that document, now known as Brookhaven Walk (also referred to in the Brookhaven Town Center FEIS as the "Preferred Alternative"), was sufficiently different from the prior proposal and the alternative 3 scheme analyzed in the Brookhaven Town Center DEIS to warrant the preparation of a Draft Supplemental EIS (Draft Supplemental EIS). Since a DEIS public comment period and hearing had been held on the Brookhaven Town Center Site Plan, the applicant was directed to both analyze the new proposal as well as address the comments generated during the comment period of the Brookhaven Town Center DEIS. Therefore, the Brookhaven Walk Draft Supplemental EIS was composed of the following three (3) volumes:

Volume 1 contains the Brookhaven Walk Draft Supplemental EIS, a detailed description of the revised Brookhaven Walk project and comparative discussions of its potential impacts and mitigation measures. This volume references appropriate baseline information in the Brookhaven Town Center DEIS.
Volume 2 contains public and agency comments on the Brookhaven Town Center application and appropriate responses. This volume also contains Attachments A through E in support of the responses to comments.
Volume 3 contains Attachment F in support of the responses to comments.

It should be noted that Volume 1 of the Brookhaven Walk Draft Supplemental EIS outlines the logic and design considerations that resulted in the revised Brookhaven Walk Site Plan, and provided a more complete record regarding the impacts, mitigations, alternatives and plan evolution that resulted in Brookhaven Walk.

A public hearing was held by the Planning Board on the Brookhaven Walk Draft Supplemental EIS and site plan on October 6, 2003, and written public and agency comments were received through October 17, 2003. The Brookhaven Walk FEIS was adopted on September 25, 2006.

During this period, the Town Board adopted broad changes to the Town zoning code. The code modifications included the adoption of Land Development Standards, which established minimum landscape areas, buffer areas and setbacks. The site was also rezoned from J-Business-3 to J-Business-2 and the J-Business-2 dimensional standards were significantly enhanced. The zone change, in combination with the Land Development Standards and new dimensional standards adopted by the Town, necessitated changes to the site plan to meet these requirements. Some of the key changes involved, large front yard setbacks, landscaping within parking areas, which necessitated the removal of the recharge basin in order to meet the interior landscape requirements, while maintaining the Central Pine Barrens Joint Planning and Policy Commission (CPBJPPC) standard minimum of 35% natural vegetation to remain on-site.

Also during this time, the Applicant revised the Brookhaven Walk site plan. Improvements to the plan involve additional landscaping, pedestrian linkage improvements and internal traffic calming measures added to the plan in response to Town Planning staff comments. As a result, the Brookhaven Walk FEIS was based on an updated design resulting in a proposal that:

- Fully conforms to the revised Town Zoning Code;
- Will utilize on-site conventional sanitary septic systems to treat wastewater;
- Requires no zoning variances;
- Results in less building area than the prior Brookhaven Walk design;
- Requires less water and generates less sanitary wastewater than the prior Brookhaven Walk proposal described in the Draft Supplemental EIS; and
- Conforms to Pine Barrens Development Standards.

The FEIS was subsequently adopted on September 25, 2006 and the Planning Board afforded agencies and the public an extended time period, until April 2, 2007, in which to consider the final EIS before issuing its written findings statement. During that period, the Planning Board received some written comments on the FEIS related to traffic and sewage disposal methods. Those comments will be addressed individually in a separate section below. The Planning Board also scheduled and noticed a hearing on the final site plan for March 5, 2007. The public notice of the hearing described the proposal, including "roadway improvements, parking, septic systems, landscaping, etc." and invited "adjacent property owners and/or others interested in any way in the proposed site plan" to "appear before the Board to be heard." Various persons and groups appeared at the March 5, 2007 hearing and commented on the application, including environmental issues such as traffic impacts and alternative sewage disposal methods. Also at the March 5, 2007 hearing, the Planning Board provided an extended period during which written comments could be submitted through April 2, 2007, so as to provide ample and additional opportunity for comments to be submitted.

Current Project Description:

The FEIS contains an exhaustive project description and therefore this Findings Statement will only provide a summarization. Brookhaven Walk has a total building footprint of 775,000 SF and a total gross floor area (GFA) of 850,000 SF. The project has been designed as an open-air mall, integrating vehicle and pedestrian traffic throughout and centered on a public plaza and fountain area. Walking paths adjoin the surrounding retail structures and will be attractively landscaped. Traditional architecture will be incorporated through the use of gabled and hipped roofs, cupolas, weathervanes, arbors, entrance canopies, storefront awnings, pediments, decorative medallions, ornamental gates, lattice work, dormers, circular/semi-circular windows and arched openings. Roofing materials will include shakes, shingles and other traditional finishes with wall materials

consisting of brick, wood, stone and/or stucco. Brick pavers, fountains, tree-lined walkways and parking areas, specialized lighting, graphics and signage will also be utilized to complement the overall theme.

A total of ten (10) structures are proposed forming an arch to centrally located single structure retail uses in the center of the site. Nine (9) of the structures are one story in height, with the remaining structure proposed at two stories in height (which will not exceed the 35-foot height limit of the J-2 zone). The anticipated uses include two (2) restaurants, five (5) anchor stores, three (3) mini-anchor stores, and seven (7) general retail uses. As proposed, no single restaurant will have more than 200 seats and no restaurant will have a floor area of more than 5,000 SF. On-site parking spaces for 3,825 cars will be provided and an additional 1,513 spaces will be landbanked, for a total of 5,338 parking spaces provided (4,999 required by Town Code) and the plan provides an excess of constructed Americans with Disabilities Act-conforming parking spaces. All spaces will be convenient to the stores and will be provided at a rate of 4.5 spaces/1,000 SF, a sufficient number the EIS predicts to adequately serve the proposed development.

The site totals 150.14 acres in size and the proposed Brookhaven Walk development will result in a total clearing of 89.46 acres (59.58% of the site), of which 72.60 acres are formerly cleared areas. Conversely, 60.69 acres (or 40.42% of the site) will remain natural and undisturbed. 3.27 acres of formerly cleared areas will be naturally re-vegetated, bringing the total area of natural vegetation following development to 63.96 acres, or 42.60% of the site. An additional 3.72 acres off-site will be disturbed as a result of the improvements associated with the reconstruction of the existing private roadway (Yaphank Woods Boulevard) along the western property boundary. Including this, the total project impact area totals 153.86 acres, resulting in clearing a total of 93.18 acres, or 60.56% thereby exceeding Pine Barrens clearing standards.

In addition, the proposed development has been located and purposely situated on the area previously cleared in 1997 pursuant to prior approvals, thereby minimizing removal of natural vegetation. The proposed project will provide 17.15 acres (11.42% of the site) of turf and landscaped areas, 8.71 acres of which will consist of non-fertilizer dependent vegetation, 8.44 acres (5.62%) will be established in fertilizer dependent vegetation. Brookhaven Walk will therefore conform to the Pine Barrens maximum fertilized standard of 15% of the site.

Landscaped areas will be located within islands in the parking areas, along the buildings, and adjacent to the preserved naturally vegetated areas along the outside of the internal ring road. In general, the species chosen will be native to Long Island or are compatible to regional climatic conditions and will not consist of invasive species; species recommended in Figure 5-2 of the Pine Barrens Plan will be used to the greatest extent practicable.

Lighting details and a luminaire list are shown on the Conceptual Site Plan (Sheet C-1) and Site Details (Sheet C-12). All fixtures will be "dark sky compliant" with an average lighting level of 2.1 foot-candles (fc) and a maximum level of 6.8 fc. A maximum mounted fixture height of 35 feet is proposed within the central mall area and all lighting along the northern and southern perimeter of the site will be a maximum of 20 feet in fixture height. Fixtures along the perimeter shall have property line cut off shielding at the curb line.

The subject parcel to is located at the northwest quadrant of the highway interchange created at the intersection of the Long Island Expressway (LIE) (Interstate 495) and the William Floyd Parkway (CR 46) in Yaphank. Both of these roadways are multilane, divided highways under the

jurisdiction of New York State Department of Transportation (NYSDOT) and Suffolk County Department of Public Works (SCDPW), respectively. Contiguous to the north of the subject parcel is a privately maintained multilane, divided roadway known as Yaphank Woods Blvd. This private roadway provides access to two residential condominium developments known as Whispering Pines and Colonial Woods adjacent to the north and west. Yaphank Woods Blvd. (under the control of the developer of the proposed project) intersects with CR 46 at the northeast corner of the subject parcel and is controlled by a traffic signal. In addition, it is proposed that a new north-south roadway along the westside of the subject parcel will connect the extension of the LIE North Service Road with Yaphank Woods Blvd. and ultimately to William Floyd Parkway at its intersection. Yaphank Woods Blvd. and the new North-South Roadway may be offered for dedication from the owners/developers to the Town of Brookhaven in the future.

Four site access points are proposed: two off William Floyd Parkway, one off Yaphank Woods Boulevard, and one off the new north-south roadway connecting Yaphank Woods Blvd. to the extension of the LIE North Service Road. All access points will feed directly into the proposed internal ring road. Yaphank Woods Boulevard will be improved along the northerly portion of the site, and the existing paved roadway along the western property boundary connecting the LIE North Service Road to Yaphank Woods Boulevard will be constructed/improved to Town standards. The new 2-lane north-south roadway will consist of one 12-foot wide travel lane in each direction with 5' shoulders throughout and auxiliary turning lanes at the proposed site access, all within a proposed 50-foot right-of-way. Additional right-of-way at intersections will be required where auxiliary lanes are provided. Additional overall roadway right-of-way, if deemed necessary, will be provided (dedicated) from the developer at time of development of other vacant lands of owner along the west side of the new north-south roadway. The residents of the Whispering Pines/Colonial Woods condominium development will continue to have direct access to Yaphank Woods Boulevard at two existing locations. The developer shall design and construct enhanced security and control measures at each location if desired by Whispering Pines/Colonial Woods condominiums.

All stormwater runoff generated on-site will be recharged in drywell fields distributed beneath the parking areas in lieu of a recharge basin. An erosion control plan incorporating the NYSDEC Technical Guidance manual measures such as silt fencing, storm drain inlet protection, hay bales, and good housekeeping measures will be utilized.

Water will be supplied to the project site via 12-inch water mains, which will tap the existing 16-inch water mains beneath the west side of CR 46 and beneath the south side of Yaphank Woods Boulevard. The applicant has received a Letter of Water Availability from the SCWA. The project's anticipated water requirements are 40,153 gpd, of which 29,993 gpd consists of nitrogen bearing sanitary wastewater and 10,160 gpd represents water use associated with restaurant kitchens. All sanitary wastewater generated by the proposed project will be handled via an on-site conventional sanitary waste disposal system in accordance with Article 6 of the Suffolk County Sanitary Code (SCSC).

Jurisdiction:

The Planning Board of the Town of Brookhaven has jurisdiction over site plan review. New York State Consolidated Laws, Article 16, Zoning And Planning, Section S 274-a. governs the creation and powers of planning boards and authorizes planning boards "to review and approve, approve with modifications or disapprove site plans prepared to specifications set forth in the ordinance or local law and/or in regulations of such authorized board." In addition, the planning board "shall have the authority to impose such reasonable conditions and restrictions as are directly related to

and incidental to a proposed site plan. Upon its approval of said site plan, any such conditions must be met in connection with the issuance of permits by applicable enforcement agents or officers of the town." Section 274-a. also provides a definition of site plan "the term "site plan" shall mean a rendering, drawing, or sketch prepared to specifications and containing necessary elements, as set forth in the applicable zoning ordinance or local law, which shows the arrangement, layout and design of the proposed use of a single parcel of land as shown on said plan.

This SEQR findings statement is mandated by Article 8 of the New York State Environmental Conservation Law (NYS ECL) and Title 6, New York Code of Rules and Regulations (6 NYCRR) Part 617 (State Environmental Quality Review). The basic purpose of SEQR is to incorporate the consideration of environmental factors into the existing planning, review and decision-making processes of state, regional and local government agencies at the earliest possible time. SEQR does not change the existing jurisdiction of agencies nor the jurisdiction between or among state and local agencies. SEQR provides all involved agencies with the authority, following the filing of a final EIS and written findings statement to impose substantive conditions upon an action to ensure that the requirements of the SEQR regulations have been satisfied. The conditions imposed must be practicable and reasonably related to impacts identified in the EIS.

In addition, each agency involved in a proposed action has the responsibility to provide the lead agency with information it may have that may assist the lead agency in making its determination of significance, to identify potentially significant adverse impacts in the scoping process, to comment in a timely manner on the EIS if it has concerns which need to be addressed and to participate, as may be needed, in any public hearing. SEQR also strongly encourages interested agencies to make known their views on the action, particularly with respect to their areas of expertise and jurisdiction. SEQR regulations also indicate that no agency may make a final decision to undertake, fund, approve or disapprove an action that has been the subject of a final EIS, until the agency has made a written findings statement that considers the relevant environmental impacts, the facts and conclusions disclosed in the final EIS, weigh and balance the relevant environmental impacts with social, economic and other considerations and provides a written rationale for the agency's decision.

The following is a list of involved agencies and the current status of the reviews for the permits and/or approvals required for the proposed project:

- Town Planning Board - Site Plan approval.
- Town Division of Environmental Protection - Freshwater Wetland Permit Exemption – issued January 26, 2007.
- Town Department of Buildings - Building Permit (includes sign permit) - Requires site plan approval.
- CPBJPPC - Development of Regional Significance - Received Consistency letter December 21, 2006; final approval pending completion of SEQRA process.
- SCDPW - CR 46 Use Permit (construction trucks) - Pending completion of SEQRA process.
- SCDPW – Highway work permit for roadway improvements - Pending; conceptual approval granted September 27, 2004.
- SCDPW - 239f Review - Pending submission of building permit.
- SCDHS - Article 6 (Sanitary System design review) Pending completion of SEQRA process.
- SCDHS - Article 4 (Water Supply System design review) - Pending completion of SEQRA process.
- NYSDEC - Freshwater Wetland Permit (renewal of Non-Jurisdiction Letter) Non-Jurisdiction

Confirmed.

- NYSDEC - Phase II SPDES Stormwater Permit - Pending completion of SEQRA process.
- NYSDOT - Highway Work Permit for roadway improvements - Pending completion of SEQRA process; conceptual approval granted March 4, 2004.
- FHWA - Approval for Access Modification at LIE/CR 46 Interchange - Approved April 4, 2006 (note that work cannot begin until NYSDOT Highway Work permit is issued).

Community And Government Outreach Efforts:

In order to ensure dissemination of the most current and accurate information on the project and encourage public participation and input, the applicant has voluntarily undertaken a number of outreach efforts with various civic associations and governmental agencies. The following lists those bodies that have received information and/or presentations on the details and characteristics of the project:

Community Organizations: (* Denotes a meeting was held)

Affiliated Brookhaven Civic Organization*
Birchwood at Spring Lake*
Colonial Woods/Whispering Pines*
East Yaphank Chamber of Commerce*
East Yaphank Civic Association*
Leisure Village*
Long Island Association*
Long Island Pine Barrens Society*
Manor Park Civic Association*
Mastic Park Civic Association*
Mastic/Shirley Chamber of Commerce*
Middle Island Civic Association
Open Space Council*
Ridge Civic Association*
Ridge Fire District*
South Yaphank Civic Association*
Yaphank Fire District*
Yaphank Historical Society*
Yaphank Taxpayers and Civic Association*

Government: The following government officials were contacted concerning Brookhaven Walk and provided with information on the proposal.

New York State
Honorable Kenneth P. LaValle - NYS Senator
Honorable Marc S. Alessi - NYS Assemblyman
Honorable Patricia Eddington - NYS Assemblywoman
Peter Scully - Regional Director NYSDEC

Suffolk County
Honorable Steve Levy - Suffolk County Executive
Honorable Kate M. Browning - Suffolk County Legislator
Thomas A. Isles, AICP - Director, Planning
Michael J. Deering - Director, Environmental Affairs (No longer in this position)

Andrew P. Freleng, AICP - Chief Planner
Jim Morgo - Commissioner, Economic Development & Workforce Housing

Town of Brookhaven
Honorable Brian X. Foley - Supervisor
Honorable Connie Kepert - Councilwoman
Honorable Carol A. Bissonette - Councilwoman
David W. Woods, AICP - Commissioner, Planning
Ralph F. Wiebelt - Site Plan Reviewer
Paul G. Rogalle - Traffic Safety
John Turner - Director, Environmental Protection & Land Management
Ray Donnelly - Commissioner, Economic Development
Anthony M. Figliola - Empire Zone Coordinator

School District
Longwood Central School District

Other Public Authorities
Stephen M. Jones - Executive Director, Suffolk County Water Authority

In addition to the above, the applicant has also established a website that provides appropriate information on the proposed project. Effective June 14, 2006, information on Brookhaven Walk is available on the Internet at www.brookhavenwalk.com. A copy of the adopted FEIS and the Pine Barrens CGA application have been, and will continue to be, available to all interested parties on this website. In addition, visitors to this website have detailed access to the site plan, traffic plans, and architectural renderings. Visitors also have an opportunity to contact the applicant directly with questions or concerns.

Public Participation Opportunities:
The long regulatory history of this project has had an additional benefit of providing numerous opportunities for public participation as follows:

1985 DEIS public hearing and comment period for Grant Park Mall.
1990 DEIS public hearing and comment period for Brookhaven Town Center.
1990 Site plan hearings for Brookhaven Town Center.
1993 GEIS public hearing and comment period for North Shore Properties.
1995 Site plan hearings for Brookhaven Town Center.
1998 Draft Supplemental EIS public hearing and comment period for amended Brookhaven Town Center.
2001 Scoping public hearing and comment period for the new Brookhaven Town Center
2001 Amended Scoping public hearing and comment period - new Brookhaven Town Center
2002 DEIS public hearing and comment period for the new Brookhaven Town Center.
2003 Draft Supplemental EIS public hearing and comment period for the Brookhaven Walk.
2006 FEIS public consideration period
2007 Site plan hearings for Brookhaven Walk.

Grading, Erosion & Storm Water Control:
The Brookhaven Walk project will be built predominantly in the formerly cleared central portion of the site (not including improvements to the new roadway along the western perimeter), with disturbance limited to 89.46 acres, or 59.58% of the site. The Grading Plan depicts the extent

and details of grading to be performed during construction. To allow for the construction of the buildings, paved areas and drainage structures, it is estimated that a total of 63,000 cubic yards (CY) of material will be exported from the site. A maximum cut of 18 feet is required, located in the retail building between Anchor "A" and Anchor "B", and a maximum depth of fill is 17 feet located west of Anchor "E" at the point where the parking drive curves. Given the size of the project, 63,000 cubic yards (CY) of material will be exported from the site is considered to be minimal and not significant.

All stormwater runoff generated on-site will be recharged in drywell fields distributed beneath the parking areas, in lieu of a recharge basin. The drainage system will be sized to accommodate a minimum of 2 inches of rainfall and is proposed to have a total of 488 drywells. The drainage system has been subject to the review and approval of the Town Engineering Department and conforms to all applicable drainage and grading requirements of the Town. Prior to the onset of construction and in accordance with the NYSDEC Phase II SPDES Program, the applicant will be required to obtain coverage under the General Permit for Stormwater Discharges from Construction Activities. NYSDEC requires that an SWPPP be prepared for the site, including a detailed erosion and sediment control plan, to manage stormwater generated on-site during construction activities. The erosion control plan will incorporate NYSDEC Technical Guidance Manual measures such as silt fencing, storm drain inlet protection, hay bales, and good housekeeping measures will be utilized.

Erosion control measures will be utilized to minimize loss of soil during construction, particularly in areas of steep slopes, adjacent to the wetlands and other natural areas, as well as in locations where potential erosion and sedimentation could adversely impact adjoining properties and streets. Soils will be wetted if necessary to limit fugitive dust and planting of exposed soils will occur as rapidly as possible following construction. As long as erosion is controlled during grading and construction, the potential for sediment transport will be minimal, and no significant loss of soils is expected. It has also been shown in the EIS that the project site does not experience soil constraints with regards to stormwater recharge or building stability provided appropriate soil compaction and building construction techniques are used. Consequently, this Board finds that no significant impacts on geological resources from the grading operation are anticipated and all reasonable and practical mitigation measures will be undertaken.

Sanitary Treatment:

SCDHS, SCSA and NYSDEC maintains jurisdiction over approval, type and location of sewage treatment facilities. As noted previously, SEQR does not change the existing jurisdiction of agencies nor the jurisdiction between or among state and local agencies. Therefore, as SEQR involved agencies, SCDHS, SCSA and NYSDEC should issue their own findings statements and associated regulatory/permitting decisions based upon their areas of jurisdiction and the fact contained in the EIS. Though this Board has limited jurisdiction over sanitary facilities, the project is proposed within the Town of Brookhaven. Therefore this Board finds that pursuant to this Board's site plan review authority it is reasonable and appropriate, to reach a reasonable level of assurance that the proposed method of sanitary treatment will not adversely impact the environment.

The Brookhaven Walk project originally proposed to route sanitary wastewater to the Dorade Sewage Treatment Plant, which would have been upgraded to handle the new flow. This proposal was questioned in several comments on the Draft Supplemental EIS due to the location of the Dorade Sewage Treatment Plant in the Compatible Growth Area of the Pine Barrens. Pine Barrens standards seek to encourage discharge of sewage treatment plant wastewater outside of

the pine barrens zone where practical. Several options to treat sanitary waste have been explored and considered by the applicant and various regulatory agencies including the Town, SCDHS, SCSA and NYSDEC including:

- Establish a "replacement" plant for the Dorade Sewage Treatment Plant on a parcel of land owned by Rose-Breslin, located outside of the Pine Barrens on the "Arrow" parcel (this application has been withdrawn by the applicant),
- Brookhaven Town efforts to establish an Sewage Treatment Plant to handle wastewater from parcels in the vicinity of Yaphank (these efforts have not come to fruition and no district has been established).
- Utilize the existing Suffolk County Sewage Treatment Plant on Yaphank Avenue, Yaphank.
- Use of a conventional sanitary system for handling of sanitary wastewater.

Since these other sewage treatment options were in the preliminary planning stages, and could in fact take one of several forms (i.e. Arrow parcel, Suffolk County Yaphank Sewage Treatment Plant or Town Sewage Treatment Plant), the applicant proposed to and applied for the utilization of an on-site wastewater disposal system for Brookhaven Walk. Article 6 of the SC Sanitary Code allows for 300 gpd/acre of sanitary flow, or a discharge of approximately 44,812 gpd. As a result, the applicant proposes the use of four (4) conventional systems with the total cumulative sanitary flow from the four systems of 29,993 gpd. The proposed 29,993 gpd of conventional on-site sanitary facilities are therefore compliant with Suffolk County Article 6 requirements of 44,812 gpd of maximum total sanitary discharge for the project site and the design is also compliant with NYSDEC requirements in that the design wastewater discharge from each system is less than 30,000 gpd.

The FEIS indicates that the use of conventional sanitary system would have the following benefits:

- would not require off-site sewage treatment,
- would not exceed treated effluent discharge standards in the Pine Barrens,
- would conform with and be substantially less than the allowable flow for the site under Article 6 of the SCSC,
- would conform with NYSDEC outfall wastewater discharge flow restrictions, and
- would allow the applicant to participate in the establishment of a new Sewage Treatment Plant outside of the Pine Barrens, should such a facility become available and economically and technically feasible.

As a result, no significant wastewater impacts are expected, and based on the discussion above regarding environmental policy considerations, the proposed sewage handling option is considered the best option for the project.

In addition, the applicant has agreed that, should an alternative Sewage Treatment Plant location become available outside of the Pine Barrens zone, the applicant would connect the Brookhaven Walk project to this off-site Sewage Treatment Plant. This would involve participation in a fair share of financing the conveyance and treatment system. To facilitate the potential future connection to an off-site plant, "dry sewer" lines have been included in the proposed project, to be utilized if and when connection to an off-site sanitary system becomes available.

Surface Waters:

The project site contains a small vernal wetland that is not directly connected to the aquifer. The 0.8-acre wetland is located within the northern buffer area of the project site, upgradient of any sanitary discharge points and will be protected with a minimum 175-foot buffer of natural upland and/or naturally landscaped vegetation (100 foot NYSDEC adjacent area and 75 foot additional Town setback). The project will be required to apply and conform to the NYSDEC SPDES program for coverage under the General Permit for Stormwater Discharges from Construction Activities. This permit will not allow for overland flow of runoff from newly developed areas to the on-site wetland located. In addition, the extensive buffer areas around this wetland will allow it to continue to receive runoff from natural lands within its contributing area maintaining the current hydrologic properties of this system.

At the time the site plan application was submitted, the plan indicated that disturbance would occur within the Town's 150-foot regulated area. However, since that time the applicant has revised the Site Plan to eliminate all construction, grading, clearing or ground disturbance within 175 feet of the wetland limit. As the Town's jurisdiction is limited to within 150 feet of the wetland limit, a Town wetland permit is no longer needed.

While no construction, grading, clearing or ground disturbance is proposed within 175 feet of the wetlands limit, the applicant proposes to re-vegetate currently disturbed areas within that limit, that were cleared in 1997 pursuant to prior approvals. The intent of this re-vegetation proposal is simply to provide an attractive and uninterrupted viewscape for project patrons that also would provide some natural habitat value. The applicant has already obtained a letter of non-jurisdiction from NYSDEC and the Town's Division of Environmental Protection for these activities. In conclusion, the EIS clearly illustrates that this wetland will not impacted by hydrologic modifications, sanitary wastewater, fertilizer usage or any aspect of Brookhaven Walk proposal in terms of nitrogen influx, groundwater nitrogen recharge or stormwater flow. As a result, impacts to the quantity or quality of water in this wetland are not anticipated.

Water Supply:

The development will be served by the Suffolk County Water Authority via existing mains adjacent to the site. The Water Authority is responsible for maintaining proper quality and quantity of potable water in water supply service areas. No issues regarding quantity of the water supply were identified in the EIS and water supply is typically not at issue in this area of the Town of Brookhaven. In addition, the applicant has received a Letter of Water Availability from the SCWA.

Pine Barrens Plan Standards and Guidelines:

The Brookhaven Walk proposal is located within the Compatible Growth Area of the Central Pine Barrens and is considered a Development of Regional Significance. A full analysis of the Brookhaven Walk project in relation to the Pine Barrens Plan Standards and Guidelines is included with the EIS. The EIS predicts 60.69 acres (or 40.42% of the site) will remain natural and undisturbed and an additional 3.27 acres of previously cleared area will be re-vegetated with native species for a total area of natural vegetation following development of 63.96 acres, or 42.60% of the site. It is realized that an additional 3.72 acres off-site will be disturbed as a result of the improvements associated with the reconstruction of the existing private roadway (Yaphank Woods Boulevard) along the western property boundary. Including this, the total project impact area totals 153.86 acres, resulting in clearing a total of 93.18 acres, or 60.56%. Therefore the site plan is fully compliant with and exceeds the Pine Barrens Plan clearance standard of 65%. In

addition, to the maximum extent possible, the proposed development has been located and purposely situated on the area previously cleared in 1997 pursuant to prior approvals, thereby minimizing removal of natural vegetation. The project therefore only requires a total of 16.86 acres of new clearing.

The amount of fertilizer dependent vegetation on site is proposed to cover 8.44 acres (5.62%), significantly below the Pine Barrens standard of a maximum of 15% of the site to be planted in fertilizer dependent vegetation.

The specific wastewater handling proposal has been evaluated in consideration of the Pine Barrens Plan's Standards and Guidelines for water resource protection for a DRS. Standard 5.5.5.1.1 (SCSC Article 6 compliance) requires conformance with the SCSC, and as noted above, the project will discharge nearly 15,000 gpd less than allowed by Article 6. Standard 5.3.3.1.2 (Sewage treatment plant discharge) indicates that *"Where deemed practical by the County or State, sewage treatment plant discharge shall be outside and downgradient of the Central Pine Barrens"*, and as noted, no Sewage Treatment Plant outfall or increase in flow of an existing outfall is proposed. Guideline 5.3.3.1.3 (Nitrate-nitrogen goal) indicates that, *"A more protective goal of two and one half (2.5) ppm* [parts per million] *may be achieved for new projects through an average residential density of one (1) unit per two (2) acres (or its commercial or industrial equivalent), through clustering, or through other mechanisms to protect surface water quality for projects in the vicinity of ponds and wetlands.* The results of the Simulation of Nitrogen in Recharge (SONIR) and the BURBS computer models in the EIS indicate that the project would have a predicted concentration of nitrogen in recharge of 1.6 mg/l (SONIR) and 1.8 (BURBS). The expected concentration of nitrogen in recharge of 1.6/1.8 mg/l is significantly lower than the Pine Barrens Plan Guideline of 2.5 mg/l (for projects in the vicinity of surface waters) and the NYS Drinking Water Standard of 10 mg/l; as a result, no groundwater impacts are expected.

To summarize, it is anticipated that the Brookhaven Walk proposal will meet or exceed all pine Barren standards and in a letter issue on December 21, 2006, the Pine Barrens Commission indicated that the proposed project appears to be consistent with the standards and guidelines of the Pine Barrens Plan.

Brookhaven National Laboratory Contaminant Plumes:

The EIS addressed concerns regarding the potential for impact to the site and the SCWA's William Floyd Parkway wellfield from any of the contaminant plumes originating on the BNL site. That analysis indicated that the southerly direction of groundwater flow from the subject site is not in the direction of the contaminant plumes (the plumes are presently located to the east of the site, south of the LIE and BNL, between North Street and Weeks Avenue). The direction of flow of these plumes is toward the south, generally parallel to and approximately 1.5 miles from the recharge generated on the subject site. Therefore, it is not anticipated that recharge generated from the project site will impact the contaminant plumes originating on the BNL property nor will the plumes have any impact to the project site.

Wildlife and Vegetation Resources:

The EIS contains a detailed impact analysis on these resources and further indicates that no threatened or endangered plant or animal species are present, so that potential impacts to such species would not occur. The EIS also predicts that out of 153.86 acres, a total of 89.46 acres of vegetation will be disturbed and that 60.69 acres (or 40.42% of the site) will remain natural and undisturbed and an additional 3.27 acres of previously cleared area will be re-vegetated with native species for a total area of natural vegetation following development of 63.96 acres, or

42.60% of the site. In addition, to the maximum extent possible, the proposed development has been located and purposely situated on the area previously cleared in 1997 pursuant to prior approvals, thereby greatly minimizing removal of natural vegetation. The project therefore only requires a total of 16.86 acres (9.1%) of new clearing and is fully compliant with Pine Barrens Plan standards. The Pine Barrens Plan standards were created after the adoption of a comprehensive plan and associated GEIS and are specially intended to minimize adverse impacts to the Pine Barrens ecology.

Transportation/Traffic Safety:

As indicated above, we note that the major roadways and intersections within the project study area are under NYSDOT or SCDPW jurisdiction. These agencies maintain jurisdiction over final approval of proposed roadway improvements. As noted previously, SEQR does not change the existing jurisdiction of agencies nor the jurisdiction between or among state and local agencies. Therefore, as SEQR involved agencies, NYSDOT and SCDPW should issue their own findings statements and associated regulatory/permitting decisions based upon their areas of jurisdiction and the facts contained in the EIS. Though this Board has limited jurisdiction over improvements on State or County roadways, the project is proposed within the Town of Brookhaven. Therefore this Board finds that pursuant to this Board's site plan review authority it is reasonable and appropriate, to reach a reasonable level of assurance that the proposed project traffic impacts will be adequately mitigated.

The EIS contains a detailed Traffic Impact Study that analyzes the traffic aspects of the proposed retail facility, with particular emphasis on identifying appropriate roadway improvements. In addition, an Interchange Justification Report of Access Modification as required by the Federal Highway Administration (FHWA) for the LIE (I495) has been approved by the FHWA, NYSDOT and SCDPW. These agencies, as well as the Town of Brookhaven Division of Traffic Safety and its consultants, have reviewed this traffic impact study. Based upon this review and analysis and the mitigation measures listed in the FEIS, this Board finds that the following transportation/traffic safety mitigation measures will be implemented and completed by the applicant. These improvements have also been designed to address the potential traffic needs for future development of the adjacent Racetrack and nearby Arrow parcels based on and assuming their present zonings.

Based on the recommendations of the Traffic Impact Study, the following roadway improvements are proposed for the Brookhaven Walk project:

- Yaphank Woods Boulevard will be improved along the northerly portion of the site between CR 46 and its westerly terminus incorporating physical features that promote traffic calming and will incorporate elements for a "boulevard design". The developer will incorporate travelway reductions and modify landscaped raised median treatments to improve access safety.
- The existing paved roadway along the western property boundary connecting the LIE North Service Road to Yaphank Woods Boulevard will be constructed/reconstructed to Town standards. This new 2-lane north-south roadway will consist of one 12-foot wide travel lane in each direction with 5' shoulders throughout and auxiliary turning lanes at the proposed site access, all within a proposed 50-foot right-of-way. Additional right-of-way at intersections will be required where auxiliary lanes are provided. Additional overall roadway right-of-way, if deemed necessary, will be provided at time of development of other vacant lands along the west side of the new north-south roadway. At its intersection with the LIE North Service Road, dedicated auxiliary lanes for deceleration/acceleration from/to the North Service Road

will be provided.

- The North Service Road will be extended and a new entrance ramp to the LIE will be constructed approximately 1,850 feet west of the existing service road. The existing entrance ramp will remain in place.
- Widening and re-striping will be provided along the North Service Road. The improvements will incorporate an additional lane between the ramp from the southbound William Floyd Parkway past the access to Entrance No. 4/ new roadway.
- Traffic signs will be provided on the exit ramp from southbound William Floyd Parkway onto the North Service Road directing vehicles to utilize the second Westbound LIE Entrance Ramp to reduce the volume of vehicles weaving on the North Service Road from the southbound William Floyd Parkway Ramp to the first Westbound LIE Entrance Ramp.
- The exit ramp from the eastbound LIE to the South Service Road will be reconstructed to provide two exiting lanes. An eastbound auxiliary lane on the LIE, for approximately 1,500 feet in advance of the exit ramp, will be provided.
- Access to the site from William Floyd Parkway will be at two locations. The first one is located midway between the westbound LIE on/off-ramps and Yaphank Woods Boulevard. This signalized site access will provide for two (2) separated northbound left turn only lanes, while providing continuous right-of-way for three (3) northbound through lanes, two southbound through lanes (controlled by signal) and an exiting eastbound channelized right-turn only lane. A physical barrier will be provided/constructed along the right side of the northbound William Floyd Parkway left-turn only lanes preventing vehicles exiting from the westbound LIE to weave across William Floyd Parkway to this site access drive. The second access to the site is located farther to the north and also south of Yaphank Woods Blvd. and will be limited to right turn movements in and out of the site. Restricted movements will be channelized and all left turns will be prohibited. The construction of these two site access driveways along William Floyd Parkway will provide additional access to Brookhaven Walk. The driveways will disperse the traffic destined to the site to a total of four access points. The provision of these driveways will minimize congestion and delays at the remaining access locations by dispersing the site generated traffic. Specifically, ~~the~~ traffic volumes and delays at the intersection of William Floyd Parkway and Yaphank Woods Boulevard will be minimized and the intersection will operate at acceptable levels of service while ensuring acceptable levels of safety at this location.
- The exiting loop ramp from the LIE South Service Road to northbound William Floyd Parkway will be widened to provide a two-lane exit ~~ing~~ ramp. The right exiting lane will be dedicated solely to the entrance ramp onto the westbound North Service Road. Traffic signs will be provided on the exiting loop ramp directing motorists destined for Brookhaven Walk to the entrance ramp onto the North Service Road. This will reduce the number of vehicles weaving on northbound William Floyd Parkway between the loop ramps.
- An additional lane northbound on William Floyd Parkway will be constructed extending from the LIE South Service Road northerly through the intersection of Yaphank Woods Blvd.
- The intersection of William Floyd Parkway and Yaphank Woods Boulevard will be reconstructed/widened to provide the southbound William Floyd Parkway approach with two through lanes and a separate right-turn only lane. The northbound approach of the William Floyd Parkway will be widened to provide two left-turn only lanes and three (3) through lanes. The eastbound approach of Yaphank Woods Boulevard will be reconstructed/widened to provide two left-turn only lanes and a separate right-turn only lane. The existing traffic signal will require rebuilding, to include (but limited to); equipment, added signal heads and timing design modifications as a result of intersection reconstruction.
- Traffic signal modifications, including but not limited to full actuation and timing design, at the intersection of William Floyd Parkway and Moriches Road-Middle Island Road, will be

provided in accordance with all required Suffolk County highway work permits.

- Traffic signal modifications, including but not limited to timing design, at the intersection of William Floyd Parkway and the existing Police Station Driveway, will be provided in accordance with all required Suffolk County highway work permits.
- Traffic signal modifications, including but not limited to full actuation and timing design, at the two-signal system at the intersection of Longwood Road/Brookhaven National Laboratory at the William Floyd Parkway will be provided in accordance with all required Suffolk County highway work permits.

As indicated above, the Interchange Justification Report of Access Modification for access to the Long Island Expressway has been reviewed and approved by the FHWA, NYSDOT and SCDPW, as applicable. These proposed improvements are summarized as follows:

- The proposed two-lane exit ramp for eastbound LIE at the Exit 68 Interchange to the South Service Road will significantly increase the capacity of the exit, thereby accommodating future traffic volumes. The provision of a two-lane exit ramp will not adversely impact the LIE mainline.
- The proposed two lane loop ramp from eastbound LIE South Service Road to northbound William Floyd Parkway will provide added capacity and separation for motorists destined for westbound LIE North Service Road.
- Construction of an additional northbound lane on William Floyd Parkway; especially within the interchange area will provide added capacity and safety to address the weaving maneuvers and improve level of service.
- Relocation of the northbound William Floyd Parkway to westbound LIE loop ramp further to the north will accommodate the added northbound lane and need for increased weaving section improving operations and safety.
- The proposed added two lane weaving section on the North Service Road will enhance access to the new north-south roadway for access to the project site. The construction of approximately 1,850 feet of new LIE North Service Road to the west and a second entrance ramp to westbound LIE Main Line, improved capacity, weaving length and safety should be realized. These improvements will not adversely impact the LIE mainline.
- The proposed lane addition along northbound William Floyd Parkway through the intersection of Yaphank Woods Boulevard will eliminate the two previously proposed lane drops on each side of the northbound William Floyd Parkway between the Brookhaven Walk Driveway and Yaphank Woods Boulevard, thereby enhancing the safety of the northbound William Floyd Parkway roadway section.

The proposed modifications to the roadways at or near the Eastbound Interchange 68 LIE Exit Ramp and the Westbound Interchange 68 LIE Entrance Ramp should not have an adverse impact on the operational characteristics of the traffic flow on the LIE or the modified ramps, but should provide a benefit. The future traffic volumes will be accommodated on the adjacent roadway network after construction of the improvements. Safe and efficient traffic operating conditions will be maintained along the adjacent roadways.

All traffic mitigation identified and required in accordance with all applicable Highway Work Permits and all related approvals from agencies having jurisdiction, shall be completed prior to the completion of the project.

Inherently, there exists the potential for unforeseen traffic related impacts associated with a new development project. These unanticipated impacts usually relate to traffic safety as it relates to

driver behavior, changes in traffic patterns and the influx of a wide range of new and diverse trips generated by the type of development in this area. In addition, the magnitude of the development may exacerbate this condition and justifies the need for follow-up traffic studies. Therefore, the following mitigating measures are required and are in addition to those already identified above and previously discussed herein:

The applicant shall conduct a follow-up traffic study consisting of a traffic signal warrant analysis at three locations. These locations include: 1.) Brookhaven Walk driveway at Yaphank Woods Blvd., 2.) Yaphank Woods Blvd @ New North-South Roadway, 3.) New North-South Roadway @ Brookhaven Walk driveway (rear driveway). This traffic study/analysis will be conducted after at least one holiday season with stores open and occupied with approximately 85% of the facility open and in operation. The study will recommend appropriate corrective measures and the applicant shall bear all costs in implementing and completing required improvements including, but not limited to traffic signals or other safety measures.

The applicant shall conduct a follow-up traffic study consisting of traffic volume flows and traffic operations at two residential driveway locations. These locations include: 1.) Yaphank Woods Blvd. @ Colonial Woods access drive and 2.) Yaphank Woods Blvd. @ Whispering Pines access drive. This traffic study/analysis will include AM, PM and Mid-day Peak Hour counts, evaluation of levels of service, traffic signal warrant analysis, and other related traffic control and/or lane control corrective measures. This traffic study/analysis will be conducted after at least one holiday season with stores open and occupied with approximately 85% of the facility open and in operation. The study will recommend appropriate corrective measures and the applicant shall bear all costs in implementing and completing required improvements including, but not limited to traffic signals or other safety measures.

Upon substantial completion and occupancy of the project (95 to 100%), the applicant shall be responsible to address any local area traffic safety related improvements necessitated by the traffic impacts associated with this project. The Town's Director of Traffic Safety or designee may direct the applicant's engineers to address local area intersection or roadway safety concerns commensurate with a full evaluation of the latest available accident history data that bear a rational nexus to the traffic generated by Brookhaven Walk. The applicant shall be responsible for all costs for study, evaluation, design and implementation of corrective measures deemed appropriate or as applied to a "fair share" basis for that portion of the traffic improvements deemed necessary.

Air Resources:

The Air Quality Analysis contained in the EIS indicated that the Brookhaven Walk project would not result in significant air quality impacts and that the level of potential air quality impact is directly related to vehicle emissions. Carbon monoxide dispersion modeling in the EIS demonstrates that the proposed traffic mitigation is effective in reducing congestion and thereby provides mitigation of air resource impacts. The number of vehicle trips generated by the Brookhaven Walk proposal will be significantly less than that generated by the prior Brookhaven Town Center proposal.

Zoning and Land Use Plans:

This Board understands that the Brookhaven Walk proposal will change the type of use and the intensity of use of the site, from a vacant, undeveloped property to a regional shopping destination. However, it is anticipated that the Brookhaven Walk project will not result in any adverse land use, zoning or land use plan impacts for the following reasons:

- The parcel is recommended for regional shopping destination/commercial center use in the Town's master and land use plans.
- The parcel is zoned for regional shopping destination/commercial center use, has been zoned for that use for a considerable period of time and has been the subject of various municipal applications for a regional shopping destination for several decades.
- The project conforms to the requirements of Town Zoning Code for the J-2 district, including building height and parking count, and requires no variances.
- The project is in conformance with all applicable standards of the Land Development Standards of Chapter 85-50, of Town Code.
- The project is in conformance with all applicable standards of the Central Pine Barrens District contained in Article XXXVII of Town Code.
- The proposed project conforms to the applicable recommendations of the Longwood Mini-Master Plan, as it will significantly increase tax generation of the site and within the Longwood Central School District, without a corresponding increase in students generated.
- Finally, the proposed project will provide the commercial use specified in the Mini-Master Plan for the Yaphank Center of Activity identified as the project site.

Community Character:

Impacts on the character of the community were discussed and analyzed in the Draft Supplemental EIS for the prior project and are anticipated to be non-significant. the Retail Market and Economic Impact Analysis prepared for the EIS (updated April 2006) indicate that no impacts to the character of the downtowns and/or community centers in the region are anticipated due to the Brookhaven Walk proposal. In addition, the EIS specifically analyzed potential impacts to the adjacent Whispering Pines/Colonial Woods condominiums. No significant impact to the character of the Whispering Pines/Colonial Woods development, located north of the project site across Yaphank Woods Boulevard, is anticipated, because of the mitigation measures incorporated into the project design. These measures include, but are not limited to: a significant reduction in building size and mass from prior proposals, use of shrouds or "cut offs" on the pole-mounted, dark sky-compliant lighting fixtures, deep building setbacks, retention of thick buffers of natural vegetation along the northern, eastern and southern property lines (which also serve to minimize construction and site generated noise audible at this receptor), use of extensive landscaping, and construction of specific roadway improvements directing traffic to major arteries and away from local roads in addition to providing direct access to the LIE North Service Road for this community.

While some change in community character is expected, the change is consistent with the intended use of the site, and impacts are substantially mitigated or not significant.

Fiscal, Socio-Economic and Community Services:

Brookhaven Walk will result in a significant increase in taxes generated (sales taxes and property taxes) and jobs will be created on the site, with associated positive impacts on all such jurisdictions and the regional economy.

The potential for economic impact to the thirteen other major shopping centers or districts in the region was addressed in the EIS. That analysis ("Retail Market and Economic Impact Analysis", Thomas Conoscenti Associates, March 2003 and updated in April 2006 as Appendix A-8 of the FEIS) concluded as follows:

In summary, given the distance to nearby regional centers, the different merchandise mix and target markets, Brookhaven Walk will have a minimal competitive impact on nearby regional shopping destinations. No significant direct or indirect economic impacts on the existing businesses in the trading area are anticipated.

The above report also states: *"There is more than sufficient demand in the trading area to support the proposed Brookhaven Walk."* It is noteworthy that the 850,000 SF of Brookhaven Walk is significantly less than the square footage that could be built on the subject site "as-of-right" and significantly less that the 1.9 million square feet proposed in the prior Brookhaven Town Center proposal.

The potential impacts on community services are anticipated to be primarily beneficial due to the substantial tax revenue and private maintenance of the facility, particularly with respect to the school district. Community service providers currently exist and will provide services to development within their service areas. The project is anticipated to generate a total of $3.63 million in tax revenues annually, based on the 2005-06 tax year rates. This tax revenue is expected to offset all or provide a fair share of the increased cost to the various taxing jurisdictions to provide their services to the project, so that there will be minimal potential impact to the use, availability of and cost of these services to other sites and areas within the various service areas.

Tax revenues generated by the project are a substantial net benefit to the school district with no educational costs. Based on the most recent calculations, the proposed project will generate approximately $2.52 million in annual school tax revenue which is a substantial, reliable increase in the amount of taxes allocated to the Longwood Central School District, without generating any residents or school-age children (and the costs associated with their educational services). This represents a significant positive benefit of the proposed project, in that it will provide a large increase in school district assets with no offsetting increase in district expenses.

Security for the mall will be managed by a privately-owned and funded Department of Public Safety established for the mall, performed on a 24-hour basis and equipped with the latest security technology available, thereby reducing and/or minimizing the potential workload of the Suffolk County Police Department. The applicant and Town have worked with Ridge and Yaphank Fire Districts to ensure an equitable sharing of these revenues and jurisdictions with respect to fire and ambulance response to the site. The site provides numerous access points as well as the reconstruction of an existing road along the western perimeter, increasing the Ridge and Yaphank Fire Districts' abilities to access the site and surrounding areas.

The Long Island Power Authority (LIPA), KeySpan and SCWA have indicated their ability to provide electric, natural gas and water services to the site.

The Dorade Sewage Treatment Plant is no longer proposed to accept sewage from Brookhaven Walk and therefore will not need to be upgraded (to meet the Brookhaven Walk additional flow). The applicant will maintain ownership of the Dorade Sewage Treatment Plant, and will still be responsible for the continued maintenance and operation of this plant. Since the plant is aging, the applicant will also be responsible for any upgrades to the facility in order for this plant to continue to meet discharge standards or as mandated by NYSDEC.

As a result, community service impacts are either not significant or have been mitigated to the maximum extent practicable.

Cumulative and Secondary Impacts & Growth-Inducing Aspects:
The Brookhaven Town Center DEIS contained a description and discussion of the potential cumulative impacts associated with development of the Applicant's other land holdings in the vicinity, as well as an analysis of the secondary (i.e., growth-inducing) impacts of development of the adjacent Racetrack and Arrow parcels. The full cumulative impact analysis contained in that DEIS is supplemented by the additional cumulative impact analysis included in Appendix G of the Brookhaven Walk FEIS. This supplemental analysis provides further information including: an updated outline of the prior cumulative analysis and disclosure of the extent of applicant related land holdings; a discussion of whether a GEIS is needed in connection with the proposed action; an analysis of potential cumulative impacts; an update on the status of land holdings; and an assessment of the potential impacts of utilization of the applicant's holdings.

The supplemental analysis recognizes the prior comments on the Brookhaven Town Center DEIS that suggest there may be a need for a Generic EIS in connection with the site-specific Brookhaven Town Center project. This issue stems from a prior land use proposal envisioned by Breslin Realty and referred to as North Shore Properties. North Shore Properties involved the accumulation of approximately 2,100 acres of land that were proposed for development in the 1980's. Development plans and application submissions were prepared and the Town Board of the Town of Brookhaven as lead agency determined that a Generic EIS was necessary to determine the potential impact of the pending projects. The full background with regard to North Shore Properties is provided in the Brookhaven Town Center DEIS. Since that time, Breslin Realty has sold all properties to AVR Realty and/or Rose-Breslin. Further sale of land has occurred such that original parcels designated as 4, 5, 6, 7, 8 and 9 have been acquired/sold and are in public ownership. More recently, Parcels 10 and 16 and the Greenbelt were also purchased for open space. This placed 729± acres of the original holdings in public ownership, leaving 1,377± acres of land.

In addition, as of January 26, 2007, the applicant has closed on Parcel 3 and the majority of Parcel 2, selling these lands for public open space. The applicant has agreed to sell Parcel 1 and the remainder of Parcel 2 to New York State and is awaiting contracts. Upon closing of this sale, 53.7% of the original North Shore Properties holdings will have been conveyed as public open space lands. While the applicant still owns some vacant lands that are available for development, these lands are no different than the other vacant lands in area. Furthermore, to conduct comprehensive analysis of only a selection of vacant parcels controlled by the applicant while ignoring the other vacant parcels in the community area undermines the principles of accepted land use planning standards. At its most basic level, land use planning will at a minimum involve zoning and transport infrastructure planning and will be an important part of social policy, ensuring that land is used efficiently for the benefit of the wider economy and population as well as to protect the environment. These land use planning goals can not be accomplished by analyzing only a partial selection of vacant parcels in the community.

It is also recognized that the Town Board of the Town of Brookhaven has the jurisdiction to weigh development pressures in the area and to authorize comprehensive community planning if needed. The Town Board has been extremely proactive and sensitive to land use/planning concerns by enacting sweeping changes and enhancements to the Town zoning code and re-zoned many commercial parcels based upon the conclusions of a comprehensive Generic EIS. Furthermore, the Town Board has enacted seven separate development moratoriums (Town code chapter 17A-G) and has recently authorized the undertaking of more than eight compressive land use planning community visioning/hamlet plans. However, the Brookhaven

Walk site has not been included in the boundaries of any of these long-range planning initiatives. Given these facts and in consideration of the significant open space acquisitions as well as the fact that no other applications are pending on any of the remaining North Shore Properties parcels, the FEIS for Brookhaven Walk concludes that North Shore Properties proposal is no longer being pursued by the applicant, that the applicant has in fact dismantled these holdings by actual sale of more than half of these holdings to public entities and that the applicant has no overall development program.

Not withstanding the above, the Brookhaven Town Center DEIS provided a detailed cumulative impact analysis of the full utilization of two adjacent parcels, specifically the Racetrack parcel to the west and the Arrow parcel to the south. That analysis included: a brief description of the existing conditions of the Racetrack and Arrow parcels; the assumed uses and yields of each; a table quantifying the anticipated site and development characteristics; and generalized discussions of the expected geological, water, ecological, transportation, air, zoning, land use, plan, community service, community character and fiscal/socio-economic impacts.

It was clearly indicated and disclosed that there were no applications pending for these two parcels or any other applicant holdings; nevertheless, these parcels were recognized as being in proximity and as having the potential to share cumulative impacts. The impact analysis included a complete traffic impact study that determined the adequacy and need for upgrades to the road system if the combined projects were developed under current zoning. In addition, the cumulative impact analysis in the Draft Supplemental EIS identified the controlling layers of government approvals, land use plans, overlay districts, SEQRA analyses and zoning regulations that would ultimately shape the development of those parcels if and when they are proposed for development in the future. Finally, the Draft Supplemental EIS performed an assessment of the potential impact of full development of the combined parcels on the array of environmental (natural and human resources) conditions for the categories analyzed in the site-specific Brookhaven Town Center analyses. This Board therefore finds that cumulative impacts have been addressed and that adequate mitigation has been incorporated into the site design.

Construction Phase:

Construction period impacts from development of the Brookhaven Walk proposal were described and discussed in the EIS and indicates that the following mitigation will be implemented:

- At the initiation of construction activities, limits of clearing will be flagged to indicate to equipment operators the boundaries beyond which no clearing is permitted. The clearing limit will also be provided with staked hay bales and silt fences, which will act as soil traps, and drainage diversions to limit the potential for eroded soils to impact areas, which are to remain undisturbed. The construction manager will be responsible for the proper siting, installation and maintenance of these hay bales.
- Construction vehicles will not utilize the northern portion of Yaphank Woods Boulevard during the construction-period; all such vehicles will access the site via the LIE North Service Road. All equipment loading/unloading, materials storage, and construction staging areas and construction worker parking will be located within the subject site; thereby minimizing construction impacts to the adjacent Whispering Pines/Colonial Woods development.
- It is anticipated that the distance between construction activities, which generate significant amounts of noise, and potential receptors (in the Whispering Pines/Colonial Woods site) will be sufficient to adequately reduce construction-related noise. In addition, retention of thick, naturally vegetated buffers along all perimeters of the site will provide

additional noise buffering.

- Dust suppression methods will be utilized, which may include use of water sprays and a truck wash-down station. In addition, the retention of thick, naturally vegetated buffers along all site boundaries will add to the level of dust suppression, by acting as windbreaks.
- Construction activities will be limited to between the hours of 8 AM and 5 PM.

Comments Received After The FEIS Was Adopted:

Fire District/Emergency Response:
After the FEIS was adopted by the lead agency, this Board received several comments regarding fire districts and their ability to respond during an emergency. These comments asked what fire district the project is within, requested clarity to existing fire district boundaries, questioned the ability of Yaphank Fire District to respond in a timely fashion and finally, suggested mitigation of a dedicated fire access road if the response of Yaphank Fire District did not meet standards.

NYS Town Law Article 11 governs the establishment, extension and alteration of fire district boundaries and requires that the town board, acting by a majority vote may establish or extend fire districts. Article 11 of NYS Town Law further specifies that irrespective of the manner of their original establishment, whenever two or more fire districts adjoin and the boards of fire commissioners of each fire district affected have agreed by a written memorandum of proposed change to alter the boundaries of such fire districts and after a public hearing thereon, held jointly by such fire districts, the boundaries of such fire districts may be altered in accordance with such memorandum of proposed change, but not until such proposed change has been approved by the town board of the town in which such fire districts are located.

The Town Clerk of the Town of Brookhaven has on file and available for public inspection records regarding the establishment and any alteration of fire districts boundaries. Review of these records finds that as accurately reported in the FEIS, the Brookhaven Walk project site is within the Ridge Fire District. This Board finds that that the provisions of NYS law in combination of the records at the Town Clerks office resolves any ambiguity of fire district boundaries.

With regards to emergency response times and the recommendation for the construction of a new dedicated fire access roadway, there is significant practical difficulty in implementing any new dedicated fire access roadway as the potential lands necessary for the roadway are; in private ownership not under the control of the applicant, are in public ownership under a nature preserve category and part of the Core Preservation Area of the Pine Barrens or are part of the I495 Interstate right of way. However, response times for both the Ridge and Yaphank Fire Districts were documented in the FEIS and shown to be significantly below the 9 minute response time standard. These existing response times documented in the FIES have not been disputed by the commentators, but instead were predicted to become substantially longer as a result of project generated traffic.

However, the EIS contains a detailed Traffic Impact Study that analyzes the traffic aspects of the proposed retail facility, with particular emphasis on identifying appropriate roadway improvements. In addition, an Interchange Justification Report of Access Modification as required by the Federal Highway Administration (FHWA) for the LIE (I495) has been approved by the FHWA, NYSDOT and SCDPW. These agencies, as well as the Town of Brookhaven Division of Traffic Safety and its consultants, have reviewed the traffic impact study. The roadway improvement plans that have been proposed to mitigate the projects impact, have been

specifically designed to either maintain or improve level of service on all studied roadways including those roadways used by Yaphank Fire District for emergency response. In addition, these roadway improvements have also been designed to address the potential traffic needs for future development of the adjacent Racetrack and nearby Arrow parcels based on and assuming their present zonings. Consequently, since level of service is predicted to remain the same or improve, emergency response times are correspondingly anticipated to either remain the same or actually improve after the roadway improvements plans are implemented. These conclusions are supported in the NYSDOT Findings which state, "NYSDOT conducted lengthy reviews and requested numerous analyses from the applicant to ensure that the traffic concerns were adequately addressed ..." and "NYSDOT identified public benefits which would accrue from the implementation of the traffic work outlined in the Interchange Justification Report of Access Modification report. The benefits to the public include the preservation on the level of service at the ramps of the Long Island Expressway exit 68." Therefore, this Board finds that no additional roadway improvements or dedicated fire access roadway are needed to mitigate project related emergency response times.

Open Space Council:
After the FEIS was adopted, this Board also received comments from the Open Space Council. These comments consisted of the following concerns:

- That the Town Board should assume lead agency so as to have a wider range of potential alternatives to consider and to address cumulative impacts.
- That the method of sanitary waste disposal has been changed from the use of a STP to the use of an onsite conventional sewage system and that this alternative was never explored and there was no opportunity for adequate public review.
- That the Suffolk County Sewer Agency and SCDHS may have overstepped their authority, a concern that use of an conventional sewage system will set averse precedent and that no new STP or refurbished Dorade will be constructed by AVR/Rose-Breslin.
- That sanitary waste disposal might impact the Carmans River and cause Nitrate toxicity to aquatic animals.
- That the Dorade STP is barely able to handle it's current volume and concern of a "catastrophic" Dorade STP failure. Segmentation issues and/or cumulative impacts regarding the future of the Dorade or an alternative STP were also expressed.
- Concerns that the proposed roadway improvements will not be conducive to safe, free flowing traffic on the north bound William Floyd Parkway.
- Requested the disclosure of the ownership of the portion of the north service road west of the existing LIE on-ramp and a recommendation for a covenant that prohibits forever, the extension of that road into Main St.
- Concerns that the market study does not account for the failure to thrive of the Bellport Outlets due to the presence of Tanger Mall in Riverhead.

With regards to the request that the Town Board should be lead agency, the Town Planning Board has jurisdiction over the Brookhaven Walk application, whereas the Town Board does not. The application before the Town is and has long been for Site Plan approval and the proposed project does not require a change of zone, special permits or any other approvals from the Town Board that would allow the Town Board

to be considered even an SEQR involved agency. Please also see the cumulative impact section of this findings statement for further information.

With regards to the claim that the Suffolk County Sewer Agency and SCDHS may have or may not have overstepped their authority is beyond this Board jurisdiction and beyond the confines and purpose of this findings statement. SEQR regulations clearly state that SEQR does not change the existing jurisdiction of agencies nor the jurisdiction between or among state, county and local agencies. Consequently, Suffolk County Sewer Agency and SCDHS have continuing jurisdiction over sanitary issues. With regards to the various conventional sanitary system issues raised, the FEIS indicates that the applicant proposed the use of an onsite sewage system in response to comments on the DEIS made by the New York State Department of Environmental Conservation (NYSDEC) and other agencies which indicated that it would be undesirable to connect the project to the Dorade sewage treatment plant (STP), thus increasing STP discharge in the Central Pine Barrens.

All current health and environmental regulations at both the County and State level support use of an on-site, conventional sanitary system provided such a system meets density discharge limitations by ensuring that not more than 300 gallons per day (gpd) per acre are discharged in Groundwater Management Zone 3. Such systems are not under the jurisdiction of this Board but are under the jurisdiction of Suffolk County Department of Health Services (SCDHS) and are routinely approved administratively without public review since the Long Island Regional 208 Study and other studies support the existing regulations, which have established this density discharge limitation. It is also important to note that project will comply with the Central Pine Barrens Comprehensive Land Use Plan by conforming to the Standards and Guidelines for a Development of Regional Significance, which include consideration of groundwater impacts, sanitary discharge, aquifer protection and compliance with SCDHS discharge requirements, and discourage additional STP's in the Central Pine Barrens. The proposed project density has been reduced from what was originally a 1.6 million square foot (SF) mall, to an 850,000 SF center. The change in project intensity reduces the sanitary flow to just less than 30,000 gpd, or just less than 200 gpd/acre, which is substantially less than the allowable flow 300 gpd flow. Both SCDHS and the Pine Barrens Commission have provided letters to this Board indicating that the project will comply with the necessary regulations to permit this discharge.

The use of an on-site conventional sanitary system is fully described in pending plans with the Town of Brookhaven and SCDHS as well as the September 2006 FEIS, which was subject to public and agency review and comment and available for public review through the FEIS circulation process and the website www.brookhavenwalk.com. The use of an on-site sanitary system was also discussed in detail at a public hearing conducted by the Central Pine Barrens Commission on June 21, 2006, at which all interested parties had an opportunity to comment. Subsequently, the project was further evaluated at the Central Pine Barrens Commission meeting of November 15, 2006, and the Commission, on December 21, 2006, provided a letter Indicating "it appears that the project will conform" to the Central Pine Barrens Comprehensive Land Use Plan.

In summary, the cumulative impacts of on-site treatment of sanitary waste in Suffolk

County were fully studied and analyzed under the Long Island Regional 208 Study. The 208 Study was utilized as a basis for the creation and adoption of Suffolk County Article 6 regulations, which regulate and control on-site sanitary system design. The subject project is completely compliant with Article 6 requirements as documented in the SCDHS letter of March 6, 2006 that was included in the FIES. It is also compliant with the strict nitrogen discharge limitations contained in the Pine Barrens Plan Standard. Consequently, this Board finds that the proposed on-site discharge of sanitary waste results in no significant adverse impacts to groundwater or surface water, since it conforms to all applicable Standards and Guidelines of the Pine Barrens Plan and Article 6 of the Suffolk County Sanitary Code.

With regards to the issue of if a STP will ever be built, the FEIS indicates that if and when an off-site STP becomes available and feasible, Brookhaven Walk will connect to it. This requirement is specified in the SCSA Resolution 15-2006, as follows: "RESOLVED, that Brookhaven Town Center (Brookhaven Walk) be permitted to suspend the provision regarding the connection to a regional treatment plant_until a regional treatment plant is available, as determined by the Suffolk County Sewer Agency." It is anticipated that this requirement will be imposed also by the SCDHS and the applicant has committed to comply with it.

With regards to adverse precedent for use of a conventional sewage system, the cumulative impacts of conventional sewage system discharges were fully studied under the previously-referenced Long Island Regional 208 Study. This cumulative impact analysis was utilized to establish the Article 6 regulations regarding density of development, which exists to protect groundwater and surface water resource quality. In addition, the Pine Barrens requirement regarding nitrogen loading to groundwater was established based on a desire to mitigate the potential cumulative impacts associated with conventional sewage system discharges. As previously discussed the Brookhaven Walk Project is specifically designed to comply with Article 6 and Pine Barrens standards. The FEIS provides a full discussion regarding compliance with these agency requirements. Therefore there is no adverse precedent associated with the proposed conventional treatment of sewage, in fact, conventional systems are the standardized and typical system that almost all residential and commercial development utilizes in Suffolk County.

With regards to the concerns that sanitary waste disposal might impact the Carmans River and cause potential Nitrate toxicity to aquatic animals, this Board observes that the Nitrate toxicity research article referenced by the commentator addresses the case of surface water in an aquatic environment, and not to a groundwater regime feeding a river, and particularly not to a river located a substantial distance (6,000± feet) from the project site. This issue was fully addressed in the EIS and included the use of a flow diagram that indicated the route that sanitary recharge would take relative to the Carmans River with a distance of approximately 1.1 miles in the groundwater regime prior to any potential outflow to the Carmans River. Two separate computer models were utilized in the FEIS to determine the expected concentration of nitrogen in site-generated recharge water. The results of both models for the proposed project show independently that the nitrogen concentration would be less than 2.0 milligrams/liter (mg/1) limit suggested by the research article. In fact, the on-site conventional sanitary discharge evaluation included in the FEIS results in a concentration of 1.6 mg/l. Therefore, recharge at the Brookhaven Walk site is found to

be of suitable quality and already is compliant with the 2 mg/1 value cited in the research paper referenced by the Open Space Council.

With regards to the Dorade STP, the Dorade STP is not a part of the Brookhaven Walk project; a connection to this facility is not necessary or proposed. The proposed Brookhaven Walk stands on its own and is not dependent on any connection to an offsite sanitary system being implemented. The project has been designed to utilize an on-site sanitary system that fully conforms to the applicable SCDHS and Pine Barrens Plan requirements. It is noted throughout the FEIS that, if connection to an off-site STP becomes available and feasible in the future, then Brookhaven Walk will connect to such a facility.

The Dorade STP, though operated and maintained by the applicant, is a separate, existing, permitted facility subject to a State Pollutant Discharge Elimination System (SPDES) permit, with inspection, operation and maintenance requirements. The Dorade STP is not part of the Brookhaven Walk application, and is being maintained in an operable condition. Since taking over responsibility for the Dorade STP, the applicant has implemented an on-going maintenance program, and this facility is now operating in full compliance with all standards.

With regards to traffic safety issues, the commentator admits that they are not a traffic expert and offers their opinion for this Board to consider. The project has been thoroughly reviewed by the various applicable agencies with respect to vehicle access design, roadway improvements and traffic generation and impacts, and has received conceptual approvals from all such agencies. The proposed modifications to the interchange of the LIE and William Floyd Parkway will improve traffic operating conditions and were designed to provide safe travel movements. The separation of the off-ramp traffic from through traffic will improve safety conditions for both traffic flows by preventing certain weaving movements along William Floyd Parkway. There is sufficient space under the LIE bridges to accommodate the barriers and the third lane. Furthermore, these improvements will have a positive impact on all traffic and will not exclusively serve traffic destined to Brookhaven Walk. These improvements were determined based on the detailed collaborative efforts of various parties and have been reviewed and approved by these parties, which include the Federal Highway Administration, the NYS Department of Transportation and Suffolk County Department of Public Works. NYS Department of Transportation has also acknowledged the public benefit of these improvements in their SEQR Findings Statement.

With regards to ownership, NYS Department of Transportation owns the westerly portion of the lands between the westbound LIE on-ramp and Main Street, and therefore this Board nor the applicant can provide or impose any covenants on these lands.

With regards to economic failure due to the presence of Tanger Mall, this comment has been addressed in both the Draft and Final EIS's, by use of a professionally prepared fiscal impact and market study, which determined that the project would not have an adverse impact on either of this retail facility or existing downtown areas. In addition, the commentator has not established any factual data to undermine the conclusions of the report, nor has the commentator offered any alternative methodology for such an analysis.

The Town Planning Board, pursuant to 6 NYCRR Part 617.11 has prepared the Findings stated

herein and shall cause it to be filed in accordance with 6 NYCRR Part 617.12(b).

COPIES OF THIS FINDINGS STATEMENT WILL BE SENT TO:

Environmental Notices Bulletin (ENB)
NYSDEC, Division of Regulatory Services, Albany
NYSDEC, Division of Regulatory Services, Region 1
New York State Department of Transportation
Suffolk County Planning Commission
Suffolk County Department of Health Services
Suffolk County Water Authority
Suffolk County Department of Public Works
Suffolk County Sewer Agency
Central Pine Barrens Joint Planning and Policy Commission
Supervisor, Town of Brookhaven
Brookhaven Town Clerk
Town of Brookhaven, Division of Environmental Protection
Longwood Central School District
Yaphank Taxpayers & Civic Association
Open Space Council
ABCO
Colonial Woods/Whispering Pines Committee for Community Concerns
Wading River Civic Association
LI Pine Barrens Society
Applicant/Agent/Attorney

THIS STATEMENT IS NOT COMPLETE UNTIL AUTHORIZED AS FOLLOWS:

ADOPTED BY RESOLUTION: 5/21/07

SECRETARY TO THE PLANNING BOARD:

Appendix A-3
PDD Pre-Application Conference Minutes

April 7, 2010

PRE-APPLICATION CONFERENCE
THE MEADOWS PDD @ YAPHANK
APRIL 7, 2010

REPRESENTING APPLICANT: David Sloane, Esq., Certilman Balin, Chic Voorhis, Nelson Pope & Voorhis, LLC, Jeff Volmuth, Vollmuth & Brush, Dan Simone, AVR, Brian Ferruggiari, AVR,, Thomas Perna, AVR, Kevin Papasian, FST Engineering

REPRESENTING TOWN: Tullio Bertoli, Commissioner, Constance Kepert, Councilwoman, Vincent Pascale, Chair, Planning Board, Dr. Lee Koppelman, Consultant, Gregg Kelsey, P.E., Assistant Town Engineer, Paul Rogalle, Town Director of Planning, Lawrence Costantino, Diane Mazarakis, Anthony Graves, Ralph Wiebelt, Craig Lucas, Eva Greguski, Liz Krolik-Alexander

ALSO IN ATTENDANCE: Johan McConnell, South Yaphank Civic Association

Chic Voorthis: As you know, part of the PDD Application requires a submittal presentation that is public record and particularly this project. Let's start off with the aerial so we know what we have. I am sure you are familiar with the project, so I will be brief. This is the Long Island Expressway and William Floyd Parkway. The properties we are going to talk about today are two parcels we are looking to join. This parcel is 160 acres_____. This parcel here is 1,180,000 Sq. Ft. of industrial. This parcel dates back to 2007 650,000 Sq. Ft. of retail development. Mixed use community of residential uses, apartment units, 486 condominium units, 220 townhouse units. The project also includes a smaller retail component, 327,500 Sq. Ft. of retail, possibly a supermarket, a pharmacy. The way the project was designed is such that it has a main boulevard, main street type with a landscaped median going through the middle. The apartment units are right on main street. The condominium units are right along main street area. This is 550,000 Sq. Ft. of office.

These are all figures that are required as part of a Pre-Application submission for a PDD that we put in the package and distributed.

This shows the existing clearing. Currently 58% of the site is cleared. We are looking to situate the development within the cleared areas, as is required _____. This shows the areas of proposed development. We can clear up to 65% of the property. We have that difference in additional clearing from the 58%.

Applicant: This is a rendering of the Town Center. This is if you were standing in the retail area looking down at the reflecting pool into the residential community. You will notice that there will be patron parking in front of the retail establishments, you will see a round-about, traffic calming features that include the boulevard area. This is a rendering of the office park. You will see the reflecting pond on one side. The offices on the right side will be your neighborhood type of offices. Again, you have the boulevard with the landscaped median and the round-about, a traffic calming feature.

You notice on the commercial side you have _____ parking to maximize your parking areas. On the other side is the residential and you will notice the condominiums are up close to the tree lined curbed area. This is the Village Green. This is on the northwestern portion of the racetrack parcel. This is all surrounded by residences. There is a large common open space recreation area. It sort of brings back the feeling of neighborhoods of years ago. Here on Long Island we moved into a community where at the end of the block was a little pocket park, which is basically nothing more than a couple of acres of open space where kids could grab a ball and a bat and have a pick up game of softball or throw around a football or Frisbee. Passive open space establishes a sense of place in this community and a place for people to congregate and get to know each other.

Applicant: This is the last of the renderings that we have. These were all prepared by Dan Simone who is with us at the table. Over the past many months, Tullio guided the process. There have been many drafts. Most of you have been involved in that. I did want to note that all of the units, but 58 of the townhomes are one and two bedroom. So that suggests the ability to provide a diversity of housing, reduce the number of bedrooms and FAR and also reduce the number of school children.

Applicant: One of the things that is part of the PDD that is required to be submitted as part of the application is to look at the existing zoning and the density that would be allowed to be built. The concept being that if it was a change of use, we want to have some correlation to _____ of the project. This is somewhat complicated, but it is in the book and has footnotes that describe it. You look at all of the quantifiable parameters that we have come up with and the first column under L-1 zone is the existing 170-acre west parcel that could be built as 1.18 million Sq. Ft. and that basically is the number that came from the traffic study that was done as part of the cumulative assessment for the Brookhaven walk project and it is about 17% of the site. So given the fact that it is in the Pine Barrens and can only build 65% of it we think that is a good number for _____. The J-2 column is the existing approved Brookhaven Walk and that we have numbers from prior environmental impact statements for that. The third column is the total of those two which is basically the as of right base density of the property. (Inaudible) through building areas, square footage, expected number of employees, generation of waste water, we have done preliminary calculations of nitrogen in recharge _____ under the Pine Barrens Act. FST provided traffic generations. The fourth column is the existing PDD and we looked at the _____ and all the same parameters. The number of employees is not significantly different. There are residents on the property. The wastewater does increase (inaudible) it will be connecting to the existing Dorade Sewage Treatment Plant which is currently permitted for 140,000 gallons per day flow. Trip generation decreases (inaudible) as are the tax revenues to the school district. The _____ report takes the $23,000 per year per child (inaudible) and when you look at taxes for the school district, that generates a tax surplus of $4.5 million above and beyond the cost of educational program. The second column from the right looks at, is it more is it less or is it roughly equal. We feel that on balance the proposed PDD is equal to or perhaps even less in terms of impact with

respect to these quantifiable impacts. We also included a table of basically local benefits that occur as a result of the project.

Constance Kepert: R&D tax generated for the school district, is this at the end of the project?

Applicant: This is at full build out.

Constance Kepert: If you do it in phasing year 1, year 2, etc.

Applicant: We would have to break it down.

Constance Kepert: How will you phase it in?

Tullio Bertoli: Connie, this is the first step in the PDD process after this an application to the Town Board for a change of zone will be needed

Constance Kepert: Obviously, if you are generating children, we do not have the commercial office space it will have a different impact.

Applicant: We generated a table just to look at the benefits (inaudible) that is required in a PDD pre-application stage. There are public buildings proposed as part of the project, community center as well as pavilions, rest rooms, multi use path throughout the project accessible to the public, dedication of parkland for athletic fields, civic building, basketball court and parking for the Town, as well as the Town Square, which is basically public plaza, great lawn, reflecting pool and civic square. In terms of regional benefits, this will be privately maintained. It will not require maintenance by the Highway Department. Also, there is a cost associated with improvement to the Dorade Sewage Treatment Plant that involves the existing flow in Sewer District 8 (inaudible) the current flow is 130,000 (?) gallons _____ AVR Rose Breslin have no benefit from this. This is the cost to upgrade. It is a public benefit. There is a Pine Barrens credit component (inaudible).

Tullio Bertoli introduced Dr. Koppelman

Dr. Koppelman: The Carmans River Plan has been underway for some time. We have had a lot of input from a number of leading environmentalists in the Town of Brookhaven. The basic objective is the preservation and enhancement and protection of the Carmans River and the watershed that contributes to the Carmans River. One of the elements in the Planning process we are concerned with is the detailed habitat analysis in terms of the flora and fauna. Not only the endangered species, but all the species in the area including invasive species that we perhaps don't want here. The second element of the plan that is important is the issue of the water quality within the river and the contribution of potential pollutants to the river. That would involve perhaps a year's effort so we can get some samples and some monitoring stations from one end

of the river to the other. That will give us an idea of existing conditions of perhaps 18 to 24 different contaminants that either are in or could be in the river and then the contribution of both stormwater from the watershed area or underflow in terms of potential plumes that may or may not currently exist. Those are the basic elements that we are concerned with. In terms of this presentation, I had the opportunity to read the pre-application which seemed to be very interesting and very well done. Pearl Kamer's study reinforces a number of studies that we have conducted at the County level examining rental projects, condominium or cooperative and in every instance the whole key to tax positive, to tax neutral or tax negative is the mix between studios, one bedroom, two bedrooms. The projects that had three bedrooms plus a den rarely were tax positive. The whole key depends on the mix and reading the mix here and examining Pearl's work, it struck me that her numbers are extremely reasonable. Meaning she took a fairly conservative approach. That is the type of approach she takes in all of her economic work. I have just two questions. The open space that is shown for example, is that permanently protected through the site design process, is it dedicated to the Town, is it homeowners? What is your concept for how you will handle the non-built upon space?

Applicant: We did not really go into

Dr. Koppelman: If it is going to be a Homeowner's Association, I would strongly suggest that the Town insist on a reverter clause if the homeowners don't pay the taxes on the property, then the property should automatically be transferred to Town ownership so that there is no slippage in future years as to the status of the open space.

Applicant: Chic, do you remember how we handled Brookhaven Walk? It is the same thing. The natural areas remained naturally preserved in the application for Brookhaven Walk. It will be a conservation easement.

Dr. Koppelman: From what you have said, it is not protected in perpetuity. Whatever is a public benefit. It certainly includes open space. That has to be locked in to protect the public. The builder could die; he could change his mind. All sorts of things take place. That has to be avoided.

Tullio Bertoli: He also has to go before the Pine Barrens Commission.

Dr. Koppelman: I don't want to sound like a cynic, because I am a realistic idealist, but I place no faith in the human animal. Pine Barrens Commission members change for political reasons and the policies can change for a variety of reasons. When it comes to open space, which is portrayed as public benefit, I am uncomfortable unless it is fully legally locked in. Whereas the homeowners want to have it and they maintain it, that's fine. At any point, that doesn't happen, there has to be protection for the public interest.

The other question relates to the Carmans River. I looked carefully at the nitrogen loadings _____. Right now, the Carmans River is perhaps somewhere around 2 miligrams per liter. Some of my environmental friends would like to have 0

nitrate contamination which is not really achievable because you have enough nitrogen from rainfall, but if I read your numbers correctly, with the loading you are talking about in terms of upgrading the STP, you will be adding another 2 or 2.5 miligrams per liter if everything works well. Is it not possible in the upgrading of the plant that you could further reduce the nitrogen loadings.

Chic Voorhis: That is the intent. Pine Barrens requires us to have no more than 2.5 miligrams per liter of nitrogen recharging on the site. The site is in the area that contributes to the river.

We have to look at best management practices, stormwater handling, fertilization management. Pine Barrens doesn't allow more than 15% fertilizer dependent vegetation. We are discharging to the Dorade STP, which is right on the edge of the 50 unit contributing area. We are not only looking at concentration we are also looking at the load. The flow in terms of concentration gives it in the number of pounds in weight when comparing that to the as-of- right. If you build to Article 6 on the industrial and commercial property you do not necessarily need a sewage treatment plant. You have reduction in nitrogen based on sewage treatment and all of that analysis will be in the Environmental Impact Statement.

Dr. Koppelman: Will that be 0 surface water runoff for the Carmans River? Porous pavement for each charge on site.

Chic Voorhis: We will examine the clearing benefits. Mr. Breslin will be looking at practical operations, but also innovative technologies.

Brian Ferruggiari: Just so you know, we have had meetings with regard to stormwater recharge with analysis from Brookhaven National Lab. One of the things she is studying is plant life that uses nitrogen. She has put me in touch with someone from North Dakota who also studying _____. We will be getting all the research together and possibly incorporating that _____.

Tullio Bertoli: Dan, maybe you could address one of the issues that cropped up during the design process, which was to create a form based code that renders itself to the development of the process. We are going to have an approval on the and that the uses can come after the fact. Also we tried to codify so that the residential components had the alleys in the back.

Dan Simone: One of the elements of the PDD application is the implementation of a master plan approved through the rezoning. The master plan being the overall framework for development of the property and what Tullio and myself have discussed

Is how do we take it from a master plan, to site plan to putting it in the ground and the best way we can achieve these is to implement a set of regulating guidelines that go with the project, to codify certain elements of the project in areas which will allow permitted uses, which will allow certain standards with regard to building set backs,

build-to lines important features that have to be central to the plan itself. These are done in an overlay district and through the implementation of the approved master plan we have an approved regulating design manual that goes with it that will stipulate all these elements that will go into the project.

So when you see areas such as our main street district, we will have an overlay which will specify heights of buildings, permitted uses with the main street district, parking requirements for the district, sidewalk standards, streetlighting standards, elements that make up what we wish to see at the end of the day. Those were translated into residential standards for us streetscapes, two story, three story or four story residential structures, on-street parking, off-street parking, street trees, landscaping, sidewalks. You will have different overlay zones throughout the development that will stipulate certain requirements. The regulating manual is probably 15 to 20, maybe 30 sheet set that will stipulate all the requirements that will go into the PDD application to impose certain zoning restrictions or benefits to the project under the master plan. This way when you get to site plan approval process, there is a clear, concise direction. Phasing it in to trigger mechanisms that require a certain portion of the development be built and we try to maintain that tax positive. As we go through as we put this into the Phase I application to see what each component is doing from an economic standpoint and which components balance each other out so we can phase those in from the perspective of the development so we can create an overall tax positive throughout. This way, at the end of the day, if we fall into another recession as we are now, 10 years from now, we at least leave it in a tax positive standing as opposed going into a dormant state.

Paul Rogalle: We have staff here that can represent the comments they made independently. We will probably go around the room and hear from them individually. We think of the process of identifying policy, identifying some standards, identifying code as we deal with it or need to deal with it and how that may become parameters or guiding factors towards the development of the property. Certainly we know about Pine Barrens and that creates limits and guidelines for site clearing and natural areas to be preserved. We know about the regional nature of the location and that connotates desires, needs and/or concerns and maybe some other factors that need to be recognized. Brian Carrick is here to talk about traffic safety. Diane Mazarakis is here to talk about long range. Anthony Graves is here to talk about environmental issues in regard to SEQR process and some of the direction of our policy our code, our statutes regarding the SEQR process. Larry Costantino regarding land use issues as they may relate to covenants and restrictions that are either on the property already or maybe there are some land division aspects of the parcelization of this project as it may or may not get impacted in the future by different phasing of the projects. Gregg Kelsey is here

regarding drainage. We heard some interesting comments regarding the need for dealing with strormwater runoff etc. From a concept point of view we look at a project and where's the two acres or five acres or whatever space is needed to handle the runoff. Sometimes details like that get forgotten until it comes time for the site plan.

Diane, if you could share with the group some of the comments that came up from the long range perspective.

Diane Mazarakis: Diane has provided the following staff comments.

Long Range Planning

We do not have benefit of the years of planning that has culminated in this proposal, but we did assist with the community based land use plans (LUP) developed for Coram, Middle Island and Ridge (CMIR) & Mastic-Shirley.

The Economic Analysis, that will be prepared as a component of the Environmental Impact Statement, should incorporate the economic studies completed for the CMIR & Mastic-Shirley LUP's, as well as plans for Legacy Village @ Yaphank. The discussion should include: Market Sharing & Housing Demand.

As this project will be the anchor in the Town's only regional retail node, consider the benefits of facilitating the construction of an off-site LIRR commuter rail station, designed with pedestrian linkages to your development. Consider increasing the pedestrian connections to public transportation offered on CR 46.

As this project will provide housing, jobs, retail and support services, please consider early in the design creating an area for child and adult day care that benefits from an outdoor recreational area. Perhaps incorporating a pocket park adjacent to the office park will fill this design need.

Please further consider as a component of sustainable living, providing space for a charter school near the office space and, within the pine barrens clearing limits, an area set aside for Community Supported Agriculture.

Paul Rogalle: Anthony if you could touch upon the SEQR process as has been discussed or recognized at this point.

Anthony Graves: We go with the submission of the application and Part I of the Environmental Assessment Form and the Town issue of positive declaration and scoping and the Environmental Impact Statement would be accepted by the Town Board and the Final Environmental Impact Statement and findings. That would be the basic process. I think the issue is that they revised _____ proximity to

Carmans River _____ sewage treatments and footprints are trying to stay within the cleared areas, I think is good. You might consider that you might not necessarily be constrained to that in terms of trying to provide large continuous blocks of open space. My guess is that the Pine Barrens Commission and Town may look at this as large and natural. So, if there was a layout that preserved more habitat in a large unbroken block that was something you desired, I would say consider submitting that as an alternative in the EIS. In terms of the sewage treatment plant, we talked a little earlier about how some of the treatment plants in the County are not performing up to the standards that they were designed to and the County is looking at this. One of the things we would try to bring out in the Environmental Impact Statement would be to make sure there was a funding mechanism in place to continually upgrade the sewage treatment plant associated with this project, so 15 to 20 years from now it's not failing to meet its design standards.

Chip Wiebelt: Before we go off the SEQR topic, it occurs to me that an EIS would be necessary. We heard that some project phasing most likely would occur. We also heard that some sort of project thresholds or parameters guidance on how these future things may occur. Putting that all together, you may want to consider a GEIS.

Paul Rogalle: Transportation is a key element here. County roads are involved, private roads are involved, there are literally no town roads involved.

Brian Carrick: Brian provided the following staff comments:

Since there are no Town roads involved, we would be deferring to NYSDOT and SCDPW for traffic related issues on the LIE Service roads and interchange, as well as along CR 46. The previous traffic impact study for the mall was quite extensive and thorough resulting in a traffic mitigation plan. Since there is a decrease in overall traffic with the new proposal, the traffic mitigation recommendations that are currently in place as per the Brookhaven Walk project, should remain in place. No new traffic impact study would be required if the current mitigation plan remained as is. Should the plan for this property change in the future, we would need to revisit the need for further information or a new traffic impact study.

Paul Rogalle: To add to that a little bit, there has been some residual discussion regarding that. That is for the applicant, justifiably, to approach State and County as necessary to demonstrate a reduction, perhaps consider a change in the mitigation necessary. In which case that would fall solely on the State and County governmental agencies to consider and the applicant to update traffic information and/or provide for modified mitigation. Let that be stated for the record, as a direction that could come out of this process as well as various stages of the development still to take place.

Gregg Kelsey: We certainly have the need for a stormwater management plan, a SWPP plan for the project. I would envision 8 inches of storage for leaching pools and recharge basins combination. I would expect that a lot of the conversation would be

about zero landscaping. Try to keep the water close to where it falls and not necessarily pipe it off to one area. There is some ponds on the site although I do not remember exactly where. I do know rainwater floods the lower elevations. You probably want to come up with a couple of areas where you want to store runoff. Try to keep the eastern side as a retention area. Some of your open space, your village greenplace, your common areas, you have people there. You don't want to make them both drainage areas and common areas.

Chic Voorhis: One of the elements we are hoping to achieve on this project, is staying away, as far as possible, from the large recharge basins. They do not play well into these walkable communities, but one of our directions is to go with smaller pocket bioretention facilities overflowing to leaching pools to maintain the runoff in those areas. The Town doesn't have concerns for multiple smaller areas on the project site. Most of this is going to be privately maintained anyway. We do not foresee too much becoming the Town responsibility. It is better to treat it at the source then treat it at the end of the pipe. From that perspective it will limit pipe work, it will limit transporting the impacts associated with spot pollutants and excessive loading.

Gregg Kelsey: Come up with some alternate ideas, retention basins, (inaudible) You have a lot of open space, maybe you have some natural depressions that water can be overflowed to. (inaudible)

Paul Rogalle: I would like to ask Larry Costantino for a couple of comments. I see the overall size of the property being 322 acres. Certainly, there is a variety of mixed uses and perhaps need for the future phasing. Land Divisions, the need for, how about consideration, is there anything that needs to be shared at this point in time. I know it is early in the process regarding the possibility of future needs for breaking the overall parcels into smaller parcels because of needs or requirements for various development schemes or the needs of particular development. Larry, does that come into play in your comments on the land division or the treatment of the overall parcels.

Larry Costantino: That would probably come into play further into the process perhaps at the site plan stage when the applicant has a better idea as to what type of subdivisions they wish to create. It appears that it will be a combination of both condominium maps and homeowners association maps for the units and common areas.

Dan Simone: It will most likely be condo associations, business owners associations potential homeowners associations. I foresee it all under one umbrella homeowners association entity. There are issues that will arise from the subdivision standpoint for financial purposes also. I do not know how subdivisions work with respect to these open development concepts whereby the subdivision in itself may not meet guidelines under code but if they are incorporated under and open space like this, is there leeway with requirements _____. One of the issues we are going to have here as we try to implement a traditional neighborhood community, is our setbacks are not going to

conform to Town setbacks. I would like to bring that right up front because at the end of the day because when people say you need a 50' setback, we do not have that here.

Councilwoman Kepert: But we do have J-6. (Inaudible) Not going to happen.

Applicant: I would like to bring that up, because I am dealing with that on another project. I am ready to put a shovel in the ground and they say wait a minute your setbacks don't comply. They never were going to.

Lawrence Costantino: Under the PDD Code, the Town Board and Planning Board have the authority to modify any dimensional requirements.

David Sloane: You are going to need some type of land division (inaudible).

Johan McConnell: I have a question on that. Planned development (inaudible) because it is a traditional neighborhood they have their houses are very close to the front and their garages are in the back. Their streets are narrower than what is traditionally (inaudible) so they are made narrow. Is that something you would have in your plan? Your streets would be narrow, there is a calming effect.

Dan Simone: Absolutely. Our street plan in the community is going to be based on needs and the pedestrian is the driving factor on these kind of street designs other than the automobile. So we will have reduced width streets especially in the residential areas. The commercial areas would have to correlate.

Unidentified: One of the key factors is that the streets are narrow because of pedestrian use, bicycle use.

Unidentified: It is natural traffic calming technique. If you are trying to squeeze through an alley way you drive slower and more cautious.

Larry Costantino: The pre-application was a little unclear as to whether you are only dedicating land for the proposed playing fields or actually constructing the playing fields as part of your public benefits package.

Chic Voorhis: The list of public benefits is set as a guide to start conversation. We are talking with other departments, we had a conversation with the councilwoman, a conversation with the Planning Commissioner and we will be taking into consideration all of this. We will then get together and come up with a master list. There are things on the list to be taken off and substituted. Things that could be mutually agreed upon.

Larry Costantino: Along those lines you need to consider, recreation fees that will be required for the project. If you are trying to get public benefit credit for the parkland dedication to offset the Pine Barrens Credits, you can't also get credit for the required recreation fees.

Unidentified: Let's say the public benefits that we eventually agree upon are (inaudible) would that go towards the recreation fee at that point?

Larry Costantino: We would need to evaluate how the public benefits proposed exceed the normal zoning requirements.

Larry Costantino: Also, it appears that the tax impact/school district analysis did not account for the reduced taxes generated from condominium units. I believe there is an approximately 40% tax reduction for a condo unit.

Paul Rogalle: That goes along the lines of mitigation vs. public benefit. Mitigation is something that is given because it is deemed necessary to mitigate specific impacts and public benefit is negotiated and balanced against the extent of development and the needs of the community. Sal Garafalo, the Chief Fire Marshal is not here. He typically is invited and provides comments. I will try and do it justice in the sense that does become a critical part in the review process at some point in time regarding emergency access, number of hydrants, separation of buildings.

So whether it is directly related to New York State Building Code or whether it is directly related to Town policy on how to treat fire district boundaries and jurisdiction , emergency access, emergency services regarding the development of the property. Keep that in mind for further discussion as we move through the process.

Chic Voorhis: I have one more question for Gregg Kelsey. You mentioned

Gregg Kelsey: This is a key site and I just experienced Tuesday, driving out east, the rain from one farm field going across the road to another farm field. The amount of water that can fall in a short period of time is tremendous.

Gregg Kelsey: Over there we had farm fields that would flow onto 51 and muddy up the road and fill up the leaching pools and catch basin and leave sediment all over the place. Will I be open? Yes. But I don't know if it is going to be global or certain areas we will allow some modified drainage like a site plan issue like typically the industrial area normally we would not allow that to be designed with 5" storage. Two inches in leaching pools, three inches in some type retention area. Ponding in parking lots is not a great idea. First of all it affects the parking lot; you also lose parking spaces when you have rain. But if you have natural areas they leach a lot better. The wet streets and highways in the winter when you have a foot of snow on the ground, the ground is frozen, the water has nowhere to go. Leaching pools help there.

Tullio Bertoli: You guys have been terrific in working with us as a township. But we do have another storm on the horizon. We just did submit our response to Legacy Village and for better or worse we are somehow linked to that project in terms of potential impacts. Maybe you can share some of your insights into what your civic group envision this project.

Johan McConnell: Actually we have had some conversations with a small group. It does not impact my school district, fire department or ambulance. What it will impact is the people traveling to Yaphank. My community hopes this project gets off the ground first, gets started and gets built because it will in fact then make a difference on what Legacy is going to propose. Two hotels at 68 and another hotel at 67. This project is much further along. It's a big impact. Even though it is not my school district, it would be the Longwood School District. If you are comfortable with it, it certainly would not be a problem for our _____. My questions, I have three I want to bring up. I know the Yaphank Fire Department they are really interested in having that access off the back. There is an access road there. I am familiar with Legacy Village. When Legacy Village was proposed, they were going to do all kinds of social advantages for the teenagers and they made sure that all of the electricity was generated on their property. The other thing talked about was (inaudible) if you could have the same arrangement that Brookhaven National Lab (inaudible) they are getting it much cheaper. They are getting hydro-power. I am saying because of a project this small, I don't see any way a negotiation could be done.

Brian Ferruggiari: We don't know exactly what we could commit to at this particular point. Just like the environmental stuff, the plant life, we are also exploring conservation measures as well as alternative sources of energy. We had a meeting yesterday with LIPA. LIPA is going to be involved in the very beginning stages of this project. They want copies of our building plans and they want to talk to us about different energy conservation measures.

Johan McConnell: The road is a big issue for the Yaphank Fire Department

Brian Ferruggiari: Again, with the Yaphank Fire Department one of their concerns they have asked us to explore is getting equipment lanes into this site. The Yaphank Fire House is here and will come down Main Street and this way and they would much prefer to use an area they used to use to get into to serve the former racetrack property, when the racetrack was in operation. It is a previously cleared area. This is a greenbelt, it is now owned by the Town of Brookhaven. We broached this topic with the Pine Barrens Commission they have asked us to improve this formal application for their review for emergency access only. They want to know how much of this area is already cleared, previously cleared, what additional clearing, if any, would be required.

David Sloane: Didn't this come up with the first application.

Brian Ferruggiari: It came up on the first application in that they wanted to use this area here and come up in this way and that raised more questions with the Pine Barrens because this is in the DOT right-of-way. We agreed on Brookhaven Walk to explore this but now that we know this area exists and goes right into the back of the project. We think this is the preferable way.

Johan McConnell: You probably could use RCA on that because they just used RCA in the core preservation area in Yaphank and Southaven. They just used RCA in the park for their path. So if it was permissible to use it in the core preservation area in Southaven Park, I would definitely approach the Pine Barrens Commission and ask if RCA could be used as a surface for emergency access.

Brian Ferruggiari: They were open to it as an emergency access only.

Tullio Bertoli: Lee I know you have been working on this site. Where does this fit in terms of how you see the direction of planning going not just in Brookhaven, but Long Island in general? Are we on the right path?

Dr. Koppelman: It takes a lot to get me excited about a concept, but this one does. I see this as a model for the future. Of all of the developers I have dealt with over the last 60 years, these guys have been the most cooperative and the most talented. In part, working on the design as you did, I have never found developers that have been that cooperative. But more to the point, if this is executed, as I hope it will be, it should serve as a model to the entire town. That's what excites me about it. I would like to see it move forward. The suggestions that the staff made, I found to be all excellent. They have given it a great deal of thought. They have crossed every t, dotted every i, and with this kind of interplay, it has to be one of the best projects I have seen come down the pike in I don't know how long a period and this is really the future.

Constance Kepert, Councilwoman: As Lee said, I am certainly glad to see a project that incorporates so many of the components of sustainable development. There are certain aspects that I would like to see also incorporated. Such as linked to mass transportation, I think that is key. Johan brought up energy conservation, I think that is another key. I think the project will incorporate those components, as well as, public safety. Those kinds of amenities for the community are so important. I think this is a good project. Hopefully we can move it through the process with lightning like speed.

Tullio Bertoli: I found it ironic that we are talking about taking our hamlet centers and working with them and this model shows the heck with all that, let's just create a whole new hamlet center. I want to thank everyone.

Paul Rogalle: Next step, the applicant considers that which he needs to and submits an application to the Town Clerk. This is an application for consideration by the Town Board, so everything goes through Town Clerk. From there, we can get time lines.

Appendix A-4
Environmental Assessment Form (EAF), Part 1

Nelson, Pope & Voorhis, LLC

May 19, 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

TOWN OF
Brookhaven
LONG ISLAND, NEW YORK

Board of Zoning Appeals
One Independence Hill, Farmingville, NY 11738
(631) 451-6477 FAX:(631) 451-6926

State Environmental Quality Review Act
Full Environmental Assessment Form

BZ-06 rev. 4/04

PLEASE TYPE OR PRINT CLEARLY

The Full Environmental Assessment Form (EAF) is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part I: Provides objective data and information about a given project and its site. By identifying basic data, it assists a reviewer in the analysis that takes place in Parts II and III.

Part II: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially large impact. The form also identifies whether an impact can be mitigated or reduced.

Part III: If any impact in Part II is identified as potentially large, then Part III is used to evaluate whether or not the impact is actually important.

DETERMINATION OF SIGNIFICANCE – Type I and Unlisted Actions

1. Identify portions of EAF completed for project: ☑ Part I ☐ Part II ☐ Part III

2. Upon review of the information recorded on this EAF (Parts I, II and III if appropriate) and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact (s) and, therefore, is one that will not have a significant impact on the environment; therefore, a **NEGATIVE DECLARATION** will be prepared.

☐ B. Although the project could have a significant effect on the environment, there **will not** be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required; therefore, a **CONDITIONED NEGATIVE DECLARATION*** will be prepared.

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment; therefore, a **POSITIVE DECLARATION** will be prepared.

*A conditioned Negative Declaration is only valid for Unlisted Actions.

3. NAME OF ACTION: The Meadows at Yaphank PDD	
4. NAME OF LEAD AGENCY: Town Board, Town of Brookhaven	
5. NAME OF OFFICER IN LEAD AGENCY: Hon. Mark Lesko, Chairman of the Town Board and Town Supervisor	
6. SIGNATURE OF RESPONSIBLE OFFICER IN LEAD AGENCY:	7. SIGNATURE OF PREPARER:
8. DATE:	

TOWN OF
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PLEASE TYPE OR PRINT CLEARLY

Part I – PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form Part A through O. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts II and III.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

1. NAME OF PROJECT: The Meadows at Yaphank PDD	
2. PROJECT LOCATION: n/w corner, intersection of William Floyd Parkway & L.I.E, Yaphank	
3. NAME AND ADDRESS OF APPLICANT/SPONSOR: Rose-Breslin Associates, LLC & Dorade, LLC	4. BUSINESS PHONE: (914) 965-3990
5. NAME AND ADDRESS OF OWNER, IF DIFFERENT: One Executive Boulevard, Yonkers, NY 10701	
6. S.C. TAX PARCEL NUMBER.: (see attached)	7. PRESENT ZONING: (see attached)
8. DESCRIPTION OF ACTION: (PLEASE BE SPECIFIC; ATTACH ADDITIONAL SHEET IF NECESSARY)	
(see attached)	

PLEASE COMPLETE EACH QUESTION – INDICATE "N/A" IF NOT APPLICABLE:

A. **LAND USE:** (If not applicable, check here and go to Section B) ☐ N/A
Physical setting of overall project, both developed and undeveloped areas.

1. Present land use: ☐ Urban ☐ Industrial ☐ Commercial
☐ Residential Suburban ☐ Rural (non-farm) ☐ Forest
☐ Agriculture ☑ Other (Specify) Vacant; former Suffolk Downs Racetrack & partially cleared (graded land)

B. **CRITICAL ENVIRONMENTAL AREA:**

1. Is the site located in or substantially contiguous to a Critical Environment Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617?
☑ YES ☐ NO ☐ N/A (Central Pine Barrens, CGA & SGPA)

C. **ZONING AND PLANNING INFORMATION:**

1. Does proposed action involve a planning or zoning decision?
☑ YES ☐ NO

If yes, complete 1-13 below; if no, go to section D:
☑ Zoning Amendment ☐ Zoning Variance ☐ Special Use Permit
☑ Subdivision ☑ Site Plan ☐ New (Revision) of Land Use Plan
☐ Resource Management Plan ☑ Other PDD Master Plan

2. What is the zoning classification(s) of the site? J-2 (mall site); L-1 (Racetrack site); A-1 (Dorade STP site)

SC TAX PARCEL NUMBERS

The Meadows at Yaphank property is 333.46 acres in size, and is comprised of three parcels, in three tax lots. The western parcel was previously developed as the Suffolk Downs horseracing track; the eastern parcel is undeveloped but was previously cleared and had received site plan approval for an 850,000 SF retail development. The third parcel, occupied by the Dorade STP, is included because sanitary flow from the proposed project will be conveyed to it for treatment and disposal, however a change of zone is not being requested for this parcel.

- Eastern parcel (prior Brookhaven Walk mall site); 150.17 acres; J-2 zone; tax lot 0200-584-2-1.3
- Western parcel (prior Suffolk Downs racetrack site); 172.20 acres; L-1 zone; tax lots 0200-552-1-1.3
- Dorade STP; 11.09 acres; A-1 zone; tax lot 0200-552-01-03

In addition, a small portion of land within the Town Greenbelt, which is located along the western side of the western parcel, may be subject to improvements necessary to provide emergency vehicle access.

DESCRIPTION OF ACTION

The Meadows at Yaphank site is an assemblage of three tax lots, the former Suffolk Downs Race Track (aka Parr Meadows) site, the former Brookhaven Walk mall site, and the Dorade STP site. More specifically, the western 172.20-acre parcel is currently undeveloped but was previously in use as the Suffolk Downs Race Track and was later operated as a flea market site until approximately 1995. The eastern 150.17 acre parcel, which is undeveloped, was previously cleared with partial foundations installed in connection with a 1997 site plan approval (for Brookhaven Town Center), and later received site plan approval for an 850,000 SF retail development known as Brookhaven Walk in 2007. The Dorade STP currently receives flow from the Whispering Pines/Colonial Woods developments and Suffolk County Sewer District No. 8, and holds a SPDES permit for 140,000 gpd. This facility was previously designed and permitted for a wastewater flow of 450,000 gpd, of which 190,000 gpd was allocated to the Race Track site and the Mall site. The proposed project will upgrade the STP to the original permitted flow of 450,000 gpd in order to improve the treatment process for the existing flow and the proposed project wastewater.

The proposed project will consist of retail, mixed-use commercial space, office/flex space and housing. The commercial component will consist of 1,032,500 SF of commercial area made up of a hotel (150,000 SF), retail space (327,500 SF), restaurant space (5,000 SF) and office space (550,000 SF). In addition, 850 residential units are proposed including 144 rental units, 486 condominium units and 220 townhouse units. Of the residential units, a total of 85 units will be for work force housing and 303 units will be age restricted for persons aged 55 and older. The residences will include a mix of 1-bedroom (121 units), 2-bedroom (661 units) and 3-bedroom units (68 units).

The proposed project requires a change of zone to PDD for the eastern and western parcels, which total 322.37 acres; the 11.09 acres, occupied by the Dorade STP, will not be rezoned. The PDD application will be reviewed and approved at the discretion of the Brookhaven Town Board. The proposed Meadows at Yaphank PDD provides an opportunity to develop a lifestyle center, with the components of a downtown, plus corporate office and flex space, hotel and restaurants, a Town Center with neighborhood retail, anchor tenants and a civic square, traditional condominiums and townhouses, ball fields and multi-purpose areas, public plaza with concert green and reflecting pool and Main Street apartments. The

proposed development would provide a desirable alternative to a light industrial use and regional retail, for which the property is currently zoned.

Stormwater systems will utilize innovative handling methods where possible. Rain gardens and bio-filtration swales will be used for bio-filtration in initial surface collection areas for the roadways and parking lots and recharge basins and/or surface detention will be used where possible prior to overflow to subsurface leaching structures.

Amenities on the site will include tennis courts, recreational buildings and pocket parks for residents, as well as several public areas including a great lawn, village square, reflection pool, civic square and civic building, ball fields, public green, multi-purpose field, basketball court and walking trail. The Dorade STP will serve the site and the property owner will make all necessary upgrades to the STP. This is an existing permitted use already serving the community, including Colonial Woods/Whispering Pines and Suffolk County Sewer District No. 8. The property owner or future property owners associations will own and maintain internal roadways, as well as parking areas for the residences as well as the on-site drainage system. Approximately seven acres of land will be dedicated to the Town for future development of athletic fields, basketball courts, access to the Greenbelt trail and parking area.

A boulevard-style roadway with a landscaped center median will provide access directly from the main site access on William Floyd Parkway and run east-west through the development. The hotel and retail uses will be located on the south side of the main roadway, immediately upon entering the site. Residential uses will be located north of the main roadway. The public green areas including the great lawn, village square, reflecting pool and civic square will be situated north-south, connecting the retail and residential portions of the eastern parcel. A freshwater wetland is located on the northern periphery of the eastern parcel. Moving west within the subject site, office uses will be located south of the main roadway and residential units will be located north of the roadway. A large green space area will be located in the northern portion of the parcel in the vicinity of the residential units and two ball fields and associated parking is located directly north of the green space. The main roadway will terminate with a public park area consisting of a multi purpose field, civic building, restroom facility, basketball court and associated parking area.

3. What is the maximum potential development of the site if developed as permitted by the present zoning?
1.18 million SF of light industrial space & 850,000 SF retail center

4. What is the PROPOSED zoning of the site? PDD

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?
1.032 +/- million SF commercial space & 850 residences

6. Is the proposed action consistent with the recommended used adopted or recommended in local land use plans?
☑ YES ☐ NO

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?
Vacant, residential, institutional, commercial, utility; A-1, A-5, A-10, L-3, L-1

8. Is the proposed action compatible with adjoining/surrounding land used within a ¼ mile?
☑ YES ☐ NO

9. If the proposed action is a subdivision of land, what is the number of lots proposed? N/A
   a. What is the minimum sized lot proposed? _____

10. Will proposed action require any authorization(s) for the formation of sewer or water districts?
☐ YES ☑ NO

11. Is the project site presently used by the community or neighborhood as an open space or recreation area?
☑ YES ☐ NO (not authorized by owner)

12. Will the proposed action create a significant demand for any community provided services (recreation, education, police, fire protection)? ☑ YES ☐ NO
   a. If YES, is existing capacity sufficient to handle projected demand? ☑ YES ☐ NO

13. Will the proposed action result in the generation of traffic significantly above present levels? ☑ YES ☐ NO
   a. If YES, are existing roads adequate to handle the additional traffic? ☑ YES ☐ NO
*mitigation to be provided per traffic study

D. SITE DESCRIPTION: (If not applicable, check here & go to Section E) ☐ N/A

Total Lot Area: 333.46 ☐ square feet ☑ acres

	PRESENTLY	AFTER COMPLETION
Meadow or Old Field (non-agriculture)	134.00	8.18
Forested	131.58	117.79
Agricultural (include orchards, pasture etc.)		
Unvegetated (rock, earth or fill)	25.61	2.58
Roads, buildings and other paved surfaces	40.42	99.12
Beach, Dune or Bluff		
Surface Water (Recharge Areas)	1.09	9.78
Tidal Wetlands (as per Chapter 81 and Art. 25		
Freshwater Wetlands or 24 of the ECL)	0.76	0.76
Landscaped	0	95.25
Other (indicate type)		

.E. **PROJECT DESCRIPTION:** (If not applicable, check here and go to Section F). ☐ N/A

1. Physical dimensions and scale of project (fill in dimensions as appropriate):
   a. Total contiguous acreage owned or controlled by project sponsor: 333.46
   b. Project area to be developed: 206.73 initially; 206.73 ultimately ☐ square feet ☑ acres
   c. Project area to remain undeveloped 126.73 ☐ square feet ☑ acres
   d. Length of project, in feet and/or miles, if appropriate: N/A ☐ feet ☐ miles
   e. If the project is an expansion, indicate percent of expansion N/A %
   f. Number of off-street parking spaces existing 0, proposed 6,700+/-.
   g. Maximum vehicular trips generated upon completion of the project? 1,973* hourly
   h. Frontage along a public thoroughfare 6,200 +/- linear feet *weekday PM Peak Hour
   i. If residential: Number and type of housing units:

	ONE FAMILY	TWO FAMILY	MULTI-FAMILY	CONDOMINIUM
Initially:	220 (attached)		144	486
Ultimately:	220 (attached)		144	486

   j. Dimensions of largest proposed structure. (feet)
   30+/- Height 286' Width 740+/- Length

2. Will blasting occur during construction? ☐ YES ☑ NO

3. Will project require relocation of any facilities? ☐ YES ☑ NO
   If YES, explain

F. **LAND RESOURCES:** (If not applicable, check here and go to Section G) ☐ N/A

1. What is/are the predominant soil type(s) on project site? (Please consult Suffolk County Soil Survey and Soil Conservation Service – Phone: 727-2315)
   List types: HaA, HaB, CpC, CpE, PIA, PIB, PIC, RdA, RdB

2. Is project or any portion of project located in a 100-year flood plain?
   ☐ YES ☑ NO ☐ N/A

3. Soil drainage:
   Well-drained 100 % of site
   Moderately well drained of site % of site
   Poorly drained % of site

4. If any agricultural land is involved, how many acres of soil are classified within soil groups 1 through 4 of the NYS Land Classification System? (See 1 NYCRR 370 (1).) acres ☑ N/A

5. Are there any dunes, bluffs, swales, kettleholes, strands or other geological formations on the project site?
   ☐ YES ☑ NO If YES, Describe:

6. Are there bedrock outcroppings on project site? ☐ YES ☑ NO
   a. What is depth to bedrock? 1,000 +/- (in feet) ☐ N/A

7. Approximate percentage of the project site with slopes (0-100%):
   0-10% 86+/- 10-15% 7+/- 15% or greater 7+/-

8. How much natural material (i.e. rock, earth, etc.) will be removed from the site? unknown at present cubic yards

9. Will the disturbed areas be reclaimed? ☑ YES ☐ NO ☐ N/A
   a. If YES, for what intended purpose is the site being reclaimed? landscaping
   b. Will topsoil be stockpiled for reclamation? ☑ YES ☐ NO
   c. Will upper subsoil be stockpiled for reclamation? ☑ YES ☐ NO

10. Grading: ☑ YES ☐ NO ☐ N/A If yes, complete a. through i.
    a. Total area to be regraded: 199.19 ☐ square feet ☑ acres * unknown at present
    b. Total cubic yards of cut: * cubic yards
    c. Total cubic yards of fill: * cubic yards
    d. Greatest depth of excavation or cut: * feet (excluding recharge basin)
    e. Greatest depth of any recharge basin: * feet
    f. Greatest depth of fill: * feet
    g. Greatest depth of excavation or cut: * feet (excluding recharge basins)
    h. Maximum artificial slopes after construction (check one)
    ☐ 2:1 or greater ☑ 3:1 ☐ 5:1 ☐ 10:1 or less
    i. Will the project require the use of retaining walls? ☐ YES ☐ NO unknown at present
    j. Briefly describe method(s) to reduce erosion/runoff during and after construction: Groundcover, soil traps, drainage diversions, etc.; will prepare SWPPP.

G. **VISUAL-CULTURAL RESOURCES:** (If not applicable, check here and go to Section H) ☐ N/A

1. **Visual:**
   a. Will the project be noticeably visible from surrounding areas after its completion?
   ☑ YES ☐ NO ☐ N/A
   b. Will the project remove vegetation that currently screens the project site from surrounding areas?
   ☐ YES ☑ NO ☐ N/A
   c. Will the project partially or completely block, or contrast with, scenic views from surrounding areas or from the site?
   ☐ YES ☑ NO ☐ N/A
   d. Does the present site include scenic views known to be important to the community?
   ☐ YES ☑ NO If yes, please explain: _____

2. **Cultural:**
   a. Does the project site contain a building or site, and/or is it located within or substantially contiguous to a building, site or district listed on the State or the National Registers of Historic Places or Register of National Landmarks?
   ☐ YES ☑ NO ☐ N/A
   b. Does the project site contain a building or site, which is substantially contiguous to or within a Town Historic District or Town Historic District Transition Zone?
   ☐ YES ☑ NO ☐ N/A
   c. Is the project site contiguous to or does it contain a site or building which is designated a Town Landmark?
   ☐ YES ☑ NO ☐ N/A
   d. Will the project be noticeably visible from, be adjacent to, or result in the partial or complete demolition of any structures listed on the State or National Registers of Historic Places, or a Town Historic Landmark?
   ☐ YES ☑ NO ☐ N/A
   e. Will the project result in the partial or complete demolition or relocation of any structures greater than 50 years old?
   ☐ YES ☑ NO ☐ N/A
   f. Will the project result in the partial or complete removal of any documented or known Native American site?
   ☐ YES ☑ NO ☐ N/A
   g. Does the project site contain or is it located adjacent to a cemetery or gravesite?
   ☐ YES ☑ NO ☐ N/A

H. **WATER RESOURCES:** (If not applicable, check here and go to Section I) ☐ N/A

1. Will there be a potential discharge as a result of an approval of this application into a body of water either on or off-site?
   ☐ YES ☑ NO ☐ N/A
   If Yes, please explain: _____
2. Method of handling runoff (check all that apply):
   ☑ Leaching Pools ☐ Dry Wells ☐ Recharge Basin (off-site)
   ☑ Recharge Basin (on-site) ☑ Other (describe): Rain gardens; surface swales; bio-retention areas
3. What is the minimum depth to the water table on site? 50+/- feet
   (Please cite date and source of information) Water Table and Potentiometric Surface Altitudes...
   a. Seasonal variation 4 +/- feet USGS/ Monti & Busciolino, 2009
4. Are there any lakes, ponds, swamps, bogs, marshes, or freshwater wetlands within or contiguous to project area?
   ☑ YES ☐ NO ☐ N/A
   a. Name of lake/pond or wetland: NYSDEC FW Wetland B-16
5. Are there any streams within or contiguous to the project site?
   ☑ YES ☐ NO ☐ N/A Name: Carmans River *1,850 +/-ft south of the site
   a. Name of body of water to which it is tributary: Great South Bay
6. Are there any Creeks, Embayments, Harbors or tidal wetland areas within or contiguous to the project area?
   ☐ YES ☑ NO ☐ N/A Name(s) _____
   a. Name of body of water to which it is tributary: _____

7. Is the site located over a primary, principal or sole source aquifer?
☑ YES ☐ NO ☐ N/A

8. Will surface area of an existing water body increase or decrease by proposal?
☐ YES ☑ NO Please explain: On-site drainage system will be designed to prevent runoff from from impacting either Wetland B-16 or Carmans River.

I. **FLORA-FAUNA-AQUATICS:** (If not applicable, check here and go to Section J) ☐ N/A

1. Do hunting, fishing or shellfishing opportunities presently exist in the project area?
☐ YES ☑ NO ☐ N/A

2. Is the project site utilized by, or contain any species of plant or animal life that is identified as rare, threatened, endangered, protected or identified as a specied of special concern?
☐ YES ☑ NO ☐ UNKNOWN If yes, identify each species: _____

3. What wildlife species have been confirmed or would be expected to occur on site? Deer, Birds, small mammals

4. What vegetation species have been confirmed or would be expected to occur on site? Pine-oak and successional field species

5. Are there any rare or protected plants or unique plant communities present on site?
☐ YES ☑ NO If yes, identify each species: _____

6. How many acres/sq. ft. of vegetation (trees, shrubs, ground covers) would be removed from site?
139.61 +/- ☑ acres ☐ square feet ☐ N/A

7. Will any mature forest (over 100 years old) or any other locally important vegetation be removed by this project?
☐ YES ☑ NO ☐ N/A

J. **UTILITIES:** (If not applicable, check here and go to Section K) ☐ N/A

1. Is the site served by existing public utilities? ☐ YES ☑ NO
   a. If yes, does sufficient capacity exist to allow connection? ☐ YES ☐ NO
   b. If yes, will improvements be necessary to alllow connection? ☐ YES ☐ NO

2. Will project result in an increase in energy use? ☑ YES ☐ NO
If yes, indicate types: Electricity & fossil fuels

3. What type water supply is from wells, indicate pumping capacity: N/A gallons/minute.

4. Total anticipated water usage per day: 280,000 gallons/day. (estimated)

K. **WASTE DISPOSAL:** (If not applicable, check here and go to Section L) ☐ N/A

1. Will a State Pollutant Discharge Elimination System (SPDES) permit be required? ☑ YES ☐ NO
If yes, for what type of material? Stormwater runoff during construction & STP

2. Is surface liquid waste disposal or storage involved? ☐ YES ☑ NO
   a. If yes, indicate type of waste (sewage, industrial, etc.) amount and method of disposal _____

3. Is subsurface liquid waste disposal involved (including sanitary)? ☑ YES ☐ NO
If yes, please indicate:
   a. Type of waste: Sanitary wastewater
   b. Volume of waste: 280,000 gallons per day (estimated)
   c. Sanitary waste treatment
      ☐ on-site septic-system
      ☐ municipal treatment plant
      ☐ modified subsurface sewage disposal system
      ☑ community sewage disposal system (Existing Dorade STP)
      ☐ other _____

4. Are there any point source discharges not previously described associated with this project?
☐ YES ☑ NO ☐ N/A If yes, explain: _____

5. Will the project generate solid waste? ☑ YES ☐ NO ☐ N/A
   a. If yes, what is the amount per month? 241 +/- tons
   b. If yes, will an existing solid waste facility be used? ☑ YES ☐ NO
   c. If yes, give name: Town RRF location: Yaphank
   d. Will any wastes not go into a sewage disposal system or into a sanitary landfill?
   ☑ YES ☐ NO If yes, explain: recyclables

6. Will the project involve the storage or disposal of solid waste? ☐ YES ☑ NO
   (If yes, please attach a list itemizing same)
   a. If yes, what is the anticipated rate of disposal? _____ tons/month.
   b. If yes, what is the anticipated site life? _____ years.

7. As part of the construction or use of the site will the project routinely use herbicides or pesticides?
   ☐ YES ☑ NO
   If yes, describe the type, amount and method of application: _____

8. Has the site ever been used for the disposal of solid or hazardous wastes?
   ☐ YES ☑ NO ☐ UNKNOWN If yes, explain fully on a separate sheet.

9. If an industrial use is proposed for the site, describe the product and the manufacturing process involved:
   N/A

10. Will any hazardous or toxic substances or waste be stored or generated on site?
    ☐ YES ☑ NO ☐ N/A
    a. If yes, identify the substance, amount and method of storage or disposal. _____.

11. Will project routinely project odors more than 1 hour/day? ☐ YES ☑ NO

12. Will project produce operating noise exceeding the local ambient noise levels? ☐ YES ☑ NO
    If yes, source of noise: _____

L. **ECONOMICAL IMPACTS:** Completed for all commercial/industrial projects and residential projects greater than 10 units. (If not applicable, check here and go to Section M) ☐ N/A

1. Does project involved Local, State or Federal funding? ☐ YES ☑ NO

2. If single phase project:
   anticipated period of construction N/A months, (including demolition)

3. If multi-phased:
   a. Total number of phases anticipated: 5 (tentative)
   b. Expected date of commencement phase 1 (including demolition): *
   c. Approximate completion date of final phase: * month * year.
   d. Is phase 1 functionally dependent on subsequent phases? ☐ YES ☑ NO *Unknown at present

4. Number of jobs generated during construction 299. After project is complete 2,648.

5. Number of jobs eliminated by this project: 0

6. What are the current tax revenues generated by the project site? $851,632/yr (w/Dorade) dollars

7. What tax revenues will project generate after completion? $10.36 million/yr (w/Dorade) dollars

8. What is the estimated cost of construction? $262.5 million dollars

9. How many schoolchildren is the project expected to generate? 110 ☐ N/A

10. What is the estimated cost of educating the school-age children generated by the completion of this project? $2.46 million/year ☐ N/A

M. APPROVALS REQUIRED:

		TYPE	SUBMITTAL DATE
Town Board	☑YES ☐NO	Change of Zone (COZ)	Pending; Submitted 5/19/10
Town Planning Board	☑YES ☐NO	PDD Master Plan, Site Plan, Land Division	Pending COZ
Town Zoning Board	☐YES ☑NO		
Town; Environmental Protection	☐YES ☑NO		
Town; Building Department	☑YES ☐NO	Building Permit	Pending Site Plan Approval
Country Health Department	☑YES ☐NO	SCSC Art. 6 & Art. 4	Pending COZ
Local Agencies	☐YES ☑NO		
State Agencies	☑YES ☐NO	Roadwork	Pending COZ
Federal Agencies	☑YES ☐NO	Roadwork	Pending COZ
Other Agencies	☑YES ☐NO	*	Pending

*SCWA-Water Supply
SCDPW-Roadwork, STP
NYSDEC-SPDES (2)
CPBJPPC-DRS Approval

N. ADDITIONAL INFORMATION:

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

O. VERIFICATION:

I certify that the information provided above is true to the best of my knowledge.

1. NAME OF APPLICANT/SPONSOR: Phil Malicki, CEP, AICP, LEED® AP/ Nelson, Pope & Voorhis, LLC	2. SIGNATURE: Phillip A. Malicki
3. TITLE: Senior Environmental Planner	4. DATE: 5/19/10
5. NAME OF OWNER:	6. SIGNATURE:
7. TITLE:	8. DATE:

Note: If the action is in the Coastal Area and you are a state agency, complete the Coastal Assessment Form before proceeding with the assessment.

Appendix A-5
Positive Declaration

Town Board

July 20, 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

RESOLUTION SUBMISSION

MEETING OF: July 20, 2010 RESOLUTION NO. 2010-815

MOVED BY COUNCILMEMBER: Constance Kepert

REVISION

SHORT TITLE: ADOPTING POSITIVE DECLARATION FOR THE CHANGE OF ZONE FOR THE MEADOWS AT YAPHANK PLANNED DEVELOPMENT DISTRICT CZ# 2010-011-CZ

DEPARTMENT: LAW

REASON: Compliance with SEQRA

PUBLIC HEARING REQUIRED:

DEPARTMENT OF FINANCE APPROVAL: YES NO
DOLLARS INVOLVED:

SEQRA REQUIRED: Yes
DETERMINATION MADE: POSITIVE NEGATIVE
FEIS/FINDINGS FILED:

EXECUTION OF DOCUMENT REQUIRED: No

Present	Absent		Motion	Aye	No	Abstain	Not Voting
		Councilmember Fiore-Rosenfeld		/			
		Councilmember Bonner		/			
		Councilmember Walsh		/			
		Councilmember Kepert	1	/			
		Councilmember Mazzei	2	/			
		Councilmember Panico		/			
		Supervisor Lesko		/			

ADOPTED

BY THE BROOKHAVEN TOWN BOARD

RESOLUTION NO. 2010-815
MEETING: July 20, 2010

ADOPTING POSITIVE DECLARATION FOR THE CHANGE OF ZONE FOR THE MEADOWS AT YAPHANK PLANNED DEVELOPMENT DISTRICT CZ# 2010-011-CZ

WHEREAS, the Town Board is presently considering the change of zone for The Meadows at Yaphank Planned Development District for property located at the northwest corner of the Long Island Expressway North Service Road and William Floyd Parkway (CR 46) in Yaphank, New York, (SCTM # 0200 55200 0100 001003 and 0200 58400 0200 001003), comprising approximately 322.37 acres, from J Business 2 and L Industrial 1 to Planned Development District (PDD); and

WHEREAS, the Department of Planning, Environment and Land Management (PELM) has conducted a review of the Phase I PDD Application submitted by the applicant with respect to said proposed action; and

WHEREAS, as set forth in 6 NYCRR Part 617.4(b)(6)(i), a project or action that involves the physical alteration of 10 acres is a Type I Action and as a result is more likely to have a potentially significant adverse impact on the environment, and, therefore, more likely to require the preparation of an Environmental Impact Statement (EIS), and

WHEREAS, the preparation of a Draft Generic Environmental Impact Statement (DGEIS) for the proposed change of zone will provide the best means to systematically consider significant adverse environmental impacts, alternatives, and mitigation, and to facilitate the weighing of social, economic environmental factors,

NOW, THEREFORE BE IT RESOLVED that the Town Board of the Town of Brookhaven as Lead Agency hereby adopts the Positive Declaration for the Change of Zone for The Meadows at Yaphank Planned Development District, attached hereto, which requires the preparation of a Draft Generic Environmental Impact Statement (DGEIS) to address all relevant environmental issues, and

BE IT FURTHER RESOLVED, that the Department of Planning, Environment and Land Management (PELM) shall post the draft scoping document, which identifies potentially significant adverse impacts to be addressed in the DGEIS on the Town's website and the Commissioner of PELM, or his designee, is authorized to serve as the hearing officer for the scoping meeting on **Thursday, September 2, 2010** from 7:00 to 9:00 PM at Brookhaven Town Hall to provide public participation to identify the potentially adverse impacts related to the adoption of the change of zone, to receive comments in general, and

BE IT FURTHER RESOLVED, that the Commissioner of PELM is authorized to accept and approve the final scoping document provided that it is in conformance with all SEQRA regulations, satisfactorily addresses the issues raised in the Positive Declaration and to distribute it as required including posting the Final Scoping document on the Town's website.

STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)
POSITIVE DECLARATION
Notice of Intent to Prepare a Draft Generic Environmental Impact Statement (DGEIS)

LEAD AGENCY: **Town of Brookhaven Town Board**
One Independence Hill
Farmingville, NY 11738

TITLE OF ACTION:
Change of Zone from J Business 2 and L Industrial 1 to Planned Development District for The Meadows at Yaphank Planned Development District

APPLICANT:
Rose Breslin Associates, LLC and Dorade Inc.
c/o AVR Realty
One Executive Blvd.
Yonkers, NY 10701
Tel#: 914-965-3990
Email: Tomp@avrrealty.com

SEQR STATUS: **Type I**

FILE #: **2010-011-CZ**

DESCRIPTION OF ACTION:

The proposed project would change the zoning of 322.37 acres from L Industrial l and J Business 2 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex industrial space and housing. "Flex space" is defined for purposes of the proposed project as non-residential commercial space that may be office or industrial in nature or other uses permitted in the J Business 2 or L Industrial 1 districts. The commercial components of the proposed project include approximately 1,032,500 square feet (SF) of space made up of hotel, retail, restaurant and office/flex or other permitted uses within the J Business 2 and L Industrial 1 districts. The proposed residential component is comprised of 850 units of various types and sizes, including 303 age-restricted units and 85 work force housing units.

LOCATION: N/W/c of the Long Island Expressway North Service Road and William Floyd Parkway (CR 46) in Yaphank

S.C.T.M. #: **0200 55200 0100 001003 and 0200 58400 0200 001003 (322.37 acres, total)**

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review) of the Environmental Conservation Law.

The Town Board of the Town of Brookhaven, as the SEQR Lead Agency, has determined that the proposed action described above may have a significant impact on the environment and that a Draft Generic Environmental Impact Statement (DGEIS) should be prepared.

REASONS SUPPORTING THIS DETERMINATION:

The Town Board in reviewing the Change of Zone Petition in accordance with SEQR Parts 617.3 and 617.6, using the information available and comparing it with the thresholds set forth in Part 617.4, has determined that the proposed action is a Type I action. A coordinated review for Type I actions involving more than one agency was completed on July 4, 2010, as set forth in SEQR Part 617.6 (b), in order to inform and allow other regulatory agencies to participate in the decision making process.

The Town Board as Lead Agency and after review and analysis of the Phase I PDD Application, various land use studies, the issues and relevant areas of environmental concern identified and as enumerated below, the criteria contained in Part 617.7, and other supporting information finds that the proposed action may have a significant effect upon the environment and that a Draft Generic Environmental Impact Statement (DGEIS) should be prepared.

The Board has considered that the purpose of the DGEIS is to inform the public and other public agencies as early as possible that the project may significantly affect the quality of the environment, and to solicit comments which will assist the agency in determining the environmental consequences of the proposed action.

Significant impacts to the environment are anticipated, including but not limited to:

Land Use and Zoning:
The conformance of the proposed action with applicable land use plans, studies, zoning and land use patterns should be determined. The proposed action will cause a significant increase in residential density and also change the use of the property which, compared to existing and surrounding land uses, will be significant. The subject properties are located within Critical Environmental Areas above a sole source aquifer in the Suffolk County Department of Health Services (SCDHS) Groundwater Management Zone III, the Central Suffolk Special Groundwater Protection Area (SGPA), the Central Suffolk Pine Barrens Area, and the Town of Brookhaven Hydrogeologic Sensitive Zone. The potential acquisition of Pine Barrens Credits and compliance with the Central Pine Barrens Comprehensive Land Use Plan will need to be fully evaluated.

Socioeconomic Conditions:
The residential development resulting from the proposed change of zone may generate additional school aged children that could increase the tax burden to the school district and could exceed the capacity of the school district's infrastructure.

Community Character:
The consistency of the proposed development will need to be evaluated with respect to local land use plans. The project is anticipated to have a significant effect upon the general character of the community, and various effects upon the local community services, schools, and emergencies service.

Transportation:
If granted, the proposed change of zone could result in 850 residential units and 1,032,500 SF of commercial space that will increase the amount of traffic on the William Floyd Parkway (CR 46), the Long Island Expressway (NYS Rt. 495), and Yaphank Woods Boulevard as well as alter travel patterns. The impact of the additional traffic at the key intersection of the William Floyd Parkway (CR 46) and the

Long Island Expressway (NYS Rt. 495) could be significant. The traffic system in the CR 46 & NYS Rt. 495 area requires a comprehensive evaluation for the proposed project.

Water Resources:
Impacts upon groundwater from water use and sanitary disposal systems must be evaluated. Although connection to an offsite wastewater treatment facility is proposed, there is a potential impact to groundwater from fertilizers and stormwater. Much of the project site is vegetated and provides natural groundwater recharge in a sensitive sole source aquifer area. Rain gardens, surface swales, and bio-retention areas are proposed to handle runoff. Reductions in ground water quality by sanitary discharge, lawn fertilization and roadway salting should be evaluated.

The potential for the groundwater contamination within and emanating from the nearby Brookhaven National Laboratory site to impact the proposed project, and the volume of recharge water anticipated to be generated from the project site, should be addressed.

Potential impacts to the Carmans River, a tributary to the Great South Bay, located approximately 1,850 feet to the south of the site will also need to be evaluated.

The project will cause substantial alteration of existing drainage patterns and on-site topography.

Dorade Sewage Treatment Plant:
Since the original approval of the Dorade Sewage Treatment Plant (STP) in 1973 for 450,000 gallons per day (gpd) and the subsequent reduction of the permitted flow to 140,000 gpd, the environment in the area as well as sewage treatment technology has significantly changed. The applicant has proposed the upgrade of the Dorade STP and connection of the project to the upgraded facility. Despite the originally permitted flow of 450,000 gpd, the proposed increase of 280,000 gpd of treated sanitary wastewater generated from the project and recharged within a sole source aquifer will need to be evaluated. The proposed connection pathway of the project to the upgraded facility will need to be determined and examined.

Ecological Resources:
The construction and change in land use may adversely impact local flora and flora. Much of the project site is vegetated and provides natural groundwater recharge in a sensitive sole source aquifer area. Locally important wildlife and vegetation resources exist on the site in question. Impacts to these resources need to be identified and addressed. Significant loss of open space and wildlife areas is anticipated.

Wetlands and Waterways:
The project site contains New York State Department of Environmental Conservation Freshwater Wetland B-16 that is considered environmentally sensitive. The potential impacts to the wetland area will need to be addressed and mitigated.

Potential impacts to the Carmans River, a tributary to the Great South Bay, located approximately 1,850 feet to the south of the site will also need to be evaluated and mitigated.

Visual Resources:
The development may adversely impact the scenic resources currently provided by the property. The choice of architecture and site layout could have adverse impacts on visual quality in addition to community character. The existing on-site vegetation and its proximity to major thoroughfares provide certain visual aesthetics which may be impacted through development. These potential impacts need to be adequately addressed.

Energy:
The proposed action is anticipated to require substantial amounts of electricity and fossil fuels that may require utility upgrades or expansion. The total anticipated water usage for the proposed project is estimated to be 280,000 gpd. Energy efficient design and water conservation measures should be explored including certification through the US Green Building Council's LEED (Leadership in Energy & Environmental Design) Green Building Rating System.

Cultural Resources:
Based on reported sources, there is an archeological site in or adjacent to the project area. The potential for the presence of pre-historic and/or historic era cultural resources should be determined, and if present, the potential impacts of the project on these resources must be determined. A Phase I archeological survey is warranted for all portions of the project to involve ground disturbance, unless substantial prior ground disturbance can be documented.

Solid Waste:
The project is anticipated to generate approximately 241 tons of solid waste per month that may impact solid waste facilities, the Town's Resource Recovery Facility (Landfill) in Yaphank.

Air Quality:
Particulate matter generated during construction, residential and commercial heating combustion sources, as well as the additional traffic that would be generated as a result of the proposed change of zone may adversely impact air quality. The potential for impact to air quality in the area from operation of the project, and from the increase in area vehicle traffic generated by the project, should be evaluated.

Economic Impacts:
The need for the proposed project, in consideration of other major shopping centers within a distance appropriate to the scale of the proposed project, should be addressed. The potential for secondary impacts on the communities within this study area should also be addressed.

Cumulative Impacts:
The increased residential development and the commercial development may be growth inducing and could have an adverse cumulative impact on the key intersection of the William Floyd Parkway (CR 46) and the Long Island Expressway (NYS Rt. 495) that could be significant, particularly with respect to traffic. The proposed action will also set an important precedent for future project development under the Planned Development District concept. Cumulative impacts of this and other projects in the area need to be addressed. Alternatives and project mitigation must be considered.

Public Scoping of the Draft Generic Environmental Impact Statement (DGEIS) will occur:
The Town of Brookhaven will undertake public scoping of the Draft Generic Environmental Impact Statement (DGEIS) on September 2, 2010. A Draft Generic Scoping Document will be prepared and

forwarded to all Involved and Interested Agencies and posted on the Town of Brookhaven website http://www.Brookhaven.org. Notice of the time and place of the public scoping will be forwarded to all Involved and Interested Agencies, published in the official newspapers of the Town of Brookhaven, published in the New York State Department of Environmental Conservation Environmental Notice Bulletin, and posted on the Town of Brookhaven's website http://www.Brookhaven.org.

REVIEW AGENCY:	**The Town of Brookhaven Town Board**
CONTACT PERSON:	**Peter E. Fountaine, Division of Environmental Protection**
ADDRESS:	**One Independence Hill, Farmingville, NY 11738**
PHONE NO.:	**631-451-6455**
EMAIL:	**pfountaine@brookhaven.org**

COPIES OF THIS NOTICE SENT TO:

Applicant

Environmental Notice Bulletin

Kimberly Kennedy, Assistant to General Counsel, Suffolk County Water Authority
Andrew P. Freleng, Chief Planner, Suffolk County Department of Planning
Kimberly Shaw, Senior Environmental Analyst, Suffolk County Dept. of Health Services
Craig A. Platt, Secretary, Suffolk County Sewer Agency
Mark Carrara, Deputy Permit Administrator, NYS Dept. of Environmental Conservation
Sheref Fathi, Regional Environmental Manager, NYS Dept. of Transportation
Julie Hargrave, Environmental Planner, Central Pine Barrens Joint Planning and Policy Commission
Virginia L. Bartos, Historic Preservation Program Analyst, NYS Historic Preservation Field Services Bureau
Walter J. Hilbert, Suffolk County Department of Health Services
Kim A. Gennaro, M.S., AICP, VHB Engineering, Surveying and Landscape Architecture, P.C.

Town of Brookhaven:

Patricia A. Eddington, LCSW, Town Clerk and Registrar
Councilperson Connie Kepert – Council District 4
Tullio Bertoli, Commissioner, PELM
Paul Rogalle, PTP, Director, Planning Division, PELM
John L. Turner, Director, Division of Environmental Protection, PELM
Jeff Kassner, Assistant Director, Division of Environmental Protection, PELM
Chip F. Wiebelt, Senior Site Plan Reviewer, Planning Division, PELM

THIS DETERMINATION IS NOT COMPLETE UNTIL AUTHORIZED AS FOLLOWS:

ADOPTED BY RESOLUTION ON: _____

Patricia A. Eddington, LCSW, Town Clerk and Registrar: _____

Novus AGENDA

Lo

Resolution Submission Form

Resolution No.: 2010-815

Councilmember: D-4

Originated By: Eva Greguski, Planning

Title: ADOPTING POSITIVE DECLARATION FOR THE CHANGE OF ZONE FOR THE MEADOWS AT YAPHANK PLANNED DEVELOPMENT DISTRICT CZ NO. 2010-011-CZ

Subject:

Purpose:

Issue positive declaration and schedule a scoping meeting as per SEQRA requirements (Type I Action). S.C.T.M. #0200 55200 0100 001003 and 0200 58400 0200 001003.

History/Misc. Information:

The proposed project would change the zoning of 322.37 acres from L Industrial l and J Busines Planned Development District (PDD) for development of a mixed-use project that includes retai office space, office/flex industrial space and housing. Flex space is defined for purposes of the proposed project as non-residential commercial space that may be office or industrial in nature c other uses permitted in the J Business 2 or L Industrial 1 districts. The commercial components proposed project include approximately 1,032,500 square feet (SF) of space made up of hotel, re restaurant and office/flex or other permitted uses within the J Business 2 and L Industrial 1 distr The proposed residential component is comprised of 850 units of various types and sizes, includ 303 age-restricted units and 85 work force housing units.

Fiscal Impact:

N/A

Account Number:

Property Info:

Appendix A-6
Final Scope for the Draft GEIS

Town Board

October 8, 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

FINAL SCOPE
FOR THE
DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT (EIS)
FOR THE CHANGE OF ZONE APPLICATION TO
PLANNED DEVELOPMENT DISTRICT (PDD)

The Meadows at Yaphank PDD

AS A PERMITTED USE PURSUANT TO
CHAPTER 85, SECTION 338 (PLANNED DEVELOPMENT DISTRICT) OF THE CODE OF THE TOWN OF BROOKHAVEN
ON 333.46 ACRES OF PROPERTY ZONED L-INDUSTRIAL-1 AND J-BUSINESS-2, LOCATED ON THE WEST SIDE OF WILLIAM FLOYD PARKWAY AND NORTH OF THE LONG ISLAND EXPRESSWAY NORTH SERVICE ROAD, IN THE HAMLET OF YAPHANK, AND PURSUANT TO TITLE 6, NEW YORK CODE OF RULES AND REGULATIONS (6NYCRR) PART 617.9

October 8, 2010

Introduction:

This document is the final scope of the issues to be addressed and the analyses to be included in the Draft Generic EIS for the **Meadows at Yaphank Planned Development District (PDD)** project. The Draft Generic EIS that is to contain these materials has been required by the Brookhaven Town Board, as Lead Agency for administration of the PDD application and as required by the New York State Environmental Quality Review Act (SEQRA). The requirement for a Draft Generic EIS was contained in a Positive Declaration issued by the Town Board on July 20, 2010. A Public Scoping Meeting was held on September 2, 2010 where public concerns were voiced and written comments were received for thirty (30) days subsequent to the public hearing. The written comments that were received are attached as Appendix A of this Final Scoping Document and shall be addressed in the Draft Generic EIS.

The Meadows at Yaphank property is comprised of three tax parcels. The Western parcel was previously developed as the Suffolk Downs horseracing track; the Eastern parcel is undeveloped but was previously cleared and had received site plan approval for an 850,000 square foot (SF) retail development. The third parcel, occupied by the Dorade Sewage Treatment Plant (STP), is included because sanitary flow from the proposed project will be conveyed to it for treatment and disposal; however a change of zone is not being requested for this parcel. It is an existing permitted use already serving the community, including Colonial Woods Whispering Pines and the Suffolk County Sanitary District #8 and previously served the operating Suffolk Downs Racetrack. This facility is proposed to be upgraded and restored to its original permitted capacity as part of the proposed project. In addition, the proposed project involves working

cooperatively with the Town and the Yaphank Fire District to facilitate emergency vehicle access from Main Street Yaphank, across the former access road within the southern part of the Town Greenbelt parcel (immediately west of the site) to the subject site. The proposed project will also be served by the Ridge Fire District; however they will utilize existing access points off of the William Floyd Parkway.

The proposed project will consist of retail, mixed-use commercial space, office/flex space and housing. "Flex space" is defined for purposes of the proposed project as non-residential commercial space that may be office or industrial in nature or other uses permitted in the J-2 or L-1 districts. The specific type of use would be determined by market conditions and the analysis will be provided in the DGEIS. The commercial components of the proposed project include approximately 1,032,500 SF of hotel, retail, restaurant and office/flex spaces, in addition, 850 residential units of various types and sizes, including 303 age restricted units and 85 work force housing units, are proposed. The applicants for the project are Rose-Breslin, LLC and Dorade, LLC.

The information prepared in conformance with this scope and the SEQRA process is intended to provide comprehensive input in the decision-making process for use by involved agencies in preparing their own findings and issuing decisions on their respective permits. The Draft Generic EIS will be concise but thorough, well documented, accurate and consistent. Figures and tables will be presented in support of the discussions and analyses contained in the Draft Generic EIS. Where appropriate, technical information will be summarized in the body of the Draft Generic EIS and attached in their entirety in separate appendices.

With approval and acceptance by the Commissioner of Planning, Environment, and Land Management (PELM), the final scoping document, will be distributed as required including posting the Final Scoping document on the Town's website. All reasonable comments and input have been considered for inclusion in the Final Scoping document, prepared under Town Board jurisdiction, it will be established as the document under which the Draft Generic EIS will be prepared.

Under SEQRA Part 617, §617.10, a Generic EIS may be used to assess the environmental impacts of:

(1) a number of separate actions in a given geographic area which, if considered singly, may have minor impacts, but if considered together may have significant impacts; or
(2) a sequence of actions, contemplated by a single agency or individual; or
(3) separate actions having generic or common impacts; or
(4) an entire program or plan having wide application or restricting the range of future alternative policies or projects, including new or significant changes to existing land use plans, development plans, zoning regulations or agency comprehensive resource management plans.

Additionally, under SEQRA Part 617, §617.10(c) and (d), a Generic EIS and its findings should set forth specific conditions or criteria under which future actions will be undertaken or approved. Requirements for any subsequent SEQR compliance, as well as thresholds and criteria for supplemental EISs to reflect specific significant impacts, such as site specific impacts, that were not adequately addressed or analyzed in the generic EIS should be included in the Generic EIS.

When a final generic EIS has been filed under SEQRA Part 617:

(1) No further SEQR compliance is required if a subsequent proposed action will be carried out in conformance with the conditions and thresholds established for such actions in the generic EIS or its findings statement;
(2) An amended findings statement must be prepared if the subsequent proposed action was adequately addressed in the generic EIS but was not addressed or was not adequately addressed in the findings statement for the generic EIS;
(3) A negative declaration must be prepared if a subsequent proposed action was not addressed or was not adequately addressed in the generic EIS and the subsequent action will not result in any significant environmental impacts;
(4) A supplement to the final generic EIS must be prepared if the subsequent proposed action was not addressed or was not adequately addressed in the generic EIS and the subsequent action may have one or more significant adverse environmental impacts.

A Generic EIS is subject to the full procedures of SEQRA.

Brief Description of the Proposed Project:

Site Description

The property is 333.46 acres in size and is located on the northwest corner of William Floyd Parkway and the Long Island Expressway. It is comprised of the following Suffolk County tax parcels:

- Eastern parcel (prior Brookhaven Walk site); 150.17 acres; J-2 zone; tax lot 0200-584-2-1.3
- Western parcel (prior Suffolk Downs racetrack site); 172.20 acres; L-1 zone; tax lot 0200-552-1-1.3
- Dorade STP; 11.09 acres; A-1 zone; tax lot 0200-552-1-3

In addition, a small portion of land within the Town Greenbelt and the Core area of the Central Pine Barrens, located along the western side of the western parcel, may be subject to improvements necessary to provide emergency vehicle access.

The site is located within/served by the following planning and service districts:

- Ridge Fire District
- Yaphank Fire District
- Longwood Central School District
- Suffolk County Water Authority (SCWA)
- Suffolk County Police Department, 7th Precinct
- Groundwater Management Zone III
- Central Suffolk Special Groundwater Protection Area (SGPA)
- J-Business-2 District
- L-Industry-1 District
- Central Suffolk Pine Barrens Area, Compatible Growth Area (adjacent to Core properties)
- Town of Brookhaven Hydrogeologic Sensitive Zone
- Carmans River Watershed Area
- Long Island Power Authority (LIPA), electricity
- National Grid (natural gas)

Project Description

The proposed project will require a change of zone of the subject site (to be reviewed and approved at the discretion of the Brookhaven Town Board) to Planned Development District. A Planned Development District, as defined by Town Zoning Code Section 85-338, is *"a floating zone specifically designed ... to allow the unified and coordinated development of parcels of land, including the transfer of density from the core area of the Central Pine Barrens, ... the granting of zoning incentives to achieve special public benefits, and other flexible design features, all intended to help achieve the implementation of the legislative intent, purposes and goals of this article..."* The proposed Meadows at Yaphank PDD provides an opportunity to develop a lifestyle center, with the components of a downtown, plus corporate office and flex space, hotel and restaurants, a Town Center with neighborhood retail, anchor tenants and a civic square, traditional condominiums and townhouses, ball fields and multi-purpose areas, public plaza with concert green and reflecting pool and Main Street apartments. The proposed development would provide a desirable alternative to a light industrial use and neighborhood business, for which the property is currently zoned.

Stormwater systems will utilize innovative handling methods where possible. The site shall be designed to contain runoff from an 8 inch rainfall event. This can be accomplished by either the use of recharge basins designed for a 5 inch rainfall with a positive overflow or 8 inches without a positive overflow. Rain gardens and bio-filtration swales can be used for bio-filtration in initial surface collection areas for the roadways and parking lots to recharge basins and/or surface detention. The possibility of creating regulated wetlands via rain gardens and/or bio-filtration swales and the consequences on future redevelopment of the property must be analyzed.

The proposed Meadows at Yaphank PDD will consist of 1,032,500 SF of commercial area made up of a hotel (150,000 SF), retail space (327,500 SF), restaurant space (5,000 SF) and office/flex space (550,000 SF). In addition, 850 residential units are proposed including 144 rental units, 486 condominium units and 220 townhouse units. Of the 850 residential units, a total of 85 units will be for work force housing and 303 units will be age restricted for persons aged 55 and older. The residences will include a mix of 1-bedroom (121 units), 2-bedroom (661 units) and 3-bedroom units (68 units).

Amenities on the site will include tennis courts, recreational buildings and pocket parks for residents, as well as several public areas including a great lawn, village square, reflection pool, civic square and civic building, ball fields, public green, multi-purpose field, basketball court and walking trail. The Dorade STP will serve the site and the property owner will make all necessary upgrades to the STP. The property owner or future property owners associations will own and maintain internal roadways, as well as parking areas for the residences as well as the on-site drainage system. Approximately seven acres of land will be dedicated to the Town for future development of athletic fields, basketball courts, access to the Greenbelt trail and parking area.

A boulevard-style roadway with a landscaped center median will provide access directly from the main site access on William Floyd Parkway and run east-west through the development. The hotel and retail uses will be located on the south side of the main roadway, immediately upon entering the site. Residential uses will be located north of the main roadway. The public green areas including the great lawn, village square, reflecting pool and civic square will be situated

north-south, connecting the retail and residential portions of the eastern parcel. A freshwater wetland is located on the northern periphery of the eastern parcel. Moving west within the subject site, office uses will be located south of the main roadway and residential units will be located north of the roadway. A large green space area will be located in the northern portion of the parcel in the vicinity of the residential units and two ball fields and associated parking is located directly north of the green space. The main roadway will terminate with a public park area consisting of a multi purpose field, civic building, restroom facility, basketball court and associated parking area.

Due to the fact that this is a Change of Zone application to Planned Development District, this project must adhere to Town Code §85-340.B. Special public benefits are proposed to be used in exchange for zoning incentives; these public benefits will be analyzed by the Town's Planning Department and will be presented as an appendix with the Draft Generic EIS.

Should the Town of Brookhaven Town Board approve the change of zone application, the following additional approvals will be necessary:

- Town Board - Change of Zone Approval
- Planning Board - Approval of PDD Master Plan, Site Plan and Land Division
- Town Building Department - Building Permits
- SCWA - Water Supply
- Suffolk County Department of Public Works (SCDPW) - Roadwork, STP connection
- SCDPW - Roadwork, Section 136 of the Highway Law Traffic Impact Review
- Suffolk County Department of Health Services (SCDHS) - Suffolk County Sanitary Code (SCSC) Article 6 (Realty Subdivision); and Article 4 (Water Supply)
- Central Pine Barrens Joint Planning & Policy Commission (CPBJPPC) - Development of Regional Significance (DRS) approval
- New York State Department of Environmental Conservation (NYSDEC) - State Pollutant Discharge Elimination System (SPDES) Permit (for STP)
- NYSDEC - Stormwater Pollution Prevention Plan (SWPPP)
- NYSDEC - General Permit for Stormwater Discharge from Construction Activities (GP 0-10-001)

Site History

The subject site has a long history of uses and pending development. The Western parcel, formerly the Suffolk Downs horse race track, was first developed for that use by 1978, but was closed by the mid-1990s, and the associated buildings were demolished by 2001.

Around 1973, the Eastern parcel was identified as appropriate for a regional mall. A site plan application was submitted to the Town in October 1989 for Brookhaven Town Center, a 1.97 million SF, two-phase regional shopping mall and was subject to full review under SEQRA. Findings for the Brookhaven Town Center development were included in the Findings Statement for the North Shore Properties EIS in December 1994 and a subsequent site plan application for Phase I of the Brookhaven Town Center project was submitted and approved in early 1995. Clearing for construction of Phase I of development commenced in August 1997. An amended site plan application with accompanying Draft EIS for a larger Phase I project was submitted in early 1997, wherein construction was halted and subsequently withdrawn by the project sponsor. In late 1999, the New York State Supreme Court determined that the Town Board and the Town

Planning Board had violated SEQRA and the Phase I site plan approval and Findings Statement for the Brookhaven Town Center portion of the North Shore Properties EIS was rescinded. A new application known as Brookhaven Walk was submitted and SEQRA review commenced in May 2000 by the new (and current) owner/applicant, Rose-Breslin, LLC proposing 1.043 million SF of retail floor space. A Final EIS was submitted in September 2002 outlining a reduced-scale preferred alternative with a total of 850,000 SF of retail and cinema space. The Town Planning Board determined that the preferred alternative was sufficiently different from the prior proposal and thus required a Supplemental EIS. A Draft Supplemental EIS was submitted and a Final Supplemental EIS was adopted in September 2006.

During review of the Supplemental EIS, the Town Board adopted changes to the Town zoning code. The site was rezoned from J-Business-3 to J-Business-2 in 2003, and the J-Business-2 dimensional standards were changed to enhance landscaping and other site design features. The site plan that resulted from the Final Supplemental EIS process conformed to the revised J-2 district and was approved. The Brookhaven Walk site is located in the Central Pine Barrens and is subject to the Central Pine Barrens Comprehensive Land Use Plan. The Brookhaven Walk project was a DRS, and received DRS approval from the CPBJPPC. It is important to note that Brookhaven Walk involved on-site conventional septic tank-leaching pool sanitary systems. Though the applicant had ownership and operations control of the Dorade STP, this plant was not utilized for the Brookhaven Walk project. However, an SCDHS covenant required a connection to a regional STP if feasible and available.

The economic downturn during 2009 caused the applicant to re-think the project and it was determined that a mixed-use project that included the Brookhaven Walk property as well as the Race Track property to the west, was a more sustainable option for the property. The Brookhaven Walk property retains the J-2 zoning, and the Race Track property is zoned L-Industrial-1. The applicant worked closely with the Town Department of Planning, Environment & Land Management (PELM) to plan a mixed-use PDD that provides diverse housing opportunities, a retail shopping destination, office development, recreational opportunities and public benefits, all in a comprehensively designed project.

The applicant submitted a PDD Pre-Application document for this project to the Town Board on March 24, 2010. A PDD Pre-Application Conference was held on April 7, 2010, and minutes of that meeting were prepared to provide direction to the applicant in regard to the overall project. Subsequently, the required Phase I PDD submission was made on or about May 25, 2010; this submission included the preparation of a Part I Environmental Assessment Form (EAF). The Town Board, as lead agency under SEQRA, issued its Positive Declaration on July 20, 2010 requiring the preparation of a Draft Generic EIS.

As required by SEQRA, the contents of the Draft Generic EIS are determined as a result of a process known as "scoping". The Draft Scope was submitted to the Town on July 21 2010, and has been subject to public and agency input. A Public Scoping Meeting was held on September 2, 2010 where public concerns were voiced and written comments were received for thirty (30) days subsequent to the public hearing. The written comments that were received are attached as Appendix A of this Final Scoping Document and shall be addressed in the Draft Generic EIS.

This has resulted in the issuance of this Final Scope by the Town Board of the Town of Brookhaven as lead agency. Town Board issuance of the Final Scope completes the scoping process, in conformance with 6NYCRR, Part 617.8.

Potentially Significant Adverse Impacts:

The following is a description of the potential significant adverse impacts that may occur as a result of the proposed project, as listed in the Positive Declaration.

1. Change in the topography and soil profiles of the site.
2. Potential impacts to soil and groundwater quality as a result of lawn and landscaping maintenance and chemical applications.
3. Potential alteration and/or impacts to wetlands on-site.
4. Potential impacts from alteration of drainage patterns.
5. Potential impacts on surface waters from sanitary wastewater recharge, fertilizers use and stormwater handling, particularly for the Carmans River and also for the Peconic River.
6. Change in the ecological character of the subject site and impact on flora and fauna.
7. Potential impacts on air quality from the vehicle emissions associated with the increased traffic generated by the site and emissions generated by other combustion sources.
8. Increases in peak hour vehicle trips generated on-site and ability of local roadways to accommodate the increased vehicle trips generated by the project.
9. Potential impacts on the existing patterns of land use and zoning, particularly with regard to the compatibility of a PDD as well as evaluation of conformance with land use plans.
10. Potential impact on community service providers by increased demand for services including fire, police, water, solid waste handling, electric and gas service providers, as well as consideration of relative school district impacts of the project and alternatives including evaluation of tax revenue/deficit.
11. The residential component may generate additional school-aged children that could increase the tax burden to the school district and that could exceed the capacity of the school district's infrastructure.
12. The project, which is a DRS, must be evaluated for conformance to the standards and guidelines of the Central Pine Barrens Land Use Plan.
13. Change in the visual quality of the subject site resulting from the proposed architecture and site layout.
14. Change in the prevailing character of the community.
15. Impacts associated with noise in the surrounding area.
16. Impact to possible archaeological resources through evaluation of cultural resource sensitivity of the site.
17. Potential impacts to the community related to construction-associated activities of the project.
18. Potential cumulative impacts of the project in combination with other planned projects in the area, particularly with respect to traffic.
19. The proposed project may induce additional growth in the area, and would set an important precedent for future project development, including development under the Town's PDD zoning.
20. Evaluation of alternative uses of the site in terms of relative impacts and public benefits.

Organization and Overall Content of the Draft Generic EIS Document:

The Draft Generic EIS will conform to the basic content requirements as contained in 6NYCRR Part 617.9(b)(3). The document will include the following sections:

Cover Sheet

Pursuant to SEQRA Part 617, §617.9(b)(3), the Draft Generic EIS will be preceded by a cover sheet stating:

- Title identifying that the document is a Draft Generic EIS
- Name of the project and type of application under review
- Hamlet, Town, County and State in which project is located
- The Brookhaven Town Board will be identified as the Lead Agency for the project and the name and telephone number of the Lead Agency contact will also be provided.
- The name and address of the project sponsor as well as the name and address of a contact person representing the project sponsor.
- The name and address of the primary and all secondary preparers, as well as contact names and telephone numbers of each preparer.
- Month and year submitted
- Date of acceptance of the Draft Generic EIS (to be inserted later)
- Deadline by which comments on the Draft Generic EIS are due (to be inserted later)

Table of Contents

Table of contents will provide all headings, page numbering, list of figures, list of tables, list of appendix items and any additional volumes, if any.

Summary

Contents of the summary will include the following:

- Brief description of the proposed action
- Brief summaries of the significant beneficial and adverse impacts
- Brief summaries of the mitigation measures
- Brief summaries of the cumulative impacts
- List of public benefits.
- List of the alternative development scenarios considered
- List of the permits and approvals required

DGEIS Text

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1.1 Project Background, Need, Objectives and Benefits

1.1.1 Project Background
1.1.2 As-of-Right Yield
1.1.3 Public Need and Municipality Objectives
1.1.4 Objectives of the Project Sponsor
1.1.5 Benefits of the Proposed Project

1.2 Project Location and Existing Site Conditions

1.2.1 Project Location
1.2.2 Existing Site Conditions

1.3 Project Design and Layout

1.3.1 Overall Site Layout and Structures
1.3.2 Clearing, & Grading and Drainage System
1.3.3 Vehicle Access, Road System and Parking
1.3.4 Sanitary Wastewater Disposal and Water Supply
1.3.5 Solid Waste Disposal
1.3.6 Landscaping, Lighting and Amenities
1.3.7 Open Space and Recreation
1.3.8 Sustainable Project Features

1.3.9 Conformance to Town PDD Requirements

1.4 Construction Schedule and Operations

1.4.1 Construction Schedule

1.4.2 Construction Operations

1.5 Permits and Approvals Required

2.0 NATURAL ENVIRONMENTAL RESOURCES

2.1 Topography

2.1.1 Existing Conditions

2.1.2 Potential Impacts

2.1.3 Mitigation

2.2 Soils

2.2.1 Existing Conditions

2.2.2 Potential Impacts

2.2.3 Mitigation

2.3 Water

2.3.1 Existing Conditions

2.3.2 Potential Impacts

2.3.3 Mitigation

2.4 Ecology

2.4.1 Existing Conditions

2.4.2 Potential Impacts

2.4.3 Mitigation

2.5 Air

2.5.1 Existing Conditions

2.5.2 Potential Impacts

2.5.3 Mitigation

3.0 HUMAN ENVIRONMENTAL RESOURCES

3.1 Land Use, Zoning and Plans

3.1.1 Existing Conditions

3.1.2 Potential Impacts

3.1.3 Mitigation

3.2 Community Character

3.2.1 Existing Conditions

3.2.2 Potential Impacts

3.2.3 Mitigation

3.3 Community Facilities and Services

3.3.1 Existing Conditions

3.3.2 Potential Impacts

3.3.3 Mitigation

3.4 Transportation (full scope provided below)

3.4.1 Existing Conditions

3.4.2 Potential Impacts

3.4.3 Mitigation

3.5 Cultural Resources

3.5.1 Existing Conditions

3.5.2 Potential Impacts

3.5.3 Mitigation

4.0 OTHER REQUIRED SECTIONS

- **4.1 Cumulative Impacts**
- **4.2 Adverse Impacts That Cannot Be Avoided**
- **4.3 Irreversible and Irretrievable Commitment of Resources**
- **4.4 Growth-Inducing Aspects**
- **4.5 Effects on the Use and Conservation of Energy Resources**
- **4.6 Construction Impacts**

5.0 ALTERNATIVES

- **5.1 Alternative 1; No Action**
- **5.2 Alternative 2: Development Under Existing Zoning**
- **5.3 Alternative 3: Public Acquisition**
- **5.4 Alternative 4: Development of property with existing approvals**
- **5.5 Alternative 5: Development of property under L Industrial 1 zoning code**

6.0 REFERENCES

An expanded outline of methodology and extent and quality of information existing and needed for the Draft Generic EIS is provided below.

Extent and Quality of Information Needed to Adequately Address Each Impact:

As required under SEQRA, the Draft Generic EIS should include *"a statement and evaluation of potential significant adverse impacts at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence"*. Included in this evaluation should be reasonably related short-term and long-term impacts, with other required sections identified in this scoping document. This section further describes the level of analysis and the type of analysis expected with respect to the key environmental impacts of the project as outlined in the Positive Declaration. Each major section is followed by a description of the extent and quality of information needed to perform the evaluation of each of the impacted resources.

The following describes the information to be obtained and analyses provided in the Draft Generic EIS to address each of the potential adverse environmental impacts identified in the Positive Declaration:

Description of the Proposed Project

Project Background, Need, Objectives and Benefits - A description of the history/evolution of the subject site with respect to prior uses and estimated intensities of activity, approximate dates of use; dates when activity ceased. The intended use of the site for economic growth and development will be established through summary of prior land use documents. Public need for the project will be discussed.

Concerns have been raised on whether there is a need for retail space in the Town of Brookhaven and Suffolk County in general. The introduction of additional retail competition has the potential to increase the vacancy rates in shopping centers within several miles of the proposed project site. The proposed project may cause conflict with initiatives along the Montauk Highway corridor in the Mastic-Shirley area and reduce the utilization of industrial zoned properties as a means to achieve local job creation in areas of light industry. The economic need for the project will be discussed.

A brief history of the evolution of the proposed application (including input sought by applicant from the community) will be provided; this will relate proposed project to Town goals for site and surrounding area; discuss the community's need for the commercial and residential components of the project; provide discussion of the applicant's goals in pursuing proposed project; and provide listing/discussion of the benefits to accrue to the community from the proposed project. Indicate anticipated number of residential units, types of non-residential tenants expected/sought, range of selling prices of residences, and ownership and management of the various project components; discuss affordable housing provided. Note whether/how project conforms to applicable plans or land use studies and meets the goals of the PDD district. The objectives of the project sponsor will be included and discussed. The goals of the project sponsor in pursuing the proposed project will be discussed. Provide discussion of the benefits to accrue from the proposed project including public benefits, integration of sustainable development, economic stimulus, taxes and jobs; provide detail on types/quality of jobs anticipated. The benefit of economic growth and development in conformance with prior land use plans will be established.

Project Location and Existing Site Conditions – Describe and map location of site in terms of roadway access and adjacent/nearby significant properties, districts and services; identify tax parcels; provide a description of the existing site condition and surrounding land uses and roadway network.

Project Design and Layout – Based on Conceptual Plan, describe layout of project and factors determining same based on site master Plan; describe/discuss: structures proposed; anticipated architectural style, site access, internal roadways and parking; conceptual grading and drainage, limits of clearing; sanitary disposal and water supply systems; landscaping, lighting and other amenities proposed; describe open space areas and recreational amenities. Discuss factors determining connection to existing Dorade STP, any anticipated improvements, technology used and performance, and applicable agency reviews and approvals of this facility. Changes which may occur as a result of emergency fire access to the site from Main Street Yaphank will be described. Provide Comparison Table of current and anticipated future conditions of site.

The anticipated conceptual grading program for the site will be described in terms of anticipated cut, fill, and balance of soil quantities. The Town lighting requirements, conceptual lighting plan and an illumination analysis will be provided and described. Information on the type, amount and location of landscaping anticipated will be provided as well as information on maintenance requirements such as irrigation and fertilization under operation and maintenance. An account of the expected height of the buildings in relation to the surrounding area and Town Code restrictions will be included. Review PDD zoning conformance on point-by-point basis per Town Code requirements. Discuss compliance to other applicable development regulations.

Construction Schedule and Operations - Provide Conceptual Phasing Plan and describe construction process and anticipated schedule, phasing and operations (note that phasing and construction scheduling are estimates and are subject to change based on market conditions; include a discussion of site preparation, construction materials storage/staging area deliveries and construction schedule/estimated duration; workers' parking, hours of operations, truck delivery routes, facility use, occupancy and operation, protection of natural and sensitive areas, and related construction and operations). Include a discussion of conformance to SPDES stormwater and erosion control regulations for construction and post-construction conditions. Provide anticipated sequence and duration of construction phases, and maintenance and operation of the facility. Discuss the type, duration and extent of the anticipated impacts associated with the construction period for the proposed project and measures to mitigate such impacts, particularly noise and dust.

Permits and Approvals Required - Provide brief discussion of SEQRA process and review stages required for the proposed project; list all required permits, reviews and approval, and note the administrative status of each.

Natural Environmental Resources
Topography - The site's existing topographic character will be discussed and mapped based on available topographic data, to include the general elevation trends of the site, the existing high and low elevations and locations, previous modifications made for the project, and site drainage characteristics. The proposed project plan will be used to discuss/analyze the anticipated grading requirements of the proposed project, preliminary estimates of anticipated export or import of soils, if any, and the volumes and maximum depths of cut/fill, as well as locations, will be discussed. The location of any exported material disposal site will be discussed. Discuss compliance with Town/SPDES permitting and Town Chapter 86 Stormwater Management and Erosion Control requirements. Discuss mitigation measures, including conformance to SPDES GP-0-10-001.

Soils - The site's existing soil types and their distribution pattern will be described; a discussion of the limitations to development of each soil type found [the SCSC (1975) will be referenced for this information and a map will be provided]. Site-specific soil information will be presented and discussed, if available; soil limitations will be presented in tabular form. Provide information on the existing soil quality with respect to proposed uses and potential chemical application. Information from test borings conducted on-site, if any, will be presented. Potential impacts will be assessed based on proposed use of site and soil limitations outlined above. Discuss mitigation measures, including corrective measures necessary to overcome soil limitations.

Water - Identify SCDHS Groundwater Management Zone; discuss availability of wastewater treatment systems in the area; discuss existing surface water and identify proximity to flood plains. The site's existing groundwater-related characteristics will be provided; the water table elevation and direction of flow beneath the site will be determined, described and depicted with a Groundwater Flow Map, and the quality of groundwater in the region will be characterized by use of the most recent available monitoring or supply well test results from the SCWA, SCDHS and/or NYSDEC. Figures and tables will be provided as appropriate, including a water table map and water quality test results. The topographic information incorporated in the proposed project plans and information obtained from soil test borings conducted on-site (if available) will be utilized to determine the maximum and minimum depths to the water table beneath the site. The site's relationship to the groundwater and surface water contributing area of the Carmans River and Peconic River will be mapped and described.

The site's existing and anticipated groundwater recharge rates and nitrogen levels will be estimated by use of mass balance methods designed for nitrogen and recharge budget analysis. Changes in these values from those of the existing conditions will be quantified and discussed, model results will be presented in an appendix. Sources of potential adverse impacts to groundwater quality (including potential disposal of residents' pharmaceuticals) will be described and discussed in particular; the anticipated nitrogen concentration will be referenced to the NYS Drinking Water standards and standards for protection of surface waters. Identify contamination/plumes existing at the Brookhaven National Laboratories (BNL) in relation to project site. Identify water supply wells and systems and sanitary wastewater systems serving the site. Identify Carmans River Wild, Scenic and Recreational River (WSRR) boundary relative to the site. The proximity of the site to surface waters and wetlands will be discussed and mapped using NYSDEC freshwater wetland maps, site inspections, and national wetlands inventory. Setbacks from any surface water bodies or wetlands will be presented as well as applicable regulations discussed. Identify goals of the SGPA established pursuant to the New York State Environmental Conservation Law, Article 55 and the aquifers sole source designation, with respect to the subject site. Identify the goals of the 208 Study with respect to the subject site.

Determine potential impact of contamination/plumes from BNL as related to proposed project site. Improvements to the Dorade STP will be discussed; the impact of the added flow from the proposed action on the plant will be analyzed. Other water quality impacts related to pesticides, snow melt chemicals (if applicable), chemical storage, tank storage (if applicable) and any other sources shall be analyzed. The Draft Generic EIS will provide calculations of projected water consumption for each use proposed and, in consultation with the SCWA, will evaluate the ability to meet this projected water demand. Potential impact on surface water bodies in proximity to the site will be assessed.

Discuss compliance with SCDHS/NYSDEC for Groundwater Management Zone and proposed wastewater treatment facility; discuss impacts related to depth to groundwater; discuss stormwater recharge facilities based on engineering design; discuss water supply and water availability for the proposed project; describe impacts to surface water resources both on-site and tributary, and drainage as well as potential impacts with respect to proximity to flood plains, if applicable. A mass balance analysis will be performed to determine nitrogen concentration in recharge for Pine Barrens Plan conformance. Potential nitrogen impacts will be assessed in terms of both "load" and "concentration". Potential phosphorus and chloride impacts will be assessed. Potential for impact from site operations will be described and conformance to applicable requirements and regulations will be discussed. Conformance to requirements of SCSC Articles 6, 7 and 12 will be discussed. Conformance to the recommendations and conclusions of the Nationwide Urban Runoff Program (NURP) Study will be provided.

The potential for erosion and associated surface and groundwater impacts during the construction process will be discussed, and the requirements and conformance to the Town's Chapter 86 Stormwater Management and Erosion Control requirements will be provided.

The project site contains New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetland B-16 that is considered environmentally sensitive. The potential impacts to the NYSDEC Freshwater Wetland B-16 and any other wetlands area on the site pursuant to Town Code will need to be addressed and mitigated.

Ecology- Based on site inspections by qualified personnel, the site's existing natural resources including vegetation and wildlife species will be described and lists of species observed and/or expected will be provided; a map of the site's habitat areas will be prepared. Describe/discuss the existing vegetation resources of the site, including habitats found, acreages of each habitat type, expected and observed vegetation and wildlife species identification, document any known or observed endangered or protected plant species; evaluate wetland features with respect to Town Chapter 81 wetland requirements. The Breeding Bird Atlas for site and area species will be consulted and documentation of on-site bird surveying conducted pursuant to NYSDEC protocol will be provided. Correspondence from the New York State Natural Heritage Program (NHP) will be obtained, and any information provided will be addressed, particularly with respect to species with some level of recognition or protection. Potential impacts from loss/change of habitat area and/or displacement of species will be quantified and addressed. Quantify change in habitat quantities and types on the site; document change to ecological character and wildlife species occupying the site based on NHP findings, as well as the potential impact upon rare, threatened or endangered plant and animal species, if present. If impacts to threatened or endangered species identified by NHP or expected on site are identified as a result of the proposed project, a habitat protection plan will be proposed for the subject site. The assessment will include any ecological changes which may occur as a result of the proposed emergency fire access to the site from Main Street Yaphank. The plan will be comprehensive in addressing coordination with adjoining habitat protection.

Air - Describe/discuss existing meteorological and climate characteristics of vicinity and air quality in area, briefly describe the applicable air quality standards and regulations as well as conformance to each,

and provide initial screening analysis per New York State Department of Transportation (NYSDOT) Environmental Procedures Manual (EPM) to determine whether microscale analysis is necessary. Intersections where an increase in traffic volumes would result from the proposed development will be screened to determine if additional analysis is required. Potential sensitive receptors will be identified.

The existing air quality conditions shall be identified qualitatively and quantitatively with respect to the National Ambient Air Quality Standards/New York State Ambient Air Quality Standards and potential sensitive receptors. The project study area will be screened for potential air quality impacts using the EPM as based on the Traffic Impact Study (TIS) and emissions generated by other combustion sources. Should air quality screening analysis show that the potential for air quality impacts exists, microscale analysis will be conducted in accordance with procedures outlined in the EPM. The future "No Build" and "Build" conditions will be quantitatively assessed for project-induced changes to carbon monoxide and particulate matter (less than 2.5 microns in size) levels in the ambient environment at those locations with the greatest potential for air quality impacts.

Human Environmental Resources

Land Use, Zoning and Plans - The Draft Generic EIS will describe and map the existing land use and zoning of the site, of adjacent and nearby sites, and the patterns of land use and zoning within approximately 1,000 feet of the project site. The document will discuss the compatibility of the project with surrounding land uses (including any similar uses already established in the area) and the land use pattern, as well as the zoning pattern, of properties within 1,000 feet. The Draft Generic EIS will analyze the conformance of the project with requirements of the Town Code Section 85 for the proposed PDD zoning. A description of the Draft Town Comprehensive Land Use Plan (1996) and relevant land use plans, particularly the Central Pine Barrens Comprehensive Land Use Plan will be provided, and the pertinent recommendations will be described and analyzed. Note that the project site is within the Central Pine Barrens Zone, and is a DRS, for which an approval from the CPBJPPC will be required

Community Character - Based on site visits and the use of digital photographs (to be presented in an appendix), the existing viewscape of and across the site from adjacent roadways and other publicly accessible viewpoints will be described. Locations shall be determined through analysis of significance to the viewing public. Based on the applicant's and architect's input in regard to building design and material use, the anticipated visual impacts of the proposed buildings will be discussed for the same viewpoints. "To scale" photographic and architectural renderings will be prepared, with supporting descriptive text to fully disclose the anticipated change of visual character of the site. Based on the applicant's and architect's input in regard to proposed outdoor lighting, the anticipated impacts on adjacent properties will be evaluated. The intent will be to illuminate only areas on the interior of the site by use of dark sky compliant, low wattage and/or shielded fixtures and minimizing use of lighting to safety and security purposes. Describe the noise environment in the area of the subject site. In addition, operational noises and potential impacts of area noise upon future residents of the project as well as neighboring properties will be discussed. In conjunction with the discussions of potential land use impacts presented in the section above, discuss potential impacts on the quality of life for residents within 1/4-mile.

Community Facilities and Services - The document will analyze the existing and estimated future property tax revenues generated by the site and allocations to taxing jurisdictions. The estimate of the project's taxes will be presented using either comparable taxes or by a market analysis method (calculated by obtaining the project's market value multiplied by the Town's Equalization Rate to estimate the project's Assessed Value). This information will be presented in a table. The Draft Generic EIS will discuss the types and levels of public services available in the area, whether these levels are sufficient to address the needs of the community at present, and the public service needs of the project, as well as potential future fiscal and usage impacts on these community service providers. Letters will be sent to

community service providers to determine the services and facilities available, and inquire whether there are or may be limitations on serving the project. Discuss the role and existing characteristics of each of the following community service providers relative to the site:

- Longwood Central School District
- Ridge Fire Department
- Yaphank Fire Department
- Suffolk County Police Department, 7th Precinct
- Town of Brookhaven Department of Waste Management
- SCWA
- National Grid/LIPA

The estimated school tax allocations for the project, as well as the projected tax allocations for other service districts will be discussed in terms of potential fiscal shortfall/excess for the district.

Transportation - The Transportation section will include a summary of the TIS prepared for the project; the entire TIS will be presented in its entirety in an appendix. The TIS will be prepared in accordance with transportation engineering standards of the profession, and will use methods by transportation engineers and standards sought by the NYSDOT, SCDPW and the Town of Brookhaven. Existing transportation infrastructure in the region will be described. The TIS will analyze intersections identified by NYSDOT. The TIS and DGEIS will summarize "Existing Conditions" and future "No Build" volumes for the study intersections for the build analysis year; the "No Build" analysis will consider a growth factor. The summary text will discuss intersection capacity analyses for the study intersections identified above and the site access driveways and will identify impacts at study intersections for "Build" conditions. The TIS will include the following:

Manual turning movement/vehicle classification counts will be conducted during the weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) and Saturday midday (11:00 AM-2:00 PM) peak hours at the following locations:

- William Floyd Parkway northbound/ Brookhaven National Lab
- William Floyd Parkway southbound/ Longwood Road
- William Floyd Parkway/ Police Headquarters
- William Floyd Parkway/ Moriches Middle Island Road
- William Floyd Parkway/ Yaphank Woods Boulevard
- Yaphank Woods Boulevard/ Colonial Woods

Automatic Traffic Recorder Counts will be collected at the following locations:

- William Floyd Parkway - south of Yaphank Woods Boulevard
- I-495/William Floyd Parkway Interchange:
  - Northeast loop ramp
  - Northeast outer ramp
  - Northwest loop ramp
  - Northwest outer ramp
  - Southeast loop ramp
  - Southeast outer ramp
  - Southwest loop ramp
  - Southwest outer ramp
  - North Service Road between northwest outer ramp and I-495 onramp
  - South Service Road between southwest outer ramp and southwest loop ramp

- I-495 eastbound at William Floyd Parkway
- I-495 westbound at William Floyd Parkway

In addition to accounting for historic background growth, the traffic projections associated with other planned and/or approved developments near the site shall be considered. Based on conversations with the Town of Brookhaven, the following developments were identified that could generate additional traffic through the study area.

- Pinnacle Hotel - This project consists of a 200-room hotel to be located at the intersection of Natcon Road/Roned Road in Brookhaven.
- Silver Corporate Park - This site on the northwest corner of Exit 66 of the Long Island Expressway is currently zoned industrial. A previous proposal was denied for this project, which consisted of a mixed-use project. Although there is no known new current proposal, the site is currently zoned Industrial and this analysis will based on such. At the request of the Town of Brookhaven, the traffic volumes generated by a potential industrial development are to be incorporated into the analysis.
- TRC (Tritec) Parcel - This site on William Floyd Parkway is an existing office park with some vacant parcels. At the request of the Town of Brookhaven, the traffic volumes generated by the full build out and occupancy of the site based on its current zoning will be analyzed.
- Legacy Village - This potential future smart growth development is in the very preliminary stages, and details of this development are not known at this time. Therefore, volumes from this potential development will not be included in this TIS. However, the future volumes associated with the Brookhaven Meadows development should be accounted for in future analysis for the Legacy Village development.
- Arrow Parcel - This parcel is located on William Floyd Parkway south of the Long Island Expressway (southwestern corner). Currently the site in zoned industrial and is occupied by the Clare Rose Distributors, there are two additional industrial parcels available on this property; these parcels will be analyzed based upon its current zoning.
- The Artist Lake Plaza – The property is located at the northeast corner of the intersection of NYS Route 25 (Middle Country Road) and Currans Road in Middle Island. The application is to rezone 32.89 acres of A-1 zoned land to J-2 so that a total of 49.08 acres of contiguous J-2 zoned land would be established along Middle Country Road. The proposed project involves the removal of the existing former K-Mart structure and development of two large anchor stores and seven smaller retail buildings
- The Condominiums at Sandy Hills – The property is located south of Bailey Road, north of Middle Country road, and east of Rocky Point Road in Middle Island. The proposed plan includes a 135 unit residential development, 13,000 square foot (SF) commercial building adjacent to Middle Country Road, an approximately 1,600 SF clubhouse, a village green/playfield, a pool, and a sewage treatment plant (STP) proposed to serve both the subject property and an adjacent proposed multifamily development on the west side of Rocky Point Road.
- Competition Toyota - The subject site is located on the north side of New York State Route 25 and on the east side of Tudor Lane in Middle Island. The proposal involves a change of zone on a 5.269 acre parcel from A Residence1 Residential and J Business 2 Business to J Business 5 for the construction of a 29,735 SF automobile service facility.

Describe emergency evacuation routes from the area, discuss the capacity to accommodate the additional trips generated by the proposed project in such an event, and review any existing or pending plans to address this issue.

Cultural Resources - Describe and discuss the results of the prior Phase I Archaeological Assessment prepared for the former Brookhaven Walk site, as well as the recent review of the racetrack parcel by the State Historic Preservation Office with respect to the potential for cultural resources of the site. Attach pertinent correspondence in an appendix.

Other Required Sections
In addition to the key resources identified in the Positive Declaration, SEQRA identifies other required sections for a complete EIS as included in 6NYCRR Part 617.9 (b)(3). The following Other Required Sections and evaluations should be provided in the Draft Generic EIS.

Cumulative Impacts - Cumulative impacts are the potential impacts of a proposed action taken in conjunction with those of other active or anticipated nearby development projects. Cumulative impacts will be analyzed with other pending applications in the area, to be provided by the Town Planning office. The other pending applications considered here will be the same as those analyzed in the TIS (see above), and include:

- Pinnacle Hotel
- Silver Corporate Park
- TRC (Tritec) Parcel
- Arrow Parcel
- Legacy Village
- The Artist Lake Plaza
- The Condominiums at Sandy Hills
- Competition Toyota

Potential impacts of the proposed project on each resource category (if any) will be addressed, with an emphasis on potential traffic impacts. The characteristics of these projects relevant to traffic, community services and potential groundwater impacts will be ascertained from review of Town Division of Planning records and quantified cumulatively with those of the proposed project and these impacts will be discussed.

Adverse Impacts That Cannot Be Avoided - A list and brief descriptions of those adverse impacts described and discussed in greater detail elsewhere in the document that cannot be avoided will be provided.

Irreversible and Irretrievable Commitment of Resources - The Draft Generic EIS will identify those natural and human resources described in the Existing Conditions sections that will be consumed, converted or made unavailable for future use as a result of the proposed project.

Growth-Inducing Aspects - Growth-inducing aspects of a project include those direct and indirect effects of that project that promote additional development in the area. The nature of such anticipated growth will be described and impacts of growth (if projected) will be assessed.

Effects on the Use and Conservation of Energy Resources - Provide a discussion on those aspects of the proposed project that would contribute to an increase in energy as well as potential options for conservation. Assess the use of energy and fossil fuels, and propose mitigation measures and alternatives to reduce greenhouse gas emissions (GHG); these emissions are defined as carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Evaluate project related emissions of these gases including (to the extent predictable or known), both direct and indirect emissions and stationary and mobile sources, for full development. GHG guidance documents available from

NYSDEC will be used as a general guide for analysis, where applicable and appropriate, based on the size and type of project proposed. At a minimum, the Draft Generic EIS will provide a qualitative discussion of direct and indirect emissions and propose mitigation measures and alternatives to reduce greenhouse gas emissions. Discuss potential mitigation/alternatives to reduce the project's consumption of fossil fuels and consequent generation of greenhouse gases including, reasonable demand for electricity and transportation fuels, site or building-related design and alternative technologies; include an estimate of the reduction in emissions that would result from mitigation, alternatives and/or qualitative assessment as described herein.

The document will outline any Energy Star and/or Leadership in Energy and Environmental Design (LEED) initiatives that may be considered for implementation in connection with the proposed project.

Initial Identification of Mitigation Measures:

This Final Scope includes an initial identification of mitigation measures that will be further addressed in the Draft Generic EIS as required by SEQRA. These are outlined as follows:

- Topography - Provide a discussion of any measures taken to mitigate potential impacts related to alterations in the topographic contour of the subject property, including but not limited to: erosion control measures, conformance to Town Chapter 86 Town Stormwater Management and Erosion Control requirements and GP 0-10-001, slopes 1:3 or less. Balance site cut and fill volumes as much as practicable, identify construction methods to be implemented to ensure protection of adjacent uses, erosion control measures, slope design for less than 1:3; site stabilization techniques, minimize cut/fill, hours of construction operations, and truck routes to be utilized; such as erosion control plans.
- Soils - Provide a discussion of any measures taken to mitigate impact related to limitations of soils present at the subject property; including but not limited to: erosion control measures, removal of unsuitable soils, if necessary. Provide soil amendment to ensure proper fertility of soils for landscaping. Ensure proper drainage systems based on soil limitations. Fugitive dust control measures such as wetting of dry soils. Remove potentially unacceptable soils from drainage/leaching system excavations and replace with clean, good quality leaching material.
- Water Resources - Provide a discussion of any measures taken to mitigate impact related to water resources in the vicinity of the subject property including but not limited to: STP, fertilization control and natural landscape areas, stormwater management, water quality evaluation and resultant mitigation. Ensure adequate depth to groundwater for sanitary and drainage leaching facilities; conform to NURP Study recommendations for stormwater; preparation of a SWPPP and erosion control plans to ensure proper stormwater handling and erosion control. The improvements to the existing Dorade STP will be discussed. Provide for proper sanitary waste disposal; provide adequate runoff containment. Conform to the applicable requirements of the Town Zoning Code, SCSC and NYSDEC to ensure that the potential for significant adverse environmental impacts would be minimized, if not eliminated.
- Wetlands and Waterways - The project site contains New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetland B-16 that is considered environmentally sensitive. The potential impacts to the NYSDEC Freshwater Wetland B-16 and any other wetlands area on the site pursuant to Town Code will need to be addressed and mitigated. Potential impacts to the Carmans River, a tributary to the Great South Bay, located approximately 1,850 feet to the south of the site, as well as any potential impacts to the Peconic River will need to be evaluated and mitigated.
- Ecology - Provide landscaping to enhance habitat quality and aesthetics on the site. Retain existing suitable vegetation and provide buffers surrounding pond areas where possible. Identify ecological mitigation such as planned vegetated open space and habitat, buffers, retention of trees, and replanting with indigenous vegetation. Use of native plants, reduction of turfed areas, reduction in the use of fertilizer, and minimization or elimination of the use of pesticides. Identify invasive plant

species that must not be used in landscaping. Wildlife mitigation may include items such as retaining habitat; protection of endangered species through setback and corridor mitigation specific to species based on identified resources. Ensure permanent protection of open space.

- Land Use, Zoning and Plans - Provide a discussion of mitigation measures taken to limit impacts to land use, zoning and compliance with applicable plans, including but not limited to: buffering and design for neighborhood compatibility; dedication of land for public use; availability of space for sanitary waste treatment; affordable housing; land for potential public sewer district facility; quality sit-down restaurant space.
- Community Character - Provide a discussion of the measures taken to mitigate impacts to visual and noise resources, which would tend to minimize impacts to the character of the community and include: buffering; setbacks; landscaping and architecture (architectural designs using materials having colors and textures appropriate for the area) and landscaping schemes complementary to the area development pattern. Use dark sky compliant, low wattage and/or shielded lighting fixtures, to illuminate only the interior of the site, for safety and security purposes. Maintain public street setbacks and buffers in areas of the project site that may adversely impact visual resources.
- Community Facilities and Services - Provide a discussion of the taxes generated by the project that would partially offset the increased costs to community service providers. Potential increased need for emergency services would be minimized by use of security, fire and/or smoke alarms, fireproof or fire-retardant building materials, lighting systems, security patrols, etc. Increased amounts of water and energy required for the proposed project would be minimized by use of water- and energy-conserving mechanical systems, plumbing fixtures, insulations, building materials, etc. Use low wattage and/or shielded lighting fixtures, to illuminate only the interior of the site, for safety and security purposes. Limit use of fossil fuels where practicable. Increased amounts of water and energy required for the proposed project would be minimized by consideration of LEED design guidelines and use of water- and energy-conserving mechanical systems, plumbing fixtures, insulations, building materials, etc.; conservation technology will be examined.
- Transportation - Implement necessary and appropriate traffic-related improvements delineated in the TIS to minimize potential impacts to traffic flow and intersection operations.
- Cultural Resources - Discuss any mitigation measures required to protect cultural resources on or in the vicinity of the subject property.

Reasonable Alternatives to be Considered:

SEQRA requires a description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor. The Meadows at Yaphank PDD Draft Generic EIS will contain an analysis of such reasonable and feasible alternatives. The alternative analyses will be presented at a level of detail appropriate to permit analysis and comparison of impacts between alternatives and the proposed project, sufficient to allow the Town Board to make a comparative assessment of potential impacts. The assessment will be based on conceptual plan narratives.

A table comparing the key quantifiable impacts of each alternative will be prepared. The alternatives described and analyzed in the Draft Generic EIS will include:

- Alternative 1: No Action - the site remains in its current condition.
- Alternative 2: Development per Existing Zoning - this scenario assumes that the subject site is developed per its existing mix of L-1 and J-2 zonings.
- Alternative 3: Public Acquisition
- Alternative 4: Development of property with existing approvals
- Alternative 5: Development of property under L Industrial 1 zoning code

Information to be Included in Appendices:

All pertinent information and correspondence included, presented or discussed in the document will be included in appendices identified for ease of reference. Such appendices may include, but not be limited to: the adopted Final Scope; Traffic Impact Statement; nitrogen and water budget data; correspondence received from referral requests; cultural resources study, Pine Barrens Credit Evaluation, Public Benefit Analysis, and an Economic Feasibility Plan.

Issues Deemed Not Relevant, Not Environmentally Significant or Adequately Addressed in Prior Environmental Review

The intent of the Draft Generic EIS is to disclose and analyze all potential significant adverse environmental impacts associated with the proposed project. The Draft Scope has been the subject of a public scoping process in conformance with SEQRA Part 617.8, which will conclude with the issuance of this Final Scope by the lead agency. Issues identified during the scoping process that are deemed not relevant to the preparation of the Draft Generic EIS, if any, will be listed accordingly at the completion of the scoping process.

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This document is intended to fulfill the lead agency requirements for issuance of a Final Scope in accordance with SEQRA Part 617.8. The document assists the lead agency in evaluating the Draft Generic EIS for content and adequacy for public review, assists the applicant in understanding the extent and quality of information needed to evaluate the proposed project, and allows the lead agency and involved agencies to obtain the information necessary to reach an informed decision on the project.

Adopted By:

Tullio Bertoli — 10/6/10

Tullio Bertoli — Date
Commissioner, Department of Planning, Environmental, and Land Management

Appendix A
Written Comments

CENTRAL
PINE
BARRENS
JOINT
PLANNING
&
POLICY
COMMISSION

Peter A. Scully
Chair

Mark Lesko
Member

Steve A. Levy
Member

Anna E. Throne-Holst
Member

Sean M. Walter
Member

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August 19, 2010

Town of Brookhaven
Attn: Honorable Patricia A. Eddington, LCSW, Town Clerk and Registrar
One Independence Hill
Farmingville, New York 11738

RE: Referral of the Draft Scoping Document for the Draft Generic EIS for the Meadows at Yaphank Planned Development District (PDD) Change of Zone Application: J Business 2 and L Industrial 1 to PDD Town File #2010-011-CZ; SCTM #s: 200-584-2-1.3; 200-552-1-1.3 Compatible Growth Area of the Central Pine Barrens Development of Regional Significance

Dear Ms. Eddington:

The Central Pine Barrens Joint Planning and Policy Commission received your referral of the Draft Scoping document by letter dated August 4, 2010. The Town as Lead Agency classified the project as a Type I Action. The project is defined as a Development of Regional Significance (DRS) in the Central Pine Barrens Comprehensive Land Use Plan (CLUP). To date, a DRS application has not been submitted to the Commission.

The Draft Scope identifies a Draft Generic Environmental Impact Statement (DGEIS) as the format under which the potential environmental impacts will be analyzed and evaluated. If the project is assessed in the context of a DGEIS, the Final Scoping Document needs to address consistency with the State Environmental Quality Review Act (SEQRA) regulations, particularly in regard to 6 NYCRR Part 617.10, Generic Environmental Impact Statements, relevant portions of which are excerpted below for your use.

§617.10(a) of the SEQRA regulations states that Generic EISs *"...may also include an assessment of specific impacts if such details are available."* In addition, GEISs *"... may identify the important elements of the natural resource base as well as the existing and projected cultural features, patterns and character"* and *"...may present and analyze in general terms a few hypothetical scenarios that could and are likely to occur."* Accordingly, given that the project is proposed to occur on a known, specific site which has particular natural resources, the GEIS should include an assessment of specific impacts and should be able to not only identify natural resources thereon but discuss potential adverse impacts on those resources.

Furthermore, §617.10(c) of the SEQRA regulations states that *"Generic EISs and their findings should set forth specific conditions or criteria under which future actions will be undertaken or approved, including requirements for any subsequent SEQR compliance. This may include thresholds and criteria for supplemental EISs to reflect specific significant impacts, such as site specific impacts, that were not adequately addressed or analyzed in the generic EIS.* This is one of the most important aspects of GEISs and, given that the project will occur in multiple phases over a period of time, it is imperative that the GEIS establish and include such thresholds or performance standards.

§617.10(d) of the SEQRA regulations enumerates a hierarchy to be applied when evaluating the level of environmental review for subsequent site-specific phases. Again, these should be strictly adhered to during the course of development of the site.

Finally, §617.10(e) of the SEQRA regulations emphasizes the need for a cumulative impact review. This section states: "*In connection with projects that are to be developed in phases or stages, agencies should address not only the site specific impacts of the individual project under consideration, but also, in more general or conceptual terms, the cumulative impacts on the environment and the existing natural resource base of subsequent phases of a larger project or series of projects that may be developed in the future. In these cases, this part of the generic EIS must discuss the important elements and constraints present in the natural and cultural environment that may bear on the conditions of an agency decision on the immediate project.*" Accordingly, it is key that the GEIS provide a substantive cumulative impact analysis.

Project Description

The 333.46 acre project site is located on the north side of the Long Island Expressway at Exit 68, on the west side of William Floyd Parkway (CR 46), and south of Yaphank Woods Boulevard, in the hamlet of Yaphank. The site contains natural pine barrens vegetation and cleared areas. The project site was the subject of a previous application known as Brookhaven Walk, also a DRS, which was granted Commission approval on June 20, 2007.

The 322.37 acre project site is contained in two adjoining parcels situated between Yaphank Woods Boulevard and the LIE. The existing Dorade Sewage Treatment Plant on 11.09 acres, which lies to the north in the Whispering Pines/Colonial Woods developments, will be used to treat the projected sanitary wastewater flow which is projected at 280,000 gallons per day. The project requires the Dorade STP to be upgraded to its design flow capacity of 450,000 gpd. The parcels that comprise the project site are identified as:

- SCTM No. 200-584-2-1.3 (east): J-2 Business, 150.17 acres
- SCTM No. 200-552-1-1.3 (west): L-1 Industrial, 172.20 acres

The proposed project consists of a mixed-use development including retail, office space, and housing. The project consists of an estimated 1,032,500 square feet of commercial/industrial space including a hotel, restaurant, and office uses. The residential component of the project consists of 850 residential units composed of 121 one-bedroom units, 661 two-bedroom units: and 68 three-bedroom units. An estimated 303 units would be age-restricted and 85 units are designated as workforce housing. Other project elements include a village square, great lawn, civic square, woodland walking path, and recreational fields. A new boulevard labeled "LIE Access Road" traverses the center of the site with ingress/egress on CR 46. The plan prepared by Simone Design Group dated May 10, 2010 illustrates the project in five construction phases to occur over an estimated four years.

Central Pine Barrens Status

As per New York State Environmental Conservation Law (ECL) 57-0123(2), the Commission has jurisdiction to review DRS projects. The applicant must demonstrate compliance with the Standards and Guidelines in Chapter 5 of the CLUP, which are also contained in the Brookhaven Town Code. The project must, in all phases, be consistent with the CLUP Standards and Guidelines including, but not limited to, the Vegetation Clearance Limit Standard that applies

to the entire project site (Standard 5.3.3.6), the nitrate-nitrogen goal of 2.5 ppm (Standard 5.3.3.1.3), stormwater recharge (Standard 5.3.3.5.1), unfragmented open space (Standard 5.3.3.6.2), fertilizer-dependent vegetation limit of 15% (Standard 5.3.6.3), native plantings (Standard 5.3.3.6.4), erosion and sediment control (Standard 5.3.3.8.4), and cultural resource protection, among others.

As discussed above, although a DGEIS is proposed to analyze and evaluate potential environmental impacts, specific thresholds must be identified to qualitatively and quantitatively measure potential impacts to determine if and when additional assessments are needed for future site-specific projects generated by the larger project. If one of these identified thresholds is exceeded, the applicant will be required to perform a site-specific analysis in the form of a Supplemental EIS pursuant to SEQRA.

The DGEIS must include an analysis of the potential impacts of the rezoning action and the currently known elements of the project on the Central Pine Barrens Comprehensive Land Use Plan, compliance with the Standards and Guidelines for development as outlined in Chapter 5 of the CLUP and implemented by the Town Code, and an analysis of the potential impact of the rezoning action on the required minimum one to one (1:1) receiving capacity to sending credit ratio requirement, as per Section 6.5.2.1 of the CLUP, which is excerpted below for your use:

6.5.2.1 One to one receiving capacity to sending credit ratio requirement

Each town shall include enough absorption capacity in receiving districts that meet the as of right definition set forth in Section 6.4 of this Plan so as to absorb all of the Pine Barrens Credits on a one to one (1:1) ratio that the Commission estimates it may allocate in that town pursuant to this Plan. The Commission recognizes that a change in zoning upon a town board's own motion that would decrease the receiving capacity so as to reduce this ratio below 1:1 would have an adverse effect on the Pine Barrens Credit program.

The DGEIS should not be encyclopedic in nature; it must address all planning and environmental subject matters specific and relevant to the proposed project. Although the DGEIS is proposed to be generic, the known elements of the project in the current plan (e.g., number of residential units; residential population; school-aged children; commercial uses and traffic generation, traffic circulation patterns and infrastructure) provide the opportunity to analyze specific potential impacts of the change of zone, the land use and environmental changes that will occur as a result of the project, and potential impacts as a result of the project.

The project must conform to all other involved agency jurisdictions and permit requirements in effect on the project site.

Sincerely,

Julie Hargrave

Julie Hargrave
Environmental Planner

cc: John Pavacic, Executive Director, CPBJPPC
Judith Jakobsen, Policy and Planning Manager, CPBJPPC
Brenda Prusinowski, AICP, Deputy Commissioner of Town PELM Department
Owner: Rose Breslin Associates, LLC, c/o AVR Realty

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September 30, 2010

Mr. Peter E. Fountaine
Environmental Analyst
Division of Environmental Protection
Town of Brookhaven
1 Independence Hill
Farmingville, NY 11738

RE: The Meadows at Yaphank PDD Draft Scope

Dear Mr. Fountaine,

The cumulative impacts assessment herein is inadequate inasmuch as projects such as Legacy Village, Breslin's Artist Lake project, the Condominiums at Sandy Hills, Competition Toyota and others conspicuous by their absence need to be included.

The cumulative impacts of this project of great regional significance, in combination with the others proposed not just in its proximity, but throughout the entire Pine Barrens/ Peconic Bay ecosystem, need to be addressed more comprehensively.

Sincerely,

Richard Amper
Executive Director

Appendix A-7
Economic Impact Analysis and Assessment of Project Benefits

NP&V, LLC

March 29, 2011

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

ECONOMIC IMPACT ANALYSIS AND ASSESSMENT OF PROJECT BENEFITS

The Meadows at Yaphank PDD

Yaphank, New York

NP&V No. 09176

Submitted to: Rose-Breslin Associates, LLC &
Dorade, LLC
One Executive Boulevard
Yonkers, New York 10701

Submitted by: Nelson, Pope & Voorhis, LLC,
Environmental Planning Consultants
572 Walt Whitman Road
Melville, New York 11747
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March 29, 2011

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APPENDIX A – NELSON, POPE & VOORHIS, LLC ECONOMIC QUALIFICATIONS

ECONOMIC IMPACT ANALYSIS AND ASSESSMENT OF PROJECT BENEFITS

The Meadows at Yaphank Planned Development District

Yaphank, New York

NP&V No. 09176

Prepared For:	Rose-Breslin Associates, LLC & Dorade, LLC One Executive Boulevard Yonkers, New York 10701
Prepared By:	Nelson, Pope & Voorhis, LLC 572 Walt Whitman Road Melville, New York 11747 (631) 427-5665
Date:	March 29, 2011

1.0 INTRODUCTION AND PURPOSE

Nelson, Pope & Voorhis, LLC has been requested to prepare an economic impact analysis as part of the Draft Generic Environmental Impact Statement (DGEIS) for The Meadows at Yaphank Planned Development District (PDD). NP&V is a professional environmental and planning firm with qualifications and expertise to prepare economic impact analyses, and has a track record of similar completed projects, as well as fiscal impact analysis, residential and commercial market analysis and related economic development services to private and municipal clients. The economic qualifications of the firm and personnel are provided in **Attachment A**.

The Meadows at Yaphank PDD project site is an assemblage of three parcels, including the former Suffolk Meadows Racetrack (Suffolk County Tax Map [SCTM] #0200-584-2-1.3), the former Brookhaven Walk mall site (SCTM #0200-552-1-1.3), and the Dorade Sewage Treatment Plant (STP) site (SCTM #0200-552-1-3), which is currently developed. The subject property consists of 322.37 acres of an overall 333.46-acre combined project site located at the northwestern corner of the interchange of County Route 46 (William Floyd Parkway) and the Long Island Expressway, in the hamlet of Yaphank, Town of Brookhaven, Suffolk County, New York.

As seen in **Table 1**, the Meadows at Yaphank PDD is proposed to include retail, mixed-use commercial space, office/flex space and various types of housing options. The commercial components of the proposed project include approximately 1,032,500 square feet (SF) of space

comprised of a hotel, retail, restaurant and office/flex uses. The residential component includes 850 units of various types and sizes, including 303 age-restricted units and 85 workforce housing units.

The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover, the Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system.

Table 1
SUMMARY OF PROPOSED DEVELOPMENT

Type of Development	Proposed Mix
Hotel	150,000 SF
Retail	327,500 SF
Large Retailer	*150,000 SF*
Pharmacy	*14,700 SF*
Bank	*3,500 SF*
Supermarket	*65,000 SF*
Other Neighborhood Retail	*94,300 SF*
Restaurant	5,000 SF
Office/Flex	250,000 SF
Class A Office	300,000 SF
Residential	850 units
Rentals	*144 units*
Condominiums	*486 units*
Townhouses	*220 units*
Total: The Meadows at Yaphank PDD	**1,032,500 SF of commercial/ office space; 850 residential units**

Source: Rose-Breslin Associates, LLC & Dorade, LLC

The Meadows at Yaphank PDD will create strong economic activity by providing jobs and a solid tax base. Consumer activity will ripple through the local community, creating beneficial economic impacts throughout the hamlet of Yaphank, the Town of Brookhaven, Suffolk County, and the region as a whole. The following analysis examines and quantifies the economic impacts that are anticipated to result from the construction of The Meadows at Yaphank PDD. **Section 2.0** presents an executive summary and key findings of the economic impact analysis. **Section 3.0** outlines the methodology and the sources of data used to project the economic impacts generated in this analysis. **Section 4.0** includes the economic impacts – on output, employment

and labor income – during each phase of the construction period, as well as a cumulative analysis on the entire ten (10)-year long construction period. **Section 5.0** quantifies the economic benefits in terms of mortgage recording tax revenues stemming from financing the commercial component of the proposed project. **Section 6.0** provides a conclusion with respect to the overall economic impact analysis, and **Section 7.0** outlines the references utilized in this analysis.

2.0 EXECUTIVE SUMMARY

As noted in **Section 1.0**, this analysis examines the economic impacts that are associated with the construction of The Meadows at Yaphank PDD. Economic impacts include direct, indirect and induced benefits on output, employment and associated labor income during each phase of the construction period, and as well as a cumulative examination of such benefits during the construction of the proposed project.

A summary of findings is provided herein, with detailed methodologies and references provided in the subsequent sections of this analysis. This analysis was prepared using methods, data and information that are considered to be industry standard for such economic impact analyses.

Statement of Need

The Meadows at Yaphank PDD will meet the need for a lifestyle center in the hamlet of Yaphank through the provision of a high-quality, mixed-use development with a number of public benefits to meet the specific local and regional needs. The proposed development will provide workforce and age-restricted housing opportunities, which are much needed throughout the community. In addition, the proposed project will attract a variety of retail and mixed-use commercial uses to meet the local community needs. The proposed project would rehabilitate the property by replacing a partially cleared and previously used site that is now subject to unauthorized use and activity, with a mixed-use and vibrant community having a sense of place that provides enjoyment for local residents, employees and consumers alike.

The Meadows at Yaphank PDD will complement the surrounding land uses while providing an economic return to local taxing jurisdictions through increased tax revenues – including those stemming from the generation of mortgage recording tax revenues. Moreover, the proposed project will generate immediate construction jobs for the Town of Brookhaven and area residents, as well as long-term employment opportunities during project operations. Such economic benefits are most crucial during the current economic state throughout Long Island, New York State and the nation as a whole.

Definition of Economic Impacts

A *direct impact* arises from the first round of buying and selling. These direct impacts can be used to identify additional rounds of buying and selling for other sectors of the economy and to identify the impact of spending by local households. An *indirect impact* refers to the increase in sales of other industry sectors, which include further round-by-round sales. An *induced impact* accounts for the changes in output and labor income by those employed within the region, resulting from direct and indirect impacts. The *total impact* is the sum of the direct, indirect and induced impacts.

Key Findings

Anticipated Economic Impacts: Cumulative

- Construction of The Meadows at Yaphank is anticipated to occur over the course of ten (10) years, and five (5) phases.[1]
- Construction is anticipated to commence during the spring of 2012.
- The total construction cost is estimated at $233.6 million.
- The $233.6 million in direct output is projected to generate an indirect impact of approximately $57.7 million, and an induced impact of nearly $59.8 million, bringing the total economic impact on output to over $351.1 million during the entire ten (10)-year long construction period.
- It is projected that the construction period will generate a total of 82.2 full time equivalent (FTE) employees during each of the ten (10) years of the construction period. It is assumed that the same basic construction crew will be utilized from the commencement until the culmination of the construction period; as such the 82.2 FTE construction workers are anticipated to be continuously employed during the entire ten (10)-year long construction period.
- The majority of these employees will be hired from the Long Island labor force, with many from within the Town of Brookhaven. This job creation is most crucial during Long Island's present economic state, and presents an abundance of opportunities for the thousands of persons who are currently unemployed throughout the region.
- The 82.2 FTE jobs created during the cumulative ten (10)-year long construction period will have an indirect impact of 346.6 FTE employees and an induced impact of 382.5 FTE employees in other industry sectors, bringing the total impact of construction to 811.3 FTE jobs during the ten (10)-year long construction period.
- Labor income from the construction jobs is projected to amount to a total of $1,137,295 per employee over the ten (10)-year long construction period. In total, this represents approximately $1,137,295 per employee, and approximately $93.45 million in collective earnings among the 82.2 FTE employees over the cumulative ten (10)-year long construction period. This labor income is projected to have an indirect impact of over $23.5 million and an induced impact of over $19.7 million, bringing the total economic impact of the construction to over $136.7 million in labor income over the ten (10)-year long construction period.

Anticipated Economic Impacts: Phase 1

- Phase 1 of the construction period is anticipated to include the construction of 51,200 SF of retail, which includes a 14,700 SF pharmacy, 3,500 SF bank, and 33,000 SF of other neighborhood retail. In addition, Phase 1 will include the construction of 304 residential units, including all 144 of the rental units and 160 condominiums.
- It is anticipated that Phase 1 will commence during the spring of 2012, and will have a duration of three (3) years.
- Costs associated with the construction of Phase 1 are anticipated to total $43,341,688.

[1] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.

- The $43.34 million in direct output is projected to generate an indirect impact of approximately $11.3 million, and an induced impact of nearly $11.2 million, bringing the total economic impact on output to over $65.8 million during Phase 1 of the construction period.
- It is projected that Phase 1 of the construction period will generate a total of 84.3 FTE employees during each of the three (3) years of the Phase 1 construction period. The 84.3 FTE construction workers are anticipated to be continuously employed during the entire three-year long Phase 1 construction period.
- The 84.3 FTE jobs created during Phase 1 will have an indirect impact of 70.4 FTE employees and an induced impact of 71.5 FTE employees in other industry sectors, bringing the total impact of construction to 226.1 FTE jobs during Phase 1 of the construction period.
- Labor income from the construction jobs is projected to amount to $205,736 per employee over the three-year long Phase 1. This represents more than $17.3 million in collective earnings among the 84.3 FTE employees during the three-year long construction period of Phase 1.
- The $17.3 million in labor income is projected to have an indirect impact of over $4.5 million and an induced impact of nearly $3.7 million, bringing the total economic impact of Phase 1 construction to over $25.5 million in labor income.

Anticipated Economic Impacts: Phase 2

- Phase 2 of the construction period is anticipated to include the construction of 150,000 SF of Class A office space, and 416 residential units.
- It is anticipated that Phase 2 will commence during the spring of 2015, and will last four (4) years in duration.
- Costs associated with the construction of Phase 2 are anticipated to total $82,766,250.
- The $82.7 million in direct output is projected to generate an indirect impact of approximately $20.38 million, and an induced impact of nearly $21.1 million, bringing the total economic impact on output to over $124.2 million during Phase 2 of the construction period.
- It is projected that Phase 2 of the construction period will generate a total of 108.8 FTE employees during each of the four (4) years of the Phase 2 construction period. Each of these jobs is anticipated to last a duration of four (4) years, through the completion of Phase 2 construction.
- The 108.8 FTE construction workers are anticipated to be continuously employed during the entire four-year long Phase 2 construction period.
- The 108.8 FTE jobs created during Phase 2 will have an indirect impact of 119.4 FTE employees and an induced impact of 126.9 FTE employees in other industry sectors, bringing the total impact of construction to 355.1 FTE jobs during Phase 2 of the construction period.
- Labor income from the construction jobs is projected to amount to $304,291 per employee over the four-year long Phase 2. This represents more than $33.1 million in collective earnings among the 108.8 FTE employees during the four-year long construction period of Phase 2.
- The $33.1 million in labor income is projected to have an indirect impact of over $8.3 million and an induced impact of nearly $7.0 million, bringing the total economic impact of Phase 2 construction to nearly $48.4 million in labor income.

Anticipated Economic Impacts: Phase 3

- Phase 3 of the construction period is anticipated to include the construction of 276,300 SF of retail space, including a 150,000 SF retail anchor store, a 65,000 SF supermarket, and 61,300 SF of additional neighborhood retail space. In addition, it is anticipated that the final 130 residential units will be constructed.
- It is anticipated that Phase 3 will commence during the spring of 2019. Phase 3 is expected to last a duration of three (3) years.
- Costs associated with the construction of Phase 3 are anticipated to total $53,304,150.
- The $53.3 million in direct output is projected to generate an indirect impact of approximately $11.7 million, and an induced impact of nearly $13.4 million, bringing the total economic impact on output to over $78.4 million during Phase 3 of the construction period.
- It is projected that Phase 3 of the construction period will generate a total of 84.3 FTE employees during each of the three (3) years of the Phase 3 construction period. Each of these jobs is anticipated to last a duration of three (3) years, through the completion of Phase 3 construction.
- The 84.3 FTE construction workers are anticipated to be continuously employed during the entire three-year long Phase 3 construction period.
- The 84.3 FTE jobs created during Phase 3 will have an indirect impact of 62.3 FTE employees and an induced impact of 74.2 FTE employees in other industry sectors, bringing the total impact of construction to 220.8 FTE jobs during Phase 3 of the construction period.
- Labor income from the construction jobs is projected to amount to $253,029 per employee, and more than $21.3 million in collective earnings among the 84.3 FTE employees during the three-year long construction period of Phase 3.
- The $21.3 million in labor income is projected to have an indirect impact of over $4.9 million and an induced impact of over $4.4 million, bringing the total economic impact of Phase 3 construction to over $30.65 million in labor income.

Anticipated Economic Impacts: Phase 4

- Phase 4 of the construction period is anticipated to include the construction of a 150,000 SF hotel, a 5,000 SF restaurant, and 150,000 SF of Class A office space.
- It is anticipated that Phase 4 will commence during spring of 2022. Phase 4 is anticipated to last a duration of two years
- Costs associated with the construction of Phase 4 are anticipated to total $39,542,287.
- The $39.5 million in direct output is projected to generate an indirect impact of approximately $7.4 million, and an induced impact of over $9.7 million, bringing the total economic impact on output to over $56.7 million during Phase 4 of the construction period.
- It is projected that Phase 4 of the construction period will generate a total of 87.1 FTE employees during each of the two (2) years of the Phase 4 construction period. Each of these jobs is anticipated to last a duration of two (2) years, through the completion of Phase 4 construction.
- The 87.1 FTE construction workers are anticipated to be continuously employed during the entire two-year long Phase 4 construction period.
- The 87.1 FTE jobs created during Phase 4 will have an indirect impact of 34.0 FTE employees and an induced impact of 49.9 FTE employees in other industry sectors, bringing the total impact of construction to 171.0 FTE jobs during Phase 4 of the construction period.
- Labor income from the construction jobs is projected to amount to $181,590 per employee, and approximately $15.8 million in collective earnings among the 87.1 FTE employees during the two-year long construction period of Phase 4.

- The $15.8 million in labor income is projected to have an indirect impact of over $3.2 million and an induced impact of over $3.2 million, bringing the total economic impact of Phase 4 construction to over $22.3 million in labor income.

Anticipated Economic Impacts: Phase 5

- Phase 5 of the construction period is anticipated to include the construction of 250,000 SF of office/flex space.
- It is anticipated that Phase 5 will commence during the spring of 2024, and will last a duration of two years.
- Costs associated with the construction of Phase 5 are anticipated to total $14,675,000.
- The $14.675 million in direct output is projected to generate an indirect impact of approximately $2.7 million, and an induced impact of over $3.6 million, bringing the total economic impact on output to over $21.0 million during Phase 5 of the construction period.
- It is projected that Phase 5 of the construction period will generate a total of 30.5 FTE employees during each of the two (2) years of the Phase 5 construction period. Each of these jobs is anticipated to last a duration of two (2) years, through the completion of Phase 5 construction.
- The 30.5 FTE construction workers are anticipated to be continuously employed during the entire two-year long Phase 5 construction period.
- The 30.5 FTE jobs created during Phase 5 will have an indirect impact of 11.9 FTE employees and an induced impact of 17.5 FTE employees in other industry sectors, bringing the total impact of construction to 59.9 FTE jobs during Phase 5 of the construction period.
- Labor income from the construction jobs is projected to amount to $181,590 per employee, and approximately $5.87 million in collective earnings among the 30.5 FTE employees during the two-year long construction period of Phase 5.
- The $5.87 million in labor income is projected to have an indirect impact of over $1.2 million and an induced impact of nearly $1.2 million, bringing the total economic impact of Phase 5 construction to nearly $8.3 million in labor income.

Mortgage Recording Tax Revenues

- Mortgage recording tax is a one-time tax paid when a mortgage is recorded.
- Suffolk County properties are subject to a 1.05% mortgage recording tax rate.
- The commercial component of the proposed project is anticipated to amount to $118.2 million in construction costs.
- According to Rose-Breslin Associates, LLC & Dorade, LLC, approximately 65% of the cost to construct the commercial component of the project will need to be financed. Assuming that the mortgage recording tax rate remains constant at 1.05%, and when applied to the $76.83 million to be financed, it is anticipated that $806,715 will be generated by mortgage recording tax revenue.
- It is estimated that $384,150 of the mortgage recording tax revenues would be allocated to the Town of Brookhaven, $230,490 would be retained by the Metropolitan Commuter Transportation District, and the State would levy the remaining $192,075 in mortgage recording tax revenues.

A summary of key economic findings is provided in **Table 2**. The methodologies and full derivation of the facts and figures presented in the above summary are fully described in subsequent sections of this analysis.

Table 2
SUMMARY OF KEY ECONOMIC FINDINGS

Economic Impact Parameter	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
Economic Impact of Construction: Cumulative[2]			
Direct Impact	$233,629,375	82.2	$93,451,750
Indirect Impact	$57,704,588	346.6	$23,540,064
Induced Impact	$59,790,104	382.5	$19,739,270
Total Economic Impact of Construction: Cumulative	$351,124,064	811.3	$136,731,088
Economic Impact of Construction: Phase 1			
Direct Impact	$43,341,688	84.3	$17,336,675
Indirect Impact	$11,289,349	70.4	$4,530,827
Induced Impact	$11,175,495	71.5	$3,689,515
Total Economic Impact of Construction: Phase 1	$65,806,532	226.1	$25,557,018
Economic Impact of Construction: Phase 2			
Direct Impact	$82,766,250	108.8	$33,106,500
Indirect Impact	$20,380,820	119.4	$8,301,785
Induced Impact	$21,082,746	126.9	$6,986,127
Total Economic Impact of Construction: Phase 2	$124,229,816	355.1	$48,394,412
Economic Impact of Construction: Phase 3			
Direct Impact	$53,304,150	84.3	$21,321,660
Indirect Impact	$11,744,470	62.3	$4,904,352
Induced Impact	$13,392,255	74.2	$4,424,319
Total Economic Impact of Construction: Phase 3	$78,440,880	220.8	$30,650,330
Economic Impact of Construction: Phase 4			
Direct Impact	$39,542,287	87.1	$15,816,915
Indirect Impact	$7,426,110	34.0	$3,266,572
Induced Impact	$9,756,555	49.9	$3,219,258
Total Economic Impact of Construction: Phase 4	$56,724,952	171.0	$22,302,744
Economic Impact of Construction: Phase 5			
Direct Impact	$14,675,000	30.5	$5,870,000
Indirect Impact	$2,753,789	11.9	$1,212,297
Induced Impact	$3,617,932	17.5	$1,194,736
Total Economic Impact of Construction: Phase 5	$21,046,720	59.9	$8,277,033

[2] It is important to note that the direct, indirect, and induced impacts generated within each phase of construction may not exactly add up to the respective cumulative impacts of construction. This is attributed to the phasing schedule and assumptions made within the IMPLAN software that are associated with inflation and reporting the dollar value of each impact with respect to the year in which the phase is anticipated to commence.

3.0 METHODOLOGY

Various data and information from state and local sources was used to analyze the economic impacts stemming from the proposed development of The Meadows at Yaphank PDD.

Rose-Breslin Associates, LLC & Dorade, LLC supplied information regarding the proposed unit mix, project costs and budgets, as well as the phasing and construction schedule.

Suffolk County Clerk's Office and New York State Department of Taxation and Finance provided detailed information pertaining to the current mortgage recording tax rates and distribution of revenues to properties in Suffolk County, New York.

United States Bureau of Labor Statistics and New York State Department of Labor publish the Quarterly Census of Employment and Wages. This survey was used to estimate the wages earned among those employed within construction occupations in the Long Island labor market. These wages were assumed for each of the employees during the multi-phased construction period of the proposed development.

Minnesota IMPLAN Group has developed an economic impact modeling system called IMPLAN, short for "impact analysis for planning". The program was developed in the 1970s through the United States Department of Agriculture's Forest Service, and privatized in 1993.

IMPLAN is built on a mathematical input-output (I-O) model to express relationships between various sectors of the economy in a specific geographic location. The I-O model assumes fixed relationships between producers and their suppliers based on demand, and the inter-industry relationships within a region largely determine how that economy will respond to change. In an I-O model, the increase in demand for a certain product or service causes a multiplier effect; increased demand for a product affects the producer of the product, the producer's employees, the producer's suppliers, the supplier's employees, and so on, ultimately generating a total impact in the economy that is greater than the initial change in demand.

The IMPLAN model is a method for estimating local economic multipliers, including those pertaining to production, value-added, employment, wage and supplier data. IMPLAN differentiates in its software and data sets between 440 sectors that are recognized by the United States Department of Commerce. Multipliers are available for all states, counties and zip codes. Multipliers are derived from production, employment and trade data from sources including the United States Census Bureau, County Business Patterns, Annual Survey of Government Employment, Annual Survey of Retail Trade; United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Consumer Expenditure Survey; United States Department of Labor; Office of Management and Budget; United States Department of Commerce; Internal Revenue Service; United States Department of Agriculture, National Agricultural Statistical Service; Federal Procurement Data Center; and United States Bureau of Economic Analysis, Regional Economic Information System, Survey of Current Business, among other national, regional, state and local data sources.

IMPLAN is widely accepted as the industry norm in estimating how much a one-time or sustained increase in economic activity in a particular region will be supplied by industries located in the region. Federal government agencies such as the Army Corps of Engineers, Bureau of Economic Analysis, Bureau of Land Management, Environmental Protection Agency, Federal Reserve Bank, Fish and Wildlife Service, and National Park Service use the multipliers to study the local impact of government regulation on specific industries and to assess the local economic impacts of Federal actions. State and local governments including New York State Department of Labor, New York State Division of the Budget, New York State Office of the State Comptroller, New York State Assembly and New York City Economic Development Corporation, use the multipliers to estimate the regional economic impacts of government policies and projects and of events, such as the location of new businesses within their state, or to assess the impacts of tourism. Likewise, businesses, universities and private consultants use the multipliers to estimate the economic impacts of a wide range of projects, such as building a new sports facility or expanding an airport; of natural disasters; of student spending; or of special events, such as national political conventions.

NP&V personnel have received formal IMPLAN training through the Minnesota Implan Group, and possess the qualifications to project economic impacts of numerous types of projects. For the purpose of this analysis, and since the proposed project is a mixed-use development, two IMPLAN sectors were utilized: *Sector 34: Construction of new nonresidential commercial and health care structures* (includes the construction of the hotel, all retailers, restaurant, office/flex space, and Class A office space), and *Sector 37: Construction of new residential permanent site single- and multi-family structures* (includes the construction of the rental units, condominiums and townhouses). Such multipliers specific to socio-economic data in Suffolk County were purchased and analyzed to determine the direct, indirect and induced economic impacts during each phase of the construction period of The Meadows at Yaphank PDD.

4.0 ANTICIPATED ECONOMIC IMPACTS OF CONSTRUCTION

Construction of The Meadows at Yaphank PDD is anticipated to occur over a series of five phases, with the construction of Phase 1 projected to commence during the spring of 2012, lasting approximately three years in duration. While there may be some overlap in phasing, this analysis conservatively assumes that each phase will be complete before the next phase begins. As such, Phase 2 is anticipated to commence during the spring of 2015, and is projected to last four years. Phase 3 is anticipated to commence during spring of 2019, and is projected to last an additional three years in duration. Phase 4 is likely to begin during spring of 2022. Phase 4 is anticipated to be constructed over a period of two years. Lastly, the construction of Phase 5 is anticipated to commence during the spring of 2024. This final phase is projected to occur over a period of two years. The development is projected to be completed after five phases and a ten (10)-year long construction period.[3] **Table 3** illustrates the details pertaining to the anticipated construction schedule.

It should be understood that market conditions at the time of final approval may modify the phasing plan to some degree and the immediate need for additional commercial development in the early stages of the proposed project may lead to an accelerated schedule and/or phasing shift.

[3] Construction schedule provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.

Table 3
CONSTRUCTION SCHEDULE

Type of Development	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total: All Phases
Hotel	--	--	--	150,000 SF	--	**150,000 SF**
Retail	51,200 SF	--	276,300 SF	--	--	**327,500 SF**
Large Retailer	--	--	*150,000 SF*	--	--	***150,000 SF***
Pharmacy	14,700 SF	--	--	--	--	***14,700 SF***
Bank	3,500 SF	--	--	--	--	***3,500 SF***
Supermarket	--	--	*65,000 SF*	--	--	***65,000 SF***
Other Neighborhood Retail	*33,000 SF*	--	*61,300 SF*	--	--	***94,300 SF***
Restaurant	--	--	--	5,000 SF	--	**5,000 SF**
Office/Flex	--	--	--	--	250,000 SF	**250,000 SF**
Class A Office	--	150,000 SF	--	150,000 SF	--	**300,000 SF**
Residential	304 units	416 units	130 units	--	--	**850 units**
Rentals	*144 units*	--	--	--	--	***144 units***
Condominiums	*160 units*	*306 units**	*20 units**	--	--	***486 units***
Townhouses	--	*110 units**	*110 units**	--	--	***220 units***
Time Frame for Development	**± 3 years**	**± 4 years**	**± 3 years**	**± 2 years**	**± 2 years**	**± 10 years**

Source: Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC.

* It is important to note that specifics regarding the breakdown of residential units during Phase 2 and Phase 3 are unknown as of the date of publication of this analysis. The distribution of condominiums and townhouses are likely to be determined by market conditions at the time of construction of each phase. However, for the purpose of this analysis, it is assumed that the construction of townhouses will be split evenly between Phase 2 and Phase 3. As such, the number of condominiums reflects the difference between the total number of residential units and the townhouses assumed to be developed under each phase.

In total, the five phases and the ten (10)-year long construction period will result in the development of a 150,000 SF hotel; 327,500 SF of retail (including a 150,000 SF large retailer anchor store; a 14,700 SF pharmacy; a 3,500 SF bank; a 65,000 SF supermarket; and 94,300 SF of additional neighborhood retail); a 5,000 SF restaurant; 250,000 SF of office/flex space; 300,000 SF of Class A office space; and 850 residential units (including 144 rental units; 486 condominiums; and 220 townhouses).

It is projected that the construction and operations of The Meadows at Yaphank PDD will contribute positively to the local economy. During each phase of the construction period, opportunities for employment will offer direct, indirect and induced benefits among businesses and households located throughout the hamlet of Yaphank, the Town of Brookhaven, Suffolk County and the region as a whole. The new jobs created during each phase of construction will help to increase business and household income in the community. In turn, as spending increases, this creates additional jobs and further increases business and household income throughout the region.

A detailed analysis of direct, indirect and induced impacts (as defined in **Section 2.0**) generated during the entire construction period is outlined in **Section 4.1**. The direct, indirect and induced impacts generated during Phase 1 of construction are outlined in **Section 4.2**; impacts generated during Phase 2 are outlined in **Section 4.3**; impacts generated during Phase 3 are outlined in **Section 4.4**; impacts generated during Phase 4 are outlined in **Section 4.5**; and impacts generated during Phase 5 are outlined in **Section 4.6**. It is important to note that each of these impacts are temporary, projected to occur only while the proposed project is being constructed.

4.1 Anticipated Economic Impacts: Cumulative

During the construction period, *output* refers to the investment, or total costs associated with the construction of The Meadows at Yaphank PDD. As seen in **Table 4**, the construction period is projected to represent a total of approximately $233.6 million in investment, or output. The $233.6 million in output includes hard and soft construction costs, land development and other costs associated with the development of The Meadows at Yaphank PDD.[4]

[4] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.

Table 4
CONSTRUCTION COSTS

Type of Development	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total: All Phases
Hotel	--	--	--	$22,000,000	--	$22,000,000
Retail	$5,425,021	--	$24,045,191	--	--	$29,470,213
Large Retailer	--	--	*$11,600,000*	--	--	*$11,600,000*
*Pharmacy***	*$1,557,574*	--	--	--	--	*$1,557,574*
*Bank***	*$370,851*	--	--	--	--	*$370,851*
Supermarket	--	--	*$5,950,000*	--	--	*$5,950,000*
*Other Neighborhood Retail***	*$3,496,596*	--	*$6,495,191*	--	--	*$9,991,787*
Restaurant**	--	--	--	*$529,787*	--	$529,787
Office/Flex	--	--	--	--	$14,675,000	$14,675,000
Class A Office	--	$17,012,500	--	$17,012,500	--	$34,025,000
Residential	$37,916,667	$65,753,750	$29,258,958	--	--	$132,929,375
Rentals	*$17,500,000*	--	--	--	--	*$17,500,000*
*Condominiums****	*$20,416,667*	*$39,046,875**	*$2,552,083**	--	--	*$62,015,625*
*Townhouses*****	--	*$26,706,875**	*$26,706,875**	--	--	*$53,413,750*
TOTAL CONSTRUCTION COST	**$43,341,688**	**$82,766,250**	**$53,304,150**	**$39,542,287**	**$14,675,000**	**$233,629,375**

Source: Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC.

* It is important to note that specifics regarding the breakdown of residential units during Phase 2 and Phase 3 are unknown as of the date of publication of this analysis. The distribution of condominiums and townhouses are likely to be determined by market conditions at the time of construction of each phase. However, for the purpose of this analysis, it is assumed that the construction of townhouses will be split evenly between Phase 2 and Phase 3. As such, the number of condominiums reflects the difference between the total number of residential units and the townhouses assumed to be developed under each phase.

** A cost of $12,450,000 was provided by Rose-Breslin Associates, LLC & Dorade, LLC for the construction of 117,500 SF of general retail and the restaurant. For the purpose of this analysis, it was necessary to extrapolate this figure into a construction cost per square foot of development. As such, this equates to approximately $105.96 per square foot. This figure was applied to the pharmacy, bank, other neighborhood retail, and the restaurant in order to reflect the construction costs of each type of development, and account for the economic impacts accrued through each phase of construction.

*** The cost to construct the condominiums is assumed to be five percent greater than the cost to construct the rental units. For the purpose of this analysis, it was necessary to extrapolate this figure into a cost per unit. As such, this equates to costs of approximately $127,604 to construct each condominium unit. This figure was applied to the number of condominium units planned for each phase of construction.

**** The cost to construct the townhouses is assumed to be 65 percent of the sales price. For the purpose of this analysis, an average selling price among the various types of townhouses was assumed. The average selling price was multiplied by the number of units planned for development in both phases of construction, and then multiplied by 65 percent to account for the economic impacts accrued through each phase of construction.

The $233.6 million[5] in direct output is projected to generate an indirect impact of approximately $57.7 million, and an induced impact of nearly $59.8 million, bringing the total economic impact on output to over $351.1 million during the entire ten (10)-year long construction period.[6] A summary of the top industries affected during the construction period, sorted by the total impact on output is provided in **Table 5**.

Table 5
TOP INDUSTRIES AFFECTED DURING CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$132,929,368	46.8	$53,171,752
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$100,700,000	35.4	$40,280,000
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$11,412,302	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$10,655,635	46.3	$4,061,583
IMPLAN Sector 369: Architectural, engineering, and related services	$8,455,391	61.0	$5,347,906

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

During the construction period, direct *employment* refers to the number of short-term jobs necessary to build The Meadows at Yaphank PDD. It is projected that the construction period will generate a total of 82.2 full time equivalent (FTE) employees during each of the ten (10) years of the construction period. It is assumed that the same basic construction crew will be utilized from the commencement until the culmination of the construction period; as such the 82.2 FTE construction workers are anticipated to be continuously employed between spring of 2012 and spring of 2026, during the entire ten (10)-year long construction period. Since it is the policy of the Suffolk County Industrial Development Agency (SCIDA) to encourage the use of local labor during construction of this and other projects throughout the County, it is likely that the majority of these construction workers will be hired from within the local labor force.

[5] This figure and all other figures in this section reflect 2012 dollars, the year in which construction is anticipated to commence.

[6] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 1.546990 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

Direct employment creates additional opportunities for job creation throughout other sectors of the economy through expenditures derived from labor income and output. As such, the 82.2 FTE jobs created during the cumulative ten (10)-year long construction period will have an indirect impact of 346.6 FTE employees and an induced impact of 382.5 FTE employees in other industry sectors, bringing the total impact of construction to 811.3 FTE jobs during the ten (10)-year long construction period.[7] It is assumed that these positions will remain in operation during the entire construction period, and all direct, indirect, and induced employment is anticipated to be continuous during the entire ten (10)-year long construction period. This job creation – direct, as well as indirect and induced – is most crucial during Long Island's current economic state, and presents significant and long-term opportunities for the thousands of persons who are unemployed throughout the region. A summary of the top industries affected during the cumulative, ten (10)-year long construction period, sorted by the total impact on employment is provided in **Table 6**.

Table 6
TOP INDUSTRIES AFFECTED DURING CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 369: Architectural, engineering, and related services	$8,455,391	61.0	$5,347,906
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$132,929,368	46.8	$53,171,752
IMPLAN Sector 319: Wholesale trade businesses	$10,655,635	46.3	$4,061,583
IMPLAN Sector 324: Retail Stores - Food and beverage	$3,220,456	41.4	$1,364,414
IMPLAN Sector 413: Food services and drinking places	$2,310,336	35.8	$920,739

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

During the construction period, direct *labor income* refers to the total earnings, wages, or salary paid to each of the construction workers over the ten (10)-year long construction period. Labor income typically comprises approximately 40% of the total cost of construction; the remaining 60% represents the cost of construction materials. It is the policy of the SCIDA to encourage the payment of the area standard wage during construction of this and other projects throughout

[7] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 11.167791 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

Suffolk County. As such, and assuming wages remain constant (with the exception of a 3% annual inflation adjustment) through the construction period, each of the construction workers will earn the projected average wage[8] of between $66,066 at the beginning of construction in 2012 and $99,931 at the end of the construction in 2026. In total, this represents approximately $1,137,295 per employee, and approximately $93.45 million in collective earnings among the 82.2 FTE employees over the cumulative ten (10)-year long construction period.[9]

The $93.45 million in labor income is projected to have an indirect impact of over $23.5 million and an induced impact of over $19.7 million, bringing the total economic impact of the construction to over $136.7 million in labor income over the ten (10)-year long construction period.[10] A summary of the top industries affected during the cumulative construction period, sorted by the total impact on labor income is provided in **Table 7**.

[8] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the ten (10)-year long construction period.

[9] This assumes an average annual wage of $66,066 applied to a construction period of nine (9) months in 2012, an average annual wage of $68,048 applied to a construction period of twelve (12) months in 2013, an average annual wage of $70,090 applied to a construction period of twelve (12) months in 2014, an average annual wage of $72,192 applied to a construction period of twelve (12) months in 2015, an average annual wage of $74,358 applied to a construction period of twelve (12) months in 2016, an average annual wage of $76,589 applied to a construction period of twelve (12) months in 2017, an average annual wage of $78,887 applied to a construction period of twelve (12) months in 2018, an average annual wage of $81,253 applied to a construction period of twelve (12) months in 2019, an average annual wage of $83,691 applied to a construction period of twelve (12) months in 2020, an average annual wage of $86,201 applied to a construction period of twelve (12) months in 2021, an average annual wage of $88,788 applied to a construction period of twelve (12) months in 2022, an average annual wage of $91,451 applied to a construction period of twelve (12) months in 2023, an average annual wage of $94,195 applied to a construction period of twelve (12) months in 2024, an average annual wage of $97,021 applied to a construction period of twelve (12) months in 2025, and an average annual wage of 99,931 applied to a construction period of three (3) months in 2026.

[10] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 0.603716 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

Table 7
TOP INDUSTRIES AFFECTED DURING CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$132,929,368	46.8	$53,171,752
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$100,700,000	35.4	$40,280,000
IMPLAN Sector 369: Architectural, engineering, and related services	$8,455,391	61.0	$5,347,906
IMPLAN Sector 319: Wholesale trade businesses	$10,655,635	46.3	$4,061,583
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioner	$3,499,723	28.8	$2,168,424

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

A summary of the derivation of the collective economic benefits during the cumulative, ten (10)-year long construction period is provided in **Table 8**.

Table 8
ECONOMIC IMPACTS OF CONSTRUCTION: CUMULATIVE

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures, and IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures			
Direct Impact	$233,629,375	82.2	$93,451,750
Indirect Impact	$57,704,588	346.6	$23,540,064
Induced Impact	$59,790,104	382.5	$19,739,270
Total Impact[11]	$351,124,064	811.3	$136,731,088

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

4.2 Anticipated Economic Impacts: Phase 1

As seen in **Table 3**, Phase 1 of the construction period is anticipated to include the construction of 51,200 SF of retail, which includes a 14,700 SF pharmacy, 3,500 SF bank, and 33,000 SF of other neighborhood retail. In addition, Phase 1 will include the construction of 304 residential

[11] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.

units, including all 144 of the rental units and 160 condominiums. It is anticipated that Phase 1 will commence during the spring of 2012, and will last duration of three (3) years.[12]

Costs associated with the construction of Phase 1 are anticipated to total $43,341,688.[13] The $43.34 million[14] in direct output is projected to generate an indirect impact of approximately $11.3 million, and an induced impact of nearly $11.2 million, bringing the total economic impact on output to over $65.8 million during Phase 1 of the construction period.[15] A summary of the top industries affected during Phase 1 of the construction period, sorted by the total impact on output is provided in **Table 9**.

Table 9
TOP INDUSTRIES AFFECTED DURING PHASE 1 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$37,916,668	73.7	$15,166,667
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$5,425,022	10.5	$2,170,009
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$2,133,069	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$1,942,642	8.4	$740,472
IMPLAN Sector 369: Architectural, engineering, and related services	$1,148,391	8.3	$726,340

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

It is projected that Phase 1 of the construction period will generate a total of 84.3 full time equivalent (FTE) employees during each of the three (3) years of the Phase 1 construction

[12] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.

[13] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.

[14] This figure and all other figures in this section reflect 2012 dollars, the year in which construction of Phase 1 is anticipated to commence.

[15] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 1.546990 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

period. Each of these jobs is anticipated to last a duration of three (3) years, through the completion of Phase 1 construction. As seen in **Section 4.1**, it is assumed that the same basic construction crew will be utilized throughout Phase 1 of construction, and that the majority of these construction workers will be hired from within the local labor force. As such, the 84.3 FTE construction workers are anticipated to be continuously employed during the entire three-year long Phase 1 construction period.

The 84.3 FTE jobs created during Phase 1 of the construction period will have an indirect impact of 70.4 FTE employees and an induced impact of 71.5 FTE employees in other industry sectors, bringing the total impact of construction to 226.1 FTE jobs during Phase 1 of the construction period.[16] It is assumed that these positions will remain in operation during the entire phase of construction, and all direct, indirect, and induced employment is anticipated to be continuous during the entire three-year long Phase 1 construction period.

A summary of the top industries affected during Phase 1 of the construction period, sorted by the total impact on employment is provided in **Table 10**.

Table 10
TOP INDUSTRIES AFFECTED DURING PHASE 1 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$37,916,668	73.7	$15,166,667
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$5,425,022	10.5	$2,170,009
IMPLAN Sector 324: Retail Stores - Food and beverage	$744,636	9.6	$315,481
IMPLAN Sector 319: Wholesale trade businesses	$1,942,642	8.4	$740,472
IMPLAN Sector 369: Architectural, engineering, and related services	$1,148,391	8.3	$726,340

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

Direct *labor income* refers to the earnings, wages, or salary paid to each of the construction workers. As seen in **Section 4.1**, labor income typically comprises approximately 40% of the

[16] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 11.167791 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

total cost of construction, and the SCIDA encourages the payment of the area standard wage for construction projects in the region. As such, and assuming wages remain constant (with the exception of a 3% annual inflation adjustment) through Phase 1 of the construction period, each of the construction workers will earn the projected average wage[17] of $49,550 during the nine (9) months of employment during 2012[18], $68,048 during 2013, $70,090 during 2014, and $18,048 during the three (3) months of construction during 2015.[19] In total, this represents approximately $205,736 per employee, and more than $17.3 million in collective earnings among the 84.3 FTE employees during the three-year long construction period of Phase 1.

The $17.3 million in labor income is projected to have an indirect impact of over $4.5 million and an induced impact of nearly $3.7 million, bringing the total economic impact of Phase 1 construction to over $25.5 million in labor income.[20] A summary of the top industries affected during Phase 1 of the construction period, sorted by the total impact on labor income is provided in **Table 11**.

Table 11
TOP INDUSTRIES AFFECTED DURING PHASE 1 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$37,916,668	73.7	$15,166,667
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$5,425,022	10.5	$2,170,009
IMPLAN Sector 319: Wholesale trade businesses	$1,942,642	8.4	$740,472
IMPLAN Sector 369: Architectural, engineering, and related services	$1,148,391	8.3	$726,340
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioners	$654,145	5.4	$405,308

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

[17] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the three-year long construction period of Phase 1.
[18] This assumes an average annual wage of $66,066 applied to a construction period of nine (9) months in 2012.
[19] This assumes an average annual wage of $72,192 applied to a construction period of three (3) months in 2015.
[20] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 0.603716 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

A summary of the derivation of the collective economic benefits during Phase 1 of the construction period is provided in **Table 12**.

Table 12
ECONOMIC IMPACTS OF CONSTRUCTION: PHASE 1

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures, and IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures			
Direct Impact	$43,341,688	84.3	$17,336,675
Indirect Impact	$11,289,349	70.4	$4,530,827
Induced Impact	$11,175,495	71.5	$3,689,515
Total Impact[21]	$65,806,532	226.1	$25,557,018

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

4.3 Anticipated Economic Impacts: Phase 2

As seen in **Table 3**, Phase 2 of the construction period is anticipated to include the construction of 150,000 of Class A office space, and 416 residential units. For the purpose of this analysis, it was assumed that 306 of these units would be condominiums and 110 of the units would be townhouses. It is anticipated that Phase 2 will commence during the spring of 2015, and will last four years in duration. [22]

Costs associated with the construction of Phase 2 are anticipated to total $82,766,250.[23] The $82.7 million[24] in direct output is projected to generate an indirect impact of approximately $20.38 million, and an induced impact of nearly $21.1 million, bringing the total economic impact on output to over $124.2 million during Phase 2 of the construction period.[25] A summary

[21] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.
[22] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.
[23] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.
[24] This figure and all other figures in this section reflect 2015 dollars, the year in which construction of Phase 2 is anticipated to commence.
[25] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 1.546990 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN

of the top industries affected during Phase 2 of the construction period, sorted by the total impact on output is provided in **Table 13**.

Table 13
TOP INDUSTRIES AFFECTED DURING PHASE 2 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$65,753,748	86.4	$26,301,500
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$17,012,500	22.4	$6,805,000
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$4,131,706	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$3,630,731	14.8	$1,387,979
IMPLAN Sector 369: Architectural, engineering, and related services	$2,177,821	15.7	$1,469,284

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

It is projected that Phase 2 of the construction period will generate a total of 108.8 full time equivalent (FTE) employees during each of the four (4) years of the Phase 2 construction period. Each of these jobs is anticipated to last a duration of four (4) years, through the completion of Phase 2 construction. As seen in **Section 4.1**, it is assumed that the same basic construction crew will be utilized throughout Phase 2 of construction, and that the majority of these construction workers will be hired from within the local labor force. As such, the 108.8 FTE construction workers are anticipated to be continuously employed during the entire four-year long Phase 2 construction period.

The 108.8 FTE jobs created during Phase 2 of the construction period will have an indirect impact of 119.4 FTE employees and an induced impact of 126.9 FTE employees in other industry sectors, bringing the total impact of construction to 355.1 FTE jobs during Phase 2 of the construction period.[26] It is assumed that these positions will remain in operation during the entire phase of construction, and all direct, indirect, and induced employment is anticipated to be continuous during the entire four-year long Phase 2 construction period.

Sector 37) in Suffolk County, New York.

[26] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 11.167791 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

A summary of the top industries affected during Phase 2 of the construction period, sorted by the total impact on employment is provided in **Table 14**.

Table 14
TOP INDUSTRIES AFFECTED DURING PHASE 2 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$65,753,748	86.4	$26,301,500
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$17,012,500	22.4	$6,805,000
IMPLAN Sector 324: Retail Stores - Food and beverage	$1,323,436	15.9	$559,921
IMPLAN Sector 369: Architectural, engineering, and related services	$2,177,821	15.7	$1,469,284
IMPLAN Sector 319: Wholesale trade businesses	$3,630,731	14.8	$1,387,979

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

Direct *labor income* refers to the earnings, wages, or salary paid to each of the construction workers. As seen in **Section 4.1**, labor income typically comprises approximately 40% of the total cost of construction, and the SCIDA encourages the payment of the area standard wage for construction projects in the region. As such, and assuming wages remain constant (with the exception of a 3% annual inflation adjustment) through Phase 2 of the construction period, each of the construction workers will earn the projected average wage[27] of $54,144 during the nine (9) months of employment during 2015[28], $74,358 during 2016, $76,589 during 2017, $78,887 during 2018, and $20,313 during the three (3) months of construction in 2019.[29] In total, this represents approximately $304,291 per employee, and more than $33.1 million in collective earnings among the 108.8 FTE employees during the four-year long construction period of Phase 2.

The $33.1 million in labor income is projected to have an indirect impact of over $8.3 million and an induced impact of nearly $7.0 million, bringing the total economic impact of Phase 2 construction to nearly $48.4 million in labor income.[30] A summary of the top industries affected

[27] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the four-year long construction period of Phase 2.
[28] This assumes an average annual wage of $72,192 applied to a construction period of nine (9) months in 2015.
[29] This assumes an average annual wage of $81,253 applied to a construction period of three (3) months in 2019.
[30] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through

during Phase 2 of the construction period, sorted by the total impact on labor income is provided in **Table 15**.

Table 15
TOP INDUSTRIES AFFECTED DURING PHASE 2 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$65,753,748	86.4	$26,301,500
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$17,012,500	22.4	$6,805,000
IMPLAN Sector 369: Architectural, engineering, and related services	$2,177,821	15.7	$1,469,284
IMPLAN Sector 319: Wholesale trade businesses	$3,630,731	14.8	$1,387,979
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioners	$1,194,418	9.6	$767,469

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

A summary of the derivation of the collective economic benefits during Phase 2 of the construction period is provided in **Table 16**.

Table 16
ECONOMIC IMPACTS OF CONSTRUCTION: PHASE 2

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures, and IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures			
Direct Impact	$82,766,250	108.8	$33,106,500
Indirect Impact	$20,380,820	119.4	$8,301,785
Induced Impact	$21,082,746	126.9	$6,986,127
Total Impact[31]	$124,229,816	355.1	$48,394,412

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

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the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 0.603716 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

[31] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.

4.4 Anticipated Economic Impacts: Phase 3

As seen in **Table 3**, Phase 3 of the construction period is anticipated to include the construction of 276,300 SF of retail space, including a 150,000 SF retail anchor store, a 65,000 SF supermarket, and 61,300 SF of additional neighborhood retail space. In addition, it is anticipated that the last of the residential units will be constructed, including 20 condominiums and 110 townhouses. It is anticipated that Phase 3 will commence during the spring of 2019. Phase 3 is expected to last a duration of three (3) years.[32]

Costs associated with the construction of Phase 3 are anticipated to total $53,304,150.[33] The $53.3 million[34] in direct output is projected to generate an indirect impact of approximately $11.7 million, and an induced impact of nearly $13.4 million, bringing the total economic impact on output to over $78.4 million during Phase 3 of the construction period.[35] A summary of the top industries affected during Phase 3 of the construction period, sorted by the total impact on output is provided in **Table 17**.

[32] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.

[33] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.

[34] This figure and all other figures in this section reflect 2019 dollars, the year in which construction of Phase 3 is anticipated to commence.

[35] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 1.546990 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

Table 17
TOP INDUSTRIES AFFECTED DURING PHASE 3 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$29,258,960	46.3	$11,703,582
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$24,045,192	38.0	$9,618,077
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$2,713,214	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$2,279,767	8.6	$869,693
IMPLAN Sector 369: Architectural, engineering, and related services	$1,543,693	11.1	$1,128,268

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

It is projected that Phase 3 of the construction period will generate a total of 84.3 full time equivalent (FTE) employees during each of the three (3) years of the Phase 3 construction period. Each of these jobs is anticipated to last a duration of three (3) years, through the completion of Phase 3 construction. As seen in **Section 4.1**, it is assumed that the same basic construction crew will be utilized throughout Phase 3 of construction, and that the majority of these construction workers will be hired from within the local labor force. As such, the 84.3 FTE construction workers are anticipated to be continuously employed during the entire three-year long Phase 3 construction period.

The 84.3 FTE jobs created during Phase 3 of the construction period will have an indirect impact of 62.3 FTE employees and an induced impact of 74.2 FTE employees in other industry sectors, bringing the total impact of construction to 220.8 FTE jobs during Phase 3 of the construction period.[36] It is assumed that these positions will remain in operation during the entire phase of construction, and all direct, indirect, and induced employment is anticipated to be continuous during the entire three-year long Phase 3 construction period.

A summary of the top industries affected during Phase 3 of the construction period, sorted by the total impact on employment is provided in **Table 18**.

[36] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 11.167791 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

Table 18
TOP INDUSTRIES AFFECTED DURING PHASE 3 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$29,258,960	46.3	$11,703,582
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$24,045,192	38.0	$9,618,077
IMPLAN Sector 369: Architectural, engineering, and related services	$1,543,693	11.1	$1,128,268
IMPLAN Sector 319: Wholesale trade businesses	$2,279,767	8.6	$869,693
IMPLAN Sector 324: Retail Stores - Food and beverage	$696,380	7.7	$292,316

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

Direct *labor income* refers to the earnings, wages, or salary paid to each of the construction workers. As seen in **Section 4.1**, labor income typically comprises approximately 40% of the total cost of construction, and the SCIDA encourages the payment of the area standard wage for construction projects in the region. As such, and assuming wages remain constant (with the exception of a 3% annual inflation adjustment) through Phase 3 of the construction period, each of the construction workers will earn the projected average wage[37] of $60,940 during the nine (9) months of employment during 2019[38], $83,691 during 2020, $86,201 during 2021, and $22,197 during the three (3) months of construction in 2022.[39] In total, this represents approximately $253,029 per employee, and more than $21.3 million in collective earnings among the 84.3 FTE employees during the three-year long construction period of Phase 3.

The $21.3 million in labor income is projected to have an indirect impact of over $4.9 million and an induced impact of over $4.4 million, bringing the total economic impact of Phase 3 construction to over $30.65 million in labor income.[40] A summary of the top industries affected

[37] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the three-year long construction period of Phase 3.
[38] This assumes an average annual wage of $81,253 applied to a construction period of nine (9) months in 2019.
[39] This assumes an average annual wage of $88,788 applied to a construction period of three (3) months in 2022.
[40] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34), and a multiplier of 0.603716 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new residential permanent site single- and multi-family structures" (IMPLAN Sector 37) in Suffolk County, New York.

during Phase 3 of the construction period, sorted by the total impact on labor income is provided in **Table 19**.

Table 19
TOP INDUSTRIES AFFECTED DURING PHASE 3 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures	$29,258,960	46.3	$11,703,582
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$24,045,192	38.0	$9,618,077
IMPLAN Sector 369: Architectural, engineering, and related services	$1,543,693	11.1	$1,128,268
IMPLAN Sector 319: Wholesale trade businesses	$2,279,767	8.6	$869,693
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioners	$724,990	5.6	$486,055

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

A summary of the derivation of the collective economic benefits during Phase 3 of the construction period is provided in **Table 20**.

Table 20
ECONOMIC IMPACTS OF CONSTRUCTION: PHASE 3

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures, and IMPLAN Sector 37: Construction of new residential permanent site single- and multi-family structures			
Direct Impact	$53,304,150	84.3	$21,321,660
Indirect Impact	$11,744,470	62.3	$4,904,352
Induced Impact	$13,392,255	74.2	$4,424,319
Total Impact[41]	$78,440,880	220.8	$30,650,330

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

[41] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.

4.5 Anticipated Economic Impacts: Phase 4

As seen in **Table 3**, Phase 4 of the construction period is anticipated to include the construction of a 150,000 SF hotel, a 5,000 SF restaurant, and 150,000 SF of Class A office space. It is anticipated that Phase 4 will commence during spring of 2022, and is anticipated to last a duration of two years.[42]

Costs associated with the construction of Phase 4 are anticipated to total $39,542,287.[43] The $39.5 million[44] in direct output is projected to generate an indirect impact of approximately $7.4 million, and an induced impact of over $9.7 million, bringing the total economic impact on output to over $56.7 million during Phase 4 of the construction period.[45] A summary of the top industries affected during Phase 4 of the construction period, sorted by the total impact on output is provided in **Table 21**.

Table 21
TOP INDUSTRIES AFFECTED DURING PHASE 4 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$39,542,287	87.1	$15,816,915
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$1,994,060	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$1,700,500	5.9	$647,748
IMPLAN Sector 369: Architectural, engineering, and related services	$1,606,645	10.9	$1,196,865
IMPLAN Sector 360: Real estate establishments	$877,156	3.8	$140,486

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

[42] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.
[43] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.
[44] This figure and all other figures in this section reflect 2022 dollars, the year in which construction of Phase 4 is anticipated to commence.
[45] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

It is projected that Phase 4 of the construction period will generate a total of 87.1 full time equivalent (FTE) employees during each of the two (2) years of the Phase 4 construction period. Each of these jobs is anticipated to last a duration of two (2) years, through the completion of Phase 4 construction. As seen in **Section 4.1**, it is assumed that the same basic construction crew will be utilized throughout Phase 4 of construction, and that the majority of these construction workers will be hired from within the local labor force. As such, the 87.1 FTE construction workers are anticipated to be continuously employed during the entire two-year long Phase 4 construction period.

The 87.1 FTE jobs created during Phase 4 of the construction period will have an indirect impact of 34.0 FTE employees and an induced impact of 49.9 FTE employees in other industry sectors, bringing the total impact of construction to 171.0 FTE jobs during Phase 4 of the construction period.[46] It is assumed that these positions will remain in operation during the entire phase of construction, and all direct, indirect, and induced employment is anticipated to be continuous during the entire two-year long Phase 4 construction period.

A summary of the top industries affected during Phase 4 of the construction period, sorted by the total impact on employment is provided in **Table 22**.

Table 22
TOP INDUSTRIES AFFECTED DURING PHASE 4 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$39,542,287	87.1	$15,816,915
IMPLAN Sector 369: Architectural, engineering, and related services	$1,606,645	10.9	$1,196,865
IMPLAN Sector 319: Wholesale trade businesses	$1,700,500	5.9	$647,748
IMPLAN Sector 413: Food services and drinking places	$335,776	4.8	$154,250
IMPLAN Sector 360: Real estate establishments	$877,156	3.8	$140,486

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

Direct *labor income* refers to the earnings, wages, or salary paid to each of the construction workers. As seen in **Section 4.1**, labor income typically comprises approximately 40% of the total cost of construction, and the SCIDA encourages the payment of the area standard wage for construction projects in the region. As such, and assuming wages remain constant (with the

[46] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

exception of a 3% annual inflation adjustment) through Phase 4 of the construction period, each of the construction workers will earn the projected average wage[47] of $66,591 during the nine (9) months of employment during 2022[48], $91,451 during 2023, and $23,549 during the three (3) months of construction during 2025.[49] In total, this represents approximately $181,590 per employee, and approximately $15.8 million in collective earnings among the 87.1 FTE employees during the two-year long construction period of Phase 4.

The $15.8 million in labor income is projected to have an indirect impact of over $3.2 million and an induced impact of over $3.2 million, bringing the total economic impact of Phase 4 construction to over $22.3 million in labor income.[50] A summary of the top industries affected during Phase 4 of the construction period, sorted by the total impact on labor income is provided in **Table 23**.

Table 23
TOP INDUSTRIES AFFECTED DURING PHASE 4 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$39,542,287	87.1	$15,816,915
IMPLAN Sector 369: Architectural, engineering, and related services	$1,606,645	10.9	$1,196,865
IMPLAN Sector 319: Wholesale trade businesses	$1,700,500	5.9	$647,748
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioners	$522,461	3.8	$353,673
IMPLAN Sector 397: Private hospitals	$465,846	2.9	$246,180

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

A summary of the derivation of the collective economic benefits during Phase 4 of the construction period is provided in **Table 24**.

[47] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the two-year long construction period of Phase 4.
[48] This assumes an average annual wage of $88,788 applied to a construction period of nine (9) months in 2022.
[49] This assumes an average annual wage of $94,195 applied to a construction period of three (3) months in 2025.
[50] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

Table 24
ECONOMIC IMPACTS OF CONSTRUCTION: PHASE 4

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures			
Direct Impact	$39,542,287	87.1	$15,816,915
Indirect Impact	$7,426,110	34.0	$3,266,572
Induced Impact	$9,756,555	49.9	$3,219,258
Total Impact[51]	$56,724,952	171.0	$22,302,744

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

4.6 Anticipated Economic Impacts: Phase 5

As seen in **Table 3**, Phase 5 of the construction period is anticipated to include the construction of 250,000 SF of office/flex space. It is anticipated that Phase 5 will commence during the spring of 2024, and will last a duration of two years.[52]

Costs associated with the construction of Phase 5 are anticipated to total $14,675,000.[53] The $14.675 million[54] in direct output is projected to generate an indirect impact of approximately $2.7 million, and an induced impact of over $3.6 million, bringing the total economic impact on output to over $21.0 million during Phase 5 of the construction period.[55] A summary of the top industries affected during Phase 5 of the construction period, sorted by the total impact on output is provided in **Table 25**.

[51] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.
[52] It is important to note that this analysis assumes a construction period of five (5) phases over a period of ten (10) years. There may be some overlap in phasing with various phases constructed simultaneously, depending on market conditions at the time of final approval. However, and for the purpose of this analysis and to conservatively project the economic impacts to occur during each phase, the economic impacts are based on the fourteen (14) year phasing plan.
[53] Construction costs provided by Rose-Breslin Associates, LLC & Dorade, LLC, in November 2010. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.
[54] This figure and all other figures in this section reflect 2024 dollars, the year in which construction of Phase 5 is anticipated to commence.
[55] According to IMPLAN, a multiplier of 1.485648 represents the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

Table 25
TOP INDUSTRIES AFFECTED DURING PHASE 5 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON OUTPUT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$14,675,000	30.5	$5,870,000
IMPLAN Sector 361: Imputed rental activity for owner-occupied dwellings	$740,040	0.0	$0
IMPLAN Sector 319: Wholesale trade businesses	$631,093	2.1	$240,393
IMPLAN Sector 369: Architectural, engineering, and related services	$596,261	3.8	$444,183
IMPLAN Sector 360: Real estate establishments	$322,379	1.3	$52,137

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

It is projected that Phase 5 of the construction period will generate a total of 30.5 full time equivalent (FTE) employees during each of the two (2) years of the Phase 5 construction period. Each of these jobs is anticipated to last a duration of two (2) years, through the completion of Phase 5 construction. As seen in **Section 4.1**, it is assumed that the same basic construction crew will be utilized throughout Phase 5 of construction, and that the majority of these construction workers will be hired from within the local labor force. As such, the 30.5 FTE construction workers are anticipated to be continuously employed during the entire two-year long Phase 5 construction period.

The 30.5 FTE jobs created during Phase 5 of the construction period will have an indirect impact of 11.9 FTE employees and an induced impact of 17.5 FTE employees in other industry sectors, bringing the total impact of construction to 59.9 FTE jobs during Phase 5 of the construction period.[56] It is assumed that these positions will remain in operation during the entire phase of construction, and all direct, indirect, and induced employment is anticipated to be continuous during the entire two-year long Phase 5 construction period.

A summary of the top industries affected during Phase 5 of the construction period, sorted by the total impact on employment is provided in **Table 26**.

[56] According to IMPLAN, a multiplier of 9.367934 represents the total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

Table 26
TOP INDUSTRIES AFFECTED DURING PHASE 5 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON EMPLOYMENT

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$14,675,000	30.5	$5,870,000
IMPLAN Sector 369: Architectural, engineering, and related services	$596,261	3.8	$444,183
IMPLAN Sector 319: Wholesale trade businesses	$631,093	2.1	$240,393
IMPLAN Sector 413: Food services and drinking places	$124,614	1.7	$57,245
IMPLAN Sector 360: Real estate establishments	$322,379	1.3	$52,137

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

Direct *labor income* refers to the earnings, wages, or salary paid to each of the construction workers. As seen in **Section 4.1**, labor income typically comprises approximately 40% of the total cost of construction, and the SCIDA encourages the payment of the area standard wage for construction projects in the region. As such, and assuming wages remain constant (with the exception of a 3% annual inflation adjustment) through Phase 5 of the construction period, each of the construction workers will earn the projected average wage[57] of $70,646 during the nine (9) months of employment during 2024[58], $97,021 during 2025, and $24,983 during the three (3) months of construction during 2026.[59] In total, this represents approximately $181,590 per employee, and approximately $5.87 million in collective earnings among the 30.5 FTE employees during the two-year long construction period of Phase 5.

The $5.87 million in labor income is projected to have an indirect impact of over $1.2 million and an induced impact of nearly $1.2 million, bringing the total economic impact of Phase 5 construction to nearly $8.3 million in labor income.[60] A summary of the top industries affected during Phase 5 of the construction period, sorted by the total impact on labor income is provided in **Table 27**.

[57] New York State Department of Labor's Quarterly Census of Employment and Wages reports an average wage of $58,699 among those employed within construction occupations in the Long Island labor market in 2008. For the purpose of this analysis, an additional annual inflation factor of three percent was applied to the average wage, to reflect wages during each year of the two-year long construction period of Phase 5.
[58] This assumes an average annual wage of $94,195 applied to a construction period of nine (9) months in 2024.
[59] This assumes an average annual wage of $99,931 applied to a construction period of three (3) months in 2026.
[60] According to IMPLAN, a multiplier of 0.549392 represents the total dollar change in labor income of households employed by all industries for each additional one million dollars of labor income delivered to final demand through the "Construction of new nonresidential commercial and health care structures" (IMPLAN Sector 34) in Suffolk County, New York.

Table 27
TOP INDUSTRIES AFFECTED DURING PHASE 5 OF THE CONSTRUCTION PERIOD, BY TOTAL IMPACT ON LABOR INCOME

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures	$14,675,000	30.5	$5,870,000
IMPLAN Sector 369: Architectural, engineering, and related services	$596,261	3.8	$444,183
IMPLAN Sector 319: Wholesale trade businesses	$631,093	2.1	$240,393
IMPLAN Sector 394: Offices of physicians, dentists, and other health practitioners	$193,897	1.3	$131,256
IMPLAN Sector 397: Private hospitals	$172,886	1.0	$91,363

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

A summary of the derivation of the collective economic benefits during Phase 5 of the construction period is provided in **Table 28**.

Table 28
ECONOMIC IMPACTS OF CONSTRUCTION: PHASE 5

Sector	Output (Total Revenue)	Employment (Number of Jobs)	Labor Income (Total Wages)
IMPLAN Sector 34: Construction of new nonresidential commercial and health care structures			
Direct Impact	$14,675,000	30.5	$5,870,000
Indirect Impact	$2,753,789	11.9	$1,212,297
Induced Impact	$3,617,932	17.5	$1,194,736
Total Impact[61]	$21,046,720	59.9	$8,277,033

Source: Direct impact of output (construction costs) provided by Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson Pope & Voorhis, LLC via IMPLAN software.

[61] It is important to note that the direct, indirect and induced impacts on output, employment and/or labor income may not add up to the respective total impact; each figure has been rounded to the nearest whole number.

5.0 MORTGAGE RECORDING TAX REVENUES

Mortgage recording tax is a one-time tax paid when a mortgage is recorded. Mortgage recording tax revenue covers necessary local and state expenses associated with processing and recording mortgages. Such taxes are completely separate and independent from property taxes levied by a given town, county, school district, or other local or special taxing jurisdiction.

According to the New York State Department of Taxation and Finance, Suffolk County properties are subject to a 1.05% mortgage recording tax rate. This equates to a tax of $1.05 per $100 of the price of the associated mortgage, regardless of the type of land use to be developed and financed. As seen in **Table 29**, the rate of 1.05% includes a basic tax rate of 0.5%; the Suffolk County Clerk's Office indicated that this basic tax rate is levied to the Town in which the property is located. Moreover, since Suffolk County is located within the Metropolitan Commuter Transportation District (MCTD), mortgages are also subject to an additional tax of 0.3%, or $0.30 for each $100 secured by a given mortgage. Lastly, the mortgage recording tax rate includes a special additional tax rate of 0.25%, which is levied to New York State for commercial mortgages, and to the MCTD for residential mortgages. Tax reductions of $30 per housing unit can be requested for properties improved by a one- or two-family residence. However, there are no reductions or exemptions available to other types of properties.

Table 29
MORTGAGE RECORDING TAX RATE

Type of Tax	Current Tax Rate (per $100 mortgage)	Distribution
Basic Mortgage Recording Tax	$0.50	Town of Brookhaven
Additional Mortgage Recording Tax	$0.30	Metropolitan Commuter Transportation District
Special Additional Mortgage Recording Tax	$0.25	New York State (if commercial); or Metropolitan Commuter Transportation District (if residential)
Total: Mortgage Recording Tax	**$1.05**	**--**

Source: New York State Department of Taxation; Suffolk County Clerk's Office

As seen in **Section 1.0**, the Meadows at Yaphank PDD is proposed to include a mix of commercial and residential uses. **Appendix A-11** of the DGEIS outlines the mortgage tax revenues levied through residential mortgages, projected to total over $2 million. This includes mortgages for the 706 townhouses and condominiums. The rental units are considered to be commercial property, and are therefore included in a mortgage along with the hotel, retail, restaurant, office/flex space, and Class A office space. In total, the 1,032,500 SF of commercial space and the 144 rental units are anticipated to amount to $118.2 million in construction costs. This is illustrated in **Table 30**.

Table 30
CONSTRUCTION COSTS: COMMERCIAL COMPONENT OF THE MEADOWS AT YAPHANK PDD

Type of Commercial Development	Construction Cost
Hotel	$22,000,000
Retail	$29,470,213
Large Retailer	*$11,600,000*
Pharmacy	*$1,557,574*
Bank	*$370,851*
Supermarket	*$5,950,000*
Other Neighborhood Retail	*$9,991,787*
Restaurant	$529,787
Office/Flex	$14,675,000
Class A Office	$34,025,000
Rental Units	$17,500,000
Total: Commercial Component of The Meadows at Yaphank PDD	**$118,200,000**

Source: Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson, Pope & Voorhis, LLC

According to Rose-Breslin Associates, LLC & Dorade, LLC, approximately 65% of the cost to construct the commercial component of the project will need to be financed. This equates to $76.83 million to be financed through a mortgage. Assuming a mortgage recording tax rate of 1.05%[62], and when applied to the $76.83 million expected to be financed, it is anticipated that $806,715 will be generated by mortgage recording tax revenue.

Table 31
ANTICIPATED MORTGAGE RECORDING TAX GENERATION: COMMERCIAL COMPONENT OF THE MEADOWS AT YAPHANK PDD

Construction Cost: Commercial Component of The Meadows at Yaphank PDD	$118,200,000
Percentage to be Financed	65%
Total Mortgage: Commercial Component	$76,830,000
Mortgage Recording Tax Rate	1.05%
Mortgage Recording Tax Revenue	**$806,715**

Source: New York State Department of Taxation; Suffolk County Clerk's Office; Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson, Pope & Voorhis, LLC

Table 32 illustrates how the mortgage recording tax revenue is anticipated to be distributed among each of the jurisdictions. It is estimated that $384,150 of the mortgage recording tax

[62] This is based on 2010 tax rates specific to Suffolk County, New York.

revenues would be allocated to the Town of Brookhaven, $230,490 would be retained by the Metropolitan Commuter Transportation District, and New York State would levy the remaining $192,075 in mortgage recording tax revenues.

Table 32
ANTICIPATED MORTGAGE RECORDING TAX REVENUE DISTRIBUTION: COMMERCIAL COMPONENT OF THE MEADOWS AT YAPHANK PDD

Type of Tax	Current Tax Rate (per $100 mortgage)	Projected Tax Revenue	Distribution
Basic Mortgage Recording Tax	$0.50	$384,150	Town of Brookhaven
Additional Mortgage Recording Tax	$0.30	$230,490	Metropolitan Commuter Transportation District
Special Additional Mortgage Recording Tax	$0.25	$192,075	New York State
Total: Mortgage Recording Tax	**$1.05**	**$806,715**	**--**

Source: New York State Department of Taxation; Suffolk County Clerk's Office; Rose-Breslin Associates, LLC & Dorade, LLC; Analysis by Nelson, Pope & Voorhis, LLC

6.0 CONCLUSION

The Meadows at Yaphank PDD will meet the need for a lifestyle center in the hamlet of Yaphank through the provision of a high-quality, mixed-use development with a number of public benefits to meet the specific local and regional needs. The proposed development will provide workforce and age-restricted housing opportunities, which are much-needed throughout the community and the region. In addition, the proposed project will attract a variety of retail and mixed-use commercial uses to meet community needs. The proposed project would rehabilitate the property by replacing a partially cleared and previously used site that is now subject to unauthorized use and activity, with a mixed-use and vibrant community having a sense of place that provides enjoyment for local residents, employees and consumers alike.

It is projected that the construction and operations of The Meadows at Yaphank PDD will contribute positively to the local economy. The Meadows at Yaphank PDD will complement the surrounding land uses while providing an economic return to local taxing jurisdictions through increased tax revenues – including those stemming from the generation of mortgage recording tax revenues, to be distributed to the Town of Brookhaven, Metropolitan Commuter Transportation District and New York State.

Moreover, the proposed project will generate immediate construction jobs for the Town of Brookhaven and area residents. During each phase of the construction period, opportunities for employment will offer direct, indirect and induced benefits among businesses and households located throughout the hamlet of Yaphank, the Town of Brookhaven, Suffolk County and the region as a whole. The new jobs created during each phase of construction will help to increase business and household income in the community. In turn, as spending increases, this creates additional jobs and further increases business and household income throughout the region. Such economic benefits are most crucial during the current economic state throughout Long Island, New York State and the nation as a whole.

7.0 REFERENCES

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ATTACHMENT A

Nelson, Pope & Voorhis, LLC
Economic Qualifications

ABOUT NELSON, POPE & VOORHIS...

ENVIRONMENTAL PLANNING CONSULTING

MUNICIPAL PLANNING
SEQRA COMPLIANCE
HARBOR MANAGEMENT PLANNING
FEASIBILITY STUDIES
DUE DILIGENCE ASSISTANCE
REGIONAL PLANNING
ECONOMIC PLANNING
ENVIRONMENTAL SITE ASSESSMENT
ENVIRONMENTAL SCIENCE & ANALYSIS
WETLAND PERMITTING
STORM WATER MANAGEMENT PLANS
WATERFRONT & COASTAL ZONE PROJECTS
MAPPING
WATERSHED MANAGEMENT & WATER SUPPLY
PERMITTING & PROCESSING

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Nelson, Pope & Voorhis, LLC was formed in 1997 and has grown in capabilities and size since that time. The merging of Charles Voorhis & Associates (9 year history) with Nelson & Pope (a 50-year tradition in engineering and related services) created an environmental planning firm with a wealth of experience to bring to complex environmental problem solving, planning and feasibility, resource assessment and site investigations.

Nelson, Pope & Voorhis serves governmental and private sector clients in preparing creative solutions in the specialized area of complex environmental project management and land use planning and analysis.

Nelson, Pope & Voorhis has the benefit of knowledge of local issues, local resources, and the passion to provide the very best solutions and strategies for the local area. This provides unparalleled knowledge of the application of the community planning process, comprehensive planning and SEQRA Administration. The result is a team of highly compatible land use professionals that will get the job done in a manner that ensures real and implementable solutions.

Nelson, Pope & Voorhis employees are recognized as experts in environmental, land use and planning issues and have provided consulting services to various municipalities. NP&V encourages continuing education through participation in conferences and seminars for all staff and holds regular training luncheons utilizing APA and other training packages.

Nelson, Pope & Voorhis has a capable staff of professionals, including planners, ecologists, hydrologists, wetlands specialists and environmental professionals. When integrated with technical staff of Nelson & Pope, the team is expanded to include civil, sanitary and transportation engineers and land surveyors.

Nelson, Pope & Voorhis would appreciate the opportunity to discuss how we can assist you in achieving your goals. We are committed to providing quality environmental, planning and consulting services to all clients. This statement of qualifications is an introduction to the many services we provide with a focus on municipal services; the following pages contain a more detailed presentation of services offered by Nelson, Pope & Voorhis, as well as a sampling of completed projects and key staff resumes.

Call us at (631) 427-5665. We welcome the opportunity to serve your environmental, planning and consulting needs.

MORE ABOUT NELSON, POPE & VOORHIS...

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Charles Voorhis is managing partner and is a member of the American Institute of Certified Planners (AICP) and is a Certified Environmental Professional (CEP), having over 28 years of experience in environmental planning on Long Island and the New York area. Mr. Voorhis oversees the business in terms of management, marketing and expertise, provides expert testimony in hearings and court proceedings, and ensures that client needs are served to the best of the firm's ability.

The firm has significant expertise in applied use of the State Environmental Quality Review Act (SEQRA) with understanding of the practical and legal use of this law from both the private and municipal perspective. Staffing includes environmental professionals assembled to work together as a team with complementary expertise and interests. NP&V personnel maintain wildlife collection permits in New York State, and are active contributors to the Long Island Geographic Information System (GIS) user group meetings and publications.

The firm has developed a number of copyright protected computer models for environmental analysis in the areas of: wildlife and ecology; water budget analysis and groundwater impacts; economic and market analysis; and stormwater impact prediction. The reports and graphics generated for projects are high in quality and professionally prepared through the use of state-of-the-art technology in digital aerial photography, geocoding and mapping of site features using global positioning systems, AutoCAD analysis/mapping, geographic information systems (GIS), CommunityViz, custom spreadsheet models for regional land use impact assessment, and related technological tools for advanced data management and word processing. The seamless integration of environmental and engineering services with Nelson & Pope is accomplished by direct communication and computer networking to ensure that projects are managed through the review process to the development stage.

NP&V features three divisions, created to better serve clients with high quality, innovative and responsive consulting services in all aspects of environmental planning.

THE THREE DIVISIONS OF NP&V...

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The division of **ENVIRONMENTAL & COMMUNITY PLANNING** specializes in comprehensive local and regional planning. Technology is key in today's planning field and NP&V continues to keep pace with the most current tools available for planning applications. Use of Geographic Information System (GIS) software, 3D Analyst, ArcScene and Spatial Analyst, as well as CommunityViz (3-D simulation and analysis software), architectural modeling software, AutoCAD, and planning and analysis software and spreadsheets, results in rapid, accurate and high quality data, analysis, illustration and reporting. This division conducts planning studies, revitalization plans, community development/public participation activities, and human resource analysis including noise, air, demographic, socio-economic and visual resource assessment (including 3D simulations, photo simulations and shadow studies). The division is directed by Kathryn Eiseman, AICP and includes planners and GIS specialists with environmental, planning and architectural backgrounds.

The division of **ENVIRONMENTAL RESOURCE & WETLANDS ASSESSMENT** provides quality services in the preparation of Environmental Impact Statements (EIS's), Environmental Assessments (EA's), planning and zoning law review and preparation, stormwater permitting and erosion control compliance, and wetland delineation, assessment, mitigation and permitting. This division is headed by Carrie O'Farrell and has a capable staff including environmental scientists, wetland ecologists and environmental professionals to ensure timely delivery of quality products.

The division of **PHASE I/II ASSESSMENTS & REMEDIATION** performs Phase I and II Environmental Site Assessments (ESA's), voluntary cleanup, brownfields cleanup, RI/FS and all aspects of site remediation and investigation. The division is headed by Steven McGinn, CEI, AICP, a member of Nelson & Pope's environmental services branch for 13 years with significant experience in preparation of Phase I/II ESA's field investigations and remediation. This division includes a staff of hydrogeologists and environmental professionals and coordinates required field equipment and laboratory services. NP&V has performed large and small assessments and provides the fastest possible turnaround to meet due diligence periods and deadlines which are often a factor in real estate transactions. NP&V Phase I/II ESA services are known and accepted by lending institutions throughout the tri-state area. NP&V owns, maintains and operates GPR (Ground Penetrating Radar) and PowerProbe units to provide expanded services in site investigations. A description of NP&V qualifications and resumes of personnel proposed for the project and specific project experience is included in the following pages.

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Nelson Pope & Voorhis

Summary of Services...

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Harbor Management Planning
Feasibility Studies
Due Diligence Assistance
Regional Planning
Economic Planning
Environmental Site Assessment
Environmental Science & Analysis
Wetland Permitting
Storm Water Management Plans
Waterfront & Coastal Zone Projects
Mapping
Watershed Management & Water Supply
Permitting & Processing

Municipal Planning: Full environmental and planning review services for municipalities including site plan and subdivision review, zoning board review and SEQRA Administration...

Regional and Community Planning: Conceptual site development planning; public outreach: visioning workshops and charrettes; development alternatives; zoning; site yield studies; build-out analysis; visual analysis (3-D modeling; photo simulations) and comprehensive regional and hamlet planning studies…

Feasibility and Due Diligence Assistance: Comprehensive research into site development related issues affecting project implementation, timing and costs…

Economic Planning: Housing incentives and programs; community development; and economic impact and market studies…

Environmental Site Assessment: Phase I, II and III environmental site assessments; geophysical surveys; GPR services; remedial investigation and feasibility studies; Brownfield investigations; voluntary cleanup program; oil spill closure; groundwater investigations and modeling; asbestos and lead testing and abatement…

Environmental Science and Analysis: Environmental impact statements (EIS); assessment forms (EAF); ecological and wildlife studies; noise and air emission impact studies; and compliance with Federal, State & local environmental regulations & laws...

Wetland Permitting: Flagging and identification of fresh water and tidal wetlands; preparation of wetland permitting; and wetland restoration plans...

Storm Water Management Plans: Design of management plans for storm water and erosion control compliance with latest Federal and State regulations; preparation and processing of NOI; and site compliance during construction…

Waterfront and Coastal Zone Projects: Planning; permitting of waterfront improvement projects; water quality data management and studies; and docking facilities…

Mapping: Inventory of physical features; GIS mapping; data management and analysis; and ground penetrating radar for identification of subsurface conditions…

Watershed Management and Water Supply: Comprehensive regional watershed and water supply management and planning studies...

Permitting and Processing: Preparation and processing of environmental applications for submittal; client representation before municipal agencies and departments and expert testimony for legal support and hearings...

Nelson Pope & Voorhis

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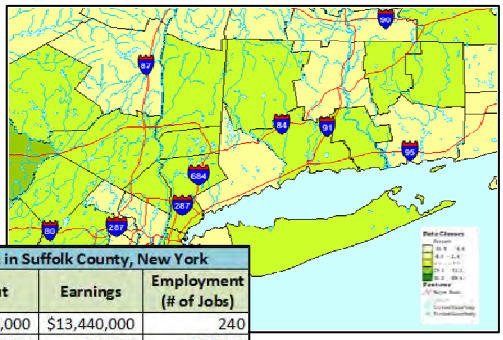
Economic and Fiscal Impact Analysis, Market Studies, Demographic and Community Needs Assessments

Environmental Planning Consulting

Feasibility & Due Diligence Assistance
Regional & Site Planning
Economic Planning
Environmental Site Assessment
Environmental Science & Analysis
Wetland Permitting
Storm Water Management Plans
Waterfront & Coastal Zone Projects
Mapping
Watershed Management & Water Supply
Permitting & Processing
Sustainability & LEED
Project Planning & Support

- Fiscal Analysis
- Economic Impact Analysis
- Economic Development Strategies
- Market Analysis
- Market Positioning & Branding
- Main Street Revitalization
- Comprehensive Community Needs Assessments
- Socioeconomic Analysis
- Demographic analysis
- Tax Base Analysis
- Industrial Cluster Analysis
- Market Feasibility Studies



NAICS CODE 230000: Construction in Suffolk County, New York			
	Output	Earnings	Employment (# of Jobs)
Direct Impact	$33,600,000	$13,440,000	240
RIMS Multiplier	1.9793	0.5803	14.0154
Indirect and Induced Impact	$66,504,480	$7,799,232	100
Total Impact	**$100,104,480**	**$21,239,232**	**340**

Many of our clients know of our quality services in tax revenue and demographic impact analysis including demographic and school district impact assessments. This expertise combined with our expert use of Geographic Information System (GIS) and census data has allowed NP&V to complete quality fiscal and economic impact studies since the company was formed in 1997.

Our fiscal impact analyses identify project benefits in terms of tax revenue projections and demand for community services from various providers. We have expanded our capabilities and recently, our economic impact analyses concentrate on an expanded quantification of project benefits including job generation during the construction and operation of development, projected salaries, consumer spending, sales tax generation from spending and other economic "ripple effect" benefits. It is critically important to understand the full benefits of economic development projects during difficult economic times.

We now offer market analyses and feasibility studies to determine potential success of projects related to demand for a given business model, within a trade area, in consideration of consumer spending, competition and market demand. Such studies are invaluable in assessing project feasibility and assist with addressing potential socio-economic impacts.

NP&V has a track record of completed, successful and built projects involving fiscal impact analysis, demographic assessment, market studies and customized analyses of community service related impacts in nearly all Towns in Nassau and Suffolk Counties. NP&V's economic planning expertise can be integrated into economic development strategies, project feasibility, balancing of mixed-use project scenarios, community development and assistance programs and needs assessments. Please contact us for more information on how we can assist with the economic planning aspects of your development, re-development, revitalization or community needs assessment project.

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RESUMES

Nelson, Pope & Voorhis

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Licensing and Certification:

- Certified Environmental Professional (CEP)
- American Institute of Certified Planners (AICP)
- Certified Environmental Inspector, Environmental Assessment Association
- US Coast Guard Master Steam and Auxiliary Sail Vessels

Experience:

- Managing Partner of Firm, Nelson, Pope & Voorhis, LLC; Melville, New York (1/97-Present)
- Principal of Firm, Charles Voorhis & Associates, Inc.; Miller Place, New York (8/88-1/97)
- Director, Division of Environmental Protection, Department of Planning, Environment and Development; Town of Brookhaven, New York (3/86-8/88)
- Environmental Analyst, Division of Environmental Protection, Department of Planning, Environment and Development; Town of Brookhaven, New York (8/82-3/86)
- Private and Public Consultant, Planning and Environmental Issues (8/82-3/87)
- Public Health Sanitarian, Suffolk County Department of Health Services; Hauppauge, New York (1/80-8/82)
- Environmentalist I, Suffolk County Department of Environmental Control, Central Islip, New York (2/78- 8/79)

Education:

- SUNY at Stony Brook; Master of Science in Environmental Engineering, concentration in Water Resource Management, 1984
- Princeton Associates; Groundwater Pollution and Hydrology Short Course, Princeton, New Jersey, 1983
- New York State Health Department, Environmental Health Training Course, Hauppauge, New York, 1982
- Southampton College of Long Island University; Bachelor of Science in Environmental Geology, 1977

Significant Professional Achievements:

- Lake Agawam Comprehensive Management Plan, 2008
- Southold TDR Planning Report and GEIS, 2008
- Suffolk County North Shore Embayments Watershed Management Plan, 2007
- Mt. Sinai Harbor Management Plan, 2006
- The Residences at North Hills, DEIS and FEIS, 2005-06
- Shelter Island Water Supply Study, 2005
- Town of Southold Comprehensive Implementation Strategy, 2003
- Lower Port Jefferson Harbor Action Plan, 2002
- Setauket Fire District Needs Analysis, 2001
- Southampton Agricultural Opportunities Subdivision, DEIS, FEIS and Findings, 2001
- Old Orchard Woods, DEIS and FEIS, 2000
- Town of Smithtown Armory Park, DEIS, 2000
- Town of Southold Water Supply Management & Water Protection Strategy, 2000
- CVS @ Greenlawn, DEIS and FEIS, 1998
- Knightsbridge Gardens, DEIS and FEIS, 1997
- Camelot Village @ Huntington, DEIS, 1997
- Airport International Plaza, DEIS and FEIS, 1996
- Price Club @ New Rochelle, DEIS and FEIS, 1995
- Commack Campus Park @ Commack DEIS and FEIS, 1994
- Water Mill Shops @ Water Mill DEIS, 1993
- PJ Venture Wholesale Club @ Commack DEIS and FEIS, 1993
- Dowling College NAT Center DEIS and FEIS, 1992
- Final EIS Angel Shores @ Southold, 1991
- Town of Brookhaven Boat Mooring Plan, 1991
- Draft EIS Round Hill @ Old Westbury, 1990
- GEIS Commercial Rezonings on the Towns Own Motion, 1988
- Draft EIS St. Elsewhere @ Nesconset, 1989
- EQBA, Acquisition Study for Brookhaven Town, 1987
- Award for Environmentally Sensitive Land Design, Pine Barrens Review Comm., 1988
- Town of Brookhaven Land Use Plan, 1987
- Discussion of Hydrogeologic Zone Boundaries in the Vicinity of S. Yaphank, LI, NY, 1986
- Comprehensive Review of Industrial Zoned Land in the Sensitive Hydrogeologic Zone, Brookhaven, 1983

Professional & Other Organizations (past and present):

- American Planning Association, Washington, D.C.
- National Association of Environmental Professionals, Alexandria, VA
- Environmental Assessment Association, Scottsdale, Arizona
- American Water Resources Association, Syracuse, New York
- New York Water Pollution Control Association, Riverdale, New York
- Water Pollution Control Federation, Washington, D.C.
- Long Island Seaport & EcoCenter, Inc., Director, Port Jefferson, NY
- Boy Scouts of America, Trained Scoutmaster, Nathanial Woodhull District, NY
- Historical Society of Port Jefferson, Trustee, Port Jefferson, NY
- Environmental Conservation Board, Village of Port Jefferson, NY
- Port Jefferson Village, Waterfront Advisory Committee, Port Jefferson, NY
- Town of Brookhaven Mount Sinai Harbor Advisory Committee, Medford, NY
- Brookhaven Conservation Advisory Council, Medford, NY

Kathryn J. Eiseman, AICP

PERSONAL PROFESSIONAL QUALIFICATIONS

Licensing and Certification:

- American Institute of Certified Planners (AICP)

Experience:

- Partner/Division Manager of the Environmental & Community Planning Division, Nelson, Pope & Voorhis, LLC Melville, NY) and Charles Voorhis & Associates, Inc. (Miller Place, NY) (7/93 to Present). Project management, preparation of planning studies, downtown revitalization plans, visual preference surveys and public workshop planning and facilitation, environmental impact statements, Geographic Information Systems analysis and mapping, air impact studies, air dispersion modeling (CAL3QHC), noise impact analysis and mitigation, conduct planning studies for land use compatibility/precedent, school and fiscal analysis, testimony at Planning Board meetings.
- Arlington Central School District; Poughkeepsie, NY. (9/91 - 6/93). Mathematics teacher, grade 7.
- Hyde Park Central School District; Hyde Park, NY. (9/89 - 6/91). Mathematics teacher, grades 7 and 8. Yearbook and Mathcounts Club advisor.

Education:

- State University of NY at Stony Brook, Masters Degree in Environmental and Waste Management, 12/96.
- State University of New York at New Paltz; New York (9/89- 6/93). Graduate studies in mathematics, education, computer science, environmental studies and liberal arts.
- Syracuse University; Syracuse, New York. Bachelors Degree. Dual Majors: Mathematics and Education, 5/88.
- Université de Grenoble; Grenoble, France. French language certificate program for foreign students, 5/84.

Significant Professional Achievements:

- Planning Consultant to the Village of Southampton, ongoing
- Eastern Waterfront Community Vision & Revitalization Plan , 6/09
- Lake Ronkonkoma Clean Lakes Study Update, 7/08
- Suffolk County North Shore Embayments Watershed Management Plan, (Final), 11/07
- Syosset Downtown Redevelopment & Revitalization Plan, 9/05
- East Hills Architectural Review Board Planning Study, 1/05
- East Hills Residential Bulk Regulations Review & Study, 1/05
- Custom 3D computer model of proposed Korean Church, Lake Success, 3/04
- Stormwater Outfall and Conveyance Inventory and Mitigation Plan for Town of Islip, 2003
- Mt. Sinai Harbor Shellfish Closure Area Investigation, Town of Brookhaven, 2/03
- Hicksville Fire District Mapping and Spatial Analysis, 2003.
- Visual Preference Survey, Port Jefferson Village, 6/02
- Setauket Fire District Needs Analysis, Setauket, New York, 2001
- Review of Past Water Quality Studies, Port Jefferson Village, 2000
- Stormwater Study, Inventory & Analysis of Stormwater Outfalls for the Town of Brookhaven South Shore Bays, 1996, West Meadow Creek, 2000, and Town of Islip, 2001
- Draft & Final EIS, Colony @ Plainview, 1998
- Noise Studies for Pep Boys & Sears Automotive Centers, 1997-1998

Professional Organizations, Certifications & Training:

- APA Metro Long Island Section Treasurer
- Boys & Girls Club of Bellport Advisory Council Member
- American Institute of Certified Planners since July 2000
- American Planning Association Member since 1997
- IAP2 Certificate Course in Public Participation, January 2004
- CommunityViz Scenario Constructor, SiteBuilder 3D™, Policy Simulator training, November 2002
- Introduction to ArcView GIS, ESRI 16 hour course, 4/00
- Fundamentals of Dispersion Modeling and Computer Modeling Laboratory, June, 1998
- Rutgers University, Methodology of Delineating Wetlands, July 1987

NICOLE L. DELLAVECCHIA

PERSONAL PROFESSIONAL QUALIFICATIONS

Experience:

- **Economic Analyst/Planner, Nelson, Pope & Voorhis, LLC (March 2009-Present)**
  - Completed fiscal impact and economic impact analyses, as well as property tax and sales tax analyses on planned development districts, as well as residential, commercial, recreational and mixed-use developments
  - Prepared market feasibility analyses, zoning analyses and needs assessments
  - Completed analyses to assess and quantify impacts to local community service providers
  - Involved with the preparation of SEQR review documents including Environmental Assessment Forms and Environmental Impact Statements
  - Conducted demographic and socioeconomic analyses
  - Prepared proposals and other marketing efforts

- **Urban Planner/Economic Analyst, Saratoga Associates, Saratoga Springs, NY (2006-2008)**
  - Completed comprehensive/master plans in urban, suburban and rural communities
  - Conducted comprehensive community needs assessments, and demographic and socioeconomic analyses at the county, municipal and neighborhood level
  - Heavily involved in economic development strategies, mall redevelopment, and tourism plans
  - Prepared market analyses and feasibility studies, as well as fiscal and economic impact analyses on residential, commercial, office space and alternative energy developments
  - Prepared corridor management plans, environmental impact statements, brownfield and industrial park redevelopment plans, local waterfront revitalization programs, parking demand analyses
  - Facilitated public participation and community visioning processes, as well as public forums regarding housing, public safety and economic development
  - Created maps, images, graphics and other visuals for various plans and presentations
  - Prepared and reviewed grants for federal, state and local funding sources

Education:

- **Master of Urban Planning, Specialization in International and Economic Development**
  State University of New York, University at Buffalo, 2006
- **Dual Major - Bachelor of Arts in Economics/International Relations**
  Specialization in Economic Development
  State University of New York, College at Geneseo, 2004

Technical Expertise and Skills:

- Microsoft Access, Excel, Frontpage, Publisher, Word & Works
- Adobe Acrobat, Illustrator, InDesign and Photoshop
- ESRI ArcMap 9.3
- SPSS
- MobileMapper and GPS Pathfinder Office
- Trimble and Thales GPS Units

Professional Organizations and Interests:

- American Planning Association, Member
- United States Green Building Council, Member
- Ronald McDonald House of Long Island, Volunteer
- Special Olympics of New York, Long Island Region, Volunteer
- Alpha Phi Omega, Alumni

Appendix A-8
Commercial Market Analysis

NP&V, LLC

March 29, 2011

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

COMMERCIAL MARKET ANALYSIS

The Meadows at Yaphank PDD

Yaphank, New York

NP&V No. 09176

Submitted to: Rose-Breslin Associates, LLC &
Dorade, LLC
One Executive Boulevard
Yonkers, New York 10701

Submitted by: Nelson, Pope & Voorhis, LLC,
Environmental Planning Consultants
572 Walt Whitman Road
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March 29, 2011

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APPENDIX A – NELSON, POPE & VOORHIS, LLC ECONOMIC QUALIFICATIONS

COMMERCIAL MARKET ANALYSIS

The Meadows at Yaphank Planned Development District

Yaphank, New York

NP&V No. 09176

Prepared For:	Rose-Breslin Associates, LLC & Dorade, LLC One Executive Boulevard Yonkers, New York 10701
Prepared By:	Nelson, Pope & Voorhis, LLC 572 Walt Whitman Road Melville, New York 11747 (631) 427-5665
Date:	March 29, 2011

1.0 INTRODUCTION AND PURPOSE

Nelson, Pope & Voorhis, LLC (NP&V) has been requested to prepare a commercial market analysis as part of the Draft Generic Environmental Impact Statement (DGEIS) for The Meadows at Yaphank Planned Development District (PDD). NP&V is a professional environmental and planning firm with qualifications and expertise to prepare market analyses, and has a track record of similar completed projects, as well as fiscal and economic analysis and related economic development services to private and municipal clients. The economic qualifications of the firm and personnel are provided in **Attachment A**.

The Meadows at Yaphank PDD project site is an assemblage of three parcels, including the former Suffolk Meadows Racetrack (Suffolk County Tax Map [SCTM] #0200-584-2-1.3), the former Brookhaven Walk mall site (SCTM #0200-552-1-1.3), and the Dorade Sewage Treatment Plant (STP) site (SCTM #0200-552-1-3), which is currently developed. The subject property consists of 322.37 acres of an overall 333.46-acre combined project site located at the northwestern corner of the interchange of County Route 46 (William Floyd Parkway) and the Long Island Expressway, in the hamlet of Yaphank, Town of Brookhaven, Suffolk County, New York.

As seen in **Table 1**, The Meadows at Yaphank PDD is proposed to include retail, mixed-use commercial space, office/flex space and various housing types. The commercial components of the proposed project include approximately 1,032,500 square feet (SF) of space comprised of a hotel, retail, restaurant and office/flex uses. The residential component includes 850 residential

units of various types and sizes, including 303 age-restricted units and 85 workforce housing units.

The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover, The Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system.

Table 1
SUMMARY OF PROPOSED DEVELOPMENT

Type of Development	Proposed Mix
Hotel	150,000 SF
Retail	327,500 SF
Large Retailer	*150,000 SF*
Pharmacy	*14,700 SF*
Bank	*3,500 SF*
Supermarket	*65,000 SF*
Other Neighborhood Retail	*94,300 SF*
Restaurant	5,000 SF
Office/Flex	250,000 SF
Class A Office	300,000 SF
Residential	850 units
Rentals	*144 units*
Condominiums	*486 units*
Townhouses	*220 units*
Total: The Meadows at Yaphank PDD	**1,032,500 SF of commercial/ office space; 850 residential units**

Source: Rose-Breslin Associates, LLC & Dorade, LLC

The following analysis identifies and quantifies the need for additional commercial/retail space that can be accommodated at The Meadows at Yaphank PDD, and within the surrounding community, in other parts of Brookhaven Town and Suffolk County. **Section 2.0** presents an executive summary and key findings of the commercial market analysis. **Section 3.0** outlines the methodology and the sources of data used in this analysis. **Section 4.0** identifies and defines the target market area, or the boundary from which consumers are expected to be drawn to commercial space at The Meadows at Yaphank PDD. **Section 5.0** quantifies the market demand for commercial space at The Meadows at Yaphank PDD through an examination of demographic and socioeconomic characteristics of the target market area. **Section 6.0** identifies the supply of existing commercial space in comparable shopping center locations that will likely seek part of

the same consumer base within the target market area. **Section 7.0** quantifies and recommends the amount of commercial space that could be supported by the target market area of the The Meadows at Yaphank PDD. **Section 8.0** provides a conclusion with respect to the commercial market analysis, and **Section 9.0** outlines the references utilized in this analysis.

2.0 EXECUTIVE SUMMARY

As noted in **Section 1.0**, this analysis identifies and quantifies the need for additional commercial space at The Meadows at Yaphank PDD, and within the surrounding communities and other parts of Brookhaven Town and Suffolk County that represent the target market area. A summary of findings is provided herein, with detailed methodologies and references provided in the subsequent sections of this analysis. Please refer to these subsequent sections for documentation or references and methods used to obtain the information presented in this summary. This analysis was prepared using methods, data and information that are considered to be industry standard in the preparation of a commercial market analysis.

The Meadows at Yaphank PDD will meet the need for a lifestyle center in the hamlet of Yaphank through the provision of a high-quality, mixed-use development with a number of public benefits to meet the specific local and regional needs. The proposed development will provide workforce and age-restricted housing opportunities, which are much needed throughout the community. In addition, the proposed project will attract a variety of retail and mixed-use commercial uses to meet the local community needs, as well as the needs of others residing in Brookhaven Town and throughout Suffolk County. The proposed project would rehabilitate the property by replacing a partially cleared and previously used site that is now subject to unauthorized use and activity, with a mixed-use and vibrant community having a sense of place that provides enjoyment for local residents, employees and consumers alike.

The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover, The Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system.

The Meadows at Yaphank PDD will complement the surrounding land uses while providing an economic return to local taxing jurisdictions through increased tax revenues – including those stemming from the generation of mortgage recording tax revenues. Moreover, the proposed project will generate immediate construction jobs for the Town of Brookhaven and area residents, as well as long-term employment opportunities during project operations. Such economic benefits are most crucial during the current economic state throughout Long Island, New York State and the nation as a whole.

Key Findings

Current Economic Conditions

- Unemployment rates in the Town of Brookhaven have increased substantially over the past few years, nearly doubling between 2007 and 2009.

- As of November 2010, approximately 19,000 persons – 7.3% of the Town's labor force – are unemployed.
- In addition to relatively high levels of unemployment, Long Island is facing an uncertain housing market and consumer spending has been conservative. Such trends are comparable to those of Suffolk County, Long Island and New York State, indicative of the ongoing fiscal and economic constraints facing the state and the nation.
- Despite job loss in other industry sectors including local government, manufacturing and financial services, the Long Island Association indicates that the private-sector job growth is accelerating, with a net growth of approximately 5,700 jobs created in Long Island between October 2009 and October 2010. The industry sectors with the largest growth include retail trade, education, health services and wholesale trade.[1]
- It is important to note that economic conditions facing the Town of Brookhaven and the Long Island region are temporary and the local economy is showing signs of recovery. It is projected that consumers may begin to spend more freely, reflective of private-sector employment growth, and the projected increase in year-end bonuses on Wall Street.[2]

Target Market Area

- The Meadows at Yaphank PDD is deemed a "super community/community shopping center," defined by the International Council of Shopping Centers and Urban Land Institute, as determined by the proposed size, type of tenants, amenities, and pedestrian-friendly landscape.
- Super community/community shopping centers are typically able to draw support from a 10-15 minute travel time radius. As such, and for the purpose of this analysis, an average 15-minute drive time radius was used to represent the target market area for additional commercial space at The Meadows at Yaphank PDD. This represents a significant portion of central Suffolk County, with the boundary of the target market area extending as little as four (4) miles to the north and south along local roads, and as far as 14 miles to the east and west along the Long Island Expressway where consumers are able to travel at faster speeds.

Market Demand

- The population within the target market area has increased considerably since 1990. The population grew by 12.5% between 1990 and 2000, and it is estimated that the population increased by an additional 10.9% since 2000. An additional 3.0% growth is projected to occur through 2015.[3]
- Population within the target market area is expected to grow by approximately 60,000 persons, growing by over 25% between 1990 and 2015.
- The number of households in the target market area has increased by 16.3% between 1990 and 2000, indicative of the residential housing boom that occurred in the target market area.
- The latest estimates suggest 87,861 households are located within a 15-minute drive time radius of the proposed project. This is projected to increase by more than 3,000 additional households over the next five years, with nearly 91,000 households projected to exist by 2015. This is 35.2% greater than the number of households recorded in 1990.
- The substantial growth within the target market area indicates that additional commercial development may be demanded within the community over the coming years.
- The median household incomes within the target market area increased slightly between 2000 and 2010. When adjusted for inflation, the median household income rose by 4.5% – to $80,166 among households in the target market area.

[1] Long Island Association Weekly Economic Update, LIA LINK, November 23, 2010.
[2] Long Island Association Weekly Economic Update, LIA LINK, November 30, 2010.
[3] Population and other demographic projections are described in greater detail in **Section 5.0**.

- The average household located within the target market area spent $61,858 on goods and services in 2009.

Market Supply

- Nineteen (19) super community/community shopping centers were identified within the target market area. All of these shopping centers are "open-air" centers with at least one (though most shopping centers had two or more anchor stores) major anchor store accompanied by numerous smaller retailers.
- Many of the shopping centers that were inventoried are in good condition, with few being newly constructed. Approximately half of the shopping centers were fully occupied, and of those that were not fully occupied, on the order of one vacant retailer was typically observed in these centers. This is typical of even the most successful shopping centers due to normal turnover.
- Several shopping centers were undergoing renovations to accommodate future tenants.
- Given the current economic situation facing Long Island, New York State and the nation as a whole, the minimal vacancies observed within super community/community shopping centers within the target market area may be indicative of the demand for additional commercial opportunities within comparable shopping centers.

Market Absorption

- The Meadows at Yaphank PDD is proposed as a well-planned development that will create an attractive and desirable environment for its visitors and employees, while enhancing the community at large. The attractive mixed-use setting, prominent design features, and the "main street" experience will serve as a model for future developments in the Town of Brookhaven and throughout Long Island.
- Population centers in the community and the accessibility of the site from prominent roadways – including the William Floyd Parkway and the Long Island Expressway – make the proposed site even more attractive to new commercial development.
- The average household located within the target market area spent $61,858 on goods and services in 2009. Of this, 62.6% or $38,718 is estimated to be spent on items that could be purchased at retailers located within new commercial development at The Meadows at Yaphank PDD. This represents the current annual buying power among households located within the target market area.
- In 2015, annual household buying power within the target market area totals over $3.52 billion for goods and services that could be provided at The Meadows at Yaphank PDD. It is important to understand that this represents a conservative estimate, and does not include the buying power stemming from the 850 new residential units proposed for The Meadows at Yaphank PDD, nor does it include the buying power from visitors to, or employees of the proposed project. In addition, it is likely that others residing outside of the target market area will frequent The Meadows at Yaphank PDD if it is located in close proximity to places frequented on a routine basis. Moreover, increased patronage will likely occur since the location off of the Long Island Expressway and the William Floyd Parkway will make it easily accessible for passersby. This would result in significant additional buying power for goods and services that could be provided at The Meadows at Yaphank PDD.
- Existing businesses are currently able to capture 107.5% of the target market area's retail potential. This indicates that the existing businesses are not only able to capture a large portion of consumer demand from those residing within the target market area, but also they are able to capture an abundance of demand from consumers residing outside of the target market area – including those employed within the target market area, in addition to visitors and others passing through the community.

- When the capture rate of 107.5% is applied to the target market area's total buying power, this equates to a collective potential absorption of nearly $3.8 billion in buying power each year among households in the target market area.
- New commercial development is not predicted nor expected to capture all of the retail potential among residents of the target market area. The majority of household purchases are likely going to continue to be spent at existing local retailers, including "mom and pop" stores, stand-alone establishments, and a variety of retailers located within smaller convenience and neighborhood shopping centers, as well as retailers located within larger regional and super regional shopping centers and mail order/on-line sales.
- It is not likely that the proposed project will have a significant impact on existing retailers, given the differentiation in products and services offered, as well as the different type of market served by the various types of shopping centers and retail establishments. Smaller convenience and neighborhood shopping centers, and community-oriented "mom and pop" retailers tend to serve the needs of the local market, providing a mix of specialty items, convenience goods and personal services to those in the immediate vicinity. Many consumers will remain loyal to such retailers, and other consumers will continue to shop at the establishments closest to their place of residence or other places frequented on a regular basis, with convenience being a determining factor of such consumers. As such, these commercial businesses will likely continue to serve the needs of the local population, and increased vacancies are not anticipated to pose a threat to such retailers.
- Assuming that new commercial development – including The Meadows at Yaphank PDD – could capture a mere five percent (5%) of the total retail potential in the target market area, this results in an annual absorption of approximately $189.2 million in buying power.
- According to the International Council of Shopping Centers and the Urban Land Institute, retailers within a given super community/community shopping center in the United States generate median sales of $284.30 per square foot of gross leasable area (GLA). Since The Meadows at Yaphank PDD is deemed to most closely resemble a super community/ community-type shopping center, this figure was applied to the $189.2 million in potential absorption. This amounts to approximately 665,687 SF of commercial space that could be absorbed by The Meadows at Yaphank PDD and other new commercial development located within a super community/community-type shopping center-type setting.
- The size of the retail component of the project as proposed – at 332,500 SF (of retail space) – can therefore be absorbed in the local market. In addition, there remains an abundance of excess commercial space that could be absorbed in the surrounding community and throughout the target market area.

3.0 METHODOLOGY

Various data and information from national, state, local and private sources were used to conduct the market analysis for new commercial development at the proposed The Meadows at Yaphank PDD. Methodology specific to various sections of this analysis are outlined in greater detail where applicable. This form of analysis conforms to standards of the industry, with methods, data and information, and sources that are considered to be industry standard in the preparation of a commercial market analysis.

Rose-Breslin Associates, LLC & Dorade, LLC supplied information regarding the proposed unit mix, features and amenities at The Meadows at Yaphank PDD.

The United States Census Bureau was consulted for pertinent demographic data, including population trends, household trends and median household income from 1990 and 2000 for the target market area. These data were utilized to examine the trends in demand for new commercial development at The Meadows at Yaphank PDD.

Nielsen Claritas generates on-demand reports specific to select locations through the Claritas MarketPlace program. A Census Demographic Overview Report provides 1990 and 2000 demographic data. A Demographic Snapshot Report provides 2010 demographic estimates. A Consumer Spending Patterns Report outlines aggregate and average household expenditure estimates specific to a variety of product categories. An Opportunity Gap – Retail Stores Report compares consumer expenditures with retail sales among a variety of retail stores, differentiated by North American Industry Classification System (NAICS) codes. NAICS is the standard used by the Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the business economy.[4] These reports were generated for all consumers residing in, and retailers located within a 15-minute drive time radius of the proposed project. For the purpose of this analysis, this assumes the intersection of the Long Island Expressway and William Floyd Parkway, in the hamlet of Yaphank.

All estimates and projections provided by this source draw upon data from sources including the Current Population Survey, American Community Survey, Census of Retail Trade (all via the United States Census Bureau), Consumer Expenditure Survey (via the United States Bureau of Labor Statistics), United States Postal Service, Internal Revenue Service, National Bureau of Economic Research, and other commercial and federal data sources.

International Council of Shopping Centers and Urban Land Institute both publish standards pertaining to trade areas for various types of commercial shopping centers. Moreover, this source provides median sales revenues per square foot among various types of shopping centers and specific types of retail establishments within a sample of numerous shopping center protocols in the United States. This data was applied to the estimated absorption to project the amount of commercial space that could be supported by The Meadows at Yaphank PDD.

[4] United States Census Bureau, via http://www.census.gov/eos/www/naics/

4.0 IDENTIFICATION AND DEFINITION OF TARGET MARKET AREA

In planning for commercial development at The Meadows at Yaphank PDD, it is important to recognize various considerations and concepts affecting viability in this location. The first of these criteria is to identify the target market area. A target market area establishes the boundary from which the majority of consumer interest will be drawn for additional commercial space at The Meadows at Yaphank PDD.

According to the International Council of Shopping Centers (ICSC), a shopping center is defined as "a group of retail and other commercial establishments that is planned, developed, owned and managed as a single property…" ICSC has identified various types of enclosed and open-air shopping centers, primarily differentiated by the location, size, major tenants and the types of goods and services sold. As seen in **Table 2**, variations of shopping centers include convenience shopping centers, neighborhood shopping centers, super community/community shopping centers, regional shopping centers, and super regional shopping centers. These definitions are meant to be guidelines to illustrate the major differences between various types of shopping centers, and it is important to note that there is no clear-cut methodology for classifying the type of a given shopping center. Some shopping centers are hybrids, combining elements from two or more of the basic classifications defined by ICSC. Moreover, mixed-use developments and other shopping centers such as lifestyle centers, town centers or downtowns don't necessarily fall within one of the basic classifications. As such, it is not always possible to precisely classify all shopping centers.[5]

[5] International Council of Shopping Centers, *"ICSC Shopping Center Definitions: Basic Configurations and Types for the United States,"* 2004.

Table 2
SHOPPING CENTER PROTOCOLS

Type of Shopping Center	Concept	Size (SF)	Number and Type of Tenants	Trade Area
Convenience	Provides for sale of a narrow mix of personal services and convenience goods.	< 30,000	Minimum of three stores. Typically anchorless, or with one small convenience store/minimarket serving as an anchor.	< 1 mile; < 5 minute drive time
Neighborhood	Provides convenience shopping for the day-to-day needs of consumers in the immediate neighborhood.	Average: 60,000 Range: 30,000 – 100,000	Typically 5-20 stores with a supermarket or a drugstore serving as an anchor. Other tenants can include those offering sundries, snacks and personal services such as hair and nail salons, shoe repairing, fitness centers, and laundromats.	3 miles; 5-10 minute drive time
Super Community/ Community[6]	General merchandise or convenience-oriented offerings. Wider range of apparel and other soft goods than neighborhood centers.	Average: 180,000 Range: 100,000 – 500,000+	Typically 15-40 stores with two or more anchors including discount stores, super drugstores and supermarkets. Other tenants can include large-specialty discount stores offering toys, electronics, books, home improvement/ furnishings, and/or sporting goods. May also include banking and professional services, personal services and recreational facilities.	3 – 6 miles; 10-15 minute travel time
Regional	Provides general merchandise in full depth and variety. Combination of anchors serves as main attraction.	Average: 500,000 Range: 250,000 – 900,000	Typically 40-80 stores with two or more anchors including one or two full-line department stores, junior department stores, mass merchants, home furnishings, discount department stores, fashion apparel. Also includes a range of services and recreational facilities.	5-15 miles; 15-30+ minute travel time
Super-Regional	Similar to a regional shopping center, but larger in size with a greater variety of merchandise.	Average: 1,000,000 Range: 500,000 – 1,500,000+	Anchors typically include three or more full-line department stores, junior department stores, mass merchants and fashion apparel. Also includes a variety of services and recreational facilities.	5-25 miles; 30-45+ minute travel time

Source: International Council of Shopping Centers; Yale School of Management; Greer, Gaylon E. and Phillip T. Kolbe, *"Investment Analysis for Real Estate Decisions,"* 2003.

[6] International Council of Shopping Centers includes traditional community shopping centers, power centers, town centers, lifestyle centers, and outlet/off-price centers within this shopping center classification.

The Meadows at Yaphank PDD is proposed as a high-quality, mixed-use development that will create an attractive and desirable environment for its commercial patrons, residents, visitors and employees, while enhancing the community at large. The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover, The Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system. The proposed development will be a vibrant community with a sense of place that provides enjoyment for local residents, employees and consumers from throughout the surrounding community, Brookhaven Town, Suffolk County and the region as a whole. This type of development will be the first of its kind in the immediate community, serving as an example for future mixed-use establishments throughout the Town of Brookhaven and Long Island.

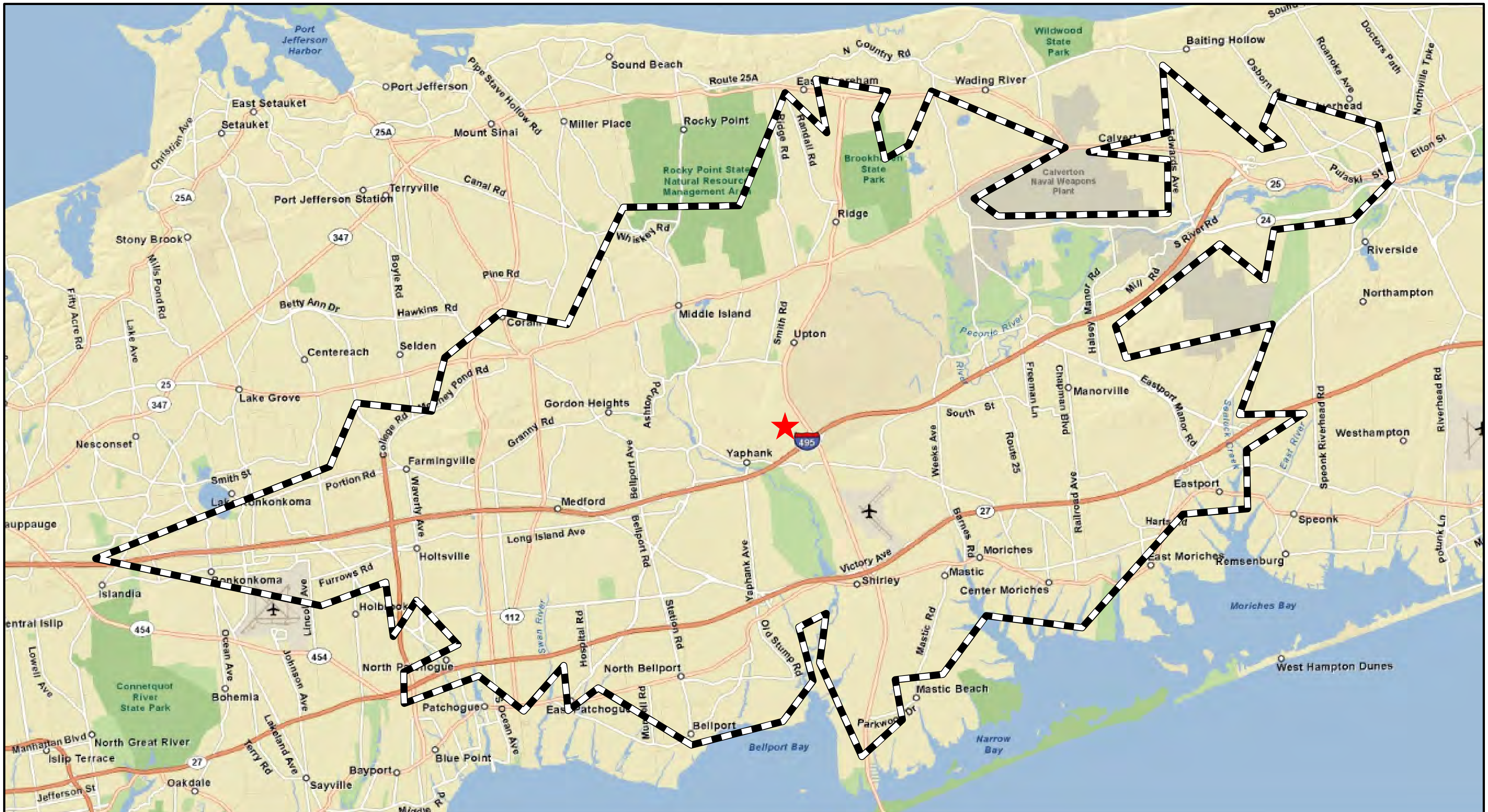
For the purpose of this analysis, The Meadows at Yaphank PDD is deemed to be a "super community/community shopping center," as determined by the proposed size, type of tenants, above-mentioned amenities, and the pedestrian-friendly lifestyle center-like landscape proposed for the development.

According to ICSC, and as seen in **Table 2**, super community/community shopping centers are typically able to draw support from a three- to six-mile radius. However, it is important to note that Long Island is a unique market, and its dense population results in a target market area that is slightly more specialized. As such, a more accurate depiction of the target market area considers average travel time, which factors in the layout of roadways, speed limits, and geographic barriers. For the purpose of this analysis, an average 15-minute drive time radius was used to represent the target market area – or the area from which approximately 60-80% of potential buyers will be drawn to additional commercial space at The Meadows at Yaphank PDD.

An average 15-minute drive time radius was calculated to determine the trade area surrounding the subject property.[7] For the purpose of this analysis, the centroid of the calculated drive time is assumed to be the intersection of the Long Island Expressway and William Floyd Parkway in the

[7] The drive time radius was calculated by Nielsen Claritas, which uses the Tiger release of the United States Census Bureau's national street file. In an effort to identify those areas where significant urban traffic congestion is likely, Nielsen Claritas aggregates census tracts with more than 60% urban population (as identified by the United States Census Bureau) and buffers the results. The default speed settings on rural road linkages are somewhat higher than those for the corresponding urban road linkages in order to account for the higher levels of traffic congestion within urban areas. In addition to differentiating between urban and rural roadways, Nielsen Claritas uses a detailed grid of approximately 500 feet in size for drive times up to 30 minutes. Road linkages are divided into six categories: rural local (local roads in small towns and minor roads outside of small towns), rural arterial (state and U.S. highways outside of urban areas), rural freeway (state, U.S. and Interstate multi-lane divided highways located outside of designated urban areas), urban local (residential streets and minor roads within urban areas), urban arterial (multi-lane major roads within designated urban areas) and urban freeway (multi-lane, divided, limited access highways located within urban areas).

hamlet of Yaphank. As seen in **Figure 1**, the area located within this boundary constitutes the target market area. This represents a significant portion of central Suffolk County, with the boundary of the target market area extending as little as four (4) miles to the north and south along local roads, and as far as 14 miles to the east and west along the Long Island Expressway where consumers are able to travel at faster speeds. This target market area represents the population residing within the immediate community, and surrounding parts of Brookhaven Town and other parts of Suffolk County that would likely support additional commercial space at The Meadows at Yaphank PDD, as well as those existing retailers and shopping centers that would serve as competition to additional commercial space at The Meadows at Yaphank PDD.



Legend

★ The Meadows at Yaphank PDD

15 Minute Drive Time Radius

FIGURE 1
TARGET MARKET AREA

Source: ESRI Web Mapping Serivce, NP&V, Nielsen Claritas
Scale: 1 inch = 3 miles

N

The Meadows at Yaphank PDD

Commercial Market Analysis

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

5.0 MARKET DEMAND

In order to determine whether additional commercial space can be supported in the local market, it is necessary to conduct an analysis of market demand. This section will examine the demand for new commercial development in the hamlet of Yaphank and the surrounding target market area, based on several determining demographic and socioeconomic characteristics of the residential population located within the target market area.

It is important to note that the target market area represents the area from which 60-80% of The Meadows at Yaphank PDD's commercial sales would originate. As such, residents of the target market area do not represent the only consumers projected to support additional commercial space at The Meadows at Yaphank PDD. It is assumed that visitors to, and employees of, the proposed project will support the commercial space proposed for The Meadows at Yaphank. In addition, it is likely that others residing outside of the target market area will support new commercial space if it is easily accessible to visitors and passersby, or if it is located in close proximity to a consumer's place of employment – including the thousands of persons employed at, and visiting, the nearby Brookhaven National Laboratory – as well as a place of worship, or other places frequented on a regular basis by consumers from outside of the target market area's 15-minute drive time radius. Likewise, it cannot be assumed that all persons residing within the target market area will patronize new commercial development at The Meadows at Yaphank PDD. However, the target market area for a shopping center represents a trade area from which the majority of support will be drawn. As such, this analysis will apply a conservative projection of the population that would likely support additional commercial space in the community as described in subsequent sections.

5.1 Population and Households

Trends in the residential population and in the number of households located within the target market area allow for a clear understanding of those consumers that support the local economy – including new commercial development at The Meadows at Yaphank PDD. An analysis of past data, coupled with current estimates and projections, illustrate the changing needs of the target market area, and how such needs can be accommodated within the local market through existing and proposed business establishments.

As seen in **Table 3** and **Chart 1**, the population within the target market area has increased substantially since 1990. Between 1990 and 2000, the population within the target market area increased by 26,321 persons.[8] Current estimates and projections suggest continued growth, yet at a slower pace, through 2015. Based on the available standard demographic references, population within a 15-minute drive time radius from The Meadows at Yaphank PDD is expected to grow by approximately 60,000 persons, growing by over 25% between 1990 and 2015.[9] It is important to note that this population projection does not account for specific

[8] United States Bureau of the Census. Accessed and analyzed via Nielsen Claritas MarketPlace, *Demographic Snapshot 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.
[9] Nielsen Claritas MarketPlace, *Demographic Snapshot 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

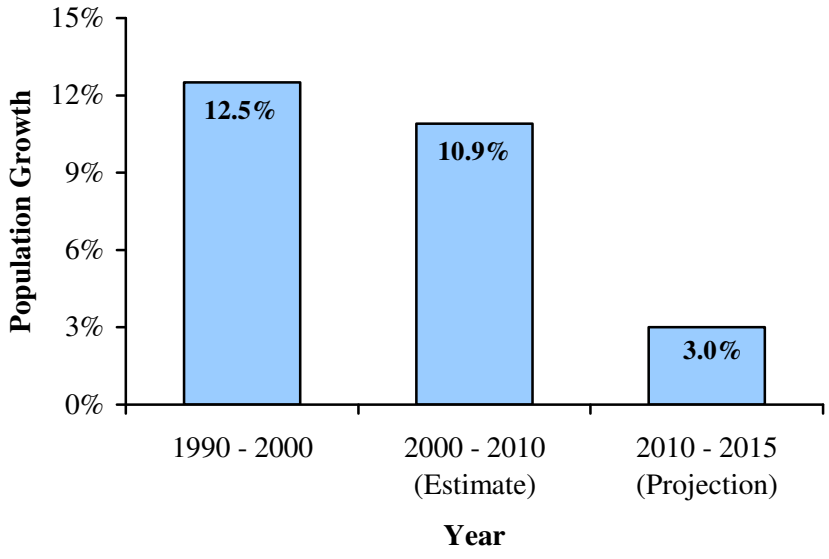
developments currently in the planning or approval process, including the 850 residential units proposed at The Meadows at Yaphank PDD. Moreover, while such factors are examined at the local level, projections are not based solely upon specific build-out scenarios or land use analyses. Furthermore, it is important to note that demographic projections do not necessarily take into account economic factors such as those pertaining to the national or local housing market, unemployment, or other economic factors facing the region, state or nation that may influence population trends into the next five years. Rather, the projections are based upon historical trends and current estimates at the county level, a time series of county-to-county migration data, an historical analysis of residential building permit data and residential postal delivery counts. Such data is supplemented with available information generated by nationwide databases, statistics providers and demographic and spatial analysis tools.

Table 3
POPULATION TRENDS

Year	Population
1990	211,283
2000	237,604
2010 (Estimate)	263,448
2015 (Projection)	271,413

Source: Nielsen Claritas

Chart 1
CHANGE IN POPULATION
Source: Nielsen Claritas



Reflective of the population trends, the number of households within the target market area has also increased significantly since 1990. As seen in **Table 4** and **Chart 2**, the number of households located within a 15-minute drive time of The Meadows at Yaphank PDD has increased by 16.3% between 1990 and 2000 – from 67,244 households in 1990 to 78,180 households in 2000.[10] As seen with population trends, current estimates and projections suggest continued growth among households within a 15-minute drive time radius from The Meadows at Yaphank PDD, through 2015 – though at a relatively slower pace. The latest estimates suggest 87,861 households currently exist within the target market area. This is projected to increase by more than 3,000 additional households, with nearly 91,000 households projected to exist by 2015.[11] This is 35.2% greater than the number of households recorded in 1990, illustrating a relatively high level of growth in the community. The substantial growth within the target market area indicates that additional commercial development can likely be supported; as growth continues over the coming years, demand will further increase.

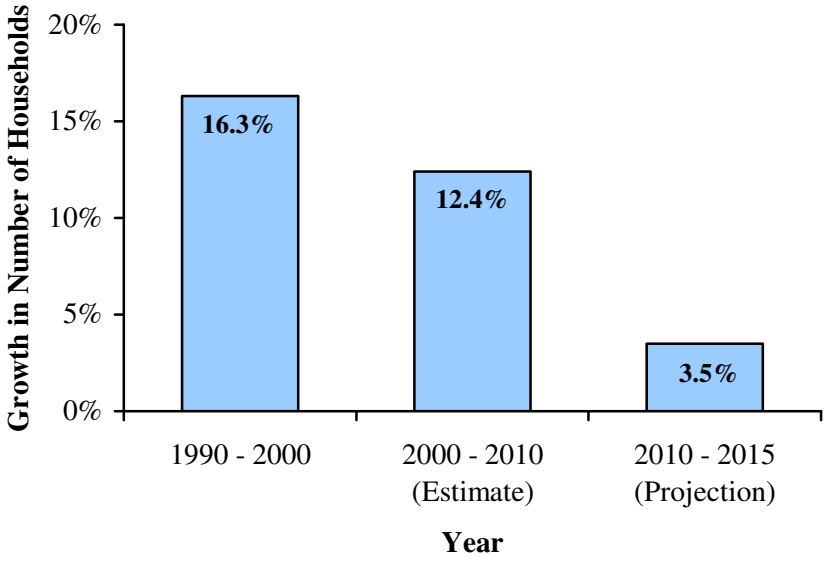
Table 4
HOUSEHOLD TRENDS

Year	Number of Households
1990	67,244
2000	78,180
2010 (Estimate)	87,861
2015 (Projection)	90,923

Source: Nielsen Claritas

[10] United States Bureau of the Census. Accessed and analyzed via Nielsen Claritas MarketPlace, *Demographic Snapshot 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.
[11] Nielsen Claritas MarketPlace, *Demographic Snapshot 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

Chart 2
CHANGE IN NUMBER OF HOUSEHOLDS
Source: Nielsen Claritas



5.2 Income

Household income is indicative of the level of buying power generated from a given community, as expenditures typically increase with higher income levels. In 2000, households in the target market area had a median income of $60,424.[12] When adjusted for annual inflation to represent 2010 dollars, this amounts to a median household income of $76,744.[13] The inflation adjustment is a standard method that allows for a legitimate examination and comparison of how household income levels have changed over time.

As seen in **Table 5**, the median household incomes within the target market area increased slightly between 2000 and 2010, when adjusting for inflation. Specifically, the median household income rose by 4.5% among households within a 15-minute drive time radius of The Meadows at Yaphank PDD.[14]

[12] United States Bureau of the Census. Accessed and analyzed via Nielsen Claritas MarketPlace, *Census Demographic Overview 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.
[13] United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index Inflation Calculator.
[14] Nielsen Claritas MarketPlace, *Demographic Snapshot 2010 Report*. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

Table 5
MEDIAN HOUSEHOLD INCOME

Year	Median Household Income
2000	$60,424
2000 (Adjusted)	$76,744*
2010 (Estimate)	$80,166

Source: Nielsen Claritas
* Note: Data from 2000 has been adjusted for inflation, to represent 2010 dollars.

5.3 Average Annual Expenditures

According to the latest estimates derived from the United States Bureau of Labor Statistics' Consumer Expenditure Survey, the average household located within the target market area spent $61,858[15] on goods and services in 2009.[16] A detailed analysis of the breakdown of these retail goods and services expenditures reveals that 62.6% of this, or $38,718 per household, is estimated to be spent on items that could be purchased at retailers located within new commercial development at The Meadows at Yaphank PDD. Such expenditures include those for food and beverages (including alcoholic and non-alcoholic), household furnishings and equipment, housekeeping supplies, apparel, some transportation costs, medical services, medical supplies, prescription drugs, sports and entertainment, personal care products and services, some education costs, smoking products and supplies, pet expenses and child care. The remaining 37.4% of household expenditures include items that would not likely be purchased at the proposed project.[17] These items include housing costs, contributions, some education costs, some transportation costs, and travel.[18] A detailed breakdown of household expenditures on retail goods and services is outlined in **Table 6**.

[15] It is important to note that this figure differs from the median household income of $80,166, as illustrated in **Table 5**. This can be attributed to the fact that data in **Table 5** depicts median household income, while data in **Table 6** depicts average household expenditures.
[16] Nielsen Claritas MarketPlace, *Consumer Spending Patterns*, 2010. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.
[17] It is important to note that these assumptions represent a conservative estimate on the goods and services that are likely to be purchased at The Meadows at Yaphank PDD. The excluded industries in this analysis have the potential to locate at The Meadows at Yaphank PDD; such conditions would result in a greater share of market absorption within the target market area.
[18] Nielsen Claritas MarketPlace, *Consumer Spending Patterns*, 2010. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

Table 6
RETAIL GOODS AND SERVICES EXPENDITURES (2009)

Good/Service	Average Annual Expenditure
Goods and services that could be purchased at The Meadows at Yaphank PDD	
Food and nonalcoholic beverages[19]	$10,542
Alcoholic beverages	$1,198
Household furnishings and equipment[20]	$3,313
Housekeeping supplies	$434
Apparel	$5,235
Transportation[21]	$2,401
Medical services, medical supplies, prescription drugs	$5,402
Sports and entertainment[22]	$4,220
Personal care products and services	$1,375
Education[23]	$2,418
Smoking products and supplies	$1,082
Pet expenses	$641
Child Care	$457
Sub-Total: Goods and services that could be purchased at The Meadows at Yaphank PDD	*$38,718*
Goods and services not likely to be purchased at The Meadows at Yaphank PDD	
Housing[24]	$8,859
Contributions	$1,782
Education[25]	$223
Transportation[26]	$9,526
Travel	$2,750
Sub-Total: Goods and services that would likely not be purchased at The Meadows at Yaphank PDD	*$23,140*
Total: Retail Goods and Services Expenditures	**$61,858**

Source: Nielsen Claritas MarketPlace

[19] Includes food at home; food away from home.
[20] Includes furniture; household textiles; major appliances; miscellaneous household equipment; small appliances/ housewares.
[21] Includes gasoline; diesel fuel; motor oil.
[22] Includes photographic equipment; reading materials; sports and recreation; TV, radio, and sound equipment; computers, software and accessories.
[23] Includes tuition/ school supplies.
[24] Includes fuels and utilities; telephone service; household repairs; household services; personal expenses and services.
[25] Includes room and board.
[26] Includes automotive maintenance/repair/other automotive expenses; vehicle purchases and leases; boats and recreational vehicle purchase; rented vehicles.

6.0 MARKET SUPPLY

In order to determine whether additional commercial space can be supported in the target market area – including communities surrounding the project site in the Town of Brookhaven and other parts of Suffolk County – it was necessary to conduct an analysis of market supply. This section examines the existing commercial establishments located within a super community/community shopping center (as defined in **Section 4.0** and **Table 2**), comparable to the commercial component proposed at The Meadows at Yaphank PDD. An analysis of these shopping centers is crucial; such businesses will provide goods and services to the same population as The Meadows at Yaphank PDD.

Nineteen (19) super community/community shopping centers have been identified within the target market area.[27] It is important to note that this market supply does not include stand-alone retail establishments, nor does it include smaller convenience shopping centers, neighborhood shopping centers, the Tanger Outlets or other outlet centers, or retail clustered within a downtown or a village center. Such smaller retailers and shopping centers tend to serve the needs of those residing within the immediate neighborhood and offer different types of products and levels of service to patrons as compared with larger super community/community shopping centers such as The Meadows at Yaphank PDD, as illustrated in **Section 4.0** and **Table 2**. Regardless, it is important to note that other such retailers in the surrounding communities may provide comparable goods and services as those proposed at The Meadows at Yaphank PDD.

As seen in **Table 7**, all of the existing shopping centers that were identified as comparable to the proposed project have similar traits and characteristics. Each of the shopping centers had a minimum of one (though most shopping centers had two or more anchor stores) anchor store (identified in bold font under the "Existing Tenants" column in **Table 7**), with some combination of large retailers and/or a supermarket as the major tenants. While several of the shopping centers are solely comprised of anchor stores, the majority of the shopping centers are supported by a host of additional accessory tenants such as apparel and shoe stores, restaurants, fitness centers, health and personal care stores, hotels, and various other convenience-oriented establishments.

There are several clusters of super community/community shopping centers located within the target market area. One such cluster exists in North Patchogue, along Sunrise Highway, at the southwestern-most boundary of the target market area. Another retail cluster is located near the intersection of William Floyd Parkway and Montauk Highway in Shirley, approximately 3.5 miles from the proposed project. A third retail cluster is located along Old Country Road/Route 58 in Riverhead, at the northeastern-most boundary of the target market area. Numerous shopping centers have taken advantage of these three strategic locations, with an abundance of

[27] While the supply of such establishments is limited to the super community/community shopping centers presented in **Table 7**, additional comparable commercial space is located outside of the target market area. Such shopping centers are located within a 15-minute drive time radius of households located near the outer edges of the target market area, and as such are likely to capture demand from these consumers. It is important to note that a conservative capture rate is utilized in subsequent sections of this analysis, in order to reflect household spending patterns at these and other establishments located outside of the target market area.

supporting neighborhood and convenience shopping centers located near each of these clusters, as well. Additional super community/community shopping centers are scattered throughout the target market area, mostly to the west of the proposed project, along Route 25, and within close proximity to the Long Island Expressway.

The majority of the existing and comparable shopping centers are in good condition, with few being newly constructed. Approximately half of the shopping centers were fully occupied, and of those that were not fully occupied, on the order of one vacant retailer was typically observed in these centers. Only a handful of shopping centers have a greater percentage of vacant retailers, based on observations made during an inventory conducted in October, November and December of 2010. It was noted that several of the shopping centers were undergoing renovations, and/or were being remodeled to accommodate future tenants. It is important to note that vacancies will inevitably occur as a result of business turnover, specific and local market considerations with respect to certain tenants, and specific and local factors with respect to a given shopping center, including business mix, signage, synergy of store types, parking, and accessibility, and related factors. Given the current economic situation facing Long Island, New York State and the nation as a whole, the minimal vacancies observed within super community/community shopping centers within the target market area may be indicative of the demand for additional commercial opportunities within comparable shopping centers.

The Meadows at Yaphank PDD is proposed as a high-quality, mixed-use development that will create an attractive and desirable environment for its commercial patrons, residents, visitors and employees, while enhancing the community at large. The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover, The Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system. The proposed development will be a vibrant community with a sense of place that provides enjoyment for local residents, employees and consumers from within the surrounding community and other parts of Brookhaven Town, Suffolk County and the region as a whole. This type of development will be the first of its kind in the immediate community, serving as an example for future mixed-use establishments throughout the Town of Brookhaven, Suffolk County and Long Island.

Table 7
EXISTING SUPPLY OF COMPARABLE SHOPPING CENTERS: TARGET MARKET AREA

Name of Shopping Center	Location	Distance[28] and Direction from The Meadows at Yaphank PDD	Occupancy Status	Total Number of Tenants	Number of Anchors	Existing Tenants
Lighthouse Commons (ID #7 in **Figure 2)**	803 Montauk Highway, (Intersection of William Floyd Parkway), Shirley	3.5 miles, south/southeast	Occupied (one retail vacancy)	4	2	**Best Yet Market**, Boston Market, Karate/Kickboxing, **Rite-Aid**
Floyd Harbor Retail Center (ID #3 in **Figure 2)**	Montauk Highway and McGraw Street, Shirley	3.6 miles, south/southeast	Occupied, (two retail vacancies, new building is under construction)	4	2	Applebee's, AT&T, Chase Bank, **Staples** (Note: Other anchor store yet to be occupied as of December 2010)
South Port Shopping Center (ID #16 in **Figure 2)**	Montauk Highway and McGraw Street, Shirley	3.6 miles, south/southeast	Occupied (two retail vacancies)	34	4	Astoria Federal Savings Bank, Bagels, Bank of America, Bath & Body Works, Children's Place, Chinese Restaurant, DOTS, Famous Footwear, FYE Music, GameStop, GNC, Hallmark, Jeweler, Justice, **Kohl's,** Lane Bryant, Liquor, Mandee, **Marshalls,** McDonalds, Nails, Optical, Payless Shoe Source, Petland Discounts, Pizza, Radio Shack, **Sears Appliance,** Sleepy's, **Stop & Shop,** Supercuts, Toys R Us Express, UPS Store, Van Heusen, Weight Watchers

[28] All distance calculations were taken from The Meadows at Yaphank PDD to each of the existing shopping centers, as the crow flies. The distance does not take into account factors such as travel time, access, environmental features or barriers. For the purpose of this analysis, The Meadows at Yaphank PDD assumes the intersection of the Long Island Expressway and William Floyd Parkway in the hamlet of Yaphank.

Name of Shopping Center	Location	Distance[28] and Direction from The Meadows at Yaphank PDD	Occupancy Status	Total Number of Tenants	Number of Anchors	Existing Tenants
Sunshine Square (ID #17 in **Figure 2**)	Station Road and Sills Road, Medford	4.0 miles, southwest	Occupied (one retail vacancy)	28	3	Cards & Gifts, Chase Bank, Chiropractor, Cleaners, DEB, Family Dollar, Firestone Car Service, Foot Care, Friendly's, GameStop, Laundromat, Liquor Store, May Gardens Chinese Restaurant, Nails, Physical Therapy, Pizza/ Pasta Restaurant, Rite Aid, Ruby Tuesday, **Saver's Donation Center**, Sleepys, Sprint, **Stop & Shop,** Subway, Supercuts, Tanning, **Ultimate Fitness,** Verizon, Vision World
Not Identified – Major Tenant is Staples (ID #11 in **Figure 2**)	Horse Block Road and Route 112, Medford	5.0 miles, west	Occupied (one retail vacancy)	22	2	Astoria Federal Savings Bank, Bagels, Cactus Café, Card Store, Chan's Chinese Restaurant, Chiropractor, Cleaners, Davis Vision, Discounts, Department of Motor Vehicles, Entenmanns, Insurance, Liquor Store, **Michaels,** Nails, Petland, Pizza, Radio Shack, Rite-Aid, **Staples,** Suffolk County National Bank, Wells Fargo Financials
Coram Plaza (ID #1 in **Figure 2**)	Middle Country Road and Mill Road, Coram	5.3 miles, west/northwest	Occupied (three retail vacancies)	15	2	A&S Furniture, AquaHut, Beauty Supply, Car and Truck Wash, Chinese Restaurant, Cleaners, Deli, Family Dollar, Firestone, **Home Depot**, Joyce Leslie, Italian Restaurant, Path Liquors, Pizza, **Stop & Shop**
Expressway Plaza (ID #2 in **Figure 2**)	Horse Block Road and Route 83, Farmingville	6.5 miles, west	Occupied (one retail vacancy)	21	2	AT&T, Bagel Shop, Burger King, Chase Bank, Chinese Restaurant, Citizen's Bank (located within Stop & Shop), Cleaners, Day Spa, Dollar Store, GNC, Hallmark, **K Mart,** Liquor Store, Nails, Payless Shoe Source, Pizza, Rockaway Bedding, Sally Beauty Salon, **Stop & Shop,** Tanning, T.G.I. Fridays Note: Sign down on Stop & Shop, but store is still actively open.

Name of Shopping Center	Location	Distance[28] and Direction from The Meadows at Yaphank PDD	Occupancy Status	Total Number of Tenants	Number of Anchors	Existing Tenants
Selden Plaza (ID #15 in **Figure 2**)	Middle Country Road and Patchogue- Mt. Sinai Road, Selden	6.8 miles, west/northwest	Occupied (two retail vacancies)	42	2	Armed Forces Career Services, Bagels, Cardsmart, Chase Bank, Chinese Restaurant, Chiropractor, Cleaners, Comic Store/Toys, Cosmetics, Distinct Dresses, Dollar Store, Dress Barn, Family Medicine Dental, Fashion Bug, Game Crazy, Hair Salon, H&R Block, Jewelry, Liquor, Nails, Payless Shoe Source, Pediatrics, Perfume & Cosmetics, Pets Warehouse, Pharmacy, Pizza, Pro-Portion, Radio Shack, Ruby Tuesday, Sleepys, Smoke Shop, Soleil Fitness, State Farm Insurance, Stride Rite, Tanning, TemperPedic, **TJMaxx,** Toys, Tropical Smoothie, **Waldbaums,** Wendy's, Window Rama
Wading River Commons (ID #18 in **Figure 2**)	Route 25A and Wading River Road, Wading River	7.4 miles, north/northeast	Occupied	17	2	**Ace Hardware,** Angel Tips Nail Salon, Bank of Smithtown, Chinese Restaurant, Cleaners, Coldwell Banker, Focaccia Ovens Restaurant, Health Club, **King Kullen,** Liquor Store, Pet Connection, Pizza, Pure Spa, Radio Shack, Salon, Sleepys, Truffles Restaurant
Not Identified – Major Tenant is Waldbaums (ID #12 in **Figure 2**)	Sunrise Highway South Service Road and Waverly Avenue, Patchogue	8.3 miles, southwest	Occupied (one retail vacancy)	14	2	Cards & Gifts, Chinese Restaurant, Cleaners, Howard's Café, Karako Suit Outlet, Laundry, Pizza/Italian Restaurant, **Staples**, Subway, Tanning Salon, The UPS Store, **Waldbaums,** Wendy's, Wines and Liquors
Island 16: Cinema de Lux (ID #5 in **Figure 2**)	185 Morris Avenue, Holtsville	8.4 miles, west	Occupied	7	1	Charlie Brown's, Chili's, H.O. Penn Cat, **Island 16 Cinema de Lux**, La Capannina, Residence Inn Marriott, Wendy's Note: (one building under construction)

Name of Shopping Center	Location	Distance[28] and Direction from The Meadows at Yaphank PDD	Occupancy Status	Total Number of Tenants	Number of Anchors	Existing Tenants
Waverly Plaza (ID #19 in **Figure 2**)	Waverly Avenue and Sunrise Highway North Service Road, Patchogue	8.4 miles, southwest	Occupied	10	3	Astoria Federal Savings Bank, Blinds To Go, **Pep Boys, Petco,** Pro-Printing, Radio Shack, Rite Aid, **Sears Hardware,** Starbucks, West Marine
Gateway Plaza (ID #4 in **Figure 2**)	Sunrise Highway North Service Road, Patchogue	8.7 miles, southwest	Occupied, (four retail vacancies, one new anchor store is under construction)	41	8	Applebee's, Angel Tips Nail Salon, Bagels, **Best Buy, Bob's Stores,** Casual Male, Catherine's, Cohen Fashion Optical, Dynasty China Buffet, Cold Stone Creamery, DOTS, Dress Barn, Fashion Bug, GameStop, GNC, **Home Depot, Home Goods,** Huntington Learning Center, JR MS, **King Kullen,** Kow Loong Chinese Restaurant, Liquors, Marburn Curtains, **Marshalls,** McDonalds, Men's Warehouse, **Michael's Arts and Crafts,** Oreck, **P.C. Richards & Son**, Payless Shoe Source, Petland Discounts, Sally Beauty Supply, Sleepys, Sprint, Ulta, Verizon, Weight Watchers, Window Rama, Wing Chun King Fu and Asian Supplies, Work & Gear, Zino Pizza
Lake Shore Plaza/ Regal Cinema (ID #6 in **Figure 2**)	Portion Road, between Hawkins Road and Nicolls Road, Ronkonkoma	9.7 miles, west	Occupied (three retail vacancies)	23	4	Aid Auto Stores, Albert's Pizza, Boston Market, Cactus Salon, Cards/Gifts, Chase Bank, Chinese Restaurant, Cleaners, Dollar King, GNC, Jewelers, Nails, **Pet Supplies Plus**, Radio Shack, **Regal Cinema**, **Sears Appliance & Hardware**, Sleepy's, Strathmore Bagels, Tanning, Verizon, Wachovia, **Waldbaums**, Wine/ Liquor

Name of Shopping Center	Location	Distance[28] and Direction from The Meadows at Yaphank PDD	Occupancy Status	Total Number of Tenants	Number of Anchors	Existing Tenants
Not Identified – Major Tenant is Kohl's (ID #10 in **Figure 2**)	Ronkonkoma Avenue and Portion Road, Ronkonkoma	11.1 miles, west	Occupied (one retail vacancy)	11	2	H&R Block, **King Kullen**, **Kohl's**, Liquor, Nails, Payless Shoe Source, Pizza, Rite-Aid, The Cell Phone Store (T-Mobile), Weight Watchers, Wendy's
Riverhead Center (ID #13 in **Figure 2**) (Note: May be outside of target market area – double check)	Old Country Road and Mill Road, Riverhead	12.2 miles, northeast	Occupied	18	9	Bagels, **Bed Bath and Beyond**, **Best Buy**, **Borders**, Boulder Creek, Chase Bank, Country Rotisserie, **Famous Footwear**, **Home Depot**, Hudson City Bank, Lane Bryant, **Michael's Arts and Crafts**, **Modell's**, **Petco**, Pier One Imports, Sleepy's, T.G.I. Fridays, **Waldbaums**
Not Identified – Major Tenant is Target (ID #9 in **Figure 2**)	1150 Old Country Road, Riverhead	13.0 miles, northeast	Occupied	2	2	Sports Authority, Target
Roanoke Plaza (ID #14 in **Figure 2**)	1120 Old Country Road, Riverhead	13.2 miles, northeast	Occupied	14	2	99 cent store, **Best Yet Supermarket,** Capital One Bank, Caruso's Pizzeria, GameStop, HearX, J&A Nail Spa, Laundromat, Lemon Tree Hair Salon, Liquor, Quiznos Sub, Sally Beauty Supply, **T.J. Maxx**, Tong Fu Chinese Restaurant
Not Identified – Major Tenant is HomeGoods (ID #8 in **Figure 2**)	1087 Old Country Road, Riverhead	13.3 miles, northeast	Occupied	9	2	B&B Bedding and Furniture, Bethpage Bank, **HomeGoods**, Petland, Sakura, **Staples**, Subway, Ultimate Fitness, West Marine

Legend

- Comparable Shopping Centers
- The Meadows at Yaphank PDD
- 15 Minute Drive Time Radius

ID	Name	ID	Name
1	Coram Plaza	11	Not Identified - Major Tennant is Staples
2	Expressway Plaza	12	Not Identified - Major Tennant is Waldbaums
3	Floyd Harbor Retail Center	13	Riverhead Center
4	Gateway Plaza	14	Roanoke Plaza
5	Island 16 : Cinema de Lux	15	Selden Plaza
6	Lake Shore Plaza/Regal Cinema	16	South Port Shopping Center
7	Lighthouse Commons	17	Sunshine Square
8	Not Identified - Major Tenant is HomeGoods	18	Wading River Commons
9	Not Identified - Major Tenant is Target	19	Waverly Plaza
10	Not Identified - Major Tennant is Kohl's		

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FIGURE 2
EXISTING SUPPLY OF COMPARABLE SHOPPING CENTERS

Source: ESRI Web Mapping Serivce, NP&V, Nielsen Claritas
Scale: 1 inch = 3 miles

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The Meadows at Yaphank PDD

Commercial Market Analysis

7.0 MARKET ABSORPTION

There are a number of factors that will ultimately determine the market absorption, and the overall success of a given shopping center. This section seeks to quantify the need for additional commercial space at The Meadows at Yaphank PDD through an analysis of the spending power among households residing within the surrounding community, and parts of Brookhaven Town and Suffolk County that comprise the target market area.

As seen in **Section 5.3** and **Table 6**, the average household located within the target market area spent $61,858 on goods and services in 2009. A detailed analysis of the breakdown of these retail goods and services expenditures reveals that 62.6% of this, or $38,718 per household, is estimated to be spent on items that could be purchased at retailers located within new commercial development at The Meadows at Yaphank PDD. Such expenditures include those for food and beverages (including both alcoholic and non-alcoholic beverages, and those consumed at home and away from home), household furnishings and equipment, housekeeping supplies, apparel, transportation (excluding automotive maintenance/repair and vehicle/boat/ recreational purchases and rental), medical services and supplies, prescription drugs, sports and entertainment, personal care products and services, education (excluding room and board), smoking products and supplies, pet expenses and child care. The remaining 37.4% of household expenditures include items that would not likely be purchased at the proposed project.[29] These items include mortgage payments, utilities, fuels and public services, education (excluding school supplies), transportation (excluding gasoline, diesel fuel and motor oil), and travel.[30]

For the purpose of this analysis, these spending patterns are assumed to remain constant. As such, $38,718 represents the annual buying power among the average household located within the target market area. As seen in **Table 8**, this figure was applied to the 90,923 households projected to reside within the target market area in 2015. This results in a total buying power of over $3.52 billion in annual expenditures for goods and services that could be provided at The Meadows at Yaphank PDD. It is important to understand that this represents a conservative estimate, and does not include the buying power stemming from the 850 new residential units proposed for The Meadows at Yaphank PDD, nor does it include the buying power from visitors to, or employees of the proposed project. In addition, it is likely that others residing outside of the target market area will frequent The Meadows at Yaphank PDD if it is located in close proximity to places frequented on a routine basis. Moreover, increased patronage will likely occur since the location off of the Long Island Expressway and the William Floyd Parkway will make it easily accessible for passersby. This would result in significant additional buying power for goods and services that could be provided at The Meadows at Yaphank PDD.

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[29] It is important to note that these assumptions represent a conservative estimate on the goods and services that are likely to be purchased at The Meadows at Yaphank PDD. The excluded industries in this analysis have the potential to locate at The Meadows at Yaphank PDD; such conditions would result in a greater share of market absorption within the target market area.

[30] Nielsen Claritas MarketPlace, *Consumer Spending Patterns*, 2010. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

Table 8
TOTAL BUYING POWER: TARGET MARKET AREA (2015)

Expenditures per Household	$38,718
Number of Households: 2015	90,923
Aggregate Household Buying Power: 2015	$3,520,356,714

Source: Nielsen Claritas, Analysis by Nelson, Pope & Voorhis

To determine the percentage of sales that could be absorbed in the target market area, it is necessary to calculate a capture rate. This is done through comparing the existing supply (retail sales) with the existing demand (consumer expenditures). According the recent sales data, the households residing within the target market area currently represent a combined buying power of approximately $4 billion per year. Likewise, the retail trade establishments and food services and drinking places located within the target market area represent roughly $4.3 billion in annual sales.[31] This indicates that the specified businesses are currently able to capture 107.5%[32] of the target market area's household expenditures. This indicates that the existing businesses are not only able to capture a large portion of consumer demand from those residing within the target market area, but also they are able to capture an abundance of demand from consumers residing outside of the target market area – including those employed within the target market area, in addition to visitors and others passing through the community. This is reflective of the proposed project's location in Eastern Brookhaven Town, in close proximity to the western boundaries of both the North Fork and the South Fork, where on the whole retail opportunities are relatively limited when compared to other parts of Brookhaven Town and Suffolk County to the west.

When the capture rate of 107.5% is applied to the target market area's total projected buying power, and as seen in **Table 9**, this equates to potential absorption of nearly $3.8 billion in annual buying power.

Table 9
TOTAL ABSORPTION OF BUYING POWER: TARGET MARKET AREA (2015)

Aggregate Household Buying Power: 2015	$3,520,356,714
Capture Rate	107.5%
Total Absorption: Target Market Area	$3,785,094,642

Source: Nielsen Claritas, Analysis by Nelson, Pope & Voorhis

[31] Nielsen Claritas MarketPlace, *RMP Opportunity Gap – Retail Stores*, 2010. All data specific to 15-minute drive time radius of The Meadows at Yaphank PDD.

[32] For the purpose of this analysis, a capture rate of 107.5% was utilized. This represents a conservative estimate, based upon the existing ability of businesses to capture household expenditures in the target market area. This analysis assumes that this rate will remain constant for the purpose of projecting absorption. However, it is important to note that new commercial presence is likely to increase the share of consumer expenditures within the target market area, resulting in an even higher capture rate among local businesses.

New commercial development is not predicted nor expected to capture all of the retail potential among residents of the target market area. The majority of household purchases are likely going to continue to be spent at existing local retailers, including "mom and pop" stores, stand-alone establishments, and a variety of retailers located within smaller convenience and neighborhood shopping centers, as well as retailers located within larger regional and super regional shopping centers throughout the target market area. It is not likely that the proposed project will have a significant impact on these other retailers, given the differentiation in products and services offered, as well as the different type of market served by the various types of shopping centers and retail establishments. Smaller convenience and neighborhood shopping centers, and community-oriented "mom and pop" retailers tend to serve the needs of the local market, providing a mix of specialty items, convenience goods and personal services to those in the immediate vicinity. Many consumers will remain loyal to such retailers, and other consumers will continue to shop at the establishments closest to their place of residence or other places frequented on a regular basis, with convenience being a determining factor of such consumers. As such, these commercial businesses will likely continue to serve the needs of the local population, and increased vacancies are not anticipated to pose a threat to such retailers.

It is assumed that new commercial development will be able to capture between five and ten percent (5% - 10%) of the total retail potential in the target market area. A conservative estimate assumes that new commercial development – including The Meadows at Yaphank PDD – will be able to capture five percent (5%) of the total retail potential in the target market area. As such, and for the purpose of this analysis, this results in an annual absorption of approximately $189.2 million in buying power, as evidenced in **Table 10**. The remaining 95% of the retail potential, or nearly $3.6 billion, represents the potential among existing retail establishments and shopping centers throughout the target market area including the nineteen (19) comparable shopping centers depicted in **Table 7**, as well as other smaller and larger shopping centers and major corridors (including the Montauk Highway Corridor in the Mastic-Shirley community) in neighboring parts of Brookhaven Town and Suffolk County. Commercial businesses in such locations will likely continue to serve the needs of the local population, and increased vacancies are not anticipated to pose a threat to such retailers.

Table 10
TOTAL ABSORPTION OF BUYING POWER:
NEW COMMERCIAL DEVELOPMENT (2015)

Total Absorption: Target Market Area	$3,785,094,642
Capture Rate: New Commercial Development	5.0%
Total Absorption: New Commercial Development	$189,254,732

Source: Nielsen Claritas, Analysis by Nelson, Pope & Voorhis

According to the International Council of Shopping Centers and the Urban Land Institute, retailers within a given super community/community shopping center in the United States

generate median sales of $284.30 per square foot of gross leasable area (GLA).[33] As seen in **Table 11**, when this figure is applied to the $189.2 million in buying power, this amounts to approximately 665,687 SF of commercial space that could be absorbed at The Meadows at Yaphank PDD and other new commercial development located within a super community/ community-type shopping center within the target market area. As such, the size of the retail component of the project as proposed (at 332,500 SF) could be absorbed in the local market, and there remains an excess of commercial space that could be absorbed throughout other types of super community/community shopping centers in the target market area.

Table 11
TOTAL ABSORPTION OF SQUARE FOOTAGE:
NEW COMMERCIAL DEVELOPMENT (2015)

Total Absorption: New Commercial Development	$189,254,732
Median Sales: Super Community/Community Shopping Centers	$284.30/SF
Commercial Space that Could be Absorbed: Super Community/Community Shopping Centers	665,687 SF

Source: Nielsen Claritas, International Council of Shopping Centers and Urban Land Institute, Analysis by Nelson, Pope & Voorhis

As seen in **Table 11**, there remains an abundance of excess commercial space that could be absorbed in other types of shopping centers within the surrounding community and throughout the target market area. When the 332,500 SF of commercial space proposed for The Meadows at Yaphank PDD is subtracted from the 665,687 SF of commercial space that could be absorbed within super community/community shopping center-type settings, there remain 333,187 SF of commercial space that could be absorbed in other similar super community/community shopping center settings within the target market area. However, it is important to note that this commercial space can also be absorbed in other types of shopping centers, including convenience, neighborhood, regional and super-regional shopping centers, as defined in **Table 2**, and in **Section 4.0**.

When the median sales of $284.30 is re-applied to the 333,187 SF in excess absorption within super community/community-type shopping centers, it results in buying power of approximately $94.7 million that can be absorbed within the target market area. This figure was applied to the median sales generated within each type of shopping center, and as seen in **Table 12**, there exists an abundance of potential for various types of shopping centers within the target market area. This ranges from 499,525 SF of commercial space within convenience shopping centers, to 279,804 SF of commercial space within neighborhood shopping centers, to 333,187 SF of

[33] Median sales revenues per square foot derived from all types of retail establishments located in a sample of 264 Super Community/Community Shopping Centers in the United States. It is important to note that the figures do not represent the industry average; however, the participating shopping centers are a representative group, and the results provide benchmarks that can be valuable in analyzing shopping center operations. All figures reported and published in *"Dollars and Cents of Shopping Centers,"* Urban Land Institute and International Council of Shopping Centers, June 2008.

commercial space within super community/community shopping centers (as previously stated), to 354,072 SF of commercial space within regional shopping centers, or 337,929 SF of commercial space within super-regional shopping centers in the target market area. This abundance of excess commercial space demanded within the community would accommodate a combination of many retail establishments considering locating within a variety of shopping center protocols within the target market area.

Table 12
EXCESS COMMERCIAL SPACE THAT COULD BE ABSORBED WITHIN THE TARGET MARKET AREA (2015)

Type of Shopping Center	Median Sales	Excess Absorption
Convenience	$189.63/SF	499,525 SF
Neighborhood	$338.54/SF	279,804 SF
Super Community/ Community	$284.30/SF	333,187 SF
Regional	$267.53/SF	354,072 SF
Super-Regional	$280.31/SF	337,929 SF

Source: Nielsen Claritas, International Council of Shopping Centers and Urban Land Institute, Analysis by Nelson, Pope & Voorhis

The synergy that is achieved from a mix of tenants will be important in ensuring the success of individual tenants located within The Meadows at Yaphank PDD. Potential retailers should consider unique characteristics of the target market area with respect to competition, geography and expected sales.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The completion of this commercial market analysis allows for the identification and quantification of the need for additional commercial space at the proposed The Meadows at Yaphank PDD. Through the preparation of this commercial market analysis, it is concluded that the commercial space as proposed, could be absorbed into the local market. There remains a substantial population center with a level of purchasing power that can support additional commercial space at The Meadows at Yaphank PDD. It is not likely that the proposed project will have a significant impact on other retailers within the community, given the differentiation in products and services offered, as well as the different type of market served by the various types of shopping centers and retail establishments.

The Meadows at Yaphank PDD will meet the need for a lifestyle center in the hamlet of Yaphank through the provision of a high-quality, mixed-use development with a number of public benefits to meet the specific local and regional needs of Brookhaven Town and Suffolk County residents. The proposed development will provide workforce and age-restricted housing opportunities, which are much needed throughout the community. In addition, the proposed project will attract a variety of retail and mixed-use commercial uses to meet the local community needs. The proposed project would rehabilitate the property by replacing a partially cleared and previously used site that is now subject to unauthorized use and activity, with a mixed-use and vibrant community having a sense of place that provides enjoyment for local residents, employees and consumers from within the surrounding community, Brookhaven Town, Suffolk County and Long Island as a whole.

The first step in quantifying the need for additional commercial space at the proposed project is to identify a target market area. For the purpose of this analysis, a target market area was identified as all households and businesses located within a 15-mile drive time radius of The Meadows at Yaphank PDD. Data and trends were analyzed in order to depict the characteristics of those residing within the target market area; ultimately these persons will serve as the majority of support for additional commercial space. As seen in **Section 5.0**, the target market area has experienced considerable growth – both in population and the number of households, since 1990, and demographic projections forecast continued growth through 2015. The substantial growth within the target market area indicates that additional commercial development can likely be supported; as growth continues over the coming years, demand will further increase.

As seen in **Section 6.0**, nineteen (19) existing and comparable shopping centers were identified within the target market area. The Meadows at Yaphank PDD is proposed as a high-quality, mixed-use development that will create an attractive and desirable environment for its commercial patrons, residents, visitors and employees, while enhancing the community at large. The mixed-use development will be constructed with smart growth principles, by incorporating features and characteristics including internal walkability, safe and convenient pedestrian access to public transit and consumer shopping needs, and on-site recreational facilities. Superior design elements will be utilized, with attractive and coordinated architectural treatments, extensive site improvements and landscaping features. The project will include a public plaza space to encourage use for community events, including an area for a concert green. Moreover,

The Meadows at Yaphank PDD will include a community center, public pavilion, reflection pool, restrooms, land for athletic fields, and nature/hiking trails with a link to the Town's greenbelt system. The proposed development will be a vibrant community with a sense of place that provides enjoyment for local residents, employees and consumers alike. This type of development will be the first of its kind in the immediate community, serving as an example for future mixed-use establishments throughout the Town of Brookhaven, Suffolk County and Long Island.

Section 7.0 quantifies the need for additional commercial space within the target market area. An analysis of buying power, potential absorption, the ability to capture sales, and trends in retail sales reveal that the 332,500 SF of proposed retail development could be absorbed at The Meadows at Yaphank PDD. In addition to the proposed The Meadows at Yaphank PDD, there remains an abundance of excess commercial space that could be absorbed in the surrounding community and throughout the target market area. In addition to the proposed 332,500 SF of commercial development at The Meadows at Yaphank PDD, the target market area can sustain commercial space within various other types of retail establishments and shopping centers throughout the target market area. This includes some combination of commercial space within convenience, neighborhood, super community/community, regional and super-regional shopping centers.

New commercial development is not predicted nor expected to capture all of the retail potential among residents of the target market area. The majority of household purchases are likely going to continue to be spent at existing local retailers, including "mom and pop" stores, stand-alone establishments, and a variety of retailers located within smaller convenience and neighborhood shopping centers, as well as retailers located within larger regional and super regional shopping centers throughout the target market area. Smaller convenience and neighborhood shopping centers, and community-oriented "mom and pop" retailers tend to serve the needs of the local market, providing a mix of specialty items, convenience goods and personal services to those in the immediate vicinity. Many consumers will remain loyal to such retailers, and other consumers will continue to shop at the establishments closest to their place of residence or other places frequented on a regular basis, with convenience being a determining factor of such consumers. As such, these commercial businesses will likely continue to serve the needs of the local population, and increased vacancies are not anticipated to pose a threat to such retailers.

Potential retailers should consider unique characteristics of the target market area with respect to competition, geography and expected sales. The synergy that is achieved through a mix of tenants will be important in ensuring the success of each individual tenant located within The Meadows at Yaphank PDD.

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ATTACHMENT A

Nelson, Pope & Voorhis, LLC
Economic Qualifications

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Nelson, Pope & Voorhis, LLC was formed in 1997 and has grown in capabilities and size since that time. The merging of Charles Voorhis & Associates (9 year history) with Nelson & Pope (a 50-year tradition in engineering and related services) created an environmental planning firm with a wealth of experience to bring to complex environmental problem solving, planning and feasibility, resource assessment and site investigations.

Nelson, Pope & Voorhis serves governmental and private sector clients in preparing creative solutions in the specialized area of complex environmental project management and land use planning and analysis.

Nelson, Pope & Voorhis has the benefit of knowledge of local issues, local resources, and the passion to provide the very best solutions and strategies for the local area. This provides unparalleled knowledge of the application of the community planning process, comprehensive planning and SEQRA Administration. The result is a team of highly compatible land use professionals that will get the job done in a manner that ensures real and implementable solutions.

Nelson, Pope & Voorhis employees are recognized as experts in environmental, land use and planning issues and have provided consulting services to various municipalities. NP&V encourages continuing education through participation in conferences and seminars for all staff and holds regular training luncheons utilizing APA and other training packages.

Nelson, Pope & Voorhis has a capable staff of professionals, including planners, ecologists, hydrologists, wetlands specialists and environmental professionals. When integrated with technical staff of Nelson & Pope, the team is expanded to include civil, sanitary and transportation engineers and land surveyors.

Nelson, Pope & Voorhis would appreciate the opportunity to discuss how we can assist you in achieving your goals. We are committed to providing quality environmental, planning and consulting services to all clients. This statement of qualifications is an introduction to the many services we provide with a focus on municipal services; the following pages contain a more detailed presentation of services offered by Nelson, Pope & Voorhis, as well as a sampling of completed projects and key staff resumes.

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Charles Voorhis is managing partner and is a member of the American Institute of Certified Planners (AICP) and is a Certified Environmental Professional (CEP), having over 28 years of experience in environmental planning on Long Island and the New York area. Mr. Voorhis oversees the business in terms of management, marketing and expertise, provides expert testimony in hearings and court proceedings, and ensures that client needs are served to the best of the firm's ability.

The firm has significant expertise in applied use of the State Environmental Quality Review Act (SEQRA) with understanding of the practical and legal use of this law from both the private and municipal perspective. Staffing includes environmental professionals assembled to work together as a team with complementary expertise and interests. NP&V personnel maintain wildlife collection permits in New York State, and are active contributors to the Long Island Geographic Information System (GIS) user group meetings and publications.

The firm has developed a number of copyright protected computer models for environmental analysis in the areas of: wildlife and ecology; water budget analysis and groundwater impacts; economic and market analysis; and stormwater impact prediction. The reports and graphics generated for projects are high in quality and professionally prepared through the use of state-of-the-art technology in digital aerial photography, geocoding and mapping of site features using global positioning systems, AutoCAD analysis/mapping, geographic information systems (GIS), CommunityViz, custom spreadsheet models for regional land use impact assessment, and related technological tools for advanced data management and word processing. The seamless integration of environmental and engineering services with Nelson & Pope is accomplished by direct communication and computer networking to ensure that projects are managed through the review process to the development stage.

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FEASIBILITY STUDIES
DUE DILIGENCE ASSISTANCE
REGIONAL PLANNING
ECONOMIC PLANNING
ENVIRONMENTAL SITE ASSESSMENT
ENVIRONMENTAL SCIENCE & ANALYSIS
WETLAND PERMITTING
STORM WATER MANAGEMENT PLANS
WATERFRONT & COASTAL ZONE PROJECTS
MAPPING
WATERSHED MANAGEMENT & WATER SUPPLY
PERMITTING & PROCESSING

The division of **ENVIRONMENTAL & COMMUNITY PLANNING** specializes in comprehensive local and regional planning. Technology is key in today's planning field and NP&V continues to keep pace with the most current tools available for planning applications. Use of Geographic Information System (GIS) software, 3D Analyst, ArcScene and Spatial Analyst, as well as CommunityViz (3-D simulation and analysis software), architectural modeling software, AutoCAD, and planning and analysis software and spreadsheets, results in rapid, accurate and high quality data, analysis, illustration and reporting. This division conducts planning studies, revitalization plans, community development/public participation activities, and human resource analysis including noise, air, demographic, socio-economic and visual resource assessment (including 3D simulations, photo simulations and shadow studies). The division is directed by Kathryn Eiseman, AICP and includes planners and GIS specialists with environmental, planning and architectural backgrounds.

The division of **ENVIRONMENTAL RESOURCE & WETLANDS ASSESSMENT** provides quality services in the preparation of Environmental Impact Statements (EIS's), Environmental Assessments (EA's), planning and zoning law review and preparation, stormwater permitting and erosion control compliance, and wetland delineation, assessment, mitigation and permitting. This division is headed by Carrie O'Farrell and has a capable staff including environmental scientists, wetland ecologists and environmental professionals to ensure timely delivery of quality products.

The division of **PHASE I/II ASSESSMENTS & REMEDIATION** performs Phase I and II Environmental Site Assessments (ESA's), voluntary cleanup, brownfields cleanup, RI/FS and all aspects of site remediation and investigation. The division is headed by Steven McGinn, CEI, AICP, a member of Nelson & Pope's environmental services branch for 13 years with significant experience in preparation of Phase I/II ESA's field investigations and remediation. This division includes a staff of hydrogeologists and environmental professionals and coordinates required field equipment and laboratory services. NP&V has performed large and small assessments and provides the fastest possible turnaround to meet due diligence periods and deadlines which are often a factor in real estate transactions. NP&V Phase I/II ESA services are known and accepted by lending institutions throughout the tri-state area. NP&V owns, maintains and operates GPR (Ground Penetrating Radar) and PowerProbe units to provide expanded services in site investigations. A description of NP&V qualifications and resumes of personnel proposed for the project and specific project experience is included in the following pages.

NELSON POPE & VOORHIS

572 Walt Whitman Road
Melville, New York
11747

PHONE: 631-427-5665
FAX: 631-427-5620
NPV@NELSONPOPE.COM

Nelson Pope & Voorhis

Summary of Services...

Environmental Planning Consulting

Municipal Planning
SEQRA Compliance
Harbor Management Planning
Feasibility Studies
Due Diligence Assistance
Regional Planning
Economic Planning
Environmental Site Assessment
Environmental Science & Analysis
Wetland Permitting
Storm Water Management Plans
Waterfront & Coastal Zone Projects
Mapping
Watershed Management & Water Supply
Permitting & Processing

Municipal Planning: Full environmental and planning review services for municipalities including site plan and subdivision review, zoning board review and SEQRA Administration...

Regional and Community Planning: Conceptual site development planning; public outreach: visioning workshops and charrettes; development alternatives; zoning; site yield studies; build-out analysis; visual analysis (3-D modeling; photo simulations) and comprehensive regional and hamlet planning studies…

Feasibility and Due Diligence Assistance: Comprehensive research into site development related issues affecting project implementation, timing and costs…

Economic Planning: Housing incentives and programs; community development; and economic impact and market studies…

Environmental Site Assessment: Phase I, II and III environmental site assessments; geophysical surveys; GPR services; remedial investigation and feasibility studies; Brownfield investigations; voluntary cleanup program; oil spill closure; groundwater investigations and modeling; asbestos and lead testing and abatement…

Environmental Science and Analysis: Environmental impact statements (EIS); assessment forms (EAF); ecological and wildlife studies; noise and air emission impact studies; and compliance with Federal, State & local environmental regulations & laws...

Wetland Permitting: Flagging and identification of fresh water and tidal wetlands; preparation of wetland permitting; and wetland restoration plans...

Storm Water Management Plans: Design of management plans for storm water and erosion control compliance with latest Federal and State regulations; preparation and processing of NOI; and site compliance during construction…

Waterfront and Coastal Zone Projects: Planning; permitting of waterfront improvement projects; water quality data management and studies; and docking facilities…

Mapping: Inventory of physical features; GIS mapping; data management and analysis; and ground penetrating radar for identification of subsurface conditions…

Watershed Management and Water Supply: Comprehensive regional watershed and water supply management and planning studies...

Permitting and Processing: Preparation and processing of environmental applications for submittal; client representation before municipal agencies and departments and expert testimony for legal support and hearings...

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11747

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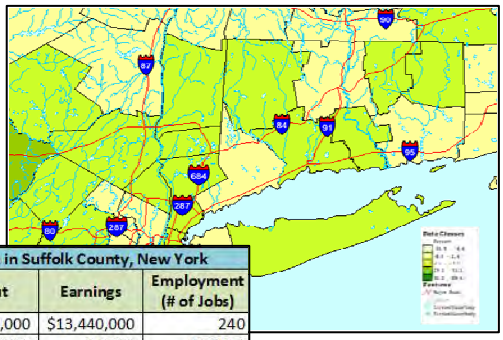
npv@nelsonpope.com

Economic and Fiscal Impact Analysis, Market Studies, Demographic and Community Needs Assessments

Environmental Planning Consulting

Feasibility & Due Diligence Assistance
Regional & Site Planning
Economic Planning
Environmental Site Assessment
Environmental Science & Analysis
Wetland Permitting
Storm Water Management Plans
Waterfront & Coastal Zone Projects
Mapping
Watershed Management & Water Supply
Permitting & Processing
Sustainability & LEED
Project Planning & Support

- Fiscal Analysis
- Economic Impact Analysis
- Economic Development Strategies
- Market Analysis
- Market Positioning & Branding
- Main Street Revitalization
- Comprehensive Community Needs Assessments
- Socioeconomic Analysis
- Demographic analysis
- Tax Base Analysis
- Industrial Cluster Analysis
- Market Feasibility Studies



NAICS CODE 230000: Construction in Suffolk County, New York			
	Output	Earnings	Employment (# of Jobs)
Direct Impact	$33,600,000	$13,440,000	240
RIMS Multiplier	1.9793	0.5803	14.0154
Indirect and Induced Impact	$66,504,480	$7,799,232	100
Total Impact	**$100,104,480**	**$21,239,232**	**340**

Many of our clients know of our quality services in tax revenue and demographic impact analysis including demographic and school district impact assessments. This expertise combined with our expert use of Geographic Information System (GIS) and census data has allowed NP&V to complete quality fiscal and economic impact studies since the company was formed in 1997.

Our fiscal impact analyses identify project benefits in terms of tax revenue projections and demand for community services from various providers. We have expanded our capabilities and recently, our economic impact analyses concentrate on an expanded quantification of project benefits including job generation during the construction and operation of development, projected salaries, consumer spending, sales tax generation from spending and other economic "ripple effect" benefits. It is critically important to understand the full benefits of economic development projects during difficult economic times.

We now offer market analyses and feasibility studies to determine potential success of projects related to demand for a given business model, within a trade area, in consideration of consumer spending, competition and market demand. Such studies are invaluable in assessing project feasibility and assist with addressing potential socio-economic impacts.

NP&V has a track record of completed, successful and built projects involving fiscal impact analysis, demographic assessment, market studies and customized analyses of community service related impacts in nearly all Towns in Nassau and Suffolk Counties. NP&V's economic planning expertise can be integrated into economic development strategies, project feasibility, balancing of mixed-use project scenarios, community development and assistance programs and needs assessments. Please contact us for more information on how we can assist with the economic planning aspects of your development, re-development, revitalization or community needs assessment project.

Nelson Pope & Voorhis

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11747

Phone: 631-427-5665
Fax: 631-427-5620
npv@nelsonpope.com

RESUMES

Nelson, Pope & Voorhis

Charles J. Voorhis, AICP, CEP

PERSONAL PROFESSIONAL QUALIFICATIONS

Licensing and Certification:

- Certified Environmental Professional (CEP)
- American Institute of Certified Planners (AICP)
- Certified Environmental Inspector, Environmental Assessment Association
- US Coast Guard Master Steam and Auxiliary Sail Vessels

Experience:

- Managing Partner of Firm, Nelson, Pope & Voorhis, LLC; Melville, New York (1/97-Present)
- Principal of Firm, Charles Voorhis & Associates, Inc.; Miller Place, New York (8/88-1/97)
- Director, Division of Environmental Protection, Department of Planning, Environment and Development; Town of Brookhaven, New York (3/86-8/88)
- Environmental Analyst, Division of Environmental Protection, Department of Planning, Environment and Development; Town of Brookhaven, New York (8/82-3/86)
- Private and Public Consultant, Planning and Environmental Issues (8/82-3/87)
- Public Health Sanitarian, Suffolk County Department of Health Services; Hauppauge, New York (1/80-8/82)
- Environmentalist I, Suffolk County Department of Environmental Control, Central Islip, New York (2/78- 8/79)

Education:

- SUNY at Stony Brook; Master of Science in Environmental Engineering, concentration in Water Resource Management, 1984
- Princeton Associates; Groundwater Pollution and Hydrology Short Course, Princeton, New Jersey, 1983
- New York State Health Department, Environmental Health Training Course, Hauppauge, New York, 1982
- Southampton College of Long Island University; Bachelor of Science in Environmental Geology, 1977

Significant Professional Achievements:

- Lake Agawam Comprehensive Management Plan, 2008
- Southold TDR Planning Report and GEIS, 2008
- Suffolk County North Shore Embayments Watershed Management Plan, 2007
- Mt. Sinai Harbor Management Plan, 2006
- The Residences at North Hills, DEIS and FEIS, 2005-06
- Shelter Island Water Supply Study, 2005
- Town of Southold Comprehensive Implementation Strategy, 2003
- Lower Port Jefferson Harbor Action Plan, 2002
- Setauket Fire District Needs Analysis, 2001
- Southampton Agricultural Opportunities Subdivision, DEIS, FEIS and Findings, 2001
- Old Orchard Woods, DEIS and FEIS, 2000
- Town of Smithtown Armory Park, DEIS, 2000
- Town of Southold Water Supply Management & Water Protection Strategy, 2000
- CVS @ Greenlawn, DEIS and FEIS, 1998
- Knightsbridge Gardens, DEIS and FEIS, 1997
- Camelot Village @ Huntington, DEIS, 1997
- Airport International Plaza, DEIS and FEIS, 1996
- Price Club @ New Rochelle, DEIS and FEIS, 1995
- Commack Campus Park @ Commack DEIS and FEIS, 1994
- Water Mill Shops @ Water Mill DEIS, 1993
- PJ Venture Wholesale Club @ Commack DEIS and FEIS, 1993
- Dowling College NAT Center DEIS and FEIS, 1992
- Final EIS Angel Shores @ Southold, 1991
- Town of Brookhaven Boat Mooring Plan, 1991
- Draft EIS Round Hill @ Old Westbury, 1990
- GEIS Commercial Rezonings on the Towns Own Motion, 1988
- Draft EIS St. Elsewhere @ Nesconset, 1989
- EQBA, Acquisition Study for Brookhaven Town, 1987
- Award for Environmentally Sensitive Land Design, Pine Barrens Review Comm., 1988
- Town of Brookhaven Land Use Plan, 1987
- Discussion of Hydrogeologic Zone Boundaries in the Vicinity of S. Yaphank, LI, NY, 1986
- Comprehensive Review of Industrial Zoned Land in the Sensitive Hydrogeologic Zone, Brookhaven, 1983

Professional & Other Organizations (past and present):

- American Planning Association, Washington, D.C.
- National Association of Environmental Professionals, Alexandria, VA
- Environmental Assessment Association, Scottsdale, Arizona
- American Water Resources Association, Syracuse, New York
- New York Water Pollution Control Association, Riverdale, New York
- Water Pollution Control Federation, Washington, D.C.
- Long Island Seaport & EcoCenter, Inc., Director, Port Jefferson, NY
- Boy Scouts of America, Trained Scoutmaster, Nathanial Woodhull District, NY
- Historical Society of Port Jefferson, Trustee, Port Jefferson, NY
- Environmental Conservation Board, Village of Port Jefferson, NY
- Port Jefferson Village, Waterfront Advisory Committee, Port Jefferson, NY
- Town of Brookhaven Mount Sinai Harbor Advisory Committee, Medford, NY
- Brookhaven Conservation Advisory Council, Medford, NY

Kathryn J. Eiseman, AICP

PERSONAL PROFESSIONAL QUALIFICATIONS

Licensing and Certification:

- American Institute of Certified Planners (AICP)

Experience:

- Partner/Division Manager of the Environmental & Community Planning Division, Nelson, Pope & Voorhis, LLC Melville, NY) and Charles Voorhis & Associates, Inc. (Miller Place, NY) (7/93 to Present). Project management, preparation of planning studies, downtown revitalization plans, visual preference surveys and public workshop planning and facilitation, environmental impact statements, Geographic Information Systems analysis and mapping, air impact studies, air dispersion modeling (CAL3QHC), noise impact analysis and mitigation, conduct planning studies for land use compatibility/precedent, school and fiscal analysis, testimony at Planning Board meetings.
- Arlington Central School District; Poughkeepsie, NY. (9/91 - 6/93). Mathematics teacher, grade 7.
- Hyde Park Central School District; Hyde Park, NY. (9/89 - 6/91). Mathematics teacher, grades 7 and 8. Yearbook and Mathcounts Club advisor.

Education:

- State University of NY at Stony Brook, Masters Degree in Environmental and Waste Management, 12/96.
- State University of New York at New Paltz; New York (9/89- 6/93). Graduate studies in mathematics, education, computer science, environmental studies and liberal arts.
- Syracuse University; Syracuse, New York. Bachelors Degree. Dual Majors: Mathematics and Education, 5/88.
- Université de Grenoble; Grenoble, France. French language certificate program for foreign students, 5/84.

Significant Professional Achievements:

- Planning Consultant to the Village of Southampton, ongoing
- Eastern Waterfront Community Vision & Revitalization Plan , 6/09
- Lake Ronkonkoma Clean Lakes Study Update, 7/08
- Suffolk County North Shore Embayments Watershed Management Plan, (Final), 11/07
- Syosset Downtown Redevelopment & Revitalization Plan, 9/05
- East Hills Architectural Review Board Planning Study, 1/05
- East Hills Residential Bulk Regulations Review & Study, 1/05
- Custom 3D computer model of proposed Korean Church, Lake Success, 3/04
- Stormwater Outfall and Conveyance Inventory and Mitigation Plan for Town of Islip, 2003
- Mt. Sinai Harbor Shellfish Closure Area Investigation, Town of Brookhaven, 2/03
- Hicksville Fire District Mapping and Spatial Analysis, 2003.
- Visual Preference Survey, Port Jefferson Village, 6/02
- Setauket Fire District Needs Analysis, Setauket, New York, 2001
- Review of Past Water Quality Studies, Port Jefferson Village, 2000
- Stormwater Study, Inventory & Analysis of Stormwater Outfalls for the Town of Brookhaven South Shore Bays, 1996, West Meadow Creek, 2000, and Town of Islip, 2001
- Draft & Final EIS, Colony @ Plainview, 1998
- Noise Studies for Pep Boys & Sears Automotive Centers, 1997-1998

Professional Organizations, Certifications & Training:

- APA Metro Long Island Section Treasurer
- Boys & Girls Club of Bellport Advisory Council Member
- American Institute of Certified Planners since July 2000
- American Planning Association Member since 1997
- IAP2 Certificate Course in Public Participation, January 2004
- CommunityViz Scenario Constructor, SiteBuilder 3D™, Policy Simulator training, November 2002
- Introduction to ArcView GIS, ESRI 16 hour course, 4/00
- Fundamentals of Dispersion Modeling and Computer Modeling Laboratory, June, 1998
- Rutgers University, Methodology of Delineating Wetlands, July 1987

NICOLE L. DELLAVECCHIA

PERSONAL PROFESSIONAL QUALIFICATIONS

Experience:

- **Economic Analyst/Planner, Nelson, Pope & Voorhis, LLC (March 2009-Present)**
  - Completed fiscal impact and economic impact analyses, as well as property tax and sales tax analyses on planned development districts, as well as residential, commercial, recreational and mixed-use developments
  - Prepared market feasibility analyses, zoning analyses and needs assessments
  - Completed analyses to assess and quantify impacts to local community service providers
  - Involved with the preparation of SEQR review documents including Environmental Assessment Forms and Environmental Impact Statements
  - Conducted demographic and socioeconomic analyses
  - Prepared proposals and other marketing efforts

- **Urban Planner/Economic Analyst, Saratoga Associates, Saratoga Springs, NY (2006-2008)**
  - Completed comprehensive/master plans in urban, suburban and rural communities
  - Conducted comprehensive community needs assessments, and demographic and socioeconomic analyses at the county, municipal and neighborhood level
  - Heavily involved in economic development strategies, mall redevelopment, and tourism plans
  - Prepared market analyses and feasibility studies, as well as fiscal and economic impact analyses on residential, commercial, office space and alternative energy developments
  - Prepared corridor management plans, environmental impact statements, brownfield and industrial park redevelopment plans, local waterfront revitalization programs, parking demand analyses
  - Facilitated public participation and community visioning processes, as well as public forums regarding housing, public safety and economic development
  - Created maps, images, graphics and other visuals for various plans and presentations
  - Prepared and reviewed grants for federal, state and local funding sources

Education:

- **Master of Urban Planning, Specialization in International and Economic Development**
  State University of New York, University at Buffalo, 2006
- **Dual Major - Bachelor of Arts in Economics/International Relations**
  Specialization in Economic Development
  State University of New York, College at Geneseo, 2004

Technical Expertise and Skills:

- Microsoft Access, Excel, Frontpage, Publisher, Word & Works
- Adobe Acrobat, Illustrator, InDesign and Photoshop
- ESRI ArcMap 9.3
- SPSS
- MobileMapper and GPS Pathfinder Office
- Trimble and Thales GPS Units

Professional Organizations and Interests:

- American Planning Association, Member
- United States Green Building Council, Member
- Ronald McDonald House of Long Island, Volunteer
- Special Olympics of New York, Long Island Region, Volunteer
- Alpha Phi Omega, Alumni

Appendix A-9
1973 Dorade STP Construction Agreement

PARR VILLAGE (May 9, 1973)

H-A-

BY THIS AGREEMENT made this 9th day of May, 1973 bet

THE PARR COMPANY OF SUFFOLK, INC., having its principal off

place of business located at 382 Rosevale Avenue, Ronl

New York, party of the first part and intended to be m

hereinafter wherever the term "OWNER" or "CORPORATION"

for convenience, be used, and the

SUFFOLK COUNTY SEWER AGENCY, a division of the county government o

Suffolk County, having its principal place of business

located at 1324 Motor Parkway, Hauppauge, New York, party

of the second part and sometimes hereinafter referred to

as the "AGENCY", and the

COUNTY OF SUFFOLK, through the Chairman of the Suffolk County Sewer

Agency, acting on behalf of the County, whose address is

the County Center, Riverhead, New York, party of the third

part, and the

TOWN OF BROOKHAVEN, a municipal corporation having its office located

at South Ocean Avenue, Patchogue, New York, party of the

fourth part, and sometimes hereinafter referred to as the

"TOWN", and the

PLANNING BOARD, Town of Brookhaven, located at South Ocean Avenue,

Patchogue, New York, party of the fifth part, and sometimes

hereinafter referred to as the "BOARD".

Fee ___ Tax ___
Receipt # 66611

Commercial Parcel

SCHEDULE "A"

DESCRIPTION OF PROPERTY
AT NORTHWEST CORNER OF
WILLIAM FLOYD PKWY. & LONG ISLAND EXPY.
NEAR YAPHANK, TOWN OF BROOKHAVEN, SUFFOLK COUNTY

BEGINNING at a point on the westerly side of William Floyd Parkway. Said point of beginning where the northerly line of the commercial zone of Parr Modular Systems, Inc., intersects the westerly line of William Floyd Parkway.

Thence from said point of beginning running southerly along the westerly line of William Floyd Parkway, the following three (3) courses:

1. South 33° 47' 50" East 2183.48 feet.
2. South 56° 12' 10" West 1.00 feet.
3. South 33° 47' 50" East 448.00 feet to a point on the westerly line of William Floyd Parkway, where it intersects the northwesterly ramp of the Long Island Expressway.

Thence running westerly along the southerly line of herein described parcel also being the northwesterly ramp of the Service Road of the Long Island Expressway, the following eight (8) courses:

1. South 56° 12' 10" West 3.00 feet.
2. Along a curve to the right having a radius of 200.00 feet and an arc length of 267.27 feet.
3. South 42° 46' 09" West 140.52 feet.
4. Along a curve to the left having a radius of 830.00 feet and an arc length 410.31 feet
5. South 14° 26' 41" West 252.16 feet.
6. Along a curve to the right having a radius of 970.00 feet and an arc length of 669.09 feet.
7. South 53° 58' 00" West 93.24 feet
8. South 36° 02' 00" East 12.00 feet to a point on the northerly line of the Long Island Expressway.

Thence running westerly along the southerly line of herein described parcel also being the northerly line of the Long Island Expressway, South 53° 58' 00" West 1230.00 feet.

Thence running northerly along the westerly line of herein described parcel, the following five (5) courses:

1. North 36° 02' 00" West 512.90 feet.
2. Along a curve to the right having a radius of 100.00 feet and an arc length of 116.55 feet.
3. North 30° 45' 00" East 824.20 feet.
4. Along a curve to the left having a radius of 335.00 feet and an arc length of 337.40 feet.
5. North 33° 47' 50" West 2160.63 feet.

Thence running westerly along the northerly line of described parcel, the following two (2) courses:

1. Along a curve to the right having a radius of 100.00 feet and an arc length of 157.07 feet.
2. North 56° 12' 10" East 1700.00 feet.

It being the intention to describe a parcel of land containing 150.0014 acres.

Race Track Parcel

DESCRIPTION OF PARCEL
ON THE NORTHEAST CORNER
OF PRIVATE(LONGWOOD) ROAD AND
THE NORTH SERVICE ROAD OF THE LONG ISLAND EXPY.
NEAR YAPHANK, TOWN OF BROOKHAVEN, SUFFOLK COUNTY, NEW YORK

Beginning at a point on the westerly line of William Floyd Parkway. Said point of beginning more fully described as follows.

From a point on the westerly line of William Floyd Parkway, where it intersects the northwesterly ramp connecting William Floyd Parkway with the Service Road of the Long Island Expressway, the following three (3) courses:

1. North 33° 47' 50" West 448.00 feet.
2. North 56° 12' 10" East 1.00 feet.
3. North 33° 47' 50" West 2183.48 feet to the aforementioned point or place of beginning.

Thence running westerly and southerly along the easterly line of herein described parcel, the following seven (7) courses:

1. South 56° 12' 10" West 1700.00 feet.
2. Along a curve to the left having a radius of 100.00 feet and an arc length of 157.07 feet.
3. South 33° 47' 50" East 2160.63 feet
4. Along a curve to the right having a radius of 335.00 feet and an arc length of 337.40 feet.
5. South 30° 45' 00" West 824.20 feet.
6. Along a curve to the left having a radius of 100.00 feet and an arc length of 116.55 feet.
7. South 36° 02' 00" East 512.90 feet to a point on the northerly line of the Service Road of the Long Island Expressway.

Thence running westerly along the southerly line of herein described parcel, also being the northerly line of the Service Road of the Long Island Expressway, the following three (3) courses:

1. South 53° 58' 00" West 1111.47 feet.
2. Along a curve to the right having a radius of 1370.00 feet and an arc length of 316.18 feet.
3. South 67° 11' 24" West 368.66 feet to a point on the easterly line of Private (Longwood) Road.

Thence running northerly along the westerly line of herein described parcel, also being the easterly line of Private (Longwood) Road, the following twelve (12) courses:

1. North 23° 02' 25" West 569.97 feet.
2. North 16° 53' 40" West 196.45 feet.
3. North 34° 50' 00" West 227.75 feet.

Race Track Parcel

4. North 31° 34' 20" West 237.02 feet.
5. North 29° 58' 00" West 585.07 feet.
6. North 24° 24' 50" West 670.85 feet.
7. North 3° 23' 40" West 323.55 feet.
8. North 11° 13' 40" West 406.74 feet.
9. North 20° 55' 30" West 294.36 feet.
10. North 28° 10' 40" West 258.59 feet.
11. North 13° 42' 30" West 156.44 feet.
12. North 4° 14' 10" East 36.45 feet.

Thence running easterly along the northerly line of herein described parcel also being the southerly line of Parr Modular Systems, Inc., the following two (2) courses:

1. North 64° 27' 06" East 1944.58 feet.
2. North 56° 12' 10" East 1800.00 feet to a point on the westerly line of William Floyd Parkway.

Thence running southerly along the easterly line of herein described parcel also being the westerly line of William Floyd Parkway, South 33° 47' 50" Ea 120.00 feet to the point or place of beginning.
Containing within said bounds 200.0009 acres.

Residential Parcel

PROPERTY ON
W/S WM. FLOYD PKWY., N/LONG ISLAND EXPY. &
BEING CONTIGUOUS WITH L.I. UNIVERSITY TO THE NORTH, NEAR YAPHANK
TOWN OF BROOKHAVEN, SUFFOLK COUNTY, NEW YORK

Beginning at a point on the westerly line of William Floyd Parkway, said poi being the southeasterly corner of herein described parcel and being 2752.48 feet northerly from the intersection of the westerly line of William Floyd Parkway and the northerly line of Long Island Expressway.

Thence westerly from said point of beginning along the southerly line of herein described parcel, the following two (2) courses:

1. South 56° 12' 10" West 1800.00 feet.
2. South 64° 27' 06" West 1944.58 feet to the easterly line of Private (Longwood) Road, also being the westerly line of herein described parcel.

Thence along the last-mentioned line, the following sixteen (16) courses:

1. North 4° 14' 10" East 142.18 feet.
2. North 20° 46' 30" East 244.97 feet.
3. North 7° 14' 00" West 175.39 feet.
4. North 19° 00' 40" West 132.19 feet.
5. North 5° 13' 20" West 187.77 feet.
6. North 6° 06' 30" East 93.54 feet.
7. North 3° 13' 40" West 340.53 feet.
8. North 30° 31' 00" East 328.60 feet.
9. North 6° 42' 00" West 172.16 feet.
10. North 21° 29' 20" West 814.47 feet.
11. North 15° 05' 10" East 141.90 feet.
12. North 40° 03' 00" East 189.50 feet.
13. North 20° 35' 50" East 298.11 feet.
14. North 5° 55' 30" East 163.88 feet.
15. North 27° 53' 20" West 256.77 feet.
16. North 3° 33' 20" East 608.19 feet to the northerly line of herein described parcel also being the southerly line of the Long Island University.

Thence easterly along the last-mentioned line, South 85° 51' 26" East 2282.09 feet to the westerly line of William Floyd Parkway.

Thence South 5° 07' 10" East 766.88 feet and North 84° 54' 05" East 92.47 feet to a curve of the westerly line of William Floyd Parkway.

Thence on a curb to the left along the last-mentioned line having a radius of 2939.79 feet and a length of an arc of 731.10 feet and South 33° 47' 50" East 779.57 feet to the point or place of beginning.
It being the intention to describe a parcel of land containing 200.8889 acres. Excepting therefrom the area for a water storage stand pipe of 1.4850 acres, well site of 4.5469 acres, sanitary sewage site of 11.5217 acres, and an additional parcel of 10.000 acres, decreasing the area of herein described parcel to 173.3353 acres.

DESCRIPTION OF PROPERTY
WEST SIDE OF WILLIAM FLOYD PARKWAY
SITUATED NEAR YAPHANK, TOWN OF BROOKHAVEN, SUFFOLK COUNTY

Beginning at a point on the westerly line of William Floyd Parkway. Said point of beginning more fully described as follows.

From a point on the westerly line of William Floyd Parkway where it intersects the northwesterly ramp connecting William Floyd Parkway with the Service Road of the Long Island Expressway, the following three (3) courses

1. North 33° 47' 50" West 448.00 feet
2. North 56° 12' 10" East 1.00 feet
3. North 33° 47' 50" West 2303.48 feet.

Thence from said point of beginning running westerly along the southerly li of herein described parcel, South 56° 12' 10" West 544.50 feet.

Thence running northerly along the westerly line of herein described parcel, North 33° 47' 50" West 800.00 feet.

Thence running easterly along the northerly line of herein described parcel, North 56° 12' 10" East 544.57 feet to a point on the westerly line of William Floyd Parkway.

Thence running southerly along the easterly line of herein described parcel, also being the westerly line of William Floyd Parkway, the following two (2) courses:

1. Along a curve to the left having a radius of 2939.79 feet and an arc length of 20.44 feet.
2. South 33° 47' 50" East 779.57 feet to the point or place of beginnir

It being the intention to describe a parcel of land containing 10.0000 acres.

DESCRIPTION OF PARCEL FOR STANDPIPE
FOR PARR MODULAR SYSTEMS, INC.
NEAR YAPHANK
TOWN OF BROOKHAVEN, SUFFOLK COUNTY, NEW YORK

Beginning at a point where the prolongation of the northerly line of herein described parcel intersects the easterly line of Private (Longwood) Road, between the lands of Elbert C. Smith on the west and Parr Modular Systems, Inc. between the lands of Elbert C. Smith on the west and Parr Modular Systems, Inc. on the east. Said point of beginning being more fully described as follows.

From a point where the northerly line of the residential zone of Parr Modular Systems, Inc., also being the southerly line of Long Island University, intersects the easterly line of Private (Longwood) Road, thence southerly along the easterly line of Private (Longwood) Road as it meanders 3727.61 feet.

Thence along the prolongation of the northerly line of herein described parcel, North 82° 46' 00" East 250.00 feet to the point or place of beginning.

Thence from said point of beginning running easterly along the northerly line of described parcel, North 82° 46' 00" East 250.00 feet.

Thence southerly along the easterly line of herein described parcel, South 7° 14' 00" East 318.07 feet.

Thence westerly along the southerly line of herein described parcel, South 64° 27' 06" West 31.60 feet.

Thence northerly along the westerly line of herein described parcel, North 7° 14' 00" West 78.00 feet.

Thence westerly along the southerly line of herein described parcel, South 82° 46' 00" West 220.00 feet.

Thence northerly along the westerly line of herein described parcel, North 7° 14' 00" West 250.00 feet to the point or place of beginning.

It being the intention to describe a parcel of land containing 1.4850 acres.

DESCRIPTION OF PARCEL FOR WELL SITE
FOR PARR MODULAR SYSTEMS, INC.
NEAR YAPHANK
TOWN OF BROOKHAVEN, SUFFOLK COUNTY, NEW YORK

Beginning at a point on the westerly widened line of William Floyd Parkway, said point also being on the southerly line of the Sewer Treatment Plant R.O.W..

Thence from said point of beginning running southerly along the easterly line of herein described parcel, South 5° 07' 10" East 746.62 feet, said line also being the westerly line of William Floyd Parkway.

Thence westerly along the southerly line of herein described parcel, North 58° 39' 00" West 373.05 feet.

Thence northerly along the westerly line of herein described parcel, North 5° 07' 10" West 573.81 feet to a point on the southerly line of Sewer Treatment Plant R.O.W.

Thence easterly along the northerly line of herein described parcel, said line also being the southerly line of the Sewer Treatment Plan R.O.W., South 85° 51' 26" East 303.96 feet to the point or place of beginning.

It being the intention to describe a parcel of land containing 4.5469 acres.

JJBR
1/19/73

Prepared by: J. J. BOHN
Land Surveyors
Mineola, N. Y.

Job: #72-318
Date: 6/16/72
Revised: 10/31/72
Job: #72-587

DESCRIPTION OF PARCEL
FOR SEWER TREATMENT PLANT
FOR PARR MODULAR SYSTEMS, INC.
SITUATED NEAR YAPHANK, TOWN OF BROOKHAVEN, SUFFOLK COUNTY

Beginning at a point on the northerly line of the residential zone of Parr Modular Systems, Inc., also being the Southerly line of Long Island University and intersects the easterly line of Private (Longwood) Road.

Thence from said point of beginning running easterly along the northerly line of herein described parcel, also being the southerly line of Long Island University, South 85° 51' 26" East 2282.09 feet to a point on the wes erly line of the William Floyd Parkway.

Thence running southerly along the easterly line of herein described parcel, also being the westerly line of the William Floyd Parkway, South 5° 07' 10" East 20.26 feet.

Thence running westerly along the southerly line of herein described parcel, North 85° 51' 26" West 1351.35 feet.

Thence running southerly along the easterly line of herein described parcel, the following three (3) courses:

1. South 4° 08' 34" West 67.00 feet.
2. South 37° 11' 25" West 586.72 feet.
3. South 16° 36' 37" West 90.00 feet.

Thence running westerly along the Southerly line of herein described parcel, the following three (3) courses:

1. North 85° 51' 26" West 272.00 feet.
2. North 24° 32' 54" West 154.49 feet.
3. North 85° 51' 26" West 243.00 feet to a point on the easterly line of Private (Longwood) Road.

Thence running northerly along the westerly line of herein described parcel, also being the easterly line of Private (Longwood) Road, North 3° 33' 20" East 532.19 feet to the point or place of beginning.

It being the intention to describe a parcel of land containing 11.5217 acres.

WITNESSETH:

WHEREAS, the OWNER is in the process of developing land located in Yaphank, Town of Brookhaven, tentatively known as Parr Village, which is more particularly bounded and described in Schedule "A" hereto annexed and made a part hereof, preliminary plans of which were prepared by John A. Jocobson Associates and show a condominium development of approximately 550 units, a quarter horse race track, and a regional shopping mall, and were heretofore filed with the COUNTY HEALTH DEPARTMENT, hereinafter referred to as the "DEPARTMENT", THE DEPARTMENT OF ENVIRONMENTAL CONTROL, hereinafter referred to as "DEC", and the AGENCY, and are by reference incorporated herein and made a part hereof, and

WHEREAS, the TOWN has conditioned its approval of the proposal upon the establishment of a communal sewage collection and disposal system, to be designed and built as required and approved by the DEC and the AGENCY, and

WHEREAS, the area is not yet within a sewer district, and

WHEREAS, the CORPORATION has offered to construct and erect the necessary sewage collection and disposal facilities and upon completion and approval thereof satisfactory to the AGENCY, the DEPARTMENT, and the DEC, donate the said system without cost to a county sewer district, or nominee of the AGENCY, which shall be a municipality, division or agency thereof,

NOW, THEREFORE, in consideration of the individual and mutual covenants and promises herein contained, the parties hereto do agree as follows:

1. That where the term "OWNER" is used herein, it shall be deemed to mean the owner of all or part of a particular section of the plat, whether it be the CORPORATION or another. That the terms "HOMEOWNERS" or "LOT OWNERS" shall both be deemed to be the first and subsequent purchasers from the OWNER, who users and whether this be a residential or commercial subdivision, who are users. The OWNER represents that it is the sole owner of the lands constituting the proposed plat described in Schedule "A" and as shown on the aforesaid preliminary plans filed with the BOARD and AGENCY.

2. That the OWNER, at its own cost and expense, shall, unless the AGENCY extend the time, immediately and within ninety (90) days of approval hereof by the County Attorney as hereinafter specified, prepare and furnish such maps and plans for all sections of the plat as shall meet the requirements of Article 5-A of the County Law necessary for presentation to the Suffolk County Legislature of a request for the establishment or extension of a county district, whichever the AGENCY may direct, and such maps and plans shall be in form and content satisfactory to the AGENCY and shall, in addition, show estimates of cost of construction, operation and maintenance and such other information as the AGENCY may require and shall be subject to the final approval of the AGENCY.

3. That the OWNER, at its own cost and expense, shall, prior to the filing of each section of the plat, prepare and furnish detailed and final maps, plans and specifications for required disposal and collection facilities including plant, lateral and trunk sewers, section by section, which maps, plans and specifications shall be subject to the final approval of and satisfactory to the AGENCY, the DEPARTMENT, the BOARD, and the TOWN HIGHWAY DEPARTMENT.

4. That the OWNER will, at its own cost and expense either prior to or after the formation of a sewer district and after the date a map is filed for any section of the proposed plat, construct, install, test and complete an approved and properly operating disposal plant and collection system of trunks and lateral sewers for each section of the proposed plat within two years from the date of the filing of the map for each section, in accordance with the said approved maps, plans and specifications, all, however, as the same may be modified in writing by the AGENCY's engineers to conform with field conditions. The AGENCY's engineers will notify all parties to this contract and the TOWN HIGHWAY DEPARTMENT of such field changes. The plant and all sewerage facilities and appurtenances, including lateral, trunk or interceptors in all sections, when taken together, are hereinafter sometimes referred to as the SYSTEM. All work shall be done carefully and in good and workmanlike manner and the nature of the construction and all materials used shall be in accordance with all applicable laws, ordinances, rules, regulations and municipal orders controlling, including the DEPARTMENT's standards as the same are approved and applied by the DEPARTMENT, and the final plans and specifications, as approved by and satisfactory to the AGENCY, the DEPARTMENT and the BOARD. No construction shall be commenced until after a permit shall have been issued by the County Department of Environmental Control.

5. The OWNER shall give the AGENCY and the other parties to this contract and the TOWN HIGHWAY DEPARTMENT at least ten (10) days prior notice confirmed in writing of each date on which sewer construction work is scheduled to start, and in addition, shall file at the same time with all of them, a tentative work schedule for the next 30 days in order that adequate arrangements for inspection can be made. The said tentative work schedule shall be kept current by the OWNER and all of them shall be notified immediately of any changes, additions or deletions on said schedule.

6. During the course of construction, the AGENCY'S engineers and inspectors, as well as those of the BOARD, the DEPARTMENT and the TOWN HIGHWAY DEPARTMENT, shall have the right at any time to inspect the work. The AGENCY's engineers and inspectors shall have the right to supervise tests of the sewer SYSTEM, or any part thereof, in order

to ascertain compliance with the approved plans and specifications. The said engineers will advise the BOARD, the DEPARTMENT and the TOWN HIGHWAY DEPARTMENT of any pending tests.

7. The OWNER, if qualified, will perform all construction, and if not, agrees to select for sewer construction, an individual or organization with proven experience and ability in such type of construction, who is acceptable to and approved by the AGENCY. The AGENCY shall apply reasonable standards in determining acceptability or withholding approval.

8. The OWNER shall, at his own cost and expense, secure any and all permits that may be necessary and shall abide by the rules and regulations of any municipality or agency having jurisdiction in the matter.

9. (Deleted)

10. That the OWNER shall, where necessary, cause its contracts of sale and/or deeds and dedications to purchasers or municipalities to be subject to the easements, rights-of-way, and sites required for the maintenance and operation of the sewer SYSTEM whether the same relate to the streets of the plat, or otherwise.

11. That the OWNER shall, before commencement of construction of a section, submit for approval to the AGENCY and the DEPARTMENT, a plan and specifications for connection of each proposed unit to the lateral sewer stubs, which in turn shall be connected to the laterals of the SYSTEM, at the CORPORATION'S expense.

12. That the CORPORATION will cause to be placed upon the plat to be filed a declaration, in form acceptable to the AGENCY, that all lots are subject to the provisions of this agreement.

13. Any unit or home thereon, or other facility erected on the plat requiring sewage disposal, shall, weather permitting, be connected to a communal sewage SYSTEM within sixty (60) days, except in the event of nuclear explosion, strike, war, whether or not declared, civil war, insurrection, rebellion or revolution, hurricane, tornado or other casualty beyond the OWNER'S control, of the SYSTEM'S becoming operable and available to the premises, and the further use of any on-site disposal systems for sewage disposal will not be permitted thereafter.

14. That the AGENCY'S engineer and inspectors and those of the BOARD, the DEPARTMENT and the HIGHWAY DEPARTMENT shall complete their examination of any maps, plans and specifications of the OWNER and make such inspections and reports as are called for and also as they may require, expeditiously and within a reasonable time. Nothing herein contained shall be construed to imply that the AGENCY'S engineers and inspectors shall replace or act as the OWNER'S own engineers and inspectors.

out

15. Prior to the request for or issuance of each Certificate of Occupancy, the OWNER will connect in an approved manner, each house or unit to the operating SYSTEM, as aforesaid, except that not exceeding fifty (50) units of the first section to be constructed may be temporarily connected to on-site cesspools, or with consent of the Department of Environmental Control, not exceeding 100 units to a consolidated cesspool site, as approved by the DEPARTMENT, with the further proviso that should the need arise for further pools prior

to the completion of the SYSTEM serving the plat and the connection of the unit thereto, the OWNER and/or HOMEOWNER shall, at their own cost and expense, install said additional pools, approved by the DEPARTMENT.

out

16. The installation of temporary cesspools, as aforesaid, shall only be permitted provided the OWNER has first installed street laterals in front of the house or unit and the unit stub and all unit connections up to the bend in the cesspool line, as shown on the approved map, and the OWNER does further convenant and agree that within sixty (60) days, weather permitting, of the plant and SYSTEM being completed, operating and available to the aforesaid units, these units shall be hooked up and connected to the SYSTEM at either the OWNER'S or the then LOT OWNER'S own cost and expense and the existing septic tank or cesspool shall be disconnected, and not used further for sewage disposal. In the case of each of these temporary units, the OWNER does and shall reserve, for itself, its successpors and assigns, the right and authority, but not the obligation, to go upon the particular site in question to make the foregoing changes and adjustments as aforesaid, at the cost of the then LOT OWNER.

Out

17. That the OWNER will not use or seek to use temporary septic tanks or cesspools for on-site waste disposal prior to completion and approval of the SYSTEM, except as otherwise provided herein.

18. That upon completion of actual construction of the SYSTEM, and before final approval thereof by the AGENCY'S engineers and the AGENCY, and before the release of any performance bonds or deposits, the OWNER shall, at its own cost and expense, furnish to the AGENCY, the DEPARTMENT, the BOARD, and the TOWN HIGHWAY DEPARTMENT, reproducible transparencies Mylar or equal, of "as built" drawings showing the location and depth of all sanitary sewage facilities including house or unit connections installed and such other information as the AGENCY may require.

19. That the OWNER does hereby covenant and irrevocably offer and make the continuing offer, free of charge and without expectation of reimbursement, to give, grant, release, convey, donate and dedicate, free of lien, cloud or encumbrance to a County Sewer District, if hereafter formed, encompassing the area of the plat and possibly more, but

if such district be not yet formed, then upon the request of the AGENCY to the nominee of the AGENCY, (a) good, clear, unencumbered, marketable and insurable title to any required and approved plant site and all lands upon which any of the appurtenances and facilities of the SYSTEM may or shall stand, and all necessary easements and rights-of-way over streets or otherwise, as shown upon the plat used or to be used in connection with the SYSTEM, or parts thereof, and such offer may be accepted at any time by the AGENCY or its nominee, it being understood that the acceptance of such lands, sites and easements shall not be construed to be an acceptance or approval of the actual SYSTEM or any part thereof, nor be construed to relieve the OWNER of any of its obligations or duties to properly construct the SYSTEM and facilities required to be constructed hereunder regardless of what stage of planning or construction they may be in, and (b) the aforesaid SYSTEM and/or parts thereof which the AGENCY or its nominee may deem satisfactory and elect to accept simultaneously or subsequent to the acceptance of the aforesaid lands, easements, rights-of-way, etc. The location and area upon which plant and beds, if any, shall stand, as approved by the AGENCY and the BOARD, and easements, shall, prior to the filing of the plat, be designated thereon. The OWNER shall, prior or subsequent to the filing of each section of the plat, whichever the AGENCY may elect, file by way of written instrument, in recordable form, confirming such offer of dedication of an approved site for the required sewage treatment plant, appurtenances and facilities, if shown on the final plat as approved, as well as all easements for all laterals and such trunks, interceptors, or portions thereof, if any, that may be necessary ultimately to tie in subsequent sections to each other or to the plant site. The OWNER will, prior to the filing of the map for any section, or if requested, subsequent to the filing of the map for any section, deliver, in escrow, to the nominee of the AGENCY, such instruments as the AGENCY may deem necessary to implement the aforesaid offer and parts thereof, including consents of mortgagees or releases of mortgages. The aforesaid district, or nominee of the AGENCY, as the case may be, may, in its discretion, at any time and from time to time thereafter, accept said offer or parts thereof, and the escrow agent, if any, shall thereupon release such necessary instruments to the district or nominee whereupon the escrow agent shall be relieved of all further responsibility relative thereto. It is understood that until acceptance of the SYSTEM, or parts thereof, the OWNER, its heirs, successors and assigns, shall prior to the acceptance thereof, be responsible for the proper construction, operation, maintenance, repair and restoration of said SYSTEM or parts thereof constructed hereunder, whether or not such maintenance, repair, restoration, etc. shall have been occasioned by damage, disturbance or otherwise, notwithstanding that the plant site, etc. may have already been accepted. In the event any required plant site, pumping station site, leaching field, bed sites or other appurtenances and facilities be outside the boundaries of the first section of the plat, then and in that case prior or subsequent to the filing, whichever the AGENCY may elect, the OWNER shall deliver, in escrow, such instruments as the AGENCY may require to accomplish an offer of dedication of clear, unencumbered, marketable and insurable title to such sites, together with whatever easements the AGENCY may feel are necessary for the purpose of ingress and egress to and from such sites. It is understood that if such facilities are not in the first section and, therefore, cannot be shown on the plat of said section, then the plat for such section shall carry a legend indicating that the said facilities are located outside said section on the lands of the owners of the sections. The OWNER, shall, until such offer be accepted, at its own cost and expense, pay all mortgages, liens, taxes and assessments against such sites and easements so that they will not be sold because of delinquent payments. The area designated as the plant site or pumping station shall be marked specifically "area to be dedicated to the Suffolk County Sewer Agency or its municipal nominee" and the following legend shall appear on each map: "The land designated as sewer plant site or pumping station are hereby irrevocably offered for dedication to the Suffolk County Sewer Agency or its municipal nominee." However, the said Agency shall not be responsible for its maintenance until acceptance.

20. That, in furtherance of the aforesaid offer, the OWNER, DEVELOPERS and all subsequent owners of all or part of the plat, their contract vendees, tenants and the residents thereof, do hereby covenant and consent, without further writing, to any petition, motion or application made to form the aforesaid county district, or, if the AGENCY approve, the formation of a Town district, and they, if re-

quested, will further confirm or initiate and submit, in writing, in recordable form, any necessary petition, consent and application to form the aforesaid district or extend it.

21. That the point in time when the sewer district shall be created shall be determined solely by the AGENCY and at such time the then OWNER and residents will lend their utmost cooperation in creating said district.

22. At the time the district is created or thereafter, it may encompass a larger area than the plat, and since the plat, pursuant to this agreement, already has made some provision for its own lateral sewers, it is not intended that the plat shall bear the cost of any lateral sewers constructed as original improvements outside the plat or in a subsequent extension of the District outside the plat, but this is not to say it or its ultimate LOT OWNERS shall not share in the overall costs of operation, maintenance, replacement and repair of the district collection system or any costs of necessary lateral construction within the plat beyond the useable portion constructed hereunder, as well as pay its share of the construction costs of any plant, trunk, interceptor, outfall, etc. serving the plat, or its enlargement, operation, maintenance, replacement and repair costs.

23. The term "cesspool" or septic tank" where used herein shall be deemed to mean individual subsurface disposal system."

24. That the OWNER will, prior to the filing of each section of the map, post a performance bond or bonds with the AGENCY or its nominee, said bonds to be issued by a surety company authorized to do business in the State of New York and acceptable to the AGENCY and also approved as to form and manner of execution by Counsel for the AGENCY. Such bond or bonds shall be in an aggregate principal amount equal to the estimated cost of the sewer construction work to be performed and completed by the OWNER, as determined and set by the AGENCY,based upon such information furnished to it by the OWNER or which it may presently have available, with the proviso and understanding that upon submission to it of final detailed plans, drawings and cost estimates, the amount of the bond may be required by the AGENCY to be increased. Thereupon the OWNER will forthwith and within ten (10) days of any request, increase or replace accordingly the bond first posted. The bonds so posted may be posted by

the OWNER, section by section, commencing with the plat of the first section of the subdivision. No plat shall be filed for any section until the appropriate bonds have been posted therefor and accepted by the AGENCY covering the estimated cost of completing that portion of the sewer SYSTEM for said section. If all the work covered by the bond be not completed within two (2) years, and the bonds be not declared in default, then the bonds may be required by the AGENCY yo be increased by an additional sum equal to 10% of the AGENCY's estimate of the still uncompleted work if the bond by its terms does not cover inflation, if any, of the cost of construction.

25. That upon application from time to time by the OWNER the AGENCY may, in its sole discretion, agree to extend the time for performance of work or to reduce the principal amount of outstanding performance bonds based upon work properly completed, and such extension or reduction granted by resolution of the AGENCY shall in no way affect the liability of the principal and surety under said bond nor shall their liability under said bond in any way be waived, encumbered, affected or released by any such extension or reduction thereof.

26. That it is understood and agreed that after this Agreement shall have been fully executed to the satisfaction of the AGENCY and after the maps, plans, specifications, dedications, bonds, deposits, insurance, etc., required by the AGENCY have been submitted in acceptable form, and the County Attorney has indicated his approval of this Agreement, then the DEPARTMENT may affix its approval to each section of the subdivision it approves.

27. The OWNER shall comply with all requirements of the Workmen's Compensation Laws and shall be solely responsible for any injury to any person or property, including employees engaged in the work, arising out of or from or claimed to arise out of or from this agreement or the performance of the duties, obligations and operations described herein and the OWNER, by the execution of this Agreement, undertakes to indemnify and hold harmless the Suffolk County Sewer Agency and all the other parties hereto form any and all liability of any nature whatsoever which may arise from of is claimed to have

arisen from the performance of any of the aforementioned duties, obligations and operations. It is the intention of the parties hereto that all duties, obligations and operations performed by the OWNER shall be at his sole risk and that, during such performance, the AGENCY and all other parties hereto are to be in no way held responisble for any damage or injury to any one or anything from any cause whatsoever arising out of or because of such performance.

28. (A) The OWNER shall furnish two (2) certificates of its Workmen's Compensation Insurance, one for the County of Suffolk and one for the Town.

(B) Prior to execution of this agreement, the OWNER at its own cost and expense, shall provide and submit to the AGENCY for acceptance two (2) copies of certificates of its own Comprehensive General Liability Insurance, including completed operations coverage, which it shall maintain and keep in full force and effect at all times during the life of this Agreement and until such time as all parts of the SYSTEM are duly accepted as provided for hereunder, with limits of at least $500,000/$1,000,000 bodily injury and $100,000/$300,000 property damage and more if requested.

In this case the policy shall have one endorsement naming as additional insureds and shall be issued to the:

1. County of Suffolk, Riverhead
2. Suffolk County Sewer Agency, Hauppauge
3. Suffolk County Department of Health, Riverhead
4. Suffolk Cty Dept. of Environmental Control, Hauppauge

and the other such policy, also by a separate endorsement, shall name as additional insureds and shall be issued to the:

1. Town
2. Town Planning Board
3. Town Highway Department

(C) Prior to execution of this Agreement, the OWNER, at its own cost and expense, shall provide and submit to the AGENCY for acceptance, two (2) Owner's Protective Liability Insurance policies or certificates thereof, which it shall maintain and keep in full force and effect at all times and during the life of this Agreement and

until such time as all parts of the SYSTEM are duly accepted as provided for hereunder, each with limits of at least $500,000/$1,000,000 bodily injury and $100,000/$300,000 property damage, and more if requested.

In this case one of the said insurance policies shall name as the insureds and shall be issued to the:

1. County of Suffolk, Riverhead
2. Suffolk County Sewer Agency, Hauppauge
3. Suffolk County Department of Health, Riverhead
4. Suffolk Cty Dept of Environmental Control, Hauppauge

and the other/endorsement shall name as insureds and shall be issued to the:

1. Town
2. Town Planning Board
3. Town Highway Department

(D) The failure of the OWNER to continue to furnish and maintain the aforesaid insurance may be deemed by the AGENCY to be a default hereunder and the AGENCY, in addition to its other remedies to which it is entitled, may, but shall not be obligated to, purchase such equivalent insurance at the cost and expense of the OWNER.

29. That the OWNER by the execution hereof does consent to any nomination and appointment by the AGENCY, of a licensedprofessional engineer or firm of licensed professional engineers and/or use of its staff as the engineer herein referred to as the AGENCY'S engineer.

30. That the AGENCY'S engineering costs for the examinations, inspections, audits, reports and services required and as called for herein, whether made by the AGENCY'S engineer or its staff, shall be at the expense of the OWNER, and the OWNER will, prior to the filing of the first section of the plat, post acheck or cash in the sum of $5,000.00 to the order of the County of Suffolk to be applied toward the said costs of the AGENCY and the OWNER will, from time to time thereafter as called for, post such further sums, not exceeding 5% of the total construction cost as shall be demanded for such purpose, which 5% shall include review of up to two (2) submissions of plans and specifications for approval and if the said two (2) submissions are not approved and the OWNER is required to further submit additional submissions showing modifications, changes and alterations as may be called for by the AGENCY, then the OWNER shall be liable for and pay an additional fee of one-half of 1% of the total construction cost for each such additional submission. It is further understood and agreed that the foregoing percentage limitation on the amount of engineering costs to be paid at the expense of the OWNER shall not be deemed to include overtime expenses, including salary and costs, incurred by the AGENCY as hhe result of scheduling of work by the OWNER or his contractors to be done on weekends, holidays or otherwise, and therefore, an amount estimated by the AGENCY to be at least equal to such anticipated additional costs shall be posted prior to the time of the scheduling of such overtime activity or, with the consent of the AGENCY, after such activity, and shall be due upon demand of the AGENCY. Said sums so posted and said additional costs shall be in addition to the basic percentage otherwise required by this contract. It is understood that the unused balance, if any, of such sums deposited against said costs and fees shall be returned to the OWNER after AGENCY approval of hhe fully tested, completed and operating SYSTEM and after acceptance thereof by the district, in accordance with this Agreement.
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31. That the fees charged by the AGENCY and the engineer nominated and appointed by the AGENCY shall be submitted to the AGENCY on Suffolk County Voucher forms and a copy thereof shall be sent to the OWNER. If the OWNER shall not have objected to same in writing within ten (10) days after receipt thereof, said vouchers shall automatically by approved by the AGENCY and transmitted to the office

of the Suffolk County Comptroller for payment out of the sums deposited by the OWNER. If the OWNER shall timely object to the fees, then the matter shall be reviewed by the OWNER, the AGENCY and the engineer and if agreement cannot be reached within twenty (20) days, then the matter shall be submitted to arbitration under the rules of the American Arbitration Association and the parties will be bound by the determination.

32. The AGENCY's engineer shall from time to time report to the AGENCY and the AGENCY will report thereafter from time to time to the DEPARTMENT, the BOARD and the OWNER on the progress of construction, and when appropriate, that construction has been completed in accordance with the maps, plans, specifications and this Agreement.

33. That for the benefit of the AGENCY the OWNER will cooperate in establishing the cost of the project.

34. It is understood and agreed that the SYSTEM will be accepted by the District or the nominee of the AGENCY after a satisfactory trial operation for a reasonable period of time, not to exceed one (1) year. It is understood that the SYSTEM will only be accepted in complete parts unless the AGENCY, at its option, elect to the contrary; that after the completion of the sewer treatment plant and its satisfactory trial operation for a reasonable period not to exceed one (1) year, provided at least fifty (50) one-family homes are connected to the SYSTEM, such sewer treatment plant and so much of the SYSTEM as has been installed shall be accepted. Similarly, future installation in subsequent sections shall be accepted after a similar trial period, it being specifically understood that nothing contained herein shall be deemed to delay the acceptance of the SYSTEM until the entire SYSTEM is complete. Nevertheless, it is understood and agreed that after the completion of the SYSTEM and the hookup of the homes in the subdivision to the SYSTEM and during the trial operation period of the plant and SYSTEM until the acceptance of the offer of dedication by the district or nominee of the AGENCY, the OWNER may charge its actual operating costs including taxes and insurance but not depreciation, all, however, not to exceed the sum of $200.00 per year per one family unit for service to said unit during the said trial period. This provision, however, shall not preclude the OWNER from requesting that the AGENCY for good and sufficient cause shown, consent to a modification of said minimum charges.

35. That in the event the AGENCY's engineer shall, with cause, serve a stop work order containing reasons therefor on the OWNER, work on that specific item of construction in question shall immediately cease, until such order be lifted in writing by the AGENCY or the AGENCY's engineer.

36. That the failure of the OWNER to comply with any provisions of this Agreement may, after twenty (20) days written notice to cure, be deemed by the AGENCY to be a default under the provisions of this Agreement and all work shall cease, unless the default in question be one involving construction, then, at the AGENCY'S option, only work on that portion of the project shall cease until said default is corrected, and if not corrected within said twenty (20) days notice of default, then all work shall cease. Upon the failure, refusal or inability of the OWNER to comply with the provisions hereof resulting in a default hereunder, the AGENCY and other parties may immediately look to sureties for performance.

36.1 Notwithstanding anything to the contrary that may elsewhere herein be contained, neither this Agreement nor the construction contemplated hereunder may be assigned to or undertaken by a corporation organized under the Transportation Corporations Law directly or indirectly.

36.2 The CORPORATION agrees that it will notify all prospective purchasers of their ultimate obligation to pay charges and/or assessments for sewage collection and disposal.

36.3 Notwithstanding anything else to the contrary herein contained, the parties do mutually understand and agree as follows, intending that where the import of this paragraph or any of its subdividions shall conflict with the import or intent of any other paragraph of this agreement, then and in that case, the provisions of this paragraph shall supercede and be deemed applicable to the point in question, to wit:

(A) The facilities intended to be erected will consist of a condominium development, a shopping center, and a quarter horse race track. The plant site and plant as approved in accordance with the provisions of this agreement shall have at least sufficient capacity to serve all the facilities intended by the owner to be erected upon the premises described in Schedule "A". It is intended that the condominium development will, or course, exist apart from and as a separate entity and that the race track will be operated as a seaparte entity and that the shopping center or centers will be operated as separate entities.

(B) It is intended that said sewage disposal plant and plant site shall serve all of the foregoing facilities and that upon the signing hereof a performance bond shall be posted in accordance with the terms of this agreement. The plant may be built in stages, if the DEC gives its prior approval.

(C) It is understood that the lateral sewer lines serving the condominium shall for the most part be internal elements and that dedication thereof to the AGENCY will not be accepted except to the extent that said line or lines are deemed necessary by the AGENCY to connect other portions of the proposal to the sewage plant via lines running through the conodminium area. The owner will offer for dedication all lines located in existing or proposed public streets, whether they serve the condominium, race track or shopping center. It is assumed that there will be interior collection lateral within the condominium, the race tract area and the shopping center and the same shall remain in private ownership and maintenance.

(D) At the AGENCY'S option, the sewer district to be proposed and created may consist of the entire area described in Schedule "A" or may only consist of the plant site and the condominium area, which

smaller district will contract with the shopping center and race track relative to sewage disposal services. The AGENCY'S determination will be made after the owner has submitted all requested information, maps, plans and details including but not limited to number of residential units in the condominium, existing assessed evaluation, estimated assessed evaluation, estimated flows from the three facilities however it is understood and agreed that during the trial operate period of the plant or after the formation of the district it is not intended that the individual condominium homeowners be expected in incur an annual operation and maintenance cost in excess of $200 per unit and that in order to maintain an estimated level of charge deemed satisfactory and reasonable to the AGENCY the remaining area, i.e. race track and shopping center, shall either, by virtue or their projected assessment evaluation or contractual obligations with the abbreviated district aforementioned offset the balance of operation and maintenance costs in order to maintain the aforesaid maximum estimated fiscal impact upon the individual residential unit owners. OWNER represents that its covenants and promises shall be binding upon any future homeowners' association or individual condominium owner that may take title to all or part of the premises herein referred to, as well as all other successors and assigns of the owner, and all shall run with the land.

(E) The OWNER reserves the right for five (5) years from the date of acceptance of the offer of dedication of the plant to come back upon the plant site and at its own cost and expense expand the plant and/or site in a manner satisfactory to the district and the DEC in order to create additional capacity to serve other adjacent or nearby areas to it, which the OWNER, may own and wish to develop, providing the then plant site is deemed adequate by the said DEC the owner shall post such additional bonds, insurance, and deposits as may then be requested.

(F) It is hereby mutually understood and agreed that paragraphs numbered 15, 16 and 17 hereinabove set forth are and are intended to be deemed deleted and without application to this agreement or the understanding of the parties.

(G) It is understood and agreed that prior to the request fo or issuance of any Certificate of Occupancy for any part or all of the facilities including the units of the condominium, the race track, the shopping center mall, or anything else that may be constructed upon the proposed site, the owner shall first have completed construction of the disposal plant in accordance with the terms of this agreement and shall have first caused all units or said plant to have been inspected, tested and approved to the satisfaction of the Department of Environmental Control so that the plant shall be in what is construed by the said department to be operational condition, and the facilities shall be connected to the aforesaid operational plant in an approved manner. It is the intention of the parties that none of the facilities shall be served by temporary on-site septic tanks or cesspools prior to the aforesaid completion of the aforesaid plant.

(H) It is understood and agreed that in the event the presently proposed 450,000 gallon per day plant is intended to serve all of the foregoing facilities herein above enumerated shall be determined by DEC to have insufficient capacity to do so, then and in that event, even though the said plant may have been already accepted by the Agency or its Nominee, the owner shall, at its own cost and expense, return to the plant and plant site and expand and increase the size of the plant in accordance with the requirements of DEC, including posting such other and further surety bonds, insurance and deposits as may be then required to guarantee such expansion. Such additional facilities shall also, on completion, be offered to be donated free of charge to the Nominee of the Agency.

37. As a portion of this contract and pursuant to the provisions of Section 103-a et seque of the General Municipal Law of the State of New York, as amended, to which this contract is made subject, the parties hereto recognize that upon the refusal of a person, when called before a grand jury to testify concerning any transaction or contract had with the state, any political subdivision thereof, a public authority or with any public department, agency or official of the state or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract:

(a) Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or fire district, or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and also that

(b) Any and all contracts made with any municipal corporation or any public department, agency or official thereof on or after the first day of July, nineteen hundred fifty-nine or with any fire district or any agency or official thereof on or after the first day of September, nineteen hundred sixty, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation or fire district without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation or fire district for goods delivered or work done prior to cancellation or termination shall be paid.

38. This contract shall not be, nor be deemed to be, assigned or any interest herein transferred, conveyed, sublet or otherwise disposed of unless the assignee, transferee or successor shall have assumed, in writing, all obligations hereunder and an original executed copy of the transferring instrument and assumption agreement, in recordable form, shall have been delivered to the AGENCY within five (5) days of the date of said assignment or transfer.

39. That all of the provisions of this Agreement h tained shall be construed to be in addition to, and not in derogation of or a limitation upon, any provisions or conditions imposed upon the OWNER by the BOARD or the DEPARTMENT.

40. The execution of this Agreement on behalf of the County has been delegated by the Suffolk County Legislature to the Chairman of the Sewer Agency. However, this Agreement is subject to the approval of the County Attorney and shall be deemed effective upon his said approval being indicated hereon.

41. That if any section, sub-section, paragraph, clause, phrase or provision of this Agreement shall, by a court of competent jurisdiction, be adjudged illegal, unlawful, invalid or held to be unconstitutional, the same shall not affect the validity of this Agreement as a whole, or any part or provision hereof other than the part so adjudged to be illegal, unlawful, invalid or unconstitutional.

42. That the OWNER desiring that the intent of this Agreement be carried out and considering it advisable that this Agreement be deemed to be a covenant and restriction placed upon the said real property to run with the land, now therefor, in consideration of this Agreement and these premises, the OWNER, as Declarant, declares as follows:

(a) That this Agreement and all the terms hereof are, and are intended to be, real covenants and restrictions running with the land, and shall be binding upon the Declarant and any and all subsequent owners of the said real property, or any part thereof, and upon their tenants, heirs, distributees, executors, administrators, successors and assigns.

(b) That these covenants and restrictions and the terms hereof may only be changed, modified or repealed by the OWNER with the prior written consent of the Suffolk County Sewer Agency or tis successors and assigns, however, the consent of the "homeowner" or "lot owner" shall not be necessary.

43. That this Agreement, and all of its provisions, shall be binding upon the parties hereto, their respective heirs, distributees, executors, administrators, tenants, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement, on the date hereinabove set forth, in counterparts, any one of which may be considered an original.

(SEALS)

THE PARR COMPANY OF SUFFOLK, INC.

By _____

TOWN OF BROOKHAVEN

By _____
Supervisor

PLANNING BOARD, TOWN OF BROOKHAVEN

By _____
Chairman

COUNTY OF SUFFOLK AND
SUFFOLK COUNTY SEWER AGENCY

By _____
Chairman, Suffolk County Sewer Agency

Per Resolution No. 69-1972

Date: 8/28/72

CHECKED AS TO FORM AND CONTENT:

ARC

APPROVED ON: 1-2-73

George W. Percy, Jr.
Suffolk County Attorney

By _____
As Assistant County Attorney

APPENDIX B

PHOTOGRAPHS OF SITE AND VICINITY

Appendix B-1
Photographs Depicting Existing Site Aesthetic Conditions

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

APPENDIX B-1
PHOTOGRAPH LOCATION MAP

Source: NYSGIS Orthoimagery Program, 2007
Scale: 1" = 1,000'

NORTH

The Meadows at Yaphank

PDD Application
Draft GEIS

1. View looking southeast along William Floyd Parkway toward interchange with LIE, from southeast corner of subject site.

2. View looking northwest along William Floyd Parkway from southeast corner of subject site.

3. View looking southeast along William Floyd Parkway from northeast corner of subject site, at Yaphank-Woods Boulevard..

4. View looking northwest along William Floyd Parkway from northeast corner of subject site, at Yaphank-Woods Boulevard.

5. View looking southwest along Yaphank-Woods Boulevard northeast corner of the subject site.

6. View looking southeast into unpaved entrance to subject site, from Yaphank-Woods Boulevard.

7. View looking into subject site of previously cleared area from topographic high point to the north.

8. View looking southward of the existing natural vegetation along the south side of Yaphank-Woods Boulevard.

9. View looking southward along alignment of proposed "LIE Access Road," from Yaphank-Woods Boulevard.

10. View looking west into western parcel from the western of Yaphank Woods Boulevard.

11. View looking southward toward subject site at terminus of Yaphank-Woods Boulevard.

12. View looking east towards southwestern corner of western parcel from the intersection of Moriches-Middle Island Road/Main St. and LIE North Service Road (inactive).

13. View looking east of southwestern corner of western parcel from the intersection of the LIE North Service Road (inactive).

14. View looking northeast towards western parcel from the bridge spanning the LIE on Moriches-Middle Island Road/Main St.

Appendix B-2
Photographs Depicting Existing Site Ecological Conditions

1. View of entrance to Dorade STP Parcel.

2. View of existing treatment tank at the Dorade STP.

3. View looking southeast into red maple swamp wetland on Brookhaven Walk parcel from Yaphank Woods Boulevard.

4. View of existing northern entrance and wooded area of Brookhaven Walk parcel, looking southeast.

5. View of existing paths and successional shrubland habitat on the Brookhaven Walk parcel, looking southeast.

6. View of central cleared area on Brookhaven Walk parcel, looking south.

7. View of the successional shrub habitat on the west side of the Brookhaven Walk parcel, looking west toward the Racetrack parcel.

8. View of the wooded edge along the west side of a path and the successional shrubland along the east side of the path, looking northwest along the western perimeter of the Brookhaven Walk parcel.

9. View of the paved roadway along the eastern perimeter of the Racetrack parcel, looking southeast.

10. View of successional shrubland and entrance way looking southwest into the Racetrack Parcel from the site's eastern-central perimeter.

11. View of successional field and barren sandy soil in the central portion of the Racetrack parcel, looking west.

12. View of the depression in the western part of the former racetrack oval on the Racetrack parcel.

13. View of cleared former roadway and successional field in the center of the Racetrack parcel, looking north.

APPENDIX C

SONIR COMPUTER MODEL DOCUMENTS

Appendix C-1
Model User's Guide

SONIR MODEL USER GUIDE

Simulation of Nitrogen in Recharge (SONIR)
Nelson, Pope & Voorhis, LLC Microcomputer Model

INTRODUCTION

SONIR is a microcomputer model developed by Charles J. Voorhis, CEP, AICP for use by Nelson, Pope & Voorhis, LLC in order to simulate the hydrologic water budget of a site and determine total nitrogen and nitrogen present in recharge in connection with land use projects. The model was developed on the Microsoft Excel Spreadsheet (trademark of Microsoft Products) for IBM (trademark of International Business Machines, Inc.) or compatible Personal Computers capable of running Excel.

Nitrogen has been identified as a source of contamination primarily from sanitary discharge and lawn fertilization. Nitrogen is of concern as a drinking water contaminant, and there is an established health limit of 10 milligrams per liter (mg/l) in drinking water. Nitrogen is also of concern in surface water, as it is a nutrient that when present in high concentrations can cause algal blooms, resulting in biological oxygen demand as algae is biologically decomposed. Depleted oxygen in surface waters causes conditions unfavorable to fish species and can result in extremely undesirable aesthetic impacts, primarily related to odors. Accordingly, it is necessary to understand the concentration of nitrogen recharge as related to a proposed site development.

Utilizing a mass-balance concept, and applying known hydrologic facts and basic assumptions, it is possible to predict the concentration of nitrogen in recharge to the shallow aquifer underlying a given site (i.e., approximates the concentration of nitrogen at the property line). This prediction can in turn be used to determine impacts and significance of impacts in consideration of hydrogeologic factors. SONIR can also be used to determine compliance with the nitrate-nitrogen guideline of the Pine Barrens Plan **(CPBJPPC, 1995)**. Similar techniques have been used to simulate nitrogen in recharge as published by the New York State Water Resources Institute, Center for Environmental Research at Cornell University, Ithaca, New York (**Hughes and Pacenka, 1985**). SONIR is intended to provide a more versatile model based upon the BURBS Mass-Balance concept. SONIR allows for use of the model to predict nitrogen impact from many sources including sewage treatment plants, and further allows for determination of a wider variety site recharge components under the hydrologic water budget section. SONIR has more versatility in the input of information, and also provides a printout of each step performed by the model, in order for regulatory agencies and review entities to understand how values are derived.

This text describes in detail the definition of terms, supported by referenced information regarding input of data for the simulation. The concept of determining the concentration of nitrogen in recharge involves a predication of the weight of nitrogen introduced to the site, as compared to the quantity of recharge resulting from precipitation and wastewater water

discharge. Losses due to evapotranspiration and runoff must be accounted for in the simulation. The values and relationship associated with these parameters determines the quantity of recharge that enters the site. The prediction is generally annualized due to the availability of average annual hydrologic data; however, data input can be determined on a seasonal basis if information is available.

The model includes four (4) data sheets identified as follows:

* Data Input Field - Sheet 1
* Site Recharge Computations - Sheet 2
* Site Nitrogen Budget - Sheet 3
* Nitrogen in Recharge Output Field - Sheet 4

All information required by the model is input in Sheet 1 - Data Input Field. Sheets 2 and 3 utilize data from Sheet 1 to compute the Site Recharge and the Site Nitrogen Budget. Sheet 4 utilizes the total values from Sheets 2 and 3 to perform the final Nitrogen in Recharge computations. Sheet 4 also includes tabulations of all conversion factors utilized in the model.

It should be noted that the simulation is only as accurate as the data which is input into the model. An understanding of hydrologic principles is necessary to determine and justify much of the data inputs used for water budget parameters. Further principles of environmental science and engineering are applied in determining nitrogen sources, application and discharge rates, degradation and losses, and final recharge. Users must apply caution in arriving at assumptions in order to ensure justifiable results.

SITE RECHARGE COMPUTATIONS

Overview

SONIR utilizes the basic hydrologic equation for determining the quantity of recharge anticipated by subtracting recharge losses from total precipitation. The quantity of recharge resulting from a given site is determined using the hydrologic budget equation **(Koszalka, 1984; p. 19):**

$$R = P - (E + Q)$$

where:
R = recharge
P = precipitation
E = evapotranspiration
Q = overland runoff

The quantity of recharge must be determined for each type of land use existing on a site, in order to determine the resultant site recharge. Surfaces commonly considered include: impervious surfaces; turfed areas; and natural areas; however, SONIR allows for a variety of land cover

types to be considered in the model. In addition, site recharge occurs as a result of irrigation and wastewater discharge. In cases where water is imported to a site via a public water system, this quantity of recharge must be considered as additional water recharged on site. SONIR allows for all of these recharge components to be included in the simulation. Many sites have fresh surface water in the form of lakes and ponds. Precipitation falls upon these surfaces; however, such features generally act as a mechanism for water loss as a result of evaporation. SONIR includes a Water Area Loss component in determining the site Hydrologic Water Budget and in computing recharge nitrogen.

Data Input - Sheet 1

The following provides a discussion of data sources and assumptions associated with the hydrologic water budget, corresponding to the Data Input Field in Sheet 1 of SONIR:

1. *Area of Site* - The total area of the site (in acres) that is capable of recharging precipitation is entered in this data cell. For sites that include tidal wetlands, the area that is inundated by tidal waters should be excluded, as recharge from these areas should not be considered in the context of nitrogen simulation. For sites that include surface water, the area can be included, provided evaporative water loss from surface water is considered by entering the acreage of surface water in Data Cell 15 noted below.

2. *Precipitation Rate* - Precipitation in the form of rainfall and snowmelt is determined using long-term recorded values from local weather stations. Cornell University maintains the Northeast Regional Climate Center, from which long-term precipitation data for Long Island weather stations is available. Monthly precipitation averages are published for the period 1951-1980 in Thornthwaite and Mather's Climatic Water Budget Method **(Snowden and Pacenka, 1985).** A tabulation of monthly and annual precipitation averages excerpted from this reference is included in the table cited for Evapotranspiration values. Data entry is in inches.

3. *Acreage of Lawn* - The total area of lawn (in acres) is entered in this Data Cell. This area includes all lawn area whether it is irrigated, fertilized or unmaintained. If there is no lawn area, a value of zero (0) is entered.

4. *Fraction of Land in Lawn* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Lawn by dividing the lawn area by total area.

5. *Evapotranspiration from Lawn* - Evapotranspiration is the natural water loss attributed to evaporation and plant utilization. Rainwater that is evaporated and transpired by plants is returned to the atmosphere as vapor. There are various methods for determining evapotranspiration, including direct measure and calculation. A commonly recognized method is the Thornthwaite and Mather Climatic Water Budget Method. Evapotranspiration rates for various locations on Long Island have been determined by

the U.S. Geological Survey, as documented in: "Ground-Water-Recharge Rates in Nassau and Suffolk Counties, New York" **(Peterson, 1987; p. 10).** The following general rates as a percent of total precipitation are excerpted from that reference:

Location	Soil Type	Vegetation	ET (in)	ET (%)
Bridgehampton	sandy loam	shallow root	21.2	46.6
	silt loam	shallow root	21.4	47.2
LaGuardia	sand	shallow root	24.2	52.9
	clay loam	shallow root	25.4	55.5
	sandy loam	moderate root	26.2	57.2
JFK Airport	sand	shallow root	22.5	53.8
	clay loam	shallow root	23.9	57.3
	sandy loam	moderate root	25.0	60.0
Mineola	sand	shallow root	22.4	47.8
	sand-silt	shallow root	23.8	51.0
	sandy loam	moderate root	25.1	53.7
	sandy loam	orchards	25.5	54.5
Patchogue	fine sand	mature forest	25.5	53.5
Riverhead	sandy loam	shallow root	22.4	49.3
		orchards	24.8	54.7
Setauket	sandy loam	mature forest	26.8	57.9
Upton	silt loam	deep root	23.9	48.4
	sandy loam	moderate root	23.0	46.5

6. *Runoff from Lawn* - Runoff is the quantity of water that travels overland during a precipitation event. Soil infiltration capacity is the critical factor in determining runoff; however, factors such as slope and vegetation also determine runoff characteristics to a lesser extent on Long Island because of soil conditions. Less urbanized areas of Long Island with characteristically dry soils with groundcover will have a low runoff percentage as a function of total precipitation, as compared to the more urbanized portions of western Long Island. Peterson **(1984; p. 14)** estimates runoff as a percent of total precipitation for Nassau County (2.1 percent); Suffolk County (0.7 percent), and Long Island in general (1.0 percent). If an average precipitation rate of 45 inches per year is assumed, runoff will vary from 0.31 to 0.94 inches. Lawn areas would be expected to be in the lower end of the range. Judgements of higher and lower runoff can be made on a site-specific basis depending upon slope and groundcover types.

7. *Acreage of Impervious* - The total area of impervious surface (in acres) is entered in this Data Cell. This area includes paved driveways, parking areas, roofs, roads, etc. If there are no impervious surfaces, a value of zero (0) is entered.

8. *Fraction of Land Impervious* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Impervious by dividing the impervious area by total area.
9. *Evaporation from Impervious* - Impervious surfaces will allow water to evaporate, particularly during summer months. There is no vegetation; therefore there is no transpiration by plants. Evaporation from Impervious is estimated to be approximately 10 percent of total precipitation **(Hughes and Porter, 1983; p. 10).** This value accounts for evaporation from parking lots and other surfaces during summer months, averaged over the entire year. This indicates that recharge/runoff would comprise the remaining 90 percent of precipitation. This assumption coincides with most drainage computations required by Code Subdivision Regulations for determined leaching pool capacity.

10. *Runoff from Impervious* - The approximation of Evaporation from Impervious would indicate that recharge/runoff would comprise the remaining 90 percent of precipitation, as there are no other losses from impervious surfaces. In consideration of paved areas, runoff is not transported off the site or to surface water as a loss. Runoff is diverted to leaching pools and allowed to re-enter the hydrologic system beneath a given site. Therefore, in terms of site recharge computations, the value for Runoff from Impervious is zero (0).

11. *Acreage of Unvegetated* - The total acreage of unvegetated area is entered in this Data Cell. This area includes sand, barren soils, and porous drives and trails. If there is no unvegetated area, a value of zero (0) is used.

12. *Fraction of Land Unvegetated* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Unvegetated by dividing the unvegetated area by total area.

13. *Evapotranspiration from Unvegetated* - Evapotranspiration from Unvegetated areas is determined in the same manner as described for Data Cell 5 above.

14. *Runoff from Unvegetated* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to unvegetated areas on a site-specific basis. Runoff in the middle to the higher end of the range (0.7 to 2.1 percent of precipitation) is expected due to lack of groundcover vegetation.

15. *Acreage of Water* - SONIR considers evaporation from surface water in the computation of site recharge. Surface water, particularly groundwater fed lakes and ponds are a source of water loss in the water budget. The quantity of fresh surface water (in acres) is entered in this Data Cell.

16. *Fraction of Land in Water* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Water on the site by dividing the water area by total area.

17. *Evaporation from Water* - Surface water features will cause evaporation of water in excess of normal evapotranspiration as documented by **Warren et al, 1968,** Hydrology of Brookhaven National Laboratory and Vicinity Suffolk County, New York. It is estimated that the upper limit of evaporation from a large free-water surface is approximately 30.00 inches per year **(Warren et al, 1968; p. 26).** This value is entered in Data Cell 17 as the most accurate approximation.

18. *Makeup Water* - SONIR allows for consideration of the impact of man-made lakes on site recharge. Lakes are generally lined with an impermeable material. Evaporation occurs from the surface of the lake at a rate of 30.00 inches per year. In order to maintain a constant water level, an on-site well is generally installed to provide make-up water to the lake or pond. The quantity of make-up water is equivalent to the quantity of evaporation, given the fact that the function of the well is to replace water that is evaporated. Therefore, for cases where make-up water is used to maintain a constant water level, a value of 30.00 inches per year is entered in Data Cell 18.

19. *Acreage of Natural* - The total quantity of natural area (in acres) is entered in this Data Cell. This area includes naturally vegetated areas such as woodland, meadow, etc. If there is no natural area, a value of zero (0) is entered.

20. *Fraction of Land Natural* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Natural by dividing the natural area by total area.

21. *Evapotranspiration from Natural* - Evapotranspiration from Natural areas is determined in the same manner as described for Data Cell 5 above.

22. *Runoff from Natural* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to natural areas on a site specific basis. Generally lower values in the range of 0.7 percent of precipitation are expected due to groundcover and canopy vegetation.

23. *Acreage of Other Area* - This is a general category which can be used to include additional groundcover types in the simulation. Acreage of Other Area is entered (in acres). This Data Cell can be used to include site recharge considerations from a portion of the site that has different hydrologic properties, such as a moist hardwood forest or vegetated freshwater wetland, where evapotranspiration would be high and runoff would be extremely low.

24. *Fraction of Land in Other Area* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Other Area by dividing the land in other area by total area.

25. *Evapotranspiration from Other Area* - Evapotranspiration from Other areas is determined in the same manner as described for Data Cell 5 above. Value can be varied depending upon the hydrologic properties of the groundcover type.

26. *Runoff from Other Area* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to Other Areas on a site-specific basis. Value can be varied depending upon the hydrologic properties of the groundcover type.

27. *Acreage of Land Irrigated* - Imported water for irrigation purposes is an additional site recharge component not considered in any of the Data Cells above. The quantity of land irrigated on a given site is entered in this Data Cell (in acres).

28. *Fraction of Land Irrigated* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Irrigated by dividing the Land Irrigated area by total area.

29. *Irrigation Rate* - The rate of irrigation must be entered in this Data Cell (in inches). Hughes and Porter **(1983; p. 19)** have indicated that lawn irrigation is estimated to be about 5.5 inches per year. This value is entered in Data Cell 29 as the most accurate approximation.

30. *Number of Dwellings* - The number of dwellings is entered in this Data Cell in order to allow for computation of wastewater disposal from residential use. Wastewater imported to a site, or even withdrawn from on-site wells and recharged through sanitary effluent is an additional recharge component that must be considered. If the project is for a commercial use or utilizes a denitrification system, the number of dwellings should not be entered in the Data Entry Field, as the wastewater flow will include recharge and nitrogen components.

31. *Water Use per Dwelling* - The water use should correspond to the total site non-irrigation water use, divided by the number of units.

32. *Wastewater Design Flow* - No entry need be made in this Data Cell. SONIR will compute the Wastewater Design Flow by multiplying the Number of Dwellings by the Water Use per Dwelling.

33. *Commercial/STP Design Flow* - SONIR permits the consideration of recharge from commercial projects, denitrification systems and sewage treatment plants. The Commercial/STP Design Flow is entered in this Data Cell as per County Health Department or engineering design standards.

Site Recharge Computations - Sheet 2

Once data entry is complete for Site Recharge Parameters, SONIR will complete a series of detailed Water Budget computations for the overall site. The following describes the computations that are performed by the model:

A. *Lawn Area Recharge* - Lawn Area Recharge is determined by use of the basic Hydrologic Budget Equation [R = P - (E + Q)] as defined previously. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Lawn Area to determine the component of Lawn Area Recharge in overall site recharge.

B. *Impervious Area Recharge* - Impervious area recharge is also determined using the Hydrologic Budget Equation; however, the value for runoff is zero (0) due to the fact that runoff is controlled by conveyance to on site leaching facilities or is allowed to runoff into depressions where runoff is recharged on site.

C. *Unvegetated Area Recharge* - Unvegetated Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Unvegetated Area to determine the component of Unvegetated Area Recharge in overall site recharge.

D. *Water Area Loss* - The Hydrologic Budget Equation is modified to consider Water Area Loss. This is particularly useful in water quantity stressed areas of Long Island. If runoff (Q) is considered be zero (0), then lake storage/recharge without make-up water would be Precipitation minus Evaporation (P - E). The resultant quantity of lake storage/recharge is then reduced by the amount of make-up water (M). The final quantity of loss is then multiplied by that portion of the site occupied by water to determine the component of water loss as related to the overall site water budget.

E. *Natural Area Recharge* - Natural Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Natural Area to determine the component of Natural Area Recharge in overall site recharge.

F. *Other Area Recharge* - Other Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Other Area to determine the component of Other Area Recharge in overall site recharge.

G. *Irrigation Recharge* - Irrigation recharge is an additional recharge component artificially added on sites where irrigation occurs. This quantity is determined in the same manner as the Hydrologic Water Budget except that the irrigation rate (in inches) is substituted for precipitation. The resultant recharge is multiplied by the area of the site that is irrigated, in order to determine the Irrigation Recharge in overall site recharge.

H. *Wastewater Recharge* - Wastewater is also a recharge component artificially added to a site. SONIR annualizes the wastewater design flow and assumes it is applied over the entire by multiplying Wastewater Design Flow by the Area of the Site, resulting in a per foot measure of wastewater over the site. This is converted to inches to be included in overall site recharge.

Once the eight (8) series of Site Recharge Computations are complete, SONIR totals each individual component to determine Total Site Recharge. The sum of these recharge contributions, is that quantity of water that is expected to enter the site on an annual basis due to precipitation, after the development is completed. This value is important in determining the concentration of nitrogen in recharge, and is important as a means of determining hydrologic impacts of a project in terms of changes to site recharge.

SITE NITROGEN BUDGET

Overview

The total nitrogen released on a given site must be determined in order to provide a means of simulating nitrogen in recharge. Nitrogen sources include: sanitary nitrogen; fertilizer nitrogen; pet waste nitrogen; precipitation nitrogen; and water supply nitrogen (wastewater and irrigation). The total of these quantities represents total site nitrogen.

Data Input - Sheet 1

The following provides a discussion of data sources and assumptions associated with the nitrogen budget, corresponding to the Data Input Field in Sheet 1 of SONIR:

1. *Persons per Dwelling* - The number of persons per dwelling is a demographic multiplier used in the determination of human population of a site. Based on multipliers listed in "The New Practitioner's Guide to Fiscal Impact Analysis", (**Rutgers, 1985**), the average number of residents is calculated at 0.00/unit (Existing Conditions), and will be 4.1/unit (Proposed Conditions).

2. *Nitrogen per Person per Year* - Annual nitrogen per person is a function of nitrogen bearing waste in wastewater. For residential land use the population of the development is determined and the nitrogen generated is assumed to be 10 pounds per capita per year **(Hughes and Porter, 1983; p. 8).**

3. *Sanitary Nitrogen Leaching Rate* - Conventional sanitary systems have a leaching rate of approximately 50% **(Hughes and Porter, 1983; p. 14)**. Valiela **(1997)** estimates even greater nitrogen loss in the vadose zone and within groundwater up to 200 meters from the source. For conventional sanitary systems on small to medium sized sites, 50% leaching/loss rate should be applied to simulate nitrogen in recharge at the property line.

For sewage treatment plants, effluent discharge concentration is assumed to be 10 mg/l or less (depending on treatment goals). Effluent is typically recharged via subsurface leaching pools and further loss may occur in the leaching pool, in the vadose zone, and in shallow groundwater **(Thomas et al., 2003; p. 243)**. Thomas monitored a sewage treatment plant discharge and found losses dissolved inorganic nitrogen of 60% between the point of discharge and the first monitoring well; most loss was believed to occur within the vadose zone, aquifer interface and/or the initial 100 meters of travel in the aquifer. Given the variability attributed to where the loss occurs and the intent of SONIR to compute nitrogen at the property line, a conservative value of 10% loss is applied to STP effluent.

4. *Area of Land Fertilized 1* - The area of land fertilized is input in Data Cell 4. This value may correspond to the Acreage of Lawn and/or the Acreage of Land Irrigated, but is not necessarily the same value. This entry should be determined on a site-specific basis.

5. *Fertilizer Application Rate 1* - Fertilizer nitrogen is determined by a fertilizer application rate over a specified area of the site. The fertilizer application rates vary depending upon the type of use. The following table indicates the rate of fertilization as a function of use as excerpted from the Non-Point Source Management Handbook **(Koppelman, 1984; Chapter 5, p.6):**

Residential (contract)	1.5 lbs/1000 sq ft
Residential (unmanaged)	2.3 lbs/1000 sq ft
Commercial	3.5 lbs/1000 sq ft
Golf Course	3.5 lbs/1000 sq ft
Sod Farms	4.0 lbs/1000 sq ft
Recreational Lands	0.2 lbs/1000 sq ft

A commercial landscaping firm has been interviewed to determine trends in commercial fertilizer application. Various fertilizer formulations are used including 10-6-4, 16-4-8 and 20-10-5 (nitrogen-phosphate-potash) depending upon season. Heavier nitrogen application rates are generally used in the spring. Fertilizer used is 50 percent organic nitrogen. This is applied in a dry form approximately 2-3 times per year, and a 50-pound bag is applied over approximately 16,000 square feet. Based on this rate if 20- 10-5 nitrogen were applied in the spring, and 16-4-8 were applied during summer and fall, this would result in an application rate of 1.5-2.1 pounds per 1000 square feet. The high of this range is a conservative value based on three applications of relatively high nitrogen fertilizer, which will be used for nitrogen in recharge simulation.

In addition, it is noted that the Non-Point Source Management Handbook indicates that application rates as low as 1.0 lb/1000 sq ft can be achieved with proper fertilizer management control. Innovative stormwater handling methods will further reduce nitrogen load from fertilized areas, particularly where surface detention and bio-filtration systems (wet meadows, rain gardens, vegetated swales, vegetated pond storage) are incorporated into stormwater design.

6. *Fertilizer Nitrogen Leaching Rate 1* - Nitrogen applied as fertilizer is subject to plant uptake (20 to 80%; 50% on average) and storage in thatch and soils (36 to 47%), thereby reducing the total amount of nitrogen leached. The percentage of plant uptake and storage are based on studies cited in the LIRPB's Special Groundwater Protection Area Plan. Based on those studies, a conservative nitrogen leaching rate of 16% has been applied in the model.

7. *Area of Land Fertilized 2* - More than one fertilizer nitrogen input is provided in order allow consideration of mixed use and/or golf course projects where land is fertilized at different rates.

8. *Fertilizer Application Rate 2* - Fertilizer Application Rates for this entry can be determined based upon Data Cell 5 above.

9. *Fertilizer Nitrogen Leaching Rate 2* - Fertilizer Nitrogen Leaching Rates can be determined based upon Data Cell 6 above.

10. *Pet Waste Application Rate* - Pet Waste Nitrogen results from the excretion of domestic pets in the outside environment. There is relatively little definitive information concerning this nitrogen source; however, several references were located and are analyzed herein. The 208 Study provides a table of nitrogen concentration in manure for various animals, not including dogs or cats. Total nitrogen values in the range of 0.30-0.43 lbs/day/1000 lbs live weight are reported for cattle, sheep and horses **(Koppelman, 1978; Animal Waste report p. 3).** It is assumed that dogs constitute the major source of animal waste that would be present in the yards of residential developments. Cat waste would be significantly less due to the lesser live weight of cats and the fact that many cat owners dispose of cat waste in solid waste by using an indoor litter box. If an average of 0.35 lbs of nitrogen is assumed for dogs, and an average of 25 pounds live weight is assumed per dog, then the total annual nitrogen per pet would be 3.19 lbs/year. The only other reference located that approximates nitrogen in pet waste is Land Use and Ground-Water Quality in the Pine Barrens of Southampton **(Hughes and Porter, 1983; p. 10).** This reference assumed an application rate of 6.5 lbs/acre of nitrogen. Pet waste was assumed to be deposited evenly over all turf. This assumption was not correlated to population density or pet density, but only to turfed acreage. In comparison of the two values, the per pet value corresponds to approximately 2 turfed acres. For the purpose of this model, the value of 3.19 lbs/pet/year is considered to be the most justifiable value for pet waste and is entered in this Data Cell. Consideration of "pick-up-after-your-pet" programs where this would result in less pet feces on the land surface can be applied as a reduction factor. In addition, the type of development (i.e., multi-family, mixed-use, condominium associations, etc.) should be considered where it is anticipated that these types of developments would result in less pets due to more transient occupants (seniors), smaller families (less kids likely equals less pets) and/or working professionals with less time for pets.

11. *Pet Waste Nitrogen Leaching Rate* - Pet waste is deposited on the ground and therefore is subject to exposure to air and decomposition on the land surface, thereby reducing the leaching potential of nitrogen from feces. As a result, a leaching rate factor of 16% is applied (similar to landscaped areas where gaseous loss of nitrogen occurs) .

12. *Area of Land Irrigated* - No entry need be made in this Data Cell. This value is the same as Data Cell 27 of the Site Recharge Parameters and SONIR will transfer the data entry to this Cell.

13. *Irrigation Rate* - No entry need be made in this Data Cell. This value is the same as Data Cell 29 of the Site Recharge Parameters and SONIR will transfer the data entry to this Cell.

14. *Irrigation Nitrogen Leaching Rate* - Hughes and Porter **(1983; p. 10)** states "plant uptake and gaseous losses are assumed to remove 84% of the nitrogen entering in precipitation". Irrigation nitrogen would be expected to be subject to the same losses; therefore, a leaching rate of 16% is entered in this Data Cell.

15 *Nitrogen in Precipitation* - On a site specific basis, precipitation is used as a dilution factor in the mass-balance model. As a result, it seems appropriate that nitrogen in precipitation be accounted for in the nitrogen budget. Nitrate-nitrogen concentrations in precipitation have been reported to be on the order of 0.5 mg/l based on the in Nassau and Suffolk Counties **(CPBJPPC, 1995; Chapter 4.5.1).** This is a component of total atmospheric deposition, but is not intended to reflect all atmospheric sources of nitrogen. It is noted that on a regional basis, atmospheric deposition (which includes wet and dry deposition, inorganic and organic nitrogen) is a significant source of nitrogen. For regional impact analysis, these sources of nitrogen should be considered, but must also be analyzed with known nitrogen reduction factors such as natural attenuation.

16. *Precipitation Nitrogen Leaching Rate* - As indicated above, a nitrogen leaching rate of 16% is applied to precipitation nitrogen.

17. *Nitrogen in Water Supply* - The concentration of Nitrogen in Water Supply determines the quantity of nitrogen that enters the site as a result of irrigation nitrogen and wastewater flow. Local water supply data should be utilized if available, otherwise a value of between 1 and 2 mg/l could be utilized.

18. *Nitrogen in Commercial/STP Flow* - This data entry allows SONIR to compute the quantity of nitrogen resulting from commercial discharge, denitrification systems and/or sewage treatment plants. Total nitrogen in community wastewater is identified as having a total nitrogen concentration of 20 mg/l in weak effluent; 40 mg/l in medium strength effluent, and 85 mg/l in strong effluent **(Metcalf & Eddy, Inc, 1991).** It is recommended that a value of 50 mg/l be used for total nitrogen concentration in sanitary systems.

Properly functioning denitrification systems and sewage treatment plants are capable of reducing total nitrogen to less than 10 mg/l in accordance with discharge limitations. A value of 10 mg/l can be entered in this data cell for such systems unless specific treatment goals warrant a lower value. The SONIR model computes the number of pounds of nitrogen in sanitary discharge as a function of concentration. The absolute nitrogen is utilized in the model; however, it must recognized that from the discharge point, nitrogen is nitrified through conversion of ammonia to nitrate in the leaching area beneath the discharge point which causes gaseous loss of nitrogen. Further natural attenuation in the form of nitrification and denitrification occurs as a result of physical, chemical and biological factors. The initial loss of nitrogen in a conventional sanitary system causes release of nitrogen gas with 50% nitrogen leached. Further reduction is known to occur beyond the conventional system within the vadose zone and aquifer, even within the boundaries of a given site. These losses have been estimated at up to 50 percent or more subsequent to discharge **(Canter and Knox, 1979; pp. 77-78; Hughes and Porter, 1983; p. 14**), with other recent research in Massachusetts finding losses (including further vadose zone as well as aquifer attenuation) of dissolved inorganic nitrogen from wastewater treatment plants in the range of 56% to as much as 81% **(Thomas et al, 2003)**. The SONIR model includes a 10-15% reduction of wastewater treatment plant effluent total nitrogen concentration as a result of known anaerobic denitrification in the lower soil layers and aquifer, as supported by the above studies. Studies report a wide variation of removal efficiencies in the soil column. Computations based on the high quality of effluent which will be discharged from the new wastewater treatment plant indicate that a 30% removal is possible. The 10-15% reduction factor applied in the SONIR model recognizes that an additional safety factor should be applied to ensure that water quality standards are maintained. As a result SONIR is conservative in predicting the concentration of nitrogen in recharge, and when natural denitrification of sanitary effluent is considered, actual concentration would be less.

Site Nitrogen Budget - Sheet 2

Once data entry is complete for Nitrogen Budget Parameters, SONIR will complete a series of detailed computations to determine the individual component of nitrogen from each source and the total nitrogen for the overall site and use. The following describes the computations that are performed by the model:

A. *Sanitary Nitrogen - Residential* - SONIR establishes the site population using the number of units on the site, and the demographic multiplier. The nitrogen load factor is then applied and reduced by the leaching rate, resulting in the total residential nitrogen component. If the project is for a commercial use or utilizes a denitrification system, the number of dwellings should not be entered in the Data Entry Field, in which case the total nitrogen from this source will be zero (0).

B. *Pet Waste Nitrogen* - The pet waste nitrogen was determined on a per pet basis; however, the number of pets for a given residential project must be determined. In order to correlate the number of pets to human population, a ratio was determined using information contained in the 208 Study, wherein it was estimated that there is 1 dog per 5 residents in suburban areas and 1 dog per 7 residents in urban areas **(Koppelman, 1978; Animal Waste Report, pp. 6).** This results in an average number of dogs based upon of 17 percent of the human population. Accordingly, this multiplier is used based upon the population of a land use project in order to estimate the nitrogen waste from pets. The pet waste nitrogen is subject to reduction as a function of the leaching rate, leading to the total pet waste nitrogen in pounds.

C. *Sanitary Nitrogen (Commercial/STP)* - SONIR utilizes the Commercial/STP Flow that is converted to liters and multiplied by the nitrogen concentration in waste. This provides a weight of nitrogen in milligrams, which is converted to pounds for the total nitrogen from this component.

D. *Water Supply Nitrogen* - SONIR utilizes the residential wastewater design flow to compute the weight of nitrogen contributed from the water supply. The method of calculation is the same as Sanitary Nitrogen (Commercial/STP). For commercial projects, this value is accounted for in the Commercial/STP Flow.

E. *Fertilizer Nitrogen 1* - This calculation utilizes data entry from the Area of Land Fertilized 1, in the Data Input Field, to determine the weight of fertilizer nitrogen applied to the area. The area is multiplied by the application rate and reduced by the leaching rate documented previously to arrive at total weight.

F. *Fertilizer Nitrogen 2* - If fertilization rates vary, the Area of Land Fertilized 2, is utilized to determine nitrogen from this source.

G. *Precipitation Nitrogen* - Nitrogen in precipitation is considered by determining the liters of Natural Recharge entering the site, multiplied by the concentration of nitrogen in precipitation. SONIR uses the sum of natural recharge components from the Site Recharge Computations to establish the natural recharge. A precipitation nitrogen leaching rate of 15% is utilized as referenced above.

H. *Irrigation Nitrogen* - Although a very small component, the Irrigation Nitrogen is determined using the Irrigation Recharge R(irr) computed in the Site Recharge Computations, over the irrigated area of the site to produce a volume of irrigation recharge. The Irrigation Recharge value is used in order to account for reduction of recharge due to evapotranspiration, since this component is only intended to determine nitrogen leaching into soil as a result of irrigation nitrogen in the water supply. This value is converted to liters and multiplied by the concentration of nitrogen in irrigation water supply. The Irrigation Nitrogen Leaching Rate (expected to the same as for precipitation) is applied to the weight to determine the total nitrogen from this source.

Once the eight (8) series of Site Nitrogen Budget computations are complete, SONIR totals each individual component to determine the Total Site Nitrogen. This value is used in determining the weight per volume ratio of nitrogen in recharge as computed in Sheet 4 of the SONIR model.

FINAL COMPUTATIONS AND SUMMARY

SONIR utilizes data generated in Sheets 2 and 3 of the model to compute a mass/volume ratio for nitrogen in recharge. Nitrogen in recharge is converted from pounds to milligrams in order to provide units compatible for mass/volume concentration. Likewise, the quantity of site recharge is applied over the site in order to determine an overall volume number for site recharge. This is then converted to liters. The final computation divides the total weight of nitrogen in milligrams, by the total volume of recharge in liters, to arrive at the Nitrogen in Recharge ratio in milligrams per liter (mg/l). This concentration represents the Final Concentration of Nitrogen in Recharge, which is highlighted on Sheet 4.

Sheet 4 also provides a site recharge summary in order to compare recharge between natural conditions, a proposed project and/or alternatives. Total Site Recharge is presented in both inches, and as a volume in cubic feet/year, gallons/year and million gallons/year (MGY).

The final field summarizes the Conversions Used in SONIR. Conversions are standard conversion multipliers as found on web sites and in standard engineering references.

SONIR is a valuable tool allowing for versatile determination of site recharge as determined from many components of site recharge. SONIR determines the load of nitrogen applied to a site from a variety of sources as well as the concentration of nitrogen in recharge in the shallow aquifer underlying a site (i.e., at a given site property line). SONIR is a fully referenced model utilizing basic hydrologic and engineering principals, in a simulation of nitrogen in recharge. Input data should be carefully justified in order to achieve best results. SONIR can be used effectively in comparing land use alternatives and relative impact upon groundwater due to nitrogen. By running the model for Existing Conditions, Proposed Project conditions and/or alternative land uses comparison of impacts can be made for consideration in land use decision-making. Questions, comments or suggestions concerning this model should be addressed to Nelson, Pope & Voorhis, LLC, 572 Walt Whitman Road, Melville, New York 11747.

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

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Appendix C-3
Proposed Project

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT — **The Meadows at Yaphank PDD**

DATA INPUT FIELD — **Proposed Project, using Dorade STP** — **SHEET 1**

A	*Site Recharge Parameters*	*Value*	*Units*
1	Area of Site	333.46	acres
2	Precipitation Rate	45.20	inches
3	Acreage of Lawn	32.00	acres
4	Fraction of Land in Lawn	0.096	fraction
5	Evapotranspiration from Lawn	22.40	inches
6	Runoff from Lawn	0.90	inches
7	Acreage of Impervious	99.12	acres
8	Fraction of Land Impervious	0.297	fraction
9	Evaporation from Impervious	4.52	inches
10	Runoff from Impervious	0.00	inches
11	Acreage of Unvegetated	2.58	acres
12	Fraction of Land Unvegetated	0.008	fraction
13	Evapotrans. from Unvegetated	21.20	inches
14	Runoff from Unvegetated	2.1	inches
15	Acreage of Water	0.76	acres
16	Fraction of Site in Water	0.002	fraction
17	Evaporation from Water	30.00	inches
18	Makeup Water (if applicable)	0.00	inches
19	Acreage of Natural Area	132.88	acres
20	Fraction of Land Natural	0.398	fraction
21	Evapotrans. from Natural Area	23.00	inches
22	Runoff from Natural Area	0.30	inches
23	Acreage of Other Area	66.12	acres
24	Fraction of Land Other Area	0.198	fraction
25	Evapotrans. from Other Area	23.00	inches
26	Runoff from Other Area	0.00	inches
27	Acreage of Land Irrigated	32.00	acres
28	Fraction of Land Irrigated	0.096	fraction
29	Irrigation Rate	5.50	inches
30	Number of Dwellings	850	units
31	Water Use per Dwelling	0	gal/day
32	Wastewater Design Flow	0	gal/day
33	Commercial /STP Design Flow	275,050	gal/day

B	*Nitrogen Budget Parameters*	*Value*	*Units*
1	Persons per Dwelling	1.92	persons
2	Nitrogen per Person per Year	0.0	lbs
3	a. Sanitary Nitrogen Leaching Rate (septic)	50%	percent
3	b. Sanitary Nitrogen Leaching Rate (STP)	90%	percent
4	Area of Land Fertilized 1	32.00	acres
5	Fertilizer Application Rate 1	1.00	lbs/1000 sq ft
6	Fertilizer Nitrogen Leaching Rate 1	16%	percent
7	Area of Land Fertilized 2	0.00	acres
8	Fertilizer Application Rate 2	0.00	lbs/1000 sq ft
9	Fertilizer Nitrogen Leaching Rate 2	0%	percent
10	Pet Waste Application Rate	3.19	lbs/pet
11	Pet Waste Nitrogen Leaching Rate	16%	percent
12	Area of Land Irrigated	32.00	acres
13	Irrigation Rate	5.50	inches
14	Irrigation Nitrogen Leaching Rate	16%	percent
15	Nitrogen in Precipitation	0.50	mg/l
16	Precipitation Nitrogen Leaching Rate	16%	percent
17	Nitrogen in Water Supply	1.16	mg/l
18	Nitrogen in Commercial/STP Flow	8.00	mg/l

C	*Comments*
1)	Please refer to user manual for data input instructions.
2)	Sanitary Nitrogen Leaching Rate 3.a.) is for residential wastewater at 50% removal; and, 3.b.) is for commercial or STP which would be expected to remove 10% additional nitrogen as a result of leaching of STP effluent discharge (see User Guide for references).
3)	Acreage of Lawn is 15% of the Meadows site.
4)	Acreage of Other Area is natural landscaping, non-fertilized.
5)	Fertilizer management will be used to achieve 1 lb/1000 SF per Non-Point Source Management Handbook.
6)	Half of the pet owners are expected to observe "Pick up after your Pet" practices.
7)	Nitrogen in STP Flow will be treated to 8 mg/l.

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE RECHARGE COMPUTATIONS

Proposed Project, using Dorado STP

SHEET 2

A	*Lawn Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Lawn	0.096	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	22.40	inches
4	Q = Runoff Rate	0.90	inches
5	R(l) = P - (E + Q)	21.90	inches
6	R(L) = R(l) x A	2.10	inches

B	*Impervious Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Impervious	0.297	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	4.52	inches
4	Q = Runoff Rate	0.00	inches
5	R(i) = P - (E + Q)	40.68	inches
6	R(I) = R(i) x A	12.09	inches

C	*Unvegetated Area Recharge*		
1	A = Fraction of Land Unveg.	0.008	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	21.20	inches
4	Q = Runoff Rate	2.10	inches
5	R(u) = P - (E + Q)	21.90	inches
6	R(U) = R(u) x A	0.17	inches

D	*Water Area Loss*		
1	A = Fraction of Site in Water	0.002	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evaporation Rate	30.00	inches
4	Q = Runoff Rate	0.00	inches
5	M = Makeup Water	0.00	inches
6	R(w) = {P - (E+Q)} - M	15.20	inches
7	R(W) = R(w) x A	0.03	inches

E	*Natural Area Recharge*		
1	A = Fraction of Land in Natural	0.398	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.30	inches
5	R(n) = P - (E + Q)	21.90	inches
6	R(N) = R(n) x A	8.73	inches

F	*Other Area Recharge*		
1	A = Fraction of Land in Other	0.198	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.00	inches
5	R(o) = P - (E + Q)	22.20	inches
6	R(O) = R(o) x A	4.40	inches

G	*Irrigation Recharge*		
1	A = Fraction of Land Irrigated	0.096	fraction
2	I = Irrigation Rate	5.50	inches
3	E = Evaptranspiration Rate	2.73	inches
4	Q = Runoff Rate	0.90	inches
5	R(irr) = I - (E + Q)	1.87	inches
6	R(IRR) = R(irr) x A	0.18	inches

H	*Wastewater Recharge*		
1	WDF = Wastewater Design Flow	275,050	gal/day
2	WDF = Wastewater Design Flow	13,422,578	cu ft/yr
3	A = Area of Site	14,525,518	sq ft
4	R(ww) = WDF/A	0.92	feet
5	R(WW) = Wastewater Recharge	11.09	inches

Total Site Recharge		
R(T) =	R(L) + R(I) + R(U) + R(W) + R(N) + R(O) + R(IRR) + R(WW)	
R(T) =	**38.80**	**inches**

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE NITROGEN BUDGET — Proposed Project, using Dorado STP — **SHEET 3**

A	*Sanitary Nitrogen-Residential*	*Value*	*Units*
1	Number of Dwellings	850	units
2	Persons per Dwelling	1.92	capita
3	P = Population	1629.45	capita
4	N = Nitrogen per person	0	lbs
5	LR = Leaching Rate	50%	percent
6	N(S) = P x N x LR	0.00	lbs
7	N(S) = Sanitary Nitrogen	0.00	lbs

B	*Pet Waste Nitrogen*	*Value*	*Units*
1	AR = Application Rate	3.19	lbs/pet
2	Human Population	1629	capita
3	Pets = 10 percent of capita x 50% (half)	81	pets
4	N(p) = AR x pets	259.90	lbs
5	LR = Leaching Rate	16%	percent
6	N(P) = N(p) x LR	41.58	lbs
7	N(P) = Pet Waste Nitrogen	20.79	lbs

C	*Sanitary Nitrogen (Commercial/STP)*		
1	CF = Commercial/STP Flow	275,050	gal/day
2	CF = Commercial/STP Flow	379,988,451	liters/yr
3	N = Nitrogen in Commercial	8.00	mg/l
4	LR = Leaching Rate	90%	percent
5	N(S) = CF x N x LR	2,735,916,849	milligrams
6	N(S) = Sanitary Nitrogen	6032.70	lbs

D	*Water Supply Nitrogen (other than wastewater, if applicable)*		
1	WDF = Water Design Flow	0	gal/day
2	WDF = Water Design Flow	0	liters/yr
3	N = Nitrogen in Water Supply	1.16	mg/l
4	N(WW) = WDF x N	0	milligrams
5	N(WW) = Water Nitrogen	0.00	lbs

E	*Fertilizer Nitrogen 1*		
1	A = Area of Land Fertilized 1	1,393,920	sq ft
2	AR = Application Rate	1.00	lbs/1000 sf
3	LR = Leaching Rate	16%	percent
4	N(F1) = A x AR x LR	223.03	lbs
5	N(F1) = Fertilizer Nitrogen	223.03	lbs

F	*Fertilizer Nitrogen 2*		
1	A = Area of Land Fertilized 2	0	sq ft
2	AR = Application Rate	0.00	lbs/1000 sf
3	LR = Leaching Rate	0%	percent
4	N(F2) = A x AR x LR	0.00	lbs
5	N(F2) = Fertilizer Nitrogen	0.00	lbs

G	*Precipitation Nitrogen*		
1	R(n) = Natural Recharge (feet)	2.29	feet
2	A = Area of Site (sq ft)	14,525,518	sq ft
3	R(N) = R(n) x A	33,319,740	cu ft
4	R(N) = Natural Recharge (liters)	943,615,023	liters
5	N = Nitrogen in Precipitation	0.50	mg/l
6	LR = Leaching Rate	16%	percent
7	N(ppt) = R(N) x N x LR	75,489,202	milligrams
8	N(ppt) = Precipitation Nitrogen	166.45	lbs

H	*Irrigation Nitrogen*		
1	R = Irrigation Recharge (inches)	1.87	inches
2	R = Irrigation Rate (feet)	0.16	feet
3	A = Area of Land Irrigated	1,393,920	sq ft
4	R(I) = R(irr) x A	217,723	cu ft
5	R(I) = Site Precipitation (liters)	6,165,913	liters
6	N = Nitrogen in Water Supply	1.16	mg/l
7	LR = Leaching Rate	16%	percent
8	N(irr) = R(I) x N x LR	1,144,393	milligrams
9	N(irr) = Irrigation Nitrogen	2.52	lbs

Total Site Nitrogen		
N=	N(S) + N(P) + N(WW) + N(F1) + N(F2) + N(ppt) + N(irr)	
N=	6445.49	lbs

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT

The Meadows at Yaphank PDD
Proposed Project, using Dorade STP

FINAL COMPUTATIONS

SHEET 4

A	*Nitrogen in Recharge*	*Value*	*Units*
1	N = Total Nitrogen (lbs)	6445.49	lbs
2	N = Total Nitrogen (milligrams)	2,926,253,691	milligrams
3	R(T) = Total Recharge (inches)	38.80	inches
4	R(T) = Total Recharge (feet)	3.23	feet
5	A = Area of Site	14,525,518	sq ft
6	R = R(T) x A	46,960,040	cu ft
7	R = Site Recharge Volume	1,329,908,331	liters
9	NR = N/R	2.20	mg/l

FINAL CONCENTRATION OF NITROGEN IN RECHARGE

2.20

B	*Site Recharge Summary*	*Value*	*Units*
1	R(T) = Total Site Recharge	38.80	inches/yr
2	R = Site Recharge Volume	46,960,040	cu ft/yr
3	R = Site Recharge Volume	351,285,518	gal/yr
4	R = Site Recharge Volume	351.29	MG/yr

Conversions used in SONIR
Acres x 43,560 = Square Feet
Cubic Feet x 7.48052 = Gallons
Cubic Feet x 28.32 = Liters
Days x 365 = Years
Feet x 12 = Inches
Gallons x 0.1337 = Cubic Feet
Gallons x 3.785 = Liters
Grams / 1,000 = Milligrams
Grams x 0.002205 = Pounds
Milligrams / 1,000 = Grams

Appendix C-4
Alternatives 2 & 4

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT **The Meadows at Yaphank PDD**

DATA INPUT FIELD **Alt. 2, Septic Systems, 2.5 mg/l Std.** **SHEET 1**

A	*Site Recharge Parameters*	*Value*	*Units*
1	Area of Site	322.37	acres
2	Precipitation Rate	45.20	inches
3	Acreage of Lawn	35.04	acres
4	Fraction of Land in Lawn	0.109	fraction
5	Evapotranspiration from Lawn	22.40	inches
6	Runoff from Lawn	0.90	inches
7	Acreage of Impervious	144.56	acres
8	Fraction of Land Impervious	0.448	fraction
9	Evaporation from Impervious	4.52	inches
10	Runoff from Impervious	0.00	inches
11	Acreage of Unvegetated	15.18	acres
12	Fraction of Land Unvegetated	0.047	fraction
13	Evapotrans. from Unvegetated	21.20	inches
14	Runoff from Unvegetated	2.1	inches
15	Acreage of Water	0.76	acres
16	Fraction of Site in Water	0.002	fraction
17	Evaporation from Water	30.00	inches
18	Makeup Water (if applicable)	0.00	inches
19	Acreage of Natural Area	120.23	acres
20	Fraction of Land Natural	0.373	fraction
21	Evapotrans. from Natural Area	23.00	inches
22	Runoff from Natural Area	0.30	inches
23	Acreage of Other Area	6.60	acres
24	Fraction of Land Other Area	0.020	fraction
25	Evapotrans. from Other Area	23.00	inches
26	Runoff from Other Area	0.00	inches
27	Acreage of Land Irrigated	35.04	acres
28	Fraction of Land Irrigated	0.109	fraction
29	Irrigation Rate	5.50	inches
30	Number of Dwellings	0	units
31	Water Use per Dwelling	0	gal/day
32	Wastewater Design Flow	0	gal/day
33	Commercial /STP Design Flow	87,000	gal/day

B	*Nitrogen Budget Parameters*	*Value*	*Units*
1	Persons per Dwelling	0.00	persons
2	Nitrogen per Person per Year	0.0	lbs
3	a. Sanitary Nitrogen Leaching Rate	50%	percent
3	b. Sanitary Nitrogen Leaching Rate	90%	percent
4	Area of Land Fertilized 1	35.04	acres
5	Fertilizer Application Rate 1	2.30	lbs/1000 sq ft
6	Fertilizer Nitrogen Leaching Rate 1	16%	percent
7	Area of Land Fertilized 2	0.00	acres
8	Fertilizer Application Rate 2	0.00	lbs/1000 sq ft
9	Fertilizer Nitrogen Leaching Rate 2	0%	percent
10	Pet Waste Application Rate	3.19	lbs/pet
11	Pet Waste Nitrogen Leaching Rate	50%	percent
12	Area of Land Irrigated	35.04	acres
13	Irrigation Rate	5.50	inches
14	Irrigation Nitrogen Leaching Rate	16%	percent
15	Nitrogen in Precipitation	1.00	mg/l
16	Precipitation Nitrogen Leaching Rate	16%	percent
17	Nitrogen in Water Supply	1.16	mg/l
18	Nitrogen in Commercial/STP Flow	40.00	mg/l

C	*Comments*
1)	Please refer to user manual for data input instructions.
2)	Sanitary Nitrogen Leaching Rate 3.a.) is for residential wastewater at 50% removal; and, 3.b.) is for commercial or STP which would be expected to remove 10% additional nitrogen as a result of leaching of STP effluent discharge (see User Guide for references).
3)	Other Area refers to recharge.

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE RECHARGE COMPUTATIONS — Alt. 2, Septic Systems, 2.5 mg/l Std. — **SHEET 2**

A	*Lawn Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Lawn	0.109	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	22.40	inches
4	Q = Runoff Rate	0.90	inches
5	R(l) = P - (E + Q)	21.90	inches
6	R(L) = R(l) x A	2.38	inches

B	*Impervious Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Impervious	0.448	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	4.52	inches
4	Q = Runoff Rate	0.00	inches
5	R(i) = P - (E + Q)	40.68	inches
6	R(I) = R(i) x A	18.24	inches

C	*Unvegetated Area Recharge*		
1	A = Fraction of Land Unveg.	0.047	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	21.20	inches
4	Q = Runoff Rate	2.10	inches
5	R(u) = P - (E + Q)	21.90	inches
6	R(U) = R(u) x A	1.03	inches

D	*Water Area Loss*		
1	A = Fraction of Site in Water	0.002	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evaporation Rate	30.00	inches
4	Q = Runoff Rate	0.00	inches
5	M = Makeup Water	0.00	inches
6	R(w) = {P - (E+Q)} - M	15.20	inches
7	R(W) = R(w) x A	0.04	inches

E	*Natural Area Recharge*		
1	A = Fraction of Land in Natural	0.373	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.30	inches
5	R(n) = P - (E + Q)	21.90	inches
6	R(N) = R(n) x A	8.17	inches

F	*Other Area Recharge*		
1	A = Fraction of Land in Other	0.020	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.00	inches
5	R(o) = P - (E + Q)	22.20	inches
6	R(O) = R(o) x A	0.45	inches

G	*Irrigation Recharge*		
1	A = Fraction of Land Irrigated	0.109	fraction
2	I = Irrigation Rate	5.50	inches
3	E = Evaptranspiration Rate	2.73	inches
4	Q = Runoff Rate	0.90	inches
5	R(irr) = I - (E + Q)	1.87	inches
6	R(IRR) = R(irr) x A	0.20	inches

H	*Wastewater Recharge*		
1	WDF = Wastewater Design Flow	87,000	gal/day
2	WDF = Wastewater Design Flow	4,245,644	cu ft/yr
3	A = Area of Site	14,042,437	sq ft
4	R(ww) = WDF/A	0.30	feet
5	R(WW) = Wastewater Recharge	3.63	inches

Total Site Recharge		
R(T) =	R(L) + R(I) + R(U) + R(W) + R(N) + R(O) + R(IRR) + R(WW)	
R(T) =	**34.14**	**inches**

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE NITROGEN BUDGET — Alt. 2, Septic Systems, 2.5 mg/l Std. — **SHEET 3**

A	*Sanitary Nitrogen-Residential*	*Value*	*Units*
1	Number of Dwellings	0	units
2	Persons per Dwelling	0.00	capita
3	P = Population	0.00	capita
4	N = Nitrogen per person	0	lbs
5	LR = Leaching Rate	50%	percent
6	N(S) = P x N x LR	0.00	lbs
7	N(S) = Sanitary Nitrogen	0.00	lbs

B	*Pet Waste Nitrogen*	*Value*	*Units*
1	AR = Application Rate	3.19	lbs/pet
2	Human Population	0	capita
3	Pets = 10 percent of capita	0	pets
4	N(p) = AR x pets	0.00	lbs
5	LR = Leaching Rate	50%	percent
6	N(P) = N(p) x LR	0.00	lbs
7	N(P) = Pet Waste Nitrogen	0.00	lbs

C	*Sanitary Nitrogen (Commercial/STP)*		
1	CF = Commercial/STP Flow	87,000	gal/day
2	CF = Commercial/STP Flow	120,192,675	liters/yr
3	N = Nitrogen in Commercial	40.00	mg/l
4	LR = Leaching Rate	50%	percent
5	N(S) = CF x N x LR	2,403,853,500	milligrams
6	N(S) = Sanitary Nitrogen	5300.50	lbs

D	*Water Supply Nitrogen (other than wastewater, if applicable)*		
1	WDF = Water Design Flow	0	gal/day
2	WDF = Water Design Flow	0	liters/yr
3	N = Nitrogen in Water Supply	1.16	mg/l
4	N(WW) = WDF x N	0	milligrams
5	N(WW) = Water Nitrogen	0.00	lbs

E	*Fertilizer Nitrogen 1*		
1	A = Area of Land Fertilized 1	1,526,342	sq ft
2	AR = Application Rate	2.30	lbs/1000 sf
3	LR = Leaching Rate	16%	percent
4	N(F1) = A x AR x LR	561.69	lbs
5	N(F1) = Fertilizer Nitrogen	561.69	lbs

F	*Fertilizer Nitrogen 2*		
1	A = Area of Land Fertilized 2	0	sq ft
2	AR = Application Rate	0.00	lbs/1000 sf
3	LR = Leaching Rate	0%	percent
4	N(F2) = A x AR x LR	0.00	lbs
5	N(F2) = Fertilizer Nitrogen	0.00	lbs

G	*Precipitation Nitrogen*		
1	R(n) = Natural Recharge (feet)	2.53	feet
2	A = Area of Site (sq ft)	14,042,437	sq ft
3	R(N) = R(n) x A	35,471,009	cu ft
4	R(N) = Natural Recharge (liters)	1,004,538,972	liters
5	N = Nitrogen in Precipitation	1.00	mg/l
6	LR = Leaching Rate	16%	percent
7	N(ppt) = R(N) x N x LR	160,726,236	milligrams
8	N(ppt) = Precipitation Nitrogen	354.40	lbs

H	*Irrigation Nitrogen*		
1	R = Irrigation Recharge (inches)	1.87	inches
2	R = Irrigation Rate (feet)	0.16	feet
3	A = Area of Land Irrigated	1,526,342	sq ft
4	R(I) = R(irr) x A	238,407	cu ft
5	R(I) = Site Precipitation (liters)	6,751,674	liters
6	N = Nitrogen in Water Supply	1.16	mg/l
7	LR = Leaching Rate	16%	percent
8	N(irr) = R(I) x N x LR	1,253,111	milligrams
9	N(irr) = Irrigation Nitrogen	2.76	lbs

Total Site Nitrogen		
N=	N(S) + N(P) + N(WW) + N(F1) + N(F2) + N(ppt) + N(irr)	
N=	**6219.36**	lbs

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT

The Meadows at Yaphank PDD

Alt. 2, Septic Systems, 2.5 mg/l Std.

FINAL COMPUTATIONS

SHEET 4

A	*Nitrogen in Recharge*	*Value*	*Units*
1	N = Total Nitrogen (lbs)	6219.36	lbs
2	N = Total Nitrogen (milligrams)	2,823,587,365	milligrams
3	R(T) = Total Recharge (inches)	34.14	inches
4	R(T) = Total Recharge (feet)	2.85	feet
5	A = Area of Site	14,042,437	sq ft
6	R = R(T) x A	39,955,059	cu ft
7	R = Site Recharge Volume	1,131,527,271	liters
9	NR = N/R	2.50	mg/l

FINAL CONCENTRATION OF NITROGEN IN RECHARGE

2.50

B	*Site Recharge Summary*	*Value*	*Units*
1	R(T) = Total Site Recharge	34.14	inches/yr
2	R = Site Recharge Volume	39,955,059	cu ft/yr
3	R = Site Recharge Volume	298,884,618	gal/yr
4	R = Site Recharge Volume	298.88	MG/yr

Conversions used in SONIR
Acres x 43,560 = Square Feet
Cubic Feet x 7.48052 = Gallons
Cubic Feet x 28.32 = Liters
Days x 365 = Years
Feet x 12 = Inches
Gallons x 0.1337 = Cubic Feet
Gallons x 3.785 = Liters
Grams / 1,000 = Milligrams
Grams x 0.002205 = Pounds
Milligrams / 1,000 = Grams

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT **The Meadows at Yaphank PDD**

DATA INPUT FIELD **Alt. 4: Retained Wet Depressions** **SHEET 1**

A	*Site Recharge Parameters*	*Value*	*Units*
1	Area of Site	333.46	acres
2	Precipitation Rate	45.20	inches
3	Acreage of Lawn	32.00	acres
4	Fraction of Land in Lawn	0.096	fraction
5	Evapotranspiration from Lawn	22.40	inches
6	Runoff from Lawn	0.90	inches
7	Acreage of Impervious	98.21	acres
8	Fraction of Land Impervious	0.295	fraction
9	Evaporation from Impervious	4.52	inches
10	Runoff from Impervious	0.00	inches
11	Acreage of Unvegetated	2.58	acres
12	Fraction of Land Unvegetated	0.008	fraction
13	Evapotrans. from Unvegetated	21.20	inches
14	Runoff from Unvegetated	2.1	inches
15	Acreage of Water	4.99	acres
16	Fraction of Site in Water	0.015	fraction
17	Evaporation from Water	30.00	inches
18	Makeup Water (if applicable)	0.00	inches
19	Acreage of Natural Area	133.09	acres
20	Fraction of Land Natural	0.399	fraction
21	Evapotrans. from Natural Area	23.00	inches
22	Runoff from Natural Area	0.30	inches
23	Acreage of Other Area	62.59	acres
24	Fraction of Land Other Area	0.188	fraction
25	Evapotrans. from Other Area	23.00	inches
26	Runoff from Other Area	0.00	inches
27	Acreage of Land Irrigated	32.00	acres
28	Fraction of Land Irrigated	0.096	fraction
29	Irrigation Rate	5.50	inches
30	Number of Dwellings	850	units
31	Water Use per Dwelling	0	gal/day
32	Wastewater Design Flow	0	gal/day
33	Commercial /STP Design Flow	275,050	gal/day

B	*Nitrogen Budget Parameters*	*Value*	*Units*
1	Persons per Dwelling	1.92	persons
2	Nitrogen per Person per Year	0.0	lbs
3	a. Sanitary Nitrogen Leaching Rate (septic)	50%	percent
3	b. Sanitary Nitrogen Leaching Rate (STP)	90%	percent
4	Area of Land Fertilized 1	32.00	acres
5	Fertilizer Application Rate 1	1.00	lbs/1000 sq ft
6	Fertilizer Nitrogen Leaching Rate 1	16%	percent
7	Area of Land Fertilized 2	0.00	acres
8	Fertilizer Application Rate 2	0.00	lbs/1000 sq ft
9	Fertilizer Nitrogen Leaching Rate 2	0%	percent
10	Pet Waste Application Rate	3.19	lbs/pet
11	Pet Waste Nitrogen Leaching Rate	16%	percent
12	Area of Land Irrigated	32.00	acres
13	Irrigation Rate	5.50	inches
14	Irrigation Nitrogen Leaching Rate	16%	percent
15	Nitrogen in Precipitation	0.50	mg/l
16	Precipitation Nitrogen Leaching Rate	16%	percent
17	Nitrogen in Water Supply	1.16	mg/l
18	Nitrogen in Commercial/STP Flow	8.00	mg/l

C	*Comments*
1)	Please refer to user manual for data input instructions.
2)	Sanitary Nitrogen Leaching Rate 3.a.) is for residential wastewater at 50% removal; and, 3.b.) is for commercial or STP which would be expected to remove 10% additional nitrogen as a result of leaching of STP effluent discharge (see User Guide for references).
3)	Acreage of Lawn is 15% of the Meadows site.
4)	Acreage of Other Area is natural landscaping, non-fertilized.
5)	Fertilizer management will be used to achieve 1 lb/1000 SF per Non-Point Source Management Handbook.
6)	Half of the pet owners are expected to observe "Pick up after your Pet" practices.
7)	Nitrogen in STP Flow will be treated to 8 mg/l.

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE RECHARGE COMPUTATIONS — **Alt. 4: Retained Wet Depressions** — **SHEET 2**

A	*Lawn Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Lawn	0.096	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	22.40	inches
4	Q = Runoff Rate	0.90	inches
5	R(l) = P - (E + Q)	21.90	inches
6	R(L) = R(l) x A	2.10	inches

B	*Impervious Area Recharge*	*Value*	*Units*
1	A = Fraction of Land in Impervious	0.295	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	4.52	inches
4	Q = Runoff Rate	0.00	inches
5	R(i) = P - (E + Q)	40.68	inches
6	R(I) = R(i) x A	11.98	inches

C	*Unvegetated Area Recharge*		
1	A = Fraction of Land Unveg.	0.008	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	21.20	inches
4	Q = Runoff Rate	2.10	inches
5	R(u) = P - (E + Q)	21.90	inches
6	R(U) = R(u) x A	0.17	inches

D	*Water Area Loss*		
1	A = Fraction of Site in Water	0.015	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evaporation Rate	30.00	inches
4	Q = Runoff Rate	0.00	inches
5	M = Makeup Water	0.00	inches
6	R(w) = {P - (E+Q)} - M	15.20	inches
7	R(W) = R(w) x A	0.23	inches

E	*Natural Area Recharge*		
1	A = Fraction of Land in Natural	0.399	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.30	inches
5	R(n) = P - (E + Q)	21.90	inches
6	R(N) = R(n) x A	8.74	inches

F	*Other Area Recharge*		
1	A = Fraction of Land in Other	0.188	fraction
2	P = Precipitation Rate	45.20	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.00	inches
5	R(o) = P - (E + Q)	22.20	inches
6	R(O) = R(o) x A	4.17	inches

G	*Irrigation Recharge*		
1	A = Fraction of Land Irrigated	0.096	fraction
2	I = Irrigation Rate	5.50	inches
3	E = Evaptranspiration Rate	2.73	inches
4	Q = Runoff Rate	0.90	inches
5	R(irr) = I - (E + Q)	1.87	inches
6	R(IRR) = R(irr) x A	0.18	inches

H	*Wastewater Recharge*		
1	WDF = Wastewater Design Flow	275,050	gal/day
2	WDF = Wastewater Design Flow	13,422,578	cu ft/yr
3	A = Area of Site	14,525,518	sq ft
4	R(ww) = WDF/A	0.92	feet
5	R(WW) = Wastewater Recharge	11.09	inches

Total Site Recharge		
R(T) =	R(L) + R(I) + R(U) + R(W) + R(N) + R(O) + R(IRR) + R(WW)	
R(T) =	**38.66**	**inches**

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

SITE NITROGEN BUDGET

Alt. 4: Retained Wet Depressions

SHEET 3

A	*Sanitary Nitrogen-Residential*	*Value*	*Units*
1	Number of Dwellings	850	units
2	Persons per Dwelling	1.92	capita
3	P = Population	1629.45	capita
4	N = Nitrogen per person	0	lbs
5	LR = Leaching Rate	50%	percent
6	N(S) = P x N x LR	0.00	lbs
7	N(S) = Sanitary Nitrogen	0.00	lbs

B	*Pet Waste Nitrogen*	*Value*	*Units*
1	AR = Application Rate	3.19	lbs/pet
2	Human Population	1629	capita
3	Pets = 10 percent of capita x 50% (half)	81	pets
4	N(p) = AR x pets	259.90	lbs
5	LR = Leaching Rate	16%	percent
6	N(P) = N(p) x LR	41.58	lbs
7	N(P) = Pet Waste Nitrogen	20.79	lbs

C	*Sanitary Nitrogen (Commercial/STP)*		
1	CF = Commercial/STP Flow	275,050	gal/day
2	CF = Commercial/STP Flow	379,988,451	liters/yr
3	N = Nitrogen in Commercial	8.00	mg/l
4	LR = Leaching Rate	90%	percent
5	N(S) = CF x N x LR	2,735,916,849	milligrams
6	N(S) = Sanitary Nitrogen	6032.70	lbs

D	*Water Supply Nitrogen (other than wastewater, if applicable)*		
1	WDF = Water Design Flow	0	gal/day
2	WDF = Water Design Flow	0	liters/yr
3	N = Nitrogen in Water Supply	1.16	mg/l
4	N(WW) = WDF x N	0	milligrams
5	N(WW) = Water Nitrogen	0.00	lbs

E	*Fertilizer Nitrogen 1*		
1	A = Area of Land Fertilized 1	1,393,920	sq ft
2	AR = Application Rate	1.00	lbs/1000 sf
3	LR = Leaching Rate	16%	percent
4	N(F1) = A x AR x LR	223.03	lbs
5	N(F1) = Fertilizer Nitrogen	223.03	lbs

F	*Fertilizer Nitrogen 2*		
1	A = Area of Land Fertilized 2	0	sq ft
2	AR = Application Rate	0.00	lbs/1000 sf
3	LR = Leaching Rate	0%	percent
4	N(F2) = A x AR x LR	0.00	lbs
5	N(F2) = Fertilizer Nitrogen	0.00	lbs

G	*Precipitation Nitrogen*		
1	R(n) = Natural Recharge (feet)	2.28	feet
2	A = Area of Site (sq ft)	14,525,518	sq ft
3	R(N) = R(n) x A	33,150,982	cu ft
4	R(N) = Natural Recharge (liters)	938,835,797	liters
5	N = Nitrogen in Precipitation	0.50	mg/l
6	LR = Leaching Rate	16%	percent
7	N(ppt) = R(N) x N x LR	75,106,864	milligrams
8	N(ppt) = Precipitation Nitrogen	165.61	lbs

H	*Irrigation Nitrogen*		
1	R = Irrigation Recharge (inches)	1.87	inches
2	R = Irrigation Rate (feet)	0.16	feet
3	A = Area of Land Irrigated	1,393,920	sq ft
4	R(I) = R(irr) x A	217,723	cu ft
5	R(I) = Site Precipitation (liters)	6,165,913	liters
6	N = Nitrogen in Water Supply	1.16	mg/l
7	LR = Leaching Rate	16%	percent
8	N(irr) = R(I) x N x LR	1,144,393	milligrams
9	N(irr) = Irrigation Nitrogen	2.52	lbs

Total Site Nitrogen	
N=	N(S) + N(P) + N(WW) + N(F1) + N(F2) + N(ppt) + N(irr)
N=	6444.65 lbs

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT

The Meadows at Yaphank PDD

Alt. 4: Retained Wet Depressions

FINAL COMPUTATIONS

SHEET 4

A	*Nitrogen in Recharge*	*Value*	*Units*
1	N = Total Nitrogen (lbs)	6444.65	lbs
2	N = Total Nitrogen (milligrams)	2,925,870,944	milligrams
3	R(T) = Total Recharge (inches)	38.66	inches
4	R(T) = Total Recharge (feet)	3.22	feet
5	A = Area of Site	14,525,518	sq ft
6	R = R(T) x A	46,791,282	cu ft
7	R = Site Recharge Volume	1,325,129,105	liters
9	NR = N/R	2.21	mg/l

FINAL CONCENTRATION OF NITROGEN IN RECHARGE

2.21

B	*Site Recharge Summary*	*Value*	*Units*
1	R(T) = Total Site Recharge	38.66	inches/yr
2	R = Site Recharge Volume	46,791,282	cu ft/yr
3	R = Site Recharge Volume	350,023,121	gal/yr
4	R = Site Recharge Volume	350.02	MG/yr

Conversions used in SONIR
Acres x 43,560 = Square Feet
Cubic Feet x 7.48052 = Gallons
Cubic Feet x 28.32 = Liters
Days x 365 = Years
Feet x 12 = Inches
Gallons x 0.1337 = Cubic Feet
Gallons x 3.785 = Liters
Grams / 1,000 = Milligrams
Grams x 0.002205 = Pounds
Milligrams / 1,000 = Grams

APPENDIX D

TRAFFIC IMPACT STUDY

Fay, Spofford & Thorndike, Inc.

November 2010

TRAFFIC IMPACT STUDY

The Meadows at Yaphank
Mixed-Used Development

Brookhaven, New York

Prepared for:

Rose-Breslin, LLC

Prepared by:

FST Engineers, Inc.
Engineers ● Planners ● Scientists
631-756-5999

November 2010

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1.0 EXECUTIVE SUMMARY

Fay, Spofford & Thorndike (FST) has been retained to provide an assessment of the traffic impacts for the proposed The Meadows at Yaphank mixed-use development to be located at the northwest corner of the Long Island Expressway (I-495) and William Floyd Parkway (Route 46) interchange in Brookhaven, New York. The mixed-use development would replace the previously permitted, but not constructed, Brookhaven Walk retail development and the Racetrack Industrial Parcel in Brookhaven, New York.

The current concept consists of a mix of residential, retail, office/flex and hotel on the two connected parcels. The residential portion is expected to consist of 850 units, consisting of 220 townhouse units, 486 condominium units, and 144 apartment units. Approximately 303 of these residential units are expected to be over-55 senior housing units. The retail portion is expected to consist of a 327,500 sf shopping center and a 5,000 sf restaurant. The office/flex is estimated to be 550,000 sf, while the hotel is expected to consist of 220 rooms.

This traffic study documents the findings of the traffic evaluation conducted for the project including an assessment of existing conditions, projection of future traffic volumes without and with the proposed mixed-use development, analysis of traffic impacts and recommendations for improving existing capacity deficiencies as well as to offset project related traffic impacts.

Trip Generation

The proposed Mixed Use Development is expected to generate 1,496 primary vehicle trips (972 entering/ 524 exiting) during the weekday morning, 2,014 vehicle trips (832 entering/ 1,182 exiting) during the evening peak hour and 1,949 vehicle trips (1,040 entering/ 909 exiting) during the Saturday midday peak hour.

The proposed Mixed Use Development is projected to generate less traffic than the uses originally permitted and allowed for the site. The total trip generation for the current site is expected to be 17% lower during the weekday morning, 40% lower on a weekday evening and 41% lower on a Saturday midday peak than as of right the uses originally permitted or allowed. Overall weekday and Saturday daily trip generation is reduced by 38% (see Table 8).

Ramp/ Roadway Mitigation

Several study area intersections and ramps are currently or are projected to operate poorly during the peak periods without roadway improvements. To mitigate the impacts of the proposed development and the correct existing deficiencies, a number of roadway improvements are proposed as part of this project.

The modified roadway improvements are discussed at each location below. Illustrations of the proposed geometric improvements are being submitted under a separate cover.

New On-Ramp from North Service Road onto Long Island Expressway (I-495) westbound

As part of this project, a new westbound on ramp to the Long Island Expressway (I-495) is proposed, approximately 1,850 feet west of the existing on-ramp. In addition, to accommodate this

improvement, I-495 westbound will be shifted southbound. This ramp had been proposed for the previous development and an Interchange Justification Report for the ramp was prepared and submitted to FHWA. The IJR was approved by FHWA in April 2006.

As shown in Table 1, with the new on-ramp from the North Service Road onto the Long Island Expressway westbound, the existing ramp will be improved to operate at LOS B during the morning peak hour and remain at LOS C during the weekday evening peak hour. The new ramp is projected to operate at LOS C during the weekday morning and evening peak hours and LOS B during the Saturday midday peak hour. All of the other merges operate at LOS C or better during the peak hours.

Table 1 – Freeway Ramp Merge Analysis Summary

	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
Location/ Condition	Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
William Floyd Parkway NB and North Service Road WB									
Existing	51.1	15.7	B	51.2	13.6	B	51.2	12.2	B
No Build	51.1	17.5	B	51.1	16.2	B	51.2	14.2	B
Build	51.0	18.4	B	51.0	17.7	B	51.1	16.4	B
William Floyd Parkway SB and South Service Road EB									
Existing	51.3	10.8	B	51.1	17.2	B	51.2	13.8	B
No Build	51.2	13.5	B	50.9	20.5	C	51.1	16.4	B
Build	51.2	14.4	B	50.7	22.8	C	51.0	17.9	B
North Service Road WB and William Floyd Parkway Ramp SB									
Existing	51.0	17.4	B	51.2	13.3	B	51.3	10.8	B
No Build	50.9	19.8	B	51.1	16.4	B	51.2	12.5	B
Build	50.4	24.9	C	50.9	20.0	C	51.1	16.9	B
North Service Road WB On-Ramp to I-495 WB									
Existing	58.8	23.8	C	59.4	22.1	C	60.3	16.3	B
No Build	57.8	27.0	C	58.2	26.2	C	59.9	18.9	B
Build with New Ramp	60.0	18.7	B	59.6	21.1	C	60.4	15.4	B
New On-Ramp to I-495 WB									
Build	58.7	25.0	C	58.2	26.4	C	60.0	18.7	B

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

South Service Road from Long Island Expressway (I-495) off-ramp

Currently there is only a single off ramp from the Long Island Expressway eastbound to the South Service Road. Approximately 1,100 feet from the Long Island Expressway (I-495), the South Service Road widens to two lanes. In order to improve operations and handle the volume of traffic utilizing this off-ramp, it is proposed that this ramp be widened to two lanes. This ramp improvement had been proposed for the previous development.

As can be seen in Table 2, with the proposed improvements, the operations at all of the studied diverges will operate at LOS C or better during the peak hours. With the proposed improvement at the South Service Road off-ramp from I-495, this diverge will improve from LOS F to LOS B with the additional lane. This improvement results in a marked improvement over the No Build conditions.

Table 2 – Freeway Ramp Diverge Analysis Summary

	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
Location/ Condition	Density[1]	LOS[2]	Density	LOS	Density	LOS
South Service Road from I-495 EB						
Existing	23.0	C	24.3	C	23.1	C
No Build	26.8	C	27.6	F	26.2	C
Build without Improvements	29.6	F*	29.7	F*	28.5	D*
Build with Improvements	**18.9**	**B**	**19.1**	**B**	**17.2**	**B**
William Floyd Parkway SB Ramp from South Service Road EB						
Existing	12.8	B	15.1	B	11.4	B
No Build	16.1	B	17.9	B	13.8	B
Build	19.4	B	20.3	C	16.7	B
William Floyd Parkway NB to South Service Road EB						
Existing	11.5	B	11.5	B	12.3	B
No Build	18.3	B	17.5	B	16.5	B
Build	20.5	C	19.1	B	18.6	B
William Floyd Parkway SB to North Service Road WB						
Existing	13.1	B	12.9	B	9.9	A
No Build	18.4	B	15.4	B	12.2	B
Build	20.0	B	20.1	C	16.0	B

1. Density (pc/mi/ln)
2. Level of Service

* Improvements Proposed at this location

Northbound William Floyd Parkway onto North Service Road (northeast) loop ramp

Due to the high volumes on the loop ramp during the morning peak hour, a two-lane off-ramp from William Floyd Parkway northbound to the North Service Road westbound is necessary to provide efficient operations.

For the current proposal, proposed mitigation consists of widening the northeast loop from William Floyd Parkway northbound to the North Service Road westbound to consist of two receiving lanes. Part of this ramp improvement had been proposed for the previous development. The previous proposal recommended widening this ramp to two lanes and the relocation of the ramp. However, since the project related traffic volumes are a fraction of the previous proposal, the current proposal is to widen the ramp without relocating the entire ramp.

As shown in Table 3, with the improvements to the northeastern loop ramp, the weave would operate at an acceptable LOS C during the weekday morning and evening peak hours and LOS B during the Saturday peak hours. This improvement results in a marked improvement over the No Build conditions. All of the other weaving movements will operate at LOS D or better during the peak hours.

Table 3– Freeway Ramp Weave Analysis Summary

	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
Location/ Condition	Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
William Floyd Parkway NB between Loop Ramps									
Existing	25.7	34.1	D	27.0	25.9	C	31.8	29.0	C
No Build	24.4	43.1	F	25.0	38.7	E	30.4	25.0	C
Build without Improvements	27.1	46.3	F*	26.1	43.0	F*	32.0	29.6	C*
Build with Improvements	37.1	25.3	C	33.6	25.0	C	41.0	18.1	B
William Floyd Parkway SB between Loop Ramps									
Existing	48.5	6.1	A	44.8	9.3	A	53.0	5.4	A
No Build	43.9	10.1	A	35.0	16.2	B	47.3	8.3	A
Build	41.4	12.9	B	32.8	22.9	B	42.1	13.8	B
North Service Road WB between Loop Ramps									
Existing	30.3	11.4	A	29.3	13.2	B	32.9	8.2	A
No Build	28.6	16.9	B	27.3	20.9	B	30.8	12.4	B
Build	26.3	27.3	C	26.5	37.6	C	29.3	19.6	B
South Service Road EB between Loop Ramps									
Existing	30.6	15.2	B	30.8	11.6	A	36.5	5.7	A
No Build	29.2	21.7	B	30.8	14.8	B	35.0	9.1	A
Build	25.9	31.9	C	26.2	26.0	C	28.6	18.2	B
New Weave - North Service Road WB west of Cloverleaf									
Build	45.5	32.3	D	48.9	23.6	B	46.7	20.5	B

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

* Improvements Proposed at this location

William Floyd Parkway at Main Site Drive

This new signalized intersection will be constructed to consist of a double northbound left turn, in addition to the two existing through lanes. The two existing southbound through lanes will be maintained in addition to a new southbound right turn lane entering the site. The exit will consist of separate left and right turn lanes. To minimize delays on William Floyd Parkway, part of the proposed improvements consist of coordinating the traffic signal at the new site drive with the intersection of William Floyd Parkway/ Yaphank Woods Boulevard. With coordination, the intersection of the William Floyd Parkway/ Main Site Drive will operate at LOS A during the weekday morning and evening peak hours and LOS B during the Saturday peak hour.

Table 4 – Signalized Capacity Analysis Summary

Location/Condition	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
William Floyd Parkway/ Longwood Road									
Existing	0.77	20.4	C	0.79	16.1	B	0.49	12.8	B
No Build	0.87	28.5	C	0.92	32.6	C	0.59	14.5	B
Build	0.95	39.1	D	0.99	39.9	C	0.67	16.0	B
Supplemental Build – Without Other Developments	*0.91*	*32.5*	*C*	*0.94*	*29.6*	*C*	*0.61*	*15.6*	*B*
William Floyd Parkway/ National Labs									
Existing	0.60	10.2	B	0.71	21.8	C	0.42	12.1	B
No Build	0.66	11.5	B	0.82	26.1	C	0.46	13.7	B
Build	0.66	12.0	B	0.92	38.5	D	0.54	13.8	B
Supplemental Build – Without Other Developments	*0.66*	*11.7*	*B*	*0.88*	*31.3*	*C*	*0.53*	*14.0*	*B*
William Floyd Parkway/ Yaphank Woods Drive									
Existing	0.83	11.0	B	0.75	9.9	A	0.60	8.2	A
No Build	0.92	14.0	B	0.82	10.6	B	0.67	9.1	A
Build without Improvements	0.98	20.7	C*	0.99	33.7	C*	0.81	16.8	B*
Supplemental Build – Without Other Developments	*0.92*	*15.8*	*B**	*0.92*	*25.2*	*C**	*0.76*	*15.5*	*B**
Build with Improvements - with Other Developments	**0.91**	**17.8**	**B**	**0.89**	**16.4**	**B**	**0.70**	**13.1**	**B**
Supplemental Build with Improvements– Without Other Developments	***0.85***	***14.6***	***B***	***0.82***	***15.1***	***B***	***0.67***	***12.8***	***B***
William Floyd Parkway/ Suffolk County Police Headquarters Driveway									
Existing	0.63	4.6	A	0.80	8.4	A	0.60	4.4	A
No Build	0.72	5.8	A	0.98	16.0	B	0.72	6.4	A
Build	0.81	7.3	A	1.10	33.5	C	0.80	8.4	A
Supplemental Build – Without Other Developments	*0.80*	*6.9*	*A*	*0.99*	*14.1*	*B*	*0.75*	*7.0*	*A*
William Floyd Parkway/ Moriches Middle Island Road									
Existing	0.70	19.8	B	0.74	26.1	C	0.68	21.4	C
No Build	0.82	24.0	C	0.87	31.9	C	0.90	26.3	C
Build	0.90	29.2	C	1.05	50.5	D	1.00	34.3	C
Supplemental Build – Without Other Developments	*0.85*	*24.5*	*C*	*0.98*	*35.1*	*D*	*0.93*	*27.6*	*C*
William Floyd Parkway/ Proposed Site Driveway									
Build	0.77	10.1	B*	0.90	19.1	B*	0.80	16.3	B*
Supplemental Build – Without Other Developments	*0.74*	*9.3*	*A**	*0.84*	*17.0*	*B**	*0.76*	*15.5*	*B**
Build with Improvements - with Other Developments	**0.79**	**5.1**	**A**	**0.89**	**12.3**	**B**	**0.76**	**12.0**	**B**
Supplemental Build with Improvements – Without Other Developments	***0.74***	***4.9***	***A***	***0.83***	***11.2***	***B***	***0.73***	***11.7***	***B***

William Floyd Parkway at Yaphank Woods Boulevard

For the current proposal, the proposed mitigation plan will consist of widening the Yaphank Woods Boulevard approach to accommodate two eastbound left turn lanes and one eastbound right turn lane. In addition, the northbound left turn lane will be widened slightly to accommodate a full 12-foot wide left turn lane. In addition, the traffic signal at this intersection will be coordinated with the new traffic signal at the proposed site driveway.

The locations with the most need for improvements will experience substantial improvement in traffic operations with the implementation of the mitigation measures identified in this study. The analysis results also show that the proposed improvements offset project impacts and provide additional capacity to accommodate future traffic growth in the area.

As can be seen in Table 4, with the proposed improvements at the intersection of William Floyd Parkway/ Yaphank Woods, this intersection will operate at LOS B during the weekday morning, weekday evening peak hours and Saturday Midday peak hour.

2.0 INTRODUCTION

2.1 Overview

Fay, Spofford & Thorndike (FST) has been retained to provide an assessment of the traffic impacts for the proposed The Meadows at Yaphank mixed-use development to be located at the northwest corner of the Long Island Expressway (I-495) and William Floyd Parkway (Route 46) interchange in Brookhaven, New York. The mixed-use development would replace the previously permitted, but not constructed, Brookhaven Walk retail development and the Racetrack Industrial Parcel (zoned L-1 Industrial) in Brookhaven, New York.

The current concept consists of a mix of residential, retail, office/flex and hotel on the two connected parcels. The residential portion is expected to consist of 850 units, consisting of 220 townhouse units, 486 condominium units, and 144 apartment units. Approximately 303 of these residential units are expected to be over-55 senior housing units. The retail portion is expected to consist of a 327,500 sf shopping center and a 5,000 sf restaurant. The office/flex is estimated to be 550,000 sf, while the hotel is expected to consist of 220 rooms. Figure 1 shows a site location map, while Figure 2 shows the site plan.

While the previous development was planned as a regional shopping mall and an Industrial Park, the new development is planned as a mixed-use development featuring a neighborhood shopping center. Therefore, the retail portion is intended to serve the local area and result in fewer trips destined to/from the retail portion of the site from over 5-10 miles away.

2.2 Study Methodology

This traffic study documents the findings of the traffic evaluation conducted for the project including an assessment of existing conditions, projection of future traffic volumes without and with the proposed mixed-use development, analysis of traffic impacts and recommendations for improving existing capacity deficiencies as well as to offset project related traffic impacts.

Schematic Diagram:
Not to Scale

Figure 1
Site Location

Proposed Mixed Use Development
Town of Brookhaven, New York

Fay, Spofford & Thorndike, LLC
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DEVELOPMENT SUMMARY

COMMERCIAL COMPONENT		RESIDENTIAL COMPONENT	
RETAIL	327,500 sf GFA	TOWNHOUSES	220 UNITS
PARKING PROVIDED	1,771 spaces (5.4/1000 sf)	PARKING PROVIDED	2 per unit 326 on street (Total -3.5 per unit)
RESTAURANT	5,000 sf GFA		
PARKING PROVIDED	77 spaces (15.4/1000 sf)	CONDOMINIUMS	486 UNITS
		PARKING PROVIDED	2 per unit 495 on street (Total -3 per unit)
OFFICE	300,000 sf GFA		
PARKING PROVIDED	1065 spaces (3.5/1000 sf)	RENTAL APTS	144 UNITS
OFFICE/INDUSTRIAL/FLEX	250,000 sf GFA	PARKING PROVIDED	364 spaces (Total -2.5 per unit)
PARKING PROVIDED	1003 spaces (4/1000 sf)		
PROPOSED HOTEL	150,000 sf GFA		
PARKING PROVIDED	189 spaces (1.3/1000 sf)		
TOTAL GFA	1,032,500 sf	TOTAL	850 UNITS

Figure 2

3.0 EXISTING CONDITIONS

3.1 Study Area

The Study area includes the Long Island Expressway (I-495)/ William Floyd Parkway interchange, in addition to the following five signalized intersections and one unsignalized intersection;

- William Floyd Parkway northbound/ Brookhaven National Lab
- William Floyd Parkway southbound/ Longwood Road
- William Floyd Parkway/ Suffolk County Police Headquarters Driveway
- William Floyd Parkway/ Moriches Middle Island Road
- William Floyd Parkway/ Yaphank Woods Boulevard
- Yaphank Woods Boulevard/ Colonial Woods

Currently the Long Island Expressway (I-495) is under NYSDOT jurisdiction, while William Floyd Parkway is under Suffolk County jurisdiction.

The functional classification of the Long Island Expressway (I-495) is an Interstate. William Floyd Parkway is a Principal Arterial (Expressway), but is not part of the National Highway System. The functional classifications of Longwood Road and Moriches Middle Island Road are Minor Arterial and the Long Island Expressway (I-495) is an Interstate. Yaphank Woods Boulevard and Princeton Road are considered to be Local roadways.

3.2 Roadway Geometry

The major travel routes and intersections within the study area are described below.

3.3 Roadways

William Floyd Parkway

William Floyd Parkway is a median divided arterial with two lanes running in each direction in a north/south direction across Long Island. William Floyd Parkway extends from the southern terminus at Smith Point to the northern terminus at Route 25. The posted speed limit in the study area is 55 mph.

Long Island Expressway (I-495)

The Long Island Expressway (I-495) is a median divided interstate, providing access to Long Island from New York City to the eastern terminus at Route 25 in Calverton. Within the vicinity of the project, there are three lanes in each direction. At many interchanges a collector/distributor roadway ramp system is utilized to minimize disruption to the main line. The posted speed limit in the study area is 55 mph.

3.4 Intersections

William Floyd Parkway/ Longwood Road/ Princeton Avenue

- William Floyd Parkway runs north/south and is median separated (160 feet wide).
- Location consists of two adjacent signalized intersections. Traffic signal operates on a single controller.
- Western intersection consists of William Floyd Parkway southbound with Longwood Road; eastern intersection consists of William Floyd Parkway northbound with Princeton Avenue.

Western Intersection

- William Floyd Parkway southbound approach consists of one left turn lane, two through lanes and a channelized right turn lane.
- Longwood Road eastbound approach consists of one through lane and one channelized right turn lane.
- Longwood Road westbound consists of one left turn lane and one through lane.

Eastern Intersection

- William Floyd Parkway northbound approach consists of one left turn lane, two through lanes and a channelized right turn.
- Princeton Road westbound approach consists of one through lane and one channelized right turn lane.
- Longwood Road eastbound approach consists of one left turn lane and one through lane.

William Floyd Parkway/ Yaphank Woods Boulevard

- Signalized three-legged intersection.
- William Floyd Parkway runs north/south and is median separated (30 feet wide).
- Yaphank Woods Boulevard approaches from the west.
- William Floyd Parkway northbound approach consists of one left turn lane and two through lanes.
- William Floyd Parkway southbound approach consists of two through lanes and one right turn lane.
- Yaphank Woods Boulevard is not striped, but the eastbound approach is wide enough to accommodate to one left turn lane and one right turn lane.

Yaphank Woods Boulevard/ Colonial Woods Drive

- Unsignalized three-legged intersection.
- Yaphank Woods Boulevard runs east/west and is median separated
- Colonial Woods Drive is stop controlled and approaches from the north.
- Yaphank Woods Boulevard is not striped, but the eastbound approach is wide enough to accommodate one left turn lane and two through lanes.
- Yaphank Woods Boulevard is not striped, but the westbound approach is wide enough to accommodate two lanes.

- The Colonial Woods Drive southbound approach consists of a single lane.

William Floyd Parkway/ Suffolk County Police Headquarters Driveway

- Signalized three-legged intersection.
- William Floyd Parkway runs north/south and is median separated.
- Suffolk County Police Headquarters Driveway approaches from the west.
- William Floyd Parkway northbound approach consists of one left turn lane and two through lanes. A free channelized right turn is located just prior to the intersection.
- William Floyd Parkway southbound approach consists of two through lanes and one right turn lane.
- Suffolk County Police Headquarters Driveway approach consists of one left turn lane and one right turn lane.

William Floyd Parkway/ Moriches Middle Island Road

- Signalized four-legged intersection.
- William Floyd Parkway runs north/south and is median separated.
- Moriches Middle Island Road runs east/west.
- William Floyd Parkway northbound approach consists of one left turn lane two through lanes and a channelized right turn lane.
- William Floyd Parkway southbound approach consists of a double left turn lane, two through lanes and one channelized right turn lane.
- Longwood Road eastbound approach consists of one left turn lane and a through/right turn lane.
- Longwood Road westbound approach consists of one left turn lane, one through lane and one right turn lane.
- Sidewalks are located on both sides of William Floyd Parkway south of Moriches Middle Island Road. A sidewalk is also present on the southern side of Moriches Middle Island Road.

4.0 TRAFFIC

4.1 Data Collection and Traffic Projections

In order to evaluate existing and future traffic operations, a traffic count program was conducted in June 2010. This traffic count program consisted of capturing both turning movement counts (TMCs) and Automatic Traffic Recordings (ATRs).

Manual turning movement/vehicle classification (TMC) counts were conducted during the weekday morning (7:00-9:00 AM) and evening (4:00-6:00 PM) and Saturday midday (11:00 AM-2:00 PM) peak hours at the following locations;

- William Floyd Parkway northbound/ Brookhaven National Lab
- William Floyd Parkway southbound/ Longwood Road
- William Floyd Parkway/ Suffolk County Police Headquarters Driveway

- William Floyd Parkway/ Moriches Middle Island Road
- William Floyd Parkway/ Yaphank Woods Boulevard
- Yaphank Woods Boulevard/ Colonial Woods

Automatic Traffic Recorder Counts (ATRs) were collected at the following locations for a seven-day period;

- William Floyd Parkway – south of Yaphank Woods Boulevard

Long Island Expressway (I-495)/William Floyd parkway Interchange

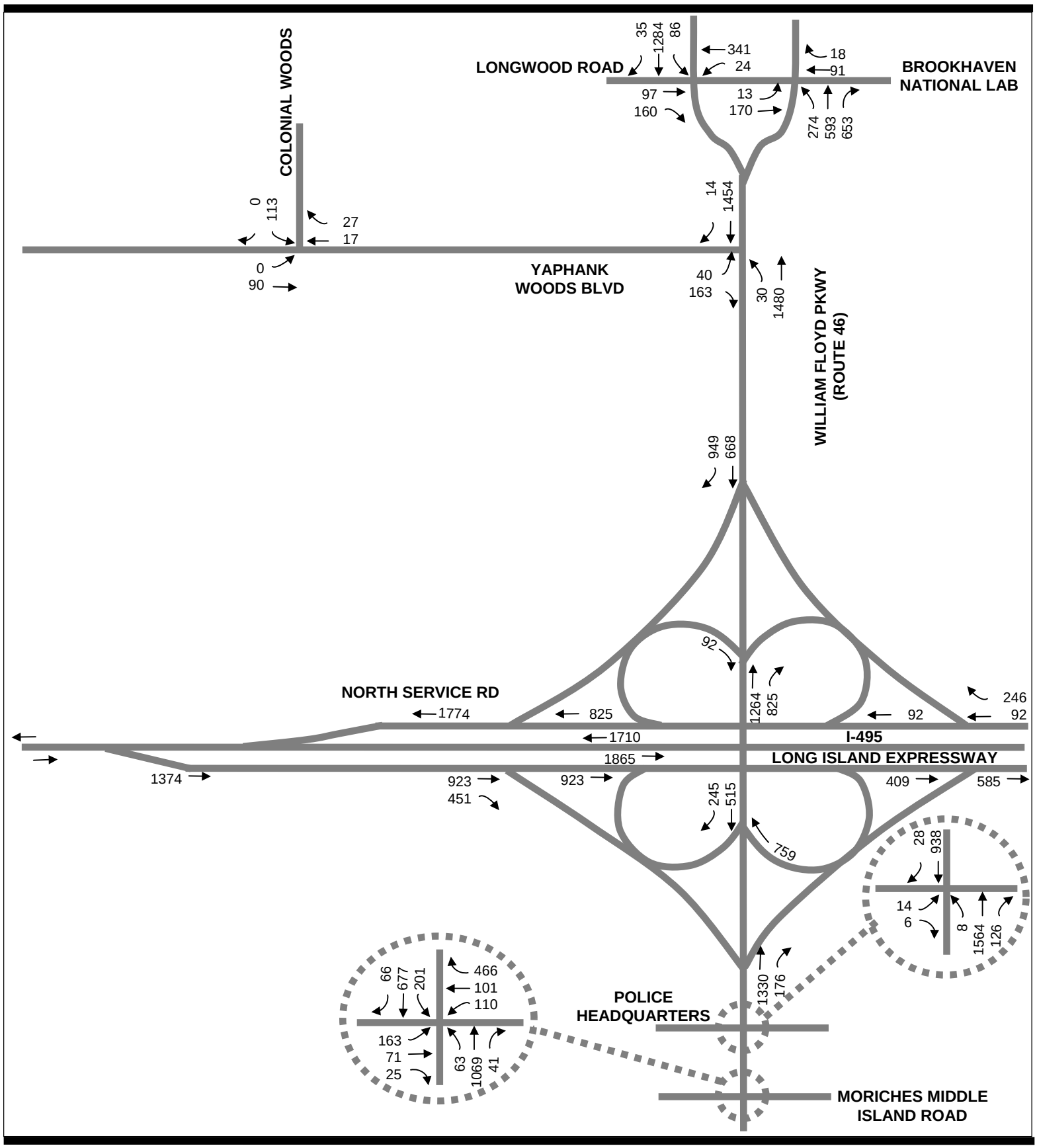
- Northeast loop ramp
- Northeast outer ramp
- Northwest loop ramp
- Northwest outer ramp
- Southeast loop ramp
- Southeast outer ramp
- Southwest loop ramp
- Southwest outer ramp
- South Service Road between southwest outer ramp and southwest loop ramp
- Long Island Expressway (I-495) eastbound at William Floyd Parkway
- Long Island Expressway (I-495) westbound at William Floyd Parkway

From the traffic count program, it was determined that the morning peak hour occurs at 7:30-8:30, the Weekday Evening Peak Hour occurs from 4:30-5:30 PM and the Saturday Midday Peak hour occurs from 12:30-1:30 PM. Traffic volumes were balanced between locations. The balanced 2010 peak-hour traffic volumes are shown in Figures 3,4 and 5.

Table 5 – Existing Traffic Volumes

Location	Weekday Daily Volume [a]	Saturday Daily Volume [a]
I-495 WB over CR 46	25,700	24,800
I-495 EB over CR 46	25,700	29,200
William Floyd Parkway NB south of Yaphank Woods Blvd	18,000	15,100
William Floyd Parkway SB south of Yaphank Woods Blvd	18,400	15,200

a daily traffic expressed in vehicles per day



Schematic Diagram:
Not to Scale

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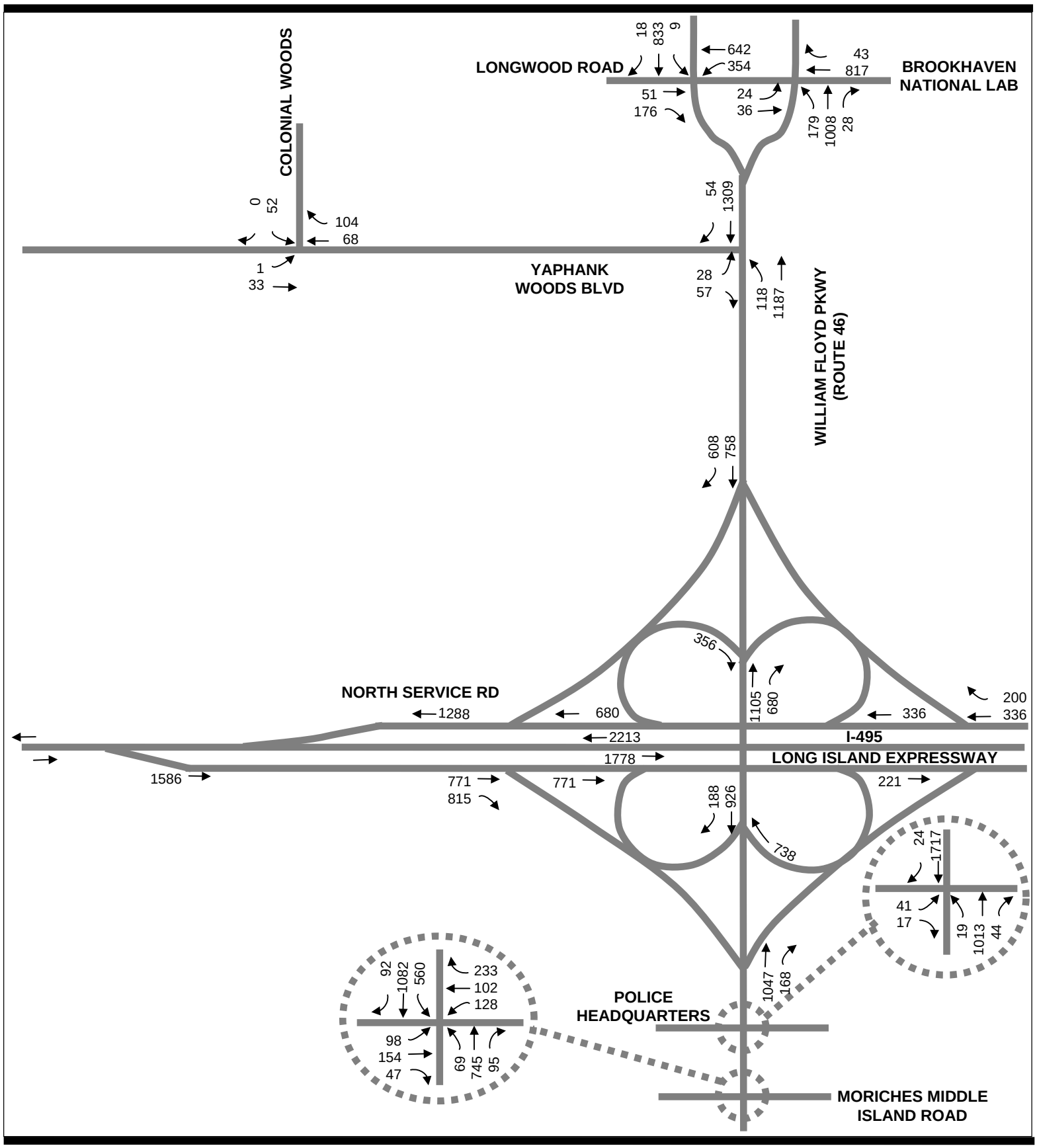
Figure 3
Existing Weekday
AM Peak Hour

Proposed Mixed Use Development
City of Brookhaven, New York



Schematic Diagram:
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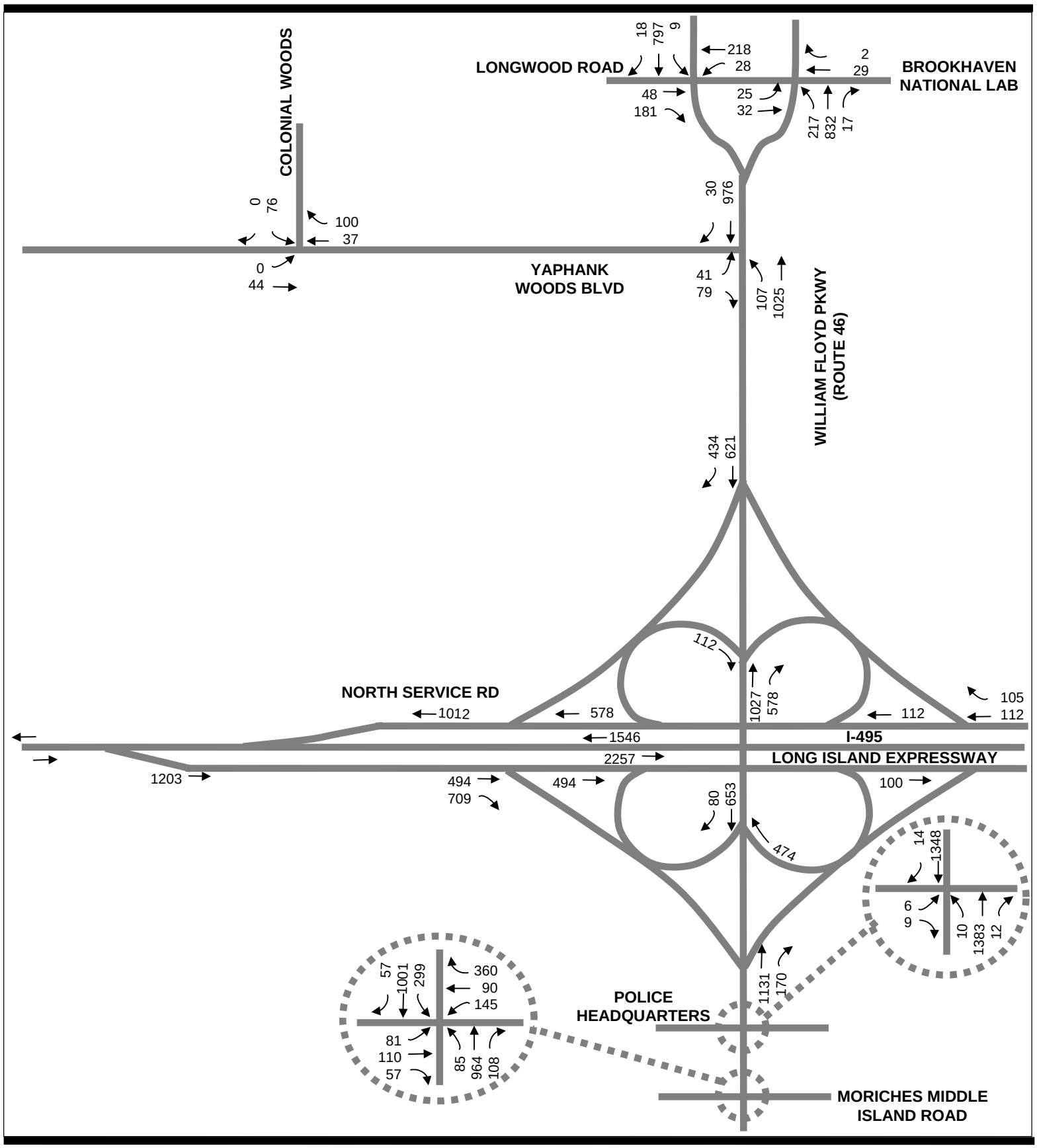
Figure 4
Existing Weekday
PM Peak Hour

Proposed Mixed Use Development
City of Brookhaven, New York



Schematic Diagram:
Not to Scale

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Figure 5
Existing Saturday
Midday Peak Hour

Proposed Mixed Use Development
City of Brookhaven, New York

Traffic data collected for this project was obtained during the month of June while local schools were still in session. To quantify the seasonal variation of traffic volumes in the area, the NYSDOT Seasonal Adjustment Factors from the 2008 Traffic Data Report was consulted. According to the factors, June traffic volumes are approximately 10% higher than average month conditions. Therefore, to be conservative, June traffic volumes were not adjusted to reflect average month conditions. Backup data for the seasonal adjustment is contained in the Appendix of this report.

In addition to seasonal adjustment, where appropriate, the traffic count volumes were adjusted to 'balance' to account for small volume imbalances between adjacent intersections. These adjusted traffic volume networks reflect 2010 existing weekday morning and evening peak hour traffic volumes.

4.2 Emergency Access/Evacuation

The project site is located within both the Ridge and Yaphank Fire Districts. The site is approximately 4 miles from the Ridge Fire Department Headquarters and 2 miles from Ridge substation #2, and 3 ½ miles from the Yaphank Fire Department Headquarters.

In addition to the vehicular site access driveways from William Floyd Parkway and the Long Island Expressway North Service Road, an additional gated emergency access only driveway is proposed to provide access to the site from Moriches Middle Island Road.

The project site is located adjacent to both William Floyd Parkway and the Long Island Expressway (I-495), which can both be utilized in the case of an emergency. Since the site has multiple direct access points to William Floyd Parkway and the Long Island Expressway North Service Road, residents, customers and workers could exit the site in an efficient manner in case of an emergency.

4.3 Safety Analysis

NYSDMV crash history data for the William Floyd Parkway corridor was reviewed for the 3-year period from March 2007 through March 2010, the most recent years for which data is available. This data is summarized in the following table. The supporting data, as well as the worksheets used to develop the crash rates contained in the table, can be found in the Appendix.

Table 6 –Crash Summary Intersections

	William Floyd Parkway and					
William Floyd Parkway and	Longwood Road/ Princeton Road (two intersections)	Yaphank Woods Parkway	I-495 Interchange (including Service Roads)	Police Driveway	Moriches Middle Island Road	William Floyd Parkway Unspecified
Year						
2007	6	0	8	0	0	4
2008	6	2	16	1	0	10
2009	15	2	9	0	0	15
2010	0	1	0	0	1	2
Total	27	5	33	1	1	31
Severity						
Property Damage	9	3	20	0	0	24
Non-Fatal Injury	18	2	13	1	1	7
Fatal Injury	0	0	0	0	0	0
Total	27	5	33	0	1	31
Type of Accident						
Single Vehicle	3	1	11	0	0	6
Head-On	1	0	0	0	0	0
Angle	10	0	0	0	0	2
Rear-End	9	2	9	1	0	5
Sideswipe	0	0	2	0	0	2
Overtaking	2	1	1	0	0	3
Deer	1	0	7	0	0	10
Not Reported	1	1	3	0	1	3
Total	27	5	33	1	1	31

Source: NYDMV

This review of the recent accident history shows that the two adjacent intersections of William Floyd Parkway/ Longwood Road intersections experienced the highest number of accidents within the study area with a total of 27 accidents during the three-year period. During the same period, the intersection of William Floyd Parkway/ Yaphank Woods Boulevard experienced 5 accidents, while 33 accidents occurred at the I-495/ William Floyd Parkway interchange, which includes the service roads. A large number of accidents reported occurred on William Floyd Parkway, but could not be located to a specific location.

With a total of 18 reported accidents involving deer in the study area, mostly on William Floyd Parkway, it appears collisions with deer are an existing hazard in the area. Although high tech methods to warn deer are being tested in a number of locations, remedies to reduce these collisions typically involve wildlife management and not engineering solutions.

5.0 Future Conditions

Traffic volumes in the study area were projected to the year 2015, which reflects a five-year traffic-planning horizon. Independent of the proposed project, volumes on the roadway network under year 2015 No-Build conditions were assumed to include existing traffic and new traffic resulting from background traffic growth. Anticipated site-generated traffic volumes were added to the 2015 No-Build traffic volume networks to reflect the year 2015 Build conditions within the project study area.

5.1 Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. The future traffic volumes were developed by applying an annual background growth rate to current volumes to account for general traffic growth in the region and then adding traffic anticipated to be generated by planned developments in the immediate vicinity.

Background Traffic Growth

A background growth rate of 2% per year was used based on conversations with planners from the Town of Brookhaven. Therefore, an annual growth rate of 2.0 percent per year was assumed in this analysis. It should be noted that in the immediate area, approximately 5,000 acres are utilized as the Brookhaven National Lab, which limits the potential developable land in the area, as well as a conveyance of over 1000 acres of open space along CR-46. Therefore, the assumption of a 2% annual background growth rate in addition to the site specific developments identified below is very conservative.

Site Specific Growth

In addition to accounting for anticipated background growth, the traffic projections associated with other planned and/or approved developments near the site were considered. Based on conversations with the Town of Brookhaven, the following developments were identified that could generate additional traffic through the study area.

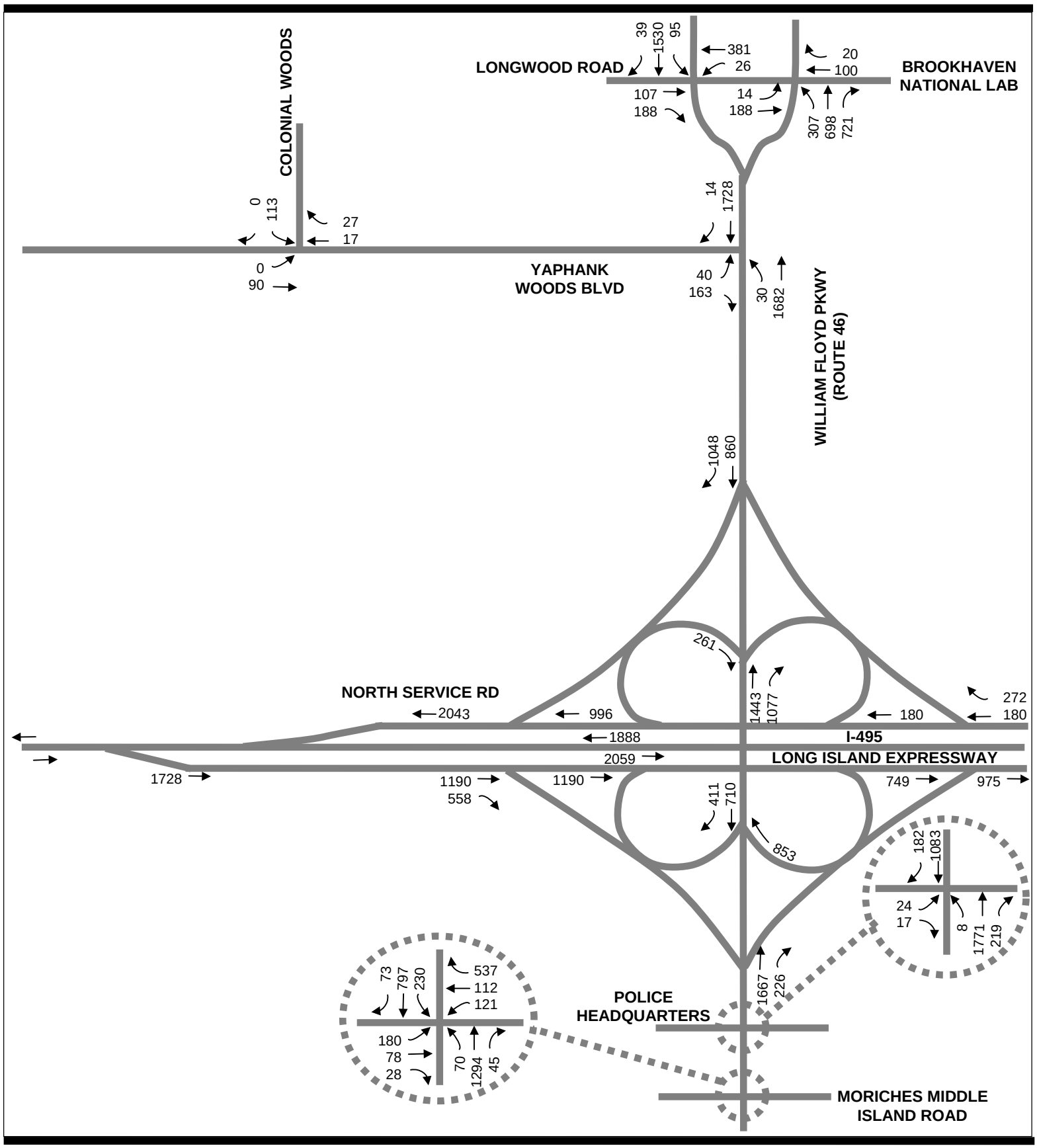
- Pinnacle Hotel – This project consists of a 200-room hotel to be located at the intersection of Natcon Road/ Roned Road in Brookhaven.
- Silver Corporate Park –This site on the northwest corner of Exit 66 of the Long Island Expressway (I-495) is currently zoned industrial. A previous proposal was denied for this project, which consisted of a mixed-use project. Although there is no current proposal, the site could accommodate approximate 2,500,000 sf of industrial/warehousing space based on current zoning. At the request of the Town of Brookhaven Planning Department, the potential traffic volumes to be generated by the full build out of the industrial development were incorporated into the analysis.
- Tri-tec – This site on William Floyd Parkway is an existing office park. However, based on current zoning an additional 1,154,000sf of industrial/warehousing space

could be constructed in addition to a 59,000 sf Health Club. At the request of the Town of Brookhaven Planners, the potential traffic volumes to be generated by the full build out and occupancy of the site was incorporated into the analysis.

- Legacy Village – This potential future smart growth development is in the very preliminary stages, and details of this development are not known at this time. Therefore volumes from this potential development were not included in this study. The future volumes associated with The Meadows at Yaphank development should be accounted for in future analysis for the Legacy Village development.
- Arrow Parcel – This parcel is located on William Floyd Parkway south of the Long Island Expressway (I-495). Currently 269,653 sf of Warehousing/ Industrial Development is under construction. There is potential for an additional 380,347 sf of Warehousing/ Industrial space for a total of 650,000 sf. The traffic volumes associated with the additional development under construction in addition to the potential space has been incorporated into the future analysis.
- Artist Lake Plaza – This project involves the removal of the former K-Mart structure on Middle County Road and development of two large anchor stores (314,330 sf and seven smaller retail building (65,081 sf). The traffic study for this project was obtained, and the potential traffic volumes to be generated by the development were incorporated into the analysis.
- The condominiums at Sandy Hills – This project involves the construction of 135 residential condominiums at the intersection of Middle County Road and CR 21. The traffic study for this project was obtained, and the potential traffic volumes to be generated by the development were incorporated into the analysis.
- Competition Toyota – This consists of a 29,735 sf Automobile Dealership on a 5.27 acre parcel on Middle County Road. The potential traffic volumes to be generated by the development were incorporated into the analysis.

Traffic volume increases associated with each of the development projects were obtained from the respective traffic impact studies for each project, or estimated based on rates contained in the ITE Trip Generation manual, eighth edition.

Applying the background growth rate and development projects to the 2010 traffic volumes resulted in the projected 2015 No Build peak hour traffic volumes, which are shown in Figures 6, 7, and 8.



Schematic Diagram:
Not to Scale

Proposed Mixed Use Development
City of Brookhaven, New York

Figure 6
2015 No Build Weekday
AM Peak Hour

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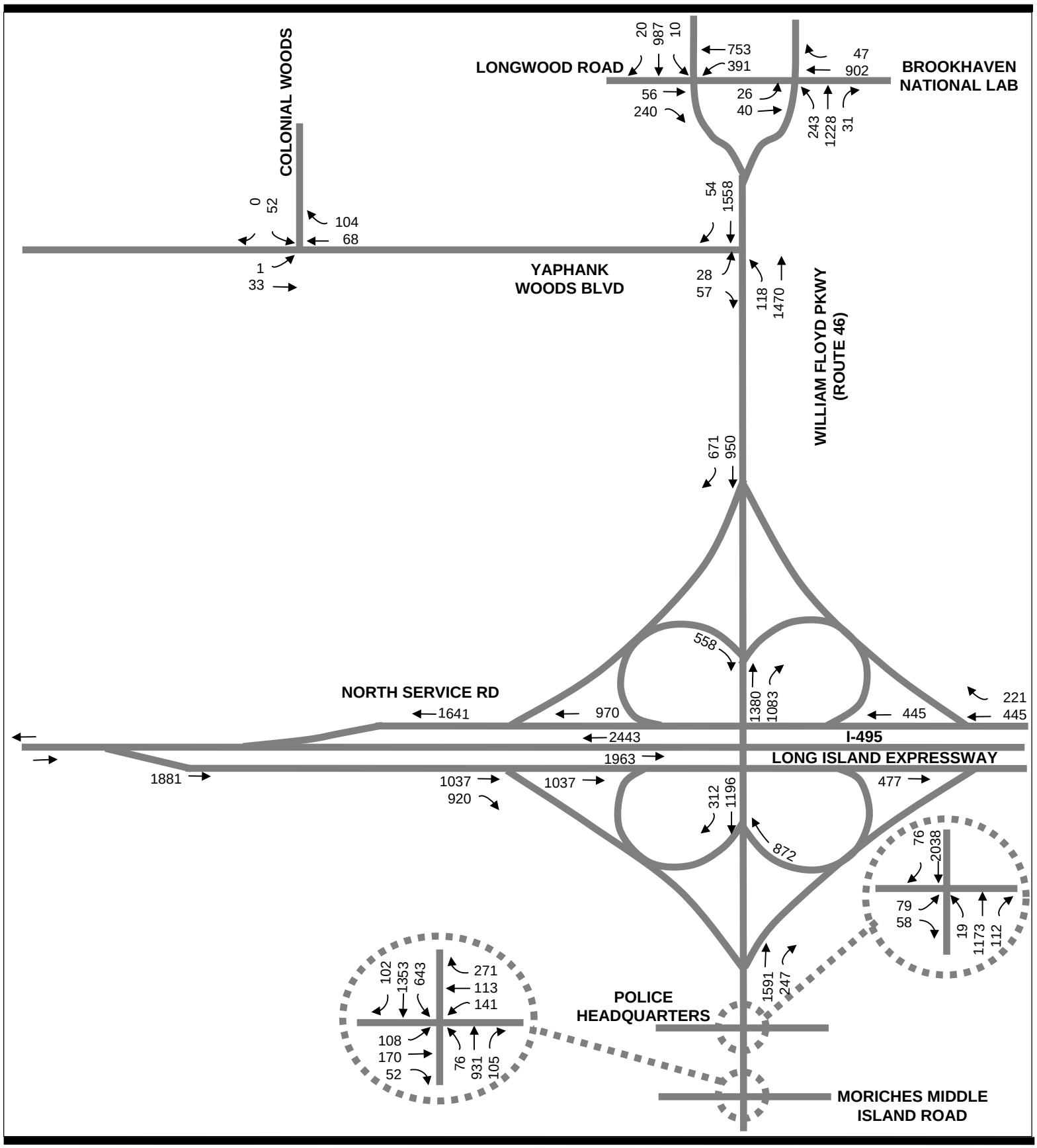

Schematic Diagram:
Not to Scale

Proposed Mixed Use Development
City of Brookhaven, New York

Figure 7
2015 No Build Weekday
PM Peak Hour

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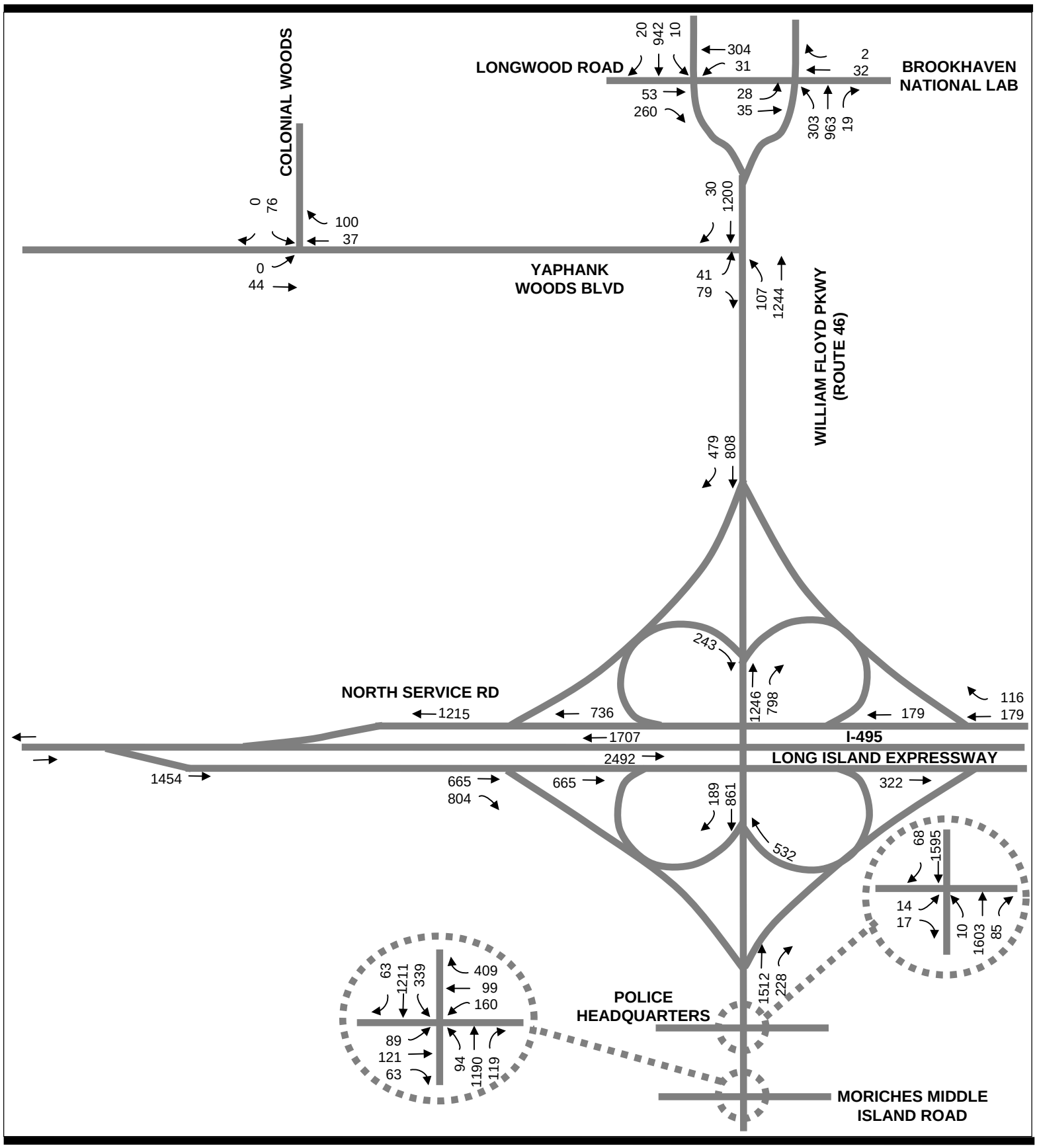

Schematic Diagram:
Not to Scale

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Proposed Mixed Use Development
City of Brookhaven, New York

Figure 8
2015 No Build Saturday Midday Peak Hour

5.2 Trip Generation Calculations

The previous development consisted of an 850,000 sf Shopping Center on the Brookhaven Walk parcel and a mix of 790,000 sf of office space and 390,000 sf warehouse space on the Racetrack Industrial Parcel. Using results from the Interchange Justification Report for the previously permitted project, in addition to data published in the eighth edition of *Trip Generation*, the estimated trip generation was calculated for the permitted uses on site.

The current concept consists of a mix of residential, retail, office/flex and hotel on the two connected parcels. The residential portion is expected to consist of 850 units, consisting of 220 townhouse units, 486 condominium units, and 144 apartment units. Approximately 303 of these residential units are expected to be over-55 senior housing units. The retail portion is expected to consist of a 327,500 sf shopping center and a 5,000 sf restaurant. The office/flex is estimated to be 550,000 sf, while the hotel was assumed to consist of 220 rooms.

Project-related trip generation projections were calculated for the proposed mixed-use development based on data compiled by the Institute of Transportation Engineers (ITE) and published in *Trip Generation*.[1] Rates published in *Trip Generation* represent observed trip generation rates of typical land uses throughout the United States. In addition, to reflect the interaction of the different land uses within the multi-use development, procedures from the ITE Trip Generation Handbook were followed to calculate the internal capture of the trips. For this development scenario, an internal trip capture between 13% to 15% is expected based on the period calculated. Application of ITE trip rates to the proposed mixed-use development yields the resulting trip generation shown in Table 7.

It should be noted that Travel Demand Management (TDM) strategies, such as local bus ridership, ridesharing, flexible work hours and telecommuting could reduce the amount of residential and office related vehicle trips the proposed development would generate. However, the volumes shown in Table 7 have not been reduced to account for these measures.

In addition, the proponent anticipates very little (5% or less) of the office/flex space to be open on a Saturday. However, to be conservative, the office/flex vehicle trips were conducted using standard rates in the ITE Trip Generation Manual, which compute to a rate equivalent to 26%-32% of weekday traffic, or a 26%-32% occupancy rate.

1 Trip Generation, Eighth Edition, published by the Institute of Transportation Engineers, Washington, D.C., 2008

Table 7 Trip Generation Summary – Current Proposal

Time Period	OFFICE/FLEX (550,000 SF) [a]	Residential (850 Units) [b]	Retail (332,750 SF) [c]	Hotel (220 Rooms) [d]	Total
Weekday Daily					
In	2,255	1,465	6,450	800	**10,970**
Out	2,135	1,590	6,445	800	**10,970**
Total	4,390	3,055	12,895	1,600	**21,940**
Weekday Morning Peak Hour					
In	646	57	203	66	**972**
Out	88	264	130	42	**524**
Total	734	321	333	108	**1,496**
Weekday Evening Peak Hour					
In	96	176	621	69	**962**
Out	558	70	623	61	**1,312**
Total	654	246	1,237	130	**2,274**
Saturday Daily					
In	555	1,279	8,970	910	**11,715**
Out	495	1,196	9,115	910	**11,715**
Total	1,050	2,475	18,085	1,820	**23,430**
Saturday Midday Peak Hour					
In	95	108	904	87	**1,194**
Out	83	103	808	69	**1,063**
Total	178	211	1,712	156	**2,257**

a Based on ITE LUC 710
b Based on ITE LUC 220 and 230
c Based on ITE LUC 820
d Based on ITE LUC 310

Pass-By Trips

Not all of the traffic generated by the retail portion of the project is new traffic added to study area roadways. Retail uses typically attract a significant percentage of their traffic from the traffic streams passing the site, particularly during commuter peak hours. These trips, which are considered pass-by, are already on the roadway system traveling to and from locations other than the site (such as home, work or other shopping opportunities). Therefore, outside the site driveways, the primary trips shown in Table 8 are the increases in traffic that will be experienced on area roadways and intersections.

Table 8 Trip Generation Comparison

Time Period	Previously Permitted Brookhaven Walk and Racetrack Parcels			Current Proposal Mixed-Use Development			Reduction in Total Development Related Trips		Reduction in Primary Development Related Trips	
	Total Trips [a]	Pass-by Trips[b]	Primary Trips	Total Trips[c]	Pass-by Trips[b]	Primary Trips	Volumes	%	Volumes	%
Weekday Morning Peak Hour										
In	1,376	0	***1,376***	972	0	***972***				
Out	378	0	***378***	524	0	***524***				
Total	1,754	0	***1,754***	1,496	0	***1,496***	**-258**	**-17%**	**-258**	**-17%**
Weekday Evening Peak Hour										
In	1,507	270	***1,237***	962	130	***832***				
Out	2,266	270	***1,996***	1,312	130	***1,182***				
Total	3,773	540	***3,233***	2,274	260	***2,014***	**-1,499**	**-40%**	**-1,219**	**-38%**
Saturday Peak Hour										
In	1,997	310	***1,687***	1,194	154	***1,040***				
Out	1,823	310	***1,513***	1,063	154	***909***				
Total	3,820	620	***3,200***	2,257	308	***1,949***	**-1,563**	**-41%**	**-1,251**	**-39%**
Weekday Daily										
In	17,715			10,970						
Out	17,715			10,970						
Total	35,430			21,940			**-13,490**	**-38%**		
Saturday Daily										
In	18,965			11,715						
Out	18,965			11,715						
Total	37,930			23,430			**-14,500**	**-38%**		

a Weekday AM and PM values taken from Interchange Justification Report, while Saturday Data calculation based on ITE Trip Generation for LUC 710 Office (390,000 sf), LUC 250 Warehousing (790,000 sf), and LUC 820 (850,000 sf)

b Based on 21% pass-by rate during weekday evening peak hour and 18% during Saturday midday peak hour as used in Interchange Justification Report

c Based on ITE Trip Generation LUC 710 Office (550,000 sf), LUC 820 Shopping Center (332,500 sf), LUC 230 Condominium/Townhouse (706 units), LUC 310 Hotel (220 rooms)

As shown in Table 7, the proposed Mixed Use Development is expected to generate 1,496 primary vehicle trips (972 entering/ 524 exiting) during the weekday morning, 2,014 vehicle trips (832 entering/ 1,182 exiting) during the evening peak hour and 1,949 vehicle trips (1,040 entering/ 909 exiting) during the Saturday midday peak hour.

The proposed Mixed Use Development is projected to generate less traffic than the uses originally permitted for the site. The total trip generation for the current site is expected to be 17% lower during the weekday morning peak hour, 40% lower on a weekday evening peak hour and 41% lower on a Saturday midday peak hour than the uses originally permitted.

5.3 Trip Distribution and Assignment

The directional distribution of the vehicular traffic approaching and departing the site is a function of population densities, competing uses, existing travel patterns, and the efficiency of the existing roadway system. The trip distribution for the project varies based on the different land uses. The retail distribution is based on a gravity model using communities within a 5-mile radius of the site. The office/flex and residential distribution was based on existing volumes and likely routes to work. The trip distribution for the various uses is shown in Figures 10, 11, 12 and 13.

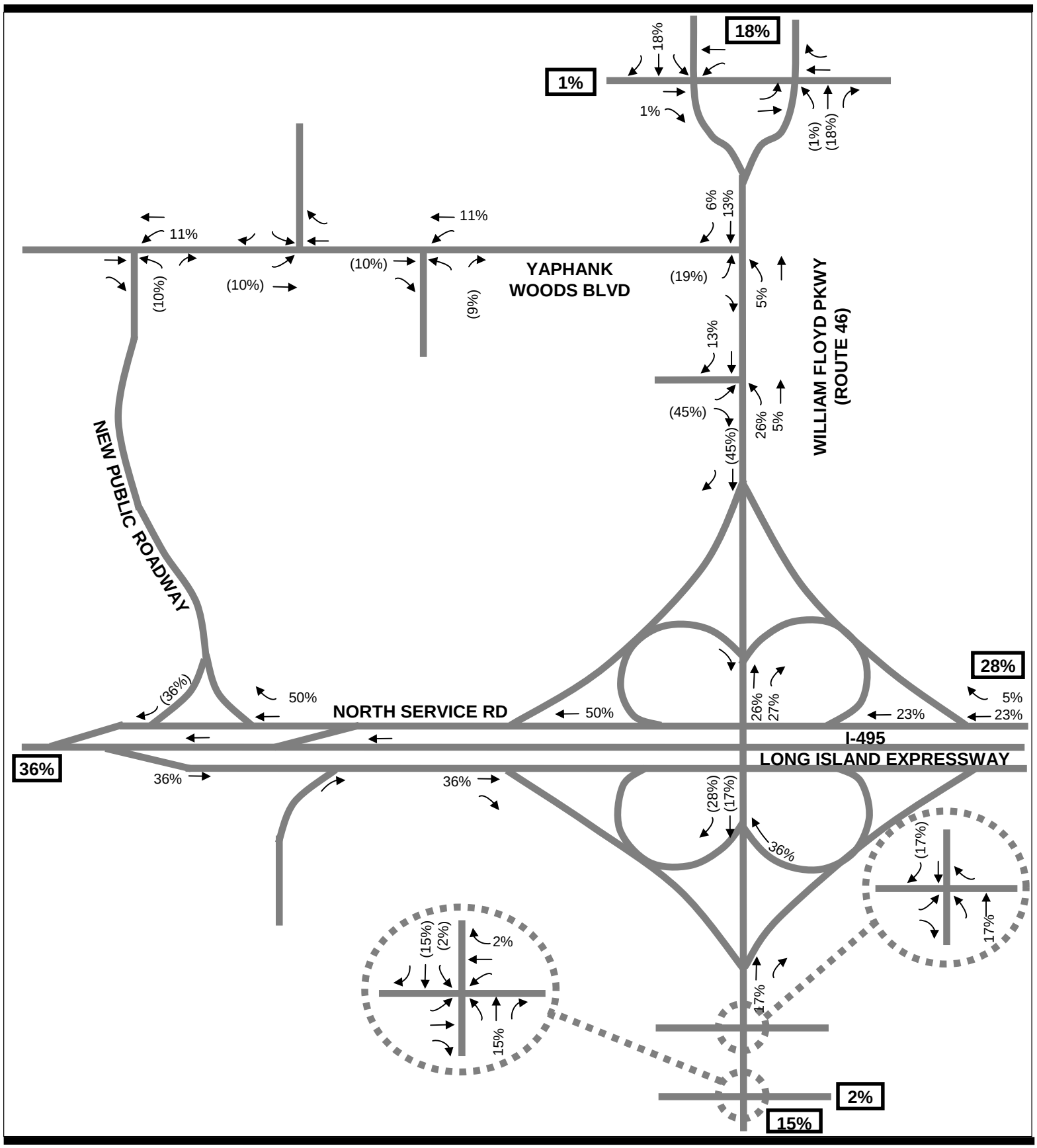
The projected site-generated traffic volume, as shown in Table 8, was distributed on the study area roadways using the trip distribution shown in Figures 14, 15 and 16.

Table 9 - Trip Distribution

By Way Of	Direction (To/From)	Percent Trips Assigned to Route			
		Residential	Office/ Flex	Retail	Hotel
I-495	East	23%	12%	25%	30%
	West	36%	39%	25%	40%
William Floyd Parkway	North	18%	22%	28%	13%
	South	17%	21%	15%	17%
Moriches Middle Island Road	East	5%	5%	5%	0%
Longwood Road	North/ West	1%	1%	2%	0%
Total		100%	100%	100%	100%

New Ramp

As part of this project, a new public roadway will be constructed between Yaphank Woods Boulevard and the North Service Road. In addition a new on-ramp from the North Service Road to Long Island Expressway (I-495) westbound will be constructed, west of the existing on-ramp. This ramp was previously approved for this location to serve a regional mall. In addition to accommodating project related traffic, this roadway and ramp would also result in the diversion of some traffic from William Floyd Parkway to the new roadway. These projected traffic diversions are shown in the Appendix. The 2015 Build traffic volumes are graphically shown in Figures 17, 18 and 19.



Schematic Diagram:
Not to Scale

Proposed Mixed Use Development
Town of Brookhaven, New York

Figure 9
Residential Distribution
Entering (Exiting)

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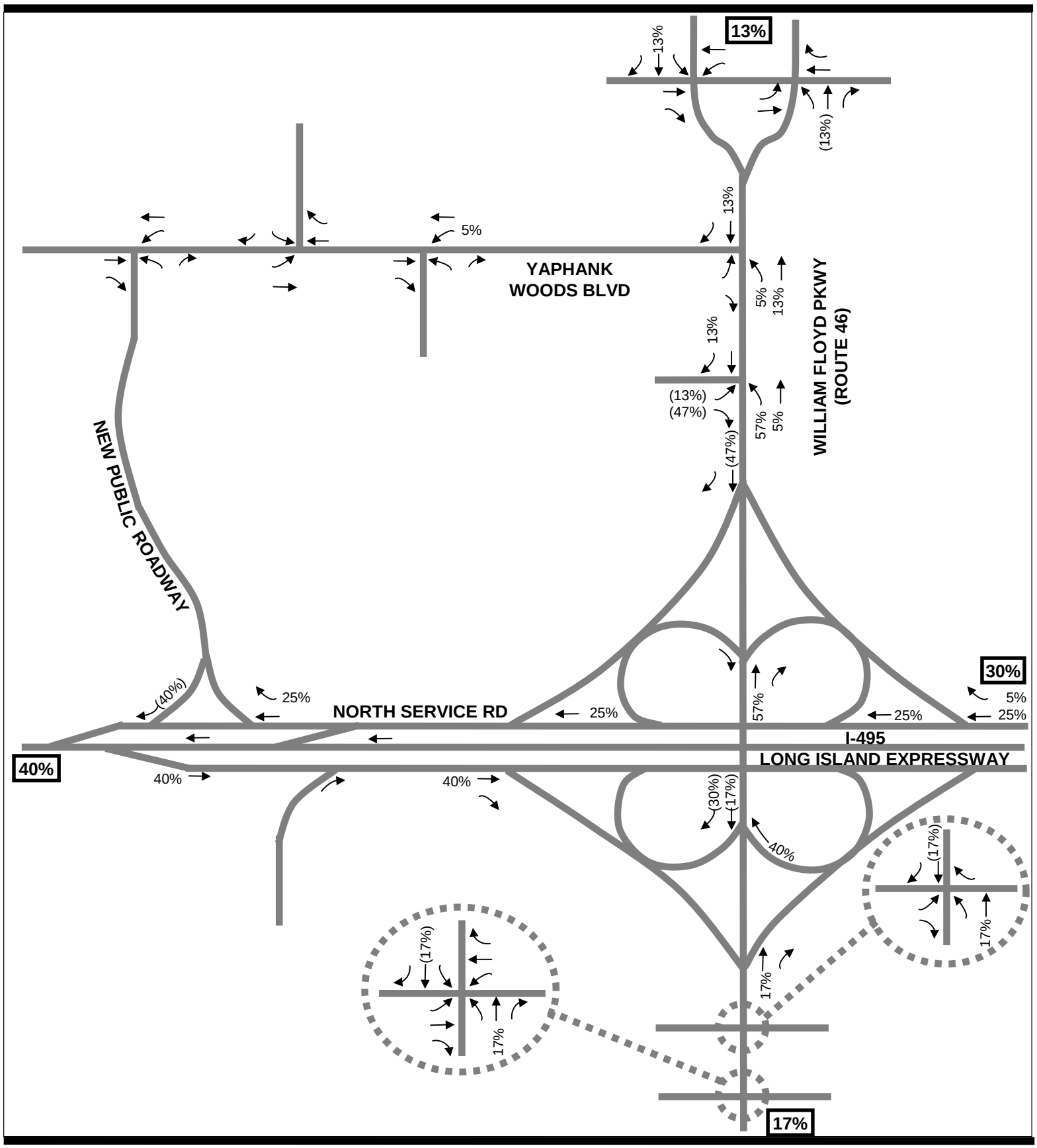

Schematic Diagram:
Not to Scale

Fay, Spofford & Thorndike, LLC
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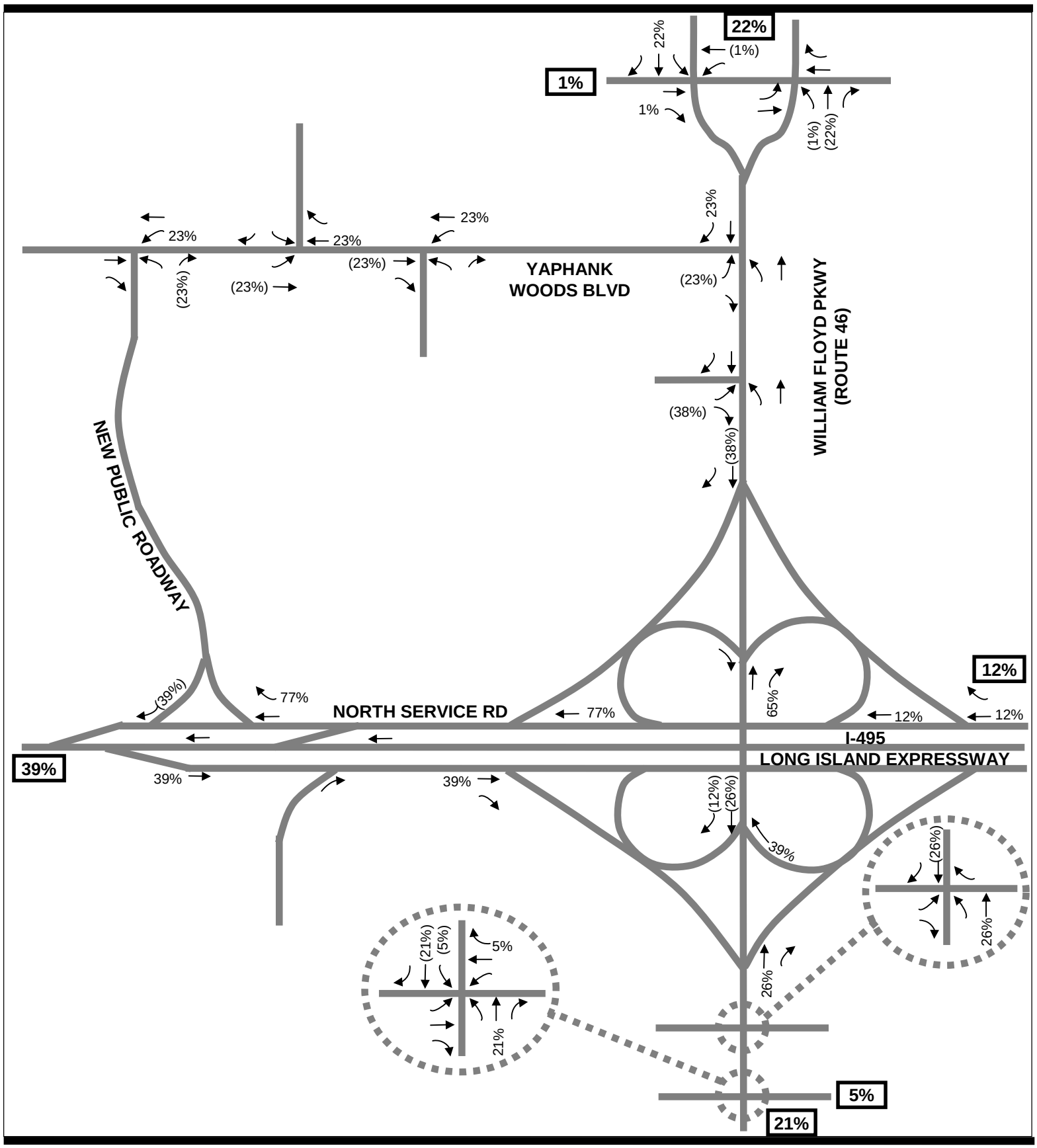
Figure 11
Hotel Distribution
Entering (Exiting)

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

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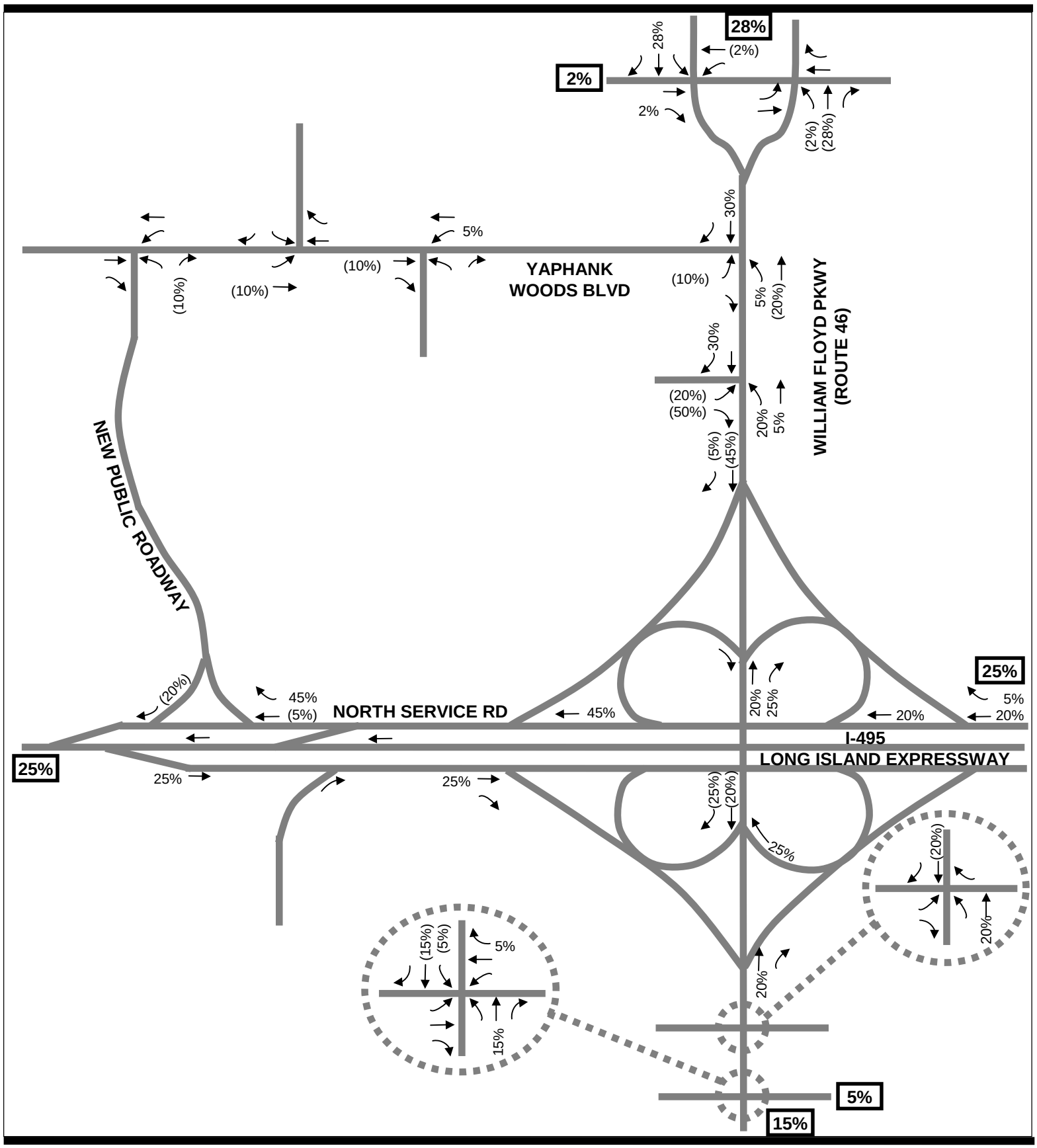
Figure 10
Office Distribution
Entering (Exiting)

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

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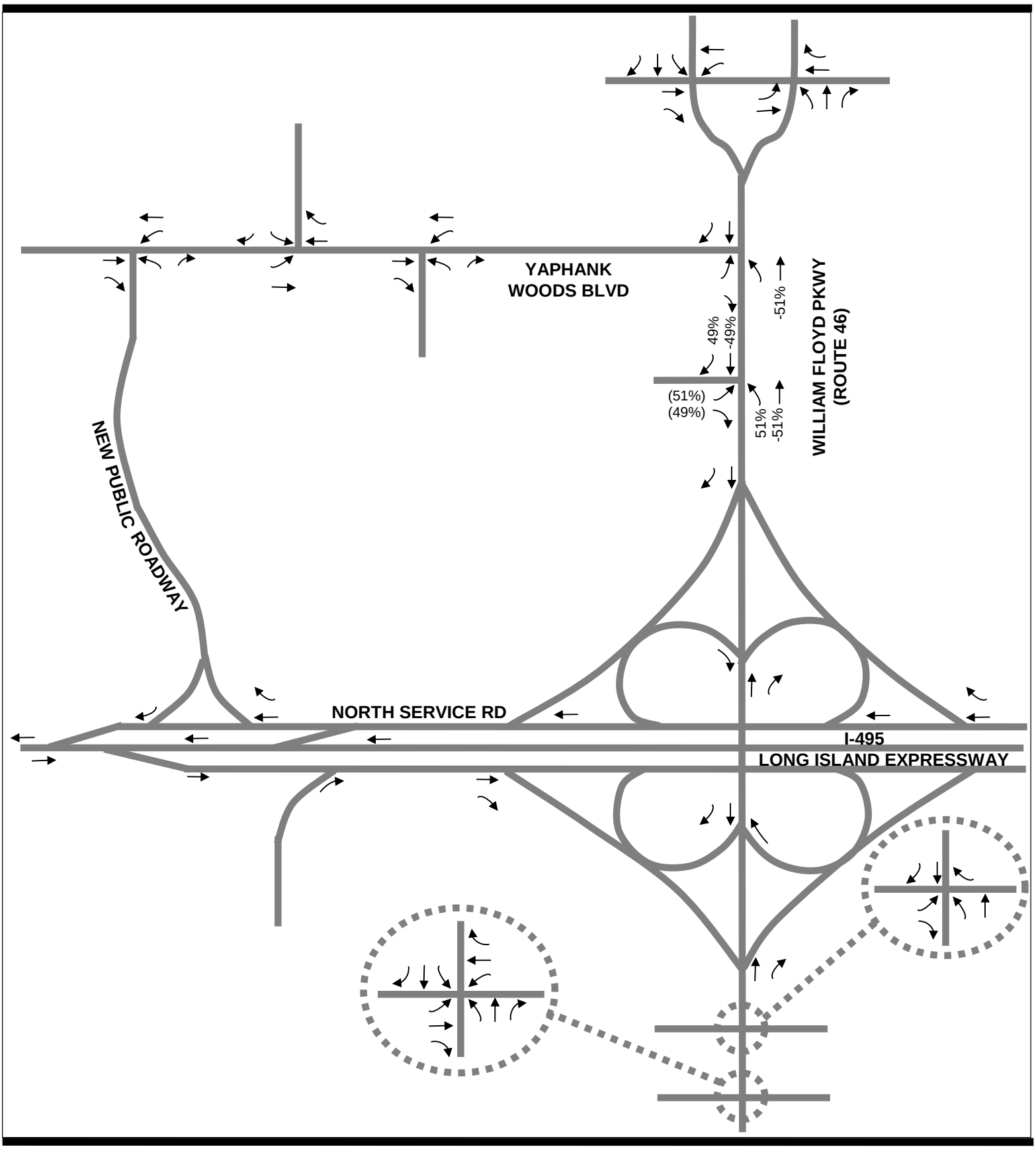
Figure 12
Retail Distribution
Entering (Exiting)

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

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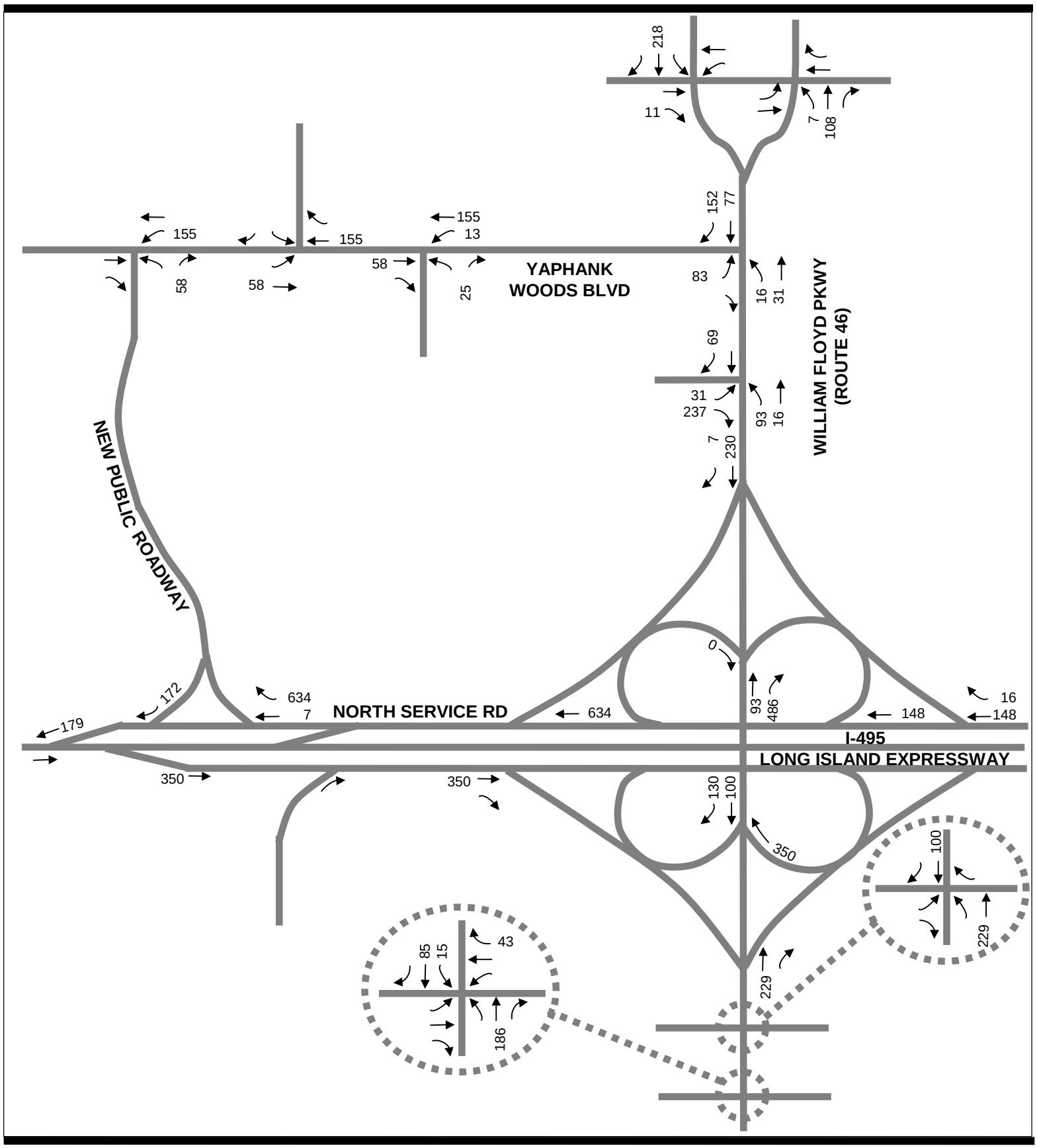
Figure 13
Retail Pass-By
Entering (Exiting)

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

Fay, Spofford & Thorndike, LLC
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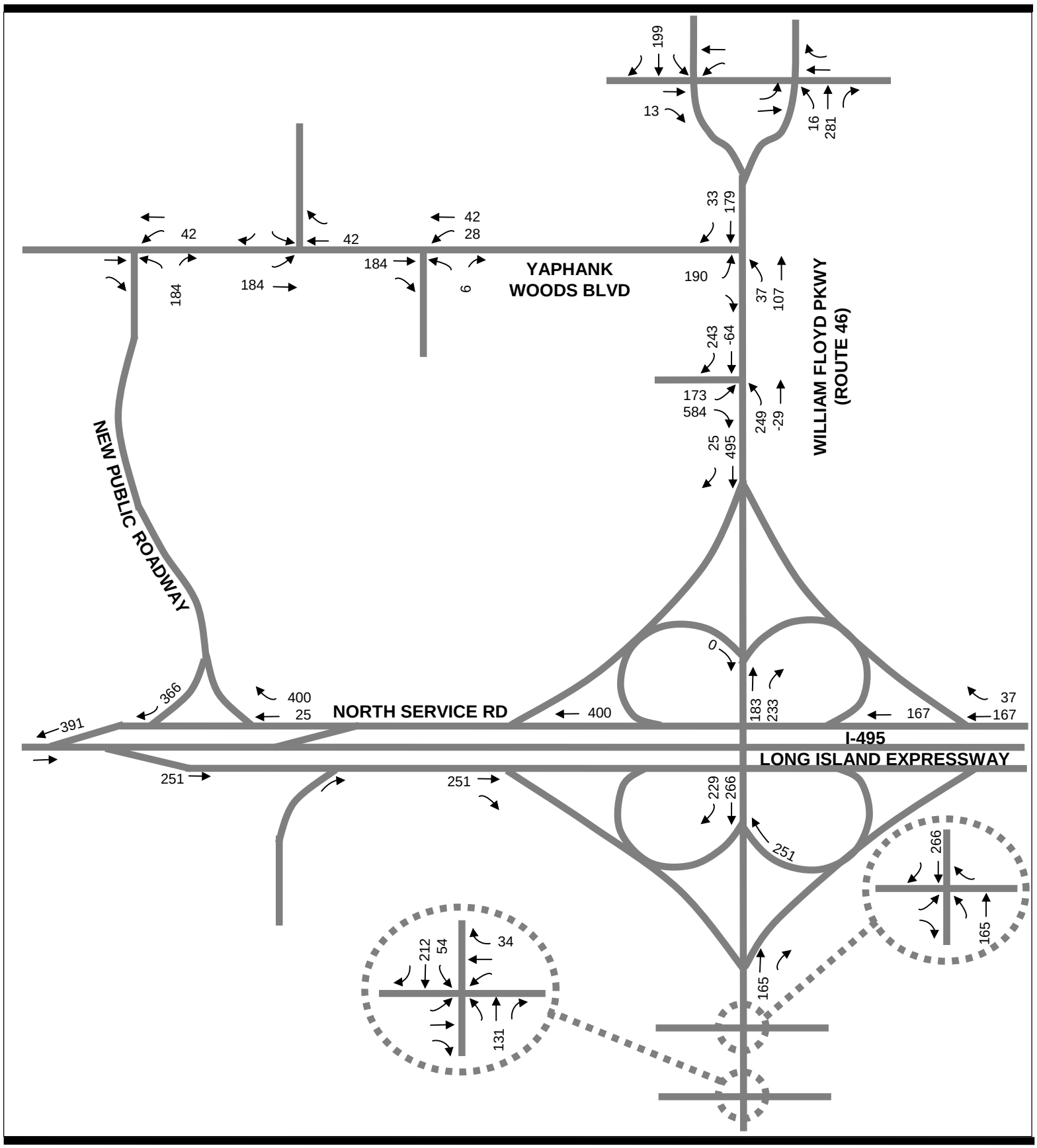
Proposed Mixed Use Development
Town of Brookhaven, New York

Figure 14
Weekday AM Peak Hour Trip Assignment



Schematic Diagram:
Not to Scale

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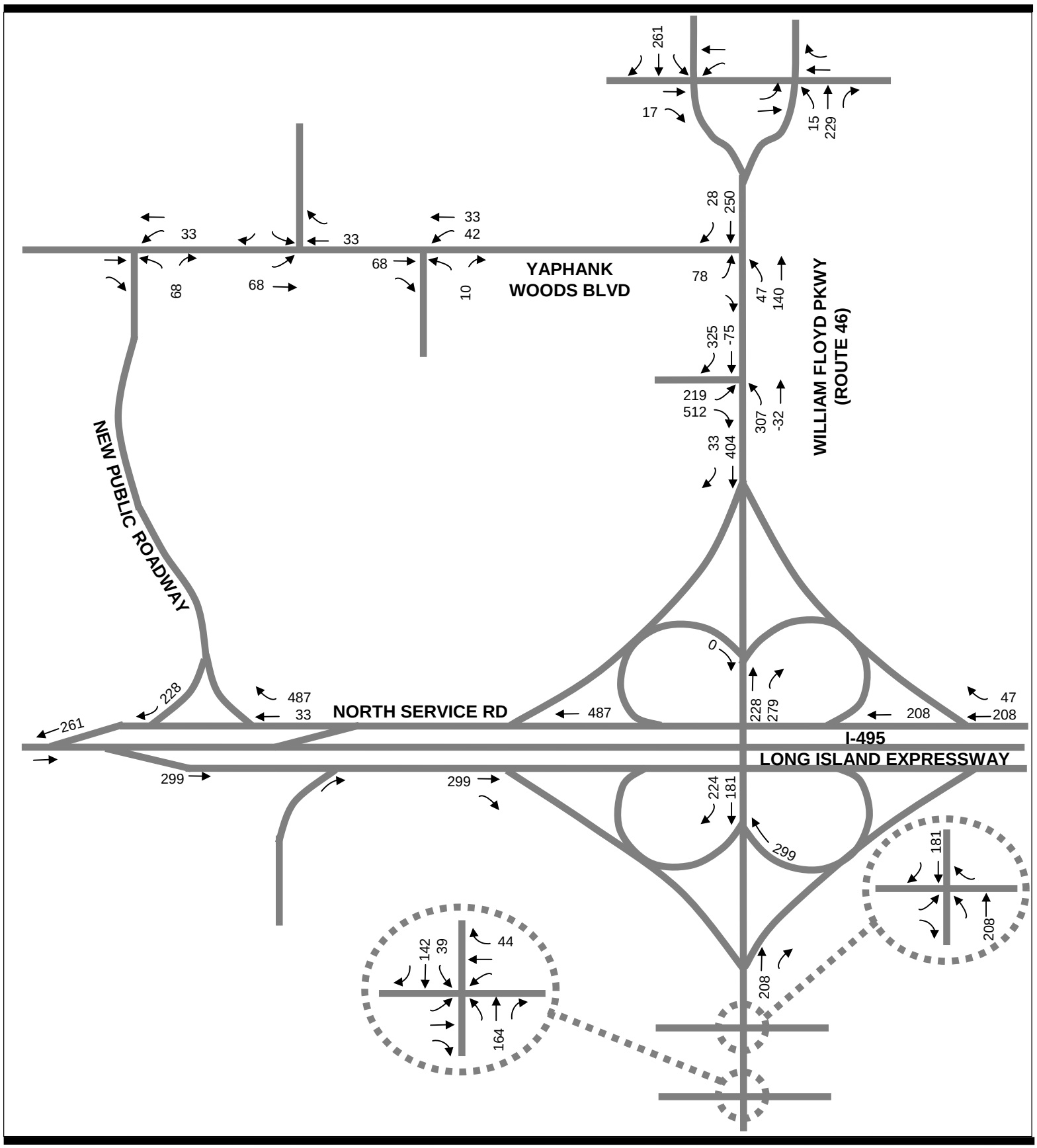
Figure 15
Weekday PM Peak Hour
Trip Assignment

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

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Figure 16
Saturday Peak Hour
Trip Assignment

Proposed Mixed Use Development
Town of Brookhaven, New York

5.4 Traffic Signal Warrants

A new traffic signal is proposed at the intersection of the site drive with William Floyd parkway. The first step in the determination of the need for traffic signal control at an unsignalized intersection is the performance of signal warrant analysis. The Manual on Uniform Traffic Control Devices (MUTCD) contains 9 warrants for the installation of traffic signals. These warrants, which consider vehicular and pedestrian volumes, delay, and crash history, are listed below.

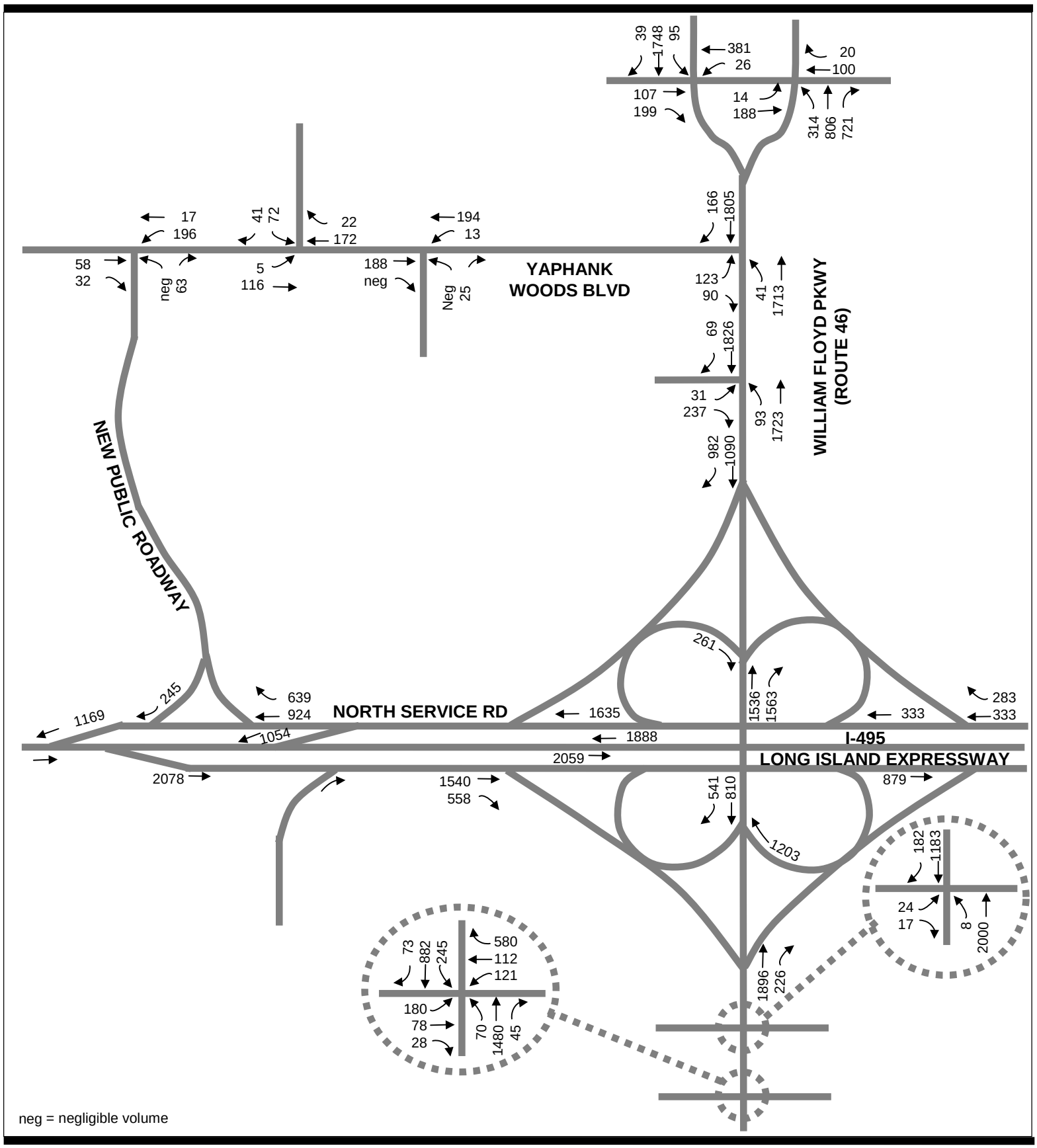
Warrant 1. Eight-Hour Vehicular Volume
Warrant 2. Four-Hour Vehicular Volume
Warrant 3. Peak Hour
Warrant 4. Pedestrian Volume
Warrant 5. School Crossing
Warrant 6. Coordinated Signal System
Warrant 7. Crash Experience
Warrant 8. Roadway Network
Warrant 9. Intersection Near a Grade Crossing

An intersection needs to satisfy only one of these warrants to support the installation of a traffic signal. However, satisfying one or more of these warrants does not require in itself either the installation or the continued operation of a traffic signal.

An analysis of the signal warrants was conducted for the proposed site drive on William Floyd Parkway to confirm that proposed traffic signal is warranted. It was determined that the following warrants are satisfied (see the Appendix for traffic signal warrant checklists).

<u>William Floyd Parkway/ Main Site Drive</u>
Warrant 1. Eight-Hour Vehicular Volume
Warrant 2. Four-Hour Vehicular Volume
Warrant 3. Peak Hour Vehicular Volume

At the primary site access intersection of William Floyd Parkway/ Main Site Drive the projected volumes exceed the eight-hour volume, four-hour volume and peak hour volume signal warrant thresholds under the Build conditions. Therefore, a signal may be installed at this location.



Schematic Diagram: Not to Scale

Fay, Spofford & Thorndike, LLC
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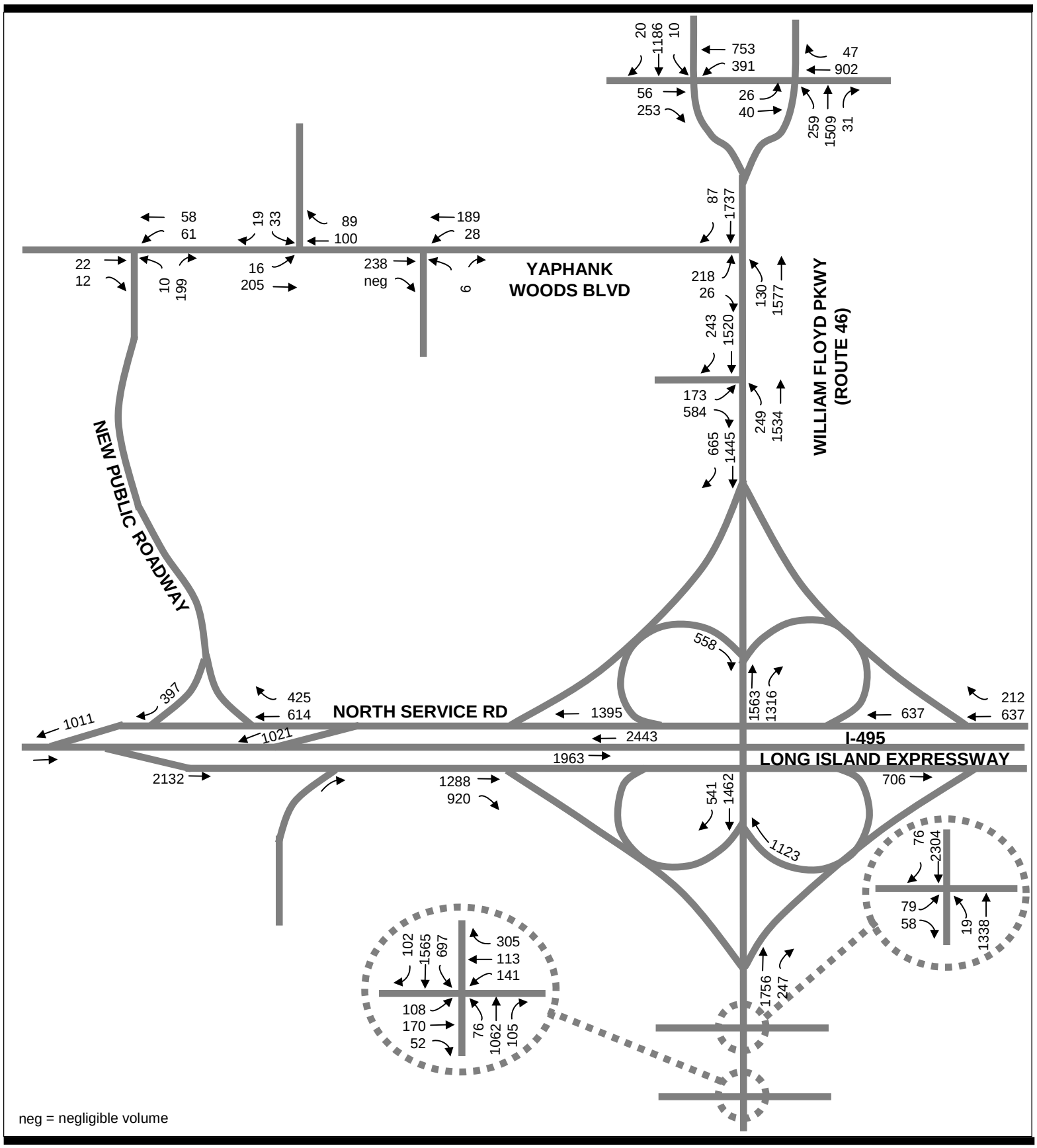
Figure 17
2015 Build Weekday
AM Peak Hour

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram: Not to Scale

Fay, Spofford & Thorndike, LLC
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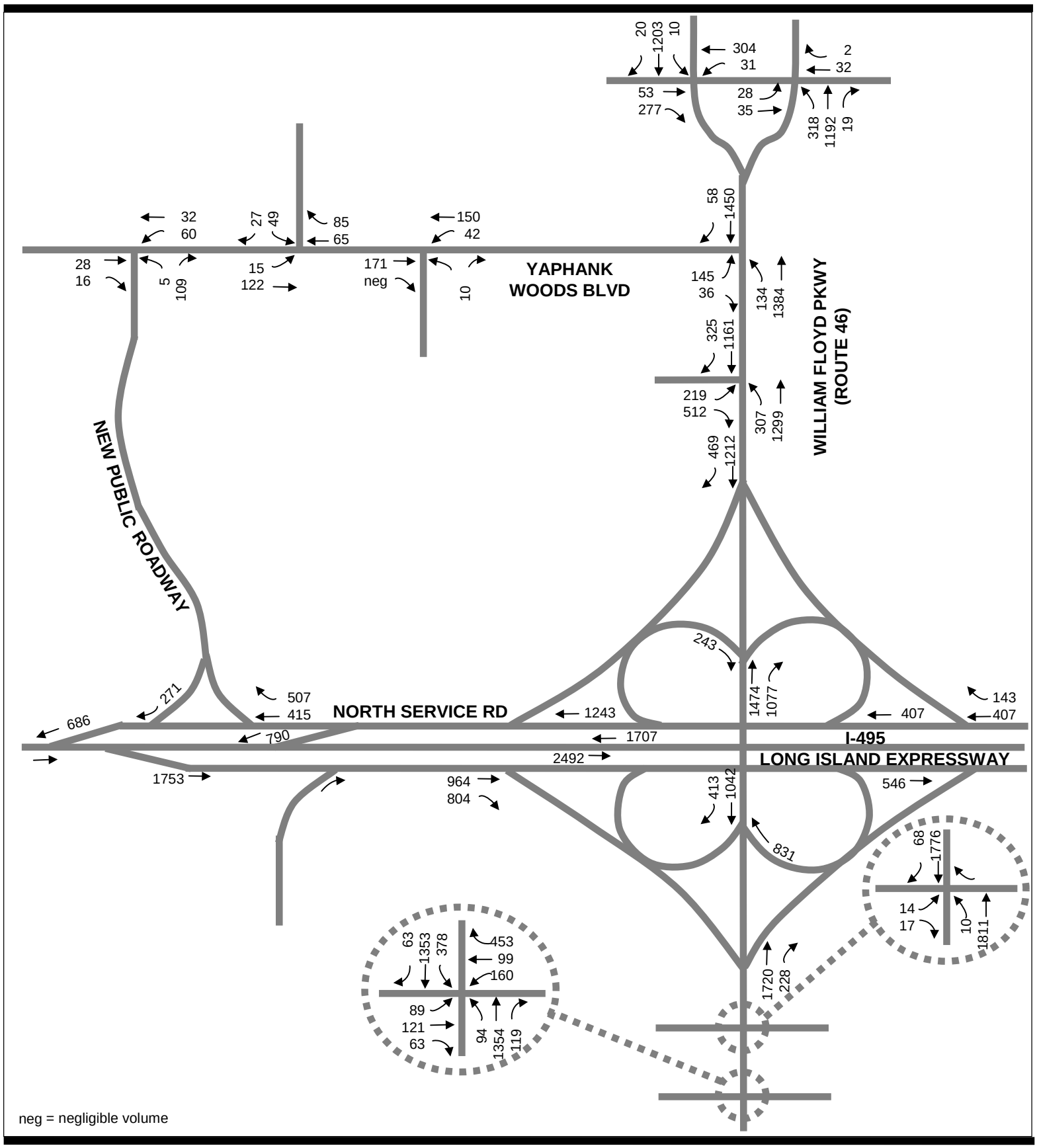
Figure 18
2015 Build Weekday
PM Peak Hour

Proposed Mixed Use Development
Town of Brookhaven, New York



Schematic Diagram:
Not to Scale

Fay, Spofford & Thorndike, LLC
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Figure 19
2015 Build Saturday
Midday Peak Hour

Proposed Mixed Use Development
Town of Brookhaven, New York

6.0 Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess quality of flow, roadway capacity analyses were conducted with respect to the 2010 Existing conditions and projected 2015 No-Build and Build traffic volume conditions. Capacity analyses provide an indication of the adequacy of the roadway facilities to serve the anticipated traffic demands.

6.1 Level of Service Criteria

Level of Service (LOS), an expression of traffic flow, is a commonly used and accepted measure of effectiveness of peak-hour traffic operating conditions. It takes into account such factors as automobile and truck volumes, roadway width, speed, grades, parking restrictions, pedestrian activity, and traffic control devices.

LOS is designated in a range from Level "A", which is the optimal condition where a roadway's operating conditions are at their best, to Level "F", which indicates traffic jam conditions. Levels "A" through "D" are typically associated with acceptable levels of peak-hour traffic operation within urban areas, with LOS "D" marking the boundary between acceptable and unacceptable traffic conditions. At Level "E", the ratio of the approach volume to capacity, or v/c ratio, of an intersection is between 90 and 100 percent of its theoretical capacity. Traffic congestion is considered to be unacceptable at LOS "E" or "F".

All capacity analysis for this study was performed in accordance with the methodologies set forth in the ***Highway Capacity Manual***.[2] As defined in the Highway Capacity Manual, LOS for unsignalized and signalized intersections is defined in terms of the average control delay in seconds per vehicle approaching the intersection for the peak 15-minute analysis period of a peak hour. The delay criteria and their associated LOS rankings are given in Tables 10 and 11.

It should be noted that LOS is based on the delay or level of congestion and is not related to the safety of an intersection.

[2] *Highway Capacity Manual*, Transportation Research Board, 2000

Table 10 – Level of Service Criteria for Unsignalized Intersections

Level of Service	Total Delay (sec/veh)
A	≤10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	> 50.0

Source:*Highway Capacity Manual 2000*, TRB

Table 11 – Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay (sec/veh)
A	≤ 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	> 80.0

Source:*Highway Capacity Manual 2000*, TRB

6.2 Traffic Operations

Levels-of-service analyses were conducted for the 2010 Existing, 2015 No-Build, and 2015 Build conditions for the signalized and unsignalized study-area intersections, and are summarized in Tables 12-15.

Signalized Intersection Capacity Analysis

Table 12 presents a summary of the existing capacity analyses for the signalized intersections in the study area. The capacity analyses worksheets are included in the appendix.

As can be seen in Table 12, the overall intersections level of service (LOS) at all of the existing signalized intersections operate at LOS C or better during the AM, PM and Saturday midday peak hours.

Table 12 – Signalized Capacity Analysis – Existing Conditions

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Longwood Road															
EB T	0.32	28.2	C	47	101	0.31	33.6	C	27	66	0.26	22.8	C	14	45
EB R	0.12	0.2	A	0	0	0.13	0.2	A	0	0	0.12	0.2	A	0	0
WB L	0.09	24.5	C	11	34	0.56	6.7	A	46	70	0.05	15.9	B	9	33
WB T	0.82	42.3	D	201	352	0.87	16.9	B	85	628	0.35	18.2	B	78	169
SB L	0.13	9.5	A	23	44	0.02	15.0	B	3	12	0.02	9.9	A	2	9
SB T	0.80	17.8	B	284	357	0.70	22.2	C	206	260	0.61	13.8	B	111	174
SB R	0.03	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.77**	**20.4**	**C**			**0.79**	**16.1**	**B**			**0.49**	**12.8**	**B**		
William Floyd Parkway/ National Labs															
EB L	0.07	19.5	B	5	14	0.22	11.5	B	2	6	0.15	6.4	A	1	6
EB T	0.66	26.1	C	66	93	0.18	10.0	A	3	8	0.14	6.4	A	2	7
WB T	0.21	25.6	C	26	45	0.66	22.2	C	196	303	0.04	16.6	B	4	15
WB R	0.02	0.0	A	0	0	0.03	0.0	A	0	0	0.0	0.0	A	0	0
NB L	0.45	11.8	B	108	123	0.28	16.9	B	64	109	0.32	10.7	B	49	98
NB T	0.48	11.9	B	126	123	0.79	24.6	C	244	315	0.62	13.0	B	114	180
NB R	0.60	1.7	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	
OVERALL	**0.60**	**10.2**	**B**			**0.71**	**21.8**	**C**			**0.42**	**12.1**	**B**		
William Floyd Parkway/ Yaphank Woods Drive															
EB L	0.42	32.2	C	20	49	0.43	32.8	C	7	38	0.52	31.0	C	10	45
EB R	0.71	36.3	D	65	122	0.15	20.7	C	9	40	0.11	18.7	B	4	31
NB L	0.28	29.5	C	15	44	0.52	25.7	C	32	139	0.52	24.1	C	25	93
NB T	0.66	4.7	A	166	251	0.48	2.9	A	0	145	0.42	3.0	A	0	118
SB T	0.82	13.7	B	279	390	0.78	13.9	B	127	337	0.58	10.1	B	78	227
SB R	0.01	5.7	A	0	7	0.04	7.1	A	0	15	0.02	6.9	A	0	13
OVERALL	**0.83**	**11.0**	**B**			**0.75**	**9.9**	**A**			**0.60**	**8.2**	**A**		

Table 12 – Signalized Capacity Analysis – Existing Conditions - Continued

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Suffolk County Police Headquarters Driveway															
EB L	0.70	105.2	F	8	27	0.78	87.5	F	24	64	0.32	51.0	D	3	15
EB R	0.01	38.2	D	0	10	001	36.5	D	0	18	0.01	39.2	D	0	14
NB L	0.18	43.4	D	5	9	0.36	59.6	E	12	24	0.24	54.4	E	6	14
NB T	0.63	3.2	A	25	108	0.40	0.8	A	12	14	0.51	2.4	A	16	25
SB T	0.43	5.0	A	0	208	0.75	9.7	A	335	437	0.55	5.5	A	0	265
SB R	0.02	3.1	A	0	11	0.02	3.7	A	0	8	0.01	2.8	A	0	6
OVERALL	**0.63**	**4.6**	**A**			**0.80**	**8.4**	**A**			**0.60**	**4.4**	**A**		
William Floyd Parkway/ Moriches Middle Island Road															
EB L	0.81	53.7	D	86	202	0.46	31.7	C	51	97	0.34	29.8	C	41	74
EB TR	0.31	30.5	C	37	86	0.60	34.2	C	99	165	0.45	30.7	C	71	118
WB L	0.54	34.1	C	54	114	0.84	62.5	E	72	157	0.76	46.6	D	80	135
WB T	0.36	30.9	C	48	10	0.32	29.9	C	51	93	0.26	28.9	C	44	77
WB R	0.34	0.6	A	0	0	0.17	0.2	A	0	0	0.25	0.4	A	0	0
NB L	0.46	38.8	D	35	71	0.34	33.8	C	36	76	0.52	39.0	D	47	89
NB T	0.69	19.1	B	258	335	0.63	23.5	C	197	274	0.67	21.1	C	226	419
NB R	0.03	11.3	B	0	18	0.07	16.8	B	0	33	0.07	13.8	B	0	36
SB L	0.53	31.2	C	56	87	0.82	29.6	C	146	200	0.61	31.2	C	84	111
SB T	0.41	15.7	B	131	222	0.73	25.1	C	372	456	0.61	19.3	B	216	413
SB R	0.05	22.6	C	0	45	0.07	30.2	C	20	39	0.04	19.5	B	0	44
OVERALL	**0.70**	**19.8**	**B**			**0.74**	**26.1**	**C**			**0.68**	**21.4**	**C**		

1. volume-to-capacity ratio.
2. delay in seconds per vehicle.
3. Queue in feet per lane

Table 13 presents a summary of the capacity analyses for the 2015 No Build condition at all of the signalized intersections in the study area. The capacity analyses worksheets are included in the appendix.

As can be seen in Table 13, with the anticipated background growth and specific background projects, the overall intersections level of service (LOS) at all of the signalized intersections will continue to operate at an overall LOS C or better during the AM, PM and Saturday midday peak hours.

Table 13 – Signalized Capacity Analysis – No Build Conditions

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Longwood Road															
EB T	0.37	32.3	C	60	110	0.37	37.6	D	34	70	0.23	24.0	C	18	54
EB R	0.14	0.2	A	0	0	0.17	0.2	A	0	0	0.18	0.2	A	0	0
WB L	0.10	28.5	C	13	33	0.66	9.6	A	66	84	0.06	17.6	B	12	41
WB T	1.00	78.5	E	260	410	1.09	68.2	E	590	779	0.48	21.9	C	126	243
SB L	0.13	8.9	A	25	48	0.02	14.1	B	3	12	0.02	10.3	B	2	9
SB T	0.88	21.4	C	393	494	0.75	22.9	C	262	326	0.69	15.8	B	156	212
SB R	0.03	0.0	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.87**	**28.5**	**C**			**0.92**	**32.6**	**C**			**0.59**	**14.5**	**B**		
William Floyd Parkway/ National Labs															
EB L	0.08	22.3	C	6	15	0.23	11.9	B	3	7	0.14	6.5	A	2	7
EB T	0.77	36.3	D	85	101	0.21	10.4	B	4	9	0.13	6.5	A	2	8
WB T	0.24	29.7	C	35	50	0.79	29.4	C	265	349	0.04	17.7	B	5	18
WB R	0.02	0.0	A	0	0	0.03	0.0	A	0	0	0.00	0.0	A	0	0
NB L	0.46	11.4	B	126	140	0.34	16.7	B	91	147	0.43	12.1	B	81	135
NB T	0.53	11.8	B	158	149	0.87	27.9	C	329	422	0.68	14.9	B	157	213
NB R	0.66	2.2	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.66**	**11.5**	**B**			**0.82**	**26.1**	**C**			**0.46**	**13.7**	**B**		
William Floyd Parkway/ Yaphank Woods Drive															
EB L	0.42	36.2	D	20	49	0.43	36.4	D	11	38	0.37	28.7	C	16	48
EB R	0.84	55.2	E	72	127	0.07	24.0	C	6	24	0.19	20.8	C	13	47
NB L	0.34	35.0	D	16	44	0.61	33.0	C	46	139	0.57	28.8	C	41	100
NB T	0.73	5.5	A	218	331	0.58	3.3	A	0	209	0.50	3.6	A	99	155
SB T	0.90	17.6	B	402	632	0.84	15.3	B	174	475	0.68	11.7	B	204	301
SB R	0.01	5.1	A	0	7	0.04	6.3	A	0	16	0.02	6.9	A	0	12
OVERALL	**0.92**	**14.0**	**B**			**0.82**	**10.6**	**B**			**0.67**	**9.1**	**A**		

Table 13 – Signalized Capacity Analysis – No Build Conditions - Continued

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Suffolk County Police Headquarters Driveway															
EB L	0.54	51.0	D	14	38	0.90	98.5	F	47	135	0.79	150.1	F	8	27
EB R	0.02	36.3	D	0	16	0.36	36.5	D	25	61	0.01	39.3	D	0	18
NB L	0.18	45.3	D	4	8	0.27	55.5	E	12	20	0.24	52.3	D	7	11
NB T	0.74	4.4	A	24	133	0.48	1.2	A	13	16	0.59	4.4	A	19	102
SB T	0.51	6.5	A	0	272	0.94	20.8	C	507	770	0.66	6.7	A	0	361
SB R	0.16	4.4	A	0	27	0.08	5.0	A	0	14	0.05	2.9	A	0	12
OVERALL	**0.72**	**5.8**	**A**			**0.98**	**16.0**	**B**			**0.72**	**6.4**	**A**		
William Floyd Parkway/ Moriches Middle Island Road															
EB L	0.93	77.9	E	103	231	0.47	30.5	C	54	105	0.36	29.4	C	43	86
EB TR	0.35	31.2	C	45	94	0.62	33.2	C	108	183	0.49	30.4	C	77	141
WB L	0.61	37.2	D	65	137	0.90	73.9	E	79	185	0.85	58.6	E	86	188
WB T	0.40	31.5	C	57	108	0.33	28.7	C	55	102	0.27	28.4	C	47	90
WB R	0.39	0.8	A	0	0	0.20	0.3	A	0	0	0.28	0.4	A	0	0
NB L	0.48	38.8	D	38	76	0.37	34.1	C	39	81	0.55	39.6	D	52	96
NB T	0.85	24.8	C	326	508	0.86	33.4	C	278	405	0.87	29.7	C	341	533
NB R	0.03	11.7	B	0	19	0.07	18.6	B	0	35	0.08	14.9	B	1	36
SB L	0.56	28.8	C	64	96	0.89	29.1	C	168	195	0.65	30.6	C	95	120
SB T	0.49	19.6	B	148	277	0.95	35.4	D	510	590	0.76	25.3	C	315	517
SB R	0.06	31.7	C	0	54	0.08	27.8	C	16	19	0.04	25.9	C	0	41
OVERALL	**0.82**	**24.0**	**C**			**0.87**	**31.9**	**C**			**0.90**	**26.3**	**C**		

1. volume-to-capacity ratio.
2. delay in seconds per vehicle.
3. Queue in feet per lane

Table 14 presents a summary of the capacity analyses for the 2015 Build condition at all of the signalized intersections in the study area. This analysis accounts for the anticipated diversions due to the proposed roadway and ramps. This analysis also accounts for a traffic signal at the proposed site driveways. However, further improvements are accounted for in the Mitigation section of this report. The capacity analyses worksheets are included in the appendix.

As can be seen in Table 14, the overall intersections level of service (LOS) at the intersection of William Floyd Parkway/ Longwood Road will operate at LOS D during the morning peak hour, LOS C during the weekday evening peak hour, and LOS B during the Saturday midday peak hour. The adjacent intersection of William Floyd Parkway/ National Labs is projected to operate at LOS D during the weekday evening peak hour and LOS B during the weekday morning and Saturday midday peak hours.

The Intersection of William Floyd Parkway/ Yaphank Woods Boulevard is projected to operate at LOS C during the weekday morning and evening peak hours. Improvements are planned at this intersection, which are discussed in Section 7 of this report.

The intersection of William Floyd Parkway/ Suffolk County Police Headquarters Driveway is projected to operate at LOS C during the evening peak hour and LOS A during the weekday morning and Saturday midday peak hours.

The intersection of William Floyd Parkway/ Moriches Middle Island Road is projected to operate at LOS D during the evening peak hour and LOS C during the weekday morning and Saturday midday peak hours.

Without coordination, the proposed intersection of William Floyd Parkway/ Proposed Site Driveway is projected to operate at LOS B during all three analyzed time periods.

Table 14 – Signalized Capacity Analysis – Build Conditions – Without Mitigation

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Longwood Road															
EB T	0.38	34.2	C	60	110	0.37	39.1	D	34	70	0.26	28.5	C	22	64
EB R	0.15	0.2	A	0	0	0.18	0.03	A	0	0	0.19	0.3	A	0	0
WB L	0.11	31.1	C	13	31	0.70	11.1	B	67	83	0.07	22.6	C	14	46
WB T	1.07	102.5	F	263	415	1.15	90.8	E	591	778	0.54	27.9	C	158	290
SB L	0.13	8.4	A	25	48	0.02	13.4	B	3	12	0.01	9.1	A	2	9
SB T	0.98	32.6	C	524	724	0.85	26.4	C	348	428	0.75	16.2	B	225	291
SB R	0.03	0.0	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.95**	**39.1**	**D**			**0.99**	**39.9**	**C**			**0.67**	**16.0**	**B**		
William Floyd Parkway/ National Labs															
EB L	0.08	23.8	C	6	15	0.23	12.3	B	3	7	0.16	7.2	A	2	7
EB T	0.80	39.8	D	85	101	0.21	10.8	B	4	9	0.15	7.2	A	3	9
WB T	0.25	31.7	C	35	50	0.84	33.8	C	265	349	0.05	21.8	C	6	21
WB R	0.02	0.0	A	0	0	0.03	0.0	A	0	0	0.00	0.0	A	0	0
NB L	0.46	10.9	B	129	144	0.34	16.0	B	98	158	0.39	10.7	B	86	136
NB T	0.59	12.3	B	195	179	1.01	48.3	D	479	646	0.73	15.0	B	217	282
NB R	0.66	2.2	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.66**	**12.0**	**B**			**0.92**	**38.5**	**D**			**0.54**	**13.8**	**B**		
William Floyd Parkway/ Yaphank Woods Drive															
EB L	0.69	43.0	D	67	120	0.81	48.7	D	122	235	0.57	33.3	C	72	130
EB R	0.36	29.7	C	37	73	0.05	22.5	C	7	25	0.06	20.4	C	8	27
NB L	0.68	61.2	E	24	70	0.81	60.8	E	75	175	0.66	39.7	D	68	153
NB T	0.79	8.9	A	304	461	0.71	9.0	A	258	333	0.59	6.6	A	163	255
SB T	0.98	30.3	C	601	765	1.04	53.5	D	587	723	0.88	22.9	C	335	532
SB R	0.16	6.8	A	6	34	0.07	10.2	B	4	26	0.04	10.2	B	0	19
OVERALL	**0.98**	**20.7**	**C***			**0.99**	**33.7**	**C***			**0.81**	**16.8**	**B***		

Table 14 – Signalized Capacity Analysis – Build Conditions – Without Mitigation- Continued

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Suffolk County Police Headquarters Driveway															
EB L	0.54	51.0	D	14	38	0.90	98.5	F	47	135	0.79	150.1	F	8	27
EB R	0.02	36.3	D	0	16	0.39	36.9	D	27	63	0.01	39.3	D	0	18
NB L	0.18	45.7	D	5	7	0.27	55.1	E	12	18	0.24	51.3	E	7	10
NB T	0.83	6.8	A	45	186	0.54	1.9	A	40	108	0.67	7.5	A	70	123
SB T	0.56	7.0	A	0	313	1.06	50.4	D	805	943	0.73	7.9	A	0	455
SB R	0.16	4.4	A	0	27	0.08	5.0	A	0	14	0.05	2.9	A	0	12
OVERALL	**0.81**	**7.3**	**A**			**1.10**	**33.5**	**C**			**0.80**	**8.4**	**A**		
William Floyd Parkway/ Moriches Middle Island Road															
EB L	0.93	77.9	E	103	231	0.47	30.5	C	54	105	0.36	29.4	C	43	86
EB TR	0.35	31.2	C	45	94	0.62	33.2	C	108	183	0.49	30.4	C	77	141
WB L	0.61	37.2	D	65	137	0.90	73.9	E	79	185	0.85	58.6	E	86	188
WB T	0.40	31.5	C	57	108	0.33	28.7	C	55	102	0.27	28.4	C	47	90
WB R	0.42	0.9	A	0	0	0.22	0.3	A	0	0	0.31	0.5	A	0	0
NB L	0.48	38.8	D	38	76	0.37	34.1	C	39	81	0.55	39.6	D	52	96
NB T	0.98	38.8	D	419	631	1.01	55.7	E	369	495	1.02	53.0	D	475	643
NB R	0.03	11.8	B	0	19	0.07	19.2.0	B	0	35	0.08	15.4	B	4	36
SB L	0.58	28.5	C	68	102	0.93	26.0	C	193	185	0.68	30.8	C	106	129
SB T	0.54	20.4	C	171	307	1.10	75.4	E	656	618	0.85	28.1	C	379	615
SB R	0.06	31.5	C	0	55	0.08	24.3	C	16	16	0.04	23.9	C	0	31
OVERALL	**0.90**	**29.2**	**C**			**1.05**	**50.5**	**D**			**1.00**	**34.3**	**C**		
William Floyd Parkway/ Proposed Site Driveway															
EB L	0.35	40.1	D	18	43	0.65	36.6	D	89	155	0.78	44.5	D	125	240
EB R	0.16	0.2	A	0	0	0.40	0.8	A	0	0	0.35	0.6	A	0	0
NB L	0.82	73.7	E	28	60	0.90	64.6	E	71	146	0.74	40.0	D	91	152
NB T	0.67	4.5	A	202	306	0.70	8.9	A	238	345	0.60	7.8	A	188	242
SB T	0.83	13.0	B	409	665	0.93	28.3	C	393	595	0.79	21.9	C	286	370
SB R	0.05	4.7	A	3	19	0.19	11.2	B	9	48	0.22	13.8	B	0	44
OVERALL	**0.77**	**10.1**	**B***			**0.90**	**19.1**	**B***			**0.80**	**16.3**	**B***		

* Improvements Proposed at this location

Unsignalized Intersection Capacity Analysis

Table 15 presents a summary of the capacity analyses for the unsignalized intersections in the study area. The analysis was conducted for the 2010 Existing, 2015 No Build and 2015 Build conditions. Currently, there is only one unsignalized intersection. Under the Build condition, a new unsignalized site drive intersection is proposed on Yaphank Woods Boulevard. The capacity analyses worksheets are included in the Appendix.

For the Build condition, the analysis accounts for the anticipated diversions due to the proposed new roadway and ramps.

As shown in Table 15, the intersection of Yaphank Woods Boulevard/ Colonial Woods Drive will operate at LOS A during all three time periods for the Existing Conditions. For the No Build Conditions, the intersection of Yaphank Woods Boulevard/ Colonial Woods Drive will operate at LOS A during all three time periods. For the Build conditions, the intersection will operate at LOS B during the morning and evening peak hours and LOS A during the Saturday peak hour.

The proposed site driveway on Yaphank Woods Boulevard will operate at LOS A during the weekday AM peak hour volume and LOS B during the weekday PM and Saturday midday peak hours.

Table 15 – Unsignalized Capacity Analysis

Location/ Movement	AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
	v/c[1]	Delay[2]	LOS	Queue[3] 95%	v/c	Delay	LOS	Queue[3] 95%	v/c	Delay	LOS	Queue[3] 95%
Yaphank Woods Boulevard/ Colonial Woods – Existing Conditions												
SB LR	0.14	9.6	A	12	0.07	9.7	A	6	0.09	9.6	A	7
Yaphank Woods Boulevard/ Colonial Woods – No Build Conditions												
SB LR	0.14	9.6	A	12	0.07	9.7	A	6	0.09	9.6	A	7
Yaphank Woods Boulevard/ Colonial Woods – Build Conditions												
SB LR	0.17	10.7	B	15	0.08	10.4	B	7	0.10	9.9	A	8
Yaphank Woods Boulevard/ Proposed Site Driveway – Build Conditions												
NB LR	0.03	9.1	A	4	0.01	9.4	A	1	0.01	9.1	A	1

1. volume-to-capacity ratio.
2. delay in seconds per vehicle.
3. Queue in feet per lane

Weave/ Merge/ Diverge Analysis

Table 16 presents a summary of the capacity analyses of existing weave, merges and diverges in the study area. The capacity analyses worksheets are included in the Appendix.

As shown in Table 16, under existing conditions, all of the merges and diverges currently operate at LOS C or better during the peak hours. The existing weave on William Floyd Parkway northbound currently operates at LOS D during the weekday morning peak hour. This is primarily due to the volumes currently on the loop ramps. All of the other weaves operate at LOS C or better during the AM, PM and Saturday peak hours.

Table 16 – Freeway Ramp Analysis – Existing Conditions

Location/ Movement	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
Diverge Analysis									
South Service Road from I-495 EB	-	23.0	C	-	24.3	C	-	23.1	C
William Floyd Parkway SB Ramp from South Service Road EB	-	12.8	B	-	15.1	B	-	11.4	B
William Floyd Parkway NB to South Service Road EB	-	11.5	B	-	11.5	B	-	12.3	B
William Floyd Parkway SB to North Service Road WB	-	13.1	B	-	12.9	B	-	9.9	A
Merge Analysis									
William Floyd Parkway NB and North Service Road WB	51.1	15.7	B	51.2	13.6	B	51.2	12.2	B
William Floyd Parkway SB and South Service Road EB	51.3	10.8	B	51.1	17.2	B	51.2	13.8	B
North Service Road WB and William Floyd Parkway Ramp SB	51.0	17.4	B	51.2	13.3	B	51.3	10.8	B
North Service Road WB On-Ramp to I-495 WB	58.8	23.8	C	59.4	22.1	C	60.3	16.3	B
Weave Analysis									
William Floyd Parkway NB between Loop Ramps	25.7	34.1	D	27.0	25.9	C	31.8	29.0	C
William Floyd Parkway SB between Loop Ramps	48.5	6.1	A	44.8	9.3	A	53.0	5.4	A
North Service Road WB between Loop Ramps	30.3	11.4	A	29.3	13.2	B	32.9	8.2	A
South Service Road EB between Loop Ramps	30.6	15.2	B	30.8	11.6	A	36.5	5.7	A

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

Table 17 presents a summary of the capacity analyses for the 2015 No Build condition at the weave, merges and diverges in the study area. The capacity analyses worksheets are included in the appendix.

As can be seen in Table 17, with the anticipated background growth and specific background projects, but without the proposed project, the Diverge from I-495 to the South Service Road is projected to operate at LOS F during the weekday evening peak hour and LOS C during the weekday AM and Saturday midday peak hours. All of the other diverge movements are projected to operate at LOS B during all three time periods.

All of the merges will operate at LOS C or better during the peak hours.

Under the 2015 No Build conditions, the weave on William Floyd Parkway northbound between the loop ramps is projected to operate at LOS F during the weekday morning peak hour and LOS E during the weekday evening peak hour. However, improvements to this weave are proposed as part of this project, which are discussed in Section 7 of this report. All of the other weaving movements will operate at LOS C or better during the peak hours.

Table 17 – Freeway Ramp Analysis – No Build Conditions

Location/ Movement	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
Diverge Analysis									
South Service Road from I-495 EB	-	26.8	C	-	27.6	F	-	26.2	C
William Floyd Parkway SB Ramp from South Service Road EB	-	16.1	B	-	17.9	B	-	13.8	B
William Floyd Parkway NB to South Service Road EB	-	18.3	B	-	17.5	B	-	16.5	B
William Floyd Parkway SB to North Service Road WB	-	18.4	B	-	15.4	B	-	12.2	B
Merge Analysis									
William Floyd Parkway NB and North Service Road WB	51.1	17.5	B	51.1	16.2	B	51.2	14.2	B
William Floyd Parkway SB and South Service Road EB	51.2	13.5	B	50.9	20.5	C	51.1	16.4	B
North Service Road WB and William Floyd Parkway Ramp SB	50.9	19.8	B	51.1	16.4	B	51.2	12.5	B
North Service Road WB On-Ramp to I-495 WB	57.8	27.0	C	58.2	26.2	C	59.9	18.9	B
Weave Analysis									
William Floyd Parkway NB between Loop Ramps	24.4	43.1	F	25.0	38.7	E	30.4	25.0	C
William Floyd Parkway SB between Loop Ramps	43.9	10.1	A	35.0	16.2	B	47.3	8.3	A
North Service Road WB between Loop Ramps	28.6	16.9	B	27.3	20.9	B	30.8	12.4	B
South Service Road EB between Loop Ramps	29.2	21.7	B	30.8	14.8	B	35.0	9.1	A

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

Table 18 presents a summary of the capacity analyses for the 2015 Build condition at the weave, merges and diverges in the study area. The capacity analyses worksheets are included in the appendix.

As can be seen in Table 18, with the traffic associated with the proposed project, the Diverge from I-495 to the South Service Road will continue to operate at LOS F during the weekday morning peak hour, will degrade from LOS E to LOS F during the weekday evening peak hour and will operate at LOS D during the Saturday midday peak hour. Improvements to this ramp are discussed in the next section of this document. All of the other diverge movements are projected to operate at LOS B during all three time periods.

With the new ramp on-ramp from the North Service Road onto the Long Island Expressway westbound, the existing ramp will be improved to operate at LOS B during the morning peak hour and remain at LOS C during the weekday evening peak hour. The new ramp is projected to operate at LOS C during the weekday morning and evening peak hours and LOS B during the Saturday midday peak hour. All of the other merges operate at LOS C or better during the peak hours.

Under the 2015 Build conditions, without improvements, the weave on William Floyd Parkway northbound between the loop ramps is projected to operate at LOS F during the weekday morning peak hour and weekday evening peak hours and operate at LOS C during the Saturday midday peak hours. Improvements to this weave are discussed in the next section of this document.

All of the other weaving movements will operate at an overall LOS C or better during the peak hours.

Table 18 – Freeway Ramp Analysis – Build Conditions

Location/ Movement	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
Diverge Analysis									
South Service Road from I-495 EB	-	29.6	F*	-	29.7	F*	-	28.5	D*
William Floyd Parkway SB Ramp from South Service Road EB	-	19.4	B	-	20.3	C	-	16.7	B
William Floyd Parkway NB to South Service Road EB	-	20.5	C	-	19.1	B	-	18.6	B
William Floyd Parkway SB to North Service Road WB	-	20.0	C	-	20.1	C	-	16.0	B
Merge Analysis									
William Floyd Parkway NB and North Service Road WB	51.0	18.4	B	51.0	17.7	B	51.1	16.4	B
William Floyd Parkway SB and South Service Road EB	51.2	14.4	B	50.7	22.8	C	51.0	17.9	B
North Service Road WB and William Floyd Parkway Ramp SB	50.4	24.9	C	50.9	20.0	C	51.1	16.9	B
North Service Road WB On-Ramp to I-495 WB (with New Ramp)	60.0	18.7	B	59.6	21.1	C	60.4	15.4	B
New On-Ramp to I-495 WB	58.7	25.0	C	58.2	26.4	C	60.0	18.7	B
Weave Analysis									
William Floyd Parkway NB between Loop Ramps	27.1	46.3	F*	26.1	43.0	F*	32.0	29.6	C*
William Floyd Parkway SB between Loop Ramps	41.4	12.9	B	32.8	22.9	B	42.1	13.8	B
North Service Road WB between Loop Ramps	26.3	27.3	C	26.5	37.6	C	29.3	19.6	B
South Service Road EB between Loop Ramps	25.9	31.9	C	26.2	26.0	C	28.6	18.2	B
New Weave - North Service Road WB west of Cloverleaf	45.5	32.3	D	48.9	23.6	B	46.7	20.5	B

3. Segment Speed (mph)
4. Density (pc/mi/ln)
5. Level of Service

* Improvements Proposed at this location

Supplemental Analysis – Without Other Developments

The 2015 No Build and Build Analysis presented previously included a significant amount of background development as requested by the Town of Brookhaven Planning Department. A number of these developments have not yet received their required permits, and project related mitigation has not been identified. Therefore, potential future roadway improvements associated with these other projects could not be incorporated into the analysis. The analysis is very conservative in that it included traffic associated with the other developments, but did not include potential improvements associated with other projects.

To provide an additional indication of the impact to operations at the signalized intersection, FST has also conducted a supplemental year 2015 analysis at the signalized intersections which included the proposed Meadows at Yaphank project in additional to a 2% per year annual growth rate, but does not include the other potential developments. The traffic volume figures are shown in the Appendix along with the analysis worksheets. This supplemental analysis was performed for two conditions. Table 19 shows the Build conditions, while the Build with Mitigation conditions are summarized in Tables 23 and 24 in the following section.

As can be seen in Table 19, the overall intersection of William Floyd Parkway/ Moriches Middle Island Road operates at LOS D during the evening peak hour. The rest of the study area locations all operate at an overall LOS C or better during the peak hours.

The supplemental analysis was also conducted at the two signalized intersections where improvements are proposed as part of the proposed development. As shown in Table 23, with the proposed improvements at the intersection of William Floyd Parkway/ Site Driveway, the intersection would operate at LOS A during the weekday morning and LOS B during the weekday evening and Saturday Midday peak hours. This would be true for both conditions, with the other developments and without the other developments. As shown in Table 24, with the proposed improvements at William Floyd Parkway/ Yaphank Woods Boulevard, the intersection would operate at LOS B during the weekday morning, weekday evening peak hours and Saturday Midday peak hours. This would be true for both conditions, with the other developments and without the other developments.

Table 19 – Supplemental Signalized Capacity Analysis – Build Conditions Without Other Developments

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Longwood Road															
EB T	0.38	33.3	C	60	110	0.37	38.6	D	34	70	0.25	27.0	C	21	62
EB R	0.14	0.2	A	0	0	0.15	0.02	A	0	0	0.15	0.2	A	0	0
WB L	0.11	30.1	C	13	32	0.68	9.6	A	59	73	0.07	20.8	C	13	44
WB T	1.03	90.6	F	259	407	1.06	56.8	E	529	714	0.42	24.3	C	109	223
SB L	0.13	8.6	A	25	48	0.02	13.6	B	3	12	0.01	9.4	A	2	9
SB T	0.93	25.0	C	451	584	0.82	25.0	C	317	392	0.75	16.3	B	203	271
SB R	0.03	0.0	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.91**	**32.5**	**C**			**0.94**	**29.6**	**C**			**0.61**	**15.6**	**B**		
William Floyd Parkway/ National Labs															
EB L	0.08	23.1	C	6	15	0.23	12.1	B	3	7	0.16	6.8	A	2	7
EB T	0.78	37.7	D	85	101	0.21	10.7	B	4	9	0.14	6.9	A	3	8
WB T	0.25	31.0	C	35	50	0.82	32.3	C	265	349	0.04	20.4	C	6	21
WB R	0.02	0.0	A	0	0	0.03	0.0	A	0	0	0.00	0.0	A	0	0
NB L	0.46	11.1	B	127	141	0.29	15.7	B	79	130	0.33	10.6	B	65	108
NB T	0.56	12.1	B	180	166	0.95	35.7	D	407	568	0.74	15.3	B	201	267
NB R	0.66	2.2	A	0	0	0.02	0.0	A	0	0	0.01	0.0	A	0	0
OVERALL	**0.66**	**11.7**	**B**			**0.88**	**31.3**	**C**			**0.53**	**14.0**	**B**		
William Floyd Parkway/ Yaphank Woods Drive															
EB L	0.69	43.0	D	67	120	0.81	48.7	D	122	235	0.55	31.6	C	71	130
EB R	0.35	29.7	C	36	72	0.05	22.5	C	7	24	0.05	19.2	B	5	25
NB L	0.68	61.2	E	24	70	0.81	60.8	E	75	175	0.65	37.1	D	68	153
NB T	0.77	8.3	A	284	431	0.63	7.9	A	211	273	0.55	6.3	A	141	222
SB T	0.91	20.3	C	451	683	0.97	35.3	D	461	650	0.83	20.5	C	288	416
SB R	0.15	6.7	A	3	31	0.06	10.2	B	2	24	0.04	10.5	B	0	19
OVERALL	**0.92**	**15.8**	**B***			**0.92**	**25.2**	**C***			**0.76**	**15.5**	**B***		

Table 19 – Supplemental Signalized Capacity Analysis – Build Conditions Without Other Developments - Continued

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Suffolk County Police Headquarters Driveway															
EB L	0.54	51.0	D	14	38	0.78	87.5	F	24	64	0.32	51.0	D	3	15
EB R	0.01	36.2	D	0	10	0.11	37.3	D	5	23	0.01	39.2	D	0	14
NB L	0.18	45.8	D	5	8	0.36	58.2	E	12	20	0.24	52.6	D	6	11
NB T	0.81	6.5	A	55	211	0.51	1.7	A	15	31	0.64	6.3	A	42	133
SB T	0.54	6.7	A	0	293	0.94	19.6	B	626	850	0.69	7.1	A	0	397
SB R	0.16	4.4	A	0	27	0.02	3.7	A	0	8	0.01	2.8	A	0	6
OVERALL	**0.80**	**6.9**	**A**			**0.99**	**14.1**	**B**			**0.75**	**7.0**	**A**		
William Floyd Parkway/ Moriches Middle Island Road															
EB L	0.93	77.9	E	103	231	0.47	30.5	C	54	105	0.36	29.4	C	43	86
EB TR	0.35	31.2	C	45	94	0.62	33.2	C	108	183	0.49	30.4	C	77	141
WB L	0.61	37.2	D	65	137	0.90	73.9	E	79	185	0.85	58.6	E	86	188
WB T	0.40	31.5	C	57	108	0.33	28.7	C	55	102	0.27	28.4	C	47	90
WB R	0.40	0.8	A	0	0	0.21	0.3	A	0	0	0.30	0.5	A	0	0
NB L	0.48	38.8	D	38	76	0.37	34.1	C	39	81	0.55	39.6	D	52	96
NB T	0.90	28.2	C	361	556	0.89	36.8	D	288	420	0.92	34.1	C	365	560
NB R	0.03	11.7	B	0	19	0.07	19.0	B	0	35	0.08	15.3	B	0	36
SB L	0.57	30.7	C	66	98	0.91	33.7	C	181	276	0.67	30.4	C	104	125
SB T	0.51	16.9	B	157	277	0.99	41.0	D	547	687	0.79	25.9	C	330	541
SB R	0.06	23.2	C	0	51	0.08	27.8	C	15	25	0.04	25.3	C	0	38
OVERALL	**0.85**	**24.5**	**C**			**0.98**	**35.1**	**D**			**0.93**	**27.6**	**C**		
William Floyd Parkway/ Proposed Site Driveway															
EB L	0.35	37.7	D	18	43	0.64	35.3	D	89	155	0.76	40.9	D	113	240
EB R	0.16	0.2	A	0	0	0.40	0.8	A	0	0	0.35	0.6	A	0	0
NB L	0.79	63.9	E	28	60	0.88	59.6	E	71	146	0.71	36.7	D	84	152
NB T	0.66	4.5	A	192	288	0.61	7.7	A	185	267	0.56	7.5	A	163	210
SB T	0.80	12.0	B	354	503	0.88	23.6	C	341	523	0.75	20.7	C	242	314
SB R	0.05	4.9	A	2	18	0.18	11.3	B	4	42	0.22	14.2	B	0	44
OVERALL	**0.74**	**9.3**	**A***			**0.84**	**17.0**	**B***			**0.76**	**15.5**	**B***		

7.0 Mitigation

This chapter describes several traffic mitigation measures that have been identified to address existing deficiencies and to minimize the traffic impacts of this project. While we have studied the cumulative impacts of the other "potential development projects" it is understood that these projects will be required to provide their own traffic mitigation. Non-capacity related strategies, such as safety improvements, and travel demand management measures to decrease traffic demand on area roadways during peak periods are also recommended.

Ramp/ Roadway Mitigation

Several study area intersections and ramps are currently or are projected to operate poorly during the peak periods without roadway improvements. To mitigate the impacts of the proposed development and the correct existing deficiencies, a number of roadway improvements are proposed as part of this project.

The modified roadway improvements are discussed at each location below. Illustrations of the proposed geometric improvements are being submitted under a separate cover.

New On-Ramp from North Service Road onto Long Island Expressway (I-495) westbound

As part of this project, a new westbound on ramp to the Long Island Expressway (I-495) is proposed, approximately 1,850 feet west of the existing on-ramp. In addition, to accommodate the new ramp, I-495 westbound will be shifted south. This ramp was previously proposed and approved for the previous development and an Interchange Justification Report for the ramp was prepared and submitted and approved by FHWA in 2005.

All of the analysis and trip assignments were conducted assuming the new Island Expressway westbound on-ramp from the North Service Road and the Yaphank Woods Boulevard Extension will be constructed. A summary of the impacts of the proposed improvement is shown in Table 20. As shown in Table 20, the operations at the existing ramp merge will be improved from LOS C to LOS B during the weekday morning peak hour and remain at LOS C during the weekday evening peak hour and LOS B during the Saturday midday peak hour with the project related traffic and the new ramp. The new ramp is projected to operate at LOS C during the weekday morning and evening peak hours and LOS B during the Saturday midday peak hour.

Table 20 – Freeway Ramp Analysis – Build Conditions
North Service Road On-Ramp to I-495 WB

AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
Existing Ramp Merge – North Service Road to I-495 WB - No Build Conditions								
57.8	27.0	C	58.2	26.2	C	59.9	18.9	B
Existing Ramp Merge – North Service Road to I-495 WB - Build Conditions – With Proposed New Ramp								
60.0	18.7	B	59.6	21.1	C	60.4	15.4	B
Proposed New Ramp Merge (West of Existing Ramp) – North Service Road to I-495 WB - Build Conditions – With Improvements								
58.7	25.0	C	58.2	26.4	C	60.0	18.7	B

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

South Service Road from Long Island Expressway (I-495) off-ramp

Currently there is only a single ramp off ramp from William Floyd Parkway eastbound to the South Service Road. Approximately 1,100 feet from the Long Island Expressway (I-495), the South Service Road widens to two lanes. In order to improve operations and handle the volume of traffic utilizing this off-ramp, it is proposed that this ramp be widened to two lanes. This ramp had been proposed and approved as part of the previous development program.

A summary of the Impacts of the proposed improvement is shown in Table 21. As shown in Table 21, the operations at the diverge will improve from LOS F to LOS B with the additional lane. This improvement results in a marked improvement over the No Build conditions.

Table 21 – Freeway Ramp Analysis – Build Conditions
South Service Road from I-495 EB

AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
Density[2]	LOS[3]	Density	LOS	Density	LOS
Diverge - South Service Road from I-495 EB - No Build Conditions					
26.8	C	27.6	F	26.2	C
Diverge - South Service Road from I-495 EB - Build Conditions – Without Improvements					
29.6	F	29.7	F	28.5	D
Diverge - South Service Road from I-495 EB - Build Conditions – With Improvements					
18.9	B	19.1	B	17.2	B

1. Segment Speed (mph)
2. Density (pc/mi/ln)
3. Level of Service

Northbound William Floyd Parkway onto North Service Road loop ramp

Due to the high volumes on the loop ramp during the morning peak hour, a two-lane off-ramp from William Floyd Parkway northbound to the North Service Road westbound is necessary to provide efficient operations.

For the current proposal, proposed mitigation consists of widening and reconfiguring the northeast loop from William Floyd Parkway northbound to the North Service Road westbound to consist of two receiving lanes. This ramp improvement was previously proposed for the previous development. The previous proposal also relocated the loop ramp. However, due to the reduced development program the current proposal consists of widening this ramp to two lanes, but does not involve relocating the entire ramp.

As shown in Table 22, with the proposed improvements at this intersection, the weave would operate at an acceptable LOS C during the weekday morning and evening peak hours and LOS B during the Saturday peak hours. This improvement results in a marked improvement over the No Build conditions.

Table 22 – Freeway Ramp Analysis – Build Conditions
William Floyd Parkway Northbound Between Loop Ramps

AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
Speed[1]	Density[2]	LOS[3]	Speed	Density	LOS	Speed	Density	LOS
Weave – William Floyd Parkway Northbound - No Build Conditions								
24.4	43.1	F	25.0	38.7	E	30.4	25.0	C
Weave – William Floyd Parkway Northbound - - Build Conditions								
27.1	46.3	F	26.1	43.0	F	32.0	29.6	C
Weave – William Floyd Parkway Northbound - – With Improvements								
37.1	25.3	C	33.6	25.0	C	41.0	18.1	B

3. Segment Speed (mph)
4. Density (pc/mi/ln)
5. Level of Service

William Floyd Parkway at Main Site Drive

This new signalized intersection will be constructed to consist of a double northbound left turn, in addition to the two existing through lanes. The two existing southbound through lanes will be maintained in addition to a new southbound right turn lane entering the site. The exit will consist of separate left and right turn lanes onto William Floyd Parkway. As shown in Table 23, with the proposed improvements at this intersection, the intersection would operate at LOS A during the weekday morning and LOS B during the weekday evening and Saturday Midday peak hours. To minimize delays on William Floyd Parkway, part of the proposed improvements consist of coordinating the traffic signal at the new site drive with the intersection of William Floyd Parkway/ Yaphank Woods Boulevard.

William Floyd Parkway at Yaphank Woods Boulevard

For the current proposal, the proposed mitigation plan will consist of widening the Yaphank Woods Boulevard approach to accommodate two eastbound left turn lanes and one eastbound right

turn lane. In addition, the northbound left turn lane on CR 46 will be widened slightly from 9 feet wide to a full 12-foot wide left turn lane. In addition, the traffic signal at this intersection will be coordinated with the new traffic signal at the proposed site driveway.

As shown in Table 24, with the proposed improvements at this intersection, the intersection would operate at LOS B during the weekday morning, weekday evening peak hours and Saturday Midday peak hours.

Table 23 – Signalized Capacity Analysis
William Floyd Parkway at Main Site Driveway

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue					Queue					Queue	
	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Main Site Drive – Build Conditions															
EB L	0.35	40.1	D	18	43	0.65	36.6	D	89	155	0.78	44.5	D	125	240
EB R	0.16	0.2	A	0	0	0.40	0.8	A	0	0	0.35	0.6	A	0	0
NB L	0.82	73.7	E	28	60	0.90	64.6	E	71	146	0.74	40.0	D	91	152
NB T	0.67	4.5	A	202	306	0.70	8.9	A	238	345	0.60	7.8	A	188	242
SB T	0.83	13.0	B	409	665	0.93	28.3	C	393	595	0.79	21.9	C	286	370
SB R	0.05	4.7	A	3	19	0.19	11.2	B	9	48	0.22	13.8	B	0	44
OVERALL	**0.77**	**10.1**	**B***			**0.90**	**19.1**	**B***			**0.80**	**16.3**	**B***		
William Floyd Parkway/ Main Site Drive – Build Conditions with Improvements															
EB L	0.35	43.3	D	19	47	0.72	43.5	D	95	176	0.80	48.6	D	122	233
EB R	0.16	0.2	A	0	0	0.40	0.8	A	0	0	0.35	0.6	A	0	0
NB L	0.38	40.5	D	28	52	0.71	42.7	D	73	127	0.71	40.2	D	88	132
NB T	0.66	4.4	A	205	306	0.67	8.0	A	242	313	0.56	7.3	A	174	225
SB T	0.87	4.1	A	38	695	0.92	13.6	B	85	549	0.74	9.4	A	53	110
SB R	0.05	0.1	A	0	1	0.19	5.9	A	4	13	0.22	4.9	A	0	20
OVERALL	**0.79**	**5.1**	**A**			**0.89**	**12.3**	**B**			**0.76**	**12.0**	**B**		
Supplemental Analysis- William Floyd Parkway/ Main Site Drive – Build Conditions with Improvements- Without other Developments															
EB L	0.35	43.3	D	19	47	0.72	43.5	D	95	176	0.80	48.6	D	48.6	233
EB R	0.16	0.2	A	0	0	0.40	0.8	A	0	0	0.35	0.6	A	0.6	0
NB L	0.387	40.5	D	28	52	0.71	42.7	D	73	127	0.71	40.2	D	40.2	132
NB T	0.64	4.2	A	194	258	0.59	6.9	A	187	243	0.54	7.1	A	7.1	211
SB T	0.81	3.9	A	37	656	0.85	11.1	B	71	197	0.69	8.6	A	8.6	93
SB R	0.05	0.01	A	0	1	0.18	5.0	A	1	14	0.22	3.9	A	3.9	24
OVERALL	**0.74**	**4.9**	**A**			**0.83**	**11.2**	**B**			**0.73**	**11.7**	**B**	**11.7**	

Table 24 – Signalized Capacity Analysis - William Floyd Parkway at Yaphank Woods Boulevard

Location/ Movement	AM Peak Hour					PM Peak Hour					Saturday Peak Hour				
				Queue[3]					Queue					Queue	
	v/c[1]	Delay[2]	LOS	50%	95%	v/c	Delay	LOS	50%	95%	v/c	Delay	LOS	50%	95%
William Floyd Parkway/ Yaphank Woods Drive – No Build Conditions															
EB L	0.42	36.2	D	20	49	0.43	36.4	D	11	38	0.37	28.7	C	16	48
EB R	0.84	55.2	E	72	127	0.07	24.0	C	6	24	0.19	20.8	C	13	47
NB L	0.34	35.0	D	16	44	0.61	33.0	C	46	139	0.57	28.8	C	41	100
NB T	0.73	5.5	A	218	331	0.58	3.3	A	0	209	0.50	3.6	A	99	155
SB T	0.90	17.6	B	402	632	0.84	15.3	B	174	475	0.68	11.7	B	204	301
SB R	0.01	5.1	A	0	7	0.04	6.3	A	0	16	0.02	6.9	A	0	12
OVERALL	**0.92**	**14.0**	**B**			**0.82**	**10.6**	**B**			**0.67**	**9.1**	**A**		
William Floyd Parkway/ Yaphank Woods Drive – Build Conditions															
EB L	0.69	43.0	D	67	120	0.81	48.7	D	122	235	0.57	33.3	C	72	130
EB R	0.36	29.7	C	37	73	0.05	22.5	C	7	25	0.06	20.4	C	8	27
NB L	0.68	61.2	E	24	70	0.81	60.8	E	75	175	0.66	39.7	D	68	153
NB T	0.79	8.9	A	304	461	0.71	9.0	A	258	333	0.59	6.6	A	163	255
SB T	0.98	30.3	C	601	765	1.04	53.5	D	587	723	0.88	22.9	C	335	532
SB R	0.16	6.8	A	6	34	0.07	10.2	B	4	26	0.04	10.2	B	0	19
OVERALL	**0.98**	**20.7**	**C***			**0.99**	**33.7**	**C***			**0.81**	**16.8**	**B***		
William Floyd Parkway/ Yaphank Woods Drive – Build Conditions with Improvements															
EB L	0.43	38.7	D	39	64	0.75	46.8	D	64	118	0.41	36.2	D	39	66
EB R	0.34	33.1	C	42	77	0.05	27.7	C	6	26	0.06	24.9	C	6	26
NB L	0.39	36.3	D	26	43	0.75	49.1	D	80	135	0.58	40.9	D	77	134
NB T	0.75	7.1	A	246	326	0.64	3.8	A	138	167	0.52	3.4	A	97	138
SB T	0.95	26.2	C	537	776	0.90	21.9	C	426	583	0.75	17.2	B	295	427
SB R	0.15	7.3	A	6	33	0.06	7.3	A	0	18	0.04	8.8	A	0	18
OVERALL	**0.91**	**17.8**	**B**			**0.89**	**16.4**	**B**			**0.70**	**13.1**	**B**		
Supplemental Analysis - William Floyd Pkwy/ Yaphank Woods Drive – Build Conditions with Improvements – Without Other Developments															
EB L	0.43	38.7	D	39	64	0.75	46.8	D	64	118	0.41	36.2	D	39	66
EB R	0.33	33.0	C	41	76	0.04	27.6	C	4	23	0.05	24.8	C	4	24
NB L	0.39	36.6	D	26	45	0.75	51.6	D	80	167	0.58	41.3	D	77	134
NB T	0.73	6.7	A	232	308	0.57	3.4	A	116	141	0.50	3.3	A	91	133
SB T	0.89	19.8	B	455	691	0.84	18.3	B	370	482	0.71	16.3	B	272	294
SB R	0.15	7.3	A	4	30	0.06	7.3	A	0	18	0.04	8.8	A	0	18
OVERALL	**0.85**	**14.6**	**B**			**0.82**	**15.1**	**B**			**0.67**	**12.8**	**B**		

As shown in Tables 20-24, the locations with the most need for improvements will experience substantial improvement in traffic operations with the implementation of the mitigation measures identified in this study. The analysis results also show that the proposed improvements offsets project impacts and also provides additional capacity to accommodate future traffic growth in the area.

Travel Demand Management (TDM) Program

The goal of the Travel Demand Management (TDM) plan is to reduce the project's overall traffic impact through the implementation of measures that are aimed at affecting the demand side of the transportation equation, rather than the supply side. TDM programs are designed to maximize the people-moving capability of the existing transportation infrastructure by increasing the number of persons in a vehicle, providing alternate modes of travel, or influencing the time of, or need to, travel. TDM measures are generally more effective with commuter-type traffic (residential and office developments). The following discusses the TDM measures proposed as part of the project. The benefits of TDM have not been factored into the tip generation calculations or the level of service analysis results in this study. Therefore, this study represents a conservative analysis.

Transit Connection

Currently no transit services are available in the immediate area. The proponent is committed to working with the Suffolk County Transit to facilitate modifications to bus routes to provide service to the site. The proponent will also work with the Suffolk County Transit to identify locations on-site for dedicated bus stops.

In addition to working with Suffolk County Transit to establish public bus service to the site the proponent will provide a private shuttle bus from the site to the local train stations (Mastic/Shirley & Yaphank) and the Brookhaven National Lab. This service would be based on demand.

Bicycle and Pedestrian Measures

Bicycling and walking to the proposed development could be attractive to some employees and residents. To facilitate both employee and residential access to the site, bicycle trails are being constructed on-site, in addition to a connection to the "greenbelt" trail. In addition, secure bicycle storage racks will be provided.

On-site Services

Employees typically make midday trips during their breaks and lunchtime to conduct personal business. On-site services could reduce the need for employees and residents to leave the site to conduct personal business. By the very nature of this mixed-use project, significant on-site services will be provided to result in reduced trip making for residents and employees.

8.0 Phasing and Mitigation Schedule

A preliminary construction phasing plan has been developed as part of the development. The phasing plan incorporates various level of development, in addition to various access options. A summary of the preliminary phasing schedule is shown in Table 25. A proposed mitigation schedule is also identified.

It should be noted that market fluctuations can impact the phasing of the project. Therefore, the actual phasing and mitigation schedule may need to be modified at a later date. If the phasing is modified, the mitigation schedule may need to be modified also based on anticipated volumes to be generated by each phase.

Table 25 – Proposed Construction Phasing and Mitigation Schedule

Phase Number	Development Size	Points of Access	Proposed Mitigation
Phase 1	• 304 Residential Units • 51,200 sf Retail	• Yaphank Woods Boulevard • Right in/right out driveway onto William Floyd Parkway (CR-46)	• Widen Yaphank Woods Boulevard eastbound approach to provide an additional left turn lane. The existing 9 ft northbound left turn lane will be widened slightly to accommodate a full 12 feet wide left turn lane. • Provide Right in/right out driveway onto William Floyd Parkway (CR-46)
Phase 2	• 416 Residential Units • 150,000 sf Office/Flex Space	• Yaphank Woods Boulevard • New Signal at WFP	• Construct a new signalized intersection at the proposed main site driveway on William Floyd Parkway (CR-46). Coordinate the traffic signal with the existing signal at the intersection of William Floyd Parkway / Yaphank Woods Boulevard.
Phase 3	• 130 Residential Units • 276,300 sf Retail	• Yaphank Woods Boulevard • New Signal at WFP • Direct Connection to LIE North Service Road	• Widen the northeast loop ramp from William Floyd Parkway northbound to the North Service Road westbound from one to two lanes • Construct a new Long Island Expressway westbound on-ramp from the North Service Road • Construct a new public roadway between Yaphank Woods Boulevard and the North Service Road.
Phase 4	• 150,000 sf Office/Flex Space • Hotel • Restaurant	• Yaphank Woods Boulevard • New Signal at WFP • Direct Connection to LIE North Service Road	• Widen the eastbound Long Island Expressway off-ramp onto the South Service Road from one lane to two lanes to accommodate the off-ramp volume.
Phase5	• 250,000 sf Office/Flex Space	• Yaphank Woods Boulevard • New Signal at WFP • Direct Connection to LIE North Service Road	N/A = Mitigation fully implemented during Phase 4.

*Phasing Plan Subject to change based on current market conditions and demands.

Recommended Mitigation Schedule

FST reviewed the project related traffic volumes at each location and also conducted a supplemental capacity analysis at specific locations during the critical peak hours. Based on this review, in order to accommodate the project related traffic, FST recommends the mitigation schedule shown in Table 25. This schedule is discussed at each location in greater detail below.

William Floyd Parkway/ Yaphank Woods Boulevard

With the proposed Phase 1 development scenario, the northbound left turn movement is expected to increase. This increase is due to the residential and retail-related development, in addition to the assumption that the proposed new traffic signal and the proposed New Public Roadway connection to the LIE are not yet implemented. The development related traffic would be divided between this intersection and the proposed right in/ right out on William Floyd Parkway (CR-46) to access the site during Phase 1. Therefore, improvements are necessary at this location in conjunction with Phase 1.

William Floyd Parkway/ New Site Drive

The planned Construction Phasing assumes an unsignalized right in/ right out driveway onto William Floyd Parkway will be constructed during Phase 1. In conjunction with Phase 2, this driveway is expected to be signalized to allow left turns at this location. Direct Site Access will be provided to the North Service Road during Phase 3.

Based on this staging plan, the full improvements proposed at this location should be implemented in conjunction with Phase 2, including signal coordination with the intersection of William Floyd Parkway / Yaphank Woods Boulevard.

I-495/Wiliam Floyd Parkway northeast loop ramp

The weave on William Floyd Parkway between loop ramps is projected to operate at LOS F during the critical AM peak hour without any development related traffic. Therefore a level of service comparison of the weave between development phases is not useful. Instead, the mitigation schedule can be estimated based on development trip assignment and the site access. Since site access to the North Service Road is not planned during Phase 1 or Phase 2, there is no project related traffic expected on the northeast loop ramp. Once a site driveway entrance is provided from the North Service Road, which is currently planned as part of Phase 3, the northeast loop ramp should be widened to accommodate two lanes.

Eastbound I-495 Off Ramp

Due to high volumes on the off ramp, the diverge from I-495 eastbound to the South Service Road is projected to operate at LOS F during the critical PM peak hour without any development related traffic. Based on the projected volumes on the ramp, we recommend implementing the ramp improvements in conjunction with Phase 3.

New Westbound I-495 On-Ramp

Based on the projected volumes on the ramp, we recommend implementing the ramp improvements during Phase 3.

Mitigation Phasing Summary

Based on the projected volumes for each phase, FST recommends the following mitigation schedule.

- In conjunction with Phase 1, the proponent will construct a new upgraded 12 'left turn on CR46 to Yaphank Woods Road. In addition, a second eastbound left turn lane on

Yaphank Woods Parkway will be constructed. A new right in/ right out site driveway will also be constructed on William Floyd Parkway (main entrance).

- In conjunction with Phase 2, the proponent will construct a signalized intersection at the proposed Main Site Driveway on William Floyd Parkway. This signal will be coordinated with the signal at the intersection of William Floyd Parkway/ Yaphank Woods Boulevard.
- In conjunction with Phase 3, the northeast loop ramp from William Floyd Parkway to the North Service Road westbound will be widened from one lane to two lanes. A new westbound on ramp will be constructed from the North Service Road to Long Island Expressway approximately 1,850 feet west of the existing ramp. In addition, a new public roadway will be constructed between Yaphank Woods Boulevard and the North Service Road. A direct connection will be provided between the project site and the North Service Road.
- In conjunction with Phase 4, the eastbound Long Island Expressway off-ramp will be widened from one-lane to two lanes to accommodate the projected off-ramp volume.
- Table 25 reflects development based on a proposed phasing plan. Actual development and mitigation may vary based on market conditions. If actual development varies from the proposed phasing schedule, the applicant will provide to the Town, during site plan review, updated traffic volumes. These traffic volumes will be utilized to determine the required mitigation (if any), based upon the projected Trip Generation of the actual development.

9.0 Conclusion

This traffic study presented a detailed traffic assessment to evaluate the impacts associated with the construction of the proposed mixed-use development.

The proposed Mixed Use Development is expected to generate 1,496 primary vehicle trips (972 entering/ 524 exiting) during the weekday morning, 2,014 vehicle trips (832 entering/ 1,182 exiting) during the evening peak hour and 1,949 vehicle trips (1,040 entering/ 909 exiting) during the Saturday midday peak hour.

The proposed Mixed Use Development is projected to generate less traffic than the uses originally permitted for the site. The total trip generation for the current site is expected to be 17% lower during the weekday morning peak hour, 40% lower on a weekday evening peak hour and 41% lower on a Saturday midday peak than the uses originally permitted. Overall weekday and Saturday daily trip generation is reduced by 38% (see Table 8).

The development schedule will be based upon future market conditions; therefore the timing of the mitigation will be triggered by the projected trip generation of actual uses to be constructed. The following offsite mitigation is proposed to offset the impacts of the development:

- Construct a new Long Island Expressway westbound on-ramp from the North Service Road approximately 1,850 feet west of its existing location.
- Construct a new public roadway between Yaphank Woods Boulevard and the North Service Road.
- Widen the eastbound Long Island Expressway off-ramp onto the South Service Road from one lane to two lanes to accommodate the off-ramp volume.
- Widen the loop ramp from William Floyd Parkway northbound to the North Service Road westbound from one to two lanes
- Construct a new signalized intersection at the proposed main site driveway. The intersection would be constructed to consist of a two northbound left turn lanes, and two through lanes. In addition, two southbound through lanes and a single southbound right turn lane would be provided. Left and right turn lanes will be provided from the site to William Floyd Parkway.
- Widening the Yaphank Woods Boulevard eastbound approach to William Floyd Parkway to provide two left turn only lanes and a separate right turn lane. The northbound left turn lane will be widened slightly to accommodate a full 12 feet wide left turn lane.
- The traffic signal at the intersection of William Floyd Parkway / Yaphank Woods Boulevard will be coordinated with the new traffic signal at the proposed William Floyd Parkway Site Driveway.

The locations with the most need for improvements will experience substantial improvement in traffic operations with the implementation of the mitigation measures identified in this study. The analysis results also show that the proposed improvements offsets project impacts and also provides additional capacity to accommodate future traffic growth in the area.

Traffic Counts

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311 85th St
Brooklyn, NY 11209
Tel: (718) 833-6176 - Fax: (718) 921-2844

Site Code: 10617
CR46 William Floyd Pkwy
S/O Yaphank Woods Blvd

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	*	51	226	100	274	88	240	80	247
12:15	*	*	*	*	*	*	*	*	69	238	79	258	78	253	75	250
12:30	*	*	*	*	*	*	*	*	44	272	68	282	80	226	64	260
12:45	*	*	*	*	*	*	*	244	40	289	61	274	68	257	56	266
01:00	*	*	*	*	*	*	*	234	29	263	54	289	48	250	44	259
01:15	*	*	*	*	*	*	*	235	27	237	58	287	45	221	43	245
01:30	*	*	*	*	*	*	*	231	23	229	40	275	36	222	33	239
01:45	*	*	*	*	*	*	*	206	21	247	27	291	45	265	31	252
02:00	*	*	*	*	*	*	*	223	23	244	32	219	22	231	26	229
02:15	*	*	*	*	*	*	*	292	19	307	31	239	40	231	30	267
02:30	*	*	*	*	*	*	*	261	12	281	31	253	24	251	22	262
02:45	*	*	*	*	*	*	*	341	15	334	28	244	24	257	22	294
03:00	*	*	*	*	*	*	*	307	10	336	18	284	19	267	16	298
03:15	*	*	*	*	*	*	*	309	18	364	21	244	19	227	19	286
03:30	*	*	*	*	*	*	*	330	12	381	15	258	26	216	18	296
03:45	*	*	*	*	*	*	*	380	6	357	9	264	25	194	13	299
04:00	*	*	*	*	*	*	*	378	15	385	13	271	23	287	17	330
04:15	*	*	*	*	*	*	*	359	19	375	23	290	18	293	20	329
04:30	*	*	*	*	*	*	*	377	18	388	16	249	19	244	18	314
04:45	*	*	*	*	*	*	*	336	20	433	19	268	18	200	19	309
05:00	*	*	*	*	*	*	*	402	37	414	20	246	23	185	27	312
05:15	*	*	*	*	*	*	*	416	35	400	28	240	21	168	28	306
05:30	*	*	*	*	*	*	*	361	62	437	44	209	32	175	46	296
05:45	*	*	*	*	*	*	*	378	96	377	60	217	44	183	67	289
06:00	*	*	*	*	*	*	*	383	104	391	63	221	39	170	69	291
06:15	*	*	*	*	*	*	*	365	204	359	54	210	52	165	103	275
06:30	*	*	*	*	*	*	*	335	290	338	77	203	51	135	139	253
06:45	*	*	*	*	*	*	*	345	340	276	88	184	61	201	163	252
07:00	*	*	*	*	*	*	*	317	259	264	94	201	64	155	139	234
07:15	*	*	*	*	*	*	*	252	287	243	147	167	62	189	165	213
07:30	*	*	*	*	*	*	*	212	346	216	179	178	65	161	197	192
07:45	*	*	*	*	*	*	*	217	374	224	148	168	93	151	205	190
08:00	*	*	*	*	*	*	*	193	362	211	120	174	80	142	187	180
08:15	*	*	*	*	*	*	*	218	374	216	168	157	103	133	215	181
08:30	*	*	*	*	*	*	*	184	329	187	230	161	119	150	226	170
08:45	*	*	*	*	*	*	*	178	272	207	265	165	125	123	221	168
09:00	*	*	*	*	*	*	*	182	211	164	225	143	110	124	182	153
09:15	*	*	*	*	*	*	*	199	239	154	195	189	119	125	184	167
09:30	*	*	*	*	*	*	*	161	223	167	217	130	157	105	199	141
09:45	*	*	*	*	*	*	*	150	216	158	187	137	166	113	190	140
10:00	*	*	*	*	*	*	*	124	199	140	181	135	163	113	181	128
10:15	*	*	*	*	*	*	*	106	179	150	206	132	178	74	188	116
10:30	*	*	*	*	*	*	*	108	186	134	218	102	208	103	204	112
10:45	*	*	*	*	*	*	*	104	190	125	203	115	212	92	202	109
11:00	*	*	*	*	*	*	*	84	214	129	218	109	209	69	214	98
11:15	*	*	*	*	*	*	*	80	203	133	254	120	238	56	232	97
11:30	*	*	*	*	*	*	*	80	206	96	256	95	222	59	228	82
11:45	*	*	*	*	*	*	*	68	262	91	256	106	207	53	242	80
Total	0	0	0	0	0	0	0	11245	6790	12587	5144	9927	3988	8504	5309	10756
Day Total	0		0		0		11245		19377		15071		12492		16065	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	35.0%	65.0%	34.1%	65.9%	31.9%	68.1%	33.0%	67.0%
Peak								05:00	07:30	04:45	11:00	01:00	10:45	04:00	11:00	04:00
Vol.								1557	1456	1684	984	1142	881	1024	916	1282
P.H.F.								0.936	0.973	0.963	0.928	0.981	0.925	0.874	0.946	0.971

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Site Code: 10617
CR46 William Floyd Pkwy
S/O Yaphank Woods Blvd

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	45	221	43	211	55	239	49	272	54	313	85	*	*	*	55	251
12:15	45	184	40	229	48	225	45	232	61	227	72	*	*	*	52	219
12:30	40	188	47	214	46	225	48	214	52	231	76	*	*	*	52	214
12:45	27	254	37	210	36	281	34	253	47	276	64	*	*	*	41	255
01:00	22	234	21	289	32	241	39	240	48	239	49	*	*	*	35	249
01:15	12	201	32	233	27	231	22	207	41	215	39	*	*	*	29	217
01:30	17	189	20	204	20	209	21	215	27	244	37	*	*	*	24	212
01:45	17	236	22	215	17	198	18	180	24	259	37	*	*	*	22	218
02:00	12	240	13	236	20	216	16	205	27	258	31	*	*	*	20	231
02:15	13	279	12	284	14	289	12	234	19	277	17	*	*	*	14	273
02:30	12	260	10	327	16	285	10	239	22	296	26	*	*	*	16	281
02:45	16	288	8	297	18	306	12	257	22	307	18	*	*	*	16	291
03:00	9	336	14	314	11	312	11	270	20	318	22	*	*	*	14	310
03:15	11	339	12	351	9	333	8	301	17	340	17	*	*	*	12	333
03:30	14	335	15	354	8	332	10	324	12	351	14	*	*	*	12	339
03:45	9	334	8	363	11	350	9	261	9	315	14	*	*	*	10	325
04:00	7	371	10	359	4	344	11	295	14	397	14	*	*	*	10	353
04:15	10	411	8	344	10	310	7	286	22	356	21	*	*	*	13	341
04:30	12	367	16	394	12	342	15	309	23	364	12	*	*	*	15	355
04:45	23	396	17	356	21	361	31	354	25	364	28	*	*	*	24	366
05:00	30	393	26	389	30	382	40	429	39	366	25	*	*	*	32	392
05:15	37	402	23	366	36	348	40	402	32	373	26	*	*	*	32	378
05:30	58	397	78	365	76	317	69	378	73	368	50	*	*	*	67	365
05:45	89	332	98	374	100	342	119	336	101	383	80	*	*	*	98	353
06:00	92	342	103	307	109	300	82	315	81	334	48	*	*	*	86	320
06:15	174	353	177	338	179	310	194	311	183	301	74	*	*	*	164	323
06:30	265	291	279	317	272	311	257	300	243	317	87	*	*	*	234	307
06:45	312	270	321	279	367	261	338	298	307	267	119	*	*	*	294	275
07:00	230	238	264	263	259	263	251	234	241	243	95	*	*	*	223	248
07:15	276	229	292	232	300	228	280	267	284	236	127	*	*	*	260	238
07:30	323	206	347	220	340	193	327	230	332	200	172	*	*	*	307	210
07:45	432	219	452	207	448	179	428	201	384	180	183	*	*	*	388	197
08:00	386	199	397	179	355	182	362	188	338	177	110	*	*	*	325	185
08:15	384	149	383	211	363	200	428	198	382	198	147	*	*	*	349	191
08:30	380	153	388	186	371	160	383	187	326	208	142	*	*	*	327	179
08:45	286	182	284	173	302	129	268	181	288	164	191	*	*	*	270	166
09:00	268	184	263	178	246	154	277	189	263	168	138	*	*	*	242	175
09:15	230	126	239	142	246	147	232	159	230	160	162	*	*	*	223	147
09:30	208	138	212	155	247	129	224	175	216	157	186	*	*	*	216	151
09:45	234	109	216	143	256	115	210	167	211	166	193	*	*	*	220	140
10:00	176	98	182	136	184	117	212	116	196	143	182	*	*	*	189	122
10:15	184	107	154	116	160	110	191	125	184	150	190	*	*	*	177	122
10:30	215	101	183	122	190	94	209	97	203	119	250	*	*	*	208	107
10:45	221	104	184	114	188	68	187	118	218	141	238	*	*	*	206	109
11:00	186	71	195	88	191	63	179	88	189	121	210	*	*	*	192	86
11:15	169	78	189	83	190	60	185	68	213	132	237	*	*	*	197	84
11:30	193	52	180	61	165	57	219	85	226	125	271	*	*	*	209	76
11:45	171	63	205	61	217	57	239	60	274	111	249	*	*	*	226	70
Total	6557	11249	6719	11589	6822	10905	6858	11050	6843	11955	4875	0	0	0	6447	11349
Day Total	17806		18308		17727		17908		18798		4875		0		17796	
% Splits	36.8%	63.2%	36.7%	63.3%	38.5%	61.5%	38.3%	61.7%	36.4%	63.6%	100.0 %	0.0%	0.0%	0.0%	36.2%	63.8%
Peak	07:45	04:45	07:45	04:30	07:45	04:30	07:45	04:45	07:30	05:00	11:00				07:45	04:45
Vol.	1557	1588	1620	1505	1537	1433	1601	1563	1436	1490	967				1389	1501
P.H.F.	0.901	0.966	0.896	0.955	0.858	0.938	0.935	0.911	0.935	0.938	0.892				0.895	0.957

ADT ADT 17,127 AADT 17,127

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Site Code: 2194
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Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: SB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	*	46	313	70	243	87	262	68	273
12:15	*	*	*	*	*	*	*	*	22	284	70	241	73	251	55	259
12:30	*	*	*	*	*	*	*	*	36	231	46	264	71	260	51	252
12:45	*	*	*	*	*	*	*	*	21	222	52	269	50	279	41	257
01:00	*	*	*	*	*	*	*	249	11	274	39	227	36	249	29	250
01:15	*	*	*	*	*	*	*	248	20	283	44	295	39	252	34	272
01:30	*	*	*	*	*	*	*	219	12	267	24	247	36	272	24	251
01:45	*	*	*	*	*	*	*	258	29	291	38	260	32	270	33	270
02:00	*	*	*	*	*	*	*	256	15	297	26	278	24	251	22	270
02:15	*	*	*	*	*	*	*	272	12	344	21	250	22	264	18	282
02:30	*	*	*	*	*	*	*	323	14	350	17	314	11	233	14	305
02:45	*	*	*	*	*	*	*	290	12	309	22	232	14	227	16	264
03:00	*	*	*	*	*	*	*	303	9	358	12	229	21	234	14	281
03:15	*	*	*	*	*	*	*	348	25	332	15	249	10	234	17	291
03:30	*	*	*	*	*	*	*	414	34	374	19	248	13	196	22	308
03:45	*	*	*	*	*	*	*	320	20	378	21	254	10	208	17	290
04:00	*	*	*	*	*	*	*	353	25	330	17	233	22	196	21	278
04:15	*	*	*	*	*	*	*	348	30	336	22	256	28	217	27	289
04:30	*	*	*	*	*	*	*	356	55	347	19	281	21	220	32	301
04:45	*	*	*	*	*	*	*	321	62	310	24	272	25	221	37	281
05:00	*	*	*	*	*	*	*	352	69	337	34	251	25	213	43	288
05:15	*	*	*	*	*	*	*	329	109	369	31	261	23	176	54	284
05:30	*	*	*	*	*	*	*	325	127	333	47	197	22	164	65	255
05:45	*	*	*	*	*	*	*	287	200	302	62	201	47	180	103	242
06:00	*	*	*	*	*	*	*	231	209	308	78	203	42	173	110	229
06:15	*	*	*	*	*	*	*	239	269	267	106	223	55	180	143	227
06:30	*	*	*	*	*	*	*	240	344	280	168	184	63	148	192	213
06:45	*	*	*	*	*	*	*	249	398	267	154	183	79	165	210	216
07:00	*	*	*	*	*	*	*	226	338	245	118	196	87	198	181	216
07:15	*	*	*	*	*	*	*	222	389	206	160	168	97	154	215	188
07:30	*	*	*	*	*	*	*	184	394	182	200	158	102	126	232	162
07:45	*	*	*	*	*	*	*	194	396	216	194	148	95	156	228	178
08:00	*	*	*	*	*	*	*	157	345	187	178	149	110	144	211	159
08:15	*	*	*	*	*	*	*	163	386	152	188	156	128	159	234	158
08:30	*	*	*	*	*	*	*	180	352	182	190	110	133	140	225	153
08:45	*	*	*	*	*	*	*	209	314	184	192	143	150	139	219	169
09:00	*	*	*	*	*	*	*	153	247	174	177	132	129	118	184	144
09:15	*	*	*	*	*	*	*	136	257	158	207	145	156	95	207	134
09:30	*	*	*	*	*	*	*	172	246	126	201	132	159	88	202	130
09:45	*	*	*	*	*	*	*	97	246	122	236	152	189	84	224	114
10:00	*	*	*	*	*	*	*	103	215	118	257	136	157	77	210	108
10:15	*	*	*	*	*	*	*	100	204	110	291	137	171	106	222	113
10:30	*	*	*	*	*	*	*	89	215	122	302	117	238	72	252	100
10:45	*	*	*	*	*	*	*	87	200	100	257	101	237	63	231	88
11:00	*	*	*	*	*	*	*	67	245	88	266	96	243	54	251	76
11:15	*	*	*	*	*	*	*	57	232	105	259	92	253	38	246	73
11:30	*	*	*	*	*	*	*	54	284	82	313	89	267	41	288	66
11:45	*	*	*	*	*	*	*	54	303	84	239	70	287	31	276	60
Total	0	0	0	0	0	0	0	9834	8043	11636	5723	9472	4389	8288	6052	10067
Day Total	0		0		0		9834		19679		15195		12677		16119	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	40.9%	59.1%	37.7%	62.3%	34.6%	65.4%	37.5%	62.5%
Peak								03:15	07:15	03:00	10:15	01:45	11:00	00:45	11:00	03:00
Vol.								1435	1524	1442	1116	1102	1050	1062	1063	1170
P.H.F.								0.867	0.957	0.954	0.891	0.877	0.915	0.952	0.923	0.950

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Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	38	295	26	284	26	274	32	291	36	292	80	280	*	*	40	286
12:15	20	253	22	238	34	251	27	283	37	299	49	*	*	*	32	265
12:30	23	248	24	230	22	228	23	227	23	246	48	*	*	*	27	236
12:45	15	213	15	181	17	205	18	243	26	241	39	*	*	*	22	217
01:00	12	200	19	268	16	281	16	246	23	261	27	*	*	*	19	251
01:15	10	251	20	209	19	247	15	209	22	251	31	*	*	*	20	233
01:30	5	228	16	237	16	243	4	236	26	263	14	*	*	*	14	241
01:45	15	252	20	263	12	263	12	251	23	249	27	*	*	*	18	256
02:00	6	254	2	247	11	287	10	303	19	274	24	*	*	*	12	273
02:15	5	266	6	271	10	279	8	252	14	322	21	*	*	*	11	278
02:30	11	277	10	272	14	266	19	273	20	291	23	*	*	*	16	276
02:45	10	298	12	314	9	294	19	277	31	310	13	*	*	*	16	299
03:00	7	282	10	328	10	267	15	300	11	349	21	*	*	*	12	305
03:15	12	337	19	317	17	337	14	310	20	322	22	*	*	*	17	325
03:30	22	372	25	383	29	373	21	419	22	372	18	*	*	*	23	384
03:45	26	281	16	291	23	359	16	329	25	343	10	*	*	*	19	321
04:00	25	327	27	366	23	332	14	378	29	327	11	*	*	*	22	346
04:15	35	312	21	326	27	331	27	355	42	337	23	*	*	*	29	332
04:30	44	332	33	370	35	350	38	404	46	380	28	*	*	*	37	367
04:45	51	296	69	302	53	311	50	305	60	326	27	*	*	*	52	308
05:00	81	323	86	344	76	309	79	330	81	352	31	*	*	*	72	332
05:15	129	323	107	359	130	333	113	380	119	334	40	*	*	*	106	346
05:30	118	352	133	309	112	297	126	311	137	351	47	*	*	*	112	324
05:45	189	303	181	277	199	248	182	278	187	293	76	*	*	*	169	280
06:00	234	239	246	276	213	222	232	276	213	289	71	*	*	*	202	260
06:15	244	241	268	216	270	235	256	255	277	281	95	*	*	*	235	246
06:30	357	249	370	241	354	195	338	260	361	240	154	*	*	*	322	237
06:45	373	225	429	216	439	201	403	238	337	244	130	*	*	*	352	225
07:00	387	193	369	184	364	165	357	241	343	224	121	*	*	*	324	201
07:15	407	155	391	208	400	159	430	204	416	183	148	*	*	*	365	182
07:30	402	189	453	163	443	162	421	180	407	166	176	*	*	*	384	172
07:45	421	151	439	162	426	131	407	124	419	171	212	*	*	*	391	148
08:00	365	148	378	133	363	139	408	149	375	149	184	*	*	*	346	144
08:15	385	161	366	142	382	104	365	174	361	139	190	*	*	*	342	144
08:30	360	140	379	155	391	140	373	140	334	143	173	*	*	*	335	144
08:45	311	159	342	123	342	94	335	136	295	190	202	*	*	*	304	140
09:00	258	143	267	141	267	109	245	132	248	150	190	*	*	*	246	135
09:15	251	131	268	144	264	116	290	151	241	133	213	*	*	*	254	135
09:30	256	93	235	135	233	110	227	114	248	126	199	*	*	*	233	116
09:45	254	83	235	117	249	79	267	87	232	93	212	*	*	*	242	92
10:00	212	85	198	99	227	79	210	100	199	109	226	*	*	*	212	94
10:15	232	99	212	80	199	56	209	120	210	114	211	*	*	*	212	94
10:30	187	70	219	97	211	69	225	86	185	95	219	*	*	*	208	83
10:45	179	65	208	56	215	54	213	73	211	110	214	*	*	*	207	72
11:00	202	64	188	71	216	52	225	63	209	95	228	*	*	*	211	69
11:15	238	54	239	54	210	37	248	50	241	102	274	*	*	*	242	59
11:30	224	51	297	60	236	36	281	47	267	60	248	*	*	*	259	51
11:45	274	35	289	36	269	37	248	47	290	85	240	*	*	*	268	48
Total	7946	10098	8204	10295	8123	9746	8111	10637	7998	11076	5280	280	0	0	7613	10372
Day Total	18044		18499		17869		18748		19074		5560		0		17985	
% Splits	44.0%	56.0%	44.3%	55.7%	45.5%	54.5%	43.3%	56.7%	41.9%	58.1%	95.0%	5.0%	0.0%	0.0%	42.3%	57.7%
Peak	07:00	03:15	07:15	04:30	06:45	03:15	07:15	03:30	07:15	04:15	11:00				07:15	03:30
Vol.	1638	1317	1661	1375	1646	1401	1666	1481	1617	1395	990				1486	1383
P.H.F.	0.929	0.885	0.917	0.898	0.929	0.939	0.969	0.884	0.965	0.918	0.903				0.950	0.900

ADT ADT 17,302 AADT 17,302

TRIP Consultants
311 85th St
Brooklyn, NY 11209
Tel: (718) 833-6176 - Fax: (718) 921-2844

Site Code: 18495
I495 EB Over CR 46 (William Floyd Pkwy)

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	*	78	500	153	624	103	486	111	537
12:15	*	*	*	*	*	*	*	*	67	561	104	632	86	462	86	552
12:30	*	*	*	*	*	*	*	*	47	547	96	555	79	469	74	524
12:45	*	*	*	*	*	*	*	*	63	558	88	565	71	425	74	516
01:00	*	*	*	*	*	*	*	*	61	495	80	584	58	419	66	499
01:15	*	*	*	*	*	*	*	*	38	499	52	553	59	443	50	498
01:30	*	*	*	*	*	*	*	*	28	564	56	551	49	458	44	524
01:45	*	*	*	*	*	*	*	*	34	540	53	611	46	389	44	513
02:00	*	*	*	*	*	*	*	394	38	484	60	590	37	323	45	448
02:15	*	*	*	*	*	*	*	388	19	604	40	561	30	424	30	494
02:30	*	*	*	*	*	*	*	458	17	556	42	617	40	374	33	501
02:45	*	*	*	*	*	*	*	412	38	556	31	540	33	329	34	459
03:00	*	*	*	*	*	*	*	479	30	538	47	464	30	310	36	448
03:15	*	*	*	*	*	*	*	478	38	603	22	471	32	346	31	474
03:30	*	*	*	*	*	*	*	447	27	576	40	481	28	338	32	460
03:45	*	*	*	*	*	*	*	428	37	519	20	466	36	320	31	433
04:00	*	*	*	*	*	*	*	435	37	527	33	431	34	314	35	427
04:15	*	*	*	*	*	*	*	402	51	508	29	431	18	301	33	410
04:30	*	*	*	*	*	*	*	373	46	571	41	456	46	264	44	416
04:45	*	*	*	*	*	*	*	404	60	523	38	460	36	262	45	412
05:00	*	*	*	*	*	*	*	470	62	541	56	382	54	232	57	406
05:15	*	*	*	*	*	*	*	450	124	559	93	354	73	231	97	398
05:30	*	*	*	*	*	*	*	417	189	552	129	376	101	238	140	396
05:45	*	*	*	*	*	*	*	427	245	546	125	403	78	235	149	403
06:00	*	*	*	*	*	*	*	404	254	513	118	372	130	233	167	380
06:15	*	*	*	*	*	*	*	397	322	542	218	324	191	203	244	366
06:30	*	*	*	*	*	*	*	389	416	504	286	317	196	232	299	360
06:45	*	*	*	*	*	*	*	397	427	624	293	289	210	218	310	382
07:00	*	*	*	*	*	*	*	351	440	496	265	272	197	231	301	338
07:15	*	*	*	*	*	*	*	345	461	469	268	251	170	215	300	320
07:30	*	*	*	*	*	*	*	272	546	462	357	223	206	178	370	284
07:45	*	*	*	*	*	*	*	288	469	465	345	260	194	224	336	309
08:00	*	*	*	*	*	*	*	301	453	437	344	243	202	202	333	296
08:15	*	*	*	*	*	*	*	283	478	441	384	198	198	190	353	278
08:30	*	*	*	*	*	*	*	323	512	450	421	193	238	194	390	290
08:45	*	*	*	*	*	*	*	290	444	409	440	184	225	189	370	268
09:00	*	*	*	*	*	*	*	287	457	419	422	187	233	167	371	265
09:15	*	*	*	*	*	*	*	251	399	452	496	201	270	182	388	272
09:30	*	*	*	*	*	*	*	270	472	427	534	193	325	149	444	260
09:45	*	*	*	*	*	*	*	258	452	393	473	206	324	154	416	253
10:00	*	*	*	*	*	*	*	218	526	388	559	165	363	166	483	234
10:15	*	*	*	*	*	*	*	205	501	317	589	164	385	141	492	207
10:30	*	*	*	*	*	*	*	190	505	288	641	189	418	92	521	190
10:45	*	*	*	*	*	*	*	170	511	209	617	144	425	111	518	158
11:00	*	*	*	*	*	*	*	127	490	203	595	155	405	97	497	146
11:15	*	*	*	*	*	*	*	130	495	201	594	111	474	92	521	134
11:30	*	*	*	*	*	*	*	121	455	196	595	140	467	85	506	136
11:45	*	*	*	*	*	*	*	102	530	179	595	112	489	81	538	118
Total	0	0	0	0	0	0	0	13231	12489	22511	11977	17251	8192	12418	10889	17392
Day Total	0		0		0		13231		35000		29228		20610		28281	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	35.7%	64.3%	41.0%	59.0%	39.7%	60.3%	38.5%	61.5%
Peak								03:00	10:00	02:45	10:30	01:45	11:00	12:00	11:00	12:00
Vol.								1832	2043	2273	2447	2379	1835	1842	2062	2129
P.H.F.								0.956	0.935	0.911	0.954	0.941	0.938	0.948	0.958	0.964

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Site Code: 18495
I495 EB Over CR 46 (William Floyd Pkwy)

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	60	380	65	352	66	344	90	385	98	499	187	*	*	*	94	392
12:15	50	351	59	381	88	323	51	437	83	585	141	*	*	*	79	415
12:30	35	414	47	372	50	330	49	389	66	599	105	*	*	*	59	421
12:45	38	359	42	343	50	362	50	389	64	521	104	*	*	*	58	395
01:00	25	329	41	349	54	340	39	390	68	542	78	*	*	*	51	390
01:15	23	349	34	338	26	327	46	375	55	541	77	*	*	*	44	386
01:30	26	336	28	358	32	372	33	396	50	606	53	*	*	*	37	414
01:45	35	343	28	320	25	317	33	313	65	656	47	*	*	*	39	390
02:00	30	333	20	339	30	343	22	266	49	577	55	*	*	*	34	372
02:15	27	350	30	372	29	362	32	206	27	597	27	*	*	*	29	377
02:30	13	390	26	394	24	392	16	266	17	652	38	*	*	*	22	419
02:45	21	394	34	374	16	375	27	226	28	505	46	*	*	*	29	375
03:00	33	384	30	398	35	419	28	290	23	672	25	*	*	*	29	433
03:15	17	398	23	403	30	429	25	293	41	644	31	*	*	*	28	433
03:30	33	404	36	387	33	397	29	316	28	600	34	*	*	*	32	421
03:45	36	389	39	379	42	351	13	259	37	597	22	*	*	*	32	395
04:00	35	373	29	419	32	374	43	313	41	560	36	*	*	*	36	408
04:15	39	421	41	420	41	376	39	300	58	571	41	*	*	*	43	418
04:30	46	436	38	419	41	426	53	264	45	541	45	*	*	*	45	417
04:45	71	395	47	459	56	408	83	554	59	584	56	*	*	*	62	480
05:00	93	437	97	396	84	381	61	617	89	566	61	*	*	*	81	479
05:15	106	409	121	436	94	402	103	572	109	564	114	*	*	*	108	477
05:30	178	376	167	409	165	403	180	475	159	546	122	*	*	*	162	442
05:45	223	421	201	402	183	378	214	403	199	559	141	*	*	*	194	433
06:00	269	365	274	358	223	359	225	405	265	543	164	*	*	*	237	406
06:15	361	361	312	345	353	356	305	405	310	577	221	*	*	*	310	409
06:30	441	338	424	385	419	364	411	359	405	581	249	*	*	*	392	405
06:45	406	284	382	313	368	355	411	382	430	561	303	*	*	*	383	379
07:00	415	275	416	245	426	307	432	302	465	490	331	*	*	*	414	324
07:15	456	219	464	281	430	278	429	324	467	551	322	*	*	*	428	331
07:30	505	233	494	262	472	225	499	290	509	480	372	*	*	*	475	298
07:45	434	224	479	204	475	253	493	295	459	422	377	*	*	*	453	280
08:00	403	223	409	241	419	221	473	281	465	439	374	*	*	*	424	281
08:15	412	191	513	240	431	267	439	326	457	448	438	*	*	*	448	294
08:30	461	190	508	218	523	194	507	298	462	433	505	*	*	*	494	267
08:45	450	189	482	216	417	216	474	325	417	487	516	*	*	*	459	287
09:00	418	181	455	216	437	214	410	349	361	471	460	*	*	*	424	286
09:15	400	180	453	202	416	200	435	314	426	422	540	*	*	*	445	264
09:30	388	162	450	199	421	203	469	301	450	436	660	*	*	*	473	260
09:45	357	142	449	184	411	186	387	247	397	447	570	*	*	*	428	241
10:00	378	136	392	158	391	139	397	277	405	342	563	*	*	*	421	210
10:15	376	153	415	190	363	132	407	163	489	356	671	*	*	*	454	199
10:30	402	134	376	161	348	112	400	150	459	268	714	*	*	*	450	165
10:45	416	98	383	107	354	93	398	134	477	258	692	*	*	*	453	138
11:00	352	111	404	109	350	111	393	135	534	300	708	*	*	*	457	153
11:15	371	89	358	104	357	92	395	120	516	274	*	*	*	*	399	136
11:30	422	77	360	114	337	76	425	124	503	239	*	*	*	*	409	126
11:45	389	69	405	82	376	72	393	106	532	216	*	*	*	*	419	109
Total	10975	13795	11380	14353	10843	13956	11366	15106	12218	23925	11436	0	0	0	11576	16230
Day Total	24770		25733		24799		26472		36143		11436		0		27806	
% Splits	44.3%	55.7%	44.2%	55.8%	43.7%	56.3%	42.9%	57.1%	33.8%	66.2%	100.0 %	0.0%	0.0%	0.0%	41.6%	58.4%
Peak	07:00	04:15	08:15	04:00	07:45	02:45	07:45	04:45	11:00	03:00	10:15				08:00	04:45
Vol.	1810	1689	1958	1717	1848	1620	1912	2218	2085	2513	2785				1825	1878
P.H.F.	0.896	0.966	0.954	0.935	0.883	0.944	0.943	0.899	0.976	0.935	0.975				0.924	0.978

ADT ADT 27,846 AADT 27,846

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Site Code: 15984
I495 WB Over CR 46 (William Floyd Pkwy)

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: WB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	*	42	353	69	260	139	475	83	363
12:15	*	*	*	*	*	*	*	*	39	309	65	258	112	486	72	351
12:30	*	*	*	*	*	*	*	*	31	363	65	342	91	493	62	399
12:45	*	*	*	*	*	*	*	*	39	342	55	416	87	475	60	411
01:00	*	*	*	*	*	*	*	*	22	383	38	386	66	534	42	434
01:15	*	*	*	*	*	*	*	*	30	372	37	402	48	638	38	471
01:30	*	*	*	*	*	*	*	*	23	403	37	373	47	642	36	473
01:45	*	*	*	*	*	*	*	*	23	382	26	377	35	651	28	470
02:00	*	*	*	*	*	*	*	*	26	403	28	368	24	633	26	468
02:15	*	*	*	*	*	*	*	382	14	463	21	446	18	712	18	501
02:30	*	*	*	*	*	*	*	436	25	499	28	466	29	735	27	534
02:45	*	*	*	*	*	*	*	440	24	406	22	438	23	741	23	506
03:00	*	*	*	*	*	*	*	446	20	455	27	495	16	703	21	525
03:15	*	*	*	*	*	*	*	488	52	489	29	479	19	803	33	565
03:30	*	*	*	*	*	*	*	476	30	480	23	520	28	771	27	562
03:45	*	*	*	*	*	*	*	499	49	527	23	513	23	805	32	586
04:00	*	*	*	*	*	*	*	484	42	456	25	532	21	761	29	558
04:15	*	*	*	*	*	*	*	531	62	568	52	542	29	793	48	608
04:30	*	*	*	*	*	*	*	552	90	578	50	520	22	784	54	608
04:45	*	*	*	*	*	*	*	534	117	572	42	542	41	699	67	547
05:00	*	*	*	*	*	*	*	568	143	516	40	510	42	719	75	576
05:15	*	*	*	*	*	*	*	591	151	528	72	499	31	722	85	585
05:30	*	*	*	*	*	*	*	467	170	494	88	556	44	721	101	560
05:45	*	*	*	*	*	*	*	415	232	430	80	497	53	731	122	518
06:00	*	*	*	*	*	*	*	387	275	454	91	475	63	617	143	483
06:15	*	*	*	*	*	*	*	385	321	487	103	442	87	658	170	493
06:30	*	*	*	*	*	*	*	372	344	396	129	414	80	614	184	449
06:45	*	*	*	*	*	*	*	295	362	366	173	419	92	596	209	419
07:00	*	*	*	*	*	*	*	257	336	365	143	399	109	538	196	390
07:15	*	*	*	*	*	*	*	290	426	310	188	354	148	525	254	370
07:30	*	*	*	*	*	*	*	236	413	252	189	380	175	490	259	340
07:45	*	*	*	*	*	*	*	220	374	255	209	329	144	448	242	313
08:00	*	*	*	*	*	*	*	208	381	253	231	320	158	489	257	318
08:15	*	*	*	*	*	*	*	196	394	229	247	325	189	488	277	310
08:30	*	*	*	*	*	*	*	186	364	190	251	332	185	422	267	282
08:45	*	*	*	*	*	*	*	176	363	206	225	319	209	387	266	272
09:00	*	*	*	*	*	*	*	165	379	200	271	327	203	387	284	270
09:15	*	*	*	*	*	*	*	187	381	221	232	339	236	355	283	276
09:30	*	*	*	*	*	*	*	144	313	211	270	323	300	279	294	239
09:45	*	*	*	*	*	*	*	139	270	159	250	314	276	273	265	221
10:00	*	*	*	*	*	*	*	117	339	152	280	251	310	210	310	182
10:15	*	*	*	*	*	*	*	109	310	136	289	284	325	197	308	182
10:30	*	*	*	*	*	*	*	88	310	117	286	216	396	178	331	150
10:45	*	*	*	*	*	*	*	80	302	120	341	271	386	141	343	153
11:00	*	*	*	*	*	*	*	91	285	109	348	214	439	124	357	134
11:15	*	*	*	*	*	*	*	111	353	95	285	188	453	107	364	125
11:30	*	*	*	*	*	*	*	60	311	92	237	164	462	81	337	99
11:45	*	*	*	*	*	*	*	58	346	86	240	161	396	60	327	91
Total	0	0	0	0	0	0	0	11866	9748	16232	6550	18297	6909	24891	7736	18782
Day Total	0		0		0		11866		25980		24847		31800		26518	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	37.5%	62.5%	26.4%	73.6%	21.7%	78.3%	29.2%	70.8%
Peak								04:30	07:15	04:15	10:15	04:00	11:00	03:45	10:45	04:15
Vol.								2245	1594	2234	1264	2136	1750	3143	1401	2381
P.H.F.								0.950	0.935	0.966	0.908	0.960	0.947	0.976	0.962	0.979

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Job Number: 10-32
Client: FST Engineers, Inc.
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Direction: WB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	56	336	45	324	49	356	32	327	0	0	0	0	*	*	30	224
12:15	46	371	45	370	42	341	27	366	0	0	0	0	*	*	27	241
12:30	37	407	29	356	37	335	42	352	0	0	0	*	*	*	24	290
12:45	23	338	41	322	24	374	34	355	0	0	0	*	*	*	20	278
01:00	28	350	27	388	25	369	22	378	0	0	0	*	*	*	17	297
01:15	33	405	19	380	36	362	20	386	0	0	0	*	*	*	18	307
01:30	17	379	33	415	21	376	24	408	0	0	0	*	*	*	16	316
01:45	30	402	19	398	22	358	17	415	0	0	0	*	*	*	15	315
02:00	10	419	26	364	13	385	15	392	0	0	0	*	*	*	11	312
02:15	15	443	19	448	19	406	19	417	0	0	0	*	*	*	12	343
02:30	14	448	12	453	23	448	14	454	0	0	0	*	*	*	10	361
02:45	22	406	43	460	13	413	31	438	0	0	0	*	*	*	18	343
03:00	17	527	20	455	22	446	15	461	0	0	0	*	*	*	12	378
03:15	31	506	35	501	31	516	43	453	0	0	0	*	*	*	23	395
03:30	40	503	39	520	33	547	36	488	0	0	0	*	*	*	25	412
03:45	35	539	40	516	41	486	26	486	0	0	0	*	*	*	24	405
04:00	47	539	46	533	32	462	43	516	0	0	0	*	*	*	28	410
04:15	60	607	46	592	54	575	62	552	0	0	0	*	*	*	37	465
04:30	91	533	102	591	86	438	86	572	0	0	0	*	*	*	61	427
04:45	100	569	92	562	127	554	95	546	0	0	0	*	*	*	69	450
05:00	168	554	148	589	133	530	133	218	0	0	0	*	*	*	97	378
05:15	181	588	181	617	160	545	185	0	0	0	0	*	*	*	118	350
05:30	234	494	200	544	202	472	185	0	0	1	0	*	*	*	137	302
05:45	288	427	246	471	210	399	209	0	0	0	0	*	*	*	159	259
06:00	316	416	316	393	256	365	236	0	0	0	0	*	*	*	187	235
06:15	340	434	308	367	302	370	319	0	0	0	0	*	*	*	212	234
06:30	366	352	354	337	342	312	305	0	0	0	0	*	*	*	228	200
06:45	402	338	389	318	398	269	369	0	0	0	0	*	*	*	260	185
07:00	434	283	397	331	397	257	371	0	0	0	0	*	*	*	266	174
07:15	447	318	410	265	442	235	432	0	0	0	0	*	*	*	288	164
07:30	446	287	424	244	424	217	435	0	0	0	0	*	*	*	288	150
07:45	434	258	437	232	411	179	435	0	0	0	0	*	*	*	290	134
08:00	450	214	396	235	422	163	383	0	0	0	0	*	*	*	275	122
08:15	523	217	457	203	468	147	439	0	0	0	0	*	*	*	314	113
08:30	432	238	389	189	383	129	414	0	0	0	0	*	*	*	270	111
08:45	432	210	447	205	394	150	420	0	0	0	0	*	*	*	282	113
09:00	404	224	388	189	395	133	378	0	0	0	0	*	*	*	261	109
09:15	383	218	386	208	348	171	353	0	0	0	0	*	*	*	245	119
09:30	408	187	374	163	385	166	363	0	0	0	0	*	*	*	255	103
09:45	366	135	317	139	323	108	345	0	0	0	0	*	*	*	225	76
10:00	358	126	332	147	307	119	322	0	0	0	0	*	*	*	220	78
10:15	387	124	356	109	329	107	341	0	0	0	0	*	*	*	236	68
10:30	355	99	359	104	317	84	356	0	0	0	0	*	*	*	231	57
10:45	342	87	385	86	352	100	364	0	0	0	0	*	*	*	240	55
11:00	345	70	349	82	324	96	345	0	0	0	0	*	*	*	227	50
11:15	377	76	360	72	348	88	351	0	0	0	0	*	*	*	239	47
11:30	349	69	385	33	346	69	334	0	0	0	0	*	*	*	236	34
11:45	349	58	414	50	368	52	371	0	0	0	0	*	*	*	250	32
Total	11087	16148	10682	15870	10236	14579	10196	8980	0	1	0	0	0	0	7033	11021
Day Total	27235		26552		24815		19176		1		0		0		18054	
% Splits	40.7%	59.3%	40.2%	59.8%	41.2%	58.8%	53.2%	46.8%	0.0%	100.0 %	0.0%	0.0%	0.0%	0.0%	39.0%	61.0%
Peak	07:30	04:15	07:30	04:30	07:30	04:45	07:30	04:00		04:45					07:30	04:00
Vol.	1872	2283	1714	2359	1725	2101	1692	2186		1					1167	1752
P.H.F.	0.895	0.940	0.938	0.956	0.921	0.913	0.964	0.955		0.250					0.929	0.942

ADT ADT 21,538 AADT 21,538

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Site Code: 2203
Northeast Loop Ramp
NB CR46 Off Ramp to WB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB to WB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	143	24	181	33	158	44	129	34	153
12:15	*	*	*	*	*	*	*	137	18	162	29	132	27	127	25	140
12:30	*	*	*	*	*	*	*	121	43	140	53	164	22	139	39	141
12:45	*	*	*	*	*	*	*	137	11	137	23	154	27	162	20	148
01:00	*	*	*	*	*	*	*	138	13	143	12	129	14	132	13	136
01:15	*	*	*	*	*	*	*	104	8	107	26	131	8	133	14	119
01:30	*	*	*	*	*	*	*	116	8	111	15	109	9	117	11	113
01:45	*	*	*	*	*	*	*	123	12	126	11	120	15	145	13	128
02:00	*	*	*	*	*	*	*	125	21	126	3	196	15	175	13	156
02:15	*	*	*	*	*	*	*	156	6	149	13	239	19	165	13	177
02:30	*	*	*	*	*	*	*	159	12	168	10	233	5	155	9	179
02:45	*	*	*	*	*	*	*	138	14	148	13	273	6	126	11	171
03:00	*	*	*	*	*	*	*	148	13	172	16	188	16	141	15	162
03:15	*	*	*	*	*	*	*	150	14	166	11	170	12	133	12	155
03:30	*	*	*	*	*	*	*	181	17	193	7	122	6	146	10	160
03:45	*	*	*	*	*	*	*	131	23	145	11	123	6	115	13	128
04:00	*	*	*	*	*	*	*	205	35	199	13	145	6	110	18	165
04:15	*	*	*	*	*	*	*	149	32	165	17	138	4	179	18	158
04:30	*	*	*	*	*	*	*	171	53	173	22	124	6	142	27	152
04:45	*	*	*	*	*	*	*	159	67	123	22	89	7	104	32	119
05:00	*	*	*	*	*	*	*	236	92	203	38	135	9	94	46	167
05:15	*	*	*	*	*	*	*	153	103	148	41	97	14	108	53	126
05:30	*	*	*	*	*	*	*	139	118	151	46	93	24	104	63	122
05:45	*	*	*	*	*	*	*	124	119	150	41	99	16	124	59	124
06:00	*	*	*	*	*	*	*	111	165	109	47	106	18	105	77	108
06:15	*	*	*	*	*	*	*	125	198	120	60	132	39	110	99	122
06:30	*	*	*	*	*	*	*	114	195	117	86	136	42	90	108	114
06:45	*	*	*	*	*	*	*	75	205	111	78	89	26	131	103	102
07:00	*	*	*	*	*	*	*	89	208	98	81	120	41	93	110	100
07:15	*	*	*	*	*	*	*	70	208	87	96	99	40	98	115	88
07:30	*	*	*	*	*	*	*	90	230	137	76	92	33	82	113	100
07:45	*	*	*	*	*	*	*	69	209	87	93	90	47	71	116	79
08:00	*	*	*	*	*	*	*	75	180	83	85	70	60	56	108	71
08:15	*	*	*	*	*	*	*	79	195	95	108	81	59	101	121	89
08:30	*	*	*	*	*	*	*	74	210	87	106	87	63	80	126	82
08:45	*	*	*	*	*	*	*	73	163	86	111	93	73	76	116	82
09:00	*	*	*	*	*	*	*	68	127	76	99	90	72	78	99	78
09:15	*	*	*	*	*	*	*	67	142	78	117	97	77	63	112	76
09:30	*	*	*	*	*	*	*	46	131	103	123	97	89	55	114	75
09:45	*	*	*	*	*	*	*	47	144	73	108	76	98	70	117	66
10:00	*	*	*	*	*	*	*	59	99	65	88	77	96	52	94	63
10:15	*	*	*	*	*	*	*	44	107	79	111	80	101	49	106	63
10:30	*	*	*	*	*	*	*	42	127	60	137	62	122	43	129	52
10:45	*	*	*	*	*	*	*	45	109	69	132	51	108	46	116	53
11:00	*	*	*	*	*	*	87	34	99	43	121	60	125	31	108	42
11:15	*	*	*	*	*	*	110	44	128	42	120	54	125	21	121	40
11:30	*	*	*	*	*	*	105	21	116	40	133	44	107	25	115	32
11:45	*	*	*	*	*	*	125	19	124	42	146	35	104	11	125	27
Total	0	0	0	0	0	0	427	5123	4695	5673	2988	5579	2102	4842	3249	5303
Day Total	0		0		0		5550		10368		8567		6944		8552	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	92.3%	45.3%	54.7%	34.9%	65.1%	30.3%	69.7%	38.0%	62.0%
Peak							11:00	04:30	07:00	03:15	11:00	02:00	10:30	01:45	10:30	02:15
Vol.							427	719	855	703	520	941	480	640	474	689
P.H.F.							0.854	0.762	0.929	0.866	0.890	0.862	0.960	0.894	0.919	0.962

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Site Code: 2203
Northeast Loop Ramp
NB CR46 Off Ramp to WB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB to WB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	14	120	18	108	24	136	15	150	23	163	30	*	*	*	21	135
12:15	7	128	12	111	12	119	14	115	21	167	34	*	*	*	17	128
12:30	11	134	43	121	40	121	40	104	53	154	65	*	*	*	42	127
12:45	11	98	14	107	7	100	12	121	10	142	29	*	*	*	14	114
01:00	6	146	7	153	7	113	9	127	10	153	16	*	*	*	9	138
01:15	4	135	9	106	12	116	7	107	11	111	9	*	*	*	9	115
01:30	7	111	7	112	11	113	10	109	9	113	13	*	*	*	10	112
01:45	7	106	16	127	16	116	11	106	5	119	19	*	*	*	12	115
02:00	15	127	9	98	7	119	4	118	19	131	10	*	*	*	11	119
02:15	4	130	11	138	8	144	9	147	6	142	11	*	*	*	8	140
02:30	9	148	11	172	5	131	6	130	7	140	8	*	*	*	8	144
02:45	3	140	4	152	3	125	7	139	5	144	15	*	*	*	6	140
03:00	5	159	10	173	14	136	12	148	10	170	13	*	*	*	11	157
03:15	14	130	9	187	11	143	17	160	7	145	9	*	*	*	11	153
03:30	25	170	11	205	13	218	12	179	31	227	10	*	*	*	17	200
03:45	13	157	14	138	17	150	23	145	18	142	7	*	*	*	15	146
04:00	24	190	28	196	21	201	27	171	25	157	14	*	*	*	23	183
04:15	41	162	29	139	31	160	30	154	42	134	14	*	*	*	31	150
04:30	52	188	49	181	50	164	32	163	37	173	23	*	*	*	40	174
04:45	60	144	70	140	52	141	56	137	57	157	21	*	*	*	53	144
05:00	98	198	87	235	83	186	82	214	92	223	27	*	*	*	78	211
05:15	88	160	96	155	107	163	99	158	99	138	56	*	*	*	91	155
05:30	111	128	130	132	125	118	115	134	115	141	37	*	*	*	106	131
05:45	140	123	141	140	126	119	148	122	142	130	59	*	*	*	126	127
06:00	157	87	162	103	164	99	175	119	156	106	54	*	*	*	145	103
06:15	203	86	178	102	197	96	176	123	174	119	71	*	*	*	166	105
06:30	190	87	180	100	214	91	198	88	187	117	96	*	*	*	178	97
06:45	197	81	223	99	175	82	198	98	181	127	67	*	*	*	174	97
07:00	212	80	216	100	198	113	231	95	190	114	83	*	*	*	188	100
07:15	237	72	234	92	231	81	218	112	205	97	96	*	*	*	204	91
07:30	210	64	216	82	237	87	214	59	214	109	106	*	*	*	200	80
07:45	208	76	224	56	204	58	207	78	178	98	103	*	*	*	187	73
08:00	212	69	190	83	182	50	176	84	204	96	115	*	*	*	180	76
08:15	208	81	208	87	221	70	197	76	199	89	98	*	*	*	188	81
08:30	194	63	212	75	226	37	214	91	177	79	114	*	*	*	190	69
08:45	159	51	188	85	160	67	154	97	177	80	105	*	*	*	157	76
09:00	141	52	164	66	164	55	154	98	131	70	116	*	*	*	145	68
09:15	142	64	142	50	148	40	127	74	122	84	117	*	*	*	133	62
09:30	110	62	123	53	128	53	132	60	119	85	114	*	*	*	121	63
09:45	137	50	117	51	126	42	104	62	119	72	97	*	*	*	117	55
10:00	111	43	100	44	87	45	110	61	94	80	128	*	*	*	105	55
10:15	95	41	103	54	108	45	114	48	109	68	127	*	*	*	109	51
10:30	97	54	91	42	100	37	110	44	105	59	127	*	*	*	105	47
10:45	113	36	125	33	108	33	98	39	100	52	118	*	*	*	110	39
11:00	89	39	104	31	112	20	112	38	109	40	116	*	*	*	107	34
11:15	120	29	106	31	107	18	129	36	127	46	125	*	*	*	119	32
11:30	95	18	97	20	113	24	103	25	131	45	112	*	*	*	108	26
11:45	110	18	107	29	130	15	107	21	134	21	*	*	*	*	118	21
Total	4516	4835	4645	5094	4642	4710	4555	5084	4496	5569	2954	0	0	0	4323	5059
Day Total	9351		9739		9352		9639		10065		2954		0		9382	
% Splits	48.3%	51.7%	47.7%	52.3%	49.6%	50.4%	47.3%	52.7%	44.7%	55.3%	100.0 %	0.0%	0.0%	0.0%	46.1%	53.9%
Peak	07:00	03:45	07:00	03:15	07:00	03:30	07:00	04:30	07:15	04:30	10:00				07:00	04:30
Vol.	867	697	890	726	870	729	870	672	801	691	500				779	684
P.H.F.	0.915	0.880	0.951	0.772	0.918	0.836	0.942	0.785	0.936	0.761	0.977				0.955	0.810

ADT ADT 9,138 AADT 9,138

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Site Code: 18594
Northeast Outer Ramp
WB SRD Off Ramp to NB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: WB to NB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	*	2	19	8	22	12	14	7	18
12:15	*	*	*	*	*	*	*	*	5	21	3	16	4	14	4	17
12:30	*	*	*	*	*	*	*	*	1	23	4	27	4	19	3	23
12:45	*	*	*	*	*	*	*	21	1	26	5	24	5	24	4	24
01:00	*	*	*	*	*	*	*	29	3	16	3	28	2	21	3	24
01:15	*	*	*	*	*	*	*	32	1	26	4	26	4	15	3	25
01:30	*	*	*	*	*	*	*	21	2	16	1	24	5	18	3	20
01:45	*	*	*	*	*	*	*	32	1	20	1	22	5	20	2	24
02:00	*	*	*	*	*	*	*	25	0	23	2	23	2	22	1	23
02:15	*	*	*	*	*	*	*	34	1	27	2	25	3	25	2	28
02:30	*	*	*	*	*	*	*	29	4	15	3	28	2	20	3	23
02:45	*	*	*	*	*	*	*	20	0	32	0	17	0	26	0	24
03:00	*	*	*	*	*	*	*	31	0	33	0	20	2	21	1	26
03:15	*	*	*	*	*	*	*	32	0	60	2	28	1	18	1	34
03:30	*	*	*	*	*	*	*	41	1	32	0	27	2	14	1	28
03:45	*	*	*	*	*	*	*	40	1	34	0	30	2	11	1	29
04:00	*	*	*	*	*	*	*	47	0	39	1	23	1	24	1	33
04:15	*	*	*	*	*	*	*	48	0	56	2	27	2	20	1	38
04:30	*	*	*	*	*	*	*	50	1	42	0	31	0	28	0	38
04:45	*	*	*	*	*	*	*	39	0	50	2	33	2	21	1	36
05:00	*	*	*	*	*	*	*	57	3	44	3	27	2	23	3	38
05:15	*	*	*	*	*	*	*	52	3	44	1	20	1	18	2	34
05:30	*	*	*	*	*	*	*	44	5	73	2	16	2	11	3	36
05:45	*	*	*	*	*	*	*	44	6	60	5	30	5	21	5	39
06:00	*	*	*	*	*	*	*	35	7	71	2	17	2	15	4	34
06:15	*	*	*	*	*	*	*	25	33	57	5	20	6	18	15	30
06:30	*	*	*	*	*	*	*	37	34	33	8	24	6	10	16	26
06:45	*	*	*	*	*	*	*	34	44	35	6	14	6	13	19	24
07:00	*	*	*	*	*	*	*	21	28	25	7	19	6	9	14	18
07:15	*	*	*	*	*	*	*	19	46	22	13	8	6	11	22	15
07:30	*	*	*	*	*	*	*	24	58	21	28	17	3	12	30	18
07:45	*	*	*	*	*	*	*	19	57	24	6	13	5	10	23	16
08:00	*	*	*	*	*	*	*	17	59	24	6	8	5	13	23	16
08:15	*	*	*	*	*	*	*	12	54	19	17	14	7	16	26	15
08:30	*	*	*	*	*	*	*	17	45	13	15	10	13	14	24	14
08:45	*	*	*	*	*	*	*	13	29	10	21	12	8	8	19	11
09:00	*	*	*	*	*	*	*	16	22	11	18	10	11	4	17	10
09:15	*	*	*	*	*	*	*	14	36	10	15	13	10	18	20	14
09:30	*	*	*	*	*	*	*	15	24	16	15	10	8	8	16	12
09:45	*	*	*	*	*	*	*	17	16	13	19	9	20	2	18	10
10:00	*	*	*	*	*	*	*	8	18	8	11	10	10	6	13	8
10:15	*	*	*	*	*	*	*	6	11	14	13	9	8	5	11	8
10:30	*	*	*	*	*	*	*	6	18	8	11	5	23	4	17	6
10:45	*	*	*	*	*	*	*	6	23	8	18	7	20	3	20	6
11:00	*	*	*	*	*	*	*	2	17	6	7	9	13	5	12	6
11:15	*	*	*	*	*	*	*	5	17	5	29	11	15	6	20	7
11:30	*	*	*	*	*	*	*	4	22	10	17	14	19	6	19	8
11:45	*	*	*	*	*	*	*	6	20	5	15	4	17	2	17	4
Total	0	0	0	0	0	0	0	1146	779	1299	376	881	317	686	490	1018
Day Total	0		0		0		1146		2078		1257		1003		1508	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	37.5%	62.5%	29.9%	70.1%	31.6%	68.4%	32.5%	67.5%
Peak								04:30	07:30	05:30	08:15	04:15	10:30	02:00	07:30	04:15
Vol.								198	228	261	71	118	71	93	102	150
P.H.F.								0.868	0.966	0.894	0.612	0.894	0.772	0.830	0.850	0.962

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Site Code: 18594
Northeast Outer Ramp
WB SRD Off Ramp to NB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: WB to NB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	2	17	2	18	2	17	3	27	1	25	3	*	*	*	2	21
12:15	3	17	0	24	2	20	2	16	4	28	7	*	*	*	3	21
12:30	2	23	2	19	2	19	3	15	1	21	3	*	*	*	2	19
12:45	2	17	3	23	2	24	1	26	4	32	2	*	*	*	2	24
01:00	1	26	2	20	3	28	1	24	1	31	2	*	*	*	2	26
01:15	1	14	2	29	1	28	2	10	3	24	2	*	*	*	2	21
01:30	2	23	1	21	1	22	2	30	0	15	0	*	*	*	1	22
01:45	1	21	2	24	0	23	0	13	0	29	3	*	*	*	1	22
02:00	1	27	0	22	2	21	0	19	1	32	5	*	*	*	2	24
02:15	0	29	1	29	0	47	0	26	2	21	1	*	*	*	1	30
02:30	1	17	0	39	0	27	0	29	2	21	1	*	*	*	1	27
02:45	0	22	1	39	2	31	0	30	3	26	2	*	*	*	1	30
03:00	1	26	0	31	0	21	0	33	0	35	1	*	*	*	0	29
03:15	0	36	0	34	0	31	1	43	1	35	3	*	*	*	1	36
03:30	0	35	0	38	2	36	2	51	1	49	0	*	*	*	1	42
03:45	0	43	1	36	0	30	0	33	1	29	2	*	*	*	1	34
04:00	0	28	1	34	0	30	4	38	2	40	2	*	*	*	2	34
04:15	2	48	0	50	1	40	0	26	1	36	1	*	*	*	1	40
04:30	0	40	0	44	1	30	2	43	0	37	2	*	*	*	1	39
04:45	0	51	0	51	2	57	0	52	1	41	1	*	*	*	1	50
05:00	1	47	2	51	3	49	4	59	5	52	3	*	*	*	3	52
05:15	2	51	2	61	3	50	6	54	7	48	2	*	*	*	4	53
05:30	2	51	5	45	5	36	6	34	4	45	3	*	*	*	4	42
05:45	12	39	8	45	14	35	9	24	8	40	16	*	*	*	11	37
06:00	15	28	21	31	10	26	11	27	9	35	5	*	*	*	12	29
06:15	18	38	21	29	16	32	21	30	15	34	7	*	*	*	16	33
06:30	39	25	31	18	33	19	22	37	33	23	9	*	*	*	28	24
06:45	37	21	41	20	40	19	38	28	31	22	12	*	*	*	33	22
07:00	31	25	25	23	34	14	24	24	29	26	8	*	*	*	25	22
07:15	36	17	52	18	44	27	45	23	46	22	11	*	*	*	39	21
07:30	49	12	68	15	58	16	62	19	51	14	24	*	*	*	53	15
07:45	53	17	69	17	72	11	69	13	64	14	18	*	*	*	62	14
08:00	56	20	65	14	53	10	61	16	59	11	7	*	*	*	51	14
08:15	56	17	50	16	55	22	55	17	59	10	7	*	*	*	47	16
08:30	42	14	43	17	45	9	50	19	48	17	14	*	*	*	40	15
08:45	30	14	44	16	29	9	27	7	37	12	14	*	*	*	30	12
09:00	36	24	32	12	30	15	22	15	34	12	11	*	*	*	28	16
09:15	22	7	25	9	26	7	29	9	16	14	18	*	*	*	23	9
09:30	17	10	22	16	26	10	21	7	19	14	18	*	*	*	20	11
09:45	23	6	25	11	31	11	15	7	20	10	18	*	*	*	22	9
10:00	21	9	15	15	16	6	17	5	16	10	11	*	*	*	16	9
10:15	15	11	17	9	10	1	18	6	19	10	12	*	*	*	15	7
10:30	22	2	13	7	16	10	24	6	18	10	26	*	*	*	20	7
10:45	17	9	15	3	21	3	23	8	21	6	20	*	*	*	20	6
11:00	13	3	24	3	31	3	14	9	4	8	14	*	*	*	17	5
11:15	9	6	16	9	12	8	16	4	15	10	11	*	*	*	13	7
11:30	18	4	21	6	23	6	22	7	19	8	23	*	*	*	21	6
11:45	12	5	21	5	22	2	16	3	23	4	25	*	*	*	20	4
Total	762	1092	811	1166	801	1048	770	1101	758	1148	410	0	0	0	721	1108
Day Total	1854		1977		1849		1871		1906		410		0		1829	
% Splits	41.1%	58.9%	41.0%	59.0%	43.3%	56.7%	41.2%	58.8%	39.8%	60.2%	100.0 %	0.0%	0.0%	0.0%	39.4%	60.6%
Peak	07:30	04:45	07:15	04:45	07:30	04:45	07:30	04:30	07:30	04:45	11:00				07:30	04:45
Vol.	253	200	254	208	238	192	247	208	233	186	73				213	197
P.H.F.	0.762	0.980	0.920	0.852	0.826	0.842	0.895	0.881	0.910	0.894	0.702				0.859	0.929

ADT ADT 1,712 AADT 1,712

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Site Code: 13807
Northwest Loop Ramp
WB SRD Off Ramp to SB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: WB to SB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	48	5	77	12	28	16	23	11	44
12:15	*	*	*	*	*	*	*	38	8	52	9	29	7	30	8	37
12:30	*	*	*	*	*	*	*	58	32	53	34	21	16	36	27	42
12:45	*	*	*	*	*	*	*	25	8	46	7	31	11	30	9	33
01:00	*	*	*	*	*	*	*	53	3	60	5	36	3	29	4	44
01:15	*	*	*	*	*	*	*	35	5	39	4	24	5	28	5	32
01:30	*	*	*	*	*	*	*	37	5	40	4	37	6	19	5	33
01:45	*	*	*	*	*	*	*	37	0	36	5	31	3	27	3	33
02:00	*	*	*	*	*	*	*	37	4	48	5	35	0	26	3	36
02:15	*	*	*	*	*	*	*	52	1	52	6	34	0	24	2	40
02:30	*	*	*	*	*	*	*	41	1	49	4	31	1	27	2	37
02:45	*	*	*	*	*	*	*	39	0	48	2	26	1	33	1	36
03:00	*	*	*	*	*	*	*	62	1	48	1	28	1	33	1	43
03:15	*	*	*	*	*	*	*	45	1	54	2	35	3	42	2	44
03:30	*	*	*	*	*	*	*	55	0	57	0	42	0	31	0	46
03:45	*	*	*	*	*	*	*	59	3	53	2	52	1	27	2	48
04:00	*	*	*	*	*	*	*	69	3	71	0	40	2	28	2	52
04:15	*	*	*	*	*	*	*	64	2	71	0	40	0	34	1	52
04:30	*	*	*	*	*	*	*	116	3	130	2	47	2	31	2	81
04:45	*	*	*	*	*	*	*	85	3	77	1	34	0	39	1	59
05:00	*	*	*	*	*	*	*	104	4	88	6	49	2	34	4	69
05:15	*	*	*	*	*	*	*	87	3	79	4	40	2	33	3	60
05:30	*	*	*	*	*	*	*	60	3	63	2	39	2	30	2	48
05:45	*	*	*	*	*	*	*	40	5	47	6	39	3	36	5	40
06:00	*	*	*	*	*	*	*	35	8	35	7	38	2	31	6	35
06:15	*	*	*	*	*	*	*	26	9	50	2	28	6	39	6	36
06:30	*	*	*	*	*	*	*	40	17	45	5	27	6	24	9	34
06:45	*	*	*	*	*	*	*	35	25	40	12	28	3	24	13	32
07:00	*	*	*	*	*	*	*	31	22	26	12	30	5	13	13	25
07:15	*	*	*	*	*	*	*	25	21	25	7	25	9	30	12	26
07:30	*	*	*	*	*	*	*	31	17	22	5	19	7	13	10	21
07:45	*	*	*	*	*	*	*	19	38	16	12	15	7	15	19	16
08:00	*	*	*	*	*	*	*	32	20	26	14	28	10	23	15	27
08:15	*	*	*	*	*	*	*	16	18	23	7	33	10	31	12	26
08:30	*	*	*	*	*	*	*	22	19	22	10	28	10	35	13	27
08:45	*	*	*	*	*	*	*	19	20	32	15	26	5	27	13	26
09:00	*	*	*	*	*	*	*	28	17	26	11	31	8	30	12	29
09:15	*	*	*	*	*	*	*	33	25	35	15	23	13	26	18	29
09:30	*	*	*	*	*	*	*	35	29	32	7	39	9	17	15	31
09:45	*	*	*	*	*	*	*	31	27	19	19	28	13	11	20	22
10:00	*	*	*	*	*	*	*	25	25	27	16	33	13	9	18	24
10:15	*	*	*	*	*	*	*	20	26	17	20	34	19	10	22	20
10:30	*	*	*	*	*	*	*	16	20	12	23	27	19	8	21	16
10:45	*	*	*	*	*	*	*	16	27	12	31	21	22	3	27	13
11:00	*	*	*	*	*	*	*	12	25	14	31	11	25	8	27	11
11:15	*	*	*	*	*	*	*	13	33	16	29	32	25	6	29	17
11:30	*	*	*	*	*	*	*	10	32	14	24	18	21	8	26	12
11:45	*	*	*	*	*	*	*	7	39	17	37	18	32	6	36	12
Total	0	0	0	0	0	0	0	1923	662	2041	494	1488	386	1177	517	1656
Day Total	0		0		0		1923		2703		1982		1563		2173	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0 %	24.5%	75.5%	24.9%	75.1%	24.7%	75.3%	23.8%	76.2%
Peak								04:30	11:00	04:30	11:00	03:45	11:00	02:45	11:00	04:30
Vol.								392	129	374	121	179	103	139	118	269
P.H.F.								0.845	0.827	0.719	0.818	0.861	0.805	0.827	0.819	0.830

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Site Code: 13807
Northwest Loop Ramp
WB SRD Off Ramp to SB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: WB to SB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	5	60	9	51	4	62	4	68	4	66	15	*	*	*	7	61
12:15	5	37	7	39	5	41	5	42	11	45	14	*	*	*	8	41
12:30	3	38	27	31	29	46	37	49	35	55	39	*	*	*	28	44
12:45	4	32	4	27	8	42	6	41	3	55	7	*	*	*	5	39
01:00	3	48	0	48	3	49	4	51	4	63	3	*	*	*	3	52
01:15	4	35	4	43	1	42	5	43	2	38	5	*	*	*	4	40
01:30	1	33	4	27	5	44	4	37	4	40	6	*	*	*	4	36
01:45	1	47	4	28	6	37	2	38	1	45	6	*	*	*	3	39
02:00	3	39	2	41	7	37	1	47	1	39	3	*	*	*	3	41
02:15	2	34	0	48	1	37	1	41	3	50	1	*	*	*	1	42
02:30	1	49	3	43	2	31	1	51	1	45	0	*	*	*	1	44
02:45	2	32	0	46	0	45	2	45	0	42	1	*	*	*	1	42
03:00	2	46	2	41	4	45	1	52	2	44	0	*	*	*	2	46
03:15	0	49	1	59	1	42	1	41	2	51	3	*	*	*	1	48
03:30	1	47	0	49	0	58	0	69	2	65	0	*	*	*	0	58
03:45	1	60	0	55	0	58	1	84	3	73	0	*	*	*	1	66
04:00	1	78	3	91	3	71	3	81	4	71	1	*	*	*	2	78
04:15	1	62	2	66	2	77	1	59	3	59	0	*	*	*	2	65
04:30	1	103	1	93	3	107	1	97	1	101	1	*	*	*	1	100
04:45	2	75	3	78	2	84	0	78	2	71	3	*	*	*	2	77
05:00	1	109	5	79	4	99	4	91	2	99	1	*	*	*	3	88
05:15	0	114	0	87	5	86	1	89	3	77	5	*	*	*	2	91
05:30	5	49	5	50	3	62	4	60	3	52	4	*	*	*	4	55
05:45	4	35	8	59	6	45	8	54	6	36	9	*	*	*	7	46
06:00	4	45	2	44	9	39	7	49	5	40	7	*	*	*	6	43
06:15	8	46	10	41	10	43	9	33	10	39	7	*	*	*	9	40
06:30	13	27	15	27	15	35	7	33	15	39	9	*	*	*	12	32
06:45	18	27	20	36	15	31	15	47	20	29	10	*	*	*	16	34
07:00	25	24	16	33	19	34	27	26	20	30	15	*	*	*	20	29
07:15	25	22	29	24	36	31	23	25	28	39	12	*	*	*	26	28
07:30	25	22	13	30	14	21	19	27	15	31	7	*	*	*	16	26
07:45	29	24	33	22	33	16	31	22	30	32	9	*	*	*	28	23
08:00	25	25	20	29	23	27	28	38	27	32	7	*	*	*	22	30
08:15	28	28	24	22	15	19	22	29	20	26	13	*	*	*	20	25
08:30	15	14	29	19	17	17	18	30	22	21	10	*	*	*	18	20
08:45	13	15	19	24	27	27	36	39	23	26	24	*	*	*	24	26
09:00	28	27	31	18	30	24	17	16	19	27	19	*	*	*	24	22
09:15	20	35	23	36	18	37	30	33	25	36	17	*	*	*	22	35
09:30	19	31	18	27	35	26	23	27	22	26	22	*	*	*	23	27
09:45	24	22	29	27	9	17	20	27	17	22	10	*	*	*	18	23
10:00	16	19	18	19	25	16	18	16	32	26	21	*	*	*	22	19
10:15	24	17	21	30	25	12	16	14	26	27	24	*	*	*	23	20
10:30	28	8	11	15	29	8	32	14	25	27	27	*	*	*	25	14
10:45	30	9	18	9	31	15	17	20	32	17	28	*	*	*	26	14
11:00	24	7	19	13	24	14	23	11	26	26	35	*	*	*	25	14
11:15	28	16	34	11	27	13	30	13	31	13	31	*	*	*	30	13
11:30	26	10	27	10	46	7	34	14	41	9	29	*	*	*	34	10
11:45	41	13	30	8	30	7	41	6	38	7	*	*	*	*	36	8
Total	589	1845	603	1853	666	1883	640	2017	671	2029	520	0	0	0	620	1921
Day Total	2434		2456		2549		2657		2700		520		0		2541	
% Splits	24.2%	75.8%	24.6%	75.4%	26.1%	73.9%	24.1%	75.9%	24.9%	75.1%	100.0 %	0.0%	0.0%	0.0%	24.4%	75.6%
Peak	11:00	04:30	11:00	04:30	10:45	04:30	11:00	04:30	11:00	04:30	10:45				11:00	04:30
Vol.	119	402	110	337	128	376	128	355	136	348	123				125	363
P.H.F.	0.726	0.882	0.809	0.906	0.696	0.879	0.780	0.915	0.829	0.861	0.788				0.868	0.908

ADT ADT 2,390 AADT 2,390

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Site Code: 14640
Northwest Outer Ramp
SB CR46 Off Ramp WB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: SB to WB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	97	14	111	28	95	42	127	28	108
12:15	*	*	*	*	*	*	*	128	10	122	28	110	42	113	27	118
12:30	*	*	*	*	*	*	*	122	10	112	15	105	39	104	21	111
12:45	*	*	*	*	*	*	*	131	5	104	16	109	23	129	15	118
01:00	*	*	*	*	*	*	*	115	8	124	13	114	22	97	14	112
01:15	*	*	*	*	*	*	*	108	3	147	9	106	14	111	9	118
01:30	*	*	*	*	*	*	*	95	3	114	5	98	14	124	7	108
01:45	*	*	*	*	*	*	*	100	13	127	10	102	15	118	13	112
02:00	*	*	*	*	*	*	*	104	8	120	8	97	8	95	8	104
02:15	*	*	*	*	*	*	*	129	5	181	7	110	8	117	7	134
02:30	*	*	*	*	*	*	*	146	3	164	3	139	2	92	3	135
02:45	*	*	*	*	*	*	*	134	6	140	10	119	3	102	6	124
03:00	*	*	*	*	*	*	*	124	3	179	6	90	8	104	6	124
03:15	*	*	*	*	*	*	*	165	21	180	3	100	2	114	9	140
03:30	*	*	*	*	*	*	*	227	6	175	7	99	6	90	6	141
03:45	*	*	*	*	*	*	*	170	8	200	3	110	6	103	6	146
04:00	*	*	*	*	*	*	*	185	22	161	5	108	4	85	10	134
04:15	*	*	*	*	*	*	*	171	24	160	9	114	6	97	13	136
04:30	*	*	*	*	*	*	*	167	41	145	10	110	9	92	20	128
04:45	*	*	*	*	*	*	*	152	41	143	15	112	8	82	21	122
05:00	*	*	*	*	*	*	*	160	59	131	21	101	6	85	29	119
05:15	*	*	*	*	*	*	*	155	75	154	19	114	15	91	36	128
05:30	*	*	*	*	*	*	*	170	82	130	25	82	9	75	39	114
05:45	*	*	*	*	*	*	*	117	140	119	43	86	26	86	70	102
06:00	*	*	*	*	*	*	*	106	146	112	37	79	19	77	67	94
06:15	*	*	*	*	*	*	*	108	188	87	64	84	29	88	94	92
06:30	*	*	*	*	*	*	*	104	210	100	82	88	34	60	109	88
06:45	*	*	*	*	*	*	*	96	231	86	80	69	33	76	115	82
07:00	*	*	*	*	*	*	*	81	209	88	54	79	46	101	103	87
07:15	*	*	*	*	*	*	*	82	229	66	83	74	48	62	120	71
07:30	*	*	*	*	*	*	*	73	232	62	96	67	49	55	126	64
07:45	*	*	*	*	*	*	*	59	241	73	82	63	38	59	120	64
08:00	*	*	*	*	*	*	*	55	210	47	84	76	60	60	118	60
08:15	*	*	*	*	*	*	*	74	219	54	106	55	56	78	127	65
08:30	*	*	*	*	*	*	*	77	214	56	100	54	57	54	124	60
08:45	*	*	*	*	*	*	*	80	167	51	81	52	65	55	104	60
09:00	*	*	*	*	*	*	*	60	136	68	81	45	62	55	93	57
09:15	*	*	*	*	*	*	*	43	132	55	89	49	68	42	96	47
09:30	*	*	*	*	*	*	*	69	139	51	86	65	69	37	98	56
09:45	*	*	*	*	*	*	*	40	141	44	123	60	78	24	114	42
10:00	*	*	*	*	*	*	*	34	111	51	124	53	89	30	108	42
10:15	*	*	*	*	*	*	*	38	95	45	144	53	104	48	114	46
10:30	*	*	*	*	*	*	*	28	120	50	139	41	98	32	119	38
10:45	*	*	*	*	*	*	*	32	92	45	124	35	112	26	109	34
11:00	*	*	*	*	*	*	*	21	120	32	116	44	106	14	114	28
11:15	*	*	*	*	*	*	119	25	105	42	112	34	121	15	114	29
11:30	*	*	*	*	*	*	104	20	112	24	130	41	110	17	114	26
11:45	*	*	*	*	*	*	91	17	133	31	118	35	116	14	114	24
Total	0	0	0	0	0	0	314	4794	4542	4863	2653	3925	2004	3612	3057	4300
Day Total	0		0		0		5108		9405		6578		5616		7357	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.1%	93.9%	48.3%	51.7%	40.3%	59.7%	35.7%	64.3%	41.6%	58.4%
Peak								03:30	07:15	03:00	10:00	02:00	11:00	12:00	07:30	03:15
Vol.								753	912	734	531	465	453	473	491	569
P.H.F.								0.829	0.946	0.918	0.922	0.836	0.936	0.917	0.967	0.961

TRIP Consultants
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Site Code: 14640
Northwest Outer Ramp
SB CR46 Off Ramp WB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: SB to WB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	9	103	12	124	10	0	16	105	12	132	34	*	*	*	16	93
12:15	8	110	4	87	7	0	7	136	10	124	15	*	*	*	8	91
12:30	7	117	11	103	7	0	3	97	2	119	19	*	*	*	8	87
12:45	7	84	3	92	5	0	5	116	3	114	10	*	*	*	6	81
01:00	8	80	3	105	3	0	5	118	9	115	8	*	*	*	6	84
01:15	5	92	8	102	5	0	4	100	4	121	11	*	*	*	6	83
01:30	1	92	4	106	4	0	6	135	10	140	5	*	*	*	5	95
01:45	5	103	3	115	4	0	2	107	5	122	10	*	*	*	5	89
02:00	1	104	2	108	4	0	1	108	4	112	5	*	*	*	3	86
02:15	2	133	2	117	4	0	2	134	1	154	8	*	*	*	3	108
02:30	5	120	2	122	6	0	3	115	8	138	8	*	*	*	5	99
02:45	4	134	7	131	4	0	5	125	17	124	2	*	*	*	6	103
03:00	1	114	3	173	3	0	8	129	6	176	8	*	*	*	5	118
03:15	10	167	13	164	12	0	10	148	8	174	5	*	*	*	10	131
03:30	17	193	19	192	19	0	13	209	10	168	6	*	*	*	14	156
03:45	16	148	12	144	14	0	11	170	10	190	5	*	*	*	11	130
04:00	20	144	20	171	14	154	16	164	18	148	5	*	*	*	16	156
04:15	19	148	15	168	14	145	18	185	28	135	12	*	*	*	18	156
04:30	34	155	22	146	28	172	32	151	37	159	18	*	*	*	28	157
04:45	41	118	55	148	45	131	38	131	39	143	10	*	*	*	38	134
05:00	68	116	61	129	51	146	64	166	64	122	29	*	*	*	56	136
05:15	90	154	80	172	97	158	82	174	79	160	24	*	*	*	75	164
05:30	82	172	94	159	81	128	77	153	74	163	26	*	*	*	72	155
05:45	128	151	118	142	123	116	128	121	114	156	41	*	*	*	109	137
06:00	154	122	160	127	159	117	147	132	136	125	47	*	*	*	134	125
06:15	177	104	200	101	166	110	184	97	169	131	60	*	*	*	159	109
06:30	222	99	218	105	225	84	211	104	200	122	87	*	*	*	194	103
06:45	229	96	262	88	260	93	246	98	219	97	74	*	*	*	215	94
07:00	231	78	233	89	209	58	207	104	194	72	52	*	*	*	188	80
07:15	252	59	239	69	240	64	259	72	239	68	79	*	*	*	218	66
07:30	233	66	241	59	262	62	271	75	236	75	92	*	*	*	222	67
07:45	277	66	270	73	247	45	241	53	255	60	96	*	*	*	231	59
08:00	212	63	207	49	224	56	222	53	234	51	81	*	*	*	197	54
08:15	225	52	237	55	224	58	200	69	223	45	84	*	*	*	199	56
08:30	207	47	202	53	211	42	222	48	199	55	82	*	*	*	187	49
08:45	188	49	177	35	192	36	184	49	178	71	98	*	*	*	170	48
09:00	150	50	151	62	141	27	137	43	139	54	83	*	*	*	134	47
09:15	149	41	124	52	146	50	143	60	113	53	97	*	*	*	129	51
09:30	128	34	140	38	133	39	140	38	138	46	90	*	*	*	128	39
09:45	131	22	115	36	129	34	127	33	118	38	101	*	*	*	120	33
10:00	106	29	119	25	0	27	114	37	92	27	98	*	*	*	88	29
10:15	111	29	109	36	0	19	122	34	102	34	102	*	*	*	91	30
10:30	116	21	100	23	0	22	107	37	94	30	110	*	*	*	88	27
10:45	80	15	97	19	0	20	105	26	85	43	106	*	*	*	79	25
11:00	91	19	96	24	0	15	101	19	89	41	104	*	*	*	80	24
11:15	101	18	116	14	0	18	120	15	102	27	132	*	*	*	95	18
11:30	120	21	119	16	0	15	127	24	101	22	107	*	*	*	96	20
11:45	116	11	106	14	0	11	117	12	123	29	*	*	*	*	92	15
Total	4594	4263	4611	4482	3732	2272	4610	4629	4350	4845	2386	0	0	0	4063	4097
Day Total	8857		9093		6004		9239		9195		2386		0		8160	
% Splits	51.9%	48.1%	50.7%	49.3%	62.2%	37.8%	49.9%	50.1%	47.3%	52.7%	100.0 %	0.0%	0.0%	0.0%	49.8%	50.2%
Peak	07:00	03:15	07:00	03:30	07:15	04:30	07:15	03:30	07:15	03:00	10:30				07:15	04:00
Vol.	993	652	983	675	973	607	993	728	964	728	452				868	603
P.H.F.	0.896	0.845	0.910	0.879	0.928	0.882	0.916	0.871	0.945	0.958	0.856				0.939	0.919

ADT ADT 7,924 AADT 7,924

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Site Code: 2225
Southeast Loop Ramp
EB SRD Off Ramp to NB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB to NB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	88	35	111	51	110	41	112	42	105
12:15	*	*	*	*	*	*	*	75	37	109	43	117	37	125	39	106
12:30	*	*	*	*	*	*	*	108	16	132	27	114	43	102	29	114
12:45	*	*	*	*	*	*	*	98	18	124	31	124	41	110	30	114
01:00	*	*	*	*	*	*	*	94	14	128	24	113	22	96	20	108
01:15	*	*	*	*	*	*	*	106	10	90	32	123	23	93	22	103
01:30	*	*	*	*	*	*	*	101	10	107	25	120	21	84	19	103
01:45	*	*	*	*	*	*	*	81	16	122	10	138	19	115	15	114
02:00	*	*	*	*	*	*	*	91	16	115	18	97	8	106	14	102
02:15	*	*	*	*	*	*	*	110	11	126	20	105	17	92	16	108
02:30	*	*	*	*	*	*	*	135	8	116	14	120	10	114	11	121
02:45	*	*	*	*	*	*	*	171	7	152	18	104	13	107	13	134
03:00	*	*	*	*	*	*	*	149	8	162	5	129	10	106	8	136
03:15	*	*	*	*	*	*	*	170	11	155	11	107	7	90	10	130
03:30	*	*	*	*	*	*	*	150	6	174	5	110	10	94	7	132
03:45	*	*	*	*	*	*	*	206	2	193	1	124	7	78	3	150
04:00	*	*	*	*	*	*	*	180	11	199	6	119	15	99	11	149
04:15	*	*	*	*	*	*	*	182	10	184	8	117	5	92	8	144
04:30	*	*	*	*	*	*	*	174	8	186	6	89	11	84	8	133
04:45	*	*	*	*	*	*	*	164	5	201	12	105	7	82	8	138
05:00	*	*	*	*	*	*	*	197	19	202	7	104	10	77	12	145
05:15	*	*	*	*	*	*	*	221	12	218	14	93	12	68	13	150
05:30	*	*	*	*	*	*	*	196	23	190	22	94	13	101	19	145
05:45	*	*	*	*	*	*	*	204	48	176	30	113	26	74	35	142
06:00	*	*	*	*	*	*	*	206	39	171	25	95	13	70	26	136
06:15	*	*	*	*	*	*	*	197	95	166	15	95	26	65	45	131
06:30	*	*	*	*	*	*	*	182	140	186	25	84	18	60	61	128
06:45	*	*	*	*	*	*	*	185	144	131	28	92	20	70	64	120
07:00	*	*	*	*	*	*	*	162	138	131	41	75	20	57	66	106
07:15	*	*	*	*	*	*	*	119	150	109	49	70	28	69	76	92
07:30	*	*	*	*	*	*	*	92	162	84	61	75	24	73	82	81
07:45	*	*	*	*	*	*	*	101	187	89	58	69	36	73	94	83
08:00	*	*	*	*	*	*	*	105	166	99	59	68	28	79	84	88
08:15	*	*	*	*	*	*	*	108	181	95	60	72	47	52	96	82
08:30	*	*	*	*	*	*	*	98	161	89	108	65	38	71	102	81
08:45	*	*	*	*	*	*	*	84	123	104	120	67	58	56	100	78
09:00	*	*	*	*	*	*	*	105	92	80	110	74	45	60	82	80
09:15	*	*	*	*	*	*	*	104	111	77	74	87	53	46	79	78
09:30	*	*	*	*	*	*	*	82	96	69	99	64	61	55	85	68
09:45	*	*	*	*	*	*	*	75	97	78	79	63	70	58	82	68
10:00	*	*	*	*	*	*	*	57	104	66	82	59	70	39	85	55
10:15	*	*	*	*	*	*	*	57	80	74	86	67	75	43	80	60
10:30	*	*	*	*	*	*	*	50	87	62	94	49	89	51	90	53
10:45	*	*	*	*	*	*	*	59	77	52	88	50	99	44	88	51
11:00	*	*	*	*	*	*	*	46	106	69	95	60	97	28	99	51
11:15	*	*	*	*	*	*	*	39	103	59	116	58	109	32	109	47
11:30	*	*	*	*	*	*	*	50	89	45	112	51	84	28	95	44
11:45	*	*	*	*	*	*	119	37	141	53	123	53	86	29	117	43
Total	0	0	0	0	0	0	119	5851	3230	5910	2247	4351	1722	3609	2399	4930
Day Total	0		0		0		5970		9140		6598		5331		7329	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	98.0%	35.3%	64.7%	34.1%	65.9%	32.3%	67.7%	32.7%	67.3%
Peak								05:15	07:30	04:45	11:00	01:00	10:30	12:00	11:00	05:00
Vol.								827	696	811	446	494	394	449	420	582
P.H.F.								0.936	0.930	0.930	0.907	0.895	0.904	0.898	0.897	0.970

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Site Code: 2225
Southeast Loop Ramp
EB SRD Off Ramp to NB CR46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB to NB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	28	98	25	70	27	97	29	140	32	186	54	*	*	*	32	118
12:15	26	81	23	102	24	78	25	80	31	107	40	*	*	*	28	90
12:30	23	77	21	91	22	83	28	89	22	111	33	*	*	*	25	90
12:45	12	116	22	104	20	102	22	107	23	112	29	*	*	*	21	108
01:00	9	98	12	127	12	84	19	76	28	106	27	*	*	*	18	98
01:15	5	89	18	92	14	91	13	93	14	100	21	*	*	*	14	93
01:30	8	80	3	92	12	87	11	103	17	122	26	*	*	*	13	97
01:45	3	122	11	96	10	117	11	68	8	122	11	*	*	*	9	105
02:00	5	103	6	123	14	109	14	76	11	102	13	*	*	*	10	103
02:15	8	93	7	122	10	113	7	68	7	129	10	*	*	*	8	105
02:30	2	112	6	129	8	126	3	80	9	120	18	*	*	*	8	113
02:45	8	132	4	119	9	118	9	85	11	141	10	*	*	*	8	119
03:00	5	166	9	150	4	153	7	86	8	143	12	*	*	*	8	140
03:15	6	175	10	162	7	165	3	114	9	186	8	*	*	*	7	160
03:30	7	170	7	181	2	174	5	122	5	184	7	*	*	*	6	166
03:45	4	168	3	180	5	167	4	95	2	171	8	*	*	*	4	156
04:00	2	185	6	172	1	186	8	106	3	210	5	*	*	*	4	172
04:15	5	227	5	205	5	146	3	120	8	178	10	*	*	*	6	175
04:30	4	175	8	210	4	177	6	119	7	184	5	*	*	*	6	173
04:45	6	208	5	189	4	178	8	171	6	190	15	*	*	*	7	187
05:00	10	207	8	191	9	197	14	222	14	188	12	*	*	*	11	201
05:15	14	194	8	186	18	174	14	200	7	197	10	*	*	*	12	190
05:30	27	197	30	175	29	180	28	218	24	209	23	*	*	*	27	195
05:45	40	190	46	193	48	194	56	191	48	178	37	*	*	*	46	189
06:00	37	176	41	170	46	179	37	173	34	166	22	*	*	*	36	173
06:15	90	201	91	184	100	186	94	170	79	141	28	*	*	*	80	176
06:30	127	153	134	164	135	155	152	138	128	158	36	*	*	*	119	154
06:45	129	145	159	155	164	147	159	152	157	127	54	*	*	*	137	145
07:00	94	138	119	112	93	147	105	105	118	100	33	*	*	*	94	120
07:15	132	121	142	121	143	119	131	130	135	102	58	*	*	*	124	119
07:30	152	108	153	111	179	101	145	110	154	92	44	*	*	*	138	104
07:45	208	106	228	90	220	104	212	91	177	81	61	*	*	*	184	94
08:00	181	96	193	87	165	101	157	101	159	81	45	*	*	*	150	93
08:15	198	74	200	108	215	117	211	105	177	92	76	*	*	*	180	99
08:30	177	66	195	94	191	82	197	103	163	98	52	*	*	*	162	89
08:45	141	85	126	82	124	77	139	89	135	72	81	*	*	*	124	81
09:00	113	91	129	99	121	89	134	86	123	82	66	*	*	*	114	89
09:15	120	61	127	84	118	86	115	81	101	69	68	*	*	*	108	76
09:30	101	70	110	75	114	65	112	92	104	80	82	*	*	*	104	76
09:45	111	49	114	74	108	66	89	82	107	87	88	*	*	*	103	72
10:00	83	52	79	73	87	82	103	73	105	71	82	*	*	*	90	70
10:15	84	56	77	55	92	60	102	53	97	72	74	*	*	*	88	59
10:30	105	52	86	72	81	43	108	53	83	46	122	*	*	*	98	53
10:45	103	49	86	57	75	35	73	58	110	61	124	*	*	*	95	52
11:00	78	38	86	47	73	35	69	44	113	75	89	*	*	*	85	48
11:15	75	32	68	42	82	32	84	33	115	71	114	*	*	*	90	42
11:30	78	27	80	31	75	17	98	39	94	57	*	*	*	*	85	34
11:45	57	33	81	25	83	36	116	36	164	67	*	*	*	*	100	39
Total	3041	5542	3207	5673	3202	5457	3289	5026	3286	5824	1943	0	0	0	3026	5501
Day Total	8583		8880		8659		8315		9110		1943		0		8527	
% Splits	35.4%	64.6%	36.1%	63.9%	37.0%	63.0%	39.6%	60.4%	36.1%	63.9%	100.0 %	0.0%	0.0%	0.0%	35.5%	64.5%
Peak	07:45	04:15	07:45	04:15	07:45	05:00	07:45	05:00	07:45	04:45	10:30				07:45	05:00
Vol.	764	817	816	795	791	745	777	831	676	784	449				676	776
P.H.F.	0.918	0.900	0.895	0.946	0.899	0.945	0.916	0.936	0.955	0.933	0.905				0.918	0.965

ADT ADT 8,068 AADT 8,068

TRIP Consultants
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Brooklyn, NY 11209
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Site Code: 2207
Southeast Outer Ramp
NB CR46 Off Ramp to EB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB to EB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	35	2	33	9	44	6	30	6	36
12:15	*	*	*	*	*	*	*	28	3	27	4	38	7	38	5	33
12:30	*	*	*	*	*	*	*	42	2	40	3	42	2	24	2	37
12:45	*	*	*	*	*	*	*	26	5	22	2	49	6	37	4	34
01:00	*	*	*	*	*	*	*	34	1	36	6	49	4	40	4	40
01:15	*	*	*	*	*	*	*	26	1	23	8	30	3	40	4	30
01:30	*	*	*	*	*	*	*	26	3	31	4	43	2	41	3	35
01:45	*	*	*	*	*	*	*	25	3	43	3	45	3	28	3	35
02:00	*	*	*	*	*	*	*	24	2	32	1	31	1	32	1	30
02:15	*	*	*	*	*	*	*	31	3	26	4	26	3	42	3	31
02:30	*	*	*	*	*	*	*	32	1	38	5	29	7	40	4	35
02:45	*	*	*	*	*	*	*	33	6	37	4	33	3	49	4	38
03:00	*	*	*	*	*	*	*	36	0	31	1	30	1	21	1	30
03:15	*	*	*	*	*	*	*	31	3	28	1	34	0	28	1	30
03:30	*	*	*	*	*	*	*	46	1	36	1	47	1	29	1	40
03:45	*	*	*	*	*	*	*	34	1	40	2	31	0	18	1	31
04:00	*	*	*	*	*	*	*	49	2	48	2	37	1	8	2	36
04:15	*	*	*	*	*	*	*	34	1	31	2	25	2	29	2	30
04:30	*	*	*	*	*	*	*	48	12	48	6	33	4	16	7	36
04:45	*	*	*	*	*	*	*	35	3	36	4	17	3	23	3	28
05:00	*	*	*	*	*	*	*	36	7	41	3	28	1	23	4	32
05:15	*	*	*	*	*	*	*	29	9	34	7	27	4	15	7	26
05:30	*	*	*	*	*	*	*	29	18	32	12	22	11	20	14	26
05:45	*	*	*	*	*	*	*	23	13	15	7	15	7	22	9	19
06:00	*	*	*	*	*	*	*	30	20	26	13	32	8	9	14	24
06:15	*	*	*	*	*	*	*	19	23	27	13	20	13	13	16	20
06:30	*	*	*	*	*	*	*	24	35	27	18	21	13	9	22	20
06:45	*	*	*	*	*	*	*	16	31	24	20	21	16	27	22	22
07:00	*	*	*	*	*	*	*	25	41	21	19	19	8	10	23	19
07:15	*	*	*	*	*	*	*	15	31	23	17	16	17	17	22	18
07:30	*	*	*	*	*	*	*	20	49	17	28	14	19	11	32	16
07:45	*	*	*	*	*	*	*	14	57	21	29	14	14	13	33	16
08:00	*	*	*	*	*	*	*	14	36	24	27	15	14	8	26	15
08:15	*	*	*	*	*	*	*	13	42	18	34	16	18	12	31	15
08:30	*	*	*	*	*	*	*	12	51	10	31	18	29	10	37	12
08:45	*	*	*	*	*	*	*	14	42	19	33	13	35	9	37	14
09:00	*	*	*	*	*	*	*	22	43	19	29	8	19	6	30	14
09:15	*	*	*	*	*	*	*	10	23	14	30	8	19	9	24	10
09:30	*	*	*	*	*	*	*	8	35	16	38	9	33	12	35	11
09:45	*	*	*	*	*	*	*	17	28	14	30	14	29	6	29	13
10:00	*	*	*	*	*	*	*	6	34	7	34	13	23	7	30	8
10:15	*	*	*	*	*	*	*	5	29	15	28	11	28	3	28	8
10:30	*	*	*	*	*	*	*	9	29	15	43	12	28	10	33	12
10:45	*	*	*	*	*	*	*	4	33	8	15	9	36	2	28	6
11:00	*	*	*	*	*	*	*	5	27	10	33	11	21	4	27	8
11:15	*	*	*	*	*	*	*	5	25	5	23	7	27	6	25	6
11:30	*	*	*	*	*	*	*	8	38	2	33	9	55	2	42	5
11:45	*	*	*	*	*	*	33	1	48	5	37	6	35	4	38	4
Total	0	0	0	0	0	0	33	1108	952	1195	756	1141	639	912	779	1094
Day Total	0		0		0		1141		2147		1897		1551		1873	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	97.1%	44.3%	55.7%	39.9%	60.1%	41.2%	58.8%	41.6%	58.4%
Peak								04:00	07:45	03:45	09:45	00:15	10:45	02:00	08:15	00:15
Vol.								166	186	167	135	178	139	163	135	144
P.H.F.								0.847	0.816	0.870	0.785	0.908	0.632	0.832	0.804	0.900

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Site Code: 2207
Southeast Outer Ramp
NB CR46 Off Ramp to EB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: NB to EB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	8	34	3	43	5	28	4	35	5	34	3	*	*	*	5	35
12:15	1	26	7	25	8	26	3	39	4	31	3	*	*	*	4	29
12:30	1	33	5	35	4	31	6	42	7	36	5	*	*	*	5	35
12:45	2	23	5	39	2	24	2	33	6	47	6	*	*	*	4	33
01:00	4	27	1	39	2	28	3	32	3	37	4	*	*	*	3	33
01:15	3	27	4	29	3	28	3	43	3	40	4	*	*	*	3	33
01:30	2	28	0	24	0	24	0	33	0	25	2	*	*	*	1	27
01:45	2	25	1	29	2	28	3	23	1	38	1	*	*	*	2	29
02:00	0	29	1	23	0	28	1	35	4	34	3	*	*	*	2	30
02:15	4	36	2	26	4	27	3	23	1	34	3	*	*	*	3	29
02:30	1	37	1	37	0	29	3	32	4	36	1	*	*	*	2	34
02:45	2	29	3	28	2	40	1	35	2	24	3	*	*	*	2	31
03:00	0	30	0	33	0	27	0	46	1	37	1	*	*	*	0	35
03:15	1	28	2	33	3	26	2	43	0	46	1	*	*	*	2	35
03:30	1	38	1	34	1	43	0	35	1	46	2	*	*	*	1	39
03:45	1	29	2	29	2	30	4	29	1	23	3	*	*	*	2	28
04:00	3	37	0	36	5	34	1	40	1	35	3	*	*	*	2	36
04:15	4	30	4	33	3	25	2	37	3	30	5	*	*	*	4	31
04:30	8	36	11	56	5	45	8	47	11	50	9	*	*	*	9	47
04:45	5	33	5	34	5	36	3	40	2	55	6	*	*	*	4	40
05:00	4	44	8	56	7	37	6	41	6	39	3	*	*	*	6	43
05:15	12	22	11	38	5	32	9	41	8	32	3	*	*	*	8	33
05:30	9	26	18	24	23	37	16	23	13	32	13	*	*	*	15	28
05:45	16	24	15	30	17	21	11	21	13	26	11	*	*	*	14	24
06:00	19	28	13	24	12	29	22	25	17	32	7	*	*	*	15	28
06:15	34	26	20	18	22	22	19	32	20	25	13	*	*	*	21	25
06:30	49	29	36	33	40	14	39	25	32	27	20	*	*	*	36	26
06:45	40	16	47	15	36	13	46	31	49	30	21	*	*	*	40	21
07:00	36	23	39	23	35	20	35	24	36	14	11	*	*	*	32	21
07:15	30	12	32	18	27	16	42	24	33	18	21	*	*	*	31	18
07:30	54	12	43	20	57	15	47	17	56	27	22	*	*	*	46	18
07:45	52	10	45	17	51	11	45	12	55	36	36	*	*	*	47	17
08:00	38	12	39	18	34	19	43	25	39	24	28	*	*	*	37	20
08:15	45	11	43	26	48	7	34	17	44	22	32	*	*	*	41	17
08:30	56	14	62	10	54	14	54	9	51	9	41	*	*	*	53	11
08:45	41	9	42	18	41	21	47	13	32	11	34	*	*	*	40	14
09:00	28	8	24	16	44	9	32	15	26	16	34	*	*	*	31	13
09:15	29	11	25	7	30	6	37	11	27	17	21	*	*	*	28	10
09:30	34	8	35	10	28	9	39	13	30	13	47	*	*	*	36	11
09:45	33	7	29	13	34	17	34	10	25	7	37	*	*	*	32	11
10:00	31	9	38	17	33	12	33	8	29	12	32	*	*	*	33	12
10:15	31	6	26	8	32	8	28	6	32	11	30	*	*	*	30	8
10:30	31	8	22	9	21	11	22	12	19	10	31	*	*	*	24	10
10:45	31	5	32	7	30	4	15	11	33	6	37	*	*	*	30	7
11:00	24	10	23	9	24	5	32	6	33	5	26	*	*	*	27	7
11:15	34	1	22	3	29	6	27	9	37	6	41	*	*	*	32	5
11:30	22	7	43	5	32	8	29	7	40	4	*	*	*	*	33	6
11:45	31	5	31	6	29	8	24	4	30	5	*	*	*	*	29	6
Total	948	1018	921	1163	931	1038	919	1214	925	1254	720	0	0	0	907	1139
Day Total	1966		2084		1969		2133		2179		720		0		2046	
% Splits	48.2%	51.8%	44.2%	55.8%	47.3%	52.7%	43.1%	56.9%	42.5%	57.5%	100.0 %	0.0%	0.0%	0.0%	44.3%	55.7%
Peak	07:45	04:15	07:45	04:30	07:30	04:30	08:00	04:30	07:30	04:30	09:30				07:45	04:30
Vol.	192	143	189	184	190	150	178	169	194	176	146				178	163
P.H.F.	0.857	0.813	0.762	0.821	0.833	0.833	0.824	0.899	0.866	0.800	0.777				0.840	0.867

ADT ADT 1,979 AADT 1,979

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Site Code: 1562
South Service Rd Between Southwest
Outer Rampand Southwest Loop Ramp

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	110	35	110	47	114	44	126	42	115
12:15	*	*	*	*	*	*	*	87	36	125	38	124	41	109	38	111
12:30	*	*	*	*	*	*	*	116	15	140	27	117	34	111	25	121
12:45	*	*	*	*	*	*	*	103	18	124	28	132	42	100	29	115
01:00	*	*	*	*	*	*	*	113	13	148	26	119	24	105	21	121
01:15	*	*	*	*	*	*	*	122	13	105	28	126	20	87	20	110
01:30	*	*	*	*	*	*	*	113	9	115	27	128	22	101	19	114
01:45	*	*	*	*	*	*	*	97	16	129	12	139	21	114	16	120
02:00	*	*	*	*	*	*	*	108	16	130	19	104	9	98	15	110
02:15	*	*	*	*	*	*	*	118	13	125	14	113	14	99	14	114
02:30	*	*	*	*	*	*	*	144	5	128	14	114	11	124	10	128
02:45	*	*	*	*	*	*	*	183	12	165	14	117	12	119	13	146
03:00	*	*	*	*	*	*	*	158	11	164	6	131	11	91	9	136
03:15	*	*	*	*	*	*	*	178	8	164	11	106	4	92	8	135
03:30	*	*	*	*	*	*	*	162	6	194	5	112	12	89	8	139
03:45	*	*	*	*	*	*	*	231	3	228	2	128	12	87	6	148
04:00	*	*	*	*	*	*	*	176	12	199	6	121	8	96	9	148
04:15	*	*	*	*	*	*	*	189	11	181	9	108	5	94	8	143
04:30	*	*	*	*	*	*	*	188	10	195	9	96	13	84	11	141
04:45	*	*	*	*	*	*	*	171	17	223	25	109	7	80	16	146
05:00	*	*	*	*	*	*	*	211	22	210	8	98	13	91	14	152
05:15	*	*	*	*	*	*	*	226	19	221	17	96	10	59	15	150
05:30	*	*	*	*	*	*	*	201	31	195	28	104	17	101	25	150
05:45	*	*	*	*	*	*	*	199	55	168	38	114	24	76	39	139
06:00	*	*	*	*	*	*	*	196	54	183	22	93	17	75	31	137
06:15	*	*	*	*	*	*	*	213	102	171	19	100	26	56	49	135
06:30	*	*	*	*	*	*	*	181	172	182	35	76	19	63	75	126
06:45	*	*	*	*	*	*	*	192	200	137	40	105	19	75	86	127
07:00	*	*	*	*	*	*	*	167	162	132	50	73	24	58	79	108
07:15	*	*	*	*	*	*	*	115	197	111	53	72	30	73	93	93
07:30	*	*	*	*	*	*	*	101	202	80	64	73	31	69	99	81
07:45	*	*	*	*	*	*	*	94	227	100	58	72	34	70	106	84
08:00	*	*	*	*	*	*	*	112	202	109	62	65	31	81	98	92
08:15	*	*	*	*	*	*	*	107	216	91	64	76	53	56	111	82
08:30	*	*	*	*	*	*	*	101	179	92	114	70	49	70	114	83
08:45	*	*	*	*	*	*	*	92	160	105	131	59	52	63	114	80
09:00	*	*	*	*	*	*	*	104	115	74	105	80	45	50	88	77
09:15	*	*	*	*	*	*	*	101	117	76	81	85	56	56	85	80
09:30	*	*	*	*	*	*	*	79	108	72	100	67	67	53	92	68
09:45	*	*	*	*	*	*	*	83	105	84	80	65	70	53	85	71
10:00	*	*	*	*	*	*	*	52	113	63	90	60	70	38	91	53
10:15	*	*	*	*	*	*	*	55	95	83	86	66	77	51	86	64
10:30	*	*	*	*	*	*	*	50	74	58	98	42	103	45	92	49
10:45	*	*	*	*	*	*	52	59	95	61	102	59	91	41	85	55
11:00	*	*	*	*	*	*	82	49	115	70	97	56	109	30	101	51
11:15	*	*	*	*	*	*	110	39	97	54	114	56	112	30	108	45
11:30	*	*	*	*	*	*	107	48	99	46	120	54	82	29	102	44
11:45	*	*	*	*	*	*	108	43	160	63	115	50	90	27	118	46
Total	0	0	0	0	0	0	459	6137	3772	6183	2358	4444	1787	3645	2618	5103
Day Total	0		0		0		6596		9955		6802		5432		7721	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	93.0%	37.9%	62.1%	34.7%	65.3%	32.9%	67.1%	33.9%	66.1%
Peak							11:00	05:00	07:30	04:30	11:00	01:00	10:30	12:00	08:00	03:45
Vol.							407	837	847	849	446	512	415	446	437	600
P.H.F.							0.925	0.906	0.933	0.931	0.851	0.921	0.926	0.885	0.926	0.893

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Site Code: 1562
South Service Rd Between Southwest
Outer Rampand Southwest Loop Ramp

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	31	105	28	86	20	93	27	122	30	175	43	*	*	*	30	116
12:15	27	95	16	100	25	101	25	87	29	108	43	*	*	*	28	98
12:30	16	91	29	99	17	102	26	111	28	124	33	*	*	*	25	105
12:45	13	130	16	129	23	143	25	121	21	119	21	*	*	*	20	128
01:00	9	104	18	131	9	104	16	86	22	93	33	*	*	*	18	104
01:15	7	96	11	89	15	98	13	105	16	115	13	*	*	*	12	101
01:30	5	98	4	103	11	107	12	118	11	137	22	*	*	*	11	113
01:45	3	135	10	115	11	90	12	80	10	114	10	*	*	*	9	107
02:00	7	107	8	129	17	108	11	72	8	116	17	*	*	*	11	106
02:15	5	102	6	131	8	117	6	70	10	118	15	*	*	*	8	108
02:30	3	133	6	126	9	129	5	97	11	157	18	*	*	*	9	128
02:45	8	149	3	149	5	162	9	86	9	154	8	*	*	*	7	140
03:00	6	167	10	164	5	176	7	110	7	168	12	*	*	*	8	157
03:15	7	184	10	170	7	182	3	122	6	192	11	*	*	*	7	170
03:30	6	207	6	195	2	179	4	134	6	202	5	*	*	*	5	183
03:45	4	172	5	211	5	204	5	103	3	197	7	*	*	*	5	177
04:00	7	206	10	189	4	182	7	116	7	187	7	*	*	*	7	176
04:15	6	205	4	209	8	167	5	141	6	200	8	*	*	*	6	184
04:30	8	187	6	210	8	179	11	119	13	204	17	*	*	*	10	180
04:45	14	238	15	214	16	201	18	212	19	194	23	*	*	*	18	212
05:00	13	202	11	183	16	198	16	219	20	211	12	*	*	*	15	203
05:15	16	196	19	185	16	184	18	208	10	197	20	*	*	*	16	194
05:30	40	192	52	203	39	192	39	209	48	209	35	*	*	*	42	201
05:45	52	199	51	171	58	188	64	182	46	153	33	*	*	*	51	179
06:00	48	172	52	188	76	182	67	182	68	181	24	*	*	*	56	181
06:15	115	194	117	172	114	173	120	168	106	153	35	*	*	*	101	172
06:30	139	144	155	168	199	154	191	134	181	155	51	*	*	*	153	151
06:45	184	153	213	146	193	151	177	148	188	99	66	*	*	*	170	139
07:00	135	136	155	121	148	148	148	113	168	117	47	*	*	*	134	127
07:15	164	132	183	120	191	116	174	105	166	110	49	*	*	*	154	117
07:30	211	105	215	101	231	94	197	116	193	75	56	*	*	*	184	98
07:45	249	112	261	89	244	98	242	107	222	78	60	*	*	*	213	97
08:00	242	88	235	93	201	111	214	85	208	96	62	*	*	*	194	95
08:15	226	79	240	109	229	108	259	115	190	78	62	*	*	*	201	98
08:30	193	73	223	81	195	69	213	106	189	104	72	*	*	*	181	87
08:45	167	80	148	94	185	99	172	91	165	82	72	*	*	*	152	89
09:00	137	80	134	93	128	85	134	72	126	80	65	*	*	*	121	82
09:15	132	71	131	82	124	76	124	88	113	79	82	*	*	*	118	79
09:30	118	69	124	76	142	68	112	100	108	86	89	*	*	*	116	80
09:45	105	56	116	78	102	69	110	67	120	76	88	*	*	*	107	69
10:00	99	42	86	69	77	79	86	76	93	82	81	*	*	*	87	70
10:15	89	62	92	64	78	55	106	54	91	63	107	*	*	*	94	60
10:30	111	49	91	70	90	41	110	47	93	34	124	*	*	*	103	48
10:45	102	53	104	52	77	39	81	63	109	77	112	*	*	*	98	57
11:00	82	41	73	47	66	31	76	38	121	79	100	*	*	*	86	47
11:15	87	25	68	43	76	30	115	32	105	66	*	*	*	*	90	39
11:30	82	32	102	31	90	18	89	37	115	58	*	*	*	*	96	35
11:45	63	30	74	28	88	41	134	42	146	68	*	*	*	*	101	42
Total	3593	5778	3746	5906	3698	5721	3835	5216	3780	6020	1970	0	0	0	3488	5729
Day Total	9371		9652		9419		9051		9800		1970		0		9217	
% Splits	38.3%	61.7%	38.8%	61.2%	39.3%	60.7%	42.4%	57.6%	38.6%	61.4%	100.0 %	0.0%	0.0%	0.0%	37.8%	62.2%
Peak	07:30	04:00	07:45	04:00	07:30	04:45	07:45	04:45	07:30	04:45	10:15				07:30	04:45
Vol.	928	836	959	822	905	775	928	848	813	811	443				792	810
P.H.F.	0.932	0.878	0.919	0.960	0.927	0.950	0.896	0.968	0.916	0.961	0.893				0.930	0.955

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Site Code: 2224
Southwest Loop Ramp
CR46 SB Off Ramp to EB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: SB to EB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	20	5	33	3	17	5	17	4	22
12:15	*	*	*	*	*	*	*	20	0	25	6	19	4	15	3	20
12:30	*	*	*	*	*	*	*	30	2	26	3	26	2	20	2	26
12:45	*	*	*	*	*	*	*	29	1	26	2	19	1	14	1	22
01:00	*	*	*	*	*	*	*	27	0	23	2	19	1	26	1	24
01:15	*	*	*	*	*	*	*	24	3	25	4	16	7	19	5	21
01:30	*	*	*	*	*	*	*	28	0	28	5	20	2	10	2	22
01:45	*	*	*	*	*	*	*	35	2	26	4	15	2	21	3	24
02:00	*	*	*	*	*	*	*	21	0	33	0	22	3	23	1	25
02:15	*	*	*	*	*	*	*	23	1	28	3	25	0	21	1	24
02:30	*	*	*	*	*	*	*	33	4	31	1	19	0	12	2	24
02:45	*	*	*	*	*	*	*	30	0	36	0	12	1	15	0	23
03:00	*	*	*	*	*	*	*	30	0	19	3	16	0	21	1	22
03:15	*	*	*	*	*	*	*	38	4	25	1	21	1	20	2	26
03:30	*	*	*	*	*	*	*	36	3	35	1	25	0	10	1	26
03:45	*	*	*	*	*	*	*	25	4	33	0	22	0	21	1	25
04:00	*	*	*	*	*	*	*	30	1	28	1	20	2	13	1	23
04:15	*	*	*	*	*	*	*	32	0	33	0	31	0	19	0	29
04:30	*	*	*	*	*	*	*	61	3	70	1	21	1	10	2	40
04:45	*	*	*	*	*	*	*	42	2	37	3	24	4	16	3	30
05:00	*	*	*	*	*	*	*	36	3	48	8	14	4	10	5	27
05:15	*	*	*	*	*	*	*	56	11	58	1	21	2	19	5	38
05:30	*	*	*	*	*	*	*	36	8	60	3	8	2	10	4	28
05:45	*	*	*	*	*	*	*	34	22	52	4	8	4	10	10	26
06:00	*	*	*	*	*	*	*	19	23	47	8	16	4	9	12	23
06:15	*	*	*	*	*	*	*	20	30	51	9	23	8	7	16	25
06:30	*	*	*	*	*	*	*	17	40	52	20	13	7	6	22	22
06:45	*	*	*	*	*	*	*	28	54	44	17	13	10	7	27	23
07:00	*	*	*	*	*	*	*	16	47	47	14	13	8	7	23	21
07:15	*	*	*	*	*	*	*	20	59	36	12	9	7	11	26	19
07:30	*	*	*	*	*	*	*	19	46	29	23	9	6	8	25	16
07:45	*	*	*	*	*	*	*	13	59	34	20	9	13	10	31	16
08:00	*	*	*	*	*	*	*	15	58	29	30	9	7	10	32	16
08:15	*	*	*	*	*	*	*	19	58	25	20	9	8	15	29	17
08:30	*	*	*	*	*	*	*	10	50	19	23	8	6	7	26	11
08:45	*	*	*	*	*	*	*	12	41	19	20	12	11	8	24	13
09:00	*	*	*	*	*	*	*	11	34	13	17	14	7	4	19	10
09:15	*	*	*	*	*	*	*	11	28	15	23	8	7	6	19	10
09:30	*	*	*	*	*	*	*	23	23	11	22	4	11	7	19	11
09:45	*	*	*	*	*	*	*	10	25	8	11	6	18	7	18	8
10:00	*	*	*	*	*	*	*	16	22	7	23	10	6	3	17	9
10:15	*	*	*	*	*	*	*	11	8	10	21	6	8	6	12	8
10:30	*	*	*	*	*	*	*	10	17	7	26	6	26	6	23	7
10:45	*	*	*	*	*	*	*	6	24	9	21	8	14	8	20	8
11:00	*	*	*	*	*	*	*	9	19	7	22	6	20	8	20	8
11:15	*	*	*	*	*	*	*	3	22	11	23	9	18	0	21	6
11:30	*	*	*	*	*	*	22	7	35	6	17	4	25	1	25	4
11:45	*	*	*	*	*	*	26	3	42	4	31	5	24	1	31	3
Total	0	0	0	0	0	0	48	1104	943	1378	532	689	327	554	597	931
Day Total	0		0		0		1152		2321		1221		881		1528	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	95.8%	40.6%	59.4%	43.6%	56.4%	37.1%	62.9%	39.1%	60.9%
Peak								04:30	07:45	05:00	07:30	03:30	11:00	00:30	07:45	04:30
Vol.								195	225	218	93	98	87	79	118	135
P.H.F.								0.799	0.953	0.779	0.750	0.790	0.837	0.760	0.922	0.844

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Site Code: 2224
Southwest Loop Ramp
CR46 SB Off Ramp to EB SRD

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: SB to EB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	4	30	1	32	3	33	2	*	*	*	*	*	*	*	2	32
12:15	1	22	4	20	4	24	3	*	*	*	*	*	*	*	3	22
12:30	1	17	1	25	2	18	1	*	*	*	*	*	*	*	1	20
12:45	0	24	2	21	2	26	2	*	*	*	*	*	*	*	2	24
01:00	0	24	1	32	1	23	1	*	*	*	*	*	*	*	1	26
01:15	0	33	2	21	0	32	1	*	*	*	*	*	*	*	1	29
01:30	0	32	1	26	2	28	2	*	*	*	*	*	*	*	1	29
01:45	1	30	4	23	0	31	1	*	*	*	*	*	*	*	2	28
02:00	1	34	1	27	1	25	2	*	*	*	*	*	*	*	1	29
02:15	0	23	1	32	0	33	0	*	*	*	*	*	*	*	0	29
02:30	1	35	1	34	0	36	3	*	*	*	*	*	*	*	1	35
02:45	0	25	0	23	1	28	0	*	*	*	*	*	*	*	0	25
03:00	0	37	0	27	0	24	2	*	*	*	*	*	*	*	0	29
03:15	0	27	1	29	0	29	1	*	*	*	*	*	*	*	0	28
03:30	0	32	2	48	1	34	0	*	*	*	*	*	*	*	1	38
03:45	1	35	1	22	3	41	2	*	*	*	*	*	*	*	2	33
04:00	4	37	1	47	3	36	3	*	*	*	*	*	*	*	3	40
04:15	3	32	1	29	0	45	1	*	*	*	*	*	*	*	1	35
04:30	3	56	0	48	0	57	0	*	*	*	*	*	*	*	1	54
04:45	1	44	2	37	3	41	2	*	*	*	*	*	*	*	2	41
05:00	3	54	13	43	3	52	5	*	*	*	*	*	*	*	6	50
05:15	10	40	10	53	11	44	9	*	*	*	*	*	*	*	10	46
05:30	13	34	10	37	7	38	12	*	*	*	*	*	*	*	10	36
05:45	25	37	14	43	20	447	21	*	*	*	*	*	*	*	20	176
06:00	17	14	29	27	17	24	18	*	*	*	*	*	*	*	20	22
06:15	34	14	29	19	40	21	37	*	*	*	*	*	*	*	35	18
06:30	34	18	35	24	38	18	34	*	*	*	*	*	*	*	35	20
06:45	50	15	62	13	53	21	58	*	*	*	*	*	*	*	56	16
07:00	58	22	38	13	46	12	45	*	*	*	*	*	*	*	47	16
07:15	62	12	73	10	56	9	1	*	*	*	*	*	*	*	48	10
07:30	67	17	60	11	54	13	*	*	*	*	*	*	*	*	57	14
07:45	63	6	86	10	62	10	*	*	*	*	*	*	*	*	70	9
08:00	61	16	65	17	63	15	*	*	*	*	*	*	*	*	63	16
08:15	55	12	53	18	47	18	*	*	*	*	*	*	*	*	52	16
08:30	40	18	52	15	53	13	*	*	*	*	*	*	*	*	48	15
08:45	39	12	46	10	38	10	*	*	*	*	*	*	*	*	41	11
09:00	33	12	37	15	21	12	*	*	*	*	*	*	*	*	30	13
09:15	27	9	20	10	22	9	*	*	*	*	*	*	*	*	23	9
09:30	23	11	22	10	28	14	*	*	*	*	*	*	*	*	24	12
09:45	32	10	21	11	18	11	*	*	*	*	*	*	*	*	24	11
10:00	21	7	17	12	18	9	*	*	*	*	*	*	*	*	19	9
10:15	13	11	13	3	24	10	*	*	*	*	*	*	*	*	17	8
10:30	15	5	17	11	30	7	*	*	*	*	*	*	*	*	21	8
10:45	16	11	22	4	22	6	*	*	*	*	*	*	*	*	20	7
11:00	15	9	17	5	15	11	*	*	*	*	*	*	*	*	16	8
11:15	14	3	26	1	18	5	*	*	*	*	*	*	*	*	19	3
11:30	21	2	38	3	27	3	*	*	*	*	*	*	*	*	29	3
11:45	30	1	24	2	31	4	*	*	*	*	*	*	*	*	28	2
Total	902	1061	976	1053	908	1510	269	0	0	0	0	0	0	0	913	1210
Day Total	1963		2029		2418		269		0		0		0		2123	
% Splits	46.0%	54.0%	48.1%	51.9%	37.6%	62.4%	100.0 %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	43.0%	57.0%
Peak	07:15	04:30	07:15	04:30	07:15	05:00	06:15								07:30	05:00
Vol.	243	194	284	181	235	581	174								242	308
P.H.F.	0.964	0.866	0.826	0.854	0.933	0.325	0.750								0.864	0.438

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Site Code: 2205
Southwest Outer Ramp
Off Ramp to SB CR 46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB to SB

Start	31-May-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	172	52	170	71	165	68	174	64	170
12:15	*	*	*	*	*	*	*	184	50	164	69	179	85	177	68	176
12:30	*	*	*	*	*	*	*	184	36	192	61	186	60	135	52	174
12:45	*	*	*	*	*	*	*	189	24	158	49	192	50	153	41	173
01:00	*	*	*	*	*	*	*	216	24	134	45	183	39	153	36	172
01:15	*	*	*	*	*	*	*	188	24	142	36	148	49	147	36	156
01:30	*	*	*	*	*	*	*	170	19	143	33	152	38	148	30	153
01:45	*	*	*	*	*	*	*	163	22	166	43	188	24	161	30	170
02:00	*	*	*	*	*	*	*	197	18	172	40	160	33	143	30	168
02:15	*	*	*	*	*	*	*	217	10	176	27	197	33	152	23	186
02:30	*	*	*	*	*	*	*	216	13	165	30	173	19	155	21	177
02:45	*	*	*	*	*	*	*	216	13	198	31	179	28	149	24	186
03:00	*	*	*	*	*	*	*	234	10	193	21	156	19	127	17	178
03:15	*	*	*	*	*	*	*	254	17	223	21	167	19	158	19	200
03:30	*	*	*	*	*	*	*	232	12	190	20	146	16	145	16	178
03:45	*	*	*	*	*	*	*	275	6	230	18	187	14	162	13	214
04:00	*	*	*	*	*	*	*	250	11	220	25	190	16	142	17	200
04:15	*	*	*	*	*	*	*	277	13	244	8	193	9	140	10	211
04:30	*	*	*	*	*	*	*	245	10	238	18	153	14	172	14	202
04:45	*	*	*	*	*	*	*	240	12	263	14	130	14	135	13	192
05:00	*	*	*	*	*	*	*	291	5	223	11	168	15	134	10	204
05:15	*	*	*	*	*	*	*	301	25	264	24	158	14	131	21	214
05:30	*	*	*	*	*	*	*	257	33	233	38	160	19	146	30	199
05:45	*	*	*	*	*	*	*	253	39	241	32	155	24	125	32	194
06:00	*	*	*	*	*	*	*	252	48	187	29	161	16	116	31	179
06:15	*	*	*	*	*	*	*	217	79	191	37	136	18	129	45	168
06:30	*	*	*	*	*	*	*	240	102	229	57	158	16	105	58	183
06:45	*	*	*	*	*	*	*	264	112	223	80	136	38	107	77	182
07:00	*	*	*	*	*	*	*	227	96	184	84	112	38	118	73	160
07:15	*	*	*	*	*	*	*	221	144	180	88	112	40	106	91	155
07:30	*	*	*	*	*	*	*	168	135	181	92	113	61	115	96	144
07:45	*	*	*	*	*	*	*	168	125	148	107	128	91	114	108	140
08:00	*	*	*	*	*	*	*	170	107	168	91	130	75	93	91	140
08:15	*	*	*	*	*	*	*	207	114	176	99	106	62	115	92	151
08:30	*	*	*	*	*	*	*	147	104	155	118	112	76	87	99	125
08:45	*	*	*	*	*	*	*	157	86	161	117	133	71	126	91	144
09:00	*	*	*	*	*	*	*	121	113	167	106	133	70	117	96	134
09:15	*	*	*	*	*	*	*	127	110	150	121	117	81	90	104	121
09:30	*	*	*	*	*	*	*	112	104	143	108	113	68	88	93	114
09:45	*	*	*	*	*	*	*	102	120	127	119	102	100	79	113	102
10:00	*	*	*	*	*	*	*	88	138	114	120	103	100	88	119	98
10:15	*	*	*	*	*	*	*	90	95	102	126	103	86	87	102	96
10:30	*	*	*	*	*	*	*	80	117	89	155	85	130	47	134	75
10:45	*	*	*	*	*	*	*	67	167	102	143	88	117	51	142	77
11:00	*	*	*	*	*	*	*	75	126	110	172	102	131	59	143	86
11:15	*	*	*	*	*	*	*	54	123	111	160	89	149	52	144	76
11:30	*	*	*	*	*	*	133	55	149	118	170	86	182	67	158	82
11:45	*	*	*	*	*	*	138	64	148	98	199	87	151	48	159	74
Total	0	0	0	0	0	0	271	8894	3260	8356	3483	6810	2686	5768	3126	7456
Day Total	0		0		0		9165		11616		10293		8454		10582	
% Splits	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	97.0%	28.1%	71.9%	33.8%	66.2%	31.8%	68.2%	29.5%	70.5%
Peak								05:00	10:45	04:30	11:00	00:15	11:00	12:00	11:00	03:45
Vol.								1102	565	988	701	740	613	639	604	830
P.H.F.								0.915	0.846	0.936	0.881	0.939	0.842	0.903	0.950	0.970

TRIP Consultants
311 85th St
Brooklyn, NY 11209
Tel: (718) 833-6176 - Fax: (718) 921-2844

Site Code: 2205
Southwest Outer Ramp
Off Ramp to SB CR 46

Job Number: 10-32
Client: FST Engineers, Inc.
RE: Brookhaven, NY
Direction: EB to SB

Start	07-Jun-10		Tue		Wed		Thu		Fri		Sat		Sun		Average Day	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	23	115	49	118	55	124	39	115	50	135	73	*	*	*	48	121
12:15	36	121	39	155	48	102	40	115	45	135	64	*	*	*	45	126
12:30	32	143	33	115	41	131	35	115	46	136	64	*	*	*	42	128
12:45	30	155	31	146	37	121	24	135	43	166	45	*	*	*	35	145
01:00	19	112	23	116	19	105	28	126	38	94	48	*	*	*	29	111
01:15	16	124	13	140	29	105	29	129	32	129	36	*	*	*	26	125
01:30	14	106	17	127	12	133	23	115	25	157	41	*	*	*	22	128
01:45	15	147	21	155	20	144	17	81	24	121	34	*	*	*	22	130
02:00	20	138	25	144	14	107	20	80	28	115	28	*	*	*	22	117
02:15	22	132	10	177	10	145	13	70	20	157	28	*	*	*	17	136
02:30	8	154	8	139	14	140	7	54	21	156	21	*	*	*	13	129
02:45	15	153	10	175	11	194	3	77	20	143	28	*	*	*	14	148
03:00	10	161	13	182	15	148	12	88	19	167	22	*	*	*	15	149
03:15	6	186	12	192	14	182	14	102	11	190	24	*	*	*	14	170
03:30	7	195	6	189	5	195	2	85	9	185	19	*	*	*	8	170
03:45	9	224	6	213	6	217	7	104	18	249	17	*	*	*	10	201
04:00	6	213	6	203	8	195	5	84	9	221	12	*	*	*	8	183
04:15	3	236	6	210	13	223	14	107	8	198	20	*	*	*	11	195
04:30	12	205	13	230	6	201	11	89	14	235	14	*	*	*	12	192
04:45	10	192	11	247	15	204	19	163	10	217	20	*	*	*	14	205
05:00	10	223	11	220	11	205	6	197	14	251	21	*	*	*	12	219
05:15	17	255	14	244	19	206	12	240	16	252	13	*	*	*	15	239
05:30	25	202	29	232	25	203	20	203	23	222	20	*	*	*	24	212
05:45	45	214	44	213	36	197	19	204	41	209	26	*	*	*	35	207
06:00	44	215	46	209	45	199	44	204	42	198	25	*	*	*	41	205
06:15	64	182	67	206	72	180	63	196	62	226	30	*	*	*	60	198
06:30	88	215	102	171	119	192	93	201	97	194	67	*	*	*	94	195
06:45	124	198	134	206	108	183	115	166	112	198	57	*	*	*	108	190
07:00	86	156	90	153	121	151	86	138	103	184	57	*	*	*	90	156
07:15	119	156	114	174	130	143	103	173	115	196	79	*	*	*	110	168
07:30	118	134	115	157	123	133	107	142	109	159	73	*	*	*	108	145
07:45	122	131	135	112	131	131	124	158	131	136	89	*	*	*	122	134
08:00	96	110	111	157	109	120	107	117	98	138	73	*	*	*	99	128
08:15	88	117	98	152	92	142	101	135	108	135	98	*	*	*	98	136
08:30	70	105	80	147	103	102	80	132	84	157	107	*	*	*	87	129
08:45	98	83	94	134	101	132	113	134	80	122	120	*	*	*	101	121
09:00	88	102	99	141	104	112	73	113	82	128	89	*	*	*	89	119
09:15	88	100	117	143	102	128	83	132	85	154	114	*	*	*	98	131
09:30	84	103	97	109	90	100	99	125	93	130	113	*	*	*	96	113
09:45	83	99	102	113	110	98	105	125	83	130	150	*	*	*	106	113
10:00	103	62	104	74	119	88	102	111	82	113	150	*	*	*	110	90
10:15	105	73	113	79	95	79	98	95	83	118	111	*	*	*	101	89
10:30	112	64	101	76	90	46	126	59	115	107	132	*	*	*	113	70
10:45	124	74	119	80	103	50	97	57	103	100	154	*	*	*	117	72
11:00	116	67	121	65	104	61	86	58	96	89	151	*	*	*	112	68
11:15	106	60	126	69	112	73	104	67	130	108	140	*	*	*	120	75
11:30	102	57	145	65	95	49	117	62	125	90	176	*	*	*	127	65
11:45	114	45	116	57	117	50	122	61	118	105	187	*	*	*	129	64
Total	2752	6814	2996	7331	2978	6669	2767	5839	2920	7655	3280	0	0	0	2949	6860
Day Total	9566		10327		9647		8606		10575		3280		0		9809	
% Splits	28.8%	71.2%	29.0%	71.0%	30.9%	69.1%	32.2%	67.8%	27.6%	72.4%	100.0 %	0.0%	0.0%	0.0%	30.1%	69.9%
Peak	10:30	05:00	10:45	04:45	07:00	03:45	07:15	05:15	11:00	04:30	11:00				11:00	05:00
Vol.	458	894	511	943	505	836	441	851	469	955	654				488	877
P.H.F.	0.923	0.876	0.881	0.954	0.964	0.937	0.875	0.886	0.895	0.947	0.874				0.946	0.917

ADT ADT 10,146 AADT 10,146

William Floyd Parkway/ Yaphank Wood Blvd

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB U	NBL
7:00	2	2	213		320	3	4		27					1	15		22	2	3		1				2	3
7:15	1	5	275		334	4	13		26					1	21		21				0				1	6
7:30	1	8	296		361	2	5		46					0	26		18	1	1		0				1	8
7:45	0	8	408		369	2	17		39						20		21	1	1		1				0	8
8:00	1	7	324		302	5	5		27					1	23		16		1		1				1	8
8:15	0	4	342		320	2	9		37					2	26		19	1	1						0	6
8:30	0	12	330		339	3	13		37						22		24								0	12
8:45	1	2	284		276	1	11		23						18		24	1							1	2
4:00	1	28	286		306	11	3		9						8		21	1	1		1				1	28
4:15	2	25	265		295	17	10		17					1	6		12				2				2	26
4:30	6	34	306		317	12	5		9						5		8		1						6	34
4:45	2	30	212		271	11	8		14						10		10				1				2	30
5:00	2	25	325		262	16	1		13						9		10				0				2	25
5:15	1	29	315		249	15	13		17						5		5				1				1	29
5:30	0	34	283		251	7	7		14						6		11	1			1				0	34
5:45	0	45	293		209	14	3		10					1	4		3								0	46
11:00	3	17	201	0	219	9	10		16						4		6								3	17
11:15	2	24	196	1	218	10	9		28						13		4								2	24
11:30	4	17	222	0	215	28	1		29						3		11								4	17
11:45	0	16	221	0	217	9	4		16					1	3		13	1							0	17
12:00	2	28	220	0	186	6	8		23						2		5								2	28
12:15	1	13	248	0	194	6	8		22						3		6								1	13
12:30	1	20	251	1	230	8	16		16					1	4		11		1		1				1	21
12:45	4	18	232	0	191	5	11		29						2		4								4	18
1:00	1	39	242	1	221	9	5		12						9		7								1	39
1:15	2	29	232	0	251	8	8		17						5		2								2	29
1:30	6	30	231	0	201	6	5		14						4		3								6	30
1:45	1	25	244	0	212	4	4		17						5		3								1	25

William Floyd Parkway/ Yaphank Wood Blvd

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB U	NBL
7:30	1	8	296		361	2	5		46					0	26		18	1	1		0				1	8
7:45	0	8	408		369	2	17		39						20		21	1	1		1				0	8
8:00	1	7	324		302	5	5		27					1	23		16		1		1				1	8
8:15	0	4	342		320	2	9		37					2	26		19	1	1						0	6
	2	**27**	**1370**	**0**	**1352**	**11**	**36**	**0**	**149**	**0**	**0**	**0**	**0**	**3**	**95**	**0**	**74**	**3**	**4**	**0**	**2**	**0**	**0**	**0**	**2**	**30**
																									0%	*10%*
4:30	6	34	306		317	12	5		9						5		8		1						6	34
4:45	2	30	212		271	11	8		14						10		10				1				2	30
5:00	2	25	325		262	16	1		13						9		10				0				2	25
5:15	1	29	315		249	15	13		17						5		5				1				1	29
	11	**118**	**1158**	**0**	**1099**	**54**	**27**	**0**	**53**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**33**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**11**	**118**
																									0%	*0%*
12:30	1	20	251	1	230	8	16		16					1	4		11		1		1				1	21
12:45	4	18	232	0	191	5	11		29						2		4								4	18
1:00	1	39	242	1	221	9	5		12						9		7								1	39
1:15	2	29	232	0	251	8	8		17						5		2								2	29
	8	**106**	**957**	**2**	**893**	**30**	**40**	**0**	**74**	**0**	**0**	**0**	**0**	**1**	**20**	**0**	**24**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**8**	**107**
																									0%	*1%*

/ Yaphank Wood Blvd

TOTAL										
NBT	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
228	0	342	5	7		28				615
296	0	355	4	13		26				701
322	0	379	3	6		46				765
428	0	390	3	18		40				887
347	0	318	5	6		28				713
368	0	339	3	10		37				763
352	0	363	3	13		37				780
302	0	300	2	11		23				641
294	0	327	12	4		10				676
271	0	307	17	10		19				652
311	0	325	12	6		9				703
222	0	281	11	8		15				569
334	0	272	16	1		13				663
320	0	254	15	13		18				650
289	0	262	8	7		15				615
297	0	212	14	3		10				582
205	0	225	9	10		16				485
209	1	222	10	9		28				505
225	0	226	28	1		29				530
224	0	230	10	4		16				501
222	0	191	6	8		23				480
251	0	200	6	8		22				501
255	1	241	8	17		17				561
234	0	195	5	11		29				496
251	1	228	9	5		12				546
237	0	253	8	8		17				554
235	0	204	6	5		14				500
249	0	215	4	4		17				515

/ Yaphank Wood Blvd

TOTAL										
NBT	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
322	0	379	3	6		46				765
428	0	390	3	18		40				887
347	0	318	5	6		28				713
368	0	339	3	10		37				763
1465	**0**	**1426**	**14**	**40**	**0**	**151**	**0**	**0**	**0**	
6%	*#DIV/0!*	*5%*	*21%*	*10%*	*#DIV/0!*	*1%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.88*
311	0	325	12	6		9				703
222	0	281	11	8		15				569
334	0	272	16	1		13				663
320	0	254	15	13		18				650
1187	**0**	**1132**	**54**	**28**	**0**	**55**	**0**	**0**	**0**	
2%	*#DIV/0!*	*3%*	*0%*	*4%*	*#DIV/0!*	*4%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.92*
255	1	241	8	17		17				561
234	0	195	5	11		29				496
251	1	228	9	5		12				546
237	0	253	8	8		17				554
977	**2**	**917**	**30**	**41**	**0**	**75**	**0**	**0**	**0**	
2%	*0%*	*3%*	*0%*	*2%*	*#DIV/0!*	*1%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.96*

Yaphank Wood Blvd/Colonial Woods

Time Begin	CARS												TRUCKS												Yaphank Wood Blvd/C	
	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:00				18				14			0	2								4			2	1	0	0
7:15				20				18			4	7											1		0	0
7:30				27				25			5	5								1				1	0	0
7:45				36				21			3	6				1				1				1	0	0
8:00				20				18			3	8								2			1	1	0	0
8:15				29				21			4	2								1			1	2	0	0
8:30				26				12			6	8													0	0
8:45				20				16			1	5												1	0	0
4:00				11		1		6			17	25				1				1			1		0	0
4:15				18			1	9			12	28								2			1		0	0
4:30				9				6			19	20								1					0	0
4:45				17			1	5			19	24								1					0	0
5:00				9				10			12	28													0	0
5:15				16				10			16	28				1									0	0
5:30				16				7			21	18								1				1	0	0
5:45				4			1	3			21	31												1	0	0
11:00				7				11			4	11													0	0
11:15				20		1	1	17			18	21													0	0
11:30				21				12			8	18				1								1	0	0
11:45				15				11			8	19													0	0
12:00				20				13			18	14												1	0	0
12:15				17				16			9	12													0	0
12:30				16				12			4	23				1				1				2	0	0
12:45				25				15			3	20				1									0	0
1:00				15				7			14	29												1	0	0
1:15				18				9			16	23													0	0
1:30				13			2	11			11	23													0	0
1:45				9			1	8			11	16													0	0

Yaphank Wood Blvd/Colonial Woods

Time Begin	CARS												TRUCKS												Yaphank Wood Blvd/C	
	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:30				27				25			5	5								1				1	0	0
7:45				36				21			3	6				1				1				1	0	0
8:00				20				18			3	8								2			1	1	0	0
8:15				29				21			4	2								1			1	2	0	0
	0	**0**	**0**	**112**	**0**	**0**	**0**	**85**	**0**	**0**	**15**	**21**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**2**	**5**	**0**	**0**
																									#DIV/0!	*#DIV/0!*
4:30				9				6			19	20								1					0	0
4:45				17			1	5			19	24								1					0	0
5:00				9				10			12	28													0	0
5:15				16				10			16	28				1									0	0
	0	**0**	**0**	**51**	**0**	**0**	**1**	**31**	**0**	**0**	**66**	**100**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
																									#DIV/0!	*#DIV/0!*
12:30				16				12			4	23				1				1				2	0	0
12:45				25				15			3	20				1									0	0
1:00				15				7			14	29												1	0	0
1:15				18				9			16	23													0	0
	0	**0**	**0**	**74**	**0**	**0**	**0**	**43**	**0**	**0**	**37**	**95**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**
																									#DIV/0!	*#DIV/0!*

olonial Woods

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
0	18	0	0	0	18	0	0	2	3	41
0	20	0	0	0	18	0	0	5	7	50
0	27	0	0	0	26	0	0	5	6	64
0	37	0	0	0	22	0	0	3	7	69
0	20	0	0	0	20	0	0	4	9	53
0	29	0	0	0	22	0	0	5	4	60
0	26	0	0	0	12	0	0	6	8	52
0	20	0	0	0	16	0	0	1	6	43
0	12	0	1	0	7	0	0	18	25	63
0	18	0	0	1	11	0	0	13	28	71
0	9	0	0	0	7	0	0	19	20	55
0	17	0	0	1	6	0	0	19	24	67
0	9	0	0	0	10	0	0	12	28	59
0	17	0	0	0	10	0	0	16	28	71
0	16	0	0	0	8	0	0	21	19	64
0	4	0	0	1	3	0	0	21	32	61
0	7	0	0	0	11	0	0	4	11	33
0	20	0	1	1	17	0	0	18	21	78
0	22	0	0	0	12	0	0	8	19	61
0	15	0	0	0	11	0	0	8	19	53
0	20	0	0	0	13	0	0	18	15	66
0	17	0	0	0	16	0	0	9	12	54
0	17	0	0	0	13	0	0	4	25	59
0	26	0	0	0	15	0	0	3	20	64
0	15	0	0	0	7	0	0	14	30	66
0	18	0	0	0	9	0	0	16	23	66
0	13	0	0	2	11	0	0	11	23	60
0	9	0	0	1	8	0	0	11	16	45

olonial Woods

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
0	27	0	0	0	26	0	0	5	6	64
0	37	0	0	0	22	0	0	3	7	69
0	20	0	0	0	20	0	0	4	9	53
0	29	0	0	0	22	0	0	5	4	60
0	**113**	**0**	**0**	**0**	**90**	**0**	**0**	**17**	**26**	
#DIV/0!	*1%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*6%*	*#DIV/0!*	*#DIV/0!*	*12%*	*19%*	*0.89*
0	9	0	0	0	7	0	0	19	20	55
0	17	0	0	1	6	0	0	19	24	67
0	9	0	0	0	10	0	0	12	28	59
0	17	0	0	0	10	0	0	16	28	71
0	**52**	**0**	**0**	**1**	**33**	**0**	**0**	**66**	**100**	
#DIV/0!	*2%*	*#DIV/0!*	*#DIV/0!*	*0%*	*6%*	*#DIV/0!*	*#DIV/0!*	*0%*	*0%*	*0.89*
0	17	0	0	0	13	0	0	4	25	59
0	26	0	0	0	15	0	0	3	20	64
0	15	0	0	0	7	0	0	14	30	66
0	18	0	0	0	9	0	0	16	23	66
0	**76**	**0**	**0**	**0**	**44**	**0**	**0**	**37**	**98**	
#DIV/0!	*3%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*2%*	*#DIV/0!*	*#DIV/0!*	*0%*	*3%*	*0.97*

William Floyd Parkway (SB) & Longwood Road

Time Begin	TOTAL												Total
	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	
7:30	0	0	0	20	340	11	0	21	32	10	95	0	529
7:45	0	0	0	24	343	11	0	36	62	5	93	0	574
8:00	0	0	0	18	326	6	0	14	35	4	87	0	490
8:15	0	0	0	24	300	7	0	26	34	4	56	0	451
	0	**0**	**0**	**86**	**1309**	**35**	**0**	**97**	**163**	**23**	**331**	**0**	
	#DIV/0!	*#DIV/0!*	*#DIV/0!*	*28%*	*5%*	*20%*	*#DIV/0!*	*1%*	*7%*	*22%*	*8%*	*#DIV/0!*	*0.89*
4:30	0	0	0	4	256	1	0	12	46	59	193	0	571
4:45	0	0	0	4	180	1	0	16	42	93	128	0	464
5:00	0	0	0	4	182	5	0	9	39	77	157	0	473
5:15	0	0	0	6	136	2	0	13	49	125	163	0	494
	0	**0**	**0**	**18**	**754**	**9**	**0**	**50**	**176**	**354**	**641**	**0**	
	#DIV/0!	*#DIV/0!*	*#DIV/0!*	*11%*	*4%*	*11%*	*#DIV/0!*	*8%*	*3%*	*1%*	*1%*	*#DIV/0!*	*0.88*
12:30	0	0	0	2	224	10	0	6	31	9	62	0	344
12:45	0	0	0	3	182	9	0	6	27	7	51	0	285
1:00	0	0	0	2	220	7	0	13	54	6	55	0	357
1:15	0	0	0	4	202	12	0	23	69	6	50	0	366
	0	**0**	**0**	**11**	**828**	**38**	**0**	**48**	**181**	**28**	**218**	**0**	

William Floyd Parkway (SB) & Longwood Road

Time Begin	CARS												TRUCKS												William Floyd Parkway	
	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:00				17	319	10		15	42	2	59					3	14			3	11	1	3		0	0
7:15				29	319	2		20	42	3	54						13			1	3	3	4		0	0
7:30				20	325	10		21	31	7	91						15	1			1	3	4		0	0
7:45				15	329	8		35	58	4	90					9	14	3		1	4	1	3		0	0
8:00				8	315	5		14	33	4	77					10	11	1			2		10		0	0
8:15				19	280	5		26	30	3	45					5	20	2			4	1	11		0	0
8:30				16	302	4		31	40	6	49					5	19			1	3	2	2		0	0
8:45				12	303	3		27	23	7	44					1	19	2		1	6	3	3		0	0
4:00				4	201			9	47	65	79						24				3	1			0	0
4:15				8	185	1		15	41	93	165					4	6				3	1	2		0	0
4:30				4	249	1		12	45	59	193						7				1				0	0
4:45				3	172	1		16	42	92	126					1	8					1	2		0	0
5:00				4	173	4		9	39	77	156						9	1					1		0	0
5:15				5	130	2		9	44	124	162					1	6			4	5	1	1		0	0
5:30				4	166	1		1	30	68	109						7				2		3		0	0
5:45				6	139	1		4	38	76	83						2			2		1			0	0
11:00					177	6		5	43	7	44						4				1		3		0	0
11:15				3	209	4		3	26	6	25						3				2		2		0	0
11:30				4	220	2		6	50	5	36						11				4	1	1		0	0
11:45				2	191	6		3	26	7	52						7				1				0	0
12:00				2	225			12	28	8	59						4				2	1	3		0	0
12:15				2	220	5		4	31	4	52						4								0	0
12:30				2	214	10		6	31	9	61						10						1		0	0
12:45				3	180	9		6	26	7	50						2				1		1		0	0
1:00				2	217	7		12	54	5	53						3			1		1	2		0	0
1:15				4	200	12		23	68	6	49						2				1		1		0	0
1:30				1	160	2		6	57	5	52						4						2		0	0
1:45				1	188	3		8	52	1	60						2								0	0

William Floyd Parkway (SB) & Longwood Road

Time Begin	CARS												TRUCKS												William Floyd Parkway	
	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:30				20	325	10		21	31	7	91						15	1			1	3	4		0	0
7:45				15	329	8		35	58	4	90					9	14	3		1	4	1	3		0	0
8:00				8	315	5		14	33	4	77					10	11	1			2		10		0	0
8:15				19	280	5		26	30	3	45					5	20	2			4	1	11		0	0
	0	**0**	**0**	**62**	**1249**	**28**	**0**	**96**	**152**	**18**	**303**	**0**	**0**	**0**	**0**	**24**	**60**	**7**	**0**	**1**	**11**	**5**	**28**	**0**	**0**	**0**
																									#DIV/0!	*#DIV/0!*
4:30				4	249	1		12	45	59	193						7				1				0	0
4:45				3	172	1		16	42	92	126					1	8					1	2		0	0
5:00				4	173	4		9	39	77	156						9	1					1		0	0
5:15				5	130	2		9	44	124	162					1	6			4	5	1	1		0	0
	0	**0**	**0**	**16**	**724**	**8**	**0**	**46**	**170**	**352**	**637**	**0**	**0**	**0**	**0**	**2**	**30**	**1**	**0**	**4**	**6**	**2**	**4**	**0**	**0**	**0**
																									#DIV/0!	*#DIV/0!*
12:30				2	214	10		6	31	9	61						10						1		0	0
12:45				3	180	9		6	26	7	50						2				1		1		0	0
1:00				2	217	7		12	54	5	53						3			1		1	2		0	0
1:15				4	200	12		23	68	6	49						2				1		1		0	0
	0	**0**	**0**	**11**	**811**	**38**	**0**	**47**	**179**	**27**	**213**	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**1**	**2**	**1**	**5**	**0**	**0**	**0**
																									#DIV/0!	*#DIV/0!*

(SB) & Longwood Road

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
0	20	333	10	0	18	53	3	62	0	499
0	29	332	2	0	21	45	6	58	0	493
0	20	340	11	0	21	32	10	95	0	529
0	24	343	11	0	36	62	5	93	0	574
0	18	326	6	0	14	35	4	87	0	490
0	24	300	7	0	26	34	4	56	0	451
0	21	321	4	0	32	43	8	51	0	480
0	13	322	5	0	28	29	10	47	0	454
0	4	225	0	0	9	50	66	79	0	433
0	12	191	1	0	15	44	94	167	0	524
0	4	256	1	0	12	46	59	193	0	571
0	4	180	1	0	16	42	93	128	0	464
0	4	182	5	0	9	39	77	157	0	473
0	6	136	2	0	13	49	125	163	0	494
0	4	173	1	0	1	32	68	112	0	391
0	6	141	1	0	6	38	77	83	0	352
0	0	181	6	0	5	44	7	47	0	290
0	3	212	4	0	3	28	6	27	0	283
0	4	231	2	0	6	54	6	37	0	340
0	2	198	6	0	3	27	7	52	0	295
0	2	229	0	0	12	30	9	62	0	344
0	2	224	5	0	4	31	4	52	0	322
0	2	224	10	0	6	31	9	62	0	344
0	3	182	9	0	6	27	7	51	0	285
0	2	220	7	0	13	54	6	55	0	357
0	4	202	12	0	23	69	6	50	0	366
0	1	164	2	0	6	57	5	54	0	289
0	1	190	3	0	8	52	1	60	0	315

(SB) & Longwood Road

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
0	20	340	11	0	21	32	10	95	0	529
0	24	343	11	0	36	62	5	93	0	574
0	18	326	6	0	14	35	4	87	0	490
0	24	300	7	0	26	34	4	56	0	451
0	**86**	**1309**	**35**	**0**	**97**	**163**	**23**	**331**	**0**	
#DIV/0!	*28%*	*5%*	*20%*	*#DIV/0!*	*1%*	*7%*	*22%*	*8%*	*#DIV/0!*	*0.89*
0	4	256	1	0	12	46	59	193	0	571
0	4	180	1	0	16	42	93	128	0	464
0	4	182	5	0	9	39	77	157	0	473
0	6	136	2	0	13	49	125	163	0	494
0	**18**	**754**	**9**	**0**	**50**	**176**	**354**	**641**	**0**	
#DIV/0!	*11%*	*4%*	*11%*	*#DIV/0!*	*8%*	*3%*	*1%*	*1%*	*#DIV/0!*	*0.88*
0	2	224	10	0	6	31	9	62	0	344
0	3	182	9	0	6	27	7	51	0	285
0	2	220	7	0	13	54	6	55	0	357
0	4	202	12	0	23	69	6	50	0	366
0	**11**	**828**	**38**	**0**	**48**	**181**	**28**	**218**	**0**	
#DIV/0!	*0%*	*2%*	*0%*	*#DIV/0!*	*2%*	*1%*	*4%*	*2%*	*#DIV/0!*	*0.92*

William Floyd Parkway & Moriches Middle Island Road

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:00	14	244	9	47	125	12	35	14	6	20	27	76	3	8	1	12	10	2	2	1	1		2	3	17	252
7:15	17	225	7	67	152	8	36	16	3	27	35	100	1	13	2	9	16	4	5	4	2		9	4	18	238
7:30	15	249	6	48	154	13	39	14	5	28	19	114	1	13	1	6	7	2	6	5	2	2	4	12	16	262
7:45	14	264	9	52	192	21	42	18	4	30	30	108	1	12	1	9	23	1	4	1	2	8	3	8	15	276
8:00	14	228	7	39	180	10	27	15	6	20	11	85	2	13	1	7	14	3	6	1	4	1	7	10	16	241
8:15	13	268	15	58	181	16	34	14	2	19	26	119	3	22	1	5	14	8	5	3		2	1	10	16	290
8:30	23	237	5	43	140	5	33	19	6	15	18	90		16	4	5	8	4	8	1	1	2	2	6	23	253
8:45	19	213	16	44	160	12	22	13	5	30	25	106	1	7	1	6	11	10	2	8	1	1	1	3	20	220
4:00	12	163	25	115	219	23	16	24	7	31	28	61	3	12		2	12	2		2	1	1	4	2	15	175
4:15	14	178	22	133	282	29	12	25	6	27	25	55	3	3		6	12	2	1	2			3	4	17	181
4:30	15	147	15	113	295	32	30	30	11	30	22	50	2	9	1	10	7	4	3	2	1	1	3	3	17	156
4:45	15	185	30	164	286	20	23	43	16	32	21	55	2	7	1	11	6	2		1			1	2	17	192
5:00	16	162	19	118	240	12	20	45	13	34	19	56	3	5	1	5	7		1	1			2	1	19	167
5:15	15	170	28	130	222	18	13	30	6	30	34	46	1	11		3	7	3	2	2		1		5	16	181
5:30	12	166	17	135	190	8	13	44	10	18	17	65	1	3		4	6					2		2	13	169
5:45	16	157	28	100	150	9	13	32	5	16	28	38		5	2	5	3	1		1	1	2		2	16	162
11:00	24	166	34	60	226	13	15	27	15	29	26	71	1	2	3		3			3			1	2	25	168
11:15	15	155	20	66	202	9	15	33	10	38	41	70		12		1	7		1	1		1	1	6	15	167
11:30	19	195	27	62	214	15	24	38	11	31	34	67	2	10	2		6	1	1	3	1		1	2	21	205
11:45	16	180	18	55	195	13	14	30	15	34	18	81	1	6	1		3	1		1			1	1	17	186
12:00	17	221	22	56	225	15	12	28	15	33	30	75		6		3	3			1	2		1		17	227
12:15	18	202	23	58	241	15	15	35	14	33	29	67	1	6		1	7			2	1	2		1	19	208
12:30	15	206	32	58	208	11	13	14	14	34	19	94	2	6	1	1	4		1	1		1	1		17	212
12:45	24	208	26	78	247	15	18	29	13	46	28	93	1	8	1	7	7	1		1		3	1	1	25	216
1:00	21	251	21	58	229	16	23	44	18	29	22	71	1	7		4	3		1	2	2	1		2	22	258
1:15	21	197	27	67	217	9	19	17	10	30	19	66		4		1	3			2		1		5	21	201
1:30	23	205	28	91	213	21	12	21	10	25	25	75		5			5					1		1	23	210
1:45	18	235	27	87	228	13	23	22	10	32	22	72		7	1	2	4	3			3			1	18	242

William Floyd Parkway & Moriches Middle Island Road

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:30	15	249	6	48	154	13	39	14	5	28	19	114	1	13	1	6	7	2	6	5	2	2	4	12	16	262
7:45	14	264	9	52	192	21	42	18	4	30	30	108	1	12	1	9	23	1	4	1	2	8	3	8	15	276
8:00	14	228	7	39	180	10	27	15	6	20	11	85	2	13	1	7	14	3	6	1	4	1	7	10	16	241
8:15	13	268	15	58	181	16	34	14	2	19	26	119	3	22	1	5	14	8	5	3		2	1	10	16	290
	56	**1009**	**37**	**197**	**707**	**60**	**142**	**61**	**17**	**97**	**86**	**426**	**7**	**60**	**4**	**27**	**58**	**14**	**21**	**10**	**8**	**13**	**15**	**40**	**63**	**1069**
																									11%	*6%*
4:30	15	147	15	113	295	32	30	30	11	30	22	50	2	9	1	10	7	4	3	2	1	1	3	3	17	156
4:45	15	185	30	164	286	20	23	43	16	32	21	55	2	7	1	11	6	2		1			1	2	17	192
5:00	16	162	19	118	240	12	20	45	13	34	19	56	3	5	1	5	7		1	1			2	1	19	167
5:15	15	170	28	130	222	18	13	30	6	30	34	46	1	11		3	7	3	2	2		1		5	16	181
	61	**664**	**92**	**525**	**1043**	**82**	**86**	**148**	**46**	**126**	**96**	**207**	**8**	**32**	**3**	**29**	**27**	**9**	**6**	**6**	**1**	**2**	**6**	**11**	**69**	**696**
																									12%	*5%*
12:30	15	206	32	58	208	11	13	14	14	34	19	94	2	6	1	1	4		1	1		1	1		17	212
12:45	24	208	26	78	247	15	18	29	13	46	28	93	1	8	1	7	7	1		1		3	1	1	25	216
1:00	21	251	21	58	229	16	23	44	18	29	22	71	1	7		4	3		1	2	2	1		2	22	258
1:15	21	197	27	67	217	9	19	17	10	30	19	66		4		1	3			2		1		5	21	201
	81	**862**	**106**	**261**	**901**	**51**	**73**	**104**	**55**	**139**	**88**	**324**	**4**	**25**	**2**	**13**	**17**	**1**	**2**	**6**	**2**	**6**	**2**	**8**	**85**	**887**
																									5%	*3%*

& Moriches Middle Island Road

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
10	59	135	14	37	15	7	20	29	79	674
9	76	168	12	41	20	5	27	44	104	762
7	54	161	15	45	19	7	30	23	126	765
10	61	215	22	46	19	6	38	33	116	857
8	46	194	13	33	16	10	21	18	95	711
16	63	195	24	39	17	2	21	27	129	839
9	48	148	9	41	20	7	17	20	96	691
17	50	171	22	24	21	6	31	26	109	717
25	117	231	25	16	26	8	32	32	63	765
22	139	294	31	13	27	6	27	28	59	844
16	123	302	36	33	32	12	31	25	53	836
31	175	292	22	23	44	16	32	22	57	923
20	123	247	12	21	46	13	34	21	57	780
28	133	229	21	15	32	6	31	34	51	777
17	139	196	8	13	44	10	20	17	67	713
30	105	153	10	13	33	6	18	28	40	614
37	60	229	13	15	30	15	29	27	73	721
20	67	209	9	16	34	10	39	42	76	704
29	62	220	16	25	41	12	31	35	69	766
19	55	198	14	14	31	15	34	19	82	684
22	59	228	15	12	29	17	33	31	75	765
23	59	248	15	15	37	15	35	29	68	771
33	59	212	11	14	15	14	35	20	94	736
27	85	254	16	18	30	13	49	29	94	856
21	62	232	16	24	46	20	30	22	73	826
27	68	220	9	19	19	10	31	19	71	715
28	91	218	21	12	21	10	26	25	76	761
28	89	232	16	23	22	13	32	22	73	810

& Moriches Middle Island Road

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
7	54	161	15	45	19	7	30	23	126	765
10	61	215	22	46	19	6	38	33	116	857
8	46	194	13	33	16	10	21	18	95	711
16	63	195	24	39	17	2	21	27	129	839
41	**224**	**765**	**74**	**163**	**71**	**25**	**110**	**101**	**466**	
10%	*12%*	*8%*	*19%*	*13%*	*14%*	*32%*	*12%*	*15%*	*9%*	*0.93*
16	123	302	36	33	32	12	31	25	53	836
31	175	292	22	23	44	16	32	22	57	923
20	123	247	12	21	46	13	34	21	57	780
28	133	229	21	15	32	6	31	34	51	777
95	**554**	**1070**	**91**	**92**	**154**	**47**	**128**	**102**	**218**	
3%	*5%*	*3%*	*10%*	*7%*	*4%*	*2%*	*2%*	*6%*	*5%*	*0.90*
33	59	212	11	14	15	14	35	20	94	736
27	85	254	16	18	30	13	49	29	94	856
21	62	232	16	24	46	20	30	22	73	826
27	68	220	9	19	19	10	31	19	71	715
108	**274**	**918**	**52**	**75**	**110**	**57**	**145**	**90**	**332**	
2%	*5%*	*2%*	*2%*	*3%*	*5%*	*4%*	*4%*	*2%*	*2%*	*0.92*

William Floyd Parkway & Police Headquarters

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:00	6	344	22		183	7	4		1					4	1		18	3	1						6	348
7:15		323	40		207	4	3		2					21	2		19	3							0	344
7:30	1	400	28		202	5			1					31			14	2	2						1	431
7:45	2	425	45		227	9	2		2				1	20			30		2		2				3	445
8:00	1	323	27		207	6	1		1					32			19	2	7						1	355
8:15	3	436	26		159	1								31			19	3							3	467
8:30	3	389	21		192	9	1							29	3		18	8	2						3	418
8:45	1	346	30		188	24	1		4				1	12	2		27	4	1						2	358
4:00		267	11		351	2	7		11				1	16	1		12		1						1	283
4:15	2	239	9		366	6	9		6					8	1		18	4	3		2				2	247
4:30	5	245	14		456	2	19		4				2	18	2		13	8	1		1				7	263
4:45	4	247	15		412	1	9		3					6	1		9	4							4	253
5:00	5	240	7		399	6	3		5				2	9			11				1				7	249
5:15	1	237	4		419	2	6		2					11	1		7	1	3		1				1	248
5:30	2	247	3		390	1	3		1					3			11	1							2	250
5:45	2	252	8		352	1	4							8			4								2	260
11:00	3	264	2		284	3	5		2					9			2		1						3	273
11:15	3	232	5		209		1		1				1	19					4						4	251
11:30	2	308	4		315	4	5		3					15				1	1						2	323
11:45	2	296	4		276	2	3		3					8				2	1		1				2	304
12:00	3	316	3		289	1	1		3					7					7						3	323
12:15	1	319	3		276	2			2					7	1		12				1				1	326
12:30	3	343	2		267	3								8			9	1							3	351
12:45	3	348	5		330	5	3		1				1	10			16								4	358
1:00	2	318	2		286	3	1		4					13			6				2				2	331
1:15	1	333	3		325	2	2		1					10			4				1				1	343
1:30	1	281	6		297	3	2							6	1		3								1	287
1:45	2	328	1		250	2	2		2				2	7			9				1				4	335

William Floyd Parkway & Police Headquarters

	CARS												TRUCKS												William Floyd Parkway	
Time Begin	NB U	NB L	NB T	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT	NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	NB L	NBT
7:30	1	400	28		202	5			1					31			14	2	2						1	431
7:45	2	425	45		227	9	2		2				1	20			30		2		2				3	445
8:00	1	323	27		207	6	1		1					32			19	2	7						1	355
8:15	3	436	26		159	1								31			19	3							3	467
	7	**1584**	**126**	**0**	**795**	**21**	**3**	**0**	**4**	**0**	**0**	**0**	**1**	**114**	**0**	**0**	**82**	**7**	**11**	**0**	**2**	**0**	**0**	**0**	**8**	**1698**
																									13%	*7%*
4:30	5	245	14		456	2	19		4				2	18	2		13	8	1		1				7	263
4:45	4	247	15		412	1	9		3					6	1		9	4							4	253
5:00	5	240	7		399	6	3		5				2	9			11				1				7	249
5:15	1	237	4		419	2	6		2					11	1		7	1	3		1				1	248
	15	**969**	**40**	**0**	**1686**	**11**	**37**	**0**	**14**	**0**	**0**	**0**	**4**	**44**	**4**	**0**	**40**	**13**	**4**	**0**	**3**	**0**	**0**	**0**	**19**	**1013**
																									21%	*4%*
12:30	3	343	2		267	3								8			9	1							3	351
12:45	3	348	5		330	5	3		1				1	10			16								4	358
1:00	2	318	2		286	3	1		4					13			6				2				2	331
1:15	1	333	3		325	2	2		1					10			4				1				1	343
	9	**1342**	**12**	**0**	**1208**	**13**	**6**	**0**	**6**	**0**	**0**	**0**	**1**	**41**	**0**	**0**	**35**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**10**	**1383**
																									10%	*3%*

& Police Headquarters

TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
23	0	201	10	5	0	1	0	0	0	594
42	0	226	7	3	0	2	0	0	0	624
28	0	216	7	2	0	1	0	0	0	686
45	0	257	9	4	0	4	0	0	0	767
27	0	226	8	8	0	1	0	0	0	626
26	0	178	4	0	0	0	0	0	0	678
24	0	210	17	3	0	0	0	0	0	675
32	0	215	28	2	0	4	0	0	0	641
				0.555556		0.153846				
					0.425					
12	0	363	2	8	0	11	0	0	0	680
10	0	384	10	12	0	8	0	0	0	673
16	0	469	10	20	0	5	0	0	0	790
16	0	421	5	9	0	3	0	0	0	711
7	0	410	6	3	0	6	0	0	0	688
5	0	426	3	9	0	3	0	0	0	695
3	0	401	2	3	0	1	0	0	0	662
8	0	356	1	4	0	0	0	0	0	631
2	0	286	3	6	0	2	0	0	0	575
5	0	209	0	5	0	1	0	0	0	475
4	0	315	5	6	0	3	0	0	0	658
4	0	276	4	4	0	4	0	0	0	598
3	0	289	1	8	0	3	0	0	0	630
4	0	288	2	0	0	3	0	0	0	624
2	0	276	4	0	0	0	0	0	0	636
5	0	346	5	3	0	1	0	0	0	722
2	0	292	3	1	0	6	0	0	0	637
3	0	329	2	2	0	2	0	0	0	682
7	0	300	3	2	0	0	0	0	0	600
1	0	259	2	2	0	3	0	0	0	606

& Police Headquarters

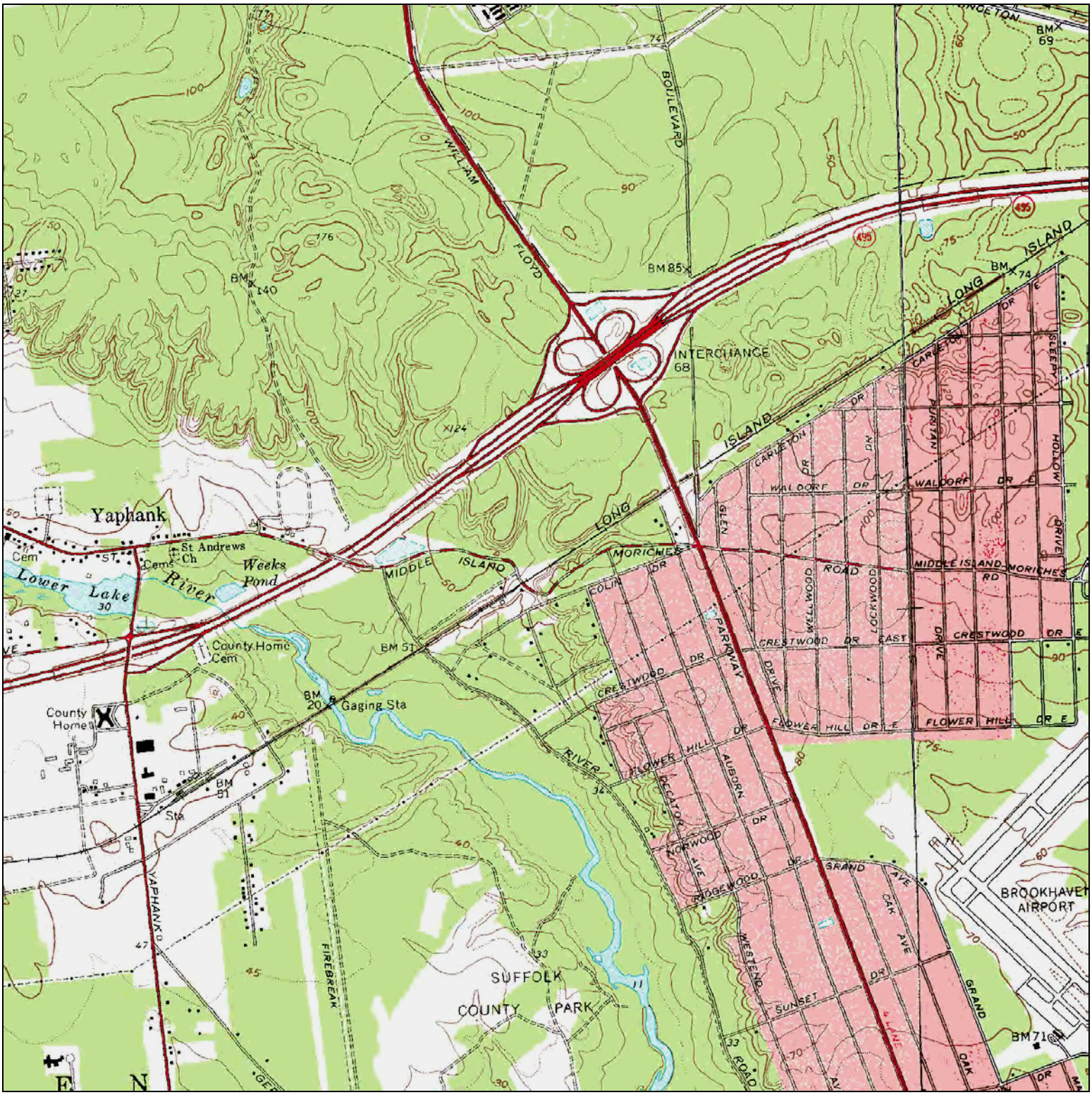
TOTAL										
NBR	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R	Total
28	0	216	7	2	0	1	0	0	0	686
45	0	257	9	4	0	4	0	0	0	767
27	0	226	8	8	0	1	0	0	0	626
26	0	178	4	0	0	0	0	0	0	678
126	**0**	**877**	**28**	**14**	**0**	**6**	**0**	**0**	**0**	
0%	*#DIV/0!*	*9%*	*25%*	*79%*		*33%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.90*
16	0	469	10	20	0	5	0	0	0	790
16	0	421	5	9	0	3	0	0	0	711
7	0	410	6	3	0	6	0	0	0	688
5	0	426	3	9	0	3	0	0	0	695
44	**0**	**1726**	**24**	**41**	**0**	**17**	**0**	**0**	**0**	
9%	*#DIV/0!*	*2%*	*54%*	*10%*	*#DIV/0!*	*18%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.91*
2	0	276	4	0	0	0	0	0	0	636
5	0	346	5	3	0	1	0	0	0	722
2	0	292	3	1	0	6	0	0	0	637
3	0	329	2	2	0	2	0	0	0	682
12	**0**	**1243**	**14**	**6**	**0**	**9**	**0**	**0**	**0**	
0%	*#DIV/0!*	*3%*	*7%*	*0%*	*#DIV/0!*	*33%*	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*	*0.93*

APPENDIX E

ECOLOGY-RELATED DOCUMENTS

Appendix E-1
NYSDEC Breeding Bird Survey

Breeding Bird Atlas Block 6752C



1 Mile

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

NYSDEC Breeding Bird Atlas
Atlas Block 6752C
2000-2005

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
American Crow	*Corvus brachyrhynchos*	FL	7/11/2004	Game Species
Canada Goose	*Branta canadensis*	FL	6/11/2002	Game Species
Gadwall	*Anas strepera*	P2	7/11/2004	Game Species
Mallard	*Anas platyrhynchos*	FL	7/11/2004	Game Species
Northern Bobwhite	*Colinus virginianus*	P2	7/27/2004	Game Species
Wild Turkey	*Meleagris gallopavo*	FL	7/27/2004	Game Species
Wood Duck	*Aix sponsa*	FL	7/11/2004	Game Species
Acadian Flycatcher	*Empidonax virescens*	X1	6/19/2005	Protected
American Goldfinch	*Spinus tristis*	P2	6/27/2002	Protected
American Kestrel	*Falco sparverius*	FL	7/24/2004	Protected
American Redstart	*Setophaga ruticilla*	T2	7/11/2004	Protected
American Robin	*Turdus migratorius*	FL	7/16/2001	Protected
Baltimore Oriole	*Icterus galbula*	FL	7/11/2004	Protected
Barn Swallow	*Hirundo rustica*	FL	7/11/2004	Protected
Belted Kingfisher	*Megaceryle alcyon*	P2	6/11/2002	Protected
Black-and-white Warbler	*Mniotilta varia*	T2	7/11/2004	Protected
Black-capped Chickadee	*Poecile atricapillus*	FL	7/16/2001	Protected
Blue Jay	*Cyanocitta cristata*	FL	6/26/2002	Protected
Blue-gray Gnatcatcher	*Polioptila caerulea*	FL	7/11/2004	Protected
Blue-winged Warbler	*Vermivora pinus*	FY	6/27/2002	Protected
Brown Creeper	*Certhia americana*	X1	7/11/2004	Protected
Brown Thrasher	*Toxostoma rufum*	S2	7/16/2001	Protected
Brown-headed Cowbird	*Molothrus ater*	FL	7/11/2004	Protected
Carolina Wren	*Thryothorus ludovicianus*	S2	7/16/2001	Protected
Cedar Waxwing	*Bombycilla cedrorum*	FY	7/11/2004	Protected
Chimney Swift	*Chaetura pelagica*	D2	6/11/2002	Protected
Chipping Sparrow	*Spizella passerina*	FL	7/11/2004	Protected
Common Grackle	*Quiscalus quiscula*	FY	6/27/2002	Protected
Common Yellowthroat	*Geothlypis trichas*	FL	7/11/2004	Protected
Downy Woodpecker	*Picoides pubescens*	FL	7/11/2004	Protected
Eastern Bluebird	*Sialia sialis*	X1	3/26/2005	Protected
Eastern Kingbird	*Tyrannus tyrannus*	NE	6/11/2002	Protected
Eastern Meadowlark	*Sturnella magna*	S2	6/30/2001	Protected
Eastern Phoebe	*Sayornis phoebe*	S2	7/24/2004	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	FL	7/11/2004	Protected
Eastern Wood-Pewee	*Contopus virens*	T2	7/11/2004	Protected
Field Sparrow	*Spizella pusilla*	T2	6/30/2001	Protected
Fish Crow	*Corvus ossifragus*	P2	6/1/2001	Protected
Gray Catbird	*Dumetella carolinensis*	FY	7/11/2004	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	FL	7/21/2004	Protected
Great Horned Owl	*Bubo virginianus*	T2	3/20/2004	Protected
Green Heron	*Butorides virescens*	X1	7/21/2004	Protected
Hairy Woodpecker	*Picoides villosus*	FL	6/30/2001	Protected
House Finch	*Carpodacus mexicanus*	P2	6/27/2002	Protected
House Wren	*Troglodytes aedon*	FL	7/24/2004	Protected
Killdeer	*Charadrius vociferus*	D2	6/4/2002	Protected
Louisiana Waterthrush	*Seiurus motacilla*	X1	5/5/2001	Protected
Mourning Dove	*Zenaida macroura*	FL	6/19/2005	Protected
Mute Swan	*Cygnus olor*	FL	6/11/2002	Protected
Northern Cardinal	*Cardinalis cardinalis*	FL	7/11/2004	Protected
Northern Flicker	*Colaptes auratus*	FL	7/21/2004	Protected
Northern Mockingbird	*Mimus polyglottos*	FY	7/24/2004	Protected

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	P2	6/30/2001	Protected
Orchard Oriole	*Icterus spurius*	S2	6/11/2002	Protected
Ovenbird	*Seiurus aurocapilla*	DD	7/11/2004	Protected
Pine Warbler	*Dendroica pinus*	FL	6/27/2002	Protected
Purple Martin	*Progne subis*	FY	7/24/2004	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	ON	7/11/2004	Protected
Red-breasted Nuthatch	*Sitta canadensis*	X1	7/11/2004	Protected
Red-eyed Vireo	*Vireo olivaceus*	S2	6/20/2001	Protected
Red-tailed Hawk	*Buteo jamaicensis*	FL	7/21/2004	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FY	6/20/2001	Protected
Scarlet Tanager	*Piranga olivacea*	FY	6/19/2005	Protected
Song Sparrow	*Melospiza melodia*	P2	6/11/2002	Protected
Tree Swallow	*Tachycineta bicolor*	P2	6/1/2001	Protected
Tufted Titmouse	*Baeolophus bicolor*	FL	7/16/2001	Protected
Veery	*Catharus fuscescens*	S2	7/16/2001	Protected
Warbling Vireo	*Vireo gilvus*	S2	6/11/2002	Protected
White-breasted Nuthatch	*Sitta carolinensis*	S2	7/21/2004	Protected
Wood Thrush	*Hylocichla mustelina*	T2	7/11/2004	Protected
Yellow Warbler	*Dendroica petechia*	FY	6/27/2002	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	S2	6/11/2002	Protected
Cooper's Hawk	*Accipiter cooperii*	X1	7/21/2004	Protected-Special Concern
Horned Lark	*Eremophila alpestris*	S2	6/4/2002	Protected-Special Concern
Osprey	*Pandion haliaetus*	X1	7/11/2004	Protected-Special Concern
Pied-billed Grebe	*Podilymbus podiceps*	X1	7/21/2004	Threatened
European Starling	*Sturnus vulgaris*	ON	6/27/2002	Unprotected
House Sparrow	*Passer domesticus*	ON	6/29/2002	Unprotected
Rock Pigeon	*Columba livia*	NE	6/10/2002	Unprotected

Current Date: 10/6/2010
Source: www.dec.ny.gov/cfmx/extapps/bba/

Appendix E-2
Projection of Wildlife Ecological Response (POWER) Model Results

PROJECTION OF WILDLIFE ECOLOGICAL RESPONSE (POWER)

NELSON, POPE & VOORHIS, LLC, MICROCOMPUTER MODEL

SPECIES LIST

INTRODUCTION

This appendix has been included to present the results of a computer model used to investigate the various wildlife species which can be expected to be found on the site considering the habitats established. This model was developed by and for the use of Nelson, Pope & Voorhis, LLC using available information and references for the various species. The model utilizes Excel spreadsheets to identify wildlife species commonly found in various Long Island habitats, based upon thorough research of available literature. The habitats investigated consisted of Successional Field, Successional Shrubland, Pitch Pine-Oak Forest and Red Maple Swamp. Some of the species listed in this model would not be expected on the property given the surrounding development, but are present in similar habitats.

The first column identifies the common name of the species, presented with the main common name in alphabetical order (for example: red-tailed hawk would come before blue jay). The scientific name of particular species is in the second column. The third column shows the legal status of the species, of which there are four possible entries (Endangered, Threatened, Special Concern and Local Concern). The fourth column indicates the seasons during which the species might be expected to be present and the fifth column, of particular importance to the environmental setting, contains information on frequency of the species in the habitat (abundant, common, rare and non expected); the species activity in the habitat (nesting, hunting and resting). References are provided with the reference list provided at the end of the appendix. The printout contained in this appendix, coupled with the discussions provided in the main body of the report, provides significant information of the wildlife found, or expected to be found on site.

Successional Old Field Species - Inventory and Characteristics

Common Name	Scientific Name	Status	Found During				Frequency/	References
			Winter	Spring	Summer	Fall	Habitat Use	
Birds								
red-winged blackbird	*Agelaius phoeniceus*	none		X	X	Early	C / N,F	4 6
Eastern bluebird	*Sialia sialis*	none		X	X	Early	R / N,F	4 7
common bobwhite	*Colinus virginianus*	none	X	X	X	X	C / N,F	4 8
indigo bunting	*Passerina cyanea*	none		Late	X	Early	C / N,F	4 20
Northern cardinal	*Cardinalis cardinalis*	none	X	X	X	X	C / N,F	4 20
gray catbird	*Dumetella carolinensis*	none		Late	X		A / N,F	4 9
black capped chickadee	*Parus atricapillus*	none	X	X	X	X	C / H	4 11
brown-headed cowbird	*Molothrus ater*	none		X	X	Early	A / H	4 6
American crow	*Corvus brachyrhynchos*	none	X	X	X	X	A / H	4 11
black-billed cuckoo	*Coccyzus erythropthalmus*	none		Late	X		C / N,F	4 11
yellow-billed cuckoo	*Coccyzus americanus*	none		Late	X		C / N,F	4 12
mourning dove	*Zenaida macroura*	none	X	X	X	X	A / N,H	4 8
rock dove	*Columba livia*	none	X	X	X	X	A / N,F	4 8
American goldfinch	*Carduelis tristis*	none		X	X	X	C / N,F	4 20
house finch	*Carpodacus mexicanus*	none		X	X	X	A / N,F	4 20
common flicker	*Colaptus auratus*	none	X	X	X	X	C / N,F	4 14
least flycatcher	*Empidonax minimus*	none		Late	X		R / N,F	4 15
willow flycatcher	*Empidonax traillii*	none		Late	X		C / N,F	4 15
common grackle	*Quiscalus quiscula*	none	X	X	X	X	A / N,F	4 6
ruffed grouse	*Bonasa umbellus*	none	X	X	X	X	C / N,F	4 8
rose-breasted grosbeak	*Pheucticus ludovicianus*	none		Late	X	Early	C / N,F	4 20
Northern harrier	*Circus cyaneus*	threatened	X	X	X	X	R / H	4 16
Cooper's hawk	*Accipiter cooperii*	special concern		X	X		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	X	X	X	X	C / H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	X	X	X	X	N / N,F	4 16
blue jay	*Cyanocitta cristatta*	none	X	X	X	X	A / N,F	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	none	X			Late	C / N,F	4 21
American kestrel	*Falco sparverius*	none	X	X	X	X	C / H	4 17
Eastern kingbird	*Tyrannus tyrannus*	none		X	X	Early	A / N,F	4 15
Eastern meadowlark	*Sturnella magna*	none		Late	X		C / N,F	4 6
Northern mockingbird	*Mimus polyglottos*	none	X	X	X	X	A / N,F	4 9

Common Name	Scientific Name	Status	Found During Winter	Spring	Summer	Fall	Frequency/ Habitat Use	References
common nighthawk	*Chordeiles minor*	special concern		Late	X		R / N,F	4 12
barn owl	*Tyto alba*	none	X	X	X	X	R / H	4 17
great-horned owl	*Bubo virginianus*	none	X	X	X	X	C / N,H	4 17
ring-necked pheasant	*Phasianus colchicus*	none	X	X	X	X	C / N,F	4 8
American robin	*Turdus migratorius*	none		X	X	Early	A / N,F	4 7
chipping sparrow	*Spizella passerina*	none	X	X	X	X	C / N,F	4 21
fox sparrow	*Passerella iliaca*	none	X	X		X	C / F	20 21
field sparrow	*Spizella pusilla*	none		X	X	X	C / N,F	4 21
grasshopper sparrow	*Ammodramus savannarum*	special concern		X	X	Early	C / N,F	4 20
house sparrow	*Passer domesticus*	none	X	X	X	X	C / N,F	4 20
Savannah sparrow	*Passerculus sandwichensis*	none		X	X	Early	R / N,F	4 21
song sparrow	*Melospiza melodia*	none	X	X	X	X	A / N,F	4 22
swamp sparrow	*Melospiza georgiana*	none	X	X	X	X	C / N,F	4 22
white-crowned sparrow	*Zonotrichia leucophrys*	none	X	X		X	C / F	22 32
European starling	*Sturnus vulgaris*	none	X	X	X	X	A / N,F	4 23
barn swallow	*Hirundo rustica*	none		Late	X		C / N,F	4 15
brown thrasher	*Toxostoma rufum*	none		X	X	Early	C / N,F	4 9
rufous-sided towhee	*Pipilo erythrophthalmus*	none		Late	X	Early	A / N,F	4 20
black-and-white warbler	*Mniotilta varia*	none		X	X		R / N,F	4 18
blue-winged warbler	*Vermivora pinus*	none		Late	X		C / N,F	4 14
chestnut-sided warbler	*Dendroica pensylvanica*	none		Late	X		R / N,F	4 19
prairie warbler	*Dendroica discolor*	none		Late	X	Early	C / N,F	4 19
yellow warbler	*Dendrocica petchia*	none		Late	X		R / N,F	4 18
cedar waxwing	*Bombycilla cedrorum*	none		X	X	Early	C / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		Late	X		C / F	4 12
American woodcock	*Philhela minor*	none		X	X	X	C / N,F	4 30
red-headed woodpecker	*Melanerpes erythrocephalus*	special concern		X	X	Early	C / N,F	4 14
house wren	*Troglodytes aedon*	none		Late	X	Early	C / N,F	4 9
common yellowthroat	*Geothlypis trichas*	none		X	X	Early	C / N,F	4 19
Mammals								
Eastern chipmunk	*Tamis striatus*	none	X	X	X	X	C / N,F	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	A / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / H	1 29

Common Name	Scientific Name	Status	Found During Winter	Spring	Summer	Fall	Frequency/ Habitat Use	References
Eastern mole	*Scalopus aquaticus*	none	X	X	X	X	C / N,F	1 29
house mouse	*Mus musculus*	none	X	X	X	X	R / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / F	1 29
black rat	*Rattus rattus*	none	X	X	X	X	R / N,F	1 29
Norway rat	*Rattus norvegicus*	none	X	X	X	X	C / N,F	1 29
least shrew	*Cryptotis parva*	none	X	X	X	X	N / N,F	1 29
short-tailed shrew	*Blarina breuicauda*	none	X	X	X	X	A / N,F	1 29
striped skunk	*Mephitis mephitis*	none	X	X	X	X	N / N,F	1 29
meadow vole	*Microtus pennsylvanicus*	none	X	X	X	X	C / N,F	29 45
pine vole	*Microtus pinetorum*	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
woodchuck	*Marmota monax*	none	X	X	X	X	R / N,F	1 29
Herptiles								
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern hognose snake	*Heterodon platyrhinos*	special concern	X	X	X	X	R / N,H	38
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39
Fowler's toad	*Bufo woodhousei fowleri*	none	X	X	X	X	C / F	33 37

KEY:

Frequency:	Activity:
A- abundant	N- nesting
C- common	H- hunting
R- rare	R- resting
N- not expected	F- foraging

Successional Shrubland Species-Inventory and Characteristics

Common Name	Scientific Name	Status	Found During				Frequency/	References
			Winter	Spring	Summer	Fall	Habitat Use	
red-winged blackbird	*Agelaius phoeniceus*	none		X	X	Early	C / N,F	4 6
common bobwhite	*Colinus virginianus*	none	X	X	X	X	C / N,F	4 8
indigo bunting	*Passerina cyanea*	none		Late	X	Early	C / N,F	4 20
Northern cardinal	*Cardinalis cardinalis*	none	X	X	X	X	C / N,F	4 20
gray catbird	*Dumetella carolinensis*	none		Late	X		A / N,F	4 9
black capped chickadee	*Parus atricapillus*	none	X	X	X	X	A / N,F	4 11
brown-headed cowbird	*Molothrus ater*	none		X	X	Early	A / N,F	4 6
American crow	*Corvus brachyrhynchos*	none	X	X	X	X	A / H	4 11
black-billed cuckoo	*Coccyzus erythropthalmus*	none		Late	X		C / N,F	4 11
yellow-billed cuckoo	*Coccyzus americanus*	none		Late	X		C / N,F	4 12
mourning dove	*Zenaida macroura*	none	X	X	X	X	A / N,H	4 8
American goldfinch	*Carduelis tristis*	none		X	X	X	C / N,F	4 20
common flicker	*Colaptus auratus*	none	X	X	X	X	R / H	4 14
least flycatcher	*Empidonax minimus*	none		Late	X		R / N,F	4 15
willow flycatcher	*Empidonax traillii*	none		Late	X		C / N,F	4 15
common grackle	*Quiscalus quiscula*	none	X	X	X	X	A / N,F	4 6
ruffed grouse	*Bonasa umbellus*	none	X	X	X	X	C / N,F	4 8
rose-breasted grosbeak	*Pheucticus ludovicianus*	none		Late	X	Early	C / N,F	4 20
Northern harrier	*Circus cyaneus*	threatened	X	X	X	X	R / H	4 16
Cooper's hawk	*Accipiter cooperii*	special concern		X	X		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	X	X	X	X	C / H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	X	X	X	X	N / N,F	4 16
blue jay	*Cyanocitta cristatta*	none	X	X	X	X	A / N,F	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	none	X			Late	C / N,F	4 21
American kestrel	*Falco sparverius*	none	X	X	X	X	C / H	4 17
Eastern kingbird	*Tyrannus tyrannus*	none		X	X	Early	A / N,F	4 15
golden-crowned kinglet	*Regulus satrapa*	none	X	X		X	R / N,H	4 7
ruby-crowned kinglet	*Regulus calendula*	none	X	X		X	R / N,H	4 7
Eastern meadowlark	*Sturnella magna*	none		Late	X		C / N,F	4 6
Northern mockingbird	*Mimus polyglottos*	none	X	X	X	X	A / N,F	4 9
barn owl	*Tyto alba*	none	X	X	X	X	R / H	4 17
great-horned owl	*Bubo virginianus*	none	X	X	X	X	C / N,H	4 17

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
ring-necked pheasant	*Phasianus colchicus*	none	X	X	X	X	C / N,F	4 8
American redstart	*Setophaga ruticilla*	none		Late	X	X	C / N,F	4 19
American robin	*Turdus migratorius*	none		X	X	Early	A / N,F	4 7
pine siskin	*Carduelis pinus*	none	X	X	X	X	N / N,F	4 20
fox sparrow	*Passerella iliaca*	none	X	X		X	C / F	20 21
field sparrow	*Spizella pusilla*	none		X	X	X	C / N,F	4 21
grasshopper sparrow	*Ammodramus savannarum*	special concern		X	X	Early	C / N,F	4 20
song sparrow	*Melospiza melodia*	none	X	X	X	X	A / N,F	4 22
swamp sparrow	*Melospiza georgiana*	none	X	X	X	X	C / N,F	4 22
white-crowned sparrow	*Zonotrichia leucophrys*	none	X	X		X	C / F	22 32
white-throated sparrow	*Zonotrichia albicollis*	none	X	X	X	X	C / N,F	4 22
European starling	*Sturnus vulgaris*	none	X	X	X	X	A / N,F	4 23
barn swallow	*Hirundo rustica*	none		Late	X		C / N,F	4 15
brown thrasher	*Toxostoma rufum*	none		X	X	Early	C / N,F	4 9
hermit thrush	*Catharus guttatus*	none	X	X	X	X	R / N,F	4 7
wood thrush	*Hylocichla mustelina*	none		X	X	Early	C / N,F	4 7
rufous-sided towhee	*Pipilo erythrophthalmus*	none		Late	X	Early	A / N,F	4 20
white eyed vireo	*Vireo griseus*	none		Late	X		C / N,F	4 23
black-and-white warbler	*Mniotilta varia*	none		X	X		R / N,F	4 18
blue-winged warbler	*Vermivora pinus*	none		Late	X		C / N,F	4 14
chestnut-sided warbler	*Dendroica pensylvanica*	none		Late	X		C / N,F	4 19
prairie warbler	*Dendroica discolor*	none		Late	X	Early	C / N,F	4 19
cedar waxwing	*Bombycilla cedrorum*	none		X	X	Early	C / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		Late	X		C / F	4 12
American woodcock	*Philhela minor*	none		X	X	X	C / N,F	4 30
Carolina wren	*Thryothorus ludovicianus*	none	X	X	X	X	C / N,F	4 9
house wren	*Troglodytes aedon*	none		Late	X	Early	C / N,F	4 9
common yellowthroat	*Geothlypis trichas*	none		X	X	Early	C / N,F	4 19
MAMMALS								
Eastern chipmunk	*Tamis striatus*	none	X	X	X	X	C / N,F	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	A / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / N,H	1 29
Eastern mole	*Scalopus aquaticus*	none	X	X	X	X	C / N,F	1 29

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
house mouse	*Mus musculus*	none	X	X	X	X	R / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / F	1 29
black rat	*Rattus rattus*	none	X	X	X	X	R / N,F	1 29
short-tailed shrew	*Blarina breuicauda*	none	X	X	X	X	A / N,F	1 29
striped skunk	*Mephitis mephitis*	none	X	X	X	X	N / N,F	1 29
meadow vole	*Microtus pennsylvanicus*	none	X	X	X	X	C / N,F	29 45
pine vole	*Microtus pinetorum*	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
woodchuck	*Marmota monax*	none	X	X	X	X	R / N,F	1 29
HERPTILES								
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern hognose snake	*Heterodon platyrhinos*	special concern	X	X	X	X	R / N,H	38
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39
Fowler's toad	*Bufo woodhousei fowleri*	none	X	X	X	X	C / F	33 37

KEY:

Frequency:	Activity:
A- abundant	N- nesting
C- common	H- hunting
R- rare	R- resting
N- not expected	F- foraging

Pine Oak Forest Species - Inventory and Characteristics

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
gray catbird	*Dumetella carolinensis*	none		**Late**	**X**		R / N,F	4 9
black capped chickadee	*Parus atricapillus*	none	**X**	**X**	**X**	**X**	A / N,F	4 11
brown-headed cowbird	*Molothrus ater*	none		**X**	**X**	**Early**	A / N,F	4 6
brown creeper	*Certhia familiaris*	none		**X**	**X**	**Early**	C / N,F	4 9
American crow	*Corvus brachyrhynchos*	none	**X**	**X**	**X**	**X**	A / N,H	4 11
yellow-billed cuckoo	*Coccyzus americanus*	none		**Late**	**X**		R / N,F	4 12
mourning dove	*Zenaida macroura*	none	**X**	**X**	**X**	**X**	C / N,H	4 8
house finch	*Carpodacus mexicanus*	none		**X**	**X**	**X**	A / N,F	4 20
purple finch	*Carpodacus purpureus*	none	**X**	**X**	**X**	**X**	C / N,F	4 20
common flicker	*Colaptus auratus*	none	**X**	**X**	**X**	**X**	C / N,F	4 14
great-crested flycatcher	*Myiarchus crinitus*	none		**Late**	**X**		C / N,F	4 15
common grackle	*Quiscalus quiscula*	none	**X**	**X**	**X**	**X**	C / N,F	4 6
ruffed grouse	*Bonasa umbellus*	none	**X**	**X**	**X**	**X**	R / N,F	4 8
broad-winged hawk	*Buteo platypterus*	none		**X**	**X**		R / N,H	4 16
Cooper's hawk	*Accipiter cooperii*	special concern		**X**	**X**		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	**X**	**X**	**X**	**X**	C / N,H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	**X**	**X**	**X**	**X**	R / N,H	4 16
blue jay	*Cyanocitta cristatta*	none	**X**	**X**	**X**	**X**	A / N,F	4 10
Northern (dark-eyed) junco	*Junco hyemalis*	none	**X**			**Late**	C / N,F	4 21
Eastern kingbird	*Tyrannus tyrannus*	none		**X**	**X**	**Early**	C / N,F	4 15
golden-crowned kinglet	*Regulus satrapa*	none	**X**	**X**		**X**	R / N,H	4 7
ruby-crowned kinglet	*Regulus calendula*	none	**X**	**X**		**X**	R / N,H	4 7
Northern mockingbird	*Mimus polyglottos*	none	**X**	**X**	**X**	**X**	C / N,F	4 9
white-breasted nuthatch	*Sitta carolinensis*	none	**X**	**X**	**X**	**X**	A / N,F	4 9
northern oriole	*Icterus galbula*	none		**Late**	**X**		R / N,F	4 6
ovenbird	*Seiurus aurocapillus*	none		**Late**	**X**	**Early**	C / N,F	4 19
common screech owl	*Otus asio*	none	**X**	**X**	**X**	**X**	C / N	4 17
great-horned owl	*Bubo virginianus*	none	**X**	**X**	**X**	**X**	C / N,H	4 17
long-eared owl	*Asio otus*	none	**X**	**X**	**X**	**X**	C / N,H	4 17
American robin	*Turdus migratorius*	none		**X**	**X**	**Early**	A / N,F	4 7
yellow-bellied sapsucker	*Sphyrapicus varius*	none		**Late**	**X**	**Early**	C / N,F	14
pine siskin	*Carduelis pinus*	none	**X**	**X**	**X**	**X**	N / N,F	4 20

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
fox sparrow	*Passerella iliaca*	none	**X**	**X**		**X**	R / F	20 21
house sparrow	*Passer domesticus*	none	**X**	**X**	**X**	**X**	C / N,F	4 20
song sparrow	*Melospiza melodia*	none	**X**	**X**	**X**	**X**	R / N,F	4 22
white-throated sparrow	*Zonotrichia albicollis*	none	**X**	**X**	**X**	**X**	R / N,F	4 22
European starling	*Sturnus vulgaris*	none	**X**	**X**	**X**	**X**	C / N,F	4 23
chimney swift	*Chaetura pelagica*	none		**X**	**X**		C / F	4 42
scarlet tanager	*Piranga olivacea*	none		**X**	**X**		C / N,F	4
brown thrasher	*Toxostoma rufum*	none		**X**	**X**	**Early**	R / N,F	4 9
hermit thrush	*Catharus guttatus*	none	**X**	**X**	**X**	**X**	C / N,F	4 7
wood thrush	*Hylocichla mustelina*	none		**X**	**X**	**Early**	R / N,F	4 7
tufted titmouse	*Parus bicolor*	none	**X**	**X**	**X**	**X**	R / N,F	4 11
veery	*Catharus fuscescens*	none		**Late**	**X**		R / N,F	4 7
red-eyed vireo	*Vireo olivaceus*	none		**Late**	**X**		R / N,F	4 23
black-and-white warbler	*Mniotilta varia*	none		**X**	**X**		R / N,F	4 18
black-throated blue warbler	*Dendroica caerulescens*	none		**Late**	**X**	**Early**	C / N,F	18
pine warbler	*Dendroica pinus*	none		**X**	**X**	**Early**	C / N,F	4 19
prairie warbler	*Dendroica discolor*	none		**Late**	**X**	**Early**	C / N,F	4 19
yellow-rumped warbler	*Dendroica coronata*	none		**X**	**X**	**Early**	C / N,F	4 8
cedar waxwing	*Bombycilla cedrorum*	none		**X**	**X**	**Early**	R / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		**Late**	**X**		C / N	4 12
Eastern wood-peewee	*Contopus virens*	none		**X**	**X**		C / N,F	4 15
downy woodpecker	*Picoides pubescens*	none	**X**	**X**	**X**	**X**	A / N,F	4 14
hairy woodpecker	*Picoides villosus*	none	**X**	**X**	**X**	**X**	C / N,F	4 14
red-bellied woodpecker	*Melanerpes carolinus*	none	**X**	**X**	**X**	**X**	R / N,F	4 14
house wren	*Troglodytes aedon*	none		**Late**	**X**	**Early**	R / N,F	4 9
Mammals								
big-brown bat	*Eptesicus fuscus*	none	**X**	**X**	**X**	**X**	C / N,F	1 29
hoary bat	*Lasiurus borealis*	none			**Late**	**Early**	C / N,F	45
Keen's bat	*Myotis keenii*	none			**X**	**Early**	R / N	1 29
little-brown bat	*Myotis lucifugus*	none	**X**	**X**	**X**	**X**	C / N,F	1 29
red bat	*Lasiurus borealis*	none		**Late**	**X**	**Early**	C / N,F	1 29
Eastern pipistrelle	*Pipistrellus subflavus*	none		**X**	**X**	**Early**	R / N,F	1 29
silver-haired bat	*Lasionycteris noctivagans*	none			**X**		R / N,F	1 29
Eastern chipmunk	*Tamis striatus*	none	**X**	**X**	**X**	**X**	C / N,F	1 29

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	C / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / N,F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / N,H	1 29
Eastern mole	*Scalopus aquaticus*	none	X	X	X	X	C / N,F	1 29
house mouse	*Mus musculus*	none	X	X	X	X	N / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / N,F	1 29
masked shrew	*Sorex cinereus*	none	X	X	X	X	C / N,F	1 29
short-tailed shrew	*Blarina breuicauda*	none	X	X	X	X	A / N,F	1 29
striped skunk	*Mephitis mephitis*	none	X	X	X	X	N / N,F	1 29
Eastern gray squirrel	*Sciurus carolinensis*	none	X	X	X	X	C / N,F	1 29
southern-flying squirrel	*Glaucimys volans*	none	X	X	X	X	C / N,F	1 29
pine vole	*Microtus pinetorum*	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
woodchuck	*Marmota monax*	none	X	X	X	X	R / N,F	1 29
Herptiles								
common gray treefrog	*Hyla versicolor*	none	X	X	X	X	C / N,F	33 37
red-backed salamander	*Plethodon cinerus cinerus*	none	X	X	X	X	R / N,F	34 36
Eastern tiger salamander	*Ambystoma tigrinum tigrinum*	endangered	X	X	X	X	R / F	36 38
marbled salamander	*Ambystoma opacum*	special concern	X	X	X	X	R / N,F	34 36 38
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern hognose snake	*Heterodon platyrhinos*	special concern	X	X	X	X	R / N,H	38
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39
Eastern spadefoot toad	*Scaphiopus holbrooki*	special concern	X	X	X	X	C / N,F	33
Fowler's toad	*Bufo woodhousei fowleri*	none	X	X	X	X	C / F	33 37
Eastern box turtle	*Terrepene carolina*	special concern	X	X	X	X	C / N,F	41

KEY:

Frequency:	Activity:
A- abundant	N- nesting
C- common	H- hunting
R- rare	R- resting
N- not expected	F- foraging

Wooded Swamp Species: Inventory and Characteristics

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	Reference
Birds								
red-winged blackbird	*Agelaius phoeniceus*	none		X	X	Early	A / N,F	4 6
Northern cardinal	*Cardinalis cardinalis*	none	X	X	X	X	C / N,F	4 20
wood duck	*Aix sponsa*	none		X	X	Early	C / N,F	4 27
great-crested flycatcher	*Myiarchus crinitus*	none		Late	X		C / N,F	4 15
blue-grey gnatcatcher	*Polioptila caerulea*	none		X	X		R / N,F	4 7
rose-breasted grosbeak	*Pheucticus ludovicianus*	none		Late	X	Early	R / N,F	4 20
yellow-crowned night-heron	*Nycticorax violaceus*	none	X	X	X	X	C / N,H	4 26
mallard	*Anas platyrhynchos*	none		X	X	X	C / N,F	4 27
white-breasted nuthatch	*Sitta carolinensis*	none	X	X	X	X	A / N,F	4 9
osprey	*Pandion haliaetus*	special concern		X	X	Early	C / N,H	4 16
great-horned owl	*Bubo virginianus*	none	X	X	X	X	C / N,H	4 17
saw-whet owl	*Aegolius acadicus*	none	X	X	X	X	C / N,H	4 17
Eastern phoebe	*Sayornis phoebe*	none		X	X	Early	C / N,F	4 15
spotted sandpiper	*Actitus macularia*	none		X	X	Early	R / N,F	4 31 32
swamp sparrow	*Melospiza georgiana*	none	X	X	X	X	C / N,F	4 22
European starling	*Sturnus vulgaris*	none	X	X	X	X	R / N,F	4 23
tree swallow	*Tachycineta bicolor*	none		X	X		C / N,F	4 15
tufted titmouse	*Parus bicolor*	none	X	X	X	X	C / N,F	4 11
veery	*Catharus fuscescens*	none		Late	X		C / N,F	4 7
yellow warbler	*Dendrocica petchia*	none		Late	X		C / N,F	4 18
American woodcock	*Philhela minor*	none		X	X	X	C / N,F	4 30
downy woodpecker	*Picoides pubescens*	none	X	X	X	X	A / N,F	4 14
hairy woodpecker	*Picoides villosus*	none	X	X	X	X	C / N,F	4 14
red-bellied woodpecker	*Melanerpes carolinus*	none	X	X	X	X	C / N,F	4 14
Mammals								
big-brown bat	*Eptesicus fuscus*	none	X	X	X	X	R / H	1 29
little-brown bat	*Myotis lucifugus*	none	X	X	X	X	R / H	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	A / F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / H	1 29
mink	*Mustela vison*	none	X	X	X	X	C / N,F	1

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	Reference
star-nosed mole	*Condylura cristata*	none	X	X	X	X	R / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
muskrat	*Ondarta zibethicus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / N,F	1 29
Norway rat	*Rattus norvegicus*	none	X	X	X	X	C / N,F	1 29
masked shrew	*Sorex cinereus*	none	X	X	X	X	C / N,F	1 29
short-tailed shrew	*Blarina breuicauda*	none	X	X	X	X	A / N,F	1 29
Eastern gray squirrel	*Sciurus carolinensis*	none	X	X	X	X	A / N,F	1 29
southern-flying squirrel	*Glaucimys volans*	none	X	X	X	X	C / N,F	1 29
meadow vole	*Microtus pennsylvanicus*	none	X	X	X	X	R / N,F	29 45
pine vole	*Microtus pinetorum*	none	X	X	X	X	R / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
Herptiles								
bull frog	*Rana catesbeiana*	none	X	X	X	X	C / N,H	33 34 35 37
common gray treefrog	*Hyla versicolor*	none	X	X	X	X	C / N,F	33 37
green frog	*Rana clamitans*	none	X	X	X	X	C / N,H	33 35 37
Southern leopard frog	*Rana pipiens sphenocephala*	special concern	X	X	X	X	R / N,F	35 37 38
wood frog	*Rana sylvatica*	none	X	X	X	X	C / N,F	33 37
red-spotted newt	*Notophthalmus viridescens*	none	X	X	X	X	C / N,F	36 38
spring peeper	*Hyla crucifer*	none	X	X	X	X	A / N,F	33 35 38
spotted salamander	*Ambystoma maculatum*	none	X	X	X	X	C / N,F	34 36 38
Eastern tiger salamander	*Ambystoma tigrinum tigrinum*	endangered	X	X	X	X	R / N,F	36 38
marbled salamander	*Ambystoma opacum*	special concern	X	X	X	X	R / N,F	34 36 38
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39
Eastern ribbon snake	*Thamnophis s. sauritus*	none	X	X	X	X	C / N,F	38 40
Northern brown snake	*Storeria dekayi*	none	X	X	X	X	C / N,H	38
Northern ringneck snake	*Diadophis punctatus*	none	X	X	X	X	C / H	38
Northern water snake	*Natrix sipedon sipedon*	none	X	X	X	X	C / N,F	38 39
painted turtle	*Chrysemys picta*	none	X	X	X	X	N / N,F	38 40

Terrestrial Cultural Species - Inventory and Characteristics

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
Birds								
red-winged blackbird	*Agelaius phoeniceus*	none		X	X	Early	C / N,F	4 6
Eastern bluebird	*Sialia sialis*	none		X	X	Early	R / N,F	4 7
common bobwhite	*Colinus virginianus*	none	X	X	X	X	C / N,F	4 8
indigo bunting	*Passerina cyanea*	none		Late	X	Early	N / F	4 20
Northern cardinal	*Cardinalis cardinalis*	none	X	X	X	X	C / N,F	4 20
gray catbird	*Dumetella carolinensis*	none		Late	X		C / F	4 9
brown-headed cowbird	*Molothrus ater*	none		X	X	Early	A / H	4 6
American crow	*Corvus brachyrhynchos*	none	X	X	X	X	A / N,H	4 11
mourning dove	*Zenaida macroura*	none	X	X	X	X	A / N,H	4 8
rock dove	*Columba livia*	none	X	X	X	X	A / N,F	4 8
great-crested flycatcher	*Myiarchus crinitus*	none		Late	X		C / N,F	4 15
common grackle	*Quiscalus quiscula*	none	X	X	X	X	A / N,F	4 6
Northern harrier	*Circus cyaneus*	threatened	X	X	X	X	R / H	4 16
Cooper's hawk	*Accipiter cooperii*	special concern		X	X		N / N,H	4 17
red-tailed hawk	*Buteo jamaicensis*	none	X	X	X	X	C / H	4 16
sharp-shinned hawk	*Accipiter striatus*	special concern	X	X	X	X	N / N,F	4 16
blue jay	*Cyanocitta cristatta*	none	X	X	X	X	A / N,F	4 10
American kestrel	*Falco sparverius*	none	X	X	X	X	C / N,H	4 17
killdeer	*Charadrius vociferus*	none		X	X	X	C / N,F	4 31 32
Eastern kingbird	*Tyrannus tyrannus*	none		X	X	Early	A / N,F	4 15
Eastern meadowlark	*Sturnella magna*	none		Late	X		C / N,F	4 6
Northern mockingbird	*Mimus polyglottos*	none	X	X	X	X	A / N,F	4 9
common nighthawk	*Chordeiles minor*	special concern		Late	X		R / N,F	4 12
barn owl	*Tyto alba*	none	X	X	X	X	R / N,H	4 17
great-horned owl	*Bubo virginianus*	none	X	X	X	X	R / N,H	4 17
ring-necked pheasant	*Phasianus colchicus*	none	X	X	X	X	C / N,F	4 8
black-bellied plover	*Pluvialis squatarola*	none		Early	X	Early	R / F	31 32
American robin	*Turdus migratorius*	none		X	X	Early	A / N,F	4 7
chipping sparrow	*Spizella passerina*	none	X	X	X	X	C / N,F	4 21
field sparrow	*Spizella pusilla*	none		X	X	X	R / N,F	4 21
grasshopper sparrow	*Ammodramus savannarum*	special concern		X	X	Early	R / N,F	4 20

Common Name	Scientific Name	Status	Found During winter	spring	summer	fall	Frequency/ Habitat Use	References
house sparrow	*Passer domesticus*	none	X	X	X	X	A / N,F	4 20
Savannah sparrow	*Passerculus sandwichensis*	none		X	X	Early	R / N,F	4 21
song sparrow	*Melospiza melodia*	none	X	X	X	X	C / N,F	4 22
white-crowned sparrow	*Zonotrichia leucophrys*	none	X	X		X	C / F	22 32
European starling	*Sturnus vulgaris*	none	X	X	X	X	A / N,F	4 23
barn swallow	*Hirundo rustica*	none		Late	X		A / N,F	4 15
chimney swift	*Chaetura pelagica*	none		X	X		C / F	4 42
brown thrasher	*Toxostoma rufum*	none		X	X	Early	R / N,F	4 9
chestnut-sided warbler	*Dendroica pensylvanica*	none		Late	X		N / N,F	4 19
cedar waxwing	*Bombycilla cedrorum*	none		X	X	Early	C / N,F	4 23 32
whip-poor-will	*Caprimulgus vociferous*	special concern		Late	X		C / F	4 12
American woodcock	*Philhela minor*	none		X	X	X	R / N,F	4 30
red-headed woodpecker	*Melanerpes erythrocephalus*	special concern		X	X	Early	C / N,F	4 14
house wren	*Troglodytes aedon*	none		Late	X	Early	C / N,F	4 9
Mammals								
Eastern pipistrelle	*Pipistrellus subflavus*	none		X	X	Early	N / F	1 29
Eastern cottontail	*Sylvilagus floridanus*	none	X	X	X	X	A / N,F	1 29
white-tailed deer	*Odocoileus virginianus*	none	X	X	X	X	C / F	1 25 29
red fox	*Vulpes vulpes*	none	X	X	X	X	C / H	1 29
house mouse	*Mus musculus*	none	X	X	X	X	C / N,F	1 29
meadow-jumping mouse	*Zapus hudsonicus*	none	X	X	X	X	R / N,F	1 29
white-footed mouse	*Peromyscus leucopus*	none	X	X	X	X	C / N,F	1 29
Virginia opossum	*Didelphis virginiana*	none	X	X	X	X	C / N,F	1 29
racoon	*Procyon lotor*	none	X	X	X	X	C / F	1 29
black rat	*Rattus rattus*	none	X	X	X	X	N / N,F	1 29
Norway rat	*Rattus norvegicus*	none	X	X	X	X	C / N,F	1 29
least shrew	*Cryptotis parva*	none	X	X	X	X	N / N,F	1 29
striped skunk	*Mephitis mephitis*	none	X	X	X	X	N / N,F	1 29
pine vole	*Microtus pinetorum*	none	X	X	X	X	C / N,F	1 29
long-tailed weasel	*Mustela frenata*	none	X	X	X	X	R / N,H	1 29
Heptiles								
Eastern garter snake	*Thamnophis sirtalis*	none	X	X	X	X	C / N,F	38 40
eastern milk snake	*Lampropettis d. triangulum*	none	X	X	X	X	C / N,F	38 39
Fowler's toad	*Bufo woodhousei fowleri*	none	X	X	X	X	C / F	33 37

KEY:

Frequency:	Activity:
A- abundant	N- nesting
C- common	H- hunting
R- rare	R- resting
N- not expected	F- foraging

PROJECTION OF WILDLIFE ECOLOGICAL RESPONSE (POWER)

NELSON, POPE & VOORHIS, LLC, MICROCOMPUTER MODEL

SPECIES ADAPTABILITY

This portion of the appendix has been included to present the results of a computer program to identify "Species Adaptability." This list is another component of the program developed for use by Nelson, Pope & Voorhis, LLC to determine potential impacts of the proposed project on wildlife. In this application the "Adaptability" of the observed and expected species are shown. The "adaptability" as indicated in the table, refers to whether an individual species may potentially benefit from (+) a habitat change from natural to urban/suburban setting; or, be impacted (-), or remain constant (=), as a result of this change. These values are not intended to represent the dynamics of actual species on the subject site under post-development conditions. The column entitled “Comments” provides relevant information which was obtained from the literature, as regards special habits of the particular species, such as adaptability, nesting, food, etc. This column is particularly important in assessing the potential impacts to the species as a result of the proposed project. The preceding text considers the site specific aspects of the proposed development in regard to individual species. This appendix is included to provide the reader with the benefit of what the literature which was consulted in connection with the Habitat Suitability Model suggests, in terms of generalized species dynamics resulting from land use. References are the same as those cited in the previous Species List portion of the appendix.

Successional Old Field Species - Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
American crow	Corvus brachyrhynchos	=	extremely adaptable; omnivorous	4 11
American goldfinch	Carduelis tristis	=	prefers diet of thistles and dandelions	4 20
American kestrel	Falco sparverius	-	adaptable; prefers open areas and parks; will nest near humans	4 17
American robin	Turdus migratorius	=	very adaptable; abundant in parks; nests in man-made structures	4 7
American woodcock	Philhela minor	-	prefers moist woodland and thicket near open fields	4 30
barn owl	Tyto alba	=	hunts in open areas, nests in man made structures and hollow trees	4 17
barn swallow	Hirundo rustica	+	nests almost entirely on buildings	4 15
black capped chickadee	Parus atricapillus	=	abundant around parks, urban and suburban areas	4 11
black-and-white warbler	Mniotilta varia	-	builds nests under shrubs and/or trees	4 18
black-billed cuckoo	Coccyzus erythropthalmus	-	avoids human activities	4 11
blue jay	Cyanocitta cristatta	=	extremely adaptable to human activity and other stresses	4 10
blue-winged warbler	Vermivora pinus	-	primarily abandoned and overgrown field, and thickets	4 14
brown thrasher	Toxostoma rufum	=	common in parks and suburban areas, wooded edges and dry open areas	4 9
brown-headed cowbird	Molothrus ater	=	lays eggs in other bird's nests; some stay during winter	4 6
cedar waxwing	Bombycilla cedrorum	+	prefers open woodlands, orchards and residential areas	4 23 32
chestnut-sided warbler	Dendroica pensylvanica	-	prefers first growth woods, with some open brush area	4 19
chipping sparrow	Spizella passerina	+	abundant around man made structures	4 21
common bobwhite	Colinus virginianus	-	somewhat tolerant of humans during spring and summer months	4 8
common flicker	Colaptus auratus	=	abundant around parks, suburban and urban areas	4 14
common grackle	Quiscalus quiscula	=	adapts well to urban and suburban habitats	4 6
common nighthawk	Chordeiles minor	=	primarily a grassland specie; will nest in burnt areas and roofs	4 12
common yellowthroat	Geothlypis trichas	=	found in all open brushy wet areas	4 19
Cooper's hawk	Accipiter cooperii	-	needs extensive woodland	4 17
Eastern bluebird	Sialia sialis	-	found almost entirely in nesting boxes, extremely rare in wild	4 7
Eastern kingbird	Tyrannus tyrannus	=	very adaptable to human activities; prefers open areas	4 15
Eastern meadowlark	Sturnella magna	-	found in marshes during winter months	4 6
European starling	Sturnus vulgaris	+	extremely adaptable to human activity; considered a pest	4 23
field sparrow	Spizella pusilla	-	associated with grasslands, fields and brushy wooded edges	4 21
fox sparrow	Passerella iliaca	-	boreal species, winters here in edge, thickets, brushy areas	20 21
grasshopper sparrow	Ammodramus savannarum	-	requires grasslands	4 20
gray catbird	Dumetella carolinensis	=	abundant around parks, urban and suburban areas	4 9
great-horned owl	Bubo virginianus	-	nocturnal; rare in wooded areas of less than 20 acres	4 17

Common Name	Scientific Name	Adapt.	Comments	References
house finch	Carpodacus mexicanus	+	nests almost entirely on buildings; considered a pest species	4 20
house sparrow	Passer domesticus	+	prefers buildings, urban, suburban, gardens; considered a pest	4 20
house wren	Troglodytes aedon	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
indigo bunting	Passerina cyanea	-	inhabits open woodlands with dense thickets for cover	4 20
least flycatcher	Empidonax minimus	=	prefers open areas and woodland borders; uncommon on Long Island	4 15
mourning dove	Zenaida macroura	=	abundant around parks, urban and suburban areas	4 8
Northern (dark-eyed) junco	Junco hyemalis	-	prefers forested area with elevation >300 meters; no LI atlas record	4 21
Northern cardinal	Cardinalis cardinalis	=	found around gardens, yards, parks	4 20
Northern harrier	Circus cyaneus	-	avoids humans; extremely protective of nests	4 16
Northern mockingbird	Mimus polyglottos	+	prefers to nest near humans	4 9
prairie warbler	Dendroica discolor	-	prefers scrub fields and open pine barrens habitat	4 19
red-headed woodpecker	Melanerpes erythrocephalus	=	prefers open woodlands, parks and suburban areas	4 14
red-tailed hawk	Buteo jamaicensis	-	needs 100 foot radius undisturbed area for nest	4 16
red-winged blackbird	Agelaius phoeniceus	=	needs water	4 6
ring-necked pheasant	Phasianus colchicus	-	needs fields with cover along edge	4 8
rock dove	Columba livia	+	nests almost entirely on buildings; considered a pest species	4 8
rose-breasted grosbeak	Pheucticus ludovicianus	=	mainly found on north shore	4 20
ruffed grouse	Bonasa umbellus	-	prefers dense cover, thick woods; avoids humans	4 8
rufous-sided towhee	Pipilo erythrophthalmus	-	may be present year round on Long Island	4 20
Savannah sparrow	Passerculus sandwichensis	-	found in shore areas; not expected inland	4 21
sharp-shinned hawk	Accipiter striatus	-	avoids humans; nests in heavily forested areas	4 16
song sparrow	Melospiza melodia	=	common to most habitats except deep forest, open field and marsh	4 22
swamp sparrow	Melospiza georgiana	-	prefers fresh water marshes; may be found in weedy fields, parks	4 22
whip-poor-will	Caprimulgus vociferous	-	nocturnal; prefers open woods with adjacent fields	4 12
white-crowned sparrow	Zonotrichia leucophrys	=	often found in suburban areas and city parks	22 32
willow flycatcher	Empidonax traillii	-	found mostly on south shore and western north shore areas	4 15
yellow warbler	Dendrocica petchia	=	rare breeder on LI, winter sps, abundant in parks & yards	4 18
yellow-billed cuckoo	Coccyzus americanus	-	avoids heavy urban areas; prefers wooded open or edges for nests	4 12
Mammals				
Eastern chipmunk	Tamis striatus	=	prefers open woods, thickets, and rocky areas	1 29
Eastern cottontail	Sylvilagus floridanus	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	Odocoileus virginianus	-	requires range of one-half square mile	1 25 29
red fox	Vulpes vulpes	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
Eastern mole	Scalopus aquaticus	=	tunnels underground	1 29
house mouse	Mus musculus	+	lives in association with man, not expected away from buildings	1 29

Common Name	Scientific Name	Adapt.	Comments	References
meadow-jumping mouse	Zapus hudsonicus	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	Peromyscus leucopus	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	Didelphis virginiana	=	common in suburban areas, as well as woods, marsh and coastal areas	1 29
racoon	Procyon lotor	+	nocturnal; very adaptive; found in urban and forest areas	1 29
black rat	Rattus rattus	=	lives in association with man, mainly city water front buildings	1 29
Norway rat	Rattus norvegicus	+	nocturnal; usually associated with human activity	1 29
least shrew	Cryptotis parva	-	not commonly documented on Long Island	1 29
short-tailed shrew	Blarina breuicauda	=	tunnels underground; abundant in a variety of habitats	1 29
striped skunk	Mephitis mephitis	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
meadow vole	Microtus pennsylvanicus	=	tunnels underground; prefers open woodland	29 45
pine vole	Microtus pinetorum	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	Mustela frenata	-	prefers dense wood, but may appear in all land habitats near water	1 29
woodchuck	Marmota monax	-	appears primarily in scrub woods and brushy areas; not common on LI	1 29
Herptiles				
Eastern garter snake	Thamnophis sirtalis	=	occupies a variety of habitats	38 40
eastern hognose snake	Heterodon platyrhinos	=	sandy soil and sunny roadside; feeds on herptiles and insects	38
eastern milk snake	Lampropettis d. triangulum	=	occupies a variety of habitats	38 39
Fowler's toad	Bufo woodhousei fowleri	-	found in suburban areas, gardens; breeds in shallow permanent ponds	33 37

Successional Shrubland Species - Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
red-winged blackbird	Agelaius phoeniceus	=	needs water	4 6
common bobwhite	Colinus virginianus	-	somewhat tolerant of humans during spring and summer months	4 8
indigo bunting	Passerina cyanea	-	inhabits open woodlands with dense thickets for cover	4 20
Northern cardinal	Cardinalis cardinalis	=	found around gardens, yards, parks	4 20
gray catbird	Dumetella carolinensis	=	abundant around parks, urban and suburban areas	4 9
black capped chickadee	Parus atricapillus	=	abundant around parks, urban and suburban areas	4 11
brown-headed cowbird	Molothrus ater	=	lays eggs in other bird's nests; some stay during winter	4 6
American crow	Corvus brachyrhynchos	=	extremely adaptable; omnivorous	4 11
black-billed cuckoo	Coccyzus erythropthalmus	-	avoids human activities	4 11
yellow-billed cuckoo	Coccyzus americanus	-	avoids heavy urban areas; prefers wooded open or edges for nests	4 12
mourning dove	Zenaida macroura	=	abundant around parks, urban and suburban areas	4 8
American goldfinch	Carduelis tristis	=	prefers diet of thistles and dandelions	4 20
common flicker	Colaptus auratus	=	abundant around parks, suburban and urban areas	4 14
least flycatcher	Empidonax minimus	=	prefers open areas and woodland borders; uncommon on Long Island	4 15
willow flycatcher	Empidonax traillii	-	found mostly on south shore and western north shore areas	4 15
common grackle	Quiscalus quiscula	=	adapts well to urban and suburban habitats	4 6
ruffed grouse	Bonasa umbellus	-	prefers dense cover, thick woods; avoids humans	4 8
rose-breasted grosbeak	Pheucticus ludovicianus	=	mainly found on north shore	4 20
Northern harrier	Circus cyaneus	-	avoids humans; extremely protective of nests	4 16
Cooper's hawk	Accipiter cooperii	-	needs extensive woodland	4 17
red-tailed hawk	Buteo jamaicensis	-	needs 100 foot radius undisturbed area for nest	4 16
sharp-shinned hawk	Accipiter striatus	-	avoids humans; nests in heavily forested areas	4 16
blue jay	Cyanocitta cristatta	=	extremely adaptable to human activity and other stresses	4 10
Northern (dark-eyed) junco	Junco hyemalis	-	prefers forested area with elevation >300 meters; no LI atlas record	4 21
American kestrel	Falco sparverius	-	adaptable; prefers open areas and parks; will nest near humans	4 17
Eastern kingbird	Tyrannus tyrannus	=	very adaptable to human activities; prefers open areas	4 15
golden-crowned kinglet	Regulus satrapa	-	prefers spruce vegetation; no atlas sightings on Long Island	4 7
ruby-crowned kinglet	Regulus calendula	-	occurs as non-breeding species; present during migration	4 7
Eastern meadowlark	Sturnella magna	-	found in marshes during winter months	4 6
Northern mockingbird	Mimus polyglottos	+	prefers to nest near humans	4 9
barn owl	Tyto alba	=	hunts in open areas, nests in man made structures and hollow trees	4 17
great-horned owl	Bubo virginianus	-	nocturnal; rare in wooded areas of less than 20 acres	4 17

Common Name	Scientific Name	Adapt.	Comments	References
ring-necked pheasant	Phasianus colchicus	-	needs fields with cover along edge	4 8
American redstart	Setophaga ruticilla	-	urbanization and agriculture have negative effects	4 19
American robin	Turdus migratorius	=	very adaptable; abundant in parks; nests in man-made structures	4 7
pine siskin	Carduelis pinus	=	one atlas confirmed breeding record on Long Island	4 20
fox sparrow	Passerella iliaca	-	boreal species, winters here in edge, thickets, brushy areas	20 21
field sparrow	Spizella pusilla	-	associated with grasslands, fields and brushy wooded edges	4 21
grasshopper sparrow	Ammodramus savannarum	-	requires grasslands	4 20
song sparrow	Melospiza melodia	=	common to most habitats except deep forest, open field and marsh	4 22
swamp sparrow	Melospiza georgiana	-	prefers fresh water marshes; may be found in weedy fields, parks	4 22
white-crowned sparrow	Zonotrichia leucophrys	=	often found in suburban areas and city parks	22 32
white-throated sparrow	Zonotrichia albicollis	-	prefers brushy areas and thick undergrowth	4 22
European starling	Sturnus vulgaris	+	extremely adaptable to human activity; considered a pest	4 23
barn swallow	Hirundo rustica	+	nests almost entirely on buildings	4 15
brown thrasher	Toxostoma rufum	=	common in parks and suburban areas, wooded edges and dry open areas	4 9
hermit thrush	Catharus guttatus	=	not common on Long Island; when present, prefers pine barrens	4 7
wood thrush	Hylocichla mustelina	=	prefers vacant wood (trees >40 feet); may adapt of wooded suburban	4 7
rufous-sided towhee	Pipilo erythrophthalmus	-	may be present year round on Long Island	4 20
white eyed vireo	Vireo griseus	-	avoids human activity; prefers dense swampy thickets	4 23
black-and-white warbler	Mniotilta varia	-	builds nests under shrubs and/or trees	4 18
blue-winged warbler	Vermivora pinus	-	primarily abandoned and overgrown field, and thickets	4 14
chestnut-sided warbler	Dendroica pensylvanica	-	prefers first growth woods, with some open brush area	4 19
prairie warbler	Dendroica discolor	-	prefers scrub fields and open pine barrens habitat	4 19
cedar waxwing	Bombycilla cedrorum	+	prefers open woodlands, orchards and residential areas	4 23 32
whip-poor-will	Caprimulgus vociferous	-	nocturnal; prefers open woods with adjacent fields	4 12
American woodcock	Philhela minor	-	prefers moist woodland and thicket near open fields	4 30
Carolina wren	Thryothorus ludovicianus	=	associated with woodland thickets and brushy areas, often near water	4 9
house wren	Troglodytes aedon	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
common yellowthroat	Geothlypis trichas	=	found in all open brushy wet areas	4 19
Mammals				
Eastern chipmunk	Tamis striatus	=	prefers open woods, thickets, and rocky areas	1 29
Eastern cottontail	Sylvilagus floridanus	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	Odocoileus virginianus	-	requires range of one-half square mile	1 25 29
red fox	Vulpes vulpes	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
Eastern mole	Scalopus aquaticus	=	tunnels underground	1 29
house mouse	Mus musculus	+	lives in association with man, not expected away from buildings	1 29

Common Name	Scientific Name	Adapt.	Comments	References
meadow-jumping mouse	Zapus hudsonicus	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	Peromyscus leucopus	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	Didelphis virginiana	=	common in suburban areas, as well as woods, marsh and coastal areas	1 29
racoon	Procyon lotor	+	nocturnal; very adaptive; found in urban and forest areas	1 29
black rat	Rattus rattus	=	lives in association with man, mainly city water front buildings	1 29
short-tailed shrew	Blarina breuicauda	=	tunnels underground; abundant in a variety of habitats	1 29
striped skunk	Mephitis mephitis	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
meadow vole	Microtus pennsylvanicus	=	tunnels underground; prefers open woodland	29 45
pine vole	Microtus pinetorum	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	Mustela frenata	-	prefers dense wood, but may appear in all land habitats near water	1 29
woodchuck	Marmota monax	-	appears primarily in scrub woods and brushy areas; not common on LI	1 29
Herptiles				
Eastern garter snake	Thamnophis sirtalis	=	occupies a variety of habitats	38 40
eastern hognose snake	Heterodon platyrhinos	=	sandy soil and sunny roadside; feeds on herptiles and insects	38
eastern milk snake	Lampropettis d. triangulum	=	occupies a variety of habitats	38 39
Fowler's toad	Bufo woodhousei fowleri	-	found in suburban areas, gardens; breeds in shallow permanent ponds	33 37

Pine Oak Species - Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
gray catbird	Dumetella carolinensis	=	abundant around parks, urban and suburban areas	4 9
black capped chickadee	Parus atricapillus	=	abundant around parks, urban and suburban areas	4 11
brown-headed cowbird	Molothrus ater	=	lays eggs in other bird's nests; some stay during winter	4 6
brown creeper	Certhia familiaris	-	prefers predominantly deciduous wooded areas	4 9
American crow	Corvus brachyrhynchos	=	extremely adaptable; omnivorous	4 11
yellow-billed cuckoo	Coccyzus americanus	-	avoids heavy urban areas; prefers wooded open or edges for nests	4 12
mourning dove	Zenaida macroura	=	abundant around parks, urban and suburban areas	4 8
house finch	Carpodacus mexicanus	+	nests almost entirely on buildings; considered a pest species	4 20
purple finch	Carpodacus purpureus	-	inhabits parks, suburban areas, and coniferous forests	4 20
common flicker	Colaptus auratus	=	abundant around parks, suburban and urban areas	4 14
great-crested flycatcher	Myiarchus crinitus	-	prefers deciduous forests and deciduous open woodland	4 15
common grackle	Quiscalus quiscula	=	adapts well to urban and suburban habitats	4 6
ruffed grouse	Bonasa umbellus	-	prefers dense cover, thick woods; avoids humans	4 8
broad-winged hawk	Buteo platypterus	-	avoids humans; nests only in dense forests; prefers to be near water	4 16
Cooper's hawk	Accipiter cooperii	-	needs extensive woodland	4 17
red-tailed hawk	Buteo jamaicensis	-	needs 100 foot radius undisturbed area for nest	4 16
sharp-shinned hawk	Accipiter striatus	-	avoids humans; nests in heavily forested areas	4 16
blue jay	Cyanocitta cristatta	=	extremely adaptable to human activity and other stresses	4 10
Northern (dark-eyed) junco	Junco hyemalis	-	prefers forested area with elevation >300 meters; no LI atlas record	4 21
Eastern kingbird	Tyrannus tyrannus	=	very adaptable to human activities; prefers open areas	4 15
golden-crowned kinglet	Regulus satrapa	-	prefers spruce vegetation; no atlas sightings on Long Island	4 7
Northern mockingbird	Mimus polyglottos	+	prefers to nest near humans	4 9
white-breasted nuthatch	Sitta carolinensis	=	abundant in parks, urban and suburban areas	4 9
northern oriole	Icterus galbula	=	prefers deciduous woodland and shade trees	4 6
ovenbird	Seiurus aurocapillus	-	prefers open forest floor and woodlot greater than 35 acres	4 19
common screech owl	Otus asio	=	nocturnal; nests in hollow trees, abandoned buildings, nest boxes	4 17
great-horned owl	Bubo virginianus	-	nocturnal; rare in wooded areas of less than 20 acres	4 17
long-eared owl	Asio otus	-	nocturnal; prefers dense forested areas near water	4 17
American robin	Turdus migratorius	=	very adaptable; abundant in parks; nests in man-made structures	4 7
yellow-bellied sapsucker	Sphyrapicus varius	=	nests in tree cavity; found in parks, yards and gardens	14
pine siskin	Carduelis pinus	=	one atlas confirmed breeding record on Long Island	4 20
fox sparrow	Passerella iliaca	-	boreal species, winters here in edge, thickets, brushy areas	20 21

Common Name	Scientific Name	Adapt.	Comments	References
house sparrow	Passer domesticus	+	prefers buildings, urban, suburban, gardens; considered a pest	4 20
song sparrow	Melospiza melodia	=	common to most habitats except deep forest, open field and marsh	4 22
white-throated sparrow	Zonotrichia albicollis	-	prefers brushy areas and thick undergrowth	4 22
European starling	Sturnus vulgaris	+	extremely adaptable to human activity; considered a pest	4 23
chimney swift	Chaetura pelagica	+	nests in chimneys, with few exceptions	4 42
scarlet tanager	Piranga olivacea	-	rare in wooded area of less than 50 acres; affected by fragmentation	4
brown thrasher	Toxostoma rufum	=	common in parks, suburban areas, wooded edges, dry open areas	4 9
hermit thrush	Catharus guttatus	=	not common on Long Island; when present, prefers pine barrens	4 7
wood thrush	Hylocichla mustelina	=	prefers vacant wood (trees >40 feet); may adapt of wooded suburban	4 7
tufted titmouse	Parus bicolor	=	common in suburban areas	4 11
veery	Catharus fuscescens	-	prefers damp forest with undergrowth; affected by fragmentation	4 7
red-eyed vireo	Vireo olivaceus	=	found in parks and suburban areas with shade trees and undergrowth	4 23
black-and-white warbler	Mniotilta varia	-	builds nests under shrubs and/or trees	4 18
black-throated blue warbler	Dendroica caerulescens	=	migratory, large range; forest interior specie; can adapt to suburb	18
pine warbler	Dendroica pinus	-	prefers pine forest; may appear in overgrown field	4 19
prairie warbler	Dendroica discolor	-	prefers scrub fields and open pine barrens habitat	4 19
yellow-rumped warbler	Dendroica coronata	-	prefers mixed and conifer forest; may be in yards	4 8
cedar waxwing	Bombycilla cedrorum	+	prefers open woodlands, orchards and residential areas	4 23 32
whip-poor-will	Caprimulgus vociferous	-	nocturnal; prefers open woods with adjacent fields	4 12
Eastern wood-peewee	Contopus virens	=	prefers suburban areas, parks and villages with shade trees	4 15
downy woodpecker	Picoides pubescens	=	found in parks and suburban areas	4 14
hairy woodpecker	Picoides villosus	=	found mainly in deciduous forests	4 14
red-bellied woodpecker	Melanerpes carolinus	=	prefers forest openings; mostly found on Long Island north shore	4 14
house wren	Troglodytes aedon	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
Mammals				
big-brown bat	Eptesicus fuscus	+	roosts in structures; found throughout LI; hunts over water	1 29
hoary bat	Lasiurus borealis	=	roosts in trees, sometimes found in parks	45
Keen's bat	Myotis keenii	+	roosts in buildings, crevices and bark; more common on eastern LI	1 29
little-brown bat	Myotis lucifugus	+	roosts in buildings and man made structures; hunts over water	1 29
red bat	Lasiurus borealis	-	feeds in marsh area; nests within 1000 yards of marsh in trees	1 29
Eastern pipistrelle	Pipistrellus subflavus	=	found near water in open woods, also found in buildings	1 29
silver-haired bat	Lasionycteris noctivagans	-	prefers wooded areas near water, primarily during summer months	1 29
Eastern chipmunk	Tamis striatus	=	prefers open woods, thickets, and rocky areas	1 29
Eastern cottontail	Sylvilagus floridanus	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	Odocoileus virginianus	-	requires range of one-half square mile	1 25 29
red fox	Vulpes vulpes	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29

Common Name	Scientific Name	Adapt.	Comments	References
Eastern mole	Scalopus aquaticus	=	tunnels underground	1 29
house mouse	Mus musculus	+	lives in association with man, not expected away from buildings	1 29
meadow-jumping mouse	Zapus hudsonicus	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	Peromyscus leucopus	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	Didelphis virginiana	=	common in suburban areas, woods, marsh and coastal areas	1 29
racoon	Procyon lotor	+	nocturnal; very adaptive; found in urban and forest areas	1 29
masked shrew	Sorex cinereus	=	tunnels underground; common in wood and wet habitats	1 29
short-tailed shrew	Blarina breuicauda	=	tunnels underground; abundant in a variety of habitats	1 29
striped skunk	Mephitis mephitis	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
Eastern gray squirrel	Sciurus carolinensis	=	found in parks, urban and suburban areas; very adaptable	1 29
southern-flying squirrel	Glaucimys volans	-	common in deep mixed, deciduous and coniferous woods	1 29
pine vole	Microtus pinetorum	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	Mustela frenata	-	prefers dense wood, but may appear in all land habitats near water	1 29
woodchuck	Marmota monax	-	appears primarily in scrub woods and brushy areas; not common on LI	1 29
Herptiles				
common gray treefrog	Hyla versicolor	-	prefer mossy trees near ponds	33 37
red-backed salamander	Plethodon cinerus cinerus	-	terrestrial, prevelent in moist situations	34 36
Eastern tiger salamander	Ambystoma tigrinum tigrinum	-	needs fishless pond or vernal pond with 500' vacant radius to breed	36 38
marbled salamander	Ambystoma opacum	=	moist to sandy areas; lays eggs in fall in low spots wet by rain	34 36 38
Eastern garter snake	Thamnophis sirtalis	=	occupies a variety of habitats	38 40
eastern hognose snake	Heterodon platyrhinos	=	sandy soil and sunny roadside; feeds on herptiles and insects	38
eastern milk snake	Lampropettis d. triangulum	=	occupies a variety of habitats	38 39
Eastern spadefoot toad	Scaphiopus holbrooki	-	nocturnal; burrows in sandy soil; eats insects, worms; gardens, etc.	33
Fowler's toad	Bufo woodhousei fowleri	-	found in suburban areas, gardens; breeds in shallow permanent ponds	33 37
Eastern box turtle	Terrepene carolina	-	terrestrial based species	41

Wooded Swamp Species : Adaptability and Comments

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
red-winged blackbird	Agelaius phoeniceus	=	needs water	4 6
Northern cardinal	Cardinalis cardinalis	=	found around gardens, yards, parks	4 20
wood duck	Aix sponsa	-	prefers wooded rivers and ponds, and wooded swamps	4 27
great-crested flycatcher	Myiarchus crinitus	-	prefers deciduous forests and deciduous open woodland	4 15
blue-grey gnatcatcher	Polioptila caerulea	=	prefers dense foliated trees along water ways	4 7
rose-breasted grosbeak	Pheucticus ludovicianus	=	mainly found on north shore	4 20
yellow-crowned night-heron	Nycticorax violaceus	-	nests in low coastal shrubbery; prefers islands	4 26
mallard	Anas platyrhynchos	-	adaptable to human activity	4 27
white-breasted nuthatch	Sitta carolinensis	=	abundant in parks, urban and suburban areas	4 9
osprey	Pandion haliaetus	-	associated with seacoast, sometimes lakes and rivers	4 16
great-horned owl	Bubo virginianus	-	nocturnal; rare in wooded areas of less than 20 acres	4 17
saw-whet owl	Aegolius acadicus	-	nocuturnal; low moist coniferous; winter in parks, yards, thickets	4 17
Eastern phoebe	Sayornis phoebe	=	prefers open wood near stream; nests in log, building, bridge, cliff	4 15
spotted sandpiper	Actitus macularia	-	nests on ground in grassy areas	4 31 32
swamp sparrow	Melospiza georgiana	-	prefers fresh water marshes; may be found in weedy fields, parks	4 22
European starling	Sturnus vulgaris	+	extremely adaptable to human activity; considered a pest	4 23
tree swallow	Tachycineta bicolor	=	always nests near water	4 15
tufted titmouse	Parus bicolor	=	common in suburban areas	4 11
veery	Catharus fuscescens	-	prefers damp forest with undergrowth; affected by fragmentation	4 7
yellow warbler	Dendrocica petchia	=	rare breeder on LI, winter sps, abundant in parks & yards	4 18
American woodcock	Philhela minor	-	prefers moist woodland and thicket near open fields	4 30
downy woodpecker	Picoides pubescens	=	found in parks and suburban areas	4 14
hairy woodpecker	Picoides villosus	=	found mainly in deciduous forests	4 14
red-bellied woodpecker	Melanerpes carolinus	=	prefers forest openings; mostly found on Long Island north shore	4 14
Mammals				
big-brown bat	Eptesicus fuscus	+	roosts in structures; found throughout LI; hunts over water	1 29
little-brown bat	Myotis lucifugus	+	roosts in buildings and man made structures; hunts over water	1 29
Eastern cottontail	Sylvilagus floridanus	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	Odocoileus virginianus	-	requires range of one-half square mile	1 25 29
red fox	Vulpes vulpes	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
mink	Mustela vison	-	prefers wetlands surrounded by forested areas	1
star-nosed mole	Condylura cristata	-	prefers wet, black, soil with earthworms	1 29
meadow-jumping mouse	Zapus hudsonicus	=	found around water in pine barrens; prefers open areas with grasses	1 29

Common Name	Scientific Name	Adapt.	Comments	References
white-footed mouse	Peromyscus leucopus	=	common to most all habitats; does not adapt well to human activity	1 29
muskrat	Ondarta zibethicus	-	prefers damp and marshy fresh and salt water habitats	1 29
Virginia opossum	Didelphis virginiana	=	common in suburban areas, woods, marsh and coastal areas	1 29
racoon	Procyon lotor	+	nocturnal; very adaptive; found in urban and forest areas	1 29
Norway rat	Rattus norvegicus	+	nocturnal; usually associated with human activity	1 29
masked shrew	Sorex cinereus	=	tunnels underground; common in wood and wet habitats	1 29
short-tailed shrew	Blarina breuicauda	=	tunnels underground; abundant in a variety of habitats	1 29
Eastern gray squirrel	Sciurus carolinensis	=	found in parks, urban and suburban areas; very adaptable	1 29
southern-flying squirrel	Glaucimys volans	-	common in deep mixed, deciduous and coniferous woods	1 29
meadow vole	Microtus pennsylvanicus	=	tunnels underground; prefers open woodland	29 45
pine vole	Microtus pinetorum	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	Mustela frenata	-	prefers dense wood, but may appear in all land habitats near water	1 29
Herptiles				
bull frog	Rana catesbeiana	-	strictly aquatic, wooded lakes	33 34 35 37
common gray treefrog	Hyla versicolor	-	prefer mossy trees near ponds	33 37
green frog	Rana clamitans	-	mainly aquatic species	33 35 37
Southern leopard frog	Rana pipiens sphenocephala	-	prefers shallow fresh to brackish pond; may be in meadow in summer	35 37 38
wood frog	Rana sylvatica	-	prefers leafy pools and transient pools in wooded areas	33 37
red-spotted newt	Notophthalmus viridescens	-	prefers shallow ponds in wooded areas; open moist woods	36 38
spring peeper	Hyla crucifer	=	prefers pools/marsh near woodland; found high in trees in summer	33 35 38
spotted salamander	Ambystoma maculatum	-	will breed in pond or vernal ponds in late March, early April	34 36 38
Eastern tiger salamander	Ambystoma tigrinum tigrinum	-	needs fishless pond or vernal pond with 500' vacant radius to breed	36 38
marbled salamander	Ambystoma opacum	=	moist to sandy areas; lays eggs in fall in low spots wet by rain	34 36 38
Eastern garter snake	Thamnophis sirtalis	=	occupies a variety of habitats	38 40
eastern milk snake	Lampropettis d. triangulum	=	occupies a variety of habitats	38 39
Eastern ribbon snake	Thamnophis s. sauritus	=	semi-aquatic specie seldom wanders far from wet areas	38 40
Northern brown snake	Storeria dekayi	=	prefers fresh marsh, moist woods, but, adapts to urban environment	38
Northern ringneck snake	Diadophis punctatus	=	prefers secluded moist areas under logs/stones; can adapt to suburb	38
Northern water snake	Natrix sipedon sipedon	-	common in swamp, bog, marsh, stream, pond and lake environments	38 39
painted turtle	Chrysemys picta	-	prefers small bodies of water	38

Terrestrial Cultural Species : Adaptability

Common Name	Scientific Name	Adapt.	Comments	References
Birds				
red-winged blackbird	Agelaius phoeniceus	=	needs water	4 6
Eastern bluebird	Sialia sialis	-	found almost entirely in nesting boxes, extremely rare in wild	4 7
common bobwhite	Colinus virginianus	-	somewhat tolerant of humans during spring and summer months	4 8
indigo bunting	Passerina cyanea	-	inhabits open woodlands with dense thickets for cover	4 20
Northern cardinal	Cardinalis cardinalis	=	found around gardens, yards, parks	4 20
gray catbird	Dumetella carolinensis	=	abundant around parks, urban and suburban areas	4 9
brown-headed cowbird	Molothrus ater	=	lays eggs in other bird's nests; some stay during winter	4 6
American crow	Corvus brachyrhynchos	=	extremely adaptable; omnivorous	4 11
mourning dove	Zenaida macroura	=	abundant around parks, urban and suburban areas	4 8
rock dove	Columba livia	+	nests almost entirely on buildings; considered a pest species	4 8
great-crested flycatcher	Myiarchus crinitus	-	prefers deciduous forests and deciduous open woodland	4 15
common grackle	Quiscalus quiscula	=	adapts well to urban and suburban habitats	4 6
Northern harrier	Circus cyaneus	-	avoids humans; extremely protective of nests	4 16
Cooper's hawk	Accipiter cooperii	-	needs extensive woodland	4 17
red-tailed hawk	Buteo jamaicensis	-	needs 100 foot radius undisturbed area for nest	4 16
sharp-shinned hawk	Accipiter striatus	-	avoids humans; nests in heavily forested areas	4 16
blue jay	Cyanocitta cristatta	=	extremely adaptable to human activity and other stresses	4 10
American kestrel	Falco sparverius	-	adaptable; prefers open areas and parks; will nest near humans	4 17
killdeer	Charadrius vociferus	=	grassland species prefers coastal and wet areas with sparse growth	4 31 32
Eastern kingbird	Tyrannus tyrannus	=	very adaptable to human activities; prefers open areas	4 15
Eastern meadowlark	Sturnella magna	-	found in marshes during winter months	4 6
Northern mockingbird	Mimus polyglottos	+	prefers to nest near humans	4 9
common nighthawk	Chordeiles minor	=	primarily a grassland specie; will nest in burnt areas and roofs	4 12
barn owl	Tyto alba	=	hunts in open areas, nests in man made structures and hollow trees	4 17
great-horned owl	Bubo virginianus	-	nocturnal; rare in wooded areas of less than 20 acres	4 17
ring-necked pheasant	Phasianus colchicus	-	needs fields with cover along edge	4 8
black-bellied plover	Pluvialis squatarola	-	non-breeder on LI; may forage during summer, occasionally winter	31 32
American robin	Turdus migratorius	=	very adaptable; abundant in parks; nests in man-made structures	4 7
chipping sparrow	Spizella passerina	+	abundant around man made structures	4 21
field sparrow	Spizella pusilla	-	associated with grasslands, fields and brushy wooded edges	4 21
grasshopper sparrow	Ammodramus savannarum	-	requires grasslands	4 20
house sparrow	Passer domesticus	+	prefers buildings, urban, suburban, gardens; considered a pest	4 20

Common Name	Scientific Name	Adapt.	Comments	References
Savannah sparrow	Passerculus sandwichensis	-	found in shore areas; not expected inland	4 21
song sparrow	Melospiza melodia	=	common to most habitats except deep forest, open field and marsh	4 22
white-crowned sparrow	Zonotrichia leucophrys	=	often found in suburban areas and city parks	22 32
European starling	Sturnus vulgaris	+	extremely adaptable to human activity; considered a pest	4 23
barn swallow	Hirundo rustica	+	nests almost entirely on buildings	4 15
chimney swift	Chaetura pelagica	+	nests in chimneys, with few exceptions	4 42
brown thrasher	Toxostoma rufum	=	common in parks, suburban areas, wooded edges, dry open areas	4 9
chestnut-sided warbler	Dendroica pensylvanica	-	prefers first growth woods, with some open brush area	4 19
cedar waxwing	Bombycilla cedrorum	+	prefers open woodlands, orchards and residential areas	4 23 32
whip-poor-will	Caprimulgus vociferous	-	nocturnal; prefers open woods with adjacent fields	4 12
American woodcock	Philhela minor	-	prefers moist woodland and thicket near open fields	4 30
red-headed woodpecker	Melanerpes erythrocephalus	=	prefers open woodlands, parks and suburban areas	4 14
house wren	Troglodytes aedon	=	found in suburban areas and gardens; nests in crevices of buildings	4 9
Mammals				
Eastern pipistrelle	Pipistrellus subflavus	=	found near water in open woods, also found in buildings	1 29
Eastern cottontail	Sylvilagus floridanus	=	will adapt to suburban areas, if there is sufficient cover	1 29
white-tailed deer	Odocoileus virginianus	-	requires range of one-half square mile	1 25 29
red fox	Vulpes vulpes	-	builds den in wooded areas with loose-sandy soil and good drainage	1 29
house mouse	Mus musculus	+	lives in association with man, not expected away from buildings	1 29
meadow-jumping mouse	Zapus hudsonicus	=	found around water in pine barrens; prefers open areas with grasses	1 29
white-footed mouse	Peromyscus leucopus	=	common to most all habitats; does not adapt well to human activity	1 29
Virginia opossum	Didelphis virginiana	=	common in suburban areas, woods, marsh and coastal areas	1 29
racoon	Procyon lotor	+	nocturnal; very adaptive; found in urban and forest areas	1 29
black rat	Rattus rattus	=	lives in association with man, mainly city water front buildings	1 29
Norway rat	Rattus norvegicus	+	nocturnal; usually associated with human activity	1 29
least shrew	Cryptotis parva	-	not commonly documented on Long Island	1 29
striped skunk	Mephitis mephitis	=	prefers mixed wood & brush within 2 miles of water; not expected on LI	1 29
pine vole	Microtus pinetorum	=	tunnels underground; prefers sandy soil in woods and field; can swim	1 29
long-tailed weasel	Mustela frenata	-	prefers dense wood, but may appear in all land habitats near water	1 29
Herptiles				
Eastern garter snake	Thamnophis sirtalis	=	occupies a variety of habitats	38 40
eastern milk snake	Lampropettis d. triangulum	=	occupies a variety of habitats	38 39
Fowler's toad	Bufo woodhousei fowleri	-	found in suburban areas, gardens; breeds in shallow permanent ponds	33 37

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Appendix E-3
NYS Natural Heritage Program Correspondence

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925
www.dec.state.ny.us

Alexander B. Grannis
Commissioner

March 2, 2009

RECEIVED
MAR 0 4 2009
NELSON & POPE

Phillip A. Malicki
Nelson, Pope & Voorhis
572 Walt Whitman Road
Melville, NY 11747-2188

Dear Mr. Malicki:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Planned Development at a 170-Acre Parcel, called the 'Racetrack Parcel', Project 8810 18, area as indicated on the map you provided, located in Yaphank, town of Brookhaven, Suffolk County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environment impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,
Tara Salerno jp
Tara Salerno, Information Services
New York Natural Heritage Program

cc: Reg. 1, Wildlife Mgr.
Peter Nye, Endangered Species Unit, Albany

Natural Heritage Report on Rare Species

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~This report contains **SENSITIVE** information that should not be released to the public without permission from the NY Natural Heritage Program.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~We do not provide maps for species most vulnerable to disturbance.

Natural Heritage Report on Rare Species and Ecological Communities

AMPHIBIANS

					Office Use
Ambystoma tigrinum					
Tiger Salamander	**NY Legal Status:**	Endangered	**NYS Rank:**	S1S2 - Critically imperiled	4328
	Federal Listing:		**Global Rank:**	G5 - Demonstrably secure	ESU
	County:	Suffolk			
	Town:	Brookhaven			
	Location:	Documented within 0.25 mile of project site. In addition to potential impacts on the documented locations, animals can move 0.25 mile from these locations. For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.			

1 Records Processed

More detailed information about many of the rare and listed animals in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, and from NYSDEC at http://www.dec.ny.gov/animals/7494.html.

Natural Heritage Report on Rare Species and Ecological Communities

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor, Albany, NY
12233-4757
(518) 402-8935

-This report contains **SENSITIVE** information that should not be released to the public without permission from the NY Natural Heritage Program.
-Refer to the User's Guide for explanations of codes, ranks and fields.
-Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities

COMMUNITIES

Coastal plain pond

This occurrence of Coastal Plain Pond is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

Office Use

NY Legal Status: Unlisted
NYS Rank: S2
6213
Federal Listing:
Global Rank: G3G4
Last Report: 1985-07-16
EO Rank:
County: Suffolk
SL
Town: Brookhaven
Location: Weeks Pond
Directions: Going west, take the Long Island Expressway to exit 67N. Park on the exit ramp at a pull off. Weeks Pond is 0.1 mi to the east, north of the highway. There is no exit 67 going east.
General Quality and Habitat: This is an excellent example, but very near expressway, subject to runoff. Round, shallow pond with woods cleared from margin, surrounded by wet meadow and successional shrubland.

/ASCULAR PLANTS

Bartonia paniculata ssp. paniculata

Office Use

Screw-stem

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
12329
Federal Listing:
Global Rank: G5T5 - Demonstrably secure
Last Report: 1997-08-22
EO Rank: Extant
County: Suffolk
Town: Brookhaven
Location: WEEKS POND
Directions: Specimen label: The plants are in a fen-like area along the west side of the Carmans River, about 100 meters south of the Long Island Expressway overpass. They are in a seepy sphagnaceous area along the river.
General Quality and Habitat: The plants are in a seepy/inundated sphagnaceous area along the river.

Carex bullata

Office Use 4232

Button Sedge

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5 - Demonstrably secure
Last Report: 2001-07
EO Rank: Good
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
Directions: Weeks Pond. Group 1: The plants are along the river bank on the east side of Carmens River immediately north of Route 495; the plants are in a sedge meadow along Carmens River. Group 2: From the junction of Long Island Expressway and Carmens River, the plants are to the immediate southeast approximately 35-70 meters from the road on the east side of the river. 1921: Cranberry bog, Yaphank.

General Quality and Habitat: There are over 500 clumps in good habitat. The plants are on the wet, muddy banks of Carmens River in a small sedge meadow dominated by Carex stricta. Associated species: Carex comosa, Rubus hispidus, Acer rubrum, Juncus canadensis, Solidago sp., Mikania scandens, Rynchospora capitellata, Apocynum androsaemifolium, Scirpus americanus, Solidago graminifolia, Panicum clandestinum, Rosa multiflora, Polygonum sagittatum, Sphagnum spp.

Gamochaeta purpurea

Office Use 1345

Purple Everlasting

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5 - Demonstrably secure
Last Report: 1984
EO Rank: Failed to find but search more

SC

County: Suffolk
Town: Brookhaven
Location: Weeks Pond
Directions: East side of Carmans River south of Long Island Expressway.
General Quality and Habitat: Sought 1984-1986 with no luck. Wet disturbed pine barrens along major highway and Carmans River.

Scleria pauciflora var. caroliniana

Office Use 1690

Few-flowered Nutrush

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5T4T5 - Apparently secure
Last Report: 1985-06-07
EO Rank: Fair

SL

County: Suffolk
Town: Brookhaven
Location: Weeks Pond
Directions: The plants were observed at Weeks Pond. Take the Long Island Expressway west to exit 67N. Park at the exit ramp pull-off. Weeks Pond is 0.1 mi to the east, north of the highway. The plants are in successional pine barrens on the north border of the pond.

General Quality and Habitat: Two plants at upper edge of pond in successional pine barrens. A round, shallow pond with woods cleared from the margin. Associated species: Andropogon scoparius, Lespedeza and Desmodium spp., Vaccinium corymbosum, and Myrica pensylvanica. Successional pine barrens.

Scleria triglomerata

Office Use

Whip Nutrush

NY Legal Status: Threatened **NYS Rank:** S1 - Critically imperiled 3839

Federal Listing: **Global Rank:** G5 - Demonstrably secure

Last Report: 1991-08-29 **EO Rank:** Good

County: Suffolk SL

Town: Brookhaven

Location: Weeks Pond

Directions: Take the Long Island Expressway west to exit 67N. Park at the exit ramp pull-off. Weeks Pond is 0.1 mi to the east, north of the highway. The plants are located along the north and west borders of the pond.

General Quality and Habitat: This is a fair population in good, protectable habitat. A round, shallow pond with woods cleared from the pond margin: The plants are growing at the wet/dry interface around a disturbed pond in successional habitat. Associated species: Andropogon scoparius, Vaccinium corymbosum, Lespedeza and Desmodium.

Utricularia striata

Office Use

Fibrous Bladderwort

NY Legal Status: Threatened **NYS Rank:** S2 - Imperiled 6832

Federal Listing: **Global Rank:** G4G5 - Apparently secure

Last Report: 2004-08-26 **EO Rank:** Excellent or Good

County: Suffolk

Town: Brookhaven

Location: Weeks Pond

Directions: Group 1: Go west from exit 68 of the Long Island Expressway to the exit road of exit 67 (Yaphank) and park along the roadside. Walk back east to the pond and find an opening in the chain-link fence on the southeast side of the pond. The plants are in the muck on the southeast side of the pond. Group 2: On the westbound lanes of the Long Island Expressway exit at exit number 67 and go north toward Yaphank. Before crossing the Carmans River, park on the east side of the road then walk north across the river to an old house north of the river. From here, head east through the woods along the southern border and fence of St. Andrews church. After the church, head southeast through the woods to the pond. The plants of Utricularia striata are along the northeastern and northern shore of the pond.

General Quality and Habitat: There are hundreds of vigorous plants in good habitat. Group 1: Plants were within Eleocharis acicularis in mud at the edge of a coastal plain pond. Group 2: This is a coastal plain pond shore. The plants are in the low vegetation and the mud around the edge of the pond. Associated species: Eleocharis robbinsii, Fimbristylis autumnalis, and Schoenoplectus americanus.

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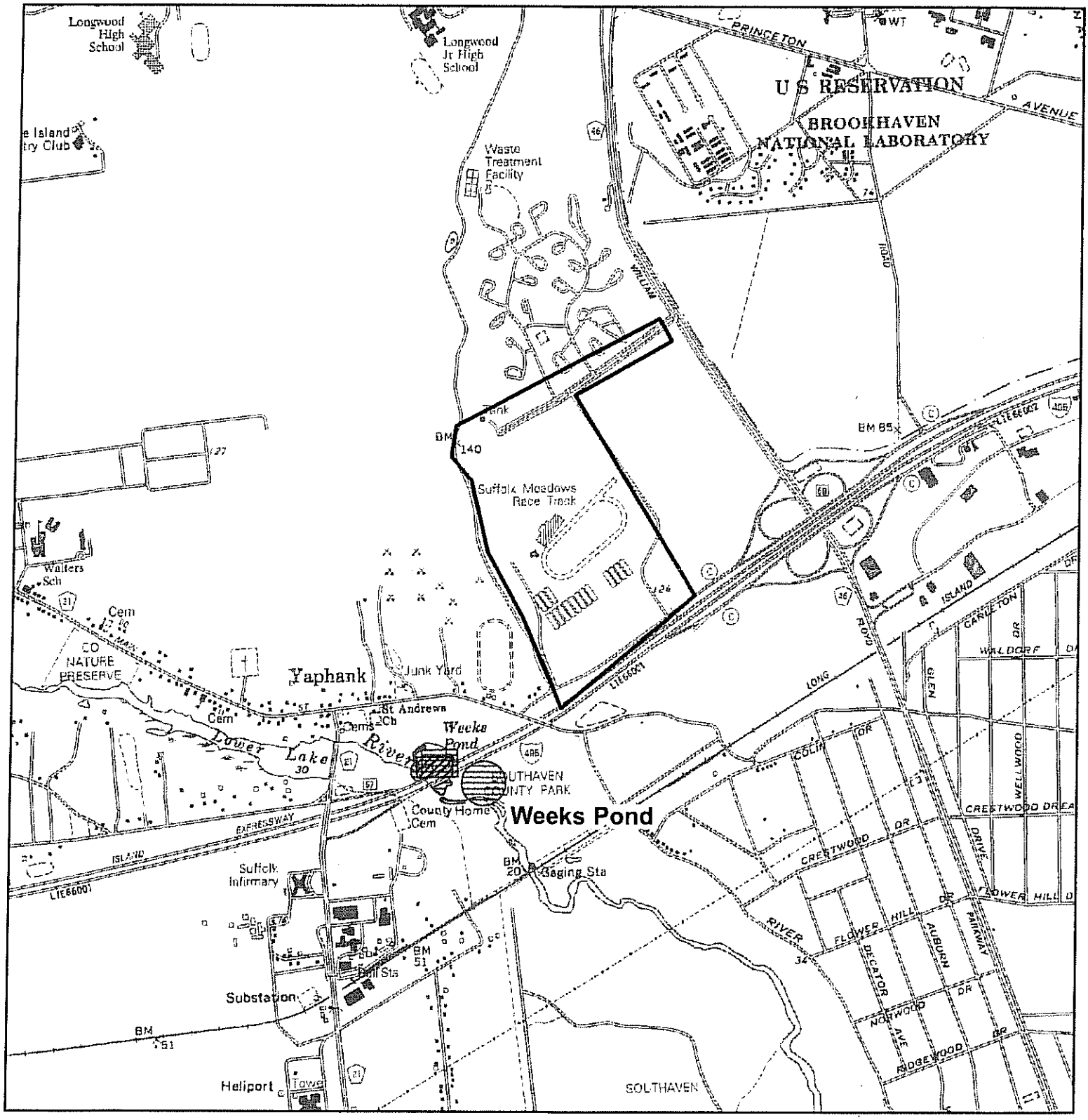
7 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, from NYSDEC at http://www.dec.ny.gov/animals/7494.html (for animals), and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to http://www.dec.ny.gov/animals/29384.html and click on DRAFT--Ecological Communities of New York State.

Natural Heritage Map of Rare Species and Ecological Communities

Prepared February 18, 2009 by the NY Natural Heritage Program, NYS DEC Albany, NY



Legend

Project Site

NY Natural Heritage Program Database Records*

Plant

Community

1:24,000

0 0.15 0.3 0.6 0.9 1.2 Miles

*The locations that are displayed are considered sensitive and should not be released to the public without permission. We do not provide map locations for all records. Please see report for details.

N W E S

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier.
There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided.
If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

Natural Heritage Report on Rare Species and Ecological Communities

BUTTERFLIES and SKIPPERS

Erynnis persius persius

Persius Duskywing

Office Use 459

NY Legal Status: Endangered
NYS Rank: SH - Historical
Federal Listing:
Global Rank: G5T1T3 - Critically imperiled — ESU
Last Report: -----05-17
EO Rank: Historical, no recent information
County: Suffolk — M
Town: Brookhaven
Location: Yaphank
Directions: The specimen label reports the location as "Yaphank".
General Quality and Habitat:

DRAGONFLIES and DAMSELFLIES

Anax longipes

Comet Darner

Office Use 12585

NY Legal Status: Unlisted
NYS Rank: S2 - Imperiled
Federal Listing:
Global Rank: G5 - Demonstrably secure
Last Report: 1908-07-26
EO Rank: Historical, no recent information
County: Suffolk
Town: Brookhaven
Location: Yaphank
Directions: The dragonfly was seen in Yaphank in Brookhaven on Long Island.
General Quality and Habitat: The dragonfly was observed in a small town on Long Island.

/ASCULAR PLANTS

Crataegus uniflora

Office Use 4037

Dwarf Hawthorn

NY Legal Status: Endangered
Federal Listing:
Last Report: 1907-07-14

NYS Rank: S1 - Critically imperiled
Global Rank: G5 - Demonstrably secure
EO Rank: Historical, no recent information

County: Suffolk
Town: Brookhaven
Location: Yapank
Directions: Specimen label: Yaphank.
General Quality and Habitat:

M

Gaylussacia bigeloviana

Office Use 7449

Northern Dwarf Huckleberry

NY Legal Status: Endangered
Federal Listing:
Last Report: 1919-06-26

NYS Rank: S1S2 - Critically imperiled
Global Rank: G4G5 - Apparently secure
EO Rank: Historical, no recent information

County: Suffolk
Town: Brookhaven
Location: Brookhaven National Laboratory
Directions: Camp Upton, west of hospital. [hospital was on diagonal roads on the southwest part of site].
General Quality and Habitat:

M

Lechea tenuifolia

Office Use 3562

Slender Pinweed

NY Legal Status: Threatened
Federal Listing:
Last Report: 1912-09-01

NYS Rank: S2 - Imperiled
Global Rank: G5 - Demonstrably secure
EO Rank: Historical, no recent information

County: Suffolk
Town: Brookhaven
Location: Yapank
Directions: Specimen label: Yaphank.
General Quality and Habitat:

M

Symphyotrichum concolor var. concolor

Office Use 3802

Silvery Aster

NY Legal Status: Endangered
Federal Listing:
Last Report: 1911-09-28

NYS Rank: S1 - Critically imperiled
Global Rank: G5T5 - Demonstrably secure
EO Rank: Historical, no recent information

County: Suffolk
Town: Brookhaven
Location: Yaphank
Directions: Specimen label: Yaphank and vicinity. Vicinity of Longwood and Moriches Fork.
General Quality and Habitat:

M

USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, 5th Floor, Albany, NY 12233-4757 phone: (518) 402-8935

NATURAL HERITAGE PROGRAM: The NY Natural Heritage Program is a partnership between the NYS Department of Environmental Conservation (NYS DEC) and The Nature Conservancy. Our Mission is to facilitate the conservation of New York's biodiversity by providing comprehensive information and scientific expertise on rare species and natural ecosystems to resource managers and other conservation partners. We accomplish this mission by combining thorough field inventories, scientific analyses, expert interpretation, and the most comprehensive database on New York's distinctive biodiversity to deliver the highest quality information for natural resource planning, protection, and management.

DATA SENSITIVITY: The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should not be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

EO RANK: A letter code for the quality of the occurrence of the rare species or significant natural community, based on population size or area, condition, and landscape context.

A-E = Extant: A=Excellent, B=Good, C=Fair, D=Poor, E=Extant but with insufficient data to assign a rank of A-D.
F = Failed to find. Did not locate species during a limited search, but habitat is still there and further field work is justified.
H = Historical. Historical occurrence without any recent field information.
X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.
U = Extant/Historical status uncertain.
Blank = Not assigned.

LAST REPORT: The date that the rare species or significant natural community was last observed at this location, as documented in the Natural Heritage databases. The format is most often YYYY-MM-DD.

NY LEGAL STATUS – Animals:

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Animals listed as Endangered, Threatened, or Special Concern are protected against taking, importation, transportation, possession, or sale without a permit. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E - **Endangered Species**: any species which meet one of the following criteria:
- Any native species in imminent danger of extirpation or extinction in New York.
- Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T - **Threatened Species**: any species which meet one of the following criteria:
- Any native species likely to become an endangered species within the foreseeable future in NY.
- Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC - **Special Concern Species**: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York.

P - **Protected Wildlife** (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U - **Unprotected** (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

G - **Game** (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY LEGAL STATUS – Plants:

The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

E - **Endangered Species**: listed species are those with:
- 5 or fewer extant sites, or
- fewer than 1,000 individuals, or
- restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
- species listed as endangered by U.S. Dept. of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

T - **Threatened**: listed species are those with:
- 6 to fewer than 20 extant sites, or
- 1,000 to fewer than 3,000 individuals, or
- restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
- listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, 5th Floor, Albany, NY 12233-4757 phone: (518) 402-8935

NATURAL HERITAGE PROGRAM: The NY Natural Heritage Program is a partnership between the NYS Department of Environmental Conservation (NYS DEC) and The Nature Conservancy. Our Mission is to facilitate the conservation of New York's biodiversity by providing comprehensive information and scientific expertise on rare species and natural ecosystems to resource managers and other conservation partners. We accomplish this mission by combining thorough field inventories, scientific analyses, expert interpretation, and the most comprehensive database on New York's distinctive biodiversity to deliver the highest quality information for natural resource planning, protection, and management.

DATA SENSITIVITY: The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should <u>not</u> be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

EO RANK: A letter code for the quality of the occurrence of the rare species or significant natural community, based on population size or area, condition, and landscape context.

A-E = Extant: A=Excellent, B=Good, C=Fair, D=Poor, E=Extant but with insufficient data to assign a rank of A-D.
F = Failed to find. Did not locate species during a limited search, but habitat is still there and further field work is justified.
H = Historical. Historical occurrence without any recent field information.
X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.
U = Extant/Historical status uncertain.
Blank = Not assigned.

LAST REPORT: The date that the rare species or significant natural community was last observed at this location, as documented in the Natural Heritage databases. The format is most often YYYY-MM-DD.

NY LEGAL STATUS – Animals:

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Animals listed as Endangered, Threatened, or Special Concern are protected against taking, importation, transportation, possession, or sale without a permit. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E - **Endangered Species**: any species which meet one of the following criteria:
- Any native species in imminent danger of extirpation or extinction in New York.
- Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T - **Threatened Species**: any species which meet one of the following criteria:
- Any native species likely to become an endangered species within the foreseeable future in NY.
- Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC - **Special Concern Species**: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York.

P - **Protected Wildlife** (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U - **Unprotected** (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

G - **Game** (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY LEGAL STATUS – Plants:

The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

E - **Endangered Species**: listed species are those with:
- 5 or fewer extant sites, or
- fewer than 1,000 individuals, or
- restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
- species listed as endangered by U.S. Dept. of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

T - **Threatened**: listed species are those with:
- 6 to fewer than 20 extant sites, or
- 1,000 to fewer than 3,000 individuals, or
- restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
- listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

STATE OF NEW YORK)
) ss.:
COUNTY OF SUFFOLK)

On the 25th day of May, 1973, before me personally came JOHN M. FLYNN, to me known, who being by me duly sworn, did depose and say that he resides at OAK TREE DRIVE, EAST MORICHES, NEW YORK, that he is the CHAIRMAN of the SUFFOLK COUNTY SEWER AGENCY, the Agency described in and which executed the foregoing instrument, and that he executed and signed his name to the foregoing instrument on behalf of the Suffolk County Sewer Agency and the County of Suffolk.

Carmen M. Pizarro
Notary Public: State of New York
CARMEN M. PIZARRO
NOTARY PUBLIC, State of New York
No. 52-8385425-Suffolk County
Commission Expires March 30, 1974

STATE OF NEW YORK)
) ss.:
COUNTY OF SUFFOLK)

(CORPORATE ACKNOWLEDGEMENT)

On the day of May, 1973, before me personally came William E. Gray to me known, who being by me duly sworn did depose and say that he resides at 4 Roman Court Lake Grove NY that he is the vice-President of The Park Company of Suffolk Inc., the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Patrick F. Adams
Notary Public: State of New York
PATRICK F. ADAMS
Attorney and Counselor at Law
No. 52-0017155
Qualified in Suffolk County

STATE OF NEW YORK)
) ss.:
COUNTY OF SUFFOLK)

(INDIVIDUAL ACKNOWLEDGEMENT)

On the day of , 197___, before me personally came to me known to be the individual(s) described in and who executed the foregoing instrument and acknowledged that he (she) (they) executed same.

Notary Public: State of New York

APPENDIX F

AIR RESOURCES-RELATED DOCUMENTS

Appendix F-1
Ambient Air Quality Documents

SULFUR DIOXIDE - Continuous Pulsed Fluorescence

NYSDEC Region **1**

Annual Averages 1999 through 2009

Annual Arithmetic Mean (ppm) - Primary Standard
(12 month average not to exceed 0.03 PPM *)

Station	Site No.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Babylon	5150-02	.007	(.010)	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Eisenhower Park	2950-10	.006	.006	.005	.004	.005	.004	.004	.004	.004	.005	.003

Comparison between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2009

		One-Hour Averages		3-Hour Block Averages Maximum not to exceed 0.5 PPM more than once per calendar year *					24 Hour Average (Calendar Day) Maximum not to exceed 0.14 PPM more than once per calendar year *				
				Observations		Highest Values, PPM			Observations		Highest Values, PPM Midnight - Midnight		
Station	**Site No.**	**Total Obs.**	**% Avail**	**Total**	**>0.5 PPM**	**1st**	**2nd**	**3rd**	**Total**	**>.14 PPM**	**1st**	**2nd**	**3rd**
Eisenhower Park	2950-10	8,620	98	2,830	0	.048 [01/23, 09]	.038 [02/07, 09]	.036 [02/07, 06]	365	0	.021 [01/22]	.020 [01/13]	.019 [01/23]

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
+ Denotes a contravention of NYS/Federal AAQS

INHALABLE PARTICULATES - Wedding Sampler

NYSDEC Region **1**

Annual Averages 1995 through 2005

Annual Arithmetic Mean (µg/m^3)

Station	Site No.	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	3 Yr Exp Val
Babylon (Farmingdale)	5150-01	18	18	19	19	xx	xx	xx	xx	xx	xx	xx	xx
Eisenhower Park	2950-10	20	18	21	18	16	17	17	18	18	15	xx	xx
Roslyn Heights	2951-03	(18)	20	23	20	xx	xx	xx	xx	xx	xx	xx	xx

Lab results not received for 2950-10 for 2005. Sampling terminated at 2950-10 on 12/31/2005.

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

Mea=Measured Est. = Estimated
+ Denotes a contravention of NYS/Federal AAQS

INHALABLE PARTICULATES (<2.5 Microns) - Rupprecht & Patashnick Sampler

NYSDEC Region **1**

Comparison between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2009
(Average of last 3 years' annual means not to exceed 15 $\mu g/m^3$ * ;
And average of 98th percentile for last 3 years not to exceed 35 $\mu g/m^3$ *, *changed* from 65 $\mu g/m^3$ on 12/17/06)

Station	Site No.	Total Obs.	Maximum Values			98th Percentile				Quarterly Averages, 2009				Annual Mean			
			1st	2nd	3rd	2009	2008	2007	3-yr Avg.	1st	2nd	3rd	4th	2009	2008	2007	3-yr Avg.
Eisenhower Park(T)	2950-10	361	38.4 [02/07]	35.2 [03/07]	34.1 [01/13]	26.7	29.8	32.0	30	13.4	7.7	8.5	9.0	9.7	11.2	11.2	10.7
Hempstead (F)	2950-18	113	33.9 [01/19]	28.3 [11/09]	25.8 [08/17]	25.8	29.2	28.5	28	11.2	7.7	9.4	7.7	9.0	10.9	11.1	10.3
Babylon (F)	5150-01	113	24.9 [11/09]	24.0 [01/22]	21.6 [01/13]	21.6	26.8	28.8	26	9.0	7.7	8.7	6.9	8.1	10.1	10.9	9.7

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

[Date of Occurrence]
+ Denotes a contravention of NYS/Federal AAQS

CARBON MONOXIDE - Continuous Non-Dispersive Infrared

NYSDEC Region **1**

Annual Averages 1990 through 2000

Annual Arithmetic Mean (ppm)

Station	Site No.	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Eisenhower Park	2950-10	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.6	0.7	(0.7)

Sampling at 2950-10 was terminated on 5/31/2000.

(Annual Means in parentheses are based on less than 75% available data)

OZONE - Continuous UV Light Absorption

NYSDEC Region **1**

Annual Averages 1999 through 2009

Annual Arithmetic Mean (ppm)

Station	Site No.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Babylon	5150-02	.025	.023	.023	.024	.025	.024	.024	.024	.026	.026	.027
Holtsville	5151-10	--	--	--	--	--	--	--	.030	.032	.031	.028
Riverhead	5155-01	.035	.034	.030	.033	.030	(.029)	.035	.039	.034	.034	.035

Comparison between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2009

		One Hour Averages							4th Highest Daily Maximum 8-Hour Average- Not to exceed an avg of 0.075 ppm during the last 3 years (standard was **changed** from 0.08 on 5/27/08)*			
		Observations			Highest Values, PPM							
Station	**Site No.**	**Total Obs.**	**% Avail**	**>.12 PPM**	**1st**	**2nd**	**3rd**	**4th**	**2007**	**2008**	**2009**	**Avg**
Babylon	5150-02	8,327	95	0	.103 [08/16, 13]	.102 [04/26, 18]	.100 [08/17, 14]	.092 [08/10, 15]	.083 [07/08]	.083 [06/10]	.079 [08/10]	.081 +
Holtsville (Operated 02/03-11/09)	5151-10	5,740	85	0	.096 [09/05, 17]	.093 [08/17, 14]	.087 [08/10, 16]	.087 [08/26, 14]	.084 [07/08]	.083 [06/10]	.074 [04/26]	.080 +
Riverhead (Operated 01/01-11/07)	5155-01	6,037	81	0	.090 [06/02, 17]	.087 [08/10, 18]	.086 [09/05, 17]	.084 [08/16, 13]	.085 [08/04]	.083 [07/21]	.071 [09/05]	.079 +

Due to EPA Waiver for SLAMS (Non-NAMS), % Availability may be based on operational year of less than 12 months (Holtsville, Riverhead)

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
+ Denotes a contravention of NYS/Federal AAQS

NITRIC OXIDE & NITROGEN DIOXIDE – Continuous Chemiluminescence

NYSDEC Region **1**

Annual Averages 1999 through 2009

Nitric Oxide - Annual Arithmetic Mean (ppm)

Station	Site No.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Eisenhower Park	2950-10	.032	.028	.029	.024	.023	(.018)	.018	.019	.015	.015	.012

Nitrogen Dioxide - Annual Arithmetic Mean (ppm) - Primary Standard
(12 month average not to exceed 0.05 PPM *)

Station	Site No.	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Eisenhower Park	2950-10	.025	.024	.024	.022	.021	(.019)	.020	.018	.018	.017	.016

Comparison between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2009

		Nitric Oxide One-Hour Averages					**Nitrogen Dioxide** One-Hour Averages				
		Observations		**Highest Values, PPM**			**Observations**		**Highest Values, PPM**		
Station	**Site No.**	**Total**	**% Avail**	**1st**	**2nd**	**3rd**	**Total**	**% Avail**	**1st**	**2nd**	**3rd**
Eisenhower Park	2950-10	8,583	98	.500 [01/13, 09]	.488 [02/02, 08]	.480 [03/05, 08]	8,583	98	.097 [02/07, 09]	.091 [03/05, 08]	.086 [01/13, 09]

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard
AAQS

[Date of Occurrence, Hour]
+ Denotes a contravention of NYS/Federal

Appendix F-2
Mobile Source Air Pollution Modeling

B. Laing Associates

October 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

MOBILE SOURCE AIR POLLUTION MODELING

THE MEADOWS AT YAPHANK
TOWN OF BROOKHAVEN
SUFFOLK COUNTY, NEW YORK

OCTOBER 2010

PREPARED BY:

B. LAING ASSOCIATES

ENVIRONMENTAL CONSULTING

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MOBILE SOURCE AIR POLLUTION MODELING
THE MEADOWS AT YAPHANK
TOWN OF BROOKHAVEN
SUFFOLK COUNTY, NEW YORK

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1.0 SUMMARY OF FINDINGS

This air quality analysis has been prepared to provide potential air quality impact information in connection with the proposed The Meadows at Yaphank (the "Project") as further described in the 2010 Draft Generic Environmental Impact Statement (DGEIS). The proposed project will establish a Planned Development District (PDD) featuring a high quality mix of residential, commercial and office land uses on the property, while providing the community with numerous benefits that could not be realized absent the use of the overarching PDD concept. The property is 333.46-acres located at the northwestern corner of the interchange of County Route (CR) 46 (William Floyd Parkway) and the Long Island Expressway (LIE), in Yaphank. The Meadows at Yaphank is an assemblage of three parcels: the former Suffolk Downs Race Track (a.k.a., Parr Meadows), the former Brookhaven Walk mall site, and the Dorade STP site. The western 172.20-acre parcel is currently undeveloped but was previously in use as a horseracing track and was later operated as a flea market site until approximately 1995. The eastern 150.17-acre parcel, which is undeveloped, was previously cleared with partial foundations installed in connection with a 1997 site plan approval for a retail project known as Brookhaven Town Center. This project was not completed, but the site received site plan approval in 2007 for an 850,000 square foot retail development known as Brookhaven Walk. This project was not constructed, thus providing an opportunity for planned development of the two adjoining parcels.

Carbon monoxide (CO) concentrations associated with the Project in the Yaphank vicinity, as outlined in the Traffic Impact Study prepared by FST Engineers, Inc. were determined using EPA-approved, line source, air pollution modeling analyses for one intersection. In this case, the intersection of William Floyd Parkway (C.R. 46) and Yaphank Woods Drive was modeled. The results of the modeling analysis indicate that carbon monoxide concentrations may increase somewhat under the build alternatives as compared with the no build alternative in 2015. However, the predicted increase in CO concentrations will not cause or contribute to the contravention of applicable air quality standards. Recommended roadway improvements associated with the project and timing modifications are sufficient to minimize air quality impacts for the project. The air pollution modeling is based on the results of analysis of peak AM traffic combined with the assumption of worst case meteorological conditions at the subject intersection.

2.0 INTRODUCTION

B. Laing Associates, Inc. was retained to prepare an air quality analysis for the proposed The Meadows at Yaphank for the 2010 existing condition plus the 2015 no-build and build scenarios. B. Laing Associates, Inc. has provided the following air quality modeling based upon traffic analyses conducted by FST Engineers, Inc., September 2010 at the intersection of William Floyd Parkway (C.R. 46) and Yaphank Woods Drive. Inputs and outputs to the air quality modeling analysis are contained in Appendix A of this report.

2.1 Existing Conditions

Climate

According to the Local Info Data Server (IDcide.com), the climate in Yaphank, New York is warm during the summer when temperatures tend to be in the 70's and very cold during winter when temperatures tend to be in the 30's. The warmest month of the year is July with an average maximum temperature of 82.80 degrees Fahrenheit, while the coldest month of the year is January with an average minimum temperature of 22.10 degrees Fahrenheit. Temperature variations between night and day tend to be fairly limited during summer with a difference that can reach 18 degrees Fahrenheit, and fairly limited during winter with an average difference of 17 degrees Fahrenheit. The annual average precipitation at Yaphank is 50.27inches. Rainfall is fairly evenly distributed throughout the year. The "wettest" month of the year is August with an average rainfall of 4.50 inches.

Ambient Air Quality

Existing air quality is very good for the Town of Brookhaven as is for Suffolk County. The average air quality index (AQI) is 48. An AQI between 0 and 50 is satisfactory and air pollution poses little or no risk. Existing air quality standards for New York State are found in the State Ambient Air Quality Standards (SAAQS) which largely mimic the National Ambient Air Quality Standards (NAAQS). Possible relevant pollutants for mobile sources are particulate matter, ozone and carbon monoxide. Carbon monoxide is the dominant pollutant and so, it is modeled as provided in NYSDOT's Environmental Procedures Manual (EPM). Sulfur dioxide can be relevant to building heating sources.

Particulate matter (PM 2.5) as measured in Babylon, New York has been below the 15 ug/m^3 annual mean standard since 2000 and has ranged between 8.1 and 10.9 ug/m^3 for 2007 to 2009.

Ozone is also measured at the Babylon location in Suffolk County. It is the only pollutant that occasionally exceeds the standard both in NYSDEC Region 1 and State-

wide. It is formed from the long-term transport of hydrocarbon emissions in the mid-western United States and as such, is not a "local" enforcement issue on emissions. The average 3 year annual mean for this pollutant was 0.081 parts per million (ppm) for the years 2007 to 2009. The fourth highest maximum daily eight hour average was 0.083 ppm in 2007 and 2008 when it slightly exceeded the 0.075 ppm standard.

Carbon monoxide (CO) levels are not measured in NYSDEC Region 1. In 2000, CO monitoring from the Eisenhower, Nassau County location was terminated. The closest monitoring station is in Queens, New York. Since 2002, the annual arithmetic mean has ranged from 0.4 to 0.6 ppm. The highest one hour value in 2009 was 3.1 ppm versus a standard of 35 ppm. The highest eight hour value was 1.9 ppm versus a standard of 9.0 ppm.

Sulfur dioxide (SO_2) is also monitored at the Eisenhower, Nassau County station. In 2009, 3 hour averages peaked at 0.048 parts per million (ppm) versus a standard of 0.5 ppm and 24 hour averages have peaked at 0.021 pppm versus a standard of 0.14 ppm. .

2.2 Intersection Selection

The first level of "air quality screening" as provided in NYSDOT's Environmental Procedures Manual (EPM) is actually a traffic analysis consistent with the Highway Capacity Manual (HCM). This analysis was provided by FST Engineers, Inc. and is also appended to this DGEIS. The EPM provides the guidance that intersections be screened for overall Level of Service (LOS). If the LOS is A, B, or C, no further analyses are required. If any signalized intersections have LOS predicted D, E, or F, significant vehicle queuing may occur and further analysis is required for the three worst intersections. In this case, the intersection of William Floyd Parkway and Yaphank Woods Drive was selected for three reasons:

1. It could run at LOS of C under the Build (PM) condition.[1]
2. It is representative of "typical" conditions along William Floyd Parkway.
3. It will be the Project's "main" entrance.

Since the intersection will operate at LOS C or better (LOS B with improvements), strictly speaking, it does <u>not</u> require modeling pursuant to NYSDOT'S EPM. However, a project of this capacity will affect link counts and queueing in the intersection and will add a degree of accuracy in modeling of over-all air quality along William Floyd Parkway. In addition, it is the Planning Board's responsibility to take a "hard look" at any possible impacts to air quality local and regional that may occur as a result of the proposed project. Such modeling more than meets the requirement in this case.

If this intersection complies with the ambient air quality standards, it is assured (pursuant to the NYSDOT EPM) that other intersections would also comply with the

[1] In the build condition, with none of the recommended improvements.

standards. Thus, it was modeled for air quality and the results are provided in Chapter 4.0.

The NYSDEC currently recommends the use of Level II threshold modeling of up to three intersections in conformity with the NYSDOT EPM. In this case, we have modeled only one intersection for the reasons described above. NYSDOT and the USEPA have accepted MOBILE 6.2 and CAL3QHC as its official models and the MOBILE 6.2 has been modified by NYSDOT to provide emission factor data specific to each NYSDOT region. These programs were used to determine potential air quality impacts on CO levels due to traffic generated by the proposed project at or near the subject intersections.

2.3 Regional Analysis

If the project would significantly affect traffic conditions over a large area, it is also appropriate to consider regional air quality effects of the project by way of a mesoscale analysis. Such analyses are generally required for projects which include significant construction on or improvements to limited access highways (i.e., Long Island Expressway 495). No significant construction will occur on the Long Island Expressway – proper for this project. (See NYSDOT-EPM Chapter 1.1, page 31 for specific criteria). Thus, no mesoscale analysis is required for the project lane.

3.0 AIR QUALITY MODELING METHODOLOGY

3.1 Microscale Dispersion Modeling

The California Department of Transportation, CALINE3 model (as adopted by the Federal Highway Administration) was originally formulated for free flowing highways. It was adapted in the CAL3QHC format to accommodate intersection queuing (i.e., idling vehicles) situations. The CAL3QHC model is designed to estimate the impact of automobile traffic upon carbon monoxide (CO) concentrations at selected receptors located near roadway locations. It receives input from traffic models, on-site measurements and emission calculations. The dispersion model is the Gaussian-based formula with special modifications by the addition of special links to account for determination of signal cycle times, acceleration/deceleration, and queue lengths through application of traffic engineering principles.

Table 1, below identifies the specific inputs that were utilized in modeling the air quality at the identified intersection. These inputs are described in greater detail below.

TABLE 1 – MODELING INPUT VALUES

Input	Value Used	Source of Value
Emission Rates	Variable – See modeling inputs	NYSDOT EPM website
Mixing Height	1,000 meters	EPM Chapter 1.1, (C)(xii)
Wind Speed	1.0 Meters/second	EPM Chapter 1.1 (C)(xi)
Surface Roughness	176 cm	EPM Chapter 1.1C, Table 10, –office equivalent
Traffic Volumes	AM Peak Hour	FST Traffic Impact Study
Degree Interval	5 degree intervals	EPM Chapter 1.1 (C)(xiii)
Link Length and Queues	1,200 feet from intersection for Free-flow links. CAL3QHC Program for Queue Link Lengths	EPM Chapter 1.1 (c)(i)-1,000 feet required.
Ambient CO levels (year – 1 hour – 8 hour)	2010 – 3.1 – 2.2 2015 – 3.77 – 2.68	EPM Chapter 1.1 (C)(viii) with a roll back calculation.
Wind Speed	1.0 meter/second	EPM Chapter 1.1 (C)(xi)
Stability	5 (E)	EPM Chapter 1.1 (C)(ix)

3.2 Emission Rates

At or near intersections, vehicles are operating in three possible modes; cruise, acceleration-deceleration or idle. Idling emissions, those which occur as cars queue at an intersection, are generally four to five times greater than cruise emissions (per unit length of roadway). Acceleration-deceleration emissions, those produced as cars stop or resume motion, are also greater than cruise emissions (per unit length of roadway). The roadway length over which the pollutants are emitted is variable, and is dependent upon a number of factors including traffic volume, roadway capacity, vehicle speeds, etc. Cruise and idle emissions are calculated by use of the USEPA MOBILE6.2 model as modified by NYDOT. The NYSDOT emission factors for each modeled year are weighted by the vehicle miles traveled (VMT) mix for the winter period in the NYSDOT Region.

The vehicle mix is split into eight standard vehicle classes and a total of 27 sub-classes. The percent composition of each class was determined on New York roadways by NYSDOT. In this way, a composite emission factor is obtained for the required speeds and for idling/running vehicles. Hot start/cold start engine operating percentages were also set at very conservative standard levels (for "rural" collectors) as specified by NYSDOT.

Once emissions are calculated for vehicle population characteristics, they are then assigned to traffic links at 50 mph speeds on William Floyd Parkway, and, on the local streets, at 20 mph for the 2010 and 2015 no build scenarios. The local and principal roadways modeled as line sources produce an environmentally conservative result. The emission factors links which are then used by the model for calculation of free-flow emissions. The second part of CALINE3 was modified to calculate excess emissions. These emissions were defined by their own unique links, which depend on average queue lengths and delay times which are determined from input signalization characteristics, lane volumes and lane capacities. Finally, all of these factors are assembled, along with receptor locations and meteorological data and are input to CAL3QHC to calculate hourly CO concentrations. Eight hour CO concentrations are determined by use of a persistence factor as described in Section 3.6.

3.3 Physical Model Structure

The model was used in this case to analyze one intersection, with three (3) phases. For most phases, at least two approach/departure links were required; one for free-flow (including acceleration/deceleration) and one or two for queuing. Each combination of phase, approach and/or queue uniquely defines a link in the intersection. In CAL3QHC, a free-flow link is non-directional; consequently a cross intersection consists of four free flow links. Additional, directional links were added to each intersection at idle to simulate queue emissions. The basis of an intersection description in CAL3QHC is a localized coordinate system. The west to east and south to north coordinates (in feet or

meters) are input to define the end points of the link center line. Other required inputs include; effective emission height for the link, width of the link, and traffic on the link.

After the data for free flow-links on each leg of the intersection were input, data for queuing links arriving at the intersections were input. This information is coded in a similar manner, (i.e., endpoints of the center line of the link are derived based on their location on the coordinate axes). In setting up the coordinates for these two different types of links, the free-flow links terminated at the intersection center while the queue links originate at the approach stop line.

As a general rule, receptors close to a roadway with idling vehicles will experience greater CO concentrations. The existence of emissions from cross-streets plus variations in diffusion and wind flow further complicates the modeling scenario. Therefore, receptor locations were also identified on the coordinate axis system; i.e., so many feet or meters east or west and north or south from the origin of the coordinate axes. The vertical coordinate of the receptor location represents the height of the receptor. Receptors used in the model are found in Table 2 along with their descriptions. Receptors were the building lines of existing, physical structures and real or potential, future sidewalks.

NYSDOT guidance calls for a series of sidewalk receptors, which were also established in the modeling coordinate structure. Sidewalk receptors were assigned for each of the intersections being analyzed. Unacceptable receptors would include locations where vehicle repairs or fueling are conducted. No unacceptable receptors were located in the project area and, thus, do not apply. The modeling included some 55 receptors. These receptors included two residences (receptors 27 and 28) located in the Colonial Woods residential area, one in the proposed, future area of condominiums (receptor 35) and the balance were "sidewalks."

3.4 Traffic Information

The peak AM in vehicles per hour and the cruise speed (mph), for each link were input into the model. Traffic velocities were set by NYSDOT-EPM values. All other traffic data were determined from FST Engineers, Inc. traffic analyses. Traffic volumes in 2010 existing conditions and 2015 no-build and build scenarios applied in the modeling were taken from FST Engineers, Inc. data.

The traffic parameters were used in the CAL3QHC determination of vehicle emissions operating in the three modes. Vehicle volumes and speeds were utilized in calculating free-flow emissions. Traffic signal characteristics and capacity service volumes were used in calculating the queue length and delay time, which determined the idle emissions.

It should be noted that free flow speeds were set at 20 mph for local streets for the 2010 and 2015 build and no build scenarios. This provided the highest emission factor per vehicle mile for the mobile segments modeled. The resultant modeled speeds are, however, actually much lower as the vehicles queuing in the intersection are double counted. That is, the queue links physically overlap the free flow links, "double counting" queuing vehicles and so, is an environmentally conservative manner, reducing the effective speeds below the modeled speeds. This adds environmental conservativism to the analysis.

3.5 Receptors

Receptors used in the model are found in Table 2 along with their descriptions. Receptors were the building lines of existing, physical structures and real or potential, future sidewalks. As a general rule, receptors close to a roadway with idling vehicles will experience greater CO concentrations. The existence of emissions from cross-streets plus variations in diffusion and wind flow further complicates the modeling scenario. Therefore, receptor locations were also identified on the coordinate axis system; i.e., so many feet or meters east or west and north or south from the origin of the coordinate axes. The vertical coordinate of the receptor location represents the height of the receptor.

NYSDOT guidance calls for a series of sidewalk receptors, which were also established in the modeling coordinate structure. Sidewalk receptors were assigned for each of the intersections being analyzed. Unacceptable receptors would include locations where vehicle repairs or fueling are conducted. No unacceptable receptors were located in the project area and, thus, do not apply. The model accepts a maximum of 60 receptors.

Sensitive receptors include schools, hospitals, retirement communities and the like. Table 2 indicates the location of the receptors within the Study Area. No Sensitive receptors were identified in the study area. However, the ambient air quality standards were set to protect the public health and welfare, including sensitive individuals. Thus, in the end, all such receptors are subject to the same standards.

3.6 Dispersion Calculations

Emissions for each link were calculated from MOBILE6.2 factors derived by NYSDOT and described in Section 3.2 above. These factors are then input to the USEPA CAL3QHC model to calculate hourly carbon monoxide concentrations at selected receptor locations. In CAL3QHC, the contribution of each small element of roadway to the concentration at a receptor location is calculated as a function of wind direction, wind speed and stability by use of the Gaussian plume formula. The contribution of the entire length of roadway is then obtained by line integration of that expression. In this instance, local, worst case, one-hour meteorological of 1.0 meter per second wind speed and stability class E was used. The worst stability generally occurs

during early morning inversion conditions. After sunrise, the atmosphere gains energy and this condition will disappear, usually within one to two hours. Since weekday peak traffic from the Project occurs in the AM hour and this meteorological condition occurs before the AM peak hour, the assumption of their coincidence is extremely conservative. The intersection was modeled for wind directions varying every 5 degrees for a 360 degree compass (i.e., 0 degrees, 5 degrees, 10 degrees, etc. to 355 degrees).

The CAL3QHC model calculated a one hour CO increment and=an ambient CO was added to the result. It includes a 3.77 ppm ambient addition for the one hour value and a 2.68 ppm ambient addition for the eight hour value in 2015. Therefore, the true peak value is the sum of the CO contributions from each link plus the ambient. This result is the maximum predicted CO concentration for corresponding peak receptor.

Since the analysis must determine a differential between build and no-build scenarios for the eight-hour CO standard, a persistence factor of 0.70 (as provided by NYSDOT for Suffolk County) was applied to one-hour results above ambient to yield eight hour results en-lieu of the eight-hour modeling. The State and National Ambient Air Quality Standards (NAAQS) for CO are 35 ppm for one hour and 9 ppm for eight hours, respectively.

4.0 AIR QUALITY MODELING RESULTS

4.1 CAL3QHC Results

One intersection was modeled for The Meadows at Yaphank project. The CAL3QHC model was run at peak AM conditions for 2010 existing condition, 2015 no build and the 2015 build for the intersection of William Floyd Parkway and Yaphank Woods Drive. Peak AM traffic scenarios were analyzed at the subject intersections using worst case meteorology for each condition. Traffic volumes associated with the build scenarios anticipated the full build of the project. Traffic data were determined from FST Engineers, Inc. traffic analyses. Thus, the impact of increased general traffic, relating to the proposed project were included in the traffic analysis. The air quality analysis does likewise.

Analysis results for the modeled receptors are presented in Appendix A. The peak CO result with the project constructed was 5.07 ppm in the one hour scenario and 3.59 ppm in the eight hour scenario for 2015 AM build along William Floyd Parkway and Yaphank Woods Drive at sidewalk receptor 19. Receptor 19 is located at the corner of Yaphank Woods Boulevard and William Floyd Parkway on the north side. The peak CO result without the project constructed was 4.97 ppm in the one hour scenario and 3.52 ppm in the eight hour scenario in 2015 AM no build scenario also at sidewalk receptor 19. Thus, the CO result with the project constructed in the one hour scenario was only 0.1 ppm higher than without the project constructed. The CO result with the project constructed in the eight hour scenario was only 0.07 ppm higher than without the project constructed. As all results are also below their respective one hour standard of 35 ppm and eight hour standard of 9 ppm in the 2015 build condition, it was determined that the project will not significantly impact air quality.

5.0 CONSTRUCTION IMPACTS ON AIR QUALITY

5.1 Construction

The short-term use of heavy equipment operations at the site will result in a temporary minor increase in pollutant emissions from the various equipment used in the construction process for a several year phased duration. However, the major concern during the construction operation will be the control of fugitive dust during site clearing, excavation, demolition and grading operations. Fugitive dust is essentially airborne soil particles caused by heavy equipment operations entraining the soil into the air. To a lesser extent, some fugitive dust emissions will arise from wind erosion of the exposed soil after the groundcover is removed. All construction related air quality impacts will be of relatively short duration and generally not in proximity to public receptors. The phasing of the project will reduce the intensity of any impacts. In addition, best construction management practices will be employed to reduce soil erosion and possible sources of fugitive dust. This generally includes the daily use of water/spray trucks in dry periods, anti-tracking pads at construction entrances and adherence to a Storm Water Pollution Prevention Plan (SWPPP).

TABLE 2
RECEPTORS (WITH CORRESPONDING DESCRIPTIONS)

WILLIAM FLOYD PARKWAY/YAPHANK WOODS DRIVE

Receptor Number	Receptor Description
1.	'RECP A SIDEWALK'
2.	'RECP B SIDEWALK '
3.	'RECP C SIDEWALK '
4.	'RECP D SIDEWALK'
5.	'RECP E SIDEWALK'
6.	'RECP F SIDEWALK'
7.	'RECP G SIDEWALK'
8.	'RECP H SIDEWALK'
9.	'RECP I SIDEWALK'
10.	'RECP J SIDEWALK'
11.	'RECP K SIDEWALK'
12.	'RECP L SIDEWALK'
13.	'RECP M SIDEWALK'
14.	'RECP N SIDEWALK'
15.	'RECP O SIDEWALK'
16.	'RECP P SIDEWALK'
17.	'RECP Q SIDEWALK'
18.	'RECP R SIDEWALK'
19.	'RECP S SIDEWALK'
20.	'RECP T SIDEWALK'
21.	'RECP U SIDEWALK'
22.	'RECP V SIDEWALK'
23.	'RECP W SIDEWALK'
24.	'RECP X SIDEWALK'
25.	'RECP Y SIDEWALK'
26.	'RECP Z SIDEWALK'
27.	'RECP AA RESIDENCE'
28.	'RECP BB COLONIAL WOODS RECP'
29.	'RECP CC SIDEWALK'
30.	'RECP DD SIDEWALK'
31.	'RECP EE SIDEWALK'
32.	'RECP FF SIDEWALK'
33.	'RECP GG SIDEWALK'
34.	'RECP HH SIDEWALK'
35.	'RECP II PROPOSED'
36.	'RECP JJ SIDEWALK'
37.	'RECP KK SIDEWALK'
38.	'RECP LL SIDEWALK'
39.	'RECP MM SIDEWALK'

40.	**'RECP NN SIDEWALK'**
41.	**'RECP OO SIDEWALK'**
42.	**'RECP PP SIDEWALK'**
43.	**'RECP QQ SIDEWALK'**
44.	**'RECP RR SIDEWALK'**
45.	**'RECP SS SIDEWALK'**
46.	**'RECP TT SIDEWALK'**
47.	**'RECP UU SIDEWALK'**
48	**'RECP VV SIDEWALK'**
49	**'RECP WW SIDEWALK'**
50	**'RECP XX SIDEWALK'**
51	**'RECP YY SIDEWALK'**
52	**'RECP ZZ SIDEWALK'**
53	**'RECP 1 SIDEWALK'**
54	**'RECP 2 SIDEWALK'**
55	**'RECP 3 SIDEWALK'**

TABLE 3 AIR QUALITY RESULTS

WILLIAM FLOYD PARKWAY/YAPHANK WOODS DRIVE

CONVERSION TABLE AIR QUALITY CO 1 AND 8 HR VALUES

JOB NO: NPVYAP01 Persistence Factor: 0.70 SCENARIO: PEAK AM 2010 EXCON

Intersection: WILLIAM FLOYD PARKWAY/YAPHANK WOODS ROAD NYSDOT REGION 10

Receptor Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Raw Result/ 1 hr	0.20	0.20	0.60	0.90	0.80	0.80	0.10	0.80	0.10	0.80	0.10	0.80	0.30	0.80	0.50	0.40	0.40	0.30	1.30	1.00
1 Hour Ambient	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
1 Hour Result	3.30	3.30	3.70	4.00	3.90	3.90	3.20	3.90	3.20	3.90	3.20	3.90	3.40	3.90	3.60	3.50	3.50	3.40	4.40	4.10
8 Hour Ambient	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
8 Hour Result	2.34	2.34	2.62	2.83	2.76	2.76	2.27	2.76	2.27	2.76	2.27	2.76	2.41	2.76	2.55	2.48	2.48	2.41	3.11	2.90

Receptor Number:	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Raw Result/ 1 hr	0.9	0.80	0.80	0.90	0.90	0.90	0.40	0.20	0.70	0.80	0.50	0.40	0.30	0.30	0.10	0.20	0.10	0.10	0.10	0.90
1 Hour Ambient	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
1 Hour Result	4.00	3.90	3.90	4.00	4.00	4.00	3.50	3.30	3.80	3.90	3.60	3.50	3.40	3.40	3.20	3.30	3.20	3.20	3.20	4.00
8 Hour Ambient	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
8 Hour Result	2.83	2.76	2.76	2.83	2.83	2.83	2.48	2.34	2.69	2.76	2.55	2.48	2.41	2.41	2.27	2.34	2.27	2.27	2.27	2.83

Receptor Number:	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Raw Result/ 1 hr	0.50	0.40	0.20	0.10	0.10	0.80	0.70	0.70	0.70	0.70	0.90	0.50	0.30	0.10	0.10
1 Hour Ambient	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
1 Hour Result	3.60	3.50	3.30	3.20	3.20	3.90	3.80	3.80	3.80	3.80	4.00	3.60	3.40	3.20	3.20
8 Hour Ambient	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
8 Hour Result	2.55	2.48	2.34	2.27	2.27	2.76	2.69	2.69	2.69	2.69	2.83	2.55	2.41	2.27	2.27

* New York State carbon monoxide standard (CO) 35ppm - 1 Hour.
* New York State carbon monoxide standard (CO) 9ppm - 8 Hour.

CONVERSION TABLE AIR QUALITY CO 1 AND 8 HR VALUES

JOB NO: NPVYAP01 Persistence Factor: 0.70 SCENARIO: PEAK AM NO BLD 2015

Intersection: WILLIAM FLOYD PARKWAY/YAPHANK WOODS ROAD NYSDOT REGION 10

Receptor Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Raw Result/ 1 hr	0.2	0.20	0.60	0.80	0.80	0.80	0.10	0.80	0.10	0.80	0.10	0.80	0.30	0.70	0.50	0.40	0.40	0.30	1.20	1.00
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	3.97	3.97	4.37	4.57	4.57	4.57	3.87	4.57	3.87	4.57	3.87	4.57	4.07	4.47	4.27	4.17	4.17	4.07	4.97	4.77
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	2.82	2.82	3.10	3.24	3.24	3.24	2.75	3.24	2.75	3.24	2.75	3.24	2.89	3.17	3.03	2.96	2.96	2.89	3.52	3.38

Receptor Number:	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Raw Result/ 1 hr	0.8	0.80	0.80	0.80	0.90	0.90	0.30	0.20	0.70	0.70	0.50	0.40	0.30	0.30	0.10	0.10	0.10	0.10	0.10	0.90
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	4.57	4.57	4.57	4.57	4.67	4.67	4.07	3.97	4.47	4.47	4.27	4.17	4.07	4.07	3.87	3.87	3.87	3.87	3.87	4.67
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	3.24	3.24	3.24	3.24	3.31	3.31	2.89	2.82	3.17	3.17	3.03	2.96	2.89	2.89	2.75	2.75	2.75	2.75	2.75	3.31

Receptor Number:	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Raw Result/ 1 hr	0.5	0.30	0.20	0.10	0.10	0.70	0.70	0.60	0.60	0.70	0.80	0.40	0.30	0.10	0.10
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	4.27	4.07	3.97	3.87	3.87	4.47	4.47	4.37	4.37	4.47	4.57	4.17	4.07	3.87	3.87
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	3.03	2.89	2.82	2.75	2.75	3.17	3.17	3.10	3.10	3.17	3.24	2.96	2.89	2.75	2.75

* New York State carbon monoxide standard (CO) 35ppm - 1 Hour.
* New York State carbon monoxide standard (CO) 9ppm - 8 Hour.

CONVERSION TABLE AIR QUALITY CO 1 AND 8 HR VALUES

JOB NO: NPVYAP01 Persistence Factor: 0.70 SCENARIO: PEAK AM BUILD 2015

Intersection: WILLIAM FLOYD PARKWAY/YAPHANK WOODS ROAD NYSDOT REGION 10

Receptor Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Raw Result/ 1 hr	0.2	0.20	0.60	1.00	0.90	0.90	0.10	0.90	0.20	0.90	0.20	0.90	0.30	0.70	0.50	0.40	0.40	0.30	1.30	1.30
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	3.97	3.97	4.37	4.77	4.67	4.67	3.87	4.67	3.97	4.67	3.97	4.67	4.07	4.47	4.27	4.17	4.17	4.07	5.07	5.07
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	2.82	2.82	3.10	3.38	3.31	3.31	2.75	3.31	2.82	3.31	2.82	3.31	2.89	3.17	3.03	2.96	2.96	2.89	3.59	3.59

Receptor Number:	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Raw Result/ 1 hr	1.1	1.00	1.00	0.90	1.00	0.90	0.40	0.20	0.80	0.70	0.50	0.40	0.30	0.30	0.10	0.30	0.20	0.20	0.10	1.00
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	4.87	4.77	4.77	4.67	4.77	4.67	4.17	3.97	4.57	4.47	4.27	4.17	4.07	4.07	3.87	4.07	3.97	3.97	3.87	4.77
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	3.45	3.38	3.38	3.31	3.38	3.31	2.96	2.82	3.24	3.17	3.03	2.96	2.89	2.89	2.75	2.89	2.82	2.82	2.75	3.38

Receptor Number:	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
Raw Result/ 1 hr	0.5	0.40	0.20	0.10	0.10	0.80	0.70	0.70	0.70	0.70	0.80	0.50	0.30	0.10	0.10
1 Hour Ambient	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
1 Hour Result	4.27	4.17	3.97	3.87	3.87	4.57	4.47	4.47	4.47	4.47	4.57	4.27	4.07	3.87	3.87
8 Hour Ambient	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
8 Hour Result	3.03	2.96	2.82	2.75	2.75	3.24	3.17	3.17	3.17	3.17	3.24	3.03	2.89	2.75	2.75

* New York State carbon monoxide standard (CO) 35ppm - 1 Hour.
* New York State carbon monoxide standard (CO) 9ppm - 8 Hour.

APPENDIX A

CAL3QHC AND EMISSION MODELING INPUTS AND OUPUTS

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'MEADOWS YAPHANK CAL3QHC ANAL.10'    60. 175.  0. 0. 55   0.3048 1 1
'RECP A  SIDEWALK'        198.    960.    6.
'RECP B  SIDEWALK'        181.   1028.    6.
'RECP C  SIDEWALK'         75.     42.    6.
'RECP D  SIDEWALK'         27.     75.    6.
'RECP E  SIDEWALK'         27.    150.    6.
'RECP F  SIDEWALK'         27.    225.    6.
'RECP G  SIDEWALK'      -1290.     34.    6.
'RECP H  SIDEWALK'         27.    375.    6.
'RECP I  SIDEWALK'      -1080.     34.    6.
'RECP J  SIDEWALK'         27.    660.    6.
'RECP K  SIDEWALK'       -870.     34.    6.
'RECP L  SIDEWALK'         27.   1080.    6.
'RECP M  SIDEWALK'       -450.     34.    6.
'RECP N  SIDEWALK'        -75.     34.    6.
'RECP O  SIDEWALK'       -150.     34.    6.
'RECP P  SIDEWALK'       -225.     34.    6.
'RECP Q  SIDEWALK'       -300.     34.    6.
'RECP R  SIDEWALK'       -375.     34.    6.
'RECP S  SIDEWALK'        -27.     75.    6.
'RECP T  SIDEWALK'        -27.    150.    6.
'RECP U  SIDEWALK'        -27.    225.    6.
'RECP V  SIDEWALK'        -27.    300.    6.
'RECP W  SIDEWALK'        -27.    375.    6.
'RECP X  SIDEWALK'        -27.    450.    6.
'RECP Y  SIDEWALK'        -27.    660.    6.
'RECP Z  SIDEWALK'        -27.    870.    6.
'RECP AA RESIDENCE'       -85.   1080.    6.
'RECP BB CW RECP'        -813.    108.    6.
'RECP CC SIDEWALK'        -27.    -75.    6.
'RECP DD SIDEWALK'        -75.    -34.    6.
'RECP EE SIDEWALK'       -150.    -34.    6.
'RECP FF SIDEWALK'       -225.    -34.    6.
'RECP GG SIDEWALK'       -300.    -34.    6.
'RECP HH SIDEWALK'       -375.    -34.    6.
'RECP II PROPOSED'       -508.   -359.    6.
'RECP JJ SIDEWALK'       -660.    -34.    6.
'RECP KK SIDEWALK'       -870.    -34.    6.
'RECP LL SIDEWALK'      -1080.    -34.    6.
'RECP MM SIDEWALK'      -1290.    -34.    6.
'RECP NN SIDEWALK'         27.    -75.    6.
'RECP OO SIDEWALK'        -27.   -150.    6.
'RECP PP SIDEWALK'        -27.   -300.    6.
'RECP QQ SIDEWALK'        -27.   -450.    6.
'RECP RR SIDEWALK'        -27.   -870.    6.
'RECP SS SIDEWALK'        -27.  -1290.    6.
'RECP TT SIDEWALK'         75.    -42.    6.
'RECP UU SIDEWALK'        150.    -36.    6.
'RECP VV SIDEWALK'        225.    -36.    6.
'RECP WW SIDEWALK'        300.    -36.    6.
'RECP XX SIDEWALK'        375.    -36.    6.
'RECP YY SIDEWALK'         27.   -150.    6.
'RECP ZZ SIDEWALK'         27.   -300.    6.
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'RECP 1  SIDEWALK'        27.    -450.     6.
'RECP 2  SIDEWALK'        27.    -870.     6.
'RECP 3  SIDEWALK'        27.   -1290.     6.

'YAPHANK PROP AM 10 EX COND, NORTH SIDE'        6  1  0  'C'
  2
'LINK1 C.R. 46  SBQ1'  'AG'   -30.  60. -30.  160.  2.  24.0   2
     90       27       3.0   1468  38.10  1600 2 3
  2
'LINK2 C.R. 46  NBQ'  'AG'    35.  -60.  35.  -160.  2.  24.0   2
     90       27       3.0  1510 38.10  1600 2 3
  1
'LINK3 C.R. 46  NFR'  'AG'   0.   0.  0.   1200.   2988.  4.25  4. 48.
  1
'LINK4 C.R. 46  SFR'  'AG'    0.  0.  1200.   0.   3127.  4.25  4. 48.
  1
'LINK5 YAP WOOD BLVD  WFR'  'AG'   0.   0.  -1200.   0.  247. 3.83  2. 24.
  2
'LINK6 YAP WOOD BLVD EBQ'  'AG'    -75.  -20.   -75.  -120.   2.  12.0   1
     90       57       3.0  203 38.10  1600 2 3
1.0 00. 5  1000. 0.  'Y' 5  0 71
```

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

DATE : 10/ 6/10
TIME : 11:32:11

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. LINK1 C.R. 46 SBQ1	-30.0	60.0	-30.0	168.4	108.	360.	AG	61.	100.0	2.0	24.0	.71	5.5
2. LINK2 C.R. 46 NBQ	35.0	-60.0	35.0	-171.5	111.	180.	AG	61.	100.0	2.0	24.0	.73	5.7
3. LINK3 C.R. 46 NFR	.0	.0	.0	1200.0	1200.	360.	AG	2988.	4.3	4.0	48.0		
4. LINK4 C.R. 46 SFR	.0	.0	1200.0	.0	1200.	90.	AG	3127.	4.3	4.0	48.0		
5. LINK5 YAP WOOD BLVD	.0	.0	-1200.0	.0	1200.	270.	AG	247.	3.8	2.0	24.0		
6. LINK6 YAP WOOD BLVD	-75.0	-20.0	-75.0	-83.3	63.	180.	AG	65.	100.0	2.0	12.0	.41	3.2

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

DATE : 10/ 6/10
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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
1. LINK1 C.R. 46 SBQ1	90	27	3.0	1468	1600	38.10	2	3
2. LINK2 C.R. 46 NBQ	90	27	3.0	1510	1600	38.10	2	3
6. LINK6 YAP WOOD BLVD	90	57	3.0	203	1600	38.10	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECP A SIDEWALK	198.0	960.0	6.0
2. RECP B SIDEWALK	181.0	1028.0	6.0
3. RECP C SIDEWALK	75.0	42.0	6.0
4. RECP D SIDEWALK	27.0	75.0	6.0

5.	RECP E	SIDEWALK	27.0	150.0	6.0	
6.	RECP F	SIDEWALK	27.0	225.0	6.0	
7.	RECP G	SIDEWALK	-1290.0	34.0	6.0	
8.	RECP H	SIDEWALK	27.0	375.0	6.0	
9.	RECP I	SIDEWALK	-1080.0	34.0	6.0	
10.	RECP J	SIDEWALK	27.0	660.0	6.0	
11.	RECP K	SIDEWALK	-870.0	34.0	6.0	
12.	RECP L	SIDEWALK	27.0	1080.0	6.0	
13.	RECP M	SIDEWALK	-450.0	34.0	6.0	
14.	RECP N	SIDEWALK	-75.0	34.0	6.0	
15.	RECP O	SIDEWALK	-150.0	34.0	6.0	
16.	RECP P	SIDEWALK	-225.0	34.0	6.0	
17.	RECP Q	SIDEWALK	-300.0	34.0	6.0	
18.	RECP R	SIDEWALK	-375.0	34.0	6.0	
19.	RECP S	SIDEWALK	-27.0	75.0	6.0	
20.	RECP T	SIDEWALK	-27.0	150.0	6.0	
21.	RECP U	SIDEWALK	-27.0	225.0	6.0	
22.	RECP V	SIDEWALK	-27.0	300.0	6.0	
23.	RECP W	SIDEWALK	-27.0	375.0	6.0	
24.	RECP X	SIDEWALK	-27.0	450.0	6.0	
25.	RECP Y	SIDEWALK	-27.0	660.0	6.0	
26.	RECP Z	SIDEWALK	-27.0	870.0	6.0	
27.	RECP AA	RESIDENCE	-85.0	1080.0	6.0	
28.	RECP BB	CW RECP	-813.0	108.0	6.0	
29.	RECP CC	SIDEWALK	-27.0	-75.0	6.0	
30.	RECP DD	SIDEWALK	-75.0	-34.0	6.0	
31.	RECP EE	SIDEWALK	-150.0	-34.0	6.0	
32.	RECP FF	SIDEWALK	-225.0	-34.0	6.0	
33.	RECP GG	SIDEWALK	-300.0	-34.0	6.0	
34.	RECP HH	SIDEWALK	-375.0	-34.0	6.0	
35.	RECP II	PROPOSED	-508.0	-359.0	6.0	
36.	RECP JJ	SIDEWALK	-660.0	-34.0	6.0	
37.	RECP KK	SIDEWALK	-870.0	-34.0	6.0	
38.	RECP LL	SIDEWALK	-1080.0	-34.0	6.0	
39.	RECP MM	SIDEWALK	-1290.0	-34.0	6.0	
40.	RECP NN	SIDEWALK	27.0	-75.0	6.0	
41.	RECP OO	SIDEWALK	-27.0	-150.0	6.0	
42.	RECP PP	SIDEWALK	-27.0	-300.0	6.0	

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

DATE : 10/ 6/10
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RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z

43.	RECP QQ	SIDEWALK	*	-27.0	-450.0	6.0	*
44.	RECP RR	SIDEWALK	*	-27.0	-870.0	6.0	*
45.	RECP SS	SIDEWALK	*	-27.0	-1290.0	6.0	*
46.	RECP TT	SIDEWALK	*	75.0	-42.0	6.0	*
47.	RECP UU	SIDEWALK	*	150.0	-36.0	6.0	*
48.	RECP VV	SIDEWALK	*	225.0	-36.0	6.0	*
49.	RECP WW	SIDEWALK	*	300.0	-36.0	6.0	*
50.	RECP XX	SIDEWALK	*	375.0	-36.0	6.0	*
51.	RECP YY	SIDEWALK	*	27.0	-150.0	6.0	*
52.	RECP ZZ	SIDEWALK	*	27.0	-300.0	6.0	*
53.	RECP 1	SIDEWALK	*	27.0	-450.0	6.0	*
54.	RECP 2	SIDEWALK	*	27.0	-870.0	6.0	*
55.	RECP 3	SIDEWALK	*	27.0	-1290.0	6.0	*

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.0	.2	.7	.7	.7	.0	.6	.0	.6	.0	.3	.0	.2	.1	.0	.0	.0	1.1	.9
5.	.0	.0	.1	.5	.5	.4	.0	.4	.0	.4	.0	.2	.0	.3	.1	.1	.0	.0	1.2	1.0
10.	.0	.0	.0	.3	.3	.3	.0	.2	.0	.2	.0	.1	.0	.4	.2	.1	.1	.0	1.3	1.0
15.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.1	.0	.5	.2	.1	.1	.0	1.1	1.0
20.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.0	.1	.5	.2	.2	.1	.1	1.0	.9
25.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.8	.7
30.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.8	.7
35.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.6	.6
40.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.1	.1	.1	.6	.6
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.3	.1	.1	.1	.6	.6
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.3	.1	.1	.1	.5	.5
55.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
60.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
65.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.2	.3	.1	.1	.1	.5	.5
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.2	.3	.1	.1	.1	.5	.5
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
80.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.2	.4	.3	.2	.2	.2	.5	.5
85.	.0	.0	.2	.1	.0	.0	.1	.0	.1	.0	.1	.0	.2	.5	.5	.3	.3	.3	.6	.5
90.	.0	.0	.4	.2	.1	.0	.1	.0	.1	.0	.1	.0	.3	.7	.5	.4	.4	.3	.7	.6
95.	.0	.0	.5	.3	.1	.1	.1	.0	.1	.0	.1	.0	.2	.8	.5	.4	.4	.2	.8	.6

100.	*	.0	.0	.6	.4	.2	.1	.0	.0	.0	.0	.1	.0	.1	.8	.5	.4	.2	.2	.9	.7
105.	*	.0	.0	.6	.4	.2	.1	.0	.1	.0	.0	.0	.0	.1	.7	.4	.2	.1	.1	.9	.7
110.	*	.0	.0	.6	.4	.2	.2	.0	.1	.0	.0	.0	.0	.0	.6	.2	.1	.1	.0	.9	.7
115.	*	.0	.0	.5	.4	.2	.2	.0	.1	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.9	.7
120.	*	.0	.0	.5	.3	.2	.2	.0	.1	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.8	.7
125.	*	.0	.0	.4	.3	.2	.2	.0	.1	.0	.1	.0	.0	.0	.2	.0	.0	.0	.0	.8	.7
130.	*	.0	.0	.4	.3	.2	.2	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.8	.7
135.	*	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.8	.8
140.	*	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.8	.8
145.	*	.1	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.8	.8
150.	*	.1	.1	.4	.3	.2	.1	.0	.1	.0	.1	.0	.1	.0	.1	.0	.0	.0	.0	.7	.9
155.	*	.1	.1	.3	.3	.2	.1	.0	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.8	1.0
160.	*	.1	.0	.3	.3	.2	.2	.0	.2	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.7	1.0
165.	*	.1	.0	.3	.3	.3	.2	.0	.2	.0	.2	.0	.1	.0	.1	.0	.0	.0	.0	.7	1.0
170.	*	.1	.1	.3	.4	.3	.3	.0	.3	.0	.3	.0	.3	.0	.1	.0	.0	.0	.0	.5	1.0
175.	*	.1	.0	.3	.4	.4	.4	.0	.4	.0	.5	.0	.5	.0	.1	.0	.0	.0	.0	.4	.9
180.	*	.0	.0	.3	.5	.4	.5	.0	.6	.0	.6	.0	.7	.0	.1	.0	.0	.0	.0	.4	.7
185.	*	.1	.1	.4	.6	.5	.6	.0	.6	.0	.7	.0	.8	.0	.1	.0	.0	.0	.0	.3	.6
190.	*	.1	.1	.4	.5	.6	.6	.0	.7	.0	.8	.0	.8	.0	.1	.0	.0	.0	.0	.3	.5
195.	*	.1	.2	.4	.6	.7	.8	.0	.7	.0	.8	.0	.8	.0	.1	.0	.0	.0	.0	.2	.5
200.	*	.2	.2	.4	.5	.6	.7	.0	.7	.0	.7	.0	.7	.0	.0	.0	.0	.0	.0	.3	.4
205.	*	.2	.2	.4	.5	.6	.7	.0	.6	.0	.6	.0	.6	.0	.0	.0	.0	.0	.0	.3	.3

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40
REC41 REC42 REC43 REC44 REC45 REC46 REC47 REC48 REC49 REC50 REC51 REC52 REC53 REC54 REC55

210.	*	.2	.2	.4	.5	.6	.7	.0	.6	.0	.6	.0	.6	.0	.0	.0	.0	.0	.0	.2	.3
215.	*	.2	.2	.4	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.3
220.	*	.2	.2	.4	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
225.	*	.2	.2	.4	.4	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
230.	*	.1	.2	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
235.	*	.1	.2	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
240.	*	.1	.1	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
245.	*	.1	.1	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
250.	*	.1	.1	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
255.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
260.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
265.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
270.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
275.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
280.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
285.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
290.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2

295.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
300.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
305.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
310.	*	.1	.1	.4	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
315.	*	.1	.1	.4	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
320.	*	.1	.0	.3	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
325.	*	.1	.0	.3	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.3	.2
330.	*	.0	.0	.3	.7	.6	.6	.0	.6	.0	.6	.0	.5	.0	.0	.0	.0	.0	.0	.3	.2
335.	*	.0	.0	.3	.6	.6	.6	.0	.6	.0	.6	.0	.5	.0	.0	.0	.0	.0	.0	.3	.2
340.	*	.0	.0	.4	.7	.7	.7	.0	.7	.0	.7	.0	.5	.0	.0	.0	.0	.0	.0	.5	.3
345.	*	.0	.0	.4	.8	.8	.8	.0	.8	.0	.8	.0	.5	.0	.0	.0	.0	.0	.0	.5	.3
350.	*	.0	.0	.4	.9	.8	.8	.0	.8	.0	.8	.0	.4	.0	.0	.0	.0	.0	.0	.7	.5
355.	*	.0	.0	.3	.8	.8	.8	.0	.8	.0	.7	.0	.4	.0	.1	.0	.0	.0	.0	.9	.7
MAX	*	.2	.2	.6	.9	.8	.8	.1	.8	.1	.8	.1	.8	.3	.8	.5	.4	.4	.3	1.3	1.0
DEGR.	*	200	195	100	350	345	195	85	345	85	190	45	185	90	95	85	90	90	85	10	5

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	*	.7	.6	.6	.6	.6	.5	.0	.0	.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.8
5.	*	.8	.8	.8	.8	.7	.6	.0	.0	.7	.6	.1	.1	.0	.0	.0	.0	.0	.0	.0	.7
10.	*	.8	.8	.8	.8	.8	.7	.0	.0	.6	.8	.2	.1	.1	.0	.0	.0	.0	.0	.0	.5
15.	*	.8	.8	.8	.8	.8	.7	.0	.0	.5	.8	.2	.1	.1	.1	.0	.0	.0	.0	.0	.6
20.	*	.7	.7	.7	.7	.7	.7	.0	.0	.4	.8	.2	.2	.1	.1	.1	.0	.0	.0	.0	.5
25.	*	.6	.6	.6	.6	.6	.6	.1	.0	.4	.6	.2	.2	.1	.1	.1	.0	.0	.0	.0	.5
30.	*	.6	.6	.6	.6	.6	.6	.1	.0	.3	.6	.2	.2	.1	.1	.1	.0	.0	.0	.0	.5
35.	*	.5	.5	.5	.5	.5	.5	.1	.0	.3	.5	.3	.2	.1	.1	.1	.1	.0	.0	.0	.5
40.	*	.5	.5	.5	.5	.5	.5	.2	.0	.2	.5	.3	.1	.1	.1	.1	.1	.0	.0	.0	.5
45.	*	.5	.5	.5	.5	.5	.5	.2	.1	.3	.4	.3	.1	.1	.1	.1	.1	.1	.0	.0	.5
50.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
55.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
60.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
65.	*	.4	.4	.4	.4	.4	.4	.2	.1	.4	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.6
70.	*	.4	.4	.4	.4	.4	.4	.2	.1	.4	.6	.3	.2	.2	.1	.1	.1	.1	.0	.0	.6
75.	*	.4	.4	.4	.4	.4	.4	.2	.1	.4	.7	.4	.3	.2	.2	.1	.1	.0	.0	.0	.6

80.	*	.4	.4	.4	.4	.4	.4	.2	.1	.5	.7	.5	.4	.3	.3	.1	.2	.1	.0	.0	.6
85.	*	.4	.4	.4	.4	.4	.4	.2	.2	.4	.7	.5	.3	.3	.2	.0	.1	.1	.1	.1	.5
90.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.6	.5	.3	.3	.2	.0	.1	.1	.1	.1	.4
95.	*	.5	.4	.4	.4	.4	.4	.2	.1	.2	.4	.4	.2	.2	.2	.0	.1	.1	.1	.1	.3
100.	*	.5	.5	.4	.4	.4	.4	.2	.1	.1	.3	.2	.1	.1	.1	.0	.1	.0	.0	.0	.2
105.	*	.5	.5	.5	.4	.4	.4	.2	.1	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
110.	*	.6	.5	.5	.5	.4	.4	.2	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
115.	*	.6	.5	.5	.5	.4	.4	.2	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
120.	*	.6	.5	.5	.5	.5	.4	.2	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
125.	*	.6	.5	.5	.5	.5	.4	.2	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
130.	*	.6	.5	.5	.5	.5	.4	.2	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
135.	*	.6	.6	.6	.6	.6	.6	.3	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
140.	*	.6	.6	.6	.6	.6	.6	.3	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
145.	*	.6	.6	.6	.6	.6	.6	.4	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
150.	*	.7	.7	.7	.7	.7	.7	.4	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
155.	*	.7	.7	.7	.7	.7	.7	.4	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
160.	*	.7	.8	.8	.8	.8	.8	.3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
165.	*	.9	.8	.8	.8	.9	.9	.3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
170.	*	.8	.8	.8	.9	.9	.8	.3	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
175.	*	.7	.8	.7	.7	.7	.8	.2	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
180.	*	.6	.6	.5	.5	.6	.6	.2	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
185.	*	.5	.4	.3	.4	.4	.4	.1	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
190.	*	.3	.3	.2	.2	.2	.3	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
195.	*	.2	.1	.1	.1	.1	.1	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
200.	*	.2	.1	.1	.1	.1	.1	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
205.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
215.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
220.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
280.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

285.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
290.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
295.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
330.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
335.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5
340.	*	.1	.1	.1	.1	.1	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6
345.	*	.1	.1	.1	.1	.1	.1	.0	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8
350.	*	.3	.3	.2	.2	.2	.2	.0	.0	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9
355.	*	.4	.4	.4	.4	.4	.3	.0	.0	.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9
MAX	*	.9	.8	.8	.9	.9	.9	.4	.2	.7	.8	.5	.4	.3	.3	.1	.2	.1	.1	.1	.9
DEGR.	*	165	175	5	170	165	165	145	85	5	10	80	80	80	80	20	80	45	85	85	355

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
0.	*	.4	.3	.2	.1	.1	.5	.5	.4	.4	.4	.9	.5	.3	.1	.1
5.	*	.5	.4	.2	.1	.1	.4	.4	.4	.4	.4	.9	.4	.2	.1	.1
10.	*	.5	.3	.2	.1	.0	.3	.3	.3	.3	.3	.8	.3	.2	.1	.0
15.	*	.3	.3	.2	.1	.0	.3	.3	.3	.3	.3	.7	.1	.1	.1	.0
20.	*	.2	.2	.1	.1	.0	.3	.3	.3	.3	.3	.6	.1	.1	.1	.0
25.	*	.3	.2	.1	.1	.0	.3	.4	.4	.4	.4	.6	.1	.1	.1	.0
30.	*	.2	.1	.1	.1	.0	.4	.4	.4	.4	.4	.5	.1	.1	.1	.0
35.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.5	.1	.1	.1	.0
40.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.5	.1	.1	.1	.0
45.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.4	.1	.1	.1	.0
50.	*	.3	.1	.1	.0	.0	.4	.5	.5	.5	.5	.4	.1	.1	.0	.0
55.	*	.3	.1	.1	.0	.0	.4	.5	.5	.5	.5	.4	.1	.1	.0	.0
60.	*	.3	.1	.1	.0	.0	.5	.5	.5	.5	.5	.4	.1	.1	.0	.0
65.	*	.3	.1	.1	.0	.0	.5	.6	.6	.6	.6	.4	.1	.1	.0	.0

70.	*	.3	.1	.1	.0	.0	.6	.6	.6	.6	.6	.4	.1	.1	.0	.0
75.	*	.3	.1	.0	.0	.0	.6	.7	.7	.7	.7	.4	.1	.0	.0	.0
80.	*	.3	.1	.0	.0	.0	.6	.7	.7	.7	.7	.4	.1	.0	.0	.0
85.	*	.2	.0	.0	.0	.0	.5	.6	.6	.6	.6	.3	.0	.0	.0	.0
90.	*	.2	.0	.0	.0	.0	.4	.5	.5	.4	.4	.3	.0	.0	.0	.0
95.	*	.1	.0	.0	.0	.0	.2	.3	.3	.3	.3	.2	.0	.0	.0	.0
100.	*	.1	.0	.0	.0	.0	.1	.1	.1	.1	.1	.2	.0	.0	.0	.0
105.	*	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1	.2	.0	.0	.0	.0
110.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
115.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
120.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
125.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
130.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
135.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
140.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
145.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
150.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
155.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
160.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
165.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
170.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
175.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
185.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
190.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
195.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
200.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
205.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0

JOB: MEADOWS YAPHANK CAL3QHC ANAL.10 RUN: YAPHANK PROP AM 10 EX COND, NORTH SIDE

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
210.	* .0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0	.0
215.	* .0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0	.0
220.	* .0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.1	.0	.0	.0	.0
230.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
235.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
240.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
245.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
250.	* .0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
255.	* .0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	* .0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0
265.	* .0	.0	.0	.0	.0	.0	.1	.1	.2	.2	.0	.0	.0	.0	.0
270.	* .0	.0	.0	.0	.0	.0	.1	.2	.3	.3	.0	.0	.0	.0	.0

275.	*	.0	.0	.0	.0	.0	.0	.2	.3	.4	.4	.0	.0	.0	.0	.0
280.	*	.0	.0	.0	.0	.0	.1	.4	.5	.6	.6	.0	.0	.0	.0	.0
285.	*	.0	.0	.0	.0	.0	.1	.5	.6	.7	.7	.0	.0	.0	.0	.0
290.	*	.0	.0	.0	.0	.0	.3	.6	.6	.7	.7	.0	.0	.0	.0	.0
295.	*	.0	.0	.0	.0	.0	.3	.6	.6	.6	.7	.0	.0	.0	.0	.0
300.	*	.0	.0	.0	.0	.0	.4	.7	.6	.6	.6	.0	.0	.0	.0	.0
305.	*	.0	.0	.0	.0	.0	.5	.7	.6	.6	.6	.0	.0	.0	.0	.0
310.	*	.0	.0	.0	.0	.0	.5	.6	.6	.6	.6	.0	.0	.0	.0	.0
315.	*	.0	.0	.0	.0	.0	.6	.6	.5	.5	.5	.0	.0	.0	.0	.0
320.	*	.0	.0	.0	.0	.0	.8	.6	.5	.5	.5	.0	.0	.0	.0	.0
325.	*	.1	.0	.0	.0	.0	.8	.6	.6	.5	.5	.1	.0	.0	.0	.0
330.	*	.1	.0	.0	.0	.0	.8	.6	.6	.5	.5	.1	.0	.0	.0	.0
335.	*	.1	.0	.0	.0	.0	.6	.6	.6	.5	.5	.2	.0	.0	.0	.0
340.	*	.1	.0	.0	.0	.0	.7	.5	.5	.4	.4	.2	.0	.0	.0	.0
345.	*	.1	.0	.0	.0	.0	.7	.5	.4	.4	.4	.5	.1	.1	.0	.0
350.	*	.2	.1	.1	.0	.0	.7	.5	.4	.4	.3	.8	.2	.1	.1	.0
355.	*	.3	.2	.1	.1	.1	.6	.5	.5	.4	.4	.8	.5	.2	.1	.1
MAX	*	.5	.4	.2	.1	.1	.8	.7	.7	.7	.7	.9	.5	.3	.1	.1
DEGR.	*	5	5	0	0	0	320	75	75	285	285	0	0	0	0	0

THE HIGHEST CONCENTRATION OF 1.30 PPM OCCURRED AT RECEPTOR REC19.

```
'MEADOWS YAPHANK CAL3QHC ANAL.15'    60. 175.  0. 0. 55   0.3048 1 1
'RECP A  SIDEWALK'        198.     960.     6.
'RECP B  SIDEWALK'        181.    1028.     6.
'RECP C  SIDEWALK'         75.      42.     6.
'RECP D  SIDEWALK'         27.      75.     6.
'RECP E  SIDEWALK'         27.     150.     6.
'RECP F  SIDEWALK'         27.     225.     6.
'RECP G  SIDEWALK'      -1290.      34.     6.
'RECP H  SIDEWALK'         27.     375.     6.
'RECP I  SIDEWALK'      -1080.      34.     6.
'RECP J  SIDEWALK'         27.     660.     6.
'RECP K  SIDEWALK'       -870.      34.     6.
'RECP L  SIDEWALK'         27.    1080.     6.
'RECP M  SIDEWALK'       -450.      34.     6.
'RECP N  SIDEWALK'        -75.      34.     6.
'RECP O  SIDEWALK'       -150.      34.     6.
'RECP P  SIDEWALK'       -225.      34.     6.
'RECP Q  SIDEWALK'       -300.      34.     6.
'RECP R  SIDEWALK'       -375.      34.     6.
'RECP S  SIDEWALK'        -27.      75.     6.
'RECP T  SIDEWALK'        -27.     150.     6.
'RECP U  SIDEWALK'        -27.     225.     6.
'RECP V  SIDEWALK'        -27.     300.     6.
'RECP W  SIDEWALK'        -27.     375.     6.
'RECP X  SIDEWALK'        -27.     450.     6.
'RECP Y  SIDEWALK'        -27.     660.     6.
'RECP Z  SIDEWALK'        -27.     870.     6.
'RECP AA RESIDENCE'       -85.    1080.     6.
'RECP BB CW RECP'        -813.     108.     6.
'RECP CC SIDEWALK'        -27.     -75.     6.
'RECP DD SIDEWALK'        -75.     -34.     6.
'RECP EE SIDEWALK'       -150.     -34.     6.
'RECP FF SIDEWALK'       -225.     -34.     6.
'RECP GG SIDEWALK'       -300.     -34.     6.
'RECP HH SIDEWALK'       -375.     -34.     6.
'RECP II PROPOSED'       -508.    -359.     6.
'RECP JJ SIDEWALK'       -660.     -34.     6.
'RECP KK SIDEWALK'       -870.     -34.     6.
'RECP LL SIDEWALK'      -1080.     -34.     6.
'RECP MM SIDEWALK'      -1290.     -34.     6.
'RECP NN SIDEWALK'         27.     -75.     6.
'RECP OO SIDEWALK'        -27.    -150.     6.
'RECP PP SIDEWALK'        -27.    -300.     6.
'RECP QQ SIDEWALK'        -27.    -450.     6.
'RECP RR SIDEWALK'        -27.    -870.     6.
'RECP SS SIDEWALK'        -27.   -1290.     6.
'RECP TT SIDEWALK'         75.     -42.     6.
'RECP UU SIDEWALK'        150.     -36.     6.
'RECP VV SIDEWALK'        225.     -36.     6.
'RECP WW SIDEWALK'        300.     -36.     6.
'RECP XX SIDEWALK'        375.     -36.     6.
'RECP YY SIDEWALK'         27.    -150.     6.
'RECP ZZ SIDEWALK'         27.    -300.     6.
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'RECP 1  SIDEWALK'        27.    -450.     6.
'RECP 2  SIDEWALK'        27.    -870.     6.
'RECP 3  SIDEWALK'        27.   -1290.     6.

'YAPHANK PROP AM 2015 BUILD, NORTH SIDE'        6  1  0  'C'
 2
'LINK1 C.R. 46  SBQ1'  'AG'   -30.  60. -30.  160.  2.  24.0   2
    90       27       3.0   1965  31.04  1600 2 3
 2
'LINK2 C.R. 46  NBQ'  'AG'    35.  -60.  35.  -160.  2.  24.0   2
    90       27       3.0  1750 31.04  1600 2 3
 1
'LINK3 C.R. 46  NFR'  'AG'   0.   0.  0.   1200.   3797.  3.55  4. 48.
 1
'LINK4 C.R. 46  SFR'  'AG'    0.  0.  1200.   0.   3639.  3.55  4. 48.
 1
'LINK5 YAP WOOD BLVD  WFR'  'AG'   0.   0. -1200.   0.  420. 3.17  2. 24.
 2
'LINK6 YAP WOOD BLVD EBQ'  'AG'    -75.  -20.   -75.  -120.   2.  12.0   1
     90       57       3.0  213 31.04  1600 2 3
1.0 00. 5  1000. 0.  'Y' 5  0 71
```

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

DATE : 10/ 6/10
TIME : 11:41:24

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. LINK1 C.R. 46 SBQ1	-30.0	60.0	-30.0	264.6	205.	360.	AG	50.	100.0	2.0	24.0	.95	10.4
2. LINK2 C.R. 46 NBQ	35.0	-60.0	35.0	-190.1	130.	180.	AG	50.	100.0	2.0	24.0	.85	6.6
3. LINK3 C.R. 46 NFR	.0	.0	.0	1200.0	1200.	360.	AG	3797.	3.5	4.0	48.0		
4. LINK4 C.R. 46 SFR	.0	.0	1200.0	.0	1200.	90.	AG	3639.	3.5	4.0	48.0		
5. LINK5 YAP WOOD BLVD	.0	.0	-1200.0	.0	1200.	270.	AG	420.	3.2	2.0	24.0		
6. LINK6 YAP WOOD BLVD	-75.0	-20.0	-75.0	-86.4	66.	180.	AG	53.	100.0	2.0	12.0	.43	3.4

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

DATE : 10/ 6/10
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ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
1. LINK1 C.R. 46 SBQ1	90	27	3.0	1965	1600	31.04	2	3
2. LINK2 C.R. 46 NBQ	90	27	3.0	1750	1600	31.04	2	3
6. LINK6 YAP WOOD BLVD	90	57	3.0	213	1600	31.04	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECP A SIDEWALK	198.0	960.0	6.0
2. RECP B SIDEWALK	181.0	1028.0	6.0
3. RECP C SIDEWALK	75.0	42.0	6.0
4. RECP D SIDEWALK	27.0	75.0	6.0

5.	RECP E	SIDEWALK	27.0	150.0	6.0	
6.	RECP F	SIDEWALK	27.0	225.0	6.0	
7.	RECP G	SIDEWALK	-1290.0	34.0	6.0	
8.	RECP H	SIDEWALK	27.0	375.0	6.0	
9.	RECP I	SIDEWALK	-1080.0	34.0	6.0	
10.	RECP J	SIDEWALK	27.0	660.0	6.0	
11.	RECP K	SIDEWALK	-870.0	34.0	6.0	
12.	RECP L	SIDEWALK	27.0	1080.0	6.0	
13.	RECP M	SIDEWALK	-450.0	34.0	6.0	
14.	RECP N	SIDEWALK	-75.0	34.0	6.0	
15.	RECP O	SIDEWALK	-150.0	34.0	6.0	
16.	RECP P	SIDEWALK	-225.0	34.0	6.0	
17.	RECP Q	SIDEWALK	-300.0	34.0	6.0	
18.	RECP R	SIDEWALK	-375.0	34.0	6.0	
19.	RECP S	SIDEWALK	-27.0	75.0	6.0	
20.	RECP T	SIDEWALK	-27.0	150.0	6.0	
21.	RECP U	SIDEWALK	-27.0	225.0	6.0	
22.	RECP V	SIDEWALK	-27.0	300.0	6.0	
23.	RECP W	SIDEWALK	-27.0	375.0	6.0	
24.	RECP X	SIDEWALK	-27.0	450.0	6.0	
25.	RECP Y	SIDEWALK	-27.0	660.0	6.0	
26.	RECP Z	SIDEWALK	-27.0	870.0	6.0	
27.	RECP AA	RESIDENCE	-85.0	1080.0	6.0	
28.	RECP BB	CW RECP	-813.0	108.0	6.0	
29.	RECP CC	SIDEWALK	-27.0	-75.0	6.0	
30.	RECP DD	SIDEWALK	-75.0	-34.0	6.0	
31.	RECP EE	SIDEWALK	-150.0	-34.0	6.0	
32.	RECP FF	SIDEWALK	-225.0	-34.0	6.0	
33.	RECP GG	SIDEWALK	-300.0	-34.0	6.0	
34.	RECP HH	SIDEWALK	-375.0	-34.0	6.0	
35.	RECP II	PROPOSED	-508.0	-359.0	6.0	
36.	RECP JJ	SIDEWALK	-660.0	-34.0	6.0	
37.	RECP KK	SIDEWALK	-870.0	-34.0	6.0	
38.	RECP LL	SIDEWALK	-1080.0	-34.0	6.0	
39.	RECP MM	SIDEWALK	-1290.0	-34.0	6.0	
40.	RECP NN	SIDEWALK	27.0	-75.0	6.0	
41.	RECP OO	SIDEWALK	-27.0	-150.0	6.0	
42.	RECP PP	SIDEWALK	-27.0	-300.0	6.0	

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

DATE : 10/ 6/10
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RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z

43.	RECP QQ	SIDEWALK	*	-27.0	-450.0	6.0	*
44.	RECP RR	SIDEWALK	*	-27.0	-870.0	6.0	*
45.	RECP SS	SIDEWALK	*	-27.0	-1290.0	6.0	*
46.	RECP TT	SIDEWALK	*	75.0	-42.0	6.0	*
47.	RECP UU	SIDEWALK	*	150.0	-36.0	6.0	*
48.	RECP VV	SIDEWALK	*	225.0	-36.0	6.0	*
49.	RECP WW	SIDEWALK	*	300.0	-36.0	6.0	*
50.	RECP XX	SIDEWALK	*	375.0	-36.0	6.0	*
51.	RECP YY	SIDEWALK	*	27.0	-150.0	6.0	*
52.	RECP ZZ	SIDEWALK	*	27.0	-300.0	6.0	*
53.	RECP 1	SIDEWALK	*	27.0	-450.0	6.0	*
54.	RECP 2	SIDEWALK	*	27.0	-870.0	6.0	*
55.	RECP 3	SIDEWALK	*	27.0	-1290.0	6.0	*

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.0	.2	.7	.7	.7	.0	.7	.0	.6	.0	.3	.0	.2	.1	.0	.0	.0	1.1	1.1
5.	.0	.0	.1	.5	.5	.5	.0	.5	.0	.4	.0	.2	.0	.4	.1	.1	.0	.0	1.3	1.3
10.	.0	.0	.0	.3	.3	.3	.0	.3	.0	.2	.0	.1	.0	.5	.2	.1	.1	.0	1.3	1.2
15.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.1	.0	.5	.2	.1	.1	.1	1.2	1.1
20.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.0	.1	.5	.2	.2	.1	.1	.9	.9
25.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.5	.2	.2	.1	.1	.9	.9
30.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.7	.7
35.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.3	.2	.1	.1	.7	.7
40.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.3	.2	.1	.1	.6	.6
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.3	.1	.1	.1	.6	.6
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.3	.1	.1	.1	.6	.6
55.	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.1	.4	.3	.1	.1	.1	.5	.5
60.	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.1	.4	.3	.1	.1	.1	.5	.5
65.	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.2	.1	.1	.1	.5	.5
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.2	.1	.1	.1	.5	.5
80.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.2	.5	.3	.2	.2	.2	.5	.5
85.	.0	.0	.2	.1	.0	.0	.1	.0	.1	.0	.1	.0	.2	.5	.5	.3	.3	.3	.6	.5
90.	.0	.0	.4	.2	.1	.0	.1	.0	.1	.0	.1	.0	.3	.7	.5	.4	.3	.3	.7	.6
95.	.0	.0	.5	.3	.1	.1	.1	.0	.2	.0	.1	.0	.2	.7	.5	.4	.4	.2	.8	.6

100. *	.0	.0	.6	.4	.2	.1	.0	.0	.1	.0	.2	.0	.1	.7	.5	.4	.2	.2	.9	.7
105. *	.0	.0	.6	.4	.2	.1	.0	.1	.1	.0	.1	.0	.2	.7	.4	.2	.1	.1	.9	.7
110. *	.0	.0	.5	.4	.2	.2	.0	.1	.1	.0	.1	.0	.0	.6	.2	.1	.1	.0	.9	.7
115. *	.0	.0	.5	.3	.2	.2	.0	.1	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.8	.7
120. *	.0	.0	.5	.3	.2	.2	.0	.1	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.8	.7
125. *	.0	.0	.4	.3	.2	.2	.0	.1	.0	.1	.0	.0	.0	.2	.0	.0	.0	.0	.8	.7
130. *	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.9	.8
135. *	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.9	.8
140. *	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.8	.8
145. *	.1	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.8	.8
150. *	.1	.1	.3	.3	.2	.1	.0	.1	.0	.1	.0	.1	.0	.1	.0	.0	.0	.0	.8	.9
155. *	.1	.1	.3	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.8	.9
160. *	.0	.0	.3	.3	.2	.2	.0	.2	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.7	.9
165. *	.1	.0	.3	.2	.3	.2	.0	.2	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.7	1.0
170. *	.1	.0	.3	.4	.3	.3	.0	.3	.0	.3	.0	.3	.0	.1	.0	.0	.0	.0	.5	.9
175. *	.1	.0	.3	.4	.3	.4	.0	.5	.0	.5	.0	.5	.0	.1	.0	.0	.0	.0	.4	.9
180. *	.0	.0	.3	.5	.4	.5	.0	.6	.0	.6	.0	.7	.0	.1	.0	.0	.0	.0	.3	.7
185. *	.1	.1	.4	.6	.6	.7	.0	.7	.0	.8	.0	.9	.0	.1	.0	.0	.0	.0	.2	.6
190. *	.1	.1	.4	.5	.6	.7	.0	.9	.0	.9	.0	.9	.0	.1	.0	.0	.0	.0	.2	.4
195. *	.1	.2	.4	.6	.7	.8	.0	.9	.0	.8	.0	.8	.0	.0	.0	.0	.0	.0	.1	.4
200. *	.2	.2	.4	.5	.6	.8	.0	.8	.0	.7	.0	.7	.0	.0	.0	.0	.0	.0	.1	.3
205. *	.2	.2	.4	.6	.6	.7	.0	.8	.0	.7	.0	.7	.0	.0	.0	.0	.0	.0	.1	.3

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40
REC41 REC42 REC43 REC44 REC45 REC46 REC47 REC48 REC49 REC50 REC51 REC52 REC53 REC54 REC55

210. *	.2	.2	.3	.6	.7	.7	.0	.6	.0	.6	.0	.6	.0	.0	.0	.0	.0	.0	.2	.2
215. *	.2	.2	.4	.5	.6	.6	.0	.6	.0	.6	.0	.6	.0	.0	.0	.0	.0	.0	.2	.2
220. *	.2	.2	.4	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
225. *	.2	.2	.4	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
230. *	.2	.2	.4	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.1	.1
235. *	.2	.2	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
240. *	.1	.2	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
245. *	.1	.2	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
250. *	.1	.1	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.1	.1	.1	.1	.1	.1	.1	.1
255. *	.1	.1	.3	.4	.5	.5	.0	.4	.0	.4	.0	.4	.1	.1	.1	.1	.1	.1	.1	.1
260. *	.1	.1	.3	.5	.5	.5	.0	.4	.0	.4	.0	.4	.1	.1	.1	.1	.1	.1	.1	.1
265. *	.1	.2	.2	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.1	.1	.0	.0	.0	.1	.1
270. *	.1	.1	.2	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
275. *	.1	.1	.2	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
280. *	.1	.1	.3	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
285. *	.1	.1	.3	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
290. *	.1	.1	.3	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1

295.	*	.1	.1	.4	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
300.	*	.1	.1	.4	.5	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
305.	*	.1	.1	.4	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.1
310.	*	.1	.1	.4	.6	.6	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.1
315.	*	.1	.1	.4	.6	.6	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
320.	*	.1	.0	.4	.6	.6	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
325.	*	.1	.0	.4	.7	.7	.6	.0	.6	.0	.6	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
330.	*	.0	.0	.4	.7	.7	.6	.0	.6	.0	.6	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
335.	*	.0	.0	.4	.8	.8	.7	.0	.7	.0	.7	.0	.6	.0	.0	.0	.0	.0	.0	.3	.3
340.	*	.0	.0	.4	.8	.7	.7	.0	.7	.0	.7	.0	.6	.0	.0	.0	.0	.0	.0	.4	.4
345.	*	.0	.0	.4	1.0	.8	.8	.0	.8	.0	.8	.0	.5	.0	.0	.0	.0	.0	.0	.5	.4
350.	*	.0	.0	.4	.9	.9	.9	.0	.9	.0	.8	.0	.5	.0	.0	.0	.0	.0	.0	.7	.7
355.	*	.0	.0	.3	.9	.9	.8	.0	.8	.0	.8	.0	.4	.0	.1	.0	.0	.0	.0	.9	.9
MAX	*	.2	.2	.6	1.0	.9	.9	.1	.9	.2	.9	.2	.9	.3	.7	.5	.4	.4	.3	1.3	1.3
DEGR.	*	200	195	100	345	350	350	85	190	95	190	100	185	90	90	85	90	95	85	5	5

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	*	.9	.7	.7	.7	.6	.5	.0	.0	.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.8
5.	*	1.0	.8	.8	.8	.8	.7	.0	.0	.7	.6	.1	.1	.0	.0	.0	.0	.0	.0	.0	.7
10.	*	1.1	.9	.9	.9	.8	.7	.0	.0	.8	.7	.2	.1	.1	.0	.0	.0	.0	.0	.0	.5
15.	*	1.0	.8	.8	.8	.8	.8	.0	.0	.6	.7	.2	.2	.1	.1	.0	.0	.0	.0	.0	.4
20.	*	.9	.7	.7	.7	.7	.7	.0	.0	.4	.7	.2	.2	.1	.1	.1	.0	.0	.0	.0	.4
25.	*	.8	.7	.7	.7	.7	.6	.1	.0	.4	.7	.3	.2	.1	.1	.1	.0	.0	.0	.0	.4
30.	*	.7	.6	.6	.6	.6	.6	.1	.0	.4	.6	.3	.2	.1	.1	.1	.1	.0	.0	.0	.4
35.	*	.7	.6	.6	.6	.6	.6	.2	.0	.3	.5	.3	.2	.1	.1	.1	.1	.0	.0	.0	.5
40.	*	.6	.5	.5	.5	.5	.5	.2	.0	.2	.5	.3	.2	.1	.1	.1	.1	.0	.0	.0	.5
45.	*	.6	.5	.5	.5	.5	.5	.2	.1	.3	.4	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
50.	*	.6	.5	.5	.5	.5	.5	.2	.1	.3	.4	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
55.	*	.5	.4	.4	.4	.4	.4	.2	.1	.3	.4	.2	.1	.1	.1	.1	.1	.1	.1	.0	.5
60.	*	.5	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.1	.0	.5
65.	*	.5	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.1	.0	.5
70.	*	.5	.4	.4	.4	.4	.4	.2	.1	.4	.6	.3	.2	.2	.1	.1	.2	.2	.1	.0	.6
75.	*	.5	.4	.4	.4	.4	.4	.2	.1	.4	.7	.4	.3	.2	.2	.1	.2	.2	.1	.0	.6

80.	*	.5	.4	.4	.4	.4	.4	.2	.1	.5	.6	.5	.4	.3	.3	.1	.3	.2	.1	.0	.6
85.	*	.5	.4	.4	.4	.4	.4	.2	.2	.4	.6	.4	.3	.3	.2	.0	.1	.1	.2	.1	.5
90.	*	.5	.4	.4	.4	.4	.4	.2	.1	.3	.6	.5	.3	.2	.2	.0	.1	.1	.1	.1	.4
95.	*	.6	.4	.4	.4	.4	.4	.2	.1	.2	.4	.4	.2	.2	.2	.0	.1	.1	.1	.1	.3
100.	*	.6	.5	.4	.4	.4	.4	.2	.1	.1	.3	.2	.1	.1	.1	.0	.0	.0	.0	.0	.2
105.	*	.6	.5	.5	.4	.4	.4	.2	.1	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
110.	*	.7	.5	.5	.5	.4	.4	.2	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
115.	*	.7	.5	.5	.5	.4	.4	.2	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
120.	*	.7	.5	.5	.5	.4	.4	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
125.	*	.7	.5	.5	.5	.5	.4	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
130.	*	.7	.6	.6	.6	.6	.5	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
135.	*	.7	.6	.6	.6	.6	.6	.3	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
140.	*	.7	.6	.6	.6	.6	.6	.3	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
145.	*	.7	.7	.7	.7	.7	.7	.3	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
150.	*	.8	.7	.7	.7	.7	.7	.4	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
155.	*	.9	.7	.8	.8	.8	.8	.3	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
160.	*	1.0	.9	.8	.8	.8	.8	.3	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
165.	*	1.1	.9	.9	.9	.9	.9	.4	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
170.	*	1.1	1.0	1.0	.9	1.0	.9	.3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
175.	*	1.1	.9	.8	.8	.8	.8	.3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
180.	*	.8	.7	.6	.7	.6	.7	.2	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
185.	*	.7	.5	.5	.5	.4	.5	.1	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
190.	*	.6	.4	.3	.2	.2	.3	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
195.	*	.5	.2	.1	.1	.1	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
200.	*	.4	.2	.1	.1	.1	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
205.	*	.3	.1	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
215.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
280.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0

285.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.2	.1	.1	.1	.1	.0	.1	.0	.0	.0	.0
290.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	.0
295.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	*	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	*	.2	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
330.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
335.	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5
340.	*	.3	.1	.1	.1	.1	.1	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6
345.	*	.3	.1	.1	.1	.1	.1	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9
350.	*	.5	.3	.3	.3	.2	.2	.0	.0	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
355.	*	.7	.5	.5	.4	.4	.3	.0	.0	.5	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9
MAX	*	1.1	1.0	1.0	.9	1.0	.9	.4	.2	.8	.7	.5	.4	.3	.3	.1	.3	.2	.2	.1	1.0
DEGR.	*	10	170	170	165	170	165	150	85	10	75	80	80	80	80	20	80	70	85	85	350

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
0.	*	.5	.3	.2	.1	.1	.5	.4	.3	.3	.3	.8	.5	.3	.1	.1
5.	*	.5	.4	.2	.1	.1	.4	.3	.3	.3	.3	.7	.4	.2	.1	.1
10.	*	.5	.3	.2	.1	.0	.3	.3	.3	.3	.3	.7	.3	.2	.1	.0
15.	*	.4	.3	.2	.1	.0	.3	.3	.3	.3	.3	.6	.1	.1	.1	.0
20.	*	.2	.3	.1	.1	.0	.3	.3	.3	.3	.3	.5	.1	.1	.1	.0
25.	*	.2	.2	.1	.1	.0	.3	.3	.3	.3	.3	.5	.1	.1	.1	.0
30.	*	.2	.1	.1	.1	.0	.3	.4	.4	.4	.4	.5	.1	.1	.1	.0
35.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.5	.1	.1	.1	.0
40.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.4	.1	.1	.1	.0
45.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.4	.1	.1	.1	.0
50.	*	.3	.1	.1	.0	.0	.4	.4	.4	.4	.4	.4	.1	.1	.0	.0
55.	*	.3	.1	.1	.0	.0	.4	.5	.5	.5	.5	.4	.1	.1	.0	.0
60.	*	.3	.1	.1	.0	.0	.5	.5	.5	.5	.5	.4	.1	.1	.0	.0
65.	*	.3	.1	.1	.0	.0	.5	.6	.6	.6	.6	.4	.1	.1	.0	.0

70.	*	.3	.1	.1	.0	.0	.5	.6	.6	.6	.6	.4	.1	.1	.0	.0
75.	*	.3	.1	.0	.0	.0	.6	.7	.7	.7	.6	.4	.1	.0	.0	.0
80.	*	.3	.1	.0	.0	.0	.6	.7	.7	.6	.6	.4	.1	.0	.0	.0
85.	*	.2	.0	.0	.0	.0	.5	.6	.6	.6	.6	.3	.0	.0	.0	.0
90.	*	.2	.0	.0	.0	.0	.4	.5	.4	.4	.4	.3	.0	.0	.0	.0
95.	*	.1	.0	.0	.0	.0	.2	.3	.3	.3	.3	.2	.0	.0	.0	.0
100.	*	.1	.0	.0	.0	.0	.1	.1	.1	.1	.1	.2	.0	.0	.0	.0
105.	*	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1	.2	.0	.0	.0	.0
110.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
115.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
120.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
125.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
130.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
135.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
140.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
145.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
150.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
155.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
160.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
165.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
170.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
175.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
185.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
190.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.2	.0	.0	.0	.0
195.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
200.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
205.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 BUILD, NORTH SIDE

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
210.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
215.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
230.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
235.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
240.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
245.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
250.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	*	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0
265.	*	.0	.0	.0	.0	.0	.0	.1	.1	.1	.2	.0	.0	.0	.0	.0
270.	*	.0	.0	.0	.0	.0	.0	.1	.2	.3	.3	.0	.0	.0	.0	.0

275.	*	.0	.0	.0	.0	.0	.0	.2	.3	.4	.4	.0	.0	.0	.0	.0
280.	*	.0	.0	.0	.0	.0	.1	.4	.5	.6	.6	.0	.0	.0	.0	.0
285.	*	.0	.0	.0	.0	.0	.1	.5	.6	.6	.7	.0	.0	.0	.0	.0
290.	*	.0	.0	.0	.0	.0	.3	.5	.6	.6	.7	.0	.0	.0	.0	.0
295.	*	.0	.0	.0	.0	.0	.3	.6	.6	.6	.6	.0	.0	.0	.0	.0
300.	*	.0	.0	.0	.0	.0	.4	.7	.6	.6	.6	.0	.0	.0	.0	.0
305.	*	.0	.0	.0	.0	.0	.5	.6	.6	.6	.6	.0	.0	.0	.0	.0
310.	*	.0	.0	.0	.0	.0	.5	.6	.5	.5	.5	.0	.0	.0	.0	.0
315.	*	.0	.0	.0	.0	.0	.6	.6	.5	.5	.5	.0	.0	.0	.0	.0
320.	*	.0	.0	.0	.0	.0	.8	.6	.6	.5	.5	.0	.0	.0	.0	.0
325.	*	.1	.0	.0	.0	.0	.8	.6	.6	.5	.5	.0	.0	.0	.0	.0
330.	*	.1	.0	.0	.0	.0	.7	.6	.6	.5	.5	.1	.0	.0	.0	.0
335.	*	.1	.0	.0	.0	.0	.8	.5	.5	.4	.4	.2	.0	.0	.0	.0
340.	*	.1	.0	.0	.0	.0	.8	.5	.5	.4	.4	.2	.1	.0	.0	.0
345.	*	.1	.0	.0	.0	.0	.7	.5	.5	.4	.4	.6	.1	.1	.0	.0
350.	*	.2	.1	.1	.0	.0	.7	.5	.4	.4	.3	.8	.2	.1	.1	.0
355.	*	.3	.2	.1	.1	.1	.6	.4	.4	.3	.3	.8	.5	.2	.1	.1
MAX	*	.5	.4	.2	.1	.1	.8	.7	.7	.7	.7	.8	.5	.3	.1	.1
DEGR.	*	0	5	0	0	0	320	75	75	75	285	0	0	0	0	0

THE HIGHEST CONCENTRATION OF 1.30 PPM OCCURRED AT RECEPTOR REC19.

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'MEADOWS YAPHANK CAL3QHC ANAL.15'    60. 175.  0. 0. 55   0.3048 1 1
'RECP A  SIDEWALK'        198.     960.     6.
'RECP B  SIDEWALK'        181.    1028.     6.
'RECP C  SIDEWALK'         75.      42.     6.
'RECP D  SIDEWALK'         27.      75.     6.
'RECP E  SIDEWALK'         27.     150.     6.
'RECP F  SIDEWALK'         27.     225.     6.
'RECP G  SIDEWALK'      -1290.      34.     6.
'RECP H  SIDEWALK'         27.     375.     6.
'RECP I  SIDEWALK'      -1080.      34.     6.
'RECP J  SIDEWALK'         27.     660.     6.
'RECP K  SIDEWALK'       -870.      34.     6.
'RECP L  SIDEWALK'         27.    1080.     6.
'RECP M  SIDEWALK'       -450.      34.     6.
'RECP N  SIDEWALK'        -75.      34.     6.
'RECP O  SIDEWALK'       -150.      34.     6.
'RECP P  SIDEWALK'       -225.      34.     6.
'RECP Q  SIDEWALK'       -300.      34.     6.
'RECP R  SIDEWALK'       -375.      34.     6.
'RECP S  SIDEWALK'        -27.      75.     6.
'RECP T  SIDEWALK'        -27.     150.     6.
'RECP U  SIDEWALK'        -27.     225.     6.
'RECP V  SIDEWALK'        -27.     300.     6.
'RECP W  SIDEWALK'        -27.     375.     6.
'RECP X  SIDEWALK'        -27.     450.     6.
'RECP Y  SIDEWALK'        -27.     660.     6.
'RECP Z  SIDEWALK'        -27.     870.     6.
'RECP AA RESIDENCE'       -85.    1080.     6.
'RECP BB CW RECP'        -813.     108.     6.
'RECP CC SIDEWALK'        -27.     -75.     6.
'RECP DD SIDEWALK'        -75.     -34.     6.
'RECP EE SIDEWALK'       -150.     -34.     6.
'RECP FF SIDEWALK'       -225.     -34.     6.
'RECP GG SIDEWALK'       -300.     -34.     6.
'RECP HH SIDEWALK'       -375.     -34.     6.
'RECP II PROPOSED'       -508.    -359.     6.
'RECP JJ SIDEWALK'       -660.     -34.     6.
'RECP KK SIDEWALK'       -870.     -34.     6.
'RECP LL SIDEWALK'      -1080.     -34.     6.
'RECP MM SIDEWALK'      -1290.     -34.     6.
'RECP NN SIDEWALK'         27.     -75.     6.
'RECP OO SIDEWALK'        -27.    -150.     6.
'RECP PP SIDEWALK'        -27.    -300.     6.
'RECP QQ SIDEWALK'        -27.    -450.     6.
'RECP RR SIDEWALK'        -27.    -870.     6.
'RECP SS SIDEWALK'        -27.   -1290.     6.
'RECP TT SIDEWALK'         75.     -42.     6.
'RECP UU SIDEWALK'        150.     -36.     6.
'RECP VV SIDEWALK'        225.     -36.     6.
'RECP WW SIDEWALK'        300.     -36.     6.
'RECP XX SIDEWALK'        375.     -36.     6.
'RECP YY SIDEWALK'         27.    -150.     6.
'RECP ZZ SIDEWALK'         27.    -300.     6.
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'RECP 1  SIDEWALK'        27.    -450.     6.
'RECP 2  SIDEWALK'        27.    -870.     6.
'RECP 3  SIDEWALK'        27.   -1290.     6.

'YAPHANK PROP AM 2015 NO BUILD, NORTH SIDE'        6  1  0  'C'
 2
'LINK1 C.R. 46  SBQ1'  'AG'   -30.   60.  -30.  160.  2.  24.0   2
    90       27       3.0   1736  31.04  1600 2 3
 2
'LINK2 C.R. 46  NBQ'  'AG'    35.  -60.   35.  -160.  2.  24.0   2
    90       27       3.0  1708 31.04  1600 2 3
 1
'LINK3 C.R. 46  NFR'  'AG'   0.   0.  0.   1200.   3454.  3.55  4. 48.
 1
'LINK4 C.R. 46  SFR'  'AG'    0.  0.  1200.   0.   3593.  3.55  4. 48.
 1
'LINK5 YAP WOOD BLVD  WFR'  'AG'   0.   0.  -1200.   0.  247. 3.17  2. 24.
 2
'LINK6 YAP WOOD BLVD EBQ'  'AG'    -75.  -20.   -75.  -120.   2.  12.0   1
     90       57       3.0  203 31.04  1600 2 3
1.0 00. 5  1000. 0.  'Y' 5  0 71
```

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

DATE : 10/ 6/10
TIME : 11:45:36

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 175. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = .0 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (FT) X1	Y1	X2	Y2	LENGTH (FT)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (FT)	W (FT)	V/C	QUEUE (VEH)
1. LINK1 C.R. 46 SBQ1	-30.0	60.0	-30.0	188.1	128.	360.	AG	50.	100.0	2.0	24.0	.84	6.5
2. LINK2 C.R. 46 NBQ	35.0	-60.0	35.0	-186.1	126.	180.	AG	50.	100.0	2.0	24.0	.83	6.4
3. LINK3 C.R. 46 NFR	.0	.0	.0	1200.0	1200.	360.	AG	3454.	3.5	4.0	48.0		
4. LINK4 C.R. 46 SFR	.0	.0	1200.0	.0	1200.	90.	AG	3593.	3.5	4.0	48.0		
5. LINK5 YAP WOOD BLVD	.0	.0	-1200.0	.0	1200.	270.	AG	247.	3.2	2.0	24.0		
6. LINK6 YAP WOOD BLVD	-75.0	-20.0	-75.0	-83.3	63.	180.	AG	53.	100.0	2.0	12.0	.41	3.2

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

DATE : 10/ 6/10
TIME : 11:45:36

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
1. LINK1 C.R. 46 SBQ1	90	27	3.0	1736	1600	31.04	2	3
2. LINK2 C.R. 46 NBQ	90	27	3.0	1708	1600	31.04	2	3
6. LINK6 YAP WOOD BLVD	90	57	3.0	203	1600	31.04	2	3

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z
1. RECP A SIDEWALK	198.0	960.0	6.0
2. RECP B SIDEWALK	181.0	1028.0	6.0
3. RECP C SIDEWALK	75.0	42.0	6.0
4. RECP D SIDEWALK	27.0	75.0	6.0

5.	RECP E	SIDEWALK	*	27.0	150.0	6.0	*
6.	RECP F	SIDEWALK	*	27.0	225.0	6.0	*
7.	RECP G	SIDEWALK	*	-1290.0	34.0	6.0	*
8.	RECP H	SIDEWALK	*	27.0	375.0	6.0	*
9.	RECP I	SIDEWALK	*	-1080.0	34.0	6.0	*
10.	RECP J	SIDEWALK	*	27.0	660.0	6.0	*
11.	RECP K	SIDEWALK	*	-870.0	34.0	6.0	*
12.	RECP L	SIDEWALK	*	27.0	1080.0	6.0	*
13.	RECP M	SIDEWALK	*	-450.0	34.0	6.0	*
14.	RECP N	SIDEWALK	*	-75.0	34.0	6.0	*
15.	RECP O	SIDEWALK	*	-150.0	34.0	6.0	*
16.	RECP P	SIDEWALK	*	-225.0	34.0	6.0	*
17.	RECP Q	SIDEWALK	*	-300.0	34.0	6.0	*
18.	RECP R	SIDEWALK	*	-375.0	34.0	6.0	*
19.	RECP S	SIDEWALK	*	-27.0	75.0	6.0	*
20.	RECP T	SIDEWALK	*	-27.0	150.0	6.0	*
21.	RECP U	SIDEWALK	*	-27.0	225.0	6.0	*
22.	RECP V	SIDEWALK	*	-27.0	300.0	6.0	*
23.	RECP W	SIDEWALK	*	-27.0	375.0	6.0	*
24.	RECP X	SIDEWALK	*	-27.0	450.0	6.0	*
25.	RECP Y	SIDEWALK	*	-27.0	660.0	6.0	*
26.	RECP Z	SIDEWALK	*	-27.0	870.0	6.0	*
27.	RECP AA	RESIDENCE	*	-85.0	1080.0	6.0	*
28.	RECP BB	CW RECP	*	-813.0	108.0	6.0	*
29.	RECP CC	SIDEWALK	*	-27.0	-75.0	6.0	*
30.	RECP DD	SIDEWALK	*	-75.0	-34.0	6.0	*
31.	RECP EE	SIDEWALK	*	-150.0	-34.0	6.0	*
32.	RECP FF	SIDEWALK	*	-225.0	-34.0	6.0	*
33.	RECP GG	SIDEWALK	*	-300.0	-34.0	6.0	*
34.	RECP HH	SIDEWALK	*	-375.0	-34.0	6.0	*
35.	RECP II	PROPOSED	*	-508.0	-359.0	6.0	*
36.	RECP JJ	SIDEWALK	*	-660.0	-34.0	6.0	*
37.	RECP KK	SIDEWALK	*	-870.0	-34.0	6.0	*
38.	RECP LL	SIDEWALK	*	-1080.0	-34.0	6.0	*
39.	RECP MM	SIDEWALK	*	-1290.0	-34.0	6.0	*
40.	RECP NN	SIDEWALK	*	27.0	-75.0	6.0	*
41.	RECP OO	SIDEWALK	*	-27.0	-150.0	6.0	*
42.	RECP PP	SIDEWALK	*	-27.0	-300.0	6.0	*

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

DATE : 10/ 6/10
TIME : 11:45:36

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (FT) X	Y	Z

43.	RECP QQ	SIDEWALK	*	-27.0	-450.0	6.0	*
44.	RECP RR	SIDEWALK	*	-27.0	-870.0	6.0	*
45.	RECP SS	SIDEWALK	*	-27.0	-1290.0	6.0	*
46.	RECP TT	SIDEWALK	*	75.0	-42.0	6.0	*
47.	RECP UU	SIDEWALK	*	150.0	-36.0	6.0	*
48.	RECP VV	SIDEWALK	*	225.0	-36.0	6.0	*
49.	RECP WW	SIDEWALK	*	300.0	-36.0	6.0	*
50.	RECP XX	SIDEWALK	*	375.0	-36.0	6.0	*
51.	RECP YY	SIDEWALK	*	27.0	-150.0	6.0	*
52.	RECP ZZ	SIDEWALK	*	27.0	-300.0	6.0	*
53.	RECP 1	SIDEWALK	*	27.0	-450.0	6.0	*
54.	RECP 2	SIDEWALK	*	27.0	-870.0	6.0	*
55.	RECP 3	SIDEWALK	*	27.0	-1290.0	6.0	*

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	.0	.0	.2	.7	.6	.6	.0	.6	.0	.5	.0	.3	.0	.2	.1	.0	.0	.0	1.1	.8
5.	.0	.0	.1	.4	.4	.4	.0	.4	.0	.4	.0	.2	.0	.3	.1	.1	.0	.0	1.2	1.0
10.	.0	.0	.0	.3	.3	.2	.0	.2	.0	.2	.0	.1	.0	.4	.2	.1	.0	.0	1.1	1.0
15.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.1	.0	.5	.2	.1	.1	.0	1.1	1.0
20.	.0	.0	.0	.1	.1	.1	.0	.1	.0	.1	.0	.0	.1	.4	.2	.2	.1	.1	.9	.9
25.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.8	.7
30.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.2	.1	.1	.6	.6
35.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.1	.1	.1	.6	.6
40.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.2	.1	.1	.1	.6	.6
45.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.4	.3	.1	.1	.1	.5	.5
50.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
55.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
60.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.3	.1	.1	.1	.5	.5
65.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.2	.3	.1	.1	.1	.5	.5
70.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.1	.1	.1	.1	.4	.4
75.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.3	.2	.1	.1	.1	.4	.4
80.	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.3	.2	.2	.2	.5	.5
85.	.0	.0	.2	.1	.0	.0	.0	.0	.1	.0	.1	.0	.2	.5	.3	.3	.3	.3	.6	.5
90.	.0	.0	.4	.2	.1	.0	.1	.0	.1	.0	.1	.0	.3	.6	.5	.4	.3	.3	.7	.6
95.	.0	.0	.5	.3	.1	.1	.1	.0	.1	.0	.1	.0	.2	.7	.5	.4	.4	.2	.8	.6

100.	*	.0	.0	.6	.4	.2	.1	.0	.0	.0	.0	.1	.0	.1	.7	.5	.4	.2	.2	.9	.7
105.	*	.0	.0	.6	.4	.2	.1	.0	.1	.0	.0	.0	.0	.1	.7	.4	.2	.1	.1	.8	.6
110.	*	.0	.0	.5	.4	.2	.2	.0	.1	.0	.0	.0	.0	.0	.4	.2	.1	.1	.0	.8	.6
115.	*	.0	.0	.5	.3	.2	.2	.0	.1	.0	.0	.0	.0	.0	.4	.1	.0	.0	.0	.8	.7
120.	*	.0	.0	.5	.3	.2	.2	.0	.1	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.8	.7
125.	*	.0	.0	.4	.3	.2	.2	.0	.1	.0	.1	.0	.0	.0	.2	.0	.0	.0	.0	.8	.7
130.	*	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.8	.7
135.	*	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.8	.7
140.	*	.0	.0	.4	.3	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.1	.0	.0	.0	.7	.8
145.	*	.1	.0	.4	.2	.2	.1	.0	.1	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.7	.8
150.	*	.1	.1	.3	.2	.2	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.7	.8
155.	*	.1	.0	.3	.2	.2	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.7	.8
160.	*	.0	.0	.3	.2	.2	.2	.0	.2	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.7	.9
165.	*	.0	.0	.3	.2	.3	.2	.0	.2	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.7	.9
170.	*	.1	.0	.3	.4	.3	.2	.0	.3	.0	.3	.0	.3	.0	.1	.0	.0	.0	.0	.5	.9
175.	*	.0	.0	.3	.4	.3	.4	.0	.4	.0	.5	.0	.4	.0	.1	.0	.0	.0	.0	.3	.8
180.	*	.0	.0	.3	.5	.4	.5	.0	.6	.0	.6	.0	.6	.0	.1	.0	.0	.0	.0	.3	.7
185.	*	.1	.1	.4	.5	.5	.6	.0	.6	.0	.7	.0	.8	.0	.1	.0	.0	.0	.0	.2	.6
190.	*	.1	.1	.4	.5	.6	.6	.0	.7	.0	.8	.0	.8	.0	.1	.0	.0	.0	.0	.2	.4
195.	*	.1	.2	.4	.6	.6	.7	.0	.7	.0	.8	.0	.8	.0	.0	.0	.0	.0	.0	.1	.4
200.	*	.2	.2	.4	.5	.6	.7	.0	.6	.0	.7	.0	.7	.0	.0	.0	.0	.0	.0	.1	.3
205.	*	.2	.2	.4	.5	.5	.7	.0	.6	.0	.6	.0	.6	.0	.0	.0	.0	.0	.0	.1	.3

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

WIND * CONCENTRATION
ANGLE * (PPM)
(DEGR)* REC1 REC2 REC3 REC4 REC5 REC6 REC7 REC8 REC9 REC10 REC11 REC12 REC13 REC14 REC15 REC16 REC17 REC18 REC19 REC20
REC21 REC22 REC23 REC24 REC25 REC26 REC27 REC28 REC29 REC30 REC31 REC32 REC33 REC34 REC35 REC36 REC37 REC38 REC39 REC40
REC41 REC42 REC43 REC44 REC45 REC46 REC47 REC48 REC49 REC50 REC51 REC52 REC53 REC54 REC55

210.	*	.2	.2	.3	.5	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
215.	*	.2	.2	.3	.4	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
220.	*	.2	.2	.4	.4	.6	.6	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
225.	*	.1	.2	.3	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
230.	*	.1	.1	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
235.	*	.1	.1	.4	.4	.5	.5	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
240.	*	.1	.1	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
245.	*	.1	.1	.4	.4	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
250.	*	.1	.1	.4	.3	.4	.3	.0	.3	.0	.3	.0	.3	.0	.0	.0	.0	.0	.0	.1	.1
255.	*	.1	.1	.3	.3	.4	.3	.0	.3	.0	.3	.0	.3	.0	.0	.0	.0	.0	.0	.1	.1
260.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
265.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
270.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
275.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
280.	*	.1	.1	.2	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
285.	*	.1	.1	.2	.4	.4	.3	.0	.3	.0	.3	.0	.3	.0	.0	.0	.0	.0	.0	.1	.1
290.	*	.1	.1	.2	.4	.4	.3	.0	.3	.0	.3	.0	.3	.0	.0	.0	.0	.0	.0	.1	.1

295.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
300.	*	.1	.1	.3	.5	.5	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.1	.1
305.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.1
310.	*	.1	.1	.3	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.1
315.	*	.1	.1	.4	.5	.4	.4	.0	.4	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.2	.2
320.	*	.1	.0	.4	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
325.	*	.1	.0	.3	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
330.	*	.0	.0	.3	.6	.5	.5	.0	.5	.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.2	.2
335.	*	.0	.0	.3	.7	.6	.6	.0	.6	.0	.6	.0	.5	.0	.0	.0	.0	.0	.0	.3	.2
340.	*	.0	.0	.3	.7	.7	.7	.0	.7	.0	.7	.0	.5	.0	.0	.0	.0	.0	.0	.4	.3
345.	*	.0	.0	.4	.8	.8	.8	.0	.8	.0	.7	.0	.5	.0	.0	.0	.0	.0	.0	.4	.3
350.	*	.0	.0	.3	.8	.8	.8	.0	.8	.0	.8	.0	.4	.0	.0	.0	.0	.0	.0	.7	.5
355.	*	.0	.0	.3	.8	.8	.8	.0	.8	.0	.7	.0	.4	.0	.1	.0	.0	.0	.0	.8	.6
MAX	*	.2	.2	.6	.8	.8	.8	.1	.8	.1	.8	.1	.8	.3	.7	.5	.4	.4	.3	1.2	1.0
DEGR.	*	200	195	100	345	345	345	90	345	85	190	45	185	90	95	90	90	95	85	5	5

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	*	.6	.6	.6	.6	.5	.5	.0	.0	.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.8
5.	*	.8	.8	.8	.7	.7	.6	.0	.0	.7	.5	.1	.1	.0	.0	.0	.0	.0	.0	.0	.6
10.	*	.8	.8	.8	.8	.8	.7	.0	.0	.6	.7	.2	.1	.1	.0	.0	.0	.0	.0	.0	.5
15.	*	.8	.8	.8	.8	.7	.7	.0	.0	.5	.7	.2	.1	.1	.1	.0	.0	.0	.0	.0	.4
20.	*	.7	.7	.7	.7	.7	.6	.0	.0	.4	.6	.2	.2	.1	.1	.1	.0	.0	.0	.0	.3
25.	*	.6	.6	.6	.6	.6	.6	.1	.0	.4	.6	.2	.2	.1	.1	.1	.0	.0	.0	.0	.3
30.	*	.5	.5	.5	.5	.5	.5	.1	.0	.3	.5	.2	.2	.1	.1	.1	.0	.0	.0	.0	.3
35.	*	.5	.5	.5	.5	.5	.5	.1	.0	.3	.5	.3	.1	.1	.1	.1	.1	.0	.0	.0	.4
40.	*	.5	.5	.5	.5	.5	.5	.2	.0	.2	.5	.3	.1	.1	.1	.1	.1	.0	.0	.0	.5
45.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.3	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
50.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.4	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
55.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.4	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
60.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
65.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.2	.1	.1	.1	.1	.1	.1	.0	.0	.5
70.	*	.3	.3	.3	.3	.3	.3	.2	.1	.4	.5	.3	.2	.2	.1	.1	.1	.0	.0	.0	.6
75.	*	.3	.3	.3	.3	.3	.3	.2	.1	.4	.7	.4	.3	.2	.2	.1	.1	.0	.0	.0	.6

80.	*	.4	.4	.4	.4	.4	.4	.2	.1	.5	.6	.5	.4	.3	.3	.1	.1	.1	.0	.0	.6
85.	*	.4	.4	.4	.4	.4	.4	.2	.2	.4	.6	.4	.3	.3	.2	.0	.1	.1	.1	.1	.5
90.	*	.4	.4	.4	.4	.4	.4	.2	.1	.3	.5	.5	.3	.2	.2	.0	.1	.1	.1	.1	.4
95.	*	.5	.4	.4	.4	.4	.4	.2	.1	.2	.4	.3	.2	.2	.2	.0	.1	.1	.1	.0	.3
100.	*	.5	.5	.4	.4	.4	.4	.2	.1	.1	.3	.2	.1	.1	.1	.0	.0	.0	.0	.0	.2
105.	*	.4	.4	.4	.3	.3	.3	.2	.1	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
110.	*	.5	.4	.4	.4	.3	.3	.2	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
115.	*	.6	.5	.5	.5	.4	.4	.2	.0	.1	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
120.	*	.6	.5	.5	.5	.4	.4	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
125.	*	.6	.5	.5	.5	.5	.4	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
130.	*	.5	.5	.5	.5	.5	.4	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
135.	*	.5	.5	.5	.5	.5	.5	.2	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
140.	*	.6	.6	.6	.6	.6	.6	.3	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
145.	*	.6	.6	.6	.6	.6	.6	.3	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
150.	*	.6	.6	.6	.6	.6	.6	.3	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
155.	*	.7	.7	.7	.7	.7	.7	.3	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
160.	*	.8	.7	.7	.8	.8	.8	.3	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
165.	*	.8	.8	.8	.8	.9	.9	.3	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
170.	*	.8	.8	.8	.8	.9	.8	.3	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
175.	*	.8	.8	.6	.7	.7	.8	.2	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
180.	*	.6	.5	.5	.5	.6	.6	.2	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
185.	*	.5	.4	.3	.3	.4	.4	.1	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
190.	*	.3	.3	.2	.2	.2	.2	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
195.	*	.2	.1	.1	.1	.1	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
200.	*	.2	.1	.1	.1	.1	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
205.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
210.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
215.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
230.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
235.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
240.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
245.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
250.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
265.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
270.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
275.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
280.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

285.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
290.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
295.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
300.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
305.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
310.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
315.	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
320.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
325.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
330.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
335.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4
340.	*	.1	.1	.1	.1	.1	.1	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6
345.	*	.1	.1	.1	.1	.1	.1	.0	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8
350.	*	.2	.2	.2	.2	.2	.2	.0	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8
355.	*	.4	.4	.4	.4	.4	.3	.0	.0	.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9
MAX	*	.8	.8	.8	.8	.9	.9	.3	.2	.7	.7	.5	.4	.3	.3	.1	.1	.1	.1	.1	.9
DEGR.	*	160	175	5	10	165	165	140	85	5	75	80	80	80	80	20	35	45	85	85	355

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
0.	*	.4	.2	.2	.1	.1	.5	.4	.3	.3	.3	.8	.4	.3	.1	.1
5.	*	.5	.3	.2	.1	.1	.4	.3	.3	.3	.3	.7	.4	.2	.1	.0
10.	*	.4	.3	.2	.1	.0	.3	.3	.3	.3	.3	.6	.3	.2	.0	.0
15.	*	.3	.3	.2	.1	.0	.3	.3	.3	.3	.3	.6	.1	.1	.1	.0
20.	*	.2	.2	.1	.1	.0	.3	.3	.3	.3	.3	.5	.1	.1	.1	.0
25.	*	.2	.2	.1	.1	.0	.3	.3	.3	.3	.3	.5	.1	.1	.1	.0
30.	*	.2	.1	.1	.1	.0	.3	.4	.4	.4	.4	.5	.1	.1	.1	.0
35.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.5	.1	.1	.1	.0
40.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.4	.1	.1	.1	.0
45.	*	.3	.1	.1	.1	.0	.4	.4	.4	.4	.4	.4	.1	.1	.1	.0
50.	*	.3	.1	.1	.0	.0	.4	.4	.4	.4	.4	.4	.1	.1	.0	.0
55.	*	.3	.1	.1	.0	.0	.4	.5	.5	.5	.5	.4	.1	.1	.0	.0
60.	*	.3	.1	.1	.0	.0	.5	.5	.5	.5	.5	.4	.1	.1	.0	.0
65.	*	.3	.1	.1	.0	.0	.5	.5	.5	.5	.5	.4	.1	.1	.0	.0

70.	*	.3	.1	.1	.0	.0	.5	.6	.6	.6	.6	.4	.1	.1	.0	.0
75.	*	.3	.1	.0	.0	.0	.6	.7	.6	.6	.6	.4	.1	.0	.0	.0
80.	*	.3	.1	.0	.0	.0	.6	.7	.6	.6	.6	.4	.1	.0	.0	.0
85.	*	.2	.0	.0	.0	.0	.5	.6	.6	.6	.6	.3	.0	.0	.0	.0
90.	*	.2	.0	.0	.0	.0	.4	.5	.4	.4	.4	.3	.0	.0	.0	.0
95.	*	.1	.0	.0	.0	.0	.2	.3	.3	.3	.3	.2	.0	.0	.0	.0
100.	*	.1	.0	.0	.0	.0	.1	.1	.1	.1	.1	.2	.0	.0	.0	.0
105.	*	.1	.0	.0	.0	.0	.0	.1	.1	.1	.1	.2	.0	.0	.0	.0
110.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
115.	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
120.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
125.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
130.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
135.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
140.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
145.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
150.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
155.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
160.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
165.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
170.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
175.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
180.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
185.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
190.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
195.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
200.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
205.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0

JOB: MEADOWS YAPHANK CAL3QHC ANAL.15 RUN: YAPHANK PROP AM 2015 NO BUILD, NORTH SID

WIND ANGLE RANGE: 0.-355.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55
210.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0
215.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
220.	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
225.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
230.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
235.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
240.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
245.	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
250.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
255.	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
260.	*	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0
265.	*	.0	.0	.0	.0	.0	.0	.1	.1	.1	.2	.0	.0	.0	.0	.0
270.	*	.0	.0	.0	.0	.0	.0	.1	.2	.3	.3	.0	.0	.0	.0	.0

275.	*	.0	.0	.0	.0	.0	.0	.2	.3	.4	.4	.0	.0	.0	.0	.0
280.	*	.0	.0	.0	.0	.0	.1	.4	.5	.6	.6	.0	.0	.0	.0	.0
285.	*	.0	.0	.0	.0	.0	.1	.5	.6	.6	.7	.0	.0	.0	.0	.0
290.	*	.0	.0	.0	.0	.0	.3	.5	.6	.6	.7	.0	.0	.0	.0	.0
295.	*	.0	.0	.0	.0	.0	.3	.6	.6	.6	.6	.0	.0	.0	.0	.0
300.	*	.0	.0	.0	.0	.0	.4	.6	.6	.6	.6	.0	.0	.0	.0	.0
305.	*	.0	.0	.0	.0	.0	.4	.6	.6	.6	.6	.0	.0	.0	.0	.0
310.	*	.0	.0	.0	.0	.0	.5	.6	.5	.5	.5	.0	.0	.0	.0	.0
315.	*	.0	.0	.0	.0	.0	.5	.6	.5	.5	.5	.0	.0	.0	.0	.0
320.	*	.0	.0	.0	.0	.0	.7	.6	.5	.5	.5	.0	.0	.0	.0	.0
325.	*	.0	.0	.0	.0	.0	.7	.6	.5	.5	.5	.0	.0	.0	.0	.0
330.	*	.1	.0	.0	.0	.0	.7	.6	.6	.5	.5	.1	.0	.0	.0	.0
335.	*	.1	.0	.0	.0	.0	.6	.5	.5	.4	.4	.2	.0	.0	.0	.0
340.	*	.1	.0	.0	.0	.0	.6	.5	.5	.4	.4	.2	.0	.0	.0	.0
345.	*	.1	.0	.0	.0	.0	.7	.5	.4	.4	.4	.5	.1	.1	.0	.0
350.	*	.1	.1	.1	.0	.0	.7	.5	.4	.4	.3	.6	.2	.1	.1	.0
355.	*	.3	.2	.1	.1	.0	.6	.4	.4	.3	.3	.8	.4	.2	.1	.1
MAX	*	.5	.3	.2	.1	.1	.7	.7	.6	.6	.7	.8	.4	.3	.1	.1
DEGR.	*	5	5	0	0	0	320	75	70	70	285	0	0	0	0	0

THE HIGHEST CONCENTRATION OF 1.20 PPM OCCURRED AT RECEPTOR REC19.

Appendix F-3
Greenhouse Gas Emission and Carbon Footprint Analysis

B. Laing Associates

November 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

GREENHOUSE GAS EMISSION AND CARBON FOOTPRINT ANALYSIS

THE MEADOWS AT YAPHANK
TOWN OF BROOKHAVEN, NEW YORK

NOVEMBER 2010

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GREENHOUSE GAS EMISSION AND CARBON FOOTPRINT ANALYSIS
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APPENDICES

APPENDIX A
CO_2 EMISSION ANALYSIS FOR RESIDENTIAL SCENARIOS

APPENDIX B
CO_2 EMISSION ANALYSIS FOR COMMERCIAL SCENARIOS

1.0 PROJECT BACKGROUND

The proposed project, known as **"The Meadows at Yaphank",** is a change of zone application on 322.37 acres of an overall 333.46-acre combined project site, which is located at the northwestern corner of the interchange of County Route 46 (the William Floyd Parkway) and the Long Island Expressway, in Yaphank. The Meadows at Yaphank is an assemblage of three parcels, of which only one, the Dorade sewage treatment plant (STP) site, is presently developed. The Dorade STP is 11.09 acres in size, and currently serves Suffolk County Sewer District #8 and the Whispering Pines/Colonial Woods condominiums. The other two parcels are presently vacant and naturally-vegetated, and include the former Suffolk Meadows Racetrack (aka Suffolk Downs or Parr Meadows; 172.20 acres and referred to as the western parcel), and the former Brookhaven Walk mall site (150.17 acres; the eastern parcel). The project is approximately 29 miles east of the Nassau/Suffolk border, and 1.6 miles northeast of the Yaphank Station of the LIRR.

The proposed project would change the zoning of the Racetrack parcel from L-Industry-1 and the Brookhaven Walk parcel from J-Business-2, to Planned Development District (PDD), for development of a mixed-use project that includes retail, office space, office/flex space and housing.

2.0 PROPOSED PROJECT

The Meadows at Yaphank PDD is proposed to consist of retail, mixed-use commercial space, office/flex space and housing. The commercial components of the proposed project include approximately 1,032,500 SF of space, distributed in hotel, retail, restaurant and office/flex uses. The residential component includes 850 units of various types and sizes, including 303 age-restricted units and 85 workforce housing units.

Within the eastern parcel, the Meadows at Yaphank proposes a bank, commercial center, pharmacy and major restaurant, all of which are allowed as-of right. For the western parcel, office, or office/flex space are proposed, all of which are allowed as-of-right. Multi-family residences are proposed as part of the proposed mixed-use PDD on the northern part of the western parcel.

3.0 GREENHOUSE GAS MODELING

3.1 General

The carbon footprint begins with a measure of the total amount of carbon dioxide (CO_2) emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product. This includes activities of individuals, populations, companies, institutions, organizations and industry. The CO_2 emissions are then converted to carbon equivalents. Footprint calculations follow from the CO_2 emission calculations and are based on several "assumptions:"

* It is possible to keep track of most of the resources people consume and many of the wastes they generate.

* It is possible to determine the energy needed to produce and/or use these products.

*The amount of carbon oxidized from fuels to generate the necessary energy for the production and use of these products can be determined.

* Biological activity, especially in the form of plant life, can remove carbon from the atmosphere and "store" it in relatively stable, solid forms.

* Most resource and waste equivalent "emissions" can be converted into the biologically productive area that is required to "maintain" these "emissions."

* These different areas can be expressed in the same unit (acres) once they are scaled proportionally to their biomass productivity. In other words, each particular acre can be based upon the equivalent CO_2 sequestration.

Since these areas have exclusive uses, and each standardized acre represents the same amount of biomass productivity, they can be added up to a total.

3.2 U. S. Environmental Protection Agency Tools

The New York State Department of Environmental Conservation's, Guide for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements was issued on September 9, 2008 (NYSDEC GHG). It states that it "will be applicable" to power plants and solid waste facilities and that other large scale projects ("such as a very large scale resort or residential" projects), "will also find this guide useful." In a further draft of March 11, 2009, "a very large scale project" was further refined to, "generate thousands of trips or use significant amounts of energy"..."could "possibly" have an EIS where the discussion of energy use or GHG emissions is required." For this project and document, the Lead Agency has scoped a GHG analysis. The above NYSDEC documents

have been referred to and utilized in this effort as the useful guide they were intended to be.

The March 11, 2009 NYSDEC Greenhouse Gas Emission Guide states that, "accurate estimates of energy use and resulting GHG emissions will be complicated by the limitations of energy modeling tools," site- and project-specific design features, and, "the preliminary nature of a project design at the point when an EIS might be filed." Further, the March 11, 2009 Greenhouse Gas Emission Guide did not require any specific, overall methodology for calculating such virtual emissions. However, it does cite U.S. Environmental Protection Agency, U. S. Department of Energy and other sources which have been used in the current analysis. Specifically, it cites US EPA's Climate Leaders Inventory Guidance, US EPA's WARM program and the World Resources Institute and World Business Council for Sustainable Development (WRI/WBCSD) as providing "relevant information." These programs have been incorporated as methodologies, background data and calculations within the US EPA's carbon "tools."

The CO_2 "emission" modeling provided herein was based upon U.S. Environmental Protection Agency's (USEPA) most recent "Individual Household Calculation Tool" and "Office Carbon Footprint Tool."[1] The model blanks (and the supporting data tables which are used in the calculation of the results) may be found on the USEPA web sites. Embedded within these "tools" are data and algorithms from the above cited studies and organizations.

The US EPA models are based upon detailed information which has been accumulated by the various Departments of the Federal government for several decades. These data include intensive information regarding energy consumption for a wide variety of human endeavors; they have been accumulated and complied since the mid-1970's (as spurred on by the first energy crisis of 1973-1974). Data include home or commercial heating (oil, natural gas, etc.) in various regions of the country, the consumption of various goods, the transportation of both goods and people, etc. plus the energy required to accomplish these ends.

The modeling of virtual emissions[2] in the form of carbon dioxide requires the translation of various forms of energy (e.g., natural gas, gasoline, diesel fuel, etc,) to useful energy or "work" units and the carbon oxidized from the fuel in the process. Industry-wide energy equivalent conversions from gallons, kilowatts or cubic feet (therms) of energy consumed were/are applied in the calculations. For example, one kilowatt hour (kw-hr)

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[1] Results of the commercial modeling are calculated in metric tons per year of CO_2 equivalent emissions. One metric ton equals 2,205 pounds. In Section 4.0 and associated tables, the results are presented in English pounds and tons per year to make the results more understandable to the general public.

[2] The CO_2 emission calculated in GHG efforts are largely "virtual" emissions. That is, with the exception of the vehicle and non-electric home HVAC, the emissions are not produced directly by the user. For example, when a user "consumes" a staple item such as food, a bag of fertilizer or paper, they do not "emit" CO_2 at that location. Rather, the CO_2 "emissions" occur in other places where and as the staple is produced, transported and then the residual waste is disposed. Many, if not most of these emissions are "virtual" since they do not and will not occur at the location of the proposed project.

of electricity translates to 3,412 British Thermal Units (btu's), one horsepower (transportation) to 2,545 btu and one therm (natural gas) to 100,000 btu. Combustion was assumed to be 100 percent of the fuel at issue and carbon content was based on the type fuel "utilized". For example, one gallon of gasoline contains 18.9 kilograms (kg) of carbon per giga-joule (GJ equivalent to a little less than one million btu's) and propane has 17.2 kg of carbon per GJ. Carbon dioxide (CO_2) emissions were/are determined in this analysis. The carbon equivalents can be derived from the data by using the appropriate molecular weights of carbon and oxygen.

The CO_2 modeling was calculated on a per 10,000 square foot basis. Since the project anticipates varied uses within the commercial development, the "per 10,000 square foot basis" was calculated to allow direct and easier comparison between the scenarios.

Carbon dioxide (CO_2) emissions were calculated as follows:

(A) Transportation: Pounds of carbon dioxide equivalent are calculated and based on USEPA's estimate of the greenhouse gas emissions (especially as CO_2) from a typical passenger vehicle. These data were based on average national fuel consumption for the vehicle types assumed to be used; the national average is 17.5 miles per gallon (mpg).[3] The GHG NYSDEC draft guidance of March 11, 2009 recommends calculating trip generations for the project and then estimating vehicle miles traveled using, "reasonable assumptions about distance traveled..." In this case, for example, two vehicles were assumed to occur per two bedroom residential unit and 2.7 vehicles per four bedroom unit. At the national average of 10,067 miles per vehicle per year[4], this yields 20 million vehicle miles traveled for the residential portion of the project (without mass transit deductions). For the commercial portion of the project, 2,648 employees were expected to occur as provided by the project planners. These employees were anticipated to be "drawn" from an average distance of 45 miles (i.e., a radius which reaches the New York City limit to the west and Orient/East Hampton to the east). This would add approximately another 50,000,000 vehicle miles traveled per year[5]. In the 'with mass transit" scenarios, approximately 5 percent of the vehicles were expected to utilize mass

[3] As determined by Federal Highway Administration (FHWA), Bureau of Transportation Statistics, the average fuel consumption for passenger vehicles was 22.4 mpg. And for vans, SUV's and pick up trucks was 17.5 mpg (2004 latest available). For projects with substantial future completion dates, CAFE standards which mandate a 40 percent fuel efficiency improvement by 2020 are considered. The current analysis is for the 2020 full build. Thus, the model conservatively uses the 17.5 "SUV" mpg but adds a 40% improvement to 24 mpg to account for the CAFÉ standards.

[4] The national average annual mileage exceeds the New York State average annual mileage of 7,321 per Federal Highway Administration (FHWA), Bureau of Transportation Statistics.

[5] The VMT calculated in this manner is environmentally conservative and exceeds that which would have been calculated by the March 11, 2009 NYSDEC draft guidance method. This also assumes that all commutes by residents and/or employees are "new" and not simply replacing other vehicular movements related to prior residences or employment on Long Island or in New York City.

transit[6]. The vehicle miles traveled and mpg data are then converted to CO_2 emissions per US EPA's Climate Leaders, Inventory Guidance[7].

(B) Electricity: Electricity emissions factors are categorized by geographic sub-region. Electrical uses have been complied by use, square footage, and occupancy based on USEPA and U.S. Department of Energy (USDOE) statistics and New York State's Energy Research and Development Authority. These calculations are provided in Table 1. For example, for commercial office buildings, Department of Energy's, Energy Information Administration, Office of Energy Statistics consumption data was used to calculate an electrical consumption of 69.2 kw-hr per square foot. This use then translates to 6.26 lbs of CO_2 equivalent per year based on carbon dioxide output of 907.16 pounds per MWhr of electricity for New York power plants[8]. The energy consumption data were then varied by proposed and "existing" uses and consumption for such uses (i.e., commercial retail, grocery versus hotel verses office space) based on the USDOE Energy Information Administration's data. By far, retail grocery was the highest user at 195.3 kw-hr per square foot. For residential use, approximately 209 kw-hr per person per month was used at $0.183 per kw-hr. The residential consumption levels were based upon New York State Energy Research and Development Authority pricing and consumption data, etc.

(C) Natural Gas[9]: Typical CO_2 emissions were calculated per household and commercial uses and are based on use, square footage, and occupancy. The consumption levels were further refined based upon Department of Energy's, Energy Information Administration, Office of Energy Statistics data, New York State Electric and Gas (NYSEG) and New York State's Energy Research and Development Authority pricing/consumption data, etc. These calculations are provided in Table 1. These data were adjusted to two or four person households depending on the residential unit size modeled. For example, the two person residential units were estimated to consume some 402 therms per year at $16.75 per 1000 cubic feet. This translates to a gas bill of $675 per year or $56 per month. This figure was then inserted into the USEPA calculation tool. Some natural gas consumption was also included for heating of the various commercial spaces as derived from Department of Energy's, Energy Information Administration, Office of Energy Statistics consumption data.

(D) Production: The proposed project will not include, per se, a "production" facility. That is, it is not planned to have a manufacturing facility. However, the project will have several commercial uses which will consume certain goods in the conduct of their business. These include computers, paper, beverages for employees, etc. These generally represent only two to five percent of the carbon consumption. These values were estimated at 143 pounds each of electronics, glass, paper and aluminum per 10,000

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[6] This was based on FST Engineers, Inc. traffic analysis which took only a 5 percent mass transit credit for the trip generation.

[7] As cited in the NYSDEC draft guidance of March 11, 2009.

[8] This translates a little higher than the NYSDEC Draft guidance which provides a figure of 0.850 pounds of CO_2 per kw-hr. of power plant production in New York State. Based upon USEPA's eGrid Version 2.1.

[9] Fuel source was assumed to be natural gas equivalents (not heating oil) per the site utility report by Divney, Tung, Schwalbe, LLP.

square feet of commercial space per year. For the calculation of CO_2 emissions, the office model's methodology and data were derived from USEPA's 2006, *Solid Waste Management and Greenhouse Gasses - A Lifecycle Assessment of Emissions*. As an example, 0.28 metric tons of carbon equivalent (MTCE) is used to produce one ton of office copier paper. These production/consumption equivalent emissions are partially offset by recycling and land filling as a result of waste disposal per (E) below.

(E) Waste Disposal: The residential calculations assume that households generated waste based upon 2.79 pounds per person per day. This translates to 4,072 pounds (2 tons per year) per proposed residence. The total production per year for the residences (regardless of the size) is 1,730.6 tons. Additional waste generation was not added for the proposed office and retail uses as it is already more than accounted for in the residential component. Greenhouse gas emission benefits from recycling newspaper, glass, plastic, metal and magazines were developed using the USEPA data and all life-cycle greenhouse gas emissions factors for waste management. Carbon dioxide equivalent emissions associated with household waste management were calculated using total emissions for landfills. The emissions for each material type are based on the Waste Reduction Model (WARM)[10]. These emission factors take into account the full material life cycle: i.e., not only the emissions sequestered into landfills, but also the emissions and sequestration associated with production, manufacturing, remanufacturing, forest carbon storage due to reduced harvests.

In addition to the specific sources identified as example above, data were also derived from information developed in the DEIS process. This includes the traffic analysis prepared by FST Engineers, Inc. Additional data as needed were derived from Metro North, New York State Electric and Gas Company (NYSEG), the New York State Department of Motor Vehicles, the U.S. Department of Agriculture and USDOE plus demographic data provided in the DEIS (e.g., square footages, site plans, number of employees, etc.).[11]

In making the calculations about projected energy and resource use that are reflected in this report, the applicant has projected energy consumption based on the transportation, residential unit types, commercial information of the proposed project plus estimates of community space to be provided. The applicant has also gathered sufficient primary data in preparing the Draft Environmental Impact Statement (DEIS) to make accurate calculations, of primary and secondary source CO_2 "emissions" data versus credible carbon measurement standards. As provided by NYSDEC GHG, however, any methodology is constrained by, "limitations of energy modeling tools," site-and project-specific design features, and, "the preliminary nature of a project design at the point when an EIS

[10] The NYSDEC GHG draft recommendations of March 11, 2009, Section D, recommends calculating waste generation and CO_2 data from this source

[11] The analysis was prepared to be specific to the project, its location and various alternatives. Most carbon footprint tools and models have been developed for regional purposes and have their use and results focused on metropolitan regions, in entire states or multi-state areas. This analysis presents data which can be inserted into a regional planning calculation methodology or model such as the west coast PLACES model. However, that is the function of regional/governmental planning agencies, not specific project sponsors.

might be filed." Within these limitations, these calculations represent reasonable estimates of carbon emissions and resource use for the project and to allow comparison to "standard" subdivision alternative, alternatives which would not have ready access to mass transit and the prior use (i.e., a psychiatric facility).

4.0 RESULTS

Carbon dioxide (CO_2) emissions and footprint modeling results were calculated in several forms. First, the tools/models used produce results are in pounds, kilograms or tons of CO_2 emissions per year[12]. Tons can be English or metric units (see footnote 1). In Section 4.0 below and associated tables, the results are presented in English tons per year to make the results more understandable to the general public. The results are reported as the Proposed Action – Residential and Commercial and the existing condition in the form of a site formerly developed to a public venue. The proposed commercial use was split into both office and commercial retail. The commercial retail assumed to be dominated by office and the retail was divided into a supermarket, hotel and general retail. and some food preparation. Community square footage was also included as "commercial" space.

The greenhouse gas emissions as CO_2 and carbon footprint results are presented in Tables 1, 2 and 3. The model results to arrive at these results are reproduced in Appendix A to and Appendix B of this report. The results are provided in English tons per year and acres for the full project and for the individual elements. They are also provided in tons per year and acres commercial uses, on a per 10,000 square foot basis. The "per 10,000 square foot basis" was calculated because the proposed floor area of each use was different. By calculating the carbon loading for "blocks" of space, the results could be multiplied to account for the entire, proposed square footage for each use. This approach allows direct comparison as to "intensity" – carbon consumption per square foot - and comparison between the scenario and use totals.

The Proposed Action has both a residential component and commercial component. These elements have been designed to function to some extent as a cross-use. That is, the commercial uses are proposed on the southern end of the site and 850 residential units sre close enough to the residential component to encourage moving around the site without using a motor vehicle (or at least a full size motor vehicle).

It is important to note that the projected project population will occur regardless of the project's implementation. What this means is that the people which make up this population will occur somewhere within the New York City metropolitan region as a result of "organic" demographic growth and they will create some type of carbon footprint as a result of their mere existence; the only reasonable questions are – where will they occur and will that location foster a greater or smaller carbon load/footprint?

[12] Tons of carbon are a factor of about 4 times less than CO_2 based upon the appropriate molecular weights.

4.1 CO_2 Emissions -Operation

The Proposed Action's residential component, with mass transit has a projected carbon loading of 17,070 tons per year (See Table 2A). This includes both the per capita/per square foot operational elements and transportation projected to result from these uses. As a subset of these results, Proposed Action residential component has a projected carbon consumption intensity of 16 to 30 tons per year per 1,200 or 2,400 square foot unit, respectively .

As provided in Table 2B, the commercial project components have been broken into four categories. On a per square foot basis, commercial uses are more "intense" than residential uses. The office carbon emissions are projected at 573 tons per year and the food service/retail carbon consumption intensity are projected at 1,236 tons per year (both per 10,000 square feet). Thus, the food service/retail carbon consumption is twice that of the office space. These results are 4.5 to 1.8 times the residential results on a per square foot basis.

The existing condition is partially an abandoned public venue. To provide a comparison of the existing condition (which is a property largely subjected to prior development) to the Proposed Action (i.e., the Proposed Action is, in part, a property re-development), its emission level as a functional facility was calculated and it had a carbon loading of 712 tons per year. This includes both the per capita/per square foot operational elements and employee transportation projected to result from these uses. This past use of the site had a carbon load equivalent to the commercial scenarios considered.[13]

An alternative scenario to this project given the zoning for this property, with full development (Alternative 2 in the project DEIS), would be to develop both the eastern and western parcels as all commercial square footage (2.03 million square feet, in total). A full build of two projects assumed for this scenario would produce 1.18 million square feet of light industrial development and 850,000 square feet of mixed commercial development on these parcels. No residential development would occur. The increase in the CO_2/Greenhouse gas "production"/"consumption" would be 31.5 percent above that which is currently proposed.

4.2 CO_2 Footprint

Transitioning from a carbon "emissions" calculation to a carbon footprint raises the concept of carbon sequestration. Carbon sequestration is largely the result of the photosynthetic activity of plant life on this planet, which converts gaseous CO_2 to carbon-based tissues. This sequestration begins at the level of single cell algae and continues up to the largest tree. To the extent the algae and, especially the larger plant species, concentrate this biomass (and so, carbon) within themselves and then more "slowly"

[13] However, it had greater carbon consumption than the proposed office use but a lesser carbon consumption intensity than food retail.

release it back to the environment upon their death, carbon accumulates within natural ecosystems.[1]

In this case, since the project is in the Mid-Atlantic/New England biome, the carbon sequestration comparison method chosen was "treed" acreage. The Proposed Action's and alternatives' CO_2 emissions were reduced to tons and then calculated in equivalent acres. The equivalent acres were then compared to the site acreage to show (a) the footprint in relation to the site and (b) the footprint in relation to analyzed alternatives.

The carbon footprint in acres is shown in Table 3. The site contains some 322 acres. A carbon minimum and maximum sequestration per acre (assumed to be biologically active) was calculated and the minimum was used to provide a ratio to the existing project site. Given the intensity of capital investment, the energy inputs needed to use/sustain such development and the resulting transportation of people and goods, it is not unusual to have a project carbon ratio in the tens to low hundreds of times a site's acreage. There is not absolute "standard" by which to compare such ratios. The general approach is to use this information to make informed decisions about increase carbon use, to compare such use between alternatives and determine if is possible to decrease the carbon use/footprint by changed use or improving "green" practices (e.g., re-using a site verses "virgin" acreage).

The Proposed Action has a projected carbon footprint of 18,996 acres. This includes both the per capita/per square foot operational elements and transportation projected to result from the combined residential and commercial uses. With this result, the Proposed Action, with limited mass transit, has a projected carbon footprint ratio of 59.

The build out of an alternative project as commercial and commercial light industrial would have a projected carbon footprint of 39,801 acres. This result is slightly more than twice that of the proposed action an includes the much higher use of the site by truck traffic and the more "intensive" site use that results from industrial activities. With this result, this alternative has a projected carbon footprint ratio of 123.6.

A public venue was included in this GHG analysis as a portion of the subject the site was previously used for this purpose. The use of the site for a public venue had a projected carbon footprint of 9,818 acres. This includes both the per capita/per square foot operational elements and transportation projected to result from these uses but was calculated for this use on only half of the site[2]. The use of the site for a public venue had a projected carbon footprint ratio of 30.5.

Given the prior public venue, the Proposed Action will not be built entirely on "virgin" acreage. This is a mitigating factor in considering the greenhouse gas "production" by the project. That is, the *net* impact of the project on greenhouse gas "production" should be reduced by this prior use/site disturbance. In that case, the *net* carbon foot print of the Proposed Action would be reduced from 18,996 to approximately 9,110 acres and the project ratio is reduced from 59 to 28.5.

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[1] Other sequestration mechanisms occur which are man-made but only the dominant, natural mechanism is relied upon in this analysis.

[2] The Parr Meadows quarter horse track occupied the western half of the site.

TABLE 1
ENERGY CONSUMPTION DATA[25]

ELECTRICITY-Residential

USE	BASE CALCULATION	MODEL INPUT
2 Bedroom	209 kw-hr. x 2 people @ 0.183/kw.hr. (per person per month)[26]	$77/month
4 Bedroom	209 kw-hr. x 3.75 people @ 0.183/kw.hr. (per person per month)	$143/month

ELECTRICITY-Commercial[27]

Office	2.88×10^{15} btu/12.208 x 10^{6} sq.ft. 236,245 btu/sq.ft. 2.36×10^{9} btu/10,000 sq.ft	692,397 kw.hr. per 10,000 sq.ft.
Supermarket	0.87×10^{15} btu/1,255 x 10^{6} sq.ft. 666,932 btu/sq.ft. 66.6 10^{9} btu/10,000 sq.ft.	1,953,000 kw.hr. per 10,000 sq.ft.
Hotel	944×10^{12} btu/5,096 x 10^{6} sq.ft. 542917 x 10^{9} btu/10,000 sq.ft.	542,917 kw.hr. per 10,000 sq.ft.

[26] New York State Energy Research and Development Authority 2008 (latest available).
[27] U.S. Department of Energy, Energy Information Agency, 2006 (latest available).

TABLE 1
ENERGY CONSUMPTION DATA (continued)

ELECTRICITY-Commercial (con't)

USE	BASE CALCULATION	MODEL INPUT
Public Assembly[28]	0.673×10^{15} btu/$3{,}939 \times 10^{6}$ sq.ft. 1.7×10^{5} btu/sq.ft. 1.71×10^{9} btu/10,000 sq.ft,	500,309 kw.hr. per 10,000 sq.ft.

NATURAL GAS-Residential[2]

2 Bedroom	20,153 cu.ft./person-year 40,306 cu.ft./unit-year @ $16.75 per 1,000 cu.ft.	$675.00/year $56.00/month
4 Bedroom	20,153 cu.ft./person-year 75,573 cu.ft./unit-year @ $16.75 per 1,000 cu.ft.	$1,265.00/year $105.00/month

NATURAL GAS-Commercial[3]

Office	269×10^{12} btu/$12{,}208 \times 10^{6}$ sq.ft. 2.2×10^{4} btu-sq.ft.	21.4 cu.ft./sq.ft 214,549 cu.ft. per 10,000 sq.ft.

[28] Used to develop information for comparative purposes regarding the former Parr Quarter Horse Track and possible concert-venue uses. Partial use was assumed in the modeling.

TABLE 1
ENERGY CONSUMPTION DATA (continued)

NATURAL GAS-Commercial (continued)

USE	BASE CALCULATION	MODEL INPUT
Supermarket	39×10^{12} btu/1,255 x 10^{6} sq.ft. 3.1×10^{4} btu-sq.ft.	29.8 cu.ft./sq.ft 298,231 cu.ft. per 10,000 sq.ft.
Hotel	215×10^{12} btu/5096 x 10^{6} sq.ft. 4.1×10^{4} btu-sq.ft.	41.1 cu.ft./sq.ft 410,807 cu.ft. per 10,000 sq.ft.
Public Assembly	131×10^{12} btu/3,939 x 10^{6} sq.ft. 3.3×10^{4} btu-sq.ft.	31.9 cu.ft./sq.ft 319,167 cu.ft. per 10,000 sq.ft.

Table 2A - CARBON FOOTPRINT ASSESSMENT

PROJECT: The Meadows at Yaphank
NUMBER: npvyap01

Scenario: Project Full Residential

Unit Type		# Units	Uses	Lbs Per Unit-Yr	Lbs Per Year
1,200	sq. ft.	630	Electric	12,659	7,975,170
		630	Gas	5,860	3,691,800
		630	Waste	2,036	1,282,680
		630	Transport	23,495	14,801,850
			Uses Total:		27,751,500
			Credits		
		630	Recycle	845	1,500
		630	Efficient Appl.	9,283	5,848,290
		630	Village Credit	1,214	764,820
		630	Mass Trans		0
			Credits Total:		6,614,610
					Lbs Per Year / Tons Per Year
		Unit Type Subtotal:			**21,136,890 / 10,568**

Unit Type		# Units	Uses	Lbs Per Unit-Yr	Lbs Per Year
2400	sq. ft.	220	Electric	23,590	5,189,800
		220	Gas	10,988	2,417,360
		220	Waste	4,072	895,840

220	Transport	35,242	7,753,240	
	Uses Total:		16256240.0	
	Credits			
220	Recycle	1,688	371,360	
220	Efficient Appl.	10,669	2,347,180	
220	Village Credit	2,427	533,940	
220	Mass Trans		0	
	Credits Total:		3252480.0	
			Lbs Per Year	Tons Per Year
Unit Type Subtotal:			**13,003,760**	**6,502**
	Scenario Total:		**34,140,650**	**17,070**

Table 2B - CARBON FOOTPRINT ASSESSMENT

PROJECT: The Meadows at Yaphank
NUMBER: npvyap01

Scenario: Commercial Full Build

OFFICE

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	630,145	630,145
		1	Gas	22402	22,402
		1	Com. Transport	121,716	121,716
		1	Appliances	112	112
		1	Products	11,532	11,532
		1	Employee Transport	366,123	366,123
			Uses Total:		1,152,030
			Credits		
		1	Recycle	2,977	2,977
		1	Village Credit	2976	2,976
			Credits Total:		5953.0
					Lbs Per Year / Tons Per Year
10K		**Unit Type Subtotal:**			**1,146,077** / **573**

RETAIL -Supermarket

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	1,777,406	1,777,406
		1	Gas	31,157	31,157
		1	Com. Transprt	121,716	121,716

1	Chiller/refrig.	200,655	200,655	
1	Products	11,532	11,532	
1	Employee Transport	334,961	334,961	
	Uses Total:		2,477,427	
	Credits			
1	Recycle	2,977	2,977	
1	Village Credit	2976	2,976	
	Credits Total:		5953.0	
			Lbs Per Year	Tons Per Year
10K	**Unit Type Subtotal:**		**2,471,474**	**1,236**
	10K Scenario Total:		**3,617,551**	**1,809**

Table 2B - CARBON FOOTPRINT ASSESSMENT (CONTINUED)

Scenario: Commercial Full Build

Retail - General

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	523,592	523,592
		1	Gas	21,432	21,432
		1	Com. Transport	121,716	121,716
		1	Appliances	113	113
		1	Products	11,532	11,532
		1	Employee Transport	371,145	371,145
			Uses Total:		1,049,530
			Credits		
		1	Recycle	2,977	2,977

1	Village Credit	2976	2,976	
	Credits Total:		5,953	
			Lbs Per Year	Tons Per Year
10K	**Unit Type Subtotal:**		**1,043,577**	**522**

Scenario: Commercial Full Build

Hotel

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	495,684	495,684
		1	Gas	42909	42,909
		1	Com. Transport	119511	119,511
		1	Appliances	113	113
		1	Products	11,532	11,532
		1	Employee Transport	56,858	56,858
			Uses Total:		726,607
			Credits		
		1	Recycle	2,977	2,977
		1	Village Credit	2976	2,976
			Credits Total:		5953.0
					Lbs Per Year	Tons Per Year
		10K	**Unit Type Subtotal:**		**720,654**	**360**

Table 2C - CARBON FOOTPRINT ASSESSMENT

PROJECT: The Meadows at Yaphank
NUMBER: npvyap01

Scenario: EXISTING CONDITION (FORMER PUBLIC ASSEMBLY)

OFFICE

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year	
10,000	sq ft	1	Electric	141,142	141,142	
		1	Gas	10474	10,474	
		1	Com. Transport	121,716	121,716	
		1	Appliances	112	112	
		1	Products	11,532	11,532	
		1	Employee Transport	1,149,048	1,149,048	
			Uses Total:		1,434,024	
			Credits			
		1	Recycle	2,977	2,977	
		1	Village Credit	2976	2,976	
			Credits Total:		5953.0	
					Lbs Per Year	Tons Per Year
10K		**Unit Type Subtotal:**			**1,428,071**	**714**

Table 3 - CARBON FOOTPRINTS

Existing Condition

Raw Acreage: 322

Scenario: Parr Quarter Horse Track

Tons Per Year	Max Acres	Min Acres	Ratio to Site Ac.
39,272.0	**11,220.6**	**9,818.0**	**30.5**

Proposed Action and Alternatives

Scenario: Project Full Build

	Tons Per Year	Max Acres	Min Acres	Ratio to Site Ac.
Residential	17,070.3	4,877.2	4,267.6	13.3
Commercial	58,912.2	16,832.0	14,728.0	45.7
Scenario Totals:	**75,982.5**	**21,709.3**	**18,995.6**	**59.0**

1	Gas	31,157	31,157	
1	Com. Transprt	121,716	121,716	
1	Chiller/refrig.	200,655	200,655	
1	Products	11,532	11,532	
1	Employee Transport	334,961	334,961	
	Uses Total:		2,477,427	
	Credits			
1	Recycle	2,977	2,977	
1	Village Credit	0	0	
	Credits Total:		2977.0	
			Lbs Per Year	Tons Per Year
10K	**Unit Type Subtotal:**		**2,474,450**	**1,237**
	10K Scenario Total:		**3,623,503**	**1,812**

CARBON FOOTPRINT ASSESSMENT TOTALS

9/9/2010

PROJECT: The Meadows at Yaphank

NUMBER: npvyap01

Scenario:Commercial - Full Zoning Build

Retail - General

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	523,592	523,592
		1	Gas	21,432	21,432
		1	Com. Transport	121,716	121,716
		1	Appliances	113	113
		1	Products	11,532	11,532
		1	Employee Transport	371,145	371,145
			Uses Total:		1,049,530
			Credits		
		1	Recycle	2,977	2,977
		1	Village Credit	0	0
			Credits Total:		2,977

	Lbs Per Year	Tons Per Year
10K Unit Type Subtotal:	**1,046,553**	**523**

Scenario:Commercial - Full Zoning Build

Hotel

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	495,684	495,684
		1	Gas	42909	42,909
		1	Com. Transport	119511	119,511
		1	Appliances	113	113
		1	Products	11,532	11,532
		1	Employee Transport	56,858	56,858

	Uses Total:		726,607	
	Credits			
1	Recycle	2,977	2,977	
1	Village Credit	0	0	
	Credits Total:		2977.0	
			Lbs Per Year	Tons Per Year
10K	**Unit Type Subtotal:**		**723,630**	**362**

Scenario:Commercial - Full Zoning Build

Light Industrial

Unit Type		# Units	Uses	Lbs Per Unit	Lbs Per Year
10,000	sq ft	1	Electric	259,374	259,374
		1	Gas	130	130
		1	Com. Transport	263632	263,632
		1	Appliances	20	20
		1	Products	11537	152,185
		1	Employee Transport	152,185	152,185
			Uses Total:		827,526
			Credits		
		1	Recycle	2,977	2,977
		1	Village Credit	0	0
			Credits Total:		2977.0
					Lbs Per Year / Tons Per

		Year
10K Unit Type Subtotal:	**824,549**	**412**
Full Project:		**3,684**

Table 3 - CARBON FOOTPRINTS

Existing Condition

	32
Raw Acreage:	2

Scenario:Parr Quarter Horse Track

Tons Per Year	Max Acres	Min Acres	Ratio to Site Ac.
39,272.0	11,220.6	9,818.0	30.5

Proposed Action and Alternatives

Scenario: Project Full Build

	Tons Per Year	Max Acres	Min Acres	Ratio to Site Ac.
Residential	17,070.3	4,877.2	4,267.6	13.3
Commercial	58,912.2	16,832.0	14,728.0	45.7
				59.0
Scenario Totals:	**75,982.5**	**21,709.3**	**18,995.6**	

Scenario: Project Full Zoning (DEIS Alternative 2)

	Tons Per Year	Max Acres	Min Acres	Ratio to Site Ac.
Commercial	58,912.2	16,832.0	14,728.0	45.7
Commercial Light Ind.	100,293.3	28,655.2	25,073.3	77.9
Scenario Totals:	**159,205.4**	**45,487.3**	**39,801.4**	**123.6**

APPENDIX A

Your Current Household Emissions

	Enter your data	Pounds of carbon dic
The Basics		
How many people live in your home?	2	
How do you heat your house?	1	
Enter **1** for natural gas, **2** for electric heat, or **3** for oil		
Transportation		
On average, how many miles do you put on your car(s)?	20,134 231 miles/week is about average in the United States per vehicle	2 enter **1** week o
What is the average gas mileage for your car	18 If you don't know your car's fuel economy, you can look it up at https://www.fueleconomy.gov/feg/byclass.htm.	23,495 Pounds 12,100 pounds is abou
Home Energy		
What is your average monthly electric bill?	$ 77 $100 is about average in the United States for a	12,659 Pounds 16,290 pounds is abou household of two peop
	Our calculations assume that you pay 10 cents/kWh. W emissions based on the national average mix of fuels u electricity. Your actual emissions may be higher or low your electricity provider's power mix.	
What is your average monthly gas bill?	$ 56 $105 is about average in the United States for a Our calculations assume that you pay	5,860 Pounds 11,000 pounds is abou household of two peop
What is your average monthly fuel oil bill?	$ 0	- Pounds

	$130 is about average in the United States for a Our calculations assume that you pay $2.37/gallon	14,500 pounds is abou household of two peop

Waste

Based on the number of people in your household, the box at right shows your estimated greenhouse gas emissions from waste. However, if you currently recycle certain materials, your waste emissions may be lower.

Which of the following products do you currently recycle in your household?

Total Waste Emissions Before Recycling		2,036 Pounds 2,036 pounds is about household of two peop
Do you recycle newspaper?	1 enter **1** for yes and **2** for no	(369) Pounds
Do you recycle glass?	1 enter **1** for yes and **2** for no	(51) Pounds
Do you recycle plastic?	1 enter **1** for yes and **2** for no	(93) Pounds
Do you recycle aluminum and steel cans?	1 enter **1** for yes and **2** for no	(332) Pounds
	Total Waste Emissions After Recycling	1,191 Pounds

Your Total Emissions	43,205 Pounds 41,500 pounds is abou United States for a hou people over a year

What You Can Do to Reduce Your Emissions

APPENDIX B

CO_2 EMISSION ANALYSIS FOR COMMERCIAL SCENARIOS

GHG Summary for Meadows at Yaphank-PU

The total GHG emissions presented here represent Scope 3 emissions. According to the W
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**521.1**
Road Transportation	511.6
Rail and Subway	9.6
Airplane	0.0
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**14.2**
Road Transportation	14.2
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**539.2**

Total Emissions (including Scope 3)	**648.2**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

The Meadows at Yaphank-PUBLIC ASSEM (EO)

This worksheet requires information on the three scopes for greenhouse gas (GHG) accounting and reporting purposes identified through W Corporate Standard. The sources included on this sheet reflect only those for which you selected "yes" on the previous page. If you decide emissions from a source not previously selected, please return to the "Source Selection" worksheet and select "Yes" for that source. Where by WRI, is provided after the source name. Emissions estimates for sources not included in the tool can be entered in the "Other Emissions'

The color key for input cells is below. Yellow cells indicate where input data is required, white cells are automatically populated and provide factors, and the light green cells provide emission estimates.

In some instances, two alternate methodologies are presented. Please only complete one of the alternate methodologies in order to estimat source.

Key

	= Input Cell
	= Default Data or Emission Factor
	= Greenhouse Gas Emission Estimate

To view the worksheets containing specific emission factors and other coefficients used in the calculations, click on the buttons to the right of each source title. To view the expanded calculations used to estimate these emissions, please click on the "View Methodology" button.

View Methodology

On-Site Stationary Fuel Combustion (Scope 1)

Fuel Densities | Heating Values | Carbon Contents | Oxidation Factors | Non-CO_2 Factors

Instructions: Enter the amount and type of natural gas in equipment used in the production of electricity, heat or steam.

Natural Gas

	Natural Gas Type	Fuel Consumed (cubic feet)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Natural gas	100,182	=	4,745	=	4.75
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00

Company-Owned Vehicle Transportation (Scope 1)

Mobile Factors

Instructions: Enter the vehicle type and miles traveled in company-owned vehicles per year. For company-owned aircraft, select the type of jet and hours flown per year.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Miles Traveled		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Automobiles	15,720	=	6,653	=	7
2.	Gasoline Light Truck	15,720	=	9,900	=	10
3.	Gasoline heavy Truck	15,720	=	23,621	=	24
4.			=	0	=	0
5.			=	0	=	0

Company-Owned Aircraft

CO_2 Emissions from company-owned aircraft

	Type of Aircraft	Hours Flown		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.			=	0	=	0

Refrigerant and Air Conditioning Use (Scope 1)

Refrigerant Factors

Instructions: Enter the refrigeration/AC application, the number of units, and the type of refrigerant used in each application.

	Application*	Number of Units	Type Of Refrigerant		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Domestic Refrigerators	1	HFC-134A	=	1	=	0
2.	Residential & Commercial A/C	1	R-401A	=	50	=	0

3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

*The application type is a refrigerator unless explicitly stated as air conditioning (A/C).

Purchased Electricity, Heat, and Steam (Scope 2)

Electricity Factors | Average Office Electricity Consumption

Instructions: Enter the amount of purchased electricity consumed (kWh) for the year you are performing the inventory. The state default emission factor for this calculation matches the state selected on the Welcome worksheet for your office location.

CO_2 Emissions

	State	Electricity Consumption (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	New York	155,095	=	64,014	=	64.01

Waste Disposal (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of that material that is disposed (e.g., landfilliing, combustion or landfilled, combusted) and the amount that is recycled.

	Material	Amount Disposed (Not Recycled) (lbs)	Amount Recycled (lbs)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Aluminum Cans	0	143	=	-975	=	-0.97
2.	Glass	0	143	=	-20	=	-0.02
3.	Office paper	0	143	=	-204	=	-0.20
4.	Personal Computers	0	143	=	-162	=	-0.16
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

	Wastewater Treated (Gallons)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	26,200	=	42.99	=	0

Employee Business and Commuting Travel (Scope 3)

Mobile Factors

Instructions: Enter the type of vehicle and distance traveled in employee-owned vehicles. Vehicle types can be seen in the drop-down lists below. For rail and subway transportation, enter the type of rail transportation and the distance traveled. For employee business travel, enter the distance traveled, the type of flight, and the seat class.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Gasoline Automobiles	666,900	=	266,574	=	266.57
2.	Gasoline Light Truck	389,025	=	244,994	=	244.99
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Rail and Subway Transportation

CO_2 Emissions from Rail Transportation

	Type of Rail Transportation	Distance Traveled (Passenger Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Locomotive	55,575	=	9,552	=	9.55
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Air Transportation

CO_2 Emissions from Employee air travel

	Type of Flight (Short, Medium, or Long Haul)	Seat Class (First, Business, Premium Economy, Economy)	Distance Traveled (land miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Haul (300 to 700 miles)	Premium Economy	0	=	0	=	0

2.				=	0	=	0
3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

Production of Purchased Materials (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of material that is purchased and the average recycled content of each material.

	Material	Amount Purchased (lbs)	Average Recycled Content(%)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Personal Computers	143		=	3,988	=	3.99
2.	Glass	143		=	46	=	0.05
3.	Office Paper	143		=	74	=	0.07
4.	Aluminum Cans	143		=	1,124	=	1.12
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

Contractor-Owned Vehicles (Scope 3)

Mobile Factors

Instructions: The following emissions use an estimate of vehicle type and distance traveled by contractors.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Light Truck	10,480	=	7,096	=	7.10
2.	Diesel Light Truck	10,480	=	7,096	=	7.10
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Leased Assets, Franchises, and Outsourced Activities (Scope 3)

Photocopy Factors

Instructions: Enter the number of photocopies outsourced below.

	Number of Copies		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	10,000	=	0.16	=	0.00

Off-Site Computer Servers (Scope 3)

Server Factors

Instructions: In the yellow cell below, please enter the electricity consumption of off-site servers used by your office.

	Electricity Consumption of Off-Site Servers (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	1	=	0	=	0.00

Other Emissions

Instructions: In the yellow cells below, please enter the results of your calculations for other activities emitting greenhouse gases, by gas. A space is provided to the left of each table to enter the name of the source of these emissions.

		Calculated Emissions Metric Tons of Carbon Dioxide Equivalent ($MTCO_2$ Eq.)	
	Source	CO_2	Total
1.			0

GHG Summary for Meadows at Yaphank-Su

The total GHG emissions presented here represent Scope 3 emissions. According to the W
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**152.0**
Road Transportation	149.1
Rail and Subway	2.8
Airplane	0.1
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**14.2**
Road Transportation	14.2
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**170.1**

Total Emissions (including Scope 3)	**1,121.5**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

The Meadows at Yaphank-Supermarket

This worksheet requires information on the three scopes for greenhouse gas (GHG) accounting and reporting purposes identified through W Corporate Standard. The sources included on this sheet reflect only those for which you selected "yes" on the previous page. If you decide emissions from a source not previously selected, please return to the "Source Selection" worksheet and select "Yes" for that source. Where by WRI, is provided after the source name. Emissions estimates for sources not included in the tool can be entered in the "Other Emissions'

The color key for input cells is below. Yellow cells indicate where input data is required, white cells are automatically populated and provide factors, and the light green cells provide emission estimates.

In some instances, two alternate methodologies are presented. Please only complete one of the alternate methodologies in order to estimat source.

Key

	= Input Cell
	= Default Data or Emission Factor
	= Greenhouse Gas Emission Estimate

To view the worksheets containing specific emission factors and other coefficients used in the calculations, click on the buttons to the right of each source title. To view the expanded calculations used to estimate these emissions, please click on the "View Methodology" button.

View Methodology

On-Site Stationary Fuel Combustion (Scope 1)

Fuel Densities | Heating Values | Carbon Contents | Oxidation Factors | Non-CO_2 Factors

Instructions: Enter the amount and type of natural gas in equipment used in the production of electricity, heat or steam.

Natural Gas

	Natural Gas Type	Fuel Consumed (cubic feet)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Natural gas	298,231	=	14,125	=	14.13
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00

Company-Owned Vehicle Transportation (Scope 1)

Mobile Factors

Instructions: Enter the vehicle type and miles traveled in company-owned vehicles per year. For company-owned aircraft, select the type of jet and hours flown per year.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Miles Traveled		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Automobiles	15,720	=	6,653	=	7
2.	Gasoline Light Truck	15,720	=	9,900	=	10
3.	Gasoline heavy Truck	15,720	=	23,621	=	24
4.			=	0	=	0
5.			=	0	=	0

Company-Owned Aircraft

CO_2 Emissions from company-owned aircraft

	Type of Aircraft	Hours Flown		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.			=	0	=	0

Refrigerant and Air Conditioning Use (Scope 1)

Refrigerant Factors

Instructions: Enter the refrigeration/AC application, the number of units, and the type of refrigerant used in each application.

	Application*	Number of Units	Type Of Refrigerant		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Domestic Refrigerators	1	HFC-134A	=	1	=	0
2.	Residential & Commercial A/C	1	R-401A	=	50	=	0

3.	Chillers	1	R-402B	=	90,892	=	91
4.				=	0	=	0
5.				=	0	=	0

*The application type is a refrigerator unless explicitly stated as air conditioning (A/C).

Purchased Electricity, Heat, and Steam (Scope 2)

Electricity Factors | Average Office Electricity Consumption

Instructions: Enter the amount of purchased electricity consumed (kWh) for the year you are performing the inventory. The state default emission factor for this calculation matches the state selected on the Welcome worksheet for your office location.

CO_2 Emissions

	State	Electricity Consumption (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	New York	1,953,000	=	806,078	=	806.08

Waste Disposal (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of that material that is disposed (e.g., landfilliing, combustion or landfilled, combusted) and the amount that is recycled.

	Material	Amount Disposed (Not Recycled) (lbs)	Amount Recycled (lbs)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Aluminum Cans	0	143	=	-975	=	-0.97
2.	Glass	0	143	=	-20	=	-0.02
3.	Office paper	0	143	=	-204	=	-0.20
4.	Personal Computers	0	143	=	-162	=	-0.16
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

	Wastewater Treated (Gallons)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	26,200	=	42.99	=	0

Employee Business and Commuting Travel (Scope 3)

Mobile Factors

Instructions: Enter the type of vehicle and distance traveled in employee-owned vehicles. Vehicle types can be seen in the drop-down lists below. For rail and subway transportation, enter the type of rail transportation and the distance traveled. For employee business travel, enter the distance traveled, the type of flight, and the seat class.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Gasoline Automobiles	194,400	=	77,706	=	77.71
2.	Gasoline Light Truck	113,400	=	71,415	=	71.42
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Rail and Subway Transportation

CO_2 Emissions from Rail Transportation

	Type of Rail Transportation	Distance Traveled (Passenger Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Locomotive	16,200	=	2,784	=	2.78
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Air Transportation

CO_2 Emissions from Employee air travel

	Type of Flight (Short, Medium, or Long Haul)	Seat Class (First, Business, Premium Economy, Economy)	Distance Traveled (land miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Haul (300 to 700 miles)	Premium Economy	500	=	116	=	0

2.				=	0	=	0
3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

Production of Purchased Materials (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of material that is purchased and the average recycled content of each material.

	Material	Amount Purchased (lbs)	Average Recycled Content(%)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Personal Computers	143		=	3,988	=	3.99
2.	Glass	143		=	46	=	0.05
3.	Office Paper	143		=	74	=	0.07
4.	Aluminum Cans	143		=	1,124	=	1.12
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

Contractor-Owned Vehicles (Scope 3)

Mobile Factors

Instructions: The following emissions use an estimate of vehicle type and distance traveled by contractors.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Light Truck	10,480	=	7,096	=	7.10
2.	Diesel Light Truck	10,480	=	7,096	=	7.10
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Leased Assets, Franchises, and Outsourced Activities (Scope 3)

Photocopy Factors

Instructions: Enter the number of photocopies outsourced below.

	Number of Copies		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	520,000	=	8.54	=	0.01

Off-Site Computer Servers (Scope 3)

Server Factors

Instructions: In the yellow cell below, please enter the electricity consumption of off-site servers used by your office.

	Electricity Consumption of Off-Site Servers (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	1	=	0	=	0.00

Other Emissions

Instructions: In the yellow cells below, please enter the results of your calculations for other activities emitting greenhouse gases, by gas. A space is provided to the left of each table to enter the name of the source of these emissions.

		Calculated Emissions Metric Tons of Carbon Dioxide Equivalent ($MTCO_2$ Eq.)	
	Source	CO_2	Total
1.			0

GHG Summary for Meadows at Yaphank-RE

The total GHG emissions presented here represent Scope 3 emissions. According to the W
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**168.4**
Road Transportation	165.2
Rail and Subway	3.1
Airplane	0.1
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**14.2**
Road Transportation	14.2
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**186.5**

Total Emissions (including Scope 3)	**474.1**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

The Meadows at Yaphank-RETAIL

Sour
W

This worksheet requires information on the three scopes for greenhouse gas (GHG) accounting and reporting purposes identified through WRI/WBC Corporate Standard. The sources included on this sheet reflect only those for which you selected "yes" on the previous page. If you decide that you emissions from a source not previously selected, please return to the "Source Selection" worksheet and select "Yes" for that source. Where applical WRI, is provided after the source name. Emissions estimates for sources not included in the tool can be entered in the "Other Emissions" section.

The color key for input cells is below. Yellow cells indicate where input data is required, white cells are automatically populated and provide default c and the light green cells provide emission estimates.

In some instances, two alternate methodologies are presented. Please only complete one of the alternate methodologies in order to estimate emissi

Key

	= Input Cell
	= Default Data or Emission Factor
	= Greenhouse Gas Emission Estimate

To view the worksheets containing specific emission factors and other coefficients used in the calculations, click on the buttons to the right of each source title. To view the expanded calculations used to estimate these emissions, please click on the "View Methodology" button.

View Methodology

On-Site Stationary Fuel Combustion (Scope 1)

Fuel Densities | Heating Values | Carbon Contents | Oxidation Factors | Non-CO_2 Factors

Instructions: Enter the amount and type of natural gas in equipment used in the production of electricity, heat or steam.

Natural Gas

	Natural Gas Type	Fuel Consumed (cubic feet)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Natural gas	205,253	=	9,722	=	9.72
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00

Company-Owned Vehicle Transportation (Scope 1)

Mobile Factors

Instructions: Enter the vehicle type and miles traveled in company-owned vehicles per year. For company-owned aircraft, select the type of jet and hours flown per year.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Miles Traveled		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Automobiles	15,720	=	6,653	=	7
2.	Gasoline Light Truck	15,720	=	9,900	=	10
3.	Gasoline heavy Truck	15,720	=	23,621	=	24
4.			=	0	=	0
5.			=	0	=	0

Company-Owned Aircraft

CO_2 Emissions from company-owned aircraft

	Type of Aircraft	Hours Flown		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.			=	0	=	0

Refrigerant and Air Conditioning Use (Scope 1)

Refrigerant Factors

Instructions: Enter the refrigeration/AC application, the number of units, and the type of refrigerant used in each application.

	Application*	Number of Units	Type Of Refrigerant		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Domestic Refrigerators	1	HFC-134A	=	1	=	0
2.	Residential & Commercial A/C	1	R-401A	=	50	=	0
3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

*The application type is a refrigerator unless explicitly stated as air conditioning (A/C).

Purchased Electricity, Heat, and Steam (Scope 2)

Electricity Factors | Average Office Electricity Consumption

Instructions: Enter the amount of purchased electricity consumed (kWh) for the year you are performing the inventory. The state default emission factor for this calculation matches the state selected on the Welcome worksheet for your office location.

CO_2 Emissions

	State	Electricity Consumption (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	New York	575,711	=	237,618	=	237.62

Waste Disposal (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of that material that is disposed (e.g., landfilliing, combustion or landfilled, combusted) and the amount that is recycled.

	Material	Amount Disposed (Not Recycled) (lbs)	Amount Recycled (lbs)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Aluminum Cans	0	143	=	-975	=	-0.97
2.	Glass	0	143	=	-20	=	-0.02
3.	Office paper	0	143	=	-204	=	-0.20
4.	Personal Computers	0	143	=	-162	=	-0.16
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

	Wastewater Treated (Gallons)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	26,200	=	42.99	=	0

Employee Business and Commuting Travel (Scope 3)

Mobile Factors

Instructions: Enter the type of vehicle and distance traveled in employee-owned vehicles. Vehicle types can be seen in the drop-down lists below. For rail and subway transportation, enter the type of rail transportation and the distance traveled. For employee business travel, enter the distance traveled, the type of flight, and the seat class.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Gasoline Automobiles	215,400	=	86,100	=	86.10
2.	Gasoline Light Truck	125,650	=	79,130	=	79.13
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Rail and Subway Transportation

CO_2 Emissions from Rail Transportation

	Type of Rail Transportation	Distance Traveled (Passenger Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Locomotive	17,950	=	3,085	=	3.09
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Air Transportation

CO_2 Emissions from Employee air travel

	Type of Flight (Short, Medium, or Long Haul)	Seat Class (First, Business, Premium Economy, Economy)	Distance Traveled (land miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Haul (300 to 700 miles)	Premium Economy	500	=	116	=	0
2.				=	0	=	0
3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

Production of Purchased Materials (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of material that is purchased and the average recycled content of each material.

	Material	Amount Purchased (lbs)	Average Recycled Content(%)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Personal Computers	143		=	3,988	=	3.99
2.	Glass	143		=	46	=	0.05
3.	Office Paper	143		=	74	=	0.07
4.	Aluminum Cans	143		=	1,124	=	1.12
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

Contractor-Owned Vehicles (Scope 3)

Mobile Factors

Instructions: The following emissions use an estimate of vehicle type and distance traveled by contractors.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Light Truck	10,480	=	7,096	=	7.10
2.	Diesel Light Truck	10,480	=	7,096	=	7.10
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Leased Assets, Franchises, and Outsourced Activities (Scope 3)

Photocopy Factors

Instructions: Enter the number of photocopies outsourced below.

	Number of Copies		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	50,000	=	0.82	=	0.00

Off-Site Computer Servers (Scope 3)

Server Factors

Instructions: In the yellow cell below, please enter the electricity consumption of off-site servers used by your office.

	Electricity Consumption of Off-Site Servers (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	5	=	0	=	0.00

Other Emissions

Instructions: In the yellow cells below, please enter the results of your calculations for other activities emitting greenhouse gases, by gas. A space is provided to the left of each table to enter the name of the source of these emissions.

	Source	Calculated Emissions: Metric Tons of Carbon Dioxide Equivalent ($MTCO_2$ Eq.) CO_2	Total
1.			0
2.			0
3.			0
4.			0
5.			0
6.			0
7.			0
8.			0

GHG Summary for Meadows at Yaphank-OF

The total GHG emissions presented here represent Scope 3 emissions. According to the W
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**166.0**
Road Transportation	162.8
Rail and Subway	3.0
Airplane	0.2
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**14.2**
Road Transportation	14.2
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**
Total Scope 3 Emissions	**184.1**
Total Emissions (including Scope 3)	**520.3**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

The Meadows at Yaphank-Office Space

This worksheet requires information on the three scopes for greenhouse gas (GHG) accounting and reporting purposes identified through W
Corporate Standard. The sources included on this sheet reflect only those for which you selected "yes" on the previous page. If you decide
emissions from a source not previously selected, please return to the "Source Selection" worksheet and select "Yes" for that source. Where
by WRI, is provided after the source name. Emissions estimates for sources not included in the tool can be entered in the "Other Emissions'

The color key for input cells is below. Yellow cells indicate where input data is required, white cells are automatically populated and provide
factors, and the light green cells provide emission estimates.

In some instances, two alternate methodologies are presented. Please only complete one of the alternate methodologies in order to estimat
source.

Key

	= Input Cell
	= Default Data or Emission Factor
	= Greenhouse Gas Emission Estimate

To view the worksheets containing specific emission factors and other coefficients used in the calculations, click on the buttons to the right of each source title. To view the expanded calculations used to estimate these emissions, please click on the "View Methodology" button.

View Methodology

On-Site Stationary Fuel Combustion (Scope 1)

Fuel Densities | Heating Values | Carbon Contents | Oxidation Factors | Non-CO_2 Factors

Instructions: Enter the amount and type of natural gas in equipment used in the production of electricity, heat or steam.

Natural Gas

	Natural Gas Type	Fuel Consumed (cubic feet)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Natural gas	214,549	=	10,162	=	10.16
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00

Company-Owned Vehicle Transportation (Scope 1)

Mobile Factors

Instructions: Enter the vehicle type and miles traveled in company-owned vehicles per year. For company-owned aircraft, select the type of jet and hours flown per year.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Miles Traveled		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Automobiles	15,720	=	6,653	=	7
2.	Gasoline Light Truck	15,720	=	9,900	=	10
3.	Gasoline heavy Truck	15,720	=	23,621	=	24
4.			=	0	=	0
5.			=	0	=	0

Company-Owned Aircraft

CO_2 Emissions from company-owned aircraft

	Type of Aircraft	Hours Flown		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.			=	0	=	0

Refrigerant and Air Conditioning Use (Scope 1)

Refrigerant Factors

Instructions: Enter the refrigeration/AC application, the number of units, and the type of refrigerant used in each application.

	Application*	Number of Units	Type Of Refrigerant		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Domestic Refrigerators	1	HFC-134A	=	1	=	0
2.	Residential & Commercial A/C	1	R-401A	=	50	=	0

3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

*The application type is a refrigerator unless explicitly stated as air conditioning (A/C).

Purchased Electricity, Heat, and Steam (Scope 2)

Electricity Factors | Average Office Electricity Consumption

Instructions: Enter the amount of purchased electricity consumed (kWh) for the year you are performing the inventory. The state default emission factor for this calculation matches the state selected on the Welcome worksheet for your office location.

CO_2 Emissions

	State	Electricity Consumption (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	New York	692,397	=	285,779	=	285.78

Waste Disposal (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of that material that is disposed (e.g., landfilliing, combustion or landfilled, combusted) and the amount that is recycled.

	Material	Amount Disposed (Not Recycled) (lbs)	Amount Recycled (lbs)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Aluminum Cans	0	143	=	-975	=	-0.97
2.	Glass	0	143	=	-20	=	-0.02
3.	Office paper	0	143	=	-204	=	-0.20
4.	Personal Computers	0	143	=	-162	=	-0.16
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

	Wastewater Treated (Gallons)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	26,200	=	42.99	=	0

Employee Business and Commuting Travel (Scope 3)

Mobile Factors

Instructions: Enter the type of vehicle and distance traveled in employee-owned vehicles. Vehicle types can be seen in the drop-down lists below. For rail and subway transportation, enter the type of rail transportation and the distance traveled. For employee business travel, enter the distance traveled, the type of flight, and the seat class.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Gasoline Automobiles	212,195	=	84,819	=	84.82
2.	Gasoline Light Truck	123,780	=	77,952	=	77.95
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Rail and Subway Transportation

CO_2 Emissions from Rail Transportation

	Type of Rail Transportation	Distance Traveled (Passenger Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Locomotive	17,683	=	3,039	=	3.04
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Air Transportation

CO_2 Emissions from Employee air travel

	Type of Flight (Short, Medium, or Long Haul)	Seat Class (First, Business, Premium Economy, Economy)	Distance Traveled (land miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Haul (300 to 700 miles)	Premium Economy	1,000	=	232	=	0

2.				=	0	=	0
3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

Production of Purchased Materials (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of material that is purchased and the average recycled content of each material.

	Material	Amount Purchased (lbs)	Average Recycled Content(%)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Personal Computers	143		=	3,988	=	3.99
2.	Glass	143		=	46	=	0.05
3.	Office Paper	143		=	74	=	0.07
4.	Aluminum Cans	143		=	1,124	=	1.12
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

Contractor-Owned Vehicles (Scope 3)

Mobile Factors

Instructions: The following emissions use an estimate of vehicle type and distance traveled by contractors.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Light Truck	10,480	=	7,096	=	7.10
2.	Diesel Light Truck	10,480	=	7,096	=	7.10
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Leased Assets, Franchises, and Outsourced Activities (Scope 3)

Photocopy Factors

Instructions: Enter the number of photocopies outsourced below.

	Number of Copies		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	50,000	=	0.82	=	0.00

Off-Site Computer Servers (Scope 3)

Server Factors

Instructions: In the yellow cell below, please enter the electricity consumption of off-site servers used by your office.

	Electricity Consumption of Off-Site Servers (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	10	=	0	=	0.00

Other Emissions

Instructions: In the yellow cells below, please enter the results of your calculations for other activities emitting greenhouse gases, by gas. A space is provided to the left of each table to enter the name of the source of these emissions.

		Calculated Emissions Metric Tons of Carbon Dioxide Equivalent ($MTCO_2$ Eq.)	
	Source	CO_2	Total
1.			0

GHG Summary for Meadows at Yaphank-HO

The total GHG emissions presented here represent Scope 3 emissions. According to the W
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**25.8**
Road Transportation	25.2
Rail and Subway	0.5
Airplane	0.1
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**14.2**
Road Transportation	14.2
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**43.9**

Total Emissions (including Scope 3)	**327.7**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

GHG Summary for Meadows at Yaphank-LH

The total GHG emissions presented here represent Scope 3 emissions. According to the V
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**72.2**
Road Transportation	69.0
Rail and Subway	3.1
Airplane	0.1
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**63.9**
Road Transportation	63.9
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**140.0**

Total Emissions (including Scope 3)	**311.4**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

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ding to the World Resources Institute and World
l Corporate Standard, Scope 3 emissions are an
Due to the diffuse nature of GHG emissions
ns across companies and are thus provided for

is tool is not meant to compile or create
d with their activities.

Reduce Waste Emissions

The Meadows at Yaphank-LHT INDUST.

This worksheet requires information on the three scopes for greenhouse gas (GHG) accounting and reporting purposes identified through W Corporate Standard. The sources included on this sheet reflect only those for which you selected "yes" on the previous page. If you decide emissions from a source not previously selected, please return to the "Source Selection" worksheet and select "Yes" for that source. Where by WRI, is provided after the source name. Emissions estimates for sources not included in the tool can be entered in the "Other Emissions

The color key for input cells is below. Yellow cells indicate where input data is required, white cells are automatically populated and provide factors, and the light green cells provide emission estimates.

In some instances, two alternate methodologies are presented. Please only complete one of the alternate methodologies in order to estimat source.

Key

	= Input Cell
	= Default Data or Emission Factor
	= Greenhouse Gas Emission Estimate

To view the worksheets containing specific emission factors and other coefficients used in the calculations, click on the buttons to the right of each source title. To view the expanded calculations used to estimate these emissions, please click on the "View Methodology" button.

View Methodology

On-Site Stationary Fuel Combustion (Scope 1)

Fuel Densities | Heating Values | Carbon Contents | Oxidation Factors | Non-CO_2 Factors

Instructions: Enter the amount and type of natural gas in equipment used in the production of electricity, heat or steam.

Natural Gas

	Natural Gas Type	Fuel Consumed (cubic feet)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Natural gas	1,250	=	59	=	0.06
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00

Company-Owned Vehicle Transportation (Scope 1)

Mobile Factors

Instructions: Enter the vehicle type and miles traveled in company-owned vehicles per year. For company-owned aircraft, select the type of jet and hours flown per year.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Miles Traveled		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Gasoline Light Truck	25,800	=	16,248	=	16
2.	Diesel Heavy Truck	25,800	=	37,451	=	37
3.			=	0	=	0
4.			=	0	=	0
5.			=	0	=	0

Company-Owned Aircraft

CO_2 Emissions from company-owned aircraft

	Type of Aircraft	Hours Flown		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.			=	0	=	0

Refrigerant and Air Conditioning Use (Scope 1)

Refrigerant Factors

Instructions: Enter the refrigeration/AC application, the number of units, and the type of refrigerant used in each application.

	Application*	Number of Units	Type Of Refrigerant		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Domestic Refrigerators	1	HFC-134A	=	1	=	0
2.	Residential & Commercial A/C	1	R-401A	=	50	=	0

3.				=	0	=	0
4.				=	0	=	0
5.				=	0	=	0

*The application type is a refrigerator unless explicitly stated as air conditioning (A/C).

Purchased Electricity, Heat, and Steam (Scope 2)

Electricity Factors | Average Office Electricity Consumption

Instructions: Enter the amount of purchased electricity consumed (kWh) for the year you are performing the inventory. The state default emission factor for this calculation matches the state selected on the Welcome worksheet for your office location.

CO_2 Emissions

	State	Electricity Consumption (kWh)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	New York	285,000	=	117,630	=	117.63

Waste Disposal (Scope 3)

Waste Factors

Instructions: Select a material and enter the amount of that material that is disposed (e.g., landfilliing, combustion or landfilled, combusted) and the amount that is recycled.

	Material	Amount Disposed (Not Recycled) (lbs)	Amount Recycled (lbs)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Aluminum Cans	0	143	=	-975	=	-0.97
2.	Glass	0	143	=	-20	=	-0.02
3.	Office paper	0	143	=	-204	=	-0.20
4.	Personal Computers	0	143	=	-162	=	-0.16
5.				=	0	=	0.00
6.				=	0	=	0.00
7.				=	0	=	0.00

	Wastewater Treated (Gallons)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	26,200	=	42.99	=	0

Employee Business and Commuting Travel (Scope 3)

Mobile Factors

Instructions: Enter the type of vehicle and distance traveled in employee-owned vehicles. Vehicle types can be seen in the drop-down lists below. For rail and subway transportation, enter the type of rail transportation and the distance traveled. For employee business travel, enter the distance traveled, the type of flight, and the seat class.

Road Transportation

CO_2 Emissions from Vehicles Used for Road Transportation

	Vehicle Type	Distance Traveled (Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Large Gasoline Automobiles	61,200	=	30,476	=	30.48
2.	Gasoline Light Truck	61,200	=	38,542	=	38.54
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Rail and Subway Transportation

CO_2 Emissions from Rail Transportation

	Type of Rail Transportation	Distance Traveled (Passenger Miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Diesel Locomotive	17,950	=	3,085	=	3.09
2.			=	0	=	0.00
3.			=	0	=	0.00
4.			=	0	=	0.00
5.			=	0	=	0.00

Air Transportation

CO_2 Emissions from Employee air travel

	Type of Flight (Short, Medium, or Long Haul)	Seat Class (First, Business, Premium Economy, Economy)	Distance Traveled (land miles)		Emissions (kg CO_2 Eq.)		Emissions ($MTCO_2$ Eq.)
1.	Medium Haul (300 to 700 miles)	Premium Economy	500	=	116	=	0

GHG Summary for Meadows at Yaphank-LH

The total GHG emissions presented here represent Scope 3 emissions. According to the V
Business Council for Sustainable Development's (WRI/WBCSD) GHG Protocol Corporate S
optional category that allows for the treatment of all other indirect emissions. Due to the di
resulting from Scope 3 activities, Scope 3 may not lend itself well to comparisons across co
informational purposes only*.

* The Office Carbon Footprint Tool follows the framework that is documented by the WRI GHG Corporate Protocol. Thi
inventories and is strictly a tool designed to assist offices in making decisions to reduce the GHG emissions associated

	Total Emissions ($MTCO_2$ Eq.)
Scope 3 Emissions	**CO_2**
Waste	**-1.3**
Waste Generated and Recycled	-1.4
Wastewater	0.0
Employee Business and Commuting Travel	**72.2**
Road Transportation	69.0
Rail and Subway	3.1
Airplane	0.1
Production of Purchased Materials	**5.2**
Contractor-Owned Vehicles	**63.9**
Road Transportation	63.9
Leased Assets, Franchises, and Outsourced Activities	**0.0**
Off-Site Computer Servers	**0.0**

Total Scope 3 Emissions	**140.0**

Total Emissions (including Scope 3)	**311.4**

Emissions were not calculated for the following sector: Off-Site Computer Servers.

APPENDIX G

CONFORMANCE TO PDD ZONING REQUIREMENTS

CONFORMANCE TO PDD ZONING REQUIREMENTS

According to the Chapter 85, Article XXXIIA (Planned Development District) of the Town Zoning Code, the Town has defined the purpose and goals of a PDD. The legislative intent (Section 85-337) is as follows:

1) It is hereby found and determined by the Town Board of the Town of Brookhaven that there exist in the Town vast but diminishing natural resources and tracts of land which must be preserved and protected for the benefit of this and future generations. This need is balanced by a need to accommodate and provide for the future economic welfare and development of the Town.

2) The purpose of this Planned Development District legislation is to create the type of planning and zoning flexibility which is necessary to achieve environmentally sensitive, economically beneficial and socially desirable development which is more creative and imaginative in its land use and design than is possible under the more rigid, conventional regulations currently in place. This type of sound planning is designed to achieve a commonality of benefits for the otherwise sometimes competing interests of planners, environmentalists, residents, civic groups, business people and developers by recognizing the unique locational, servicing and physiographic characteristics of varying parcels of land, and then shifting and modifying the development permitted on each in order to achieve benefits to the public and to the owner of the property.

3) It is, therefore, the intent of the Town Board to enact zoning which can be used as a positive planning tool by offering incentives to encourage comprehensive, coordinated planning and design, and the creation of developments and communities which are visually attractive, fiscally responsible, economically feasible and environmentally sensitive In order to aid in accomplishing the above, and the goals described below, various boards and officials of the Town of Brookhaven will incur significant expenses in connection with the review of applications for implementation of the PDD floating zone. It is desirable that reimbursement for these expenses be made to the Town by the applicant seeking such relief. It is, therefore, also the intention of this article to establish a schedule of deposits to be made by applicants to assure reimbursement of anticipated costs to be incurred by the Town in the review of their applications.

   Goals. The various long-term goals which the Town Board wishes to achieve by this legislation are as follows, although it is recognized that most applications will not be able to meet all of them:

   (1) To encourage more desirable and publicly beneficial arrangements and designs of land uses in accordance with the comprehensive plan of the Town of Brookhaven (including the draft 1987 Land Use Plan, the 1985 Open Space Study and this Zoning Code), the Long Island Pine Barrens Protection Act (Article 57 of the New York State Environmental Conservation Law), the Central Pine Barrens Comprehensive Land Use Plan (prepared by the Central Pine Barrens Joint Planning and Policy Commission), the Long Island Comprehensive Special Groundwater Protection Area Plan (prepared by the Long Island Regional Planning Board pursuant to Article 55 of the New York State Environmental Conservation Law) and other applicable plans of Town, county, regional, state and federal agencies.

   The subject site is located within the Central Pine Barrens Zone and Special Groundwater Protection Area (SGPA), so the regulations of the Long Island Pine Barrens Protection Act (Article 57 of the New York State Environmental Conservation Law), the Central Pine Barrens Comprehensive Land

Use Plan (prepared by the Central Pine Barrens Joint Planning and Policy Commission), and the Long Island Comprehensive Special Groundwater Protection Area Plan (prepared by the Long Island Regional Planning Board pursuant to Article 55 of the New York State Environmental Conservation Law) apply.

Town Code Section 85-340 promotes the use of PDDs as Receiving Sites for Pine Barrens Credits (PBCs) or other form of transferred density, as a means of preserving open space in the Pine Barrens Zone or in other locations in the Town. In general, use of this mechanism on the subject site would promote preservation of open space lands in the Town and would facilitate an expanded use of it on other sites in other proposals as well. In addition to the creation of significant special public benefits, the purchase of five PBCs is proposed.

The proposed project conforms to the applicable recommendations and requirements of the applicable plans and studies listed above, as follows:

Draft Town Comprehensive Land Use Plan Update (1996) - The Meadows at Yaphank PDD conforms to the Plan Update recommendation of "Planned Development" for the subject site. The proposed PDD would provide lands for public open space and public utilities, with commercial and residential uses; it will generate significant public benefits to the school district and community. The PDD design specifically includes large amounts of preserved land for aesthetic buffering and environmental preservation, and retains much of the naturally-vegetated perimeter buffers.

The proposed project conforms to both the spirit and other recommendations of the Plan Update, as follows:

- The project will provide high-quality senior housing in a setting that respects the existing land use context of the site and area.
- The Plan Update identifies the need for attractive, affordable housing with low maintenance and recreationally-oriented facilities for the Town's seniors, which would be achieved by the proposed PDD.
- The Meadows at Yaphank proposes a mixed land use that is appropriate in the vicinity.
- The project will help develop a greater sense of place in the local community by use of the PDD technique, which provides for recreation and open space.
- The project's residential units will be provided in the form of differing types of units, which diversity is in accordance with Plan Update recommendations and adds variety to housing patterns by adding diversification to the surrounding community.
- The project will provide for a significant number of affordable units, as recommended by the Plan Update.
- The proposed project will dedicate a substantial acreage of land to the Town for public recreational purposes.

The Longwood Mini-Master Plan (January 1993) - The project conforms to the recommended PUD mixed-use land use for the subject parcel. In addition, the proposed project will conform to many of the identified goals of the plan, including the following:

1. To encourage the creation of unique, identifiable community centers.
2. To encourage diversity or intricacy of use within our downtowns.
3. Encourage the development of people friendly streets and downtowns.
4. To enhance our tax base with properly sited industrial and commercial development.

5. Create corridors of open space throughout our community.

A portion of the subject property was identified in the plan as a potential center of activity. The plan states: *"The North Shore Properties at William Floyd Parkway and the Long Island Expressway have the potential to be a regional commercial services center."* The plan further states *"A high priority goal is to encourage the creation of unique identifiable community centers. These community centers in which people are encouraged to interact should be in Coram, Middle Island, Ridge and Yaphank, with community enhancement occurring in East Yaphank and Gordon Heights. The development of people friendly streets and downtowns is an important goal. Designated community centers should allow for higher building densities, setback relief and an integrated pattern of land use. Interaction should be encouraged by planning for a diversity of uses within the downtown areas. Amenities, such as pocket parks, and public buildings such as libraries and post offices which encourage people to be on the streets, and thus enhance their safety, should be planned within the center of communities… The aesthetic appeal of the downtowns must also be addressed. Street trees are of particular importance and should be required in site plan review. Trees can serve to separate the pedestrian from the automobile and add to the attractiveness of the downtown area... Finally, an architectural review board with input from the community should be established. "*

As previously stated, the Meadows at Yaphank development envisions a sustainable community including Smart Growth elements such as a mix of residential, commercial (retail, office, office/flex), hospitality and public open spaces. As a result, the community will provide for itself as well as the greater community. With efficient building design and proper planning, more open space is preserved and the community becomes a vibrant and successful place combating the elements of sprawl. At The Meadows at Yaphank, residents will be able to step out their door to find shopping, entertainment and employment opportunities, providing freedom on-foot for all necessities as well as vibrant public spaces and parks. As a result, the proposed project will conform to the goals, objectives and recommendations identified in the Longwood Mini-Master Plan.

Central Pine Barrens Comprehensive Land Use Plan - The Pine Barrens Commission recognizes the need for balanced growth and development within the CGA provided that it is consistent with the water resource protection and habitat preservation goals of the Pine Barrens Protection Act. Projects within the CGA are required to meet all the standards presented in the Pine Barrens Plan. **Table 3-3** provides an evaluation of the project's conformance with the Pine Barrens Plan. Development in the CGA is permitted under strict guidelines. These standards and guidelines were adopted in the Pine Barrens Plan and the SEQRA Findings Statement of June 1995. A hardship application may be filed for those projects that do not meet the standards and guidelines in which the applicant must prove that significant reasons exist as to why the project cannot meet the standards and/or guidelines set forth. All eligible development projects in the CGA must meet all of the standards in the Plan. Based on the size of the proposed project, and review of Section 4.5.5 of the Pine Barrens Plan, the project is considered a DRS, and so the stricter Standards and Guidelines of the Pine Barrens Plan must be met.

Central Pine Barrens Critical Environmental Area- Due to the subject site's location within the CEA, the Town Board is designated as lead agency under Article 8 of the SEQRA and 6 NYCRR 617.6. As previously stated, this DGEIS is intended to provide the Brookhaven Town Board (as lead agency under SEQRA) and all involved agencies with the information necessary to render informed decisions on the PDD application. Once accepted, this document will be the subject of public review, a public hearing and written comments, followed by the preparation of an FGEIS for any substantive comments. Upon completion of the FGEIS, the Town Board will be responsible for the adoption of a Statement of Findings. Simultaneously, the Town Planning Division will review the PDD application and determine whether it is complete for public and agency review. A public hearing will be held on

the PDD application and associated Master Plan (which includes the Land Use and Development Plan), possibly concurrent with the hearing on the DGEIS. Following this, and in consideration of the Findings Statement, the Town Board shall approve, conditionally approve, or disapprove the proposed PDD rezone application and Master Plan. If the proposed project is approved or conditionally approved, the applicant may proceed to a Phase 2 Subdivision/Site Plan application to the Planning Board.

This document is part of the official record under the SEQRA process outlined in 6 NYCRR Part 617, with statutory authority and enabling legislation under Article 8 of the NYS ECL. It was determined that the proposal would be appropriate for the preparation of a GEIS. Thus, this DGEIS will be subject to the full procedures of Part 617, providing a proper and complete forum for interagency review and public comment. Because of this extensive environmental review, any potential impacts associated with the site's location within the Central Pine Barrens CEA will be addressed and mitigation provided, if necessary.

Therefore, the proposed project satisfies this goal.

(2) To help implement the Central Pine Barrens Comprehensive Land Use Plan by providing a zoning mechanism designed to facilitate the transfer of Pine Barrens Credits (PBCs) from the core area of the Central Pine Barrens to receiving sites which are located and designed in a manner capable of accommodating the transferred development rights.

As contained in Section 85-340B(1) of the Town Zoning Code, the use of PBCs transferred from sites in the Central Pine Barrens Zone is the vehicle encouraged by the Town Board to justify the excess density of a proposed PDD. However, this is not the <u>only</u> such methodology the Town Board accepts to justify this increased density; Section 85-340B(2) states "*If an applicant proposes to provide other special public benefits in exchange for a zoning incentive, the actual zoning incentive decided upon by the Town Board will be based upon the comparable economic value of PBCs, the importance of the proposed public benefits, features or amenities to the accomplishment of the purposes and goals of this article, the estimated economic cost to the applicant of providing the benefit feature or amenity, the estimated economic gain to the applicant of obtaining the requested incentive and the environmental impact of the requested density increase and/or land use change, including considerations of sewage and traffic generation. The economic calculations will take into account estimated changes in both land value and development cost. All special public benefits for which zoning incentives are requested must be determined by the Town Board to be beyond that which would customarily be provided by an applicant or required by regulations of the Town of Brookhaven or other involved regulatory agencies.*"

The proposed project includes the purchase of five PBCs. In addition, the applicant proposes to provide a number of special public benefits in order to further the benefit of the project for the community, and support the PDD mixed-use project, which includes the amounts of residential density and commercial development desired by the public. Public benefits are proposed in several forms**,** and provide financially based justification for the proposed PDD.

(3) To encourage preservation and protection of the Town's natural environmental resources, including groundwater quality and quantity, the diversity of plant and animal communities, and significant habitat areas for rare, endangered, threatened and special concern species.

The proposed project will not result in any significant adverse impacts to natural resources, including topography, soils, surface and/or groundwater, wetlands, vegetation or wildlife. A primary reason for this is the fact that the site has been impacted by the previous clearing and grading for the racetrack development and previously-approved Brookhaven Walk project, which disturbed significant amounts of soil and vegetation, and thereby changed the site's natural topography and soils, and cleared a significant amount of natural vegetation. Finally, use of the required STP, in conjunction with the applicant's decision to minimize the use of fertilizers, will minimize the potential for adverse impacts on groundwater quality and the wetlands.

(4) To encourage the preservation of large, undisturbed, contiguous areas of naturally vegetated open space, wherever possible adjacent to existing large public/quasi-public open space areas. Where adjacent location is not possible, to create natural open space linkages which are of appropriate size, location and character so as to maintain the connectivity of open space for environmental, visual and recreational functions so as to create, as far as is practicable, continuous and contiguous open space systems.

After completion of the anticipated grading program, the proposed project will result in significant preserved land, consisting of the wetland and Pine Barrens protection areas. Approximately 120.79 acres or 36.22% of the overall site are proposed to remain natural.

The applicant proposes to retain this acreage in private ownership and will use appropriate mechanisms through the Town Board change of zone and Planning Board site plan review process to ensure that this amount of natural land remains in this condition in perpetuity.

There is a 0.76-acre NYSDEC-designated freshwater wetland B-16 on the eastern parcel, located along its northern border on the southern side of Yaphank-Woods Boulevard. Similar to the prior Brookhaven Walk project, this feature will be retained in an undisturbed condition (a Town Freshwater Wetland permit had been issued and renewed for that prior application). As the Town jurisdiction over this feature encompasses a radius of 150 feet from its boundary, it is expected that a non-disturbance buffer of at least this distance will be maintained by the proposed project. The NYSDEC maintains a 100-foot jurisdictional buffer for this wetland; thus, the proposed project will not require an Article 24 Freshwater Wetlands permit from the NYSDEC. As such, no wetland permits will be required from either the Town or NYSDEC.

There is a small (approximately 0.02 acres) wet depression located within the south-central portion of the eastern wooded buffer, along CR 46. This depression is not regulated but retains surface water periodically during extreme rain events and excessively wet periods. An additional wet depression (approximately 0.18 acres) is within the racetrack area. The balance of the site consists of upland areas that shed water from high elevations to low elevations where it will be recharged to the water table and/or evapotranspirate to the atmosphere.

Additionally, there is a smaller surface water body (NYSDEC-mapped freshwater wetland, identified as B-15, about 1.11 acres) located approximately 112 feet southwest of the Dorade STP property. This pond has been documented by NYSDEC as a breeding pond for an endangered amphibian species (tiger salamander).

The project's private recreational areas will include amenities such as outdoor pools/patios, tennis courts and extensive landscaped open areas crossed by pathways enhanced by benches and gazebos,

and will be for the use of the community's residents and their guests. An extensive trail system will wind through the retained natural areas on both parcels, and connect to the adjacent Town Greenbelt to the west.

Public areas will include a civic space, village green, great lawn, ball fields, a Town park and civic space.

(5) To encourage protection of scenic vistas, historical buildings and sites, sensitive archaeological areas and other important cultural resources.

The central portions of the eastern and western parcels were previously cleared. As a result, any cultural resources that may have existed in those areas would have been removed, so that no impacts to such resources would be expected.

Based on the results of an Archaeological Investigation prepared for the Eastern parcel (for the previous Brookhaven Walk proposal), the New York State Historic Preservation Office (SHPO) determined in October 2006 that no impacts to cultural resources would occur on that site as a result of that project (**Appendix J-1**).

For the Western parcel, SHPO determined in June 2009 that clearing for the Suffolk Downs Racetrack would have removed any cultural resources that may have been present in those portions of the parcel, so that redevelopment that would not encroach into previously-uncleared areas would likewise not impact cultural resources (**Appendix J-2**).

The Meadows at Yaphank PDD was initially designed to occupy only the same areas cleared for the prior development proposals, thereby continuing to minimize the potential for impact to previously-undiscovered cultural resources that may be present. Accordingly, SHPO was contacted in August 2010 to determine if further study of the subject site would be warranted for that design of the proposed project. The response letter (see **Appendix J-3**), states:

> Our staff has reviewed the documentation provided, including a recent submission from Nelson, Pope & Voorhis, LLC which refers to investigation of the project area. Based on our review of all the submitted information it is the opinion of the OPRHP [Office of Parks, Recreation and Historic Preservation] that the Meadows at Yaphank project as currently designed, will have No Impact on Historic Resources. This finding takes into account the plan to leave the northern and southern portions of the parcels in their current wooded state. Should the project be modified in a way which would impinge on those wooded areas, or should any future proposals call for work in those areas, OPRHP would recommend additional archaeological investigation as those areas were not included in the currently reviewed studies.

Subsequently, the proposed project design was revised to include minor clearing along the interior border of the previously cleared areas of the site. Therefore, in anticipation of a request for additional analysis, the applicant engaged a qualified archaeologist to prepare a supplemental Phase IB Archaeological Study for this additional acreage. The resulting report (see **Appendix J-4**) did not reveal the presence of any cultural resources on this area; the report recommended no further analysis. This report has been reviewed by SHPO, and a renewed letter confirming this conclusion has been obtained (see **Appendix J-5**).

(6) To encourage the conservation and enhancement of the visual quality and rural character of undeveloped areas of the Town by protecting visible open space, farmland and wild and scenic and recreational rivers, encouraging the creation and/or preservation of vegetative buffers along highways and between potentially conflicting land uses, and by the careful siting, design and buffering of building development.

The land use classification of the site would be changed by the proposed project, and the intensity of the site's land use will be increased. However, the site is an appropriate location for a mixed-use development, and will serve to enhance the use of the site. As significant natural vegetation will be retained along the perimeter of the site, it is expected that views of the interior of the site will be limited only to views from the proposed access driveways along William Floyd Parkway and Yaphank-Woods Boulevard. As such, the overall vacant/wooded character of the surrounding area will be maintained.

In general, the impact of the project on the visual resources of the site will result from the limited views of the interior of the site from William Floyd Parkway and Yaphank-Woods Boulevard. Viewers from the multifamily residential development to the north will be minimally visually impacted as a result of the proposed development due to the vegetative buffer proposed and the limited views of the proposed development from Yaphank-Woods Boulevard. The project will enhance the interior of the site by use of high quality landscaping, architectural designs and building materials and will minimize impacts to the surrounding community character by providing significant vegetative buffer along the site's perimeter which will continue to provide the vacant/wooded character of the area.

(7) To minimize flooding and erosion by protecting the functions of wetlands, waterbodies, watercourses, floodplains, areas of high water table, steep slopes, erosion hazard areas and natural vegetative cover.

A majority of the property contains slopes ranging from 0% to 10%, however there are areas located primarily in the central portion of the site extending from north to south as well as the western and eastern corners of the site that exhibit slopes ranging from 11% to greater than 15%.

In accordance with the NYSDEC Phase II SPDES Program, coverage under the General Permit for Stormwater Discharges from Construction Activities (NYSDEC Permit No. GP-0-10-001) will be obtained prior to the initiation of construction activities. Prior to filing for coverage under the General Permit, the NYSDEC requires that a SWPPP be prepared for the parcel, including a detailed erosion and sediment control plan, to manage stormwater generated on-site during construction activities, and for post-construction stormwater management. A SWPPP will be prepared to ensure compliance with water quality and quantity requirements pursuant to Technical Guidance and GP-0-10-001 and Town of Brookhaven Chapter 86 requirements. The NOI requesting coverage under the General Permit will be reviewed by the Town prior to filing in accordance NYSDEC requirements and prior to the initiation of construction activities at the subject property. Additionally, the General Permit requires that inspections of the construction site be performed under the supervision of a qualified professional to ensure that erosion controls are properly maintained during the construction period. The development areas would be specified in the SWPPP and would be managed on-site to ensure that no erosion or sedimentation would occur.

No significant wetlands would be impacted by the proposed development. The existing 0.76-acre wooded swamp on the subject site and the woodlands surrounding this swamp will remain undisturbed by the proposed project.

None of the three wet depressions on the site (i.e., 0.02 acres along CR 46, 0.18 acres in the former racetrack oval, and a small wet depression in the forested area southwest of the former racetrack parcel) are NYSDEC-regulated wetland features. These features experience periodic wet conditions as a result of stormwater runoff and subsequently support varying degrees of wetland vegetation. The small wet depression in the Pine-Oak woodland at the southwest corner of the site will remain undisturbed.

The eastern-most (0.02-acre) depression exists in a natural wooded setting and meets the definition of a freshwater wetland as per Chapter 81 of the Town Code. It is very small in size and would be eliminated under the proposed plan, but would be mitigated through its incorporation into a much larger proposed pond and wetland system feature at its current location. Under Alternative 4, this wooded wetland feature would be preserved with a 25-foot buffer adjacent to existing woodland to be preserved and the proposed stormwater pond and wetland system. There would be ecological value in the retention of this feature, as it would remain contiguous with preserved woodland as well as the proposed wetland complex. The elimination of the feature as proposed or its retention with a 25-foot buffer under Alternative 4 is anticipated to require a Chapter 81 Town Permit.

The larger and highly disturbed 0.18-acre wet depression within the former racetrack oval was formerly a recharge basin serving that facility. This area will be re-graded for the proposed project for parking purposes here, and its former recharge function would be relocated as part of the project's drainage system. The proposed drainage system would include recharge areas as well as pond and wetland systems along the perimeter of the site. The nearest proposed pond and wetland systems will be situated approximately 400 to 500 feet southwest and northwest of the existing wet depression, respectively. Despite the poor condition of this silted, disturbed, wet depression which experiences drastic hydrologic changes (inundated to very dry), because of the presence of hardy wetland vegetation, the Town staff have indicated this feature meets the definition of a freshwater wetland as per Chapter 81 of the Town Code. At the request of the Town, efforts were made to incorporate this area, with minimal disturbance, into the design plan for use in stormwater containment and natural recharge as Alternative 4. However, the excessively draining soils, lack of cover, lack of connectivity to natural areas, and presence of invasive *Phragmites* vegetation within the depression make it a wetland with low ecological value. The proposed 25-foot buffer assumed in Alternative 4 would do little to enhance the value of this depression if it were preserved. However, a significantly more valuable pond and wetland complex are proposed within 400 feet of the existing depression under the proposed plan. The proposed wetland complex would relocate this feature a short distance away, allow it to be contiguous with preserved woodlands, and provide much greater than 3 to 1 mitigation for the loss of this minor wetland feature.

The Carmans River and its associated wetlands, including Weeks Pond, are in the general vicinity of the subject property, but there is no direct surface water connection between the site and this river system. Weeks Pond is located approximately 2,200 feet southwest of the subject site, and the river is located approximately 2,100 feet to the southwest. The river system flows towards the south and discharges to Bellport Bay and the larger Great South Bay. The river in this location is a gaining system where groundwater provides the large majority of the flow. However, based upon the site's distance and the groundwater model prepared by CDM for SCDHS, any recharge from the site would take approximately 2.88 years to reach the river system. This 2009 update to the SCCWRMP further

indicates that approximately 53% of the river's recharge is from groundwater that is less than 10 years old. Therefore, it is not likely that recharge from the site would directly enter the freshwater portion of the Carmans River, but would more likely travel farther in the aquifer, making its way toward Bellport Bay. As a result, no significant impacts to the Carmans River system are anticipated as a result of the project.

(8) To minimize stormwater runoff and maximize the quality and quantity of groundwater recharge by reducing land disturbance, using natural drainage systems wherever possible, filtering runoff from impervious surfaces, and maximizing on-site recharge.

The site does not contain any major drainage features such as intermittent streambeds or gullies, which would, if present, indicate that significant volumes of movements of surface runoff were occurring, traversing long distances. Rather, stormwater generated on the undulating topography in the vegetated perimeter buffer areas of the site is prevented from forming large volumes of runoff due to the presence of the large area of relatively flat terrain in the center of the site (cleared for the prior Site Plan approval). As a result, the large volumes of runoff necessary to create erosion features do not occur.

All stormwater runoff generated on developed project surfaces will be retained on-site and recharged to groundwater in a drainage system designed in conformance with Town requirements. While the drainage system has not been designed at the present stage of the project, it is expected that this system will utilize a number of stormwater recharge reserve areas located along the southern fringes of the developed areas (where ground elevations are lower), leaching pools and rain gardens within the developed sections serving the internal roadways and parking areas. As with any potential site development, it will be necessary to analyze the feasibility for installation of sufficient drainage infrastructure for the management of stormwater generated on site. The Town Planning Board will be responsible for the review and approval of the drainage system design as part of the site plan review and approval process.

(9) To encourage protection of aquifers and minimize pollutants entering the soil and groundwater by maximizing the preservation of naturally vegetated areas, planting appropriate native species in areas which are to be landscaped, and utilizing proper fertilizer, pesticide, fungicide, and herbicide management techniques.

Approximately 120.79 acres (36.22 % of the overall site) will be retained as natural open space in conformance with the Vegetation Clearance Limits outlined in the Central Pine Barrens Comprehensive Land Use Plan. As required, the project will comply with the Standards and Guidelines for a Development of Regional Significance (DRS) under the Pine Barrens Plan. Open space will be permanently preserved through site plan approval and conservation easements, and will be publicly accessible for passive enjoyment (nature trails, hiking, etc.).

A detailed Landscape Plan will be prepared for the site plan application, which will be submitted after approval of the PDD application. The project will conform to Town policy for fertilizer dependent vegetation, will improve site aesthetics, and increase vegetated buffering for the neighborhood, all of which will minimize the potential for significant adverse impacts.

A total of 98.13 acres of the site will be landscaped surfaces, though only an estimated 32.00 acres would be maintained (i.e., fertilized and irrigated). This amount of maintained landscaping would represent only 9.6% of the project site. This value is well below the maximum allowable acreage of fertilized landscaping in the CGA of 15% (or, 48.36 acres for this site). Fertilizers would be applied at a rate of 1.00 pounds of nitrogen per 1,000 SF, and irrigation would be 5.5 inches annually which, corresponds to an annualized average of 13,093 gpd.

(10) To locate, plan and design or redesign communities so that they will have a clear "sense of place" and will enable residents to reside, work, shop and enjoy recreational and cultural activities in the same area.

The proposed PDD envisions a sustainable community including Smart Growth elements such as a mix of residential, commercial (retail, office, office/flex), hospitality and public open spaces. As a result, the community will provide for itself as well as the greater community. With efficient building design and proper planning, more open space is preserved and the community becomes a vibrant and successful place combating the elements of sprawl. At The Meadows at Yaphank, residents will be able to step out their door to find shopping, entertainment and employment opportunities, providing freedom on-foot for all necessities as well as vibrant public spaces and parks.

The project will feature attractive, coordinated architectural styling for the residential structures and commercial areas, as well as for all street furniture and amenities (e.g., lighting fixtures, signage, benches, trash receptacles, kiosks, fountains, etc.). It is intended and expected that the project's architecture would, in coordination with landscaping, create a visually interesting and desirable environment for residents and visitors, and will enhance the community in general. Quality-of-life will be a focus of the project, and this emphasis will be evident in its use of thoughtful building design, appropriate landscaping, well-equipped private residential recreational spaces and installation of attractive site entrances. The use of an internal boulevard-style roadway linking the commercial and residential areas provides the needed vibrancy and unifying feature of this community.

(11) To offer the opportunity for a balanced array of housing designed to meet the needs of the Town and the region.

The proposed Meadows at Yaphank PDD includes a mix of housing types including senior units, affordable units, senior affordable units and market rate units. This diverse residential component of the project meets the needs of the community, provides a beneficial and desirable land use on the property, and meets Town goals for diverse and affordable (workforce) housing opportunities.

The applicant intends to offer an appropriate Declaration of Covenants and Restrictions (C&Rs) for the PDD zoning district once these are formulated through the review process. Possible C&Rs and/or agreements could include: measures to ensure that the proposed workforce housing units remain affordable and are administered properly under the auspices of the Town and/or Long Island Housing Partnership; retention of open space, cross-access within the facility; and related matters.

(12) To encourage high-quality, environmentally sensitive industrial and commercial land uses on suitable and appropriately located parcels well served by transportation facilities and utility services.

The proposed PDD includes a mixed-use project featuring a high quality mix of residential, retail, office and office flex uses on the property. The two primary vehicle access points for the project are both from CR 46; the northerly access is via Yaphank-Woods Boulevard (at the northeastern corner of the site), and the southerly access is via Meadows Boulevard East, opposite the central portion of the eastern parcel. Secondary access will be provided to the site via the LIE North Service Road (rights-in and rights-out).

(13) To encourage the efficient use of existing and planned infrastructure, and to encourage the clustering of development so as to facilitate the economical and efficient construction and operation of wastewater treatment plants to service as much of the Town's development as practical.

Critical elements of design include retention of open space and energy efficient design to achieve conservation and energy reduction goals. Approximately 120.79 acres (36.22% of the overall site) will be retained as natural open space in conformance with the Vegetation Clearance Limits outlined in the Central Pine Barrens Comprehensive Land Use Plan. As required, the project will comply with the Standards and Guidelines for a DRS under the Pine Barrens Plan. Open space will be permanently preserved through site plan approval and conservation easements, and will be publicly accessible for passive enjoyment (nature trails, hiking, etc.). Stormwater handling will feature innovative stormwater handling methods to enhance surface treatment and quality recharge.

The applicant intends to incorporate substantial energy- and water-saving features into the proposed project, though the final roster of these features has not been determined at this early stage in the project planning process. It is possible that the number and extent of these sustainable features would justify the applicant seeking certification under the US Green Building Council's LEED® Program. However, as the range and extent of these features has not been determined as yet, the applicant is not able at this time to confirm to the lead agency or community that such certification will be sought. **Appendix A-13** provides a listing of those Credits of the LEED® for New Construction and Major Renovations, 2009 Program that may be considered for use in the proposed project. Also provided are the corresponding requirements for each credit that must be satisfied in order to receive that credit, as well as potential features of the project that would meet those requirements. It is expected that a final decision whether to seek certification will be made prior to the submission of the Site Plan application

Regardless of whether LEED® Certification is sought, the applicant intends to incorporate sustainable features in the project. The following presents a generalized discussion and description of the types of such features that will be utilized in project design and construction.

Use of new, energy-efficient building materials (e.g., insulations, windows, weather stripping, door seals, etc.) and mechanical systems, (e.g., air conditioners, heating systems, HVAC [heating, ventilation and air conditioning] systems, water heaters, heat pumps, etc.) is anticipated, which would minimize the amount of energy resources required. Incorporation of such energy-conserving measures is not only required by New York State, but is a sensible building practice, particularly in light of the increasing cost of energy resources.

The applicant intends to install energy- and water-efficient/Energy Star rated appliances, low-flow plumbing fixtures and low-voltage lighting, windows with low-emissivity coated glass, spray foam insulation (R-21 installation rating) and use of tankless water heaters in residences,

which significantly reduce energy requirements. The project's Lighting Plan will be designed to be "dark sky" compliant and utilize energy-efficient lighting fixtures. Shade trees will also be used in proximity to many of the units to provide shade and reduce cooling needs in summer months.

(14) To encourage the efficient provision and delivery of governmental services, including educational, cultural, recreational and emergency services.

The project's roadways will be designed in conformance with the applicable Town, SCDPW and NYSDOT requirements for spacing, widths, turning radii, etc., and therefore are anticipated to provide safe and efficient access for emergency vehicles. The proposed PDD will provide for significantly increased tax revenues sufficient to offset much (if not all) of the increased costs to provide public services. The added cost of educating 110 school-age children would therefore be $2,456,510 annually. This compares with additional annual tax revenues from The Meadows At Yaphank PDD of $6,402,779, resulting in surplus tax revenues to the school district of $3,946,269/year.

(15) To help assure that new development will be fiscally sound in terms of revenues produced versus expenditures required, including consideration of operating as well as capital costs for the services and facilities required for its residents.

The proposed project will be a privately owned facility that will pay a substantially increased level of property taxes, which are anticipated to offset at least a substantial portion of the increased costs to public services to provide those services to this site. The added cost of educating 110 school-age children would therefore be $2,456,510 annually. This compares with additional annual tax revenues from The Meadows At Yaphank PDD of $6,402,779, resulting in surplus tax revenues to the school district of $3,946,269/year.

(16) To encourage protection of air quality by the clustering of development so as to encourage the use of public transportation and car pooling, as well as the provision of trails to encourage biking and walking.

An extensive trail system will wind through the retained natural areas on both parcels, and connect to the adjacent Town Greenbelt to the west. The project's private recreational areas will include amenities such as outdoor pools/patios, tennis courts and extensive landscaped open areas crossed by pathways enhanced by benches and gazebos, and will be for the use of the community's residents and their guests. Public areas will include a civic space, village green, great lawn, ball fields, a Town park and civic space.

(17) To provide an efficient system of transportation infrastructure designed to maximize safety and minimize vehicular travel.

There will be two access points from CR 46; one directly into the eastern parcel (through a boulevard-style roadway for both northbound and southbound entering and southbound exiting traffic), and indirectly for both parcels from Yaphank-Woods Boulevard. There will be one access to the eastern

parcel's northern side from this roadway. Yaphank-Woods Boulevard will continue to terminate at the northeastern corner of the western parcel, from whence an internal link (on the existing roadway along the parcels' western border) will intersect the LIE North Service Road, which will also provide three accesses to the eastern parcel (on its western border) and the western parcel (at three widely-spaces locations, to the western parcel's eastern side). The intersection of this internal access road at the LIE North Service Road will be configured for westbound entering and existing traffic only. One of the eastern parcel's western accesses and one of the western parcel's eastern accesses will be aligned opposite each other, so that a common traffic circle will be formed along the internal roadway linking the two parcels.

(18) To provide for the efficient use of land and other finite resources.

The proposed project represents an efficient use of land resources, by redeveloping a property that has been previously impacted. The site contains Town-regulated wetlands, a resource that will be increased by the proposed project; however, as described above, this resource would not be impacted by stormwater or groundwater flow, and will be subject to Town design and regulatory reviews.

(19) To minimize the consumption of energy through the appropriate siting and design of communities, buildings and infrastructure.

The applicant intends to incorporate sustainable features in the project. The following presents a generalized discussion and description of the types of such features that will be utilized in project design and construction.

Use of new, energy-efficient building materials (e.g., insulations, windows, weather stripping, door seals, etc.) and mechanical systems, (e.g., air conditioners, heating systems, HVAC [heating, ventilation and air conditioning] systems, water heaters, heat pumps, etc.) is anticipated, which would minimize the amount of energy resources required. Incorporation of such energy-conserving measures is not only required by New York State, but is a sensible building practice, particularly in light of the increasing cost of energy resources.

The applicant intends to install energy- and water-efficient/Energy Star rated appliances, low-flow plumbing fixtures and low-voltage lighting, windows with low-emissivity coated glass, spray foam insulation (R-21 installation rating) and use of tankless water heaters in residences, which significantly reduce energy requirements. The project's Lighting Plan will be designed to be "dark sky" compliant and utilize energy-efficient lighting fixtures. Shade trees will also be used in proximity to many of the units to provide shade and reduce cooling needs in summer months.

(20) To encourage the properly planned revitalization, rehabilitation and/or redevelopment of existing downtowns, shopping centers, strip commercial and industrial areas.

The site is not within any downtown area and is not occupied by a shopping center or strip center, and is not home to any industrial uses. The project may have the effect of promoting the rehabilitation of nearby retail sites, due to the increased level of residents generated, making such off-site improvements more attractive to business owners.

APPENDIX H

CORRESPONDENCE

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

Dr. Allan Gerstenlauer
Superintendent of Schools
Longwood Central School District
35 Yaphank-Middle Island Road
Middle Island, NY 11953

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Dr. Gerstenlauer:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

A Tax Impact/School District Analysis was conducted for the proposed project that estimated that the Meadows at Yaphank PDD would generate approximately 110 school-aged children. Based upon initial projections, the PDD is expected to generate approximately $6,402,779/year in taxes for the school district, which is well in excess of the estimated cost to educate the proposed students ($2,456,510). Based upon preliminary calculations, the school district tax surplus will be approximately $3,946,269 per year, assuming that the State of New York does not provide any State Aid. At the current level of State Aid, the school district surplus is estimated to be $4,995,989 per year.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process Your responses will be included in the DGEIS for review by the Town of Babylon.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

K.L. McCabe

Kristen L. McCabe
Environmental Planner

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

Suffolk County Police Department
Research and Development Section
Attn: William English
Principal Management Analyst
30 Yaphank Avenue
Yaphank, NY 11980

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Mr. English:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

I am writing to obtain information regarding SCPD facilities and services which may be pertinent to the project. Specifically, I am requesting the following:

- Location of the stationhouse;
- Patrol sector assigned to the site.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

COUNTY OF SUFFOLK

RECEIVED
SEP 02 2010
NELSON & POPE

STEVE LEVY
COUNTY EXECUTIVE

RICHARD DORMER
POLICE COMMISSIONER

POLICE DEPARTMENT

August 25, 2010

Kristen L. McCabe
Environmental Planner
Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, NY 11747-2188

Re: The Meadows at Yaphank / NPV # 09176

Dear Ms. McCabe:

This is the Suffolk County Police Department's (SCPD) response to your request for information regarding SCPD facilities and services available to the referenced site.

The subject site is located within the confines of the SCPD Seventh Precinct, Sector 704. The Seventh Precinct is located at 1491 William Floyd Parkway, Shirley, NY 11967 and the telephone number is 631-852-8700.

If you need any further information, please contact me at 631-852-6069 or send an e-mail to william.english@suffolkcountyny.com.

Sincerely,

William J. English
Principal Management Analyst
Research and Development Section **2110**

WE/ww

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 23, 2010

Yaphank Fire District
31 Main St.
Yaphank, NY 11980
Attn: Matt Quinn, Fire Chief

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Chief Quinn:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units. A Concept Plan illustrating the proposed alternate emergency access in accordance with your recommendations is included herein. This concept plan will be included as part of the Change of Zone application as well as the Development of Regional Significance approval from the Pine Barrens Commission.

I am writing to obtain information in regard to Yaphank Fire Department facilities, services, and capabilities which may be pertinent to the project. Specifically, I am requesting the following:

- District boundaries served;
- The location of the stations and/or substation(s) which would serve the site;
- A listing of the major pieces of firefighting equipment at each facility;
- The number of firefighters assigned to each facility;
- Indicate any specialized firefighting capabilities of the District;
- Indicate whether the firefighters are volunteers or full-time;
- Any ambulance and/or EMT facilities or equipment relative to servicing the site.
- Annual operating budget.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

K.L. McCabe

Kristen L. McCabe
Environmental Planner

YAPHANK FIRE DISTRICT

31 Main Street
YAPHANK, NEW YORK 11980

(631) 924-3200
FAX (631) 924-3166

BOARD OF FIRE COMMISSIONERS

WILLIAM PETERS JR., CHAIRMAN
HERBERT W. DAVIS
DONALD J. SCHAAF
PATRICK ACCARDI
GREGORY SANDELL
MICHAEL L. HAMILTON, TREASURER
LINDA IVANS, SECRETARY

November 24, 2010

RECEIVED
NOV 29 2010
NELSON & POPE

Nelson, Pope & Voorhis, LLC
572 Walt Whitman Rd.
Melville, NY 11747

Re: The Meadows at Yaphank Fire District
Environmental Impact Review
NPV # 09176

Kristen McCabe:

I am writing in response to your request dated 8/23/10. The enclosed District map shows the Fire District boundaries.

We have one building and it is located at 31 Main Street, Yaphank. We currently have 4 Class A pumpers, a 95' Aerial Truck, a rescue vehicle, a tanker and two brush trucks. These vehicles are manned by a compliment of 100 volunteers.

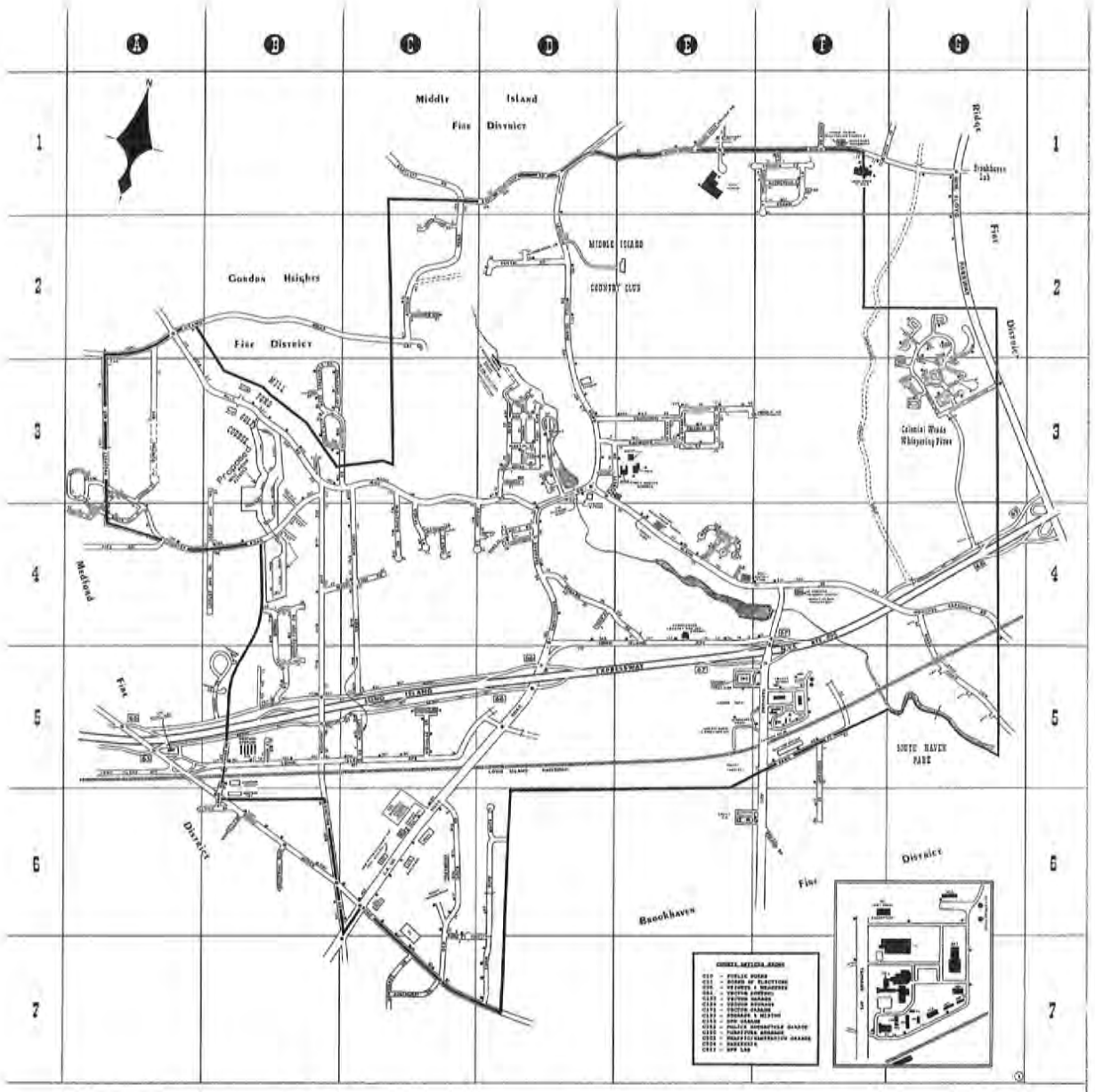
We have an ambulance company which is equipped with two ALS certified ambulances. In addition to our volunteer ambulance members we provide 24/7 paid AEMT first responders.

Our annual operating budget is 1.6 million.

If you need more information please call me at 516-924-4001 or email me at mlhyap@optonline.net.

Sincerely yours,

Michael Hamilton, Manager



YAPHANK FIRE DISTRICT

A

ADAMS COMMONS G-5
ASHTON ROAD C-2
*AVENUE STREET ..... E 3-4
AUBURN STREET ..... A 3-4

B

BACH COURT D-3
BARTLETT COMMONS G-3
*BARTLETT ROAD C-3
BELLMONT AVENUE B-5 B-6
BELLPORT LANE B-5
BENNERS COURT EAST B-4
BENNERS COURT WEST B-4
*BLOOMINGTON STREET B-3
BOBBY AVENUE B-5
*BRITTANY COURT C-3
BROAD STREET B-3
BUCKS HILL STREET A-4

C

CALIFORNIA LANE C-4
CAMDEN COURT ..... A 3-4
CEDAR STREET D-3
CEMETERY ROAD C-4
CENTER HARBOR BOULEVARD D-2
CHARLES STREET E-3
CHASE COMMONS E-3
*CHRISTINA DRIVE E-3
CHRISTINA LANE F-3
COLONIAL WOODS (WHIPP WAY) G-3
COLONIAL WOODS (WHIPP WAY) G-3
COLONY PITT G-3
*COUNTRY ROAD ..... A 3-4
COURTNEY ROAD B-4 G-3
*CRESCENT STREET ..... E 3-4
CYPRESS POINTE COURT ..... E 3-4

D

DOGWOOD LANE D-2
DONALD AVENUE C-3
DORAL LANE C-4
DUBANY STREET ..... A 4-5

E

*EASON DRIVE F-3
EAST BARTLETT ROAD B-3
*EAST GREENRIDGE DRIVE B-2
EVERETT DRIVE ..... B-2 E 3
EXPRESSWAY DR. NORTH B-5 C-3
EXPRESSWAY DR. NORTH B-4
EXPRESSWAY DR. SOUTH B-5
EXPRESSWAY DR. SOUTH C-5

F

*FERE ROAD B-4
FOX HUNT LANE B-3
FRANK AVENUE E-3
FRANKLIN COMMONS B-2

G

GARDEN LANE ..... C-6 A
GERARD ROAD B-4 E-4
*GERARD ROAD F-4
GERMAN BOULEVARD D-2
GRANNY ROAD B-2 D-2
GREENFIELD DRIVE ..... B-5 E

H

HAGEN COMMONS G-3
HAROLD ROAD ..... E-2 E
HARRISON COMMONS ..... A 3-4
HOPKINS COMMONS D-2
HORSE BLOCK ROAD B-6 D-7
HUNTINGTON COMMONS G-3

I

*INDUSTRIAL BOULEVARD D-6

J

JEAN COURT E-4
JEFFERSON COMMONS G-2
*JILLIAN COURT E-3
*JORDAN DRIVE E-3

K

KAELS ROAD D-4
KATHERINE COURT F-3
KENT COMMONS B-5

L

LANDSBERGER STREET B-4
LINCOLN ROAD C-4
LINCOLN ROAD C-2
LINDENAW COURT D-3
*LITTLE TRAVAINO DRIVE D-3
LOCUST AVENUE NORTH A-4 B-3
*LOCUST AVENUE SOUTH B-4
LONG ISLAND AVE. ..... A-5 THRU C-5
LONG ISLAND AVENUE A-4 F-4
L.I.E. (NYS) ..... C-5 THRU F-4
LONGWOOD ROAD E-2 F-2
LONGWOOD (PRIVATE) ROAD F-2 F-3

M

MAIN STREET E-4 F-4
MARCH ROAD B-5
MARCH ROAD ..... B 5-6
MARTIN STREET D-3
MASON COURT D-3
MIDDLE LINE ROAD ..... A C 4
MILLSTONE ROAD C-4
MILL ROAD ..... B-3 THRU D 3-4
MILL POND DRIVE ..... B D 3-4
MONKLEY DRIVE B-4
MORICHES-YAPHANK ROAD C-3
MUELLERS LANE C-3
*MUSELLES ROAD B-5

N

NICHOLAS DRIVE C-5
NORTH GORDON AVENUE A-2
NORTHRIDGE ROAD D-3

O

OAK STREET D-3
OLD DOCK ROAD C-5 C-6

P

PACIFIC PINES COURT ..... B 3-4
PAINE COMMONS C-2
PARK AVENUE B-4
PARK BOULEVARD D-3
PARK STREET F-3
PATCHOGUE-YAPHANK ROAD C-4
PEDDLE BEACH ROAD D-5
*PECCOLE AVENUE B-6
PEAN COMMONS E-3
*PINEHURST DRIVE D-3
PRIVATE ROAD C-3
PROSPECT AVENUE E-3

Q

NONE

R

RAINBOW STREET E-3
RIVER ROAD B-4 D-5
*ROSEMARY WAY D-5
RUSTIC ROAD D-2
RUTLEDGE COMMONS E-2

S

SANDER COURT F-3
SAND HILLS LANE D-4
*SANDRAEE DRIVE C-7
SCHILLER COURT D-3
SHANNON BOULEVARD D-3
SILAS ROAD (LNE) ..... E-4 THRU G-3
SMITH COMMONS ..... E 3-4
*SMITH ROAD ..... F-3 E 3
STATION ROAD D-3
STOCKTON COMMONS G-3
STONE COMMONS G-3
SUSAN LANE F-3
SYLVIA LANE C-3

T

TAP STREET E-3
TAYLOR COMMONS G-2
*TAYLOR LANE D-5
TERRACE COURT D-4
THOMPSON COMMONS ..... A 2-3
TIS STREET F-3
TOSKA COURT C-4
TUMBER TRAIL LANE D-4 D-5
TODD COURT E-6 D-7
TODD COURT EAST E-6 D-7

U

NONE

V

VALANCE COURT G-3

W

*WADING RIVER-MANOR ROAD C-3
WAGNER ROAD C-3
*WALTERS STREET E-3
*WEST GREENRIDGE DRIVE B-2
WHITE COURT D-4
WM. FLOYD PKWY. ..... C-2 THRU G-4
WILSON COMMONS G-3
WOODED POST DRIVE ..... B 4-5

Y-Z

YAPHANK AVENUE F-3 F-4
YAPHANK-MIDDLE ISLAND RD. B-2 D-2
YAPHANK MODES (MID ISLAND) G-3

2

ZONA BOULEVARD B-3 D-6

SCHOOLS

BROOKHAVEN COUNTRY DAY-
& PRE-SCHOOL E-5
CHARLES E. MATHES SCHOOLS -
INTERMEDIATE A-3
PRIMARY E-3
DR KAYE'S LAB ..... C-5 E
*LITTLE LAMBS NURSERY SCH. F-3
LONGWOOD HIGH SCHOOL E-3
LONGWOOD JR. HIGH F-3
MIDDLE ISLAND
NURSERY SCHOOL F-4
NEW INTERDISCIPLINARY
(SOBL) SCHOOL C-5
TOTALLY KIDS E-4

CHURCHES

BIBLE BAPTIST CHURCH ..... F-3 E 4
CALVARY FULL GOSPEL F-4
*MIDDLE ISLAND
PRESBYTERIAN F-3
ST. ANDREWS EPISCOPAL E-3
THOMAS PRESBYTERIAN E-4

COLONIAL WOODS, WHISPERING PINES CONDOS

ADAMS COMMONS G-5
BARTLETT COMMONS G-3
CHASE COMMONS G-3
COLONIAL WOODS DRIVE EAST G-3
COLONIAL WOODS DRIVE WEST G-3
COLONY TFT G-3
FRANKLIN COMMONS G-3
HANCOCK COMMONS G-3
HARRISON COMMONS ..... G 3-4
HOPKINS COMMONS G-3
HUNTINGTON COMMONS G-3
JEFFERSON COMMONS G-3
KENT COMMONS G-3
PAINE COMMONS G-3
PENN COMMONS G-3
RUTLEDGE COMMONS G-3
SMITH COMMONS ..... G 3-4
STOCKTON COMMONS G-3
STONE COMMONS G-3
TAYLOR COMMONS G-3
THOMPSON COMMONS ..... G 2-3
WILSON COMMONS G-3

WELLS POND CONDOS

CYPRESS POINTE COURT ..... E 3-4
WELL POND DRIVE B-3 D-4
PACIFIC HONEY COURT ..... D 3-4
PEDDLE BEACH ROAD D-3
SAND HILLS LANE D-4

MISCELLANEOUS

ABESA ..... (WEST SEVEN ACS) C-4
ABESA C-8
BASEBALL HEAVEN
SPORTS COMPLEX C-6
BLUELINE DISTRIBUTION CTR. F-3
COUNTY OFFICES (SEE MAP) F-4 G-3
GIRL SCOUT COUNCIL E-4 D-3
MEDFORD HOLY SPIRIT B-3
MEDFORD TIRE B-4
MORTGAGE C-6
MIDDLE ISLAND CTRY CLUB ..... B-2 D
MILL POND GOLF COURSE D-3
SHARCO OUTDOOR
EDUCATION CENTER ..... D 3-4
THE NUTCRACKER PLAYS ..... D 3-4
WESTBAM PARAGLIDING C-5
WESTON SHUTTLE ..... D 5-6

*DENOTES STREETS
USE AS DIRECTS
FOR REFERENCE ONLY

2006

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 23, 2010

Ridge Fire District
20 Francis Mooney Drive
Ridge, NY 11961
Attn: John DeVito, Fire Chief

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Chief DeVito:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units. A Concept Plan illustrating the proposed alternate emergency access in accordance with your recommendations is included herein. This concept plan will be included as part of the Change of Zone application as well as the Development of Regional Significance approval from the Pine Barrens Commission.

I am writing to obtain information in regard to Ridge Fire Department facilities, services, and capabilities which may be pertinent to the project. Specifically, I am requesting the following:

- District boundaries served;
- The location of the stations and/or substation(s) which would serve the site;
- A listing of the major pieces of firefighting equipment at each facility;
- The number of firefighters assigned to each facility;
- Indicate any specialized firefighting capabilities of the District;
- Indicate whether the firefighters are volunteers or full-time;
- Any ambulance and/or EMT facilities or equipment relative to servicing the site.
- Annual operating budget.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

Suffolk County Water Authority
John Milazzo, FOIL Officer
PO Box 38
Oakdale, NY 11769

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Mr. Milazzo:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

I would like to request the following information (which may be contained in the District's Annual Water Report):

- The locations of the SCWA's supply and/or monitoring wells within 1,000 feet of the site;
- The locations of the SCWA's supply wells which would serve the site, if applicable;
- The aquifer from which each of the above wells pumps including any wells down gradient of the site;
- Untreated water quality test results from the last three years for the above wells;
- If applicable, information on the nature and extent of any water quality and/or water supply problems in the area;
- Information on the current size and status of the NYSDEC-imposed water pumpage cap for the District, if applicable;
- Will the project require a new or extended supply line to serve the site?

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE & VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

SUFFOLK COUNTY WATER AUTHORITY

Timothy J. Hopkins
General Counsel

Administrative Offices: 4060 Sunrise Highway, Oakdale, NY 11769-0901
(631) 563-0236
Fax (631) 563-0370

September 8, 2010

RECEIVED
KMC SEP 10 2010
NELSON & POPE

Kristen L. McCabe
Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, NY 11747

RE: Request - Locale of Public Supply Wells located within a 1,000 foot radius of Proposed: The Meadows at Yaphank

Dear Ms. McCabe:

Pursuant to your request, please be advised that the Suffolk County Water Authority does not have any public supply wells located within a 1,000 foot radius of the subject site.

Enclosed are SCWA's comments as they apply to the projects Change of Zone application. SCWA will review and comment on the DGEIS once completed.

If you have any questions on this matter, please give me a call at 631-563-0375.

Very truly yours,

Kimberly Kennedy
Assistant to General Counsel

Enc.

SUFFOLK COUNTY WATER AUTHORITY

Jeffrey W. Szabo
Chief Executive Officer

Administrative Offices: 4060 Sunrise Highway, Oakdale, New York 11769-0901
(631) 563-0353
Fax (631) 563-0370

July 6, 2010

Ms. Patricia Eddington, Town Clerk
Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

RECEIVED
KMC SEP 10 2010
NELSON & POPE

Re: Change of Zone Application
The Meadows at Yaphank
SCTM# 0200-552-1-1.3 & 3
0200-584-2-1.3

Dear Ms. Eddington:

Your notification for SEQR Coordination was received by our agency.

Please be advised that our agency, the Suffolk County Water Authority, has no objection to the Town Board of the Town of Brookhaven assuming Lead Agency status for the project captioned above.

The SCWA has reviewed the change of zone application for the Meadows at Yaphank and would like to offer the following comments:

The proposed project will have a significant demand for water, based on the identified land use. This increase for water supply for domestic use and fire fighting pumpage will require that SCWA build additional water supply infrastructure. The developer will have to pay for infrastructure improvements that are directly attributed to this project. Without the detailed water requirements, SCWA cannot be more specific with its comments at this time.

It appears the proposed project will include a number of public locations with landscaping and lawn areas. SCWA recommends a low maintenance vegetative plan that will reduce the amount of fertilizers/pesticides applied on site and at the same time reduce the amount of irrigation needed to sustain the vegetation.

SCWA is supportive of using the existing Dorade Plant to handle the wastewater for this project. If the plant is up graded properly to handle this additional loading, it is unlikely to have a negative impact on our groundwater sources.

I thank you for the opportunity to comment on this proposal. Should you wish to discuss this matter further I may be reached at 631-563-0219.

Very truly yours,

Jeffrey W. Szabo
Chief Executive Officer

SMJ:kk

cc: Herman Miller
SCWA New Service

SCWA

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

National Grid
25 Hub Drive
Melville, NY 11745
Attn: Michael Brown, Account Executive

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Mr. Brown:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

I am writing to obtain information in regard to gas service available to the site. Specifically, I am requesting the following:

- Whether natural gas can be supplied to the site;
- If natural gas can be supplied, the location(s) and sizes of the supply lines which would be used;
- Whether the amount of usage would significantly impact the ability of National Grid to supply services to its other customers in the area; and,
- If natural gas can be provided, please send a letter to my attention confirming that such service can be provided.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

Nationalgrid
448 East Main ST
Patchogue, NY 11772

December 20, 2010

RE: Meadows at Yaphank
Yaphank, NY 11975

To Ms. Kristin McCabe:

Thank you for considering natural gas for your project. The existing gas main is located at the corner of Ramsey Road and William Floyd Parkway in Shirley. Please be advised that Nationalgrid requires gas load information to determine the feasibility of supplying the project with natural gas.

Please contact me at 631-758-5157 as additional information becomes available. This letter is valid for one year from the above date.

Sincerely,

John M. Merrill

John M. Merrill
Energy Consultant
Nationalgrid
448 East Main Street
Patchogue, NY 11772

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

LIPA
25 Hub Drive
Melville NY 11745
Attn: Michael Brown, Account Executive

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dear Mr. Brown:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

I am writing to obtain information in regard to electric service. Specifically, I am requesting the following:

- Whether electricity can be supplied to the site;
- If electricity can be supplied, the location(s) and sizes of the supply lines which would be used;
- Whether the amount of usage would significantly impact the ability of LIPA to supply services to its other customers in the area; and,
- If electricity can be provided, please send a letter to my attention confirming that such service can be provided.

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com.

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

LIPA
Long Island Power Authority
117 Doctors Path
Riverhead, NY 11901

RECEIVED
OCT 21 2010
NELSON & POPE

October 14, 2010

Nelson, Pope & Voorhis, LLC.
572 Walt Whitman Road
Melville, NY 11747-2188

Attention: Kristen L. Mc Cabe, Environmental Planner

Re: The Meadows at Yaphank

Dear Ms. Mc Cabe:

As requested, please be advised that the LIPA will provide electric service to the above-referenced project in accordance with our filed tariff and schedules in effect at the time service is required.

Please feel free to contact Steven Marangoni at (631)548-7045 if you require any further information.

Very truly yours,

Steven Aylward
Lead Design Supervisor
Distribution Design Department
Eastern Suffolk Division

SA/am

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 20, 2010

Town of Brookhaven
Waste Management Division
Attn: Michele DiBrita
One Independence Hill
Farmingville, NY 11738

Re: The Meadows at Yaphank
Environmental Impact Review
NPV #09176

Dar Ms. DiBrita:

Nelson, Pope & Voorhis, LLC is an environmental and planning consulting firm located in Melville. We are currently preparing a Draft Generic Environmental Impact Statement (DGEIS) for a proposed project located northwest of the Long Island Expressway/William Floyd Parkway interchange in the hamlet of Yaphank (see attached location map). The proposed project involves the change of zone of a 322.37-acre property from J-2 and L-1 to Planned Development District (PDD) for development of a mixed-use project that includes retail, office space, office/flex space and housing. The commercial components of the project include approximately 1,032,500 SF of space and the residential component is comprised of 850 units of various types and sizes, including 303 age restricted units and 85 work force housing units.

The proposed project will generate approximately 362 tons of solid waste per month, based on 3.5 pounds per capita, three pounds per hotel room, one pound per 100 SF of office space, nine pounds per 100 SF of supermarket space, two pounds per meal for restaurant use, five pounds per 100 SF of pharmacy space, two pounds per 100 SF for warehouse space and 13 pounds per 1,000 SF for retail space. It is anticipated that a private hauler will be utilized for garbage pickup on the site. We are writing to obtain information in regard to the solid waste facilities which may be pertinent to the project. Specifically, I am requesting the following:

- The yearly tonnage of solid waste disposed of at the Town's facility
- The percentage or tonnage breakdown of waste disposition (i.e. recycled, incinerated, landfilled), and where is waste disposed of via these routes?
- Confirmation that the Town will accept waste from the project (should the private hauler choose to utilize the municipal facility);
- Are there any waste regulations specific to these uses which should be considered in connection with this application?

If you have any further input with regard to the ability to provide services to this project, please provide an explanation so that this may be considered in the review process. Your responses will be included in the DGEIS submitted for review by the Town of Brookhaven.

If you should have any questions or require additional information, please do not hesitate to contact me at (631) 427-5665 or kmccabe@nelsonpope.com

Very truly yours,
NELSON, POPE AND VOORHIS, LLC

Kristen L. McCabe
Environmental Planner

Town of Brookhaven
Long Island

Mark Lesko, Supervisor

RECEIVED
SEP 01 2010
NELSON & POPE

August 26, 2010

Kristen L. McCabe
Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville NY 11747-2188

Re: The Meadows at Yaphank, #09176

Dear. Ms. McCabe:

This is in response to your request for solid waste information relative to The Meadows at Yaphank:

As you know, the name and location of the solid waste facility to which the solid waste generated by this project will be taken must be determined by the facility's management. The Town does not provide any direct waste management services to facilities such as your inquiry addresses. The owner, operator, and/or manager of such a facility must make arrangements to manage the wastes. The most common arrangement is to contract with a local carting company, although this is not the only means of managing wastes. MSW and recyclables from the proposed facility could be accepted at the Town's facility for processing for a fee subject to the Town's available capacity at any given time.

The Town's Waste Management facility takes in approximately 210,000 tons of municipal solid waste per year which is then incinerated and disposed of in the Town of Brookhaven Landfill. The Town has a mandatory source-separation ordinances, as required under New York State law. It is the responsibility of the owner, operator, and/or manager of any facility such as you are proposing to separate mandatory recyclables from its waste stream, and to find a means of recycling these source-separated materials. I have enclosed information that describes the materials that Town residents and all commercial, industrial, and institutional establishments are required to recycle. These materials may not be mixed with garbage.

Please contact me if you have any further questions.

Sincerely,

Edward Hubbard
Chief Deputy Commissioner

Department of Waste Management
Matthew J. Miner, Commissioner
One Independence Hill • Farmingville • NY 11738 • Phone (631) 451-6222 • Fax (631) 451-6391
www.brookhaven.org

Carter Alert/ Town Code Alert

Mandatory Recycling

commercial • industrial • institution • multi-family residential

RE: Town of Brookhaven Town Code 46-9 Recycling: Mandatory commercial, industrial and institutional source separation program

It has come to our attention that there is some confusion on the part of the carting industry regarding collection and disposal of mandatory recyclables generated by commercial, industrial and institutional establishments such as businesses factories, schools, hospitals, etc.

Please note that you are responsible for contracting according to the Town of Brookhaven Code requirements.

Under Brookhaven Town Code all commercial, industrial and institutional establishments, as well as private communities, condos, co-ops, and other multi-family residential establishments, **shall source separate on site and arrange for the separate collection for recycling of paper and mixed recyclables as follows:**

PAPER (can be mixed together in one bin)

- Newspaper
- Mixed paper (magazines, catalogs, color inserts, envelopes, sweepstakes forms, school paper, construction paper, book pages (no hard covers), office paper (fax, photocopy, computer printout, white ledger), non-metallic wrapping paper, NCR paper, phone books, greeting cards)
- Corrugated cardboard

MIXED RECYCLABLES (can be mixed together in one bin)

- Glass bottles and jars
- Cans (metal, bimetallic, aluminum)
- Plastic jugs and containers (PETE #1 and HDPE #2)
- Aluminum foil and foil containers

Town Code requires that these two categories of recyclable items be **separated at the generation site, collected separately from the generation site and disposed of separately** from other waste materials including regular garbage. Arrangements for disposal may include:

- direct marketing to a recycling company
- contracts with permitted solid waste haulers for separate collection
- contracts with other persons for separate collection or,
- direct delivery to a designated processing facility.

Under no circumstances are mandatory recyclables to be mixed with or collected with regular garbage at the generation site.

If you have advised your client that separate collection of recyclables is not necessary, you, as well as your client, may be in violation of Town Code.

You may view the Town Code at the Town's website at www.brookhaven.org. If you have any questions or need further clarification regarding mandatory recycling, or need information on doing a waste audit and setting up a recycling program, contact the Department of Waste Management at 451-6378.

New York State Association for Reduction, Reuse and Recycling (NYSAR3)

Recycling—It's the law...

Compliance
It is required by law for businesses to recycle and comply with Town of Brookhaven recycling regulations. Not doing so can result in citations and fines.

For full details on the all the recycling requirements defined under Town of Brookhaven Sanitation Code contact the Town of Brookhaven Department of Waste Management at 451-TOWN.

Benefits of Recycling

Cost Savings
Recycling makes good business sense. Every pound of waste you generate costs your business money. Making a few simple changes in how your business handles its waste can save money in the long run.

Customer Perception
Practice recycling and waste reduction and advertise it! The public supports businesses that are environmentally sound. You can gain additional exposure through participation in community events.

Best for the Environment
The goal of recycling is to preserve the environment and natural resources for future generations. Your recycling efforts can produce tangible results by:

- Slowing the depletion of landfill space
- Reducing energy used in the manufacturing of products and the associated soil, water, and air pollution
- Reducing the amount of hazardous constituents in discarded items, which can cause potential management problems at landfills and incinerators

Close the Loop!
After all your waste reduction and recycling efforts, don't forget to buy recycled products as well. You'd be surprised how many products are made with recycled content. Bottles, cans, and paper are the most obvious, but did you know you can also buy fabrics, clothing, carpet, lumber, automotive parts, filing cabinets, ladders, and more! By buying more post-consumer recycled items, we increase demand for use of recycled materials rather than virgin materials, which closes the recycling loop.

Business Assistance & Opportunities

New York State Association for Reduction, Reuse and Recyling (NYSAR3)

http://www.nysar3.org/businesses

Business members are listed here with information about their services and products. We encourage you to contact them for more information about what they do, or to find out how you might do business together.

All companies today are concerned with the bottom line. The NYSAR3 website offers a waste audit page to help evaluate business waste management needs and opportunities. Feel free to use the audit page to determine if your firm really needs that big dumpster picked up twice weekly, or if you can instead establish reduction, reuse and recycling programs, renegotiate your waste management service and reduce costs. If your waste hauler says that you cannot decrease the size of your dumpster or the frequency of your pickups, or if that hauler is unwilling to help with recycling, it might be time to call other haulers.

NYSAR3 also encourages you to tap into assistance available from several New York State agencies.

New York State Department of Environmental Conservation

Besides enforcing the State's environmental regulations, there are professionals at the **State Department of Environmental Conservation** that can advise you on how to set up reduction and recycling programs or help explain the newest pollution prevention opportunities available to industry. The State's economic development agency, Empire State Development has an Environmental Services Unit that knows and understands the recycling marketplace. ESD also administers the Environmental Investment Program, which provides matching funds for various pollution prevention and recycling projects. New York State's Energy Research and Development Authority offers technical and financial assistance to companies to help reduce energy consumption and costs. New York's procurement agency, the Office of General Services provides on-line information about its green purchasing practices and contracts that have been awarded. The following links will help you find the appropriate contacts at these agencies.

New York's Empire State Development

New York's Empire State Development offers both financial and technical assistance to businesses that are interested in either 1) improving or expanding recycling opportunities in the State, or 2) who are considering implementing pollution prevention strategies or technologies at their facilities. Feel free to use this link to find out more about how your company might take advantage of the financial benefits tied to improved environmental performance.

New York State Energy Research and Development Authority

The mission of the **New York State Energy Research and Development Authority (NYSERDA)** is to use innovation and technology to solve some of New York's most difficult energy and environmental problems that improve the State's economy. NYSERDA's Commercial/Industrial programs provide energy efficiency services for existing buildings, new construction, industrial facilities, and vehicle fleets. Technical assistance and financial incentives promote the purchase and installation of cost-effective energy-efficient products and equipment; assist with the construction of energy-efficient, environmentally sustainable buildings; promote electric demand reduction, and electric and gas efficiency improvements for existing building stock; and help advance the use of clean fuels in the transportation sector.

NYSERDA's Industrial Research and Development Program helps New York State manufacturers adopt energy-efficient, environmentally friendly technologies to reduce costs, and helps the State's manufacturers to develop energy-efficient and environmentally desirable products and processes.

Information about NYSERDA programs and funding incentives can be found at:
http://www.nyserda.org/

Is Your Company Buying Recycled?

Businesses that purchase recycled content products create a demand for more recyclables. Buying recycled content products closes the loop on recycling.

Green Purchasing Resources for Businesses is now available. The Northeast Recycling Council, Inc. (NERC) has recently published a sequence of websites designed to assist businesses in their green purchasing programs.

Here you will discover easy to follow steps in developing a green purchasing program. A most impressive feature of this website is the Web-based Directories, that provide easy access to thousands of green vendor websites for ordering their products and services. Each directory is categorized to help businesses find that specific product.

Another option is to browse through the variety of different products and services by visiting:
http://www.nerc.org/GreenPurchasing/adtnlgrnvndrs.html

© 2006 New York State Association for Reduction, Reuse and Recyling. All Rights Reserved.
PO Box 3913 • Albany, NY 12203
(888) 925-7329 • Fax (518) 482-7396
http://www.nysar3.org/businesses

(21) To reclaim and allow the proper redevelopment of environmentally impacted sites.

The project represents the redevelopment of a previously disturbed site.

(22) To prevent inappropriate development on stale, previously filed subdivision maps encompassing wetlands, high water table areas, steep slopes and other terrain generally considered to be unsuitable for development.

The proposed PDD has been designed in conformance with expressed local civic input favoring the implementation of the proposed PDD. The proposed project does not represent "inappropriate development" of the subject site, and no "stale, previously filed subdivision map" on a site characterized by sensitive environmental resources exists for this property.

APPENDIX I

NOISE MEASUREMENTS AND MODELING

B. Laing Associates

October 2010

Noise Measurements and Modeling

The Meadows at Yaphank
Yaphank, New York

October 2010

B. LAING ASSOCIATES
ENVIRONMENTAL CONSULTING
225 MAIN STREET – SUITE 205, NORTHPORT, NY 11768
631-261-7170 FAX: 631-261-7454
email: blaingassoc@optonline.net

Noise Measurements and Modeling
The Meadows at Yaphank
Yaphank, New York
October 2010

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APPENDIX A

Monitoring Data

APPENDIX B

Modeling Results

1.0 EXISTING CONDITION

Sound is created when changes of pressure (waves) are produced in the air. These pressure changes are created at many frequencies (i.e., spacing of the waves). Sound is received and perceived when the human ear reacts to these pressure changes. The average person's ear can detect sounds ranging from 20 to more than 10,000 hertz (Hz). Each frequency is detectable at different pressure levels and so, the system for sound measurement mimics the human ear is an A-weighted decibel system or dB(A)'s. The human ear can barely detect a 3 dB(A) change in sound levels. A 6 dB(a) change in sound levels is approximately a doubling of sound wave pressure and results in a generally audible change.

Sound measurements in this case were made using a Cirrus CK831C Noise Meter, which is meant to measure A-weighted decibel levels as a mimic of the average human ear. The noise meter digitally records the monitoring session and then calculates/produces the required averaged results and peaks at the user's direction.

With regard to the methodology of the ambient noise analysis, there is no specific mathematical methodology that was applied to ambient noise measurements. The readings are straight forward, in 15 minute intervals, and were monitored at a fixed points given existing conditions. Measurements were recorded along the Colonial Woods Condominiums, at the existing and proposed entry road (Yaphank Blvd.) and William Floyd Parkway and Long Island Expressway (I495 West) facing the dominant source with no obstructions. The directly measured levels occurred in sunny conditions with minor winds and 70 degree temperatures (F). The monitored/measured sound levels are presented in Tables 1A, 1B and 1C in Appendix A. The measured levels were dominated generally by vehicle noise from William Floyd Parkway and Long Island Expressway (I495) at the locations measured. These locations were monitored for the mid-day peak.

Sound levels, in the existing condition, were first measured at the existing residential neighborhood of the Colonial Woods. This produced the lowest L(eq) at 62.9 dB(A) with an $L_{(50)}$[1] of 43.8 dB(A) and a high reading $L_{(1)}$ of 75.8 dB(A). The second measurement was taken at the Colonial Woods main "entrance" at the William Floyd Parkway. Noise measurements (as L(eq) taken from the proposed entrance road) varied from an L(eq) of 72.2 dB(A) to an $L_{(50)}$ of 65.7 dB(A). The noise measurements at this location were dominated by traffic from the William Floyd Parkway. The "peak" measurement, $L_{(1)}$, of 83 dB(A) was recorded when a heavy duty, diesel truck passed. The third location measured was the northern side of the Long Island expressway (I495) North Service Road. This location had one L(eq) of 76.3 dB(A), a midrange $L_{(50)}$ of 73.1 dB(A) and a peak noise level of $L_{(1)}$ of 84.3 dB(A). This location had the highest peak noise level of all those revealed. The highest level was recorded when a loaded, diesel dump truck passed the monitoring location. The average measurement for for both the William Floyd Parkway and Long Island Expressway was typical for an intense transportation use (Harris, C.-1998, 3rd edition).

[1] The median sound level.

2.0 MODELING

The receptor identification and result for this modeling analysis is provided on Table 2 (at the end of the text). The inputs to and outputs from the sound modeling are presented in Appendix B.

2.1 Modeling Methodology

The site was modeled using the Sound Transportation Noise Model-Look-up 2.5. The Transportation Noise Model Look up tables provide a quick but numerical method to determine the existing condition and proposed project transportation noise impacts when no Federal Highway Administration funding is included in a proposed action. The TNM uses the vehicle volumes and speeds for five classes to determine the decibel level (A-weighed) for a particular receptor adjacent to a roadway. The modeling is conducted to determine an $L_{(eq)}$ for the existing condition. This process is then repeated for the future condition with the proposed action and a projected increase in sound levels (as $L_{(eq)}$ db(A)) can be determined.

The Transportation Noise Model (TNM) methods (and especially the look-up method) is intended to be environmentally conservative. As a result, it usually over-estimates sound levels at a particular location. The modeling result of importance in most cases (and this case) is whether or not the modeled Proposed Action will vary from the modeled existing condition, and, if so, by how much.

2.2 Existing Condition (Modeled)[2]

In the existing sound/noise condition, all locations on the project site are and will be dominated by transportation sources. The corridor is defined by the William Floyd Parkway and the Long Island Expressway. These two roadways carry tens of thousands of vehicles per day and are well used routes for commercial travel. As such, they are linear sources of noise/sounds produced by motor vehicles ranging from light duty, gas vehicles to heavy duty, diesel trucks. The data as to vehicle volumes and speeds for five classes of these vehicles were input to the model. The result was a one hour $L_{(eq)}$ of 83.9 dB(A) for a receptor in the Colonial Woods Development in proximity to William Floyd Parkway and a one hour $L_{(eq)}$ of 79.6 dB(A) for a virtual receptor located north of the Northern Service Road to the Long Island Expressway.

[2] In both cases, the modeled results exceeded the existing condition. This is not unusual as the Transportation Noise Model (TNM) methods (and especially the look-up method) is intended to be environmentally conservative. The result which of most importance in most cases (and this case) is whether or not the modeled Proposed Action will vary from the modeled existing condition.

2.3 Proposed Action – Operational

With the proposed action, all locations in the project will still be dominated by sound/noise resulting from transportation sources. The corridor is defined by the William Floyd Parkway and the Long Island Expressway. These two roadways carry tens of thousands of vehicles per day and are well used routes for commercial travel. As such, they are linear sources of noise/sounds produced by motor vehicles ranging from light duty, gas vehicles to heavy duty, diesel trucks. The project will add several hundred vehicles per day to the traffic on these roadways. The question in this case is whether or not the increased traffic from the project will materially (significantly) affect the sound/noise levels emanating from these sources and so, whether or not project can or will materially (significantly) affect the sound/noise levels in the area.

The data as to vehicle volumes and speeds for five classes of these vehicles, with the project traffic included, were input to the model to analyze the Proposed Action. The result was a one hour $L_{(eq)}$ of 83.9 dB(A) for a receptor in the Colonial Woods Development in proximity to William Floyd Parkway and a one hour $L_{(eq)}$ of 79.7 dB(A) for a virtual receptor located north of the Northern Service Road of the Long Island Expressway (I495).

The modeled future condition (with the project) demonstrates:

(a) no measurable increase (or modeled increase) in sound levels along William Floyd Parkway and
(b) an increase of less than 1.0 decibels (0.1 decibel, A-weighted) along the northern service Road of the Long Island Expressway (I 495).

Neither of these levels could be differentiated from the existing condition by any human ear. To do so, would require a differential of at least 3.0 dB(A). Therefore, it can be concluded that the project will have no significant impact upon the sound/noise environment of the project area.

APPENDIX A

Monitoring Data

TABLE 1A

Location: Residential Reading (Colonial Woods Condos)

Item	Value	unit
Date	10/18/2010	
Time	12:40pm	
Run Time	00:15:02	hh:mm:ss
Leq	62.9	dBA
Lepd	47.8	dBA
LAE	92.2	dBA
LAFmax	87.5	dBA
Peak	101.9	dBC
L1.0	75.8	dBA
L5.0	66.9	dBA
L10.0	61.5	dBA
L50.0	43.8	dBA
L90.0	36.6	dBA
Lmin	32.3	dBA
Range	30-100	dB
Overload	no	
Serial No.	D20216FF	
Exp.Time	0:00	hh:mm

TABLE 1B

Location: Yaphank Woods Rd/WFP

Item	**Value**	**unit**
Date	10/18/2010	
Time	1:10pm	
Run Time	00:15:02	hh:mm:ss
Leq	72.2	dBA
Lepd	57.1	dBA
LAE	101.5	dBA
LAFmax	92.5	dBA
Peak	113.5	dBC
L1.0	83.0	dBA
L5.0	77.9	dBA
L10.0	75.5	dBA
L50.0	65.7	dBA
L90.0	55.7	dBA
Lmin	48.9	dBA
Range	30-100	dB
Overload	no	
Serial No.	D20216FF	
Exp.Time	0:15	hh:mm

TABLE 1C

Location: 495 RAMP

Item	Value	unit
Date	10/18/2010	
Time	1:35pm	
Run Time	00:15:09	hh:mm:ss
Leq	76.3	dBA
Lepd	61.3	dBA
LAE	105.7	dBA
LAFmax	90.9	dBA
Peak	110.1	dBC
L1.0	84.3	dBA
L5.0	81.1	dBA
L10.0	79.8	dBA
L50.0	73.1	dBA
L90.0	67.3	dBA
Lmin	59.9	dBA
Range	30-100	dB
Overload	yes	
Serial No.	D20216FF	
Exp.Time	0:00	hh:mm

APPENDIX B

Modeling Results

TABLE 2 SOUND/NOISE MODELING RESULTS

10/2010

EXISTING CONDITION

	Receptor ID	*1 (WFP)*	*2 (I495)*
Result		83.9	79.6

PROPOSED ACTION OPERATIONAL

	Receptor ID	*1 (WFP)*	*2 (I495)*
Result		83.9	79.7

Notes: All modeling results in dB(A), Leq.
Reflector building surfaces assumed to be absent during operation.

NPVYAP01-Sound Results.xls

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing Condition WFP&Yap.Woods Blvd

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	9720.0
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	7200.0
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	720.0
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	180.0
Average bus speed (mph):	50.0
Motorcycle volume (v/h):	180.0
Average Motorcycle speed (mph):	50.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:	hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Exisitng Residence

Distance from center of 12-ft wide, single lane roadway (ft):	85.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	83.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Proposed Action-WFP&Yap.Woods Road

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	9834.5
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	7284.8
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	728.5
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	182.1
Average bus speed (mph):	50.0
Motorcycle volume (v/h):	182.1
Average Motorcycle speed (mph):	50.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:	hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Proposed Action-Exisitng Residence

Distance from center of 12-ft wide, single lane roadway (ft):	85.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	83.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing Condition 495(service rd)&WFP

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	13878.0
Average automobile speed (mph):	60.0
Medium truck volume (v/h):	10280.0
Average medium truck speed (mph):	60.0
Heavy truck volume (v/h):	1028.0
Average heavy truck speed (mph):	60.0
Bus volume (v/h):	257.0
Average bus speed (mph):	60.0
Motorcycle volume (v/h):	257.0
Average Motorcycle speed (mph):	60.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Existing Condition 495(service rd)&WFP

Distance from center of 12-ft wide, single lane roadway (ft):	446.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	79.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Proposed Action 495(service rd)&WFP

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	14107.5
Average automobile speed (mph):	60.0
Medium truck volume (v/h):	10450.0
Average medium truck speed (mph):	60.0
Heavy truck volume (v/h):	1045.0
Average heavy truck speed (mph):	60.0
Bus volume (v/h):	261.3
Average bus speed (mph):	60.0
Motorcycle volume (v/h):	261.3
Average Motorcycle speed (mph):	60.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Proposed Action 495(service rd)&WFP

Distance from center of 12-ft wide, single lane roadway (ft):	446.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	79.7

Appendix J-1
SHPO Correspondence for Brookhaven Walk

October 23, 2006

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

October 23, 2006

Phillip A. Malicki, CEP AICP
Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, New York 11747

Re: SEQRA
Brookhaven Town Center/Brookhaven Walk
Brookhaven/BROOKHAVEN, Suffolk County
06PR03751

Dear Mr. Malicki, CEP AICP:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

An Equal Opportunity/Affirmative Action Agency
printed on recycled paper

Appendix J-2
Applicant and SHPO Correspondence for Industrial Development on Racetrack Parcel

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

June 1, 2009

Mr. Doug Mackey
NYS Office of Parks, Recreation & Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, P.O. Box 189
Waterford, NY 12188-0189

Re: Racetrack Property
Disturbance Analysis for CRA
NP&V #88018

Dear Mr. Mackey:

Nelson, Pope & Voorhis, LLC is currently engaged in preliminary environmental and planning work for a private developer that is considering light industrial redevelopment of a former horseracing track site in Yaphank, Town of Brookhaven. The site is approximately 172 acres in size and, as noted above, was initially developed in the mid-1970s with the Suffolk Downs Racetrack. However, this operation did not prove economically viable, and the track was closed and demolished by the mid-1990s. The majority of the site's central and south-central portions was cleared and graded for the racetrack; when the racetrack facility (including the racing oval, paved parking and roadways, barns and grandstands) were demolished, these cleared areas were again disturbed, and some natural succession has occurred in these areas. However, the initial clearing operations would have removed any cultural resources that may have existing on these portions of the site.

In general, the State Historic Preservation Office (SHPO) acknowledges that, for sites where substantial prior ground disturbance can be documented, the need to analyze these areas for cultural resources would be obviated. Therefore, we have prepared the attached document, which depicts and quantifies the amount and character of disturbed land on the subject site. This establishes that any archaeological resources that may have been present in these areas prior to the racetrack construction would have been destroyed or, at the minimum, would no longer lie *in situ*.

The document also establishes that clearing regulations of the Central Pine Barrens Comprehensive Land Use Plan (hereafter, the "Pine Barrens Plan") would not permit any substantial additional clearing of natural vegetation on the site (without the specific approval of the Central Pine Barrens Joint Planning & Policy Commission, which administers the Pine Barrens Plan). Since these areas of remaining natural vegetation represent the parts of the site that were not cleared and graded for the racetrack, they also represent the only parts of the site that could still harbor cultural resources. However, the Pine Barrens Plan would not allow these areas to be disturbed, so that any cultural resources that may still be on-site would not be impacted by site redevelopment.

In consideration of the information and analyses in the document, there is substantial evidence that a Phase I Archaeological Survey is not warranted. We would appreciate your review and confirmation that a Phase I Archaeological Survey is not necessary. However, if SHPO determines to require such a study, I would request that you identify the specific locations on the property where this study should be conducted, in order to eliminate the time and expense of excavating ineligible areas.

Please let me know if you have any questions or require additional information for your review. Thank you very much for your assistance in this matter.

Sincerely,
NELSON, POPE & VOORHIS, LLC

Phillip A. Malicki, CEP, AICP, LEED® AP
Senior Environmental Planner

att/cc: Tom Perna (w/copy)
Brian Ferruggiari (w/copy)
Dave Sloane, Esq. (w/copy)
Charles J. Voorhis, CEP, AICP (w/copy)
File

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

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
www.nysparks.com

David A. Paterson
Governor

Carol Ash
Commissioner

June 23, 2009

RECEIVED
JUN 29 2009
NELSON & POPE

Ashley Marciszyn
NP&W
572 Walt Whitman Road
Melville, New York 11747

Re: CPBC
Racetrack Property
./BROOKHAVEN, Suffolk County
09PR03372

Dear Ms. Marciszyn:

Thank you for requesting the comments of the Field Services Bureau of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Field Services Bureau and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the OPRHP's opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Register of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director
Division for Historic Preservation

Appendix J-3
Applicant and SHPO Correspondence for The Meadows at Yaphank PDD

August & September 2010

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 WALT WHITMAN ROAD, MELVILLE, NY 11747 - 2188
(631) 427-5665 FAX (631) 427-5620
npv@nelsonpope.com

August 24, 2010

Mr. Doug Mackey
NYS Office of Parks, Recreation & Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, P.O. Box 189
Waterford, NY 12188-0189

Re: The Meadows at Yaphank PDD
Need for Cultural Resources Assessment
NP&V #09176

Dear Mr. Mackey:

Nelson, Pope & Voorhis, LLC is currently engaged in environmental planning for a private developer that is considering a planned development district (PDD) on a 333.46-acre site in Yaphank, Town of Brookhaven. This proposed project is known as The Meadows at Yaphank, and is comprised of two parcels that had previously been reviewed by the State Historic Preservation Office (SHPO), which determined that no significant adverse impacts to cultural resources would occur. Since these reviews were completed, neither of these two sites have been developed. These two prior reviews were:

- Brookhaven Town Center/Brookhaven Walk, 06PR03751
- Racetrack Property, 09PR03372

The pertinent SHPO confirmation letters are attached. The site owner has decided to combine these two sites into one, for a single project that will take place within the same areas of development as were previously proposed. The reason for this letter is to confirm with SHPO that the current proposed project would likewise not result in adverse impacts to cultural resources on the current project site. I have attached the Land Use and Development Plan for The Meadows at Yaphank, along with copies of the plans previously reviewed by SHPO for Brookhaven Walk and the Racetrack Property. Comparison of these two latter plans with that of the Meadows at Yaphank will show that the same amount and configuration of land disturbance would occur for the new proposal. This would indicate that no impact to cultural resources would occur for The Meadows at Yaphank.

In consideration of the above, there is sufficient justification that a new Phase I Archaeological Survey for The Meadows at Yaphank project is not needed. We would appreciate your review and confirmation that such a Survey is not necessary.

Please let me know if you have any questions or require additional information for your review. Thank you very much for your assistance in this matter.

Sincerely,
NELSON, POPE & VOORHIS, LLC

Phillip A. Malicki, CEP, AICP, LEED® AP
Senior Environmental Planner

atts/cc: Tom Perna
Brian Ferruggiari
Charles Voorhis, CEP, AICP

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David A. Paterson
Governor

Carol Ash
Commissioner

September 2, 2010

Patricia A. Eddington
Town of Brookhaven
One Independence Hill
Farmingville, New York 11738

Re: SEQRA
Meadows at Yaphank/former Suffolk Downs site
Long Island Expresswa & William Floyd Parkway
Yaphank/BROOKHAVEN, Suffolk County
10PR03630

Dear Ms. Eddington:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP) concerning this project's potential impact/effect upon historic and/or prehistoric cultural resources. Our staff has reviewed the documentation provided, including a recent submission from Nelson, Pope & Vorrhis, LLC which refers to previous investigation of the project area. Based on our review of all the submitted information it is the opinion of the OPRHP that the Meadows at Yaphank project as currently designed, will have No Impact on Historic Resources. This finding takes into account the plan to leave the northern and southern portions of the parcels in their current wooded state. Should this project be modified in a way which would impinge on those wooded areas, or should any future proposals call for work in those areas, OPRP would recommend additional archaeological investigation as those areas were not included n the currently reviewed studies.

When responding, please be sure to refer to the OPRHP Project Review (PR) number noted above. Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

Cc: Phil Malicki. NP&V (e-mail)

Appendix J-4
Extended Phase IB Archaeological Survey

Tracker Archaeology Services, Inc.

January 2011

NELSON POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

TRACKER

Archaeology Services, Inc.

Tracking the Footsteps of the Ancestors

REPORTS OF INVESTIGATIONS

Extended Phase IB Archaeological Survey for the proposed Meadows at Yaphank
Township of Brookhaven Suffolk County, New York

January 2011

Prepared for:
Nelson, Pope & Voorhis, LLC, Melville, New York

Prepared by:

Alfred G. Cammisa, RPA
Felicia Cammisa, Alexander Padilla

Report #: 697

TRACKER ARCHAEOLOGY SERVICES, INC.
MONROE, NY 10950 • (845) 783-4082
NORTH BABYLON, NY 11703 • (631) 321-1380

MANAGEMENT SUMMARY

PR#:
10PR03630

Involved agencies:
Brookhaven Town
NYSHPO

Phase:
Phase IB

Location:
Yaphank
Town of Brookhaven
Suffolk County

Survey Area (several small areas):
Width: about 1625 ft (495 m) e-w x 225 ft (69m)n-s; 250 ft (76m) n-s x 125 ft (38m) e-w; 125 ft (38m) n-s x 875 ft (267m) e-w; 562 ft (171m) n-s x 62 ft (19m) e-w
Acres Surveyed: about 14 acres (5.6 hectares)

USGS:
Bellport, NY

Survey overview:
ST no. & interval: 237 ST's at 50 ft (15m) intervals
Size of freshly plowed area: na
Surface survey transect interval: na

Results:
No prehistoric or historic remains.

Results of Architectural Survey:
No. Of buildings/structures/cemeteries in project area: none
No. Of buildings/structures/cemeteries adjacent to project area: none
No. Of previously determined NR listed or eligible buildings/structures/cemeteries/districts: none
No. Of identified eligible buildings/structures/cemeteries/districts: none

Authors:
Alfred G. Cammisa, M.A./RPA
Felicia Cammisa, B.A.
Alexander Padilla, B.A.

Date of Report:
Report completed January, 2011

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Appendix 1: Figures and Photos

Appendix 2: Shovel Tests

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Figure 1 Portion of the Bellport, New York U.S.G.S.

Figure 2 Location of the shovel tests on the project area.

LIST OF PHOTOS

Photo 1 Looking west from ST 1.

Photo 2 Looking east from ST 48.

Photo 3 Looking NW from ST 185.

INTRODUCTION

Between December 19 and 24, 2010, TRACKER-Archaeology Services, Inc. conducted an extended Phase IB archaeological survey for the proposed Meadows at Yaphank, in the Town of Brookhaven, Suffolk County, New York. The purpose of the survey was to provide physical evidence for the presence or absence of archaeological sites on the project area. The current investigations comprise an extended Phase IB field work for proposed extended construction added on to the property after the original Phase IA and IB were completed in 2000 and 2001 under the title of "Suffolk Downs" (see Kalin 2000 and 2001) and again in 2006 under the title of "Brookhaven Walk" (Cammisa et al 2006).

The entire property is approximately 300 acres in size. However, the project area is limited to small, somewhat scattered, APE's comprising approximately 14 acres. The property as a whole is bordered to the east by William Floyd Parkway, to the north by Yaphank Woods Boulevard, to the south by Long Island Expressway, and to the west by town land.

The work was performed by TRACKER-Archaeology Services, Inc. of Monroe, New York. Field work was conducted by field director, Alexander Padilla, B.A. Report preparation by Alfred Cammisa, M.A., Felicia Cammisa, B.A, and Alexander Padilla, B.A.

The work was performed for the Nelson, Pope & Voorhis, LLC of Melville, New York.

FIELD METHODS

Walkover

Any exposed ground surfaces were walked over at about 3 to 5 meter intervals to observe for artifacts. Covered ground terrain was reconnoitered at approximately 15 meter intervals to observe for any above ground features, such as berms, depressions, or rock configurations which might be evidence for historic or prehistoric features. Photographs were taken of the property.

Shovel Testing

Shovel tests (ST's) were excavated at approximately 15 meter intervals across the project area. Each ST measured about 30 to 40 cm. in diameter and was dug into the underlying subsoil (B horizon) 10 to 20 cm. when possible. All soils were screened through 1/4 inch wire mesh and observed for artifacts. Shovel test pits were flagged in the field.

Soil stratigraphy was recorded according to texture and color. Soil color was matched against the Munsell color chart for soils. Notes were transcribed in a notebook.

FIELD RESULTS

Field testing of the project area included the excavation of 237 ST's. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered. The project area consisted of a pine and oak scrub forest with some past disturbances.

Stratigraphy

Stratigraphy across the project area consisted of the following:

A/O horizon - 0 to 7 cm. thick of root mat, leaf litter and humus. In rare instances this layer was absent.

A horizon - 0 to 30 cm. thick of 10YR4/2 dark gray brown sand. In rare instance this layer was stripped out.

B horizon - 10 to 20 cm. dug into of 10YR5/6 yellow brown sand.

CONCLUSIONS AND RECOMMENDATIONS

During the course of the Phase IB survey, 237 ST's were excavated. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered. No further archaeological work is recommended.

BIBLIOGRAPHY

Cammisa, Alfred, Felicia Cammisa, Alexander Padilla

2006 *Extended Phase IB Archaeological Survey for the proposed Brookhaven Walk Yaphank, Township of Brookhaven, Suffolk County, New York.* TRACKER-Archaeology Services, Inc. #462. Ms on file with NYSHPO.

Kalin, Robert

2000 *Stage IA Study, Literature Search, Field Inspection and Sensitivity Assessment Parcel 20, Brookhaven Town Center, Yaphank, Township of Brookhaven Suffolk County, New York.*

Kalin, Robert

2001 *Brookhaven Town Center, Yaphank, Brookhaven Town, Suffolk County, New York. Phase IB Field Reconnaissance Study.*

United States Geologic Survey

1945 *Bellport, New York* quadrangles, 7.5 minute series (rev.1980).

APPENDIX 1

Figure 1

Portion of the Bellport, NY USGS

N

TRACKER
Archaeology Services, Inc.
Tracking the Footsteps of the Ancestors

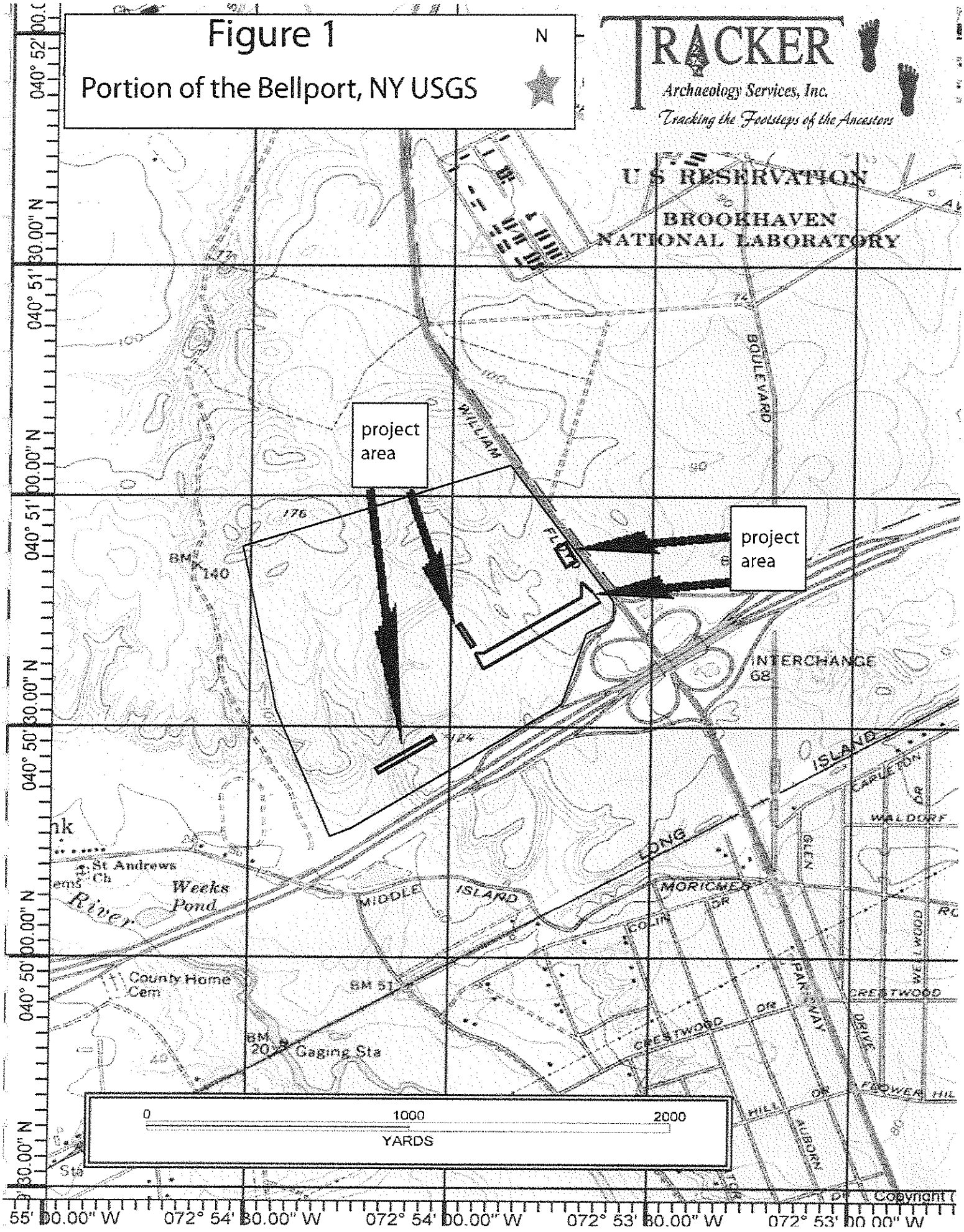


FIGURE 2: LOCATION OF SHOVEL TESTS

- CURRENT PROJECT AREA(2011 DISTURBANCE)
- V PHOTO ANGLE
- ● NEGATIVE SHOVEL TEST

PROJECT NAME: THE MEADOWS @ YAPHANK

TRACKER Archaeology Services, Inc.
"Tracking the Footsteps of the Ancestors"

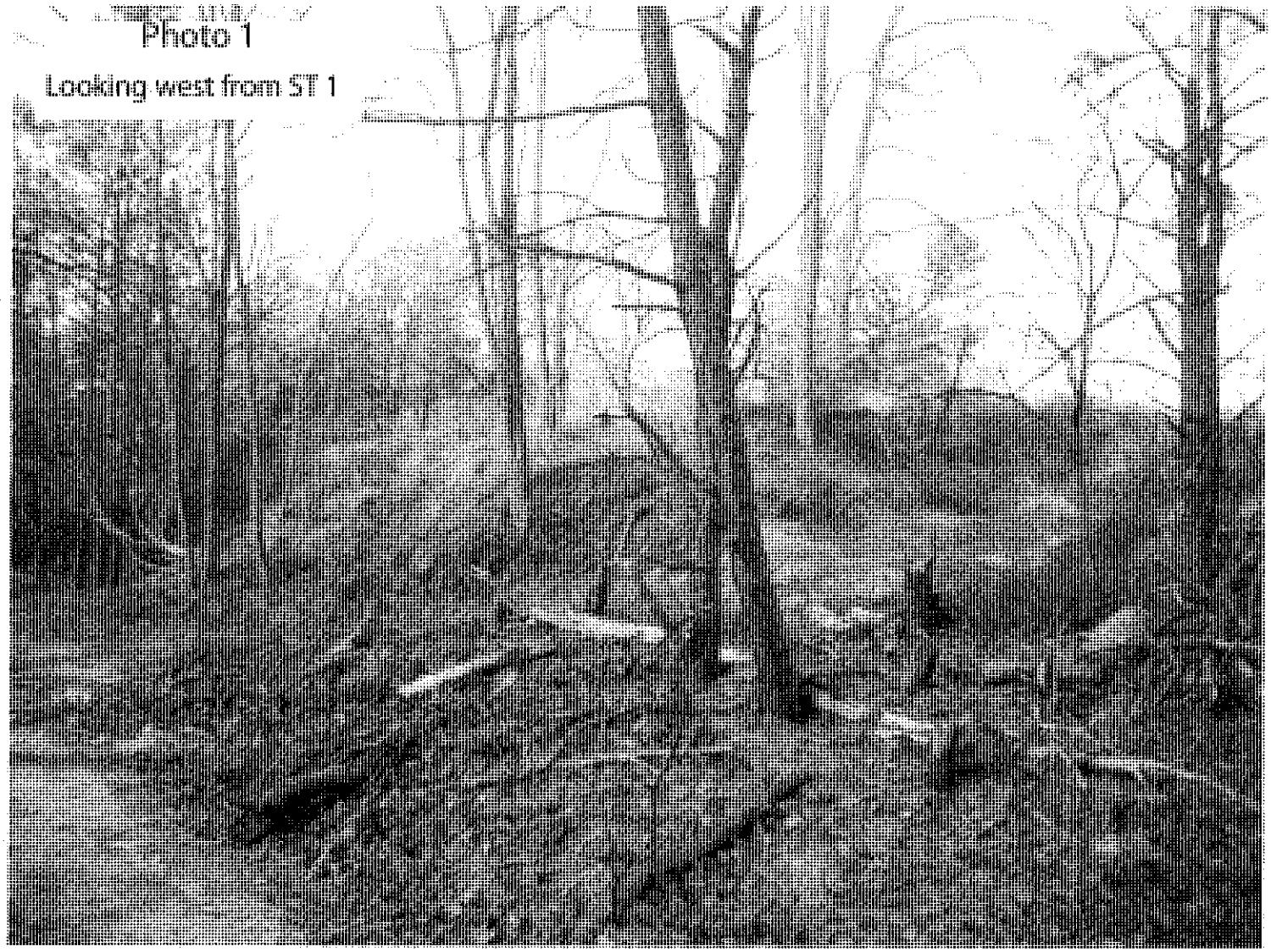


Photo 1
Looking west from ST 1

Photo 2
Looking east from ST 48

Photo 3
Looking NW from ST 185

APPENDIX 2

SHOVEL TESTS

STP	LV	DEPTH(CM)	TEXTURE	COLOR	HOR	COMMENT
1	1	0-4	rootmat,leave,humus		A/O	NCM
	2	4-34	Sa	10YR4/2	A	NCM
	3	34-44	Sa	10YR5/6	B	NCM
2	1	0-3	rootmat,leaves,humus		A/O	NCM
	3	3-20	Sa	10YR5/6	B	NCM
3	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-8	Sa	10YR4/2	A	NCM
	3	8-23	Sa	10YR5/6	B	NCM
4	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-30	Sa	10YR5/6	B	NCM
5	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-17	Sa	10YR4/2	A	NCM
	3	17-30	Sa	10YR5/6	B	NCM
6	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-18	Sa	10YR4/2	A	NCM
	3	18-31	Sa	10YR5/6	B	NCM
7	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-33	Sa	10YR5/6	B	NCM
8	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-15	Sa	10YR4/2	A	NCM
	3	15-30	Sa	10YR5/6	B	NCM
9	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-22	Sa	10YR4/2	A	NCM
	3	22-35	Sa	10YR5/6	B	NCM
10	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-25	Sa	10YR4/2	A	NCM
	3	25-37	Sa	10YR5/6	B	NCM
11	2	0-13	Sa	10YR4/2	A	NCM
	3	13-30	Sa	10YR5/6	B	NCM
12	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-27	Sa	10YR5/6	B	NCM
13	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM

14	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-26	Sa	10YR5/6	B	NCM
15	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-20	Sa	10YR4/2	A	NCM
	3	20-36	Sa	10YR5/6	B	NCM
16	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-24	Sa	10YR4/2	A	NCM
	3	24-35	Sa	10YR5/6	B	NCM
17	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-23	Sa	10YR4/2	A	NCM
	3	23-37	Sa	10YR5/6	B	NCM
18	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-29	Sa	10YR4/2	A	NCM
	3	29-40	Sa	10YR5/6	B	NCM
19	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-9	Sa	10YR4/2	A	NCM
	3	9-23	Sa	10YR5/6	B	NCM
20	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-8	Sa	10YR4/2	A	coal
	3	8-19	Sa	10YR5/6	B	NCM
21	1	0-3	rootmat,leaves,humus		A/O	NCM
	3	3-22	Sa	10YR5/6	B	NCM
22	1	0-2	rootmat,leave,humus		A/O	NCM
	2	2-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM
23	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-22	Sa	10YR5/6	B	NCM
24	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-27	Sa	10YR5/6	B	NCM
25	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-8	Sa	10YR4/2	A	NCM
	3	8-30	Sa	10YR5/6	B	NCM
26	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	5-12	Sa	10YR4/2	A	NCM
	3	12-31	Sa	10YR5/6	B	NCM
27	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM

28	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-30	Sa	10YR5/6	B	NCM
29	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-28	Sa	10YR5/6	B	NCM
30	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-24	Sa	10YR5/6	B	NCM
31	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-7	Sa	10YR4/2	A	NCM
	3	7-20	Sa	10YR5/6	B	NCM
32	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-15	Sa	10YR4/2	A	NCM
	3	15-27	Sa	10YR5/6	B	NCM
33	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM
34	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-27	Sa	10YR5/6	B	NCM
35	1	0-4	rootmat,leave,humus		A/O	NCM
	2	4-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM
36	1	0-5	rootmat,leaves,humus		A/O	NCM
	3	5-23	Sa	10YR5/6	B	NCM
37	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM
38	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-30	Sa	10YR4/2	A	NCM
	3	30-43	Sa	10YR5/6	B	NCM
39	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-20	Sa	10YR4/2	A	NCM
	3	20-30	Sa	10YR5/6	B	NCM
40	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-17	Sa	10YR4/2	A	NCM
	3	17-38	Sa	10YR5/6	B	NCM

41	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-11	Sa	10YR4/2	A	NCM
	3	11-28	Sa	10YR5/6	B	NCM
42	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-9	Sa	10YR4/2	A	NCM
	3	9-28	Sa	10YR5/6	B	NCM
43	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-9	Sa	10YR4/2	A	NCM
	3	9-25	Sa	10YR5/6	B	NCM
44	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-28	Sa	10YR5/6	B	NCM
45	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-12	Sa	10YR4/2	A	NCM
	3	12-26	Sa	10YR5/6	B	NCM
46	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-16	Sa	10YR4/2	A	NCM
	3	16-30	Sa	10YR5/6	B	NCM
47	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM
48	1	0-2	rootmat,leave,humus		A/O	NCM
	2	2-10	Sa	10YR4/2	A	NCM
	3	10-23	Sa	10YR5/6	B	NCM
49	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM
50	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-9	Sa	10YR4/2	A	NCM
	3	9-20	Sa	10YR5/6	B	NCM
51	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-20	Sa	10YR5/6	B	NCM
52	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM
53	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-23	Sa	10YR4/2	A	NCM
	3	23-36	Sa	10YR5/6	B	NCM

54	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-17	Sa	10YR4/2	A	NCM
	3	17-37	Sa	10YR5/6	B	NCM
55	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-23	Sa	10YR4/2	A	NCM
	3	23-38	Sa	10YR5/6	B	NCM
56	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-33	Sa	10YR5/6	B	NCM
57	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-25	Sa	10YR5/6	B	NCM
58	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM
59	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-27	Sa	10YR5/6	B	NCM
60	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-14	Sa	10YR4/2	A	NCM
	3	14-28	Sa	10YR5/6	B	NCM
61	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-20	Sa	10YR4/2	A	NCM
	3	20-32	Sa	10YR5/6	B	NCM
62	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
63	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-35	Sa	10YR4/2	A	NCM
	3	35-47	Sa	10YR5/6	B	NCM
64	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-23	Sa	10YR4/2	A	NCM
	3	23-36	Sa	10YR5/6	B	NCM
65	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-37	Sa	10YR4/2	A	NCM
	3	37-49	Sa	10YR5/6	B	NCM
66	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-18	Sa	10YR4/2	A	NCM
	3	18-32	Sa	10YR5/6	B	NCM

67	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-22	Sa	10YR4/2	A	NCM
	3	22-40	Sa	10YR5/6	B	NCM
68	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-28	Sa	10YR4/2	A	NCM
	3	28-39	Sa	10YR5/6	B	NCM
69	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-30	Sa	10YR5/6	B	NCM
70	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-30	Sa	10YR5/6	B	NCM
71	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM
72	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM
73	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-15	Sa	10YR4/2	A	NCM
	3	15-30	Sa	10YR5/6	B	NCM
74	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-18	Sa	10YR4/2	A	NCM
	3	18-32	Sa	10YR5/6	B	NCM
75	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-15	Sa	10YR4/2	A	NCM
	3	15-33	Sa	10YR5/6	B	NCM
76	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-21	Sa	10YR4/2	A	NCM
	3	21-33	Sa	10YR5/6	B	NCM
77	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-26	Sa	10YR4/2	A	NCM
	3	26-39	Sa	10YR5/6	B	NCM
78	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-15	Sa	10YR4/2	A	NCM
	3	15-35	Sa	10YR5/6	B	NCM
79	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-23	Sa	10YR4/2	A	NCM
	3	23-33	Sa	10YR5/6	B	NCM

80	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-27	Sa	10YR4/2	A	NCM
	3	27-39	Sa	10YR5/6	B	NCM
81	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-17	Sa	10YR4/2	A	NCM
	3	17-29	Sa	10YR5/6	B	NCM
82	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-19	Sa	10YR4/2	A	NCM
	3	19-30	Sa	10YR5/6	B	NCM
83	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-28	Sa	10YR5/6	B	NCM
84	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-10	Sa	10YR4/2	A	NCM
	3	10-20	Sa	10YR5/6	B	NCM
85	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-11	Sa	10YR4/2	A	NCM
	3	11-24	Sa	10YR5/6	B	NCM
86	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-20	Sa	10YR4/2	A	NCM
	3	20-32	Sa	10YR5/6	B	NCM
87	1	0-4	rootmat,leave,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-23	Sa	10YR5/6	B	NCM
88	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM
89	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-30	Sa	10YR4/2	A	NCM
	3	30-40	Sa	10YR5/6	B	NCM
90	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-24	Sa	10YR4/2	A	NCM
	3	24-36	Sa	10YR5/6	B	NCM
91	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-16	Sa	10YR4/2	A	NCM
	3	16-30	Sa	10YR5/6	B	NCM
92	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-25	Sa	10YR5/6	B	NCM

93	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-30	Sa	10YR5/6	B	NCM
94	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-14	Sa	10YR4/2	A	NCM
	3	14-29	Sa	10YR5/6	B	NCM
95	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-29	Sa	10YR5/6	B	NCM
96	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-27	Sa	10YR5/6	B	NCM
97	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-9	Sa	10YR4/2	A	NCM
	3	9-30	Sa	10YR5/6	B	NCM
98	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-30	Sa	10YR5/6	B	NCM
99	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-18	Sa	10YR4/2	A	NCM
	3	18-rocks.				
100	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-14	Sa	10YR4/2	A	NCM
	3	14-27	Sa	10YR5/6	B	NCM
101	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-16	Sa	10YR4/2	A	NCM
	3	16-28	Sa	10YR5/6	B	NCM
102	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM
103	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-23	Sa	10YR5/6	B	NCM
104	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-25	Sa	10YR4/2	A	NCM
	3	25-36	Sa	10YR5/6	B	NCM
105	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-29	Sa	10YR4/2	A	NCM
	3	29-40	Sa	10YR5/6	B	NCM

106	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-26	Sa	10YR5/6	B	NCM
107	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-25	Sa	10YR5/6	B	NCM
108	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM
109	1	0-2	rootmat,leaves,humus		A/O	NCM
	3	2-20	Sa	10YR5/6	B	NCM
110	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-18	Sa	10YR4/2	A	NCM
	3	18-28	Sa	10YR5/6	B	NCM
111	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM
112	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-8	Sa	10YR4/2	A	NCM
	3	8-20	Sa	10YR5/6	B	NCM
113	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-16	Sa	10YR4/2	A	NCM
	3	16-26	Sa	10YR5/6	B	NCM
114	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-11	Sa	10YR4/2	A	NCM
	3	11-30	Sa	10YR5/6	B	NCM
115	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-15	Sa	10YR4/2	A	NCM
	3	15-30	Sa	10YR5/6	B	NCM
116	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-30	Sa	10YR5/6	B	NCM
117	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-26	Sa	10YR4/2	A	NCM
	3	26-40	Sa	10YR5/6	B	NCM
118	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-33	Sa	10YR4/2	A	NCM
	3	33-45	Sa	10YR5/6	B	NCM

119	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	Sa	10YR4/2	A	NCM
	3	13-32	Sa	10YR5/6	B	NCM
120	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-20	Sa	10YR4/2	A	NCM
	3	20-33	Sa	10YR5/6	B	NCM
121	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-23	Sa	10YR4/2	A	NCM
	3	23-46	Sa	10YR5/6	B	NCM
122	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-27	Sa	10YR5/6	B	NCM
123	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-9	Sa	10YR4/2	A	NCM
	3	9-26	Sa	10YR5/6	B	NCM
124	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-8	Sa	10YR4/2	A	NCM
	3	8-20	Sa	10YR5/6	B	NCM
125	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-30	Sa	10YR5/6	B	NCM
126	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-28	Sa	10YR5/6	B	NCM
127	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-34	Sa	10YR5/6	B	NCM
128	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM
129	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-14	Sa	10YR4/2	A	NCM
	3	14-31	Sa	10YR5/6	B	NCM
130	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-29	Sa	10YR5/6	B	NCM
131	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-28	Sa	10YR5/6	B	NCM

132	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-25	Sa	10YR4/2	A	NCM
	3	25-46	Sa	10YR5/6	B	NCM
133	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-19	Sa	10YR4/2	A	NCM
	3	19-31	Sa	10YR5/6	B	NCM
134	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-16	Sa	10YR4/2	A	NCM
	3	16-30	Sa	10YR5/6	B	NCM
135	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-30	Sa	10YR4/2	A	NCM
	3	30-43	Sa	10YR5/6	B	NCM
136	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-27	Sa	10YR5/6	B	NCM
137	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-13	Sa	10YR4/2	A	NCM
	3	13-26	Sa	10YR5/6	B	NCM
138	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-14	Sa	10YR4/2	A	NCM
	3	14-28	Sa	10YR5/6	B	NCM
139	1	0-5	rootmat,leaves,humus		A/O	NCM
	3	5-22	Sa	10YR5/6	B	NCM
140	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-23	Sa	10YR4/2	A	NCM
	3	23-37	Sa	10YR5/6	B	NCM
141	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-9	Sa	10YR4/2	A	NCM
	3	9-roots.				
142	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-15	Sa	10YR4/2	A	NCM
	3	15-27	Sa	10YR5/6	B	NCM
143	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-28	Sa	10YR5/6	B	NCM
144	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-14	Sa	10YR4/2	A	NCM
	3	14-27	Sa	10YR5/6	B	NCM
145	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-9	Sa	10YR4/2	A	NCM
	3	9-25	Sa	10YR5/6	B	NCM

146	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-8	Sa	10YR4/2	A	NCM
	3	8-30	Sa	10YR5/6	B	NCM
147	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-25	Sa	10YR5/6	B	NCM
148	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-28	Sa	10YR5/6	B	NCM
149	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM
150	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-27	Sa	10YR5/6	B	NCM
151	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-27	Sa	10YR5/6	B	NCM
152	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-27	Sa	10YR5/6	B	NCM
153	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-9	Sa	10YR4/2	A	NCM
	3	9-28	Sa	10YR5/6	B	NCM
154	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-10	Sa	10YR4/2	A	NCM
	3	10-29	Sa	10YR5/6	B	NCM
155	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-26	Sa	10YR4/2	A	NCM
	3	26-39	Sa	10YR5/6	B	NCM
156	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-35	Sa	10YR5/6	B	NCM
157	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
158	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-30	Sa	10YR4/2	A	NCM
	3	30-46	Sa	10YR5/6	B	NCM

159	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-11	Sa	10YR4/2	A	NCM
	3	11-30	Sa	10YR5/6	B	NCM
160	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-18	Sa	10YR4/2	A	NCM
	3	18-33	Sa	10YR5/6	B	NCM
161	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-15	Sa	10YR4/2	A	NCM
	3	15-25	Sa	10YR5/6	B	NCM
162	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-10	Sa	10YR4/2	A	NCM
	3	10-23	Sa	10YR5/6	B	NCM
163	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-16	Sa	10YR4/2	A	NCM
	3	16-31	Sa	10YR5/6	B	NCM
164	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-20	Sa	10YR4/2	A	NCM
	3	20-32	Sa	10YR5/6	B	NCM
165	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-26	Sa	10YR4/2	A	NCM
	3	26-39	Sa	10YR5/6	B	NCM
166	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-33	Sa	10YR4/2	A	NCM
	3	33-45	Sa	10YR5/6	B	NCM
167	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-31	Sa	10YR4/2	A	NCM
	3	31-45	Sa	10YR5/6	B	NCM
168	1	0-5	rootmat,leave,humus		A/O	NCM
	2	5-25	Sa	10YR4/2	A	NCM
	3	25-38	Sa	10YR5/6	B	NCM
169	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-10	Sa	10YR4/2	A	NCM
	3	10-25	Sa	10YR5/6	B	NCM
170	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-27	Sa	10YR5/6	B	NCM
171	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM

172	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-12	Sa	10YR4/2	A	NCM
	3	12-28	Sa	10YR5/6	B	NCM
173	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-20	Sa	10YR4/2	A	NCM
	3	20-36	Sa	10YR5/6	B	NCM
174	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-17	Sa	10YR4/2	A	NCM
	3	17-30	Sa	10YR5/6	B	NCM
175	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-19	Sa	10YR4/2	A	NCM
	3	19-30	Sa	10YR5/6	B	NCM
176	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-23	Sa	10YR4/2	A	NCM
	3	23-35	Sa	10YR5/6	B	NCM
177	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-19	Sa	10YR4/2	A	NCM
	3	19-29	Sa	10YR5/6	B	NCM
178	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-30	Sa	10YR4/2	A	NCM
	3	30-41	Sa	10YR5/6	B	NCM
179	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-23	Sa	10YR4/2	A	NCM
	3	23-35	Sa	10YR5/6	B	NCM
180	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-16	Sa	10YR4/2	A	NCM
	3	16-29	Sa	10YR5/6	B	NCM
181	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-14	Sa	10YR4/2	A	NCM
	3	14-30	Sa	10YR5/6	B	NCM
182	3	0-21	Sa	10YR5/6	B	NCM
183	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
184	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-11	Sa	10YR4/2	A	NCM
	3	11-24	Sa	10YR5/6	B	NCM
185	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-8	Sa	10YR4/2	A	NCM
	3	8-29	Sa	10YR5/6	B	NCM

186	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-14	Sa	10YR4/2	A	NCM
	3	14-27	Sa	10YR5/6	B	NCM
187	1	0-4	rootmat,leave,humus		A/O	NCM
	2	4-11	Sa	10YR4/2	A	NCM
	3	11-30	Sa	10YR5/6	B	NCM
188	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-22	Sa	10YR4/2	A	NCM
	3	22-36	Sa	10YR5/6	B	NCM
189	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-20	Sa	10YR4/2	A	NCM
	3	20-31	Sa	10YR5/6	B	NCM
190	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
191	1	0-10	rootmat,leaves,humus		A/O	NCM
	2	10-25	Sa	10YR4/2	A	NCM
	3	25-36	Sa	10YR5/6	B	NCM
192	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-11	Sa	10YR4/2	A	NCM
	3	11-28	Sa	10YR5/6	B	NCM
193	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-24	Sa	10YR4/2	A	NCM
	3	24-38	Sa	10YR5/6	B	NCM
194	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	Sa	10YR4/2	A	NCM
	3	13-29	Sa	10YR5/6	B	NCM
195	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-37	Sa	10YR5/6	B	NCM
196	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-12	Sa	10YR4/2	A	NCM
	3	12-26	Sa	10YR5/6	B	NCM
197	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-11	Sa	10YR4/2	A	NCM
	3	11-26	Sa	10YR5/6	B	NCM
198	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-29	Sa	10YR5/6	B	NCM

199	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-24	Sa	10YR4/2	A	NCM
	3	24-42	Sa	10YR5/6	B	NCM
200	1	0-4	rootmat,leave,humus		A/O	NCM
	2	4-13	Sa	10YR4/2	A	NCM
	3	13-25	Sa	10YR5/6	B	NCM
201	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-20	Sa	10YR4/2	A	NCM
	3	20-33	Sa	10YR5/6	B	NCM
202	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-17	Sa	10YR4/2	A	NCM
	3	17-33	Sa	10YR5/6	B	NCM
203	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-12	Sa	10YR4/2	A	NCM
	3	12-27	Sa	10YR5/6	B	NCM
204	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-26	Sa	10YR4/2	A	NCM
	3	26-39	Sa	10YR5/6	B	NCM
205	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-38	Sa	10YR4/2	A	NCM
	3	38-48	Sa	10YR5/6	B	NCM
206	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-27	Sa	10YR4/2	A	NCM
	3	27-roots.				
207	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-11	Sa	10YR4/2	A	NCM
	3	11-25	Sa	10YR5/6	B	NCM
208	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-11	Sa	10YR4/2	A	NCM
	3	11-31	Sa	10YR5/6	B	NCM
209	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
210	2	0-12	Sa	10YR4/2	A	NCM
	3	12-30	Sa	10YR5/6	B	NCM
211	2	0-23	Sa	10YR4/2	A	NCM
	3	23-35	Sa	10YR5/6	B	NCM
212	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM

213	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-11	Sa	10YR4/2	A	NCM
	3	11-23	Sa	10YR5/6	B	NCM
214	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-26	Sa	10YR5/6	B	NCM
215	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	Sa	10YR4/2	A	NCM
	3	10-26	Sa	10YR5/6	B	NCM
216	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-12	Sa	10YR4/2	A	NCM
	3	12-25	Sa	10YR5/6	B	NCM
217	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-12	Sa	10YR4/2	A	NCM
	3	12-24	Sa	10YR5/6	B	NCM
218	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-15	Sa	10YR4/2	A	NCM
	3	15-30	Sa	10YR5/6	B	NCM
219	1	0-6	rootmat,leave,humus		A/O	NCM
	2	6-16	Sa	10YR4/2	A	NCM
	3	16-28	Sa	10YR5/6	B	NCM
220	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-26	Sa	10YR5/6	B	NCM
221	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-14	Sa	10YR4/2	A	NCM
	3	14-27	Sa	10YR5/6	B	NCM
222	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-19	Sa	10YR4/2	A	NCM
	3	19-31	Sa	10YR5/6	B	NCM
223	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-23	Sa	10YR4/2	A	NCM
	3	23-36	Sa	10YR5/6	B	NCM
224	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-15	Sa	10YR4/2	A	NCM
	3	15-28	Sa	10YR5/6	B	NCM
225	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-20	Sa	10YR4/2	A	NCM
	3	20-33	Sa	10YR5/6	B	NCM

226	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-29	Sa	10YR4/2	A	NCM
	3	29-40	Sa	10YR5/6	B	NCM
227	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-24	Sa	10YR4/2	A	NCM
	3	24-40	Sa	10YR5/6	B	NCM
228	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-27	Sa	10YR4/2	A	NCM
	3	27-42	Sa	10YR5/6	B	NCM
229	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-28	Sa	10YR4/2	A	NCM
	3	28-39	Sa	10YR5/6	B	NCM
230	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-18	Sa	10YR4/2	A	NCM
	3	18-30	Sa	10YR5/6	B	NCM
231	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-11	Sa	10YR4/2	A	NCM
	3	11-24	Sa	10YR5/6	B	NCM
232	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-14	Sa	10YR4/2	A	NCM
	3	14-32	Sa	10YR5/6	B	NCM
233	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-20	Sa	10YR4/2	A	NCM
	3	20-30	Sa	10YR5/6	B	NCM
234	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-14	Sa	10YR4/2	A	NCM
	3	14-28	Sa	10YR5/6	B	NCM
235	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-26	Sa	10YR4/2	A	NCM
	3	26-39	Sa	10YR5/6	B	NCM
236	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-30	Sa	10YR4/2	A	NCM
	3	30-45	Sa	10YR5/6	B	NCM
237	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-22	Sa	10YR4/2	A	NCM
	3	22-43	Sa	10YR5/6	B	NCM

Appendix J-5
SHPO Correspondence for The Meadows at Yaphank PDD

March 18, 2011

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

New York State Office of Parks, Recreation and Historic Preservation

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

Historic Preservation Field Services Bureau
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643 Fax: 518-233-9049

March 18, 2011

Peter E. Fountaine
Town of Brookhaven Division of Environmental Protection
One Independence Hill
Farmingville, New York 11738

Re: SEQRA
Archaeological Addendum Investigation
The Meadows at Yaphank/formerly Suffolk Downs
LIE & Wm Floyd Parkway
Yaphank/BROOKHAVEN, Suffolk County
10PR03630

Dear Mr. Fountaine:

Thank you for requesting the comments of the Field Services Bureau of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Field Services Bureau and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the OPRHP's opinion that the expanded project will continue to have No Impact upon cultural resources in or eligible for inclusion in the State and National Register of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above. Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology

Cc: Phil Malicki, NPV (e-mail)

APPENDIX K

INDUSTRIAL LAND INVENTORY

Industrial Land Inventory

Summary Table

Map/Area	Acres	Available %	Available Acres	% of Total
Map 1				
#1-1	13.5	20%	2.7	
#1-2	7.7	100%	7.7	
	9.7	10%	1.0	
	96.0	0%	0.0	
#1-3	52.2	0%	0.0	
#1-4	7.0	100%	7.0	
	12.7	0%	0.0	
	55.6	30%	16.7	
#1-5	12.7	0%	0.0	
#1-6	25.1	0%	0.0	
#1-7	174.5	100%	174.5	
	466.7		209.6	45%
Map 2				
#2-1	12.6	25%	3.2	
#2-2	9.5	0%	0.0	
#2-3	37.0	75%	27.8	
	47.6	25%	11.9	
#2-4	30.0	7%	2.1	
#2-5	1.3	0%	0.0	
	5.2	0%	0.0	
	2.4	0%	0.0	
	1.6	0%	0.0	
	8.8	0%	0.0	
#2-6	22.2	80%	17.8	
	18.6	0%	0.0	
	79.0	75%	59.25	
	7.6	75%	5.7	
	283.4		127.6	45%
Map 3				
#3-1	190.4	0%	0.0	
#3-2	4.8	0%	0.0	
	1.4	0%	0.0	
#3-3	5.2	80%	4.2	
	201.8		4.2	2%
Map 5				
#5-1	0.9	0%	0.0	
#5-2	12	20%	2.4	
	12.9		2.4	19%

Industrial Land Inventory

Summary Table

Map 6				
#6-1	40.5	25%	10.1	
	33.9	10%	3.4	
#6-2	7.2	10%	0.7	
#6-3	41.7	75%	31.3	
	31.3	25%	7.8	
#6-4	1.6	0%	0.0	
#6-5	14.5	25%	3.6	
	137.7	25%	34.4	
#6-6	72.3	60%	43.4	
	120.5	30%	36.2	
	35.8	0%	0.0	
	10.7	20%	2.1	
#6-7	4.4	0%	0.0	
#6-8	14.8	0%	0.0	
	566.9		173.1	31%
Map 7				
#7-1	2,159.1	50%	1,079.6	
#7-2	8.1	0%	0.0	
#7-3	220.0	100%	220.0	
#7-4	31.0	0%	0.0	
#7-5	150.2	0%	0.0	
#7-6	76.0	50%	38.0	
#7-7	2.9	0%	0.0	
#7-8	2.7	50%	1.4	
#7-9	17.7	70%	12.4	
#7-10	19.8	60%	11.9	
	1.1	0%	0.0	
#7-11	29.3	15%	4.4	
#7-12	17.9	75%	13.4	
#7-13	0	0%	0.0	
#7-14	0.6	100%	0.6	
	2.7	0%	0.0	
#7-15	106.7	0%	0.0	
#7-16	6.1	100%	6.1	
#7-17	2.3	0%	0.0	
#7-18	23.9	70%	16.7	
#7-19	12.7	25%	3.2	
	2,890.8		1,407.6	49%
	**Note: Without 1/2 of Silver Corporate*		1,297.6	45%

Industrial Land Inventory

Summary Table

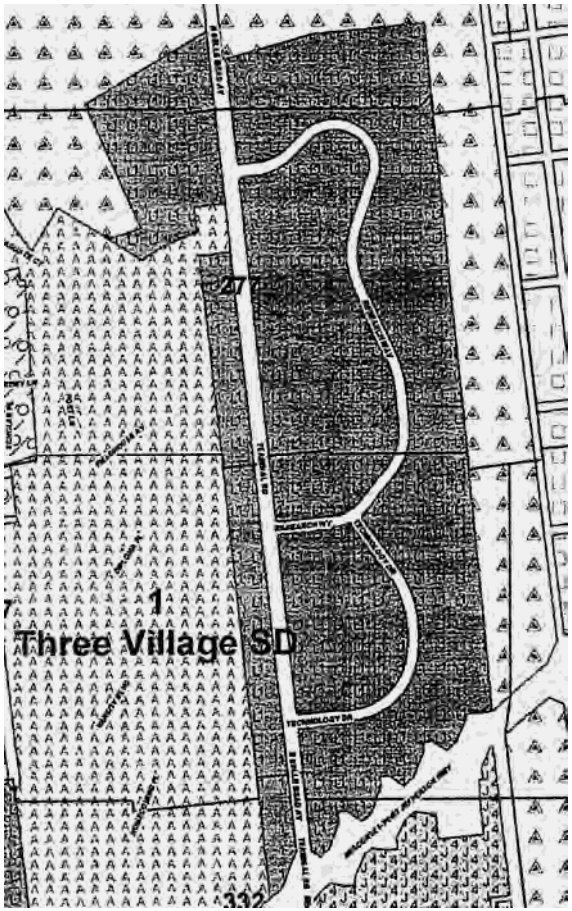
Map 8

#8-1	3	0%	0.0	
#8-2	172.2	50%	86.1	
#8-3	108.3	30%	32.5	
#8-4	238	50%	119.0	
#8-5	660	100%	660.0	
#8-6	17.9	0%	0.0	
#8-7	100	100%	100.0	
#8-8	4.3	0%	0.0	
#8-9	3	0%	0.0	
#8-10	7.9	30%	2.4	
#8-11	6	0%	0.0	
#8-12	2.4	50%	1.2	
#8-13	10.1	0%	0.0	
#8-14	71.7	70%	50.2	
	1,404.8		1,051.4	75%
**Note: Without Subject Parcel*			965.3	69%
Totals	5,827.3		2,975.7	51%
**Note: Without Subject Parcel*			2,889.6	50%
**Note: Without 1/2 of Silver Corporate*			2,865.7	49%
**Note: Without Both (Site and Silver)*			2,669.6	46%

1-1

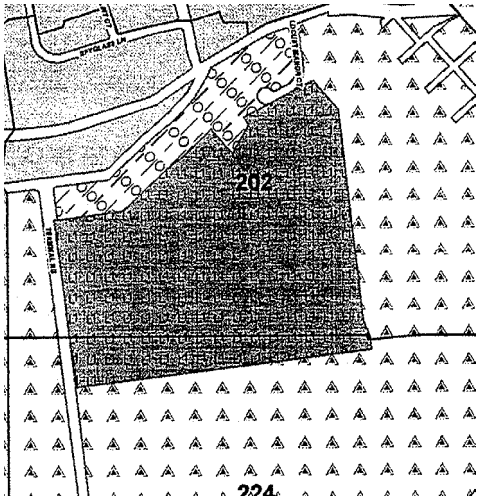
Approximate Acres	Approximate Percent of Use	Comments
13.5	80%	Mark Tree Road; Recreation, office, general industrial; Possible turnover; tenant opportunities, minimal growth potential

1-2



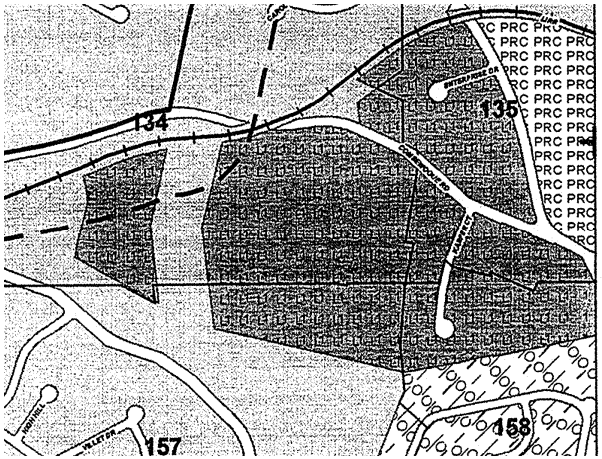
Approximate Acres	Approximate Percent of Use	Comments
NW – 7.7 W – 9.7 E – 96.0	NW – 0% W – 90% E – 100%	NW – roadfront developed; back may be public ownership W – Small office, contractor, auto service, misc. industrial parcels E – Office, industrial park Possible turnover; tenant opportunities, minimal growth potential

1-3



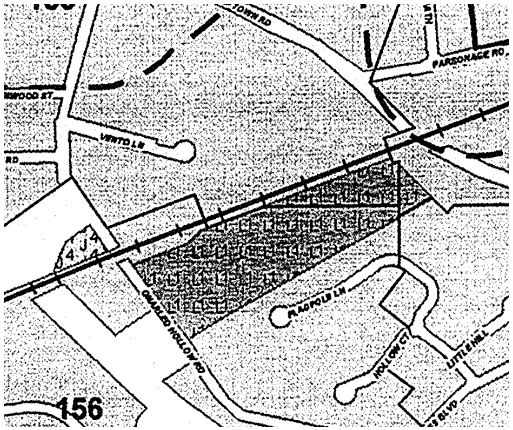
Approximate Acres	Approximate Percent of Use	Comments
52.2	100%	Northville terminal; some tenant industrial uses along Terminal Road; Possible turnover; tenant opportunities, minimal growth potential

1-4



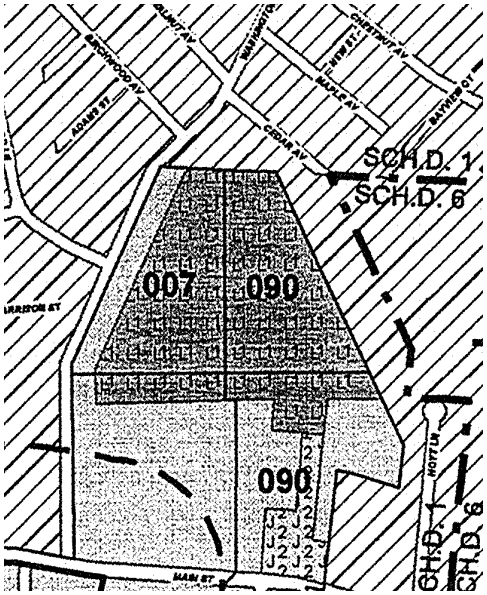
Approximate Acres	Approximate Percent of Use	Comments
W – 7.0 NE – 12.7 S – 55.6	W – 0% NE – 100% S – 70%	W – vacant, may be public land NE – Enterprise office, industrial park S – Kasper industrial, general industrial, contractor yards, Possible turnover; tenant opportunities, moderate growth potential

1-5



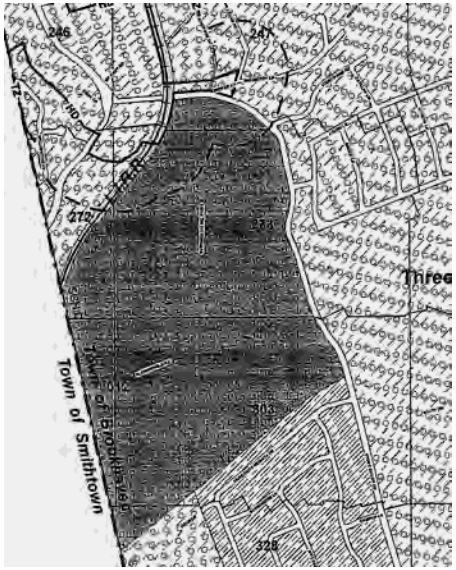
Approximate Acres	Approximate Percent of Use	Comments
12.7	100%	Flagpole company, bus yard, some tenant space; mostly occupied Possible turnover; tenant opportunities, minimal growth potential

1-6



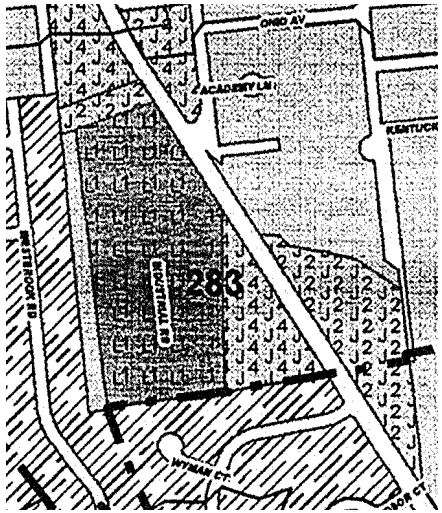
Approximate Acres	Approximate Percent of Use	Comments
25.1	100%	Tank farm next to LIPA; vacant parts will not be used; utility related

1-7



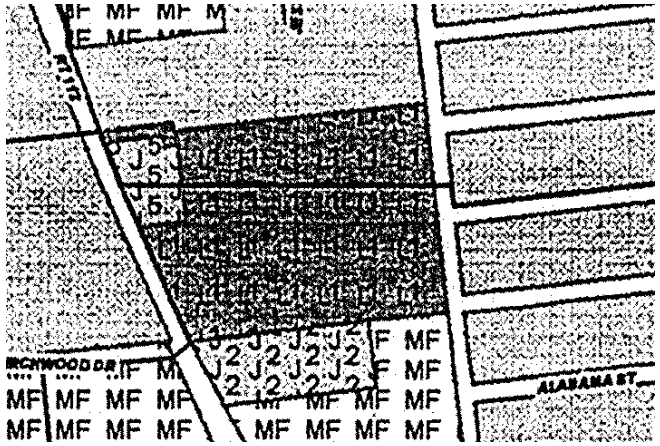
Approximate Acres	Approximate Percent of Use	Comments
174.5 (Brookhaven)	0%	Gyrodyne - Brookhaven part vacant; future uncertain

2-1



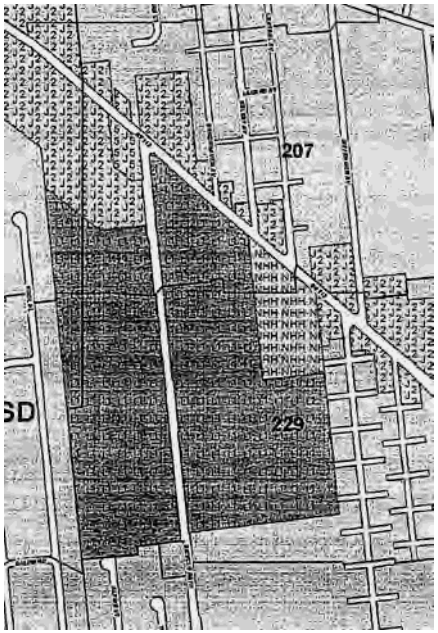
Approximate Acres	Approximate Percent of Use	Comments
12.6	75%	Industrial Road, mix of uses; office, contractor, industrial uses; may have some potential

2-2



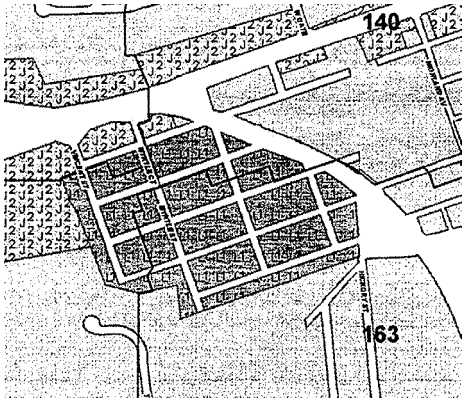
Approximate Acres	Approximate Percent of Use	Comments
9.5	100%	Bus yard, general industrial; mostly occupied by several tenants Possible turnover; tenant opportunities, minimal growth potential

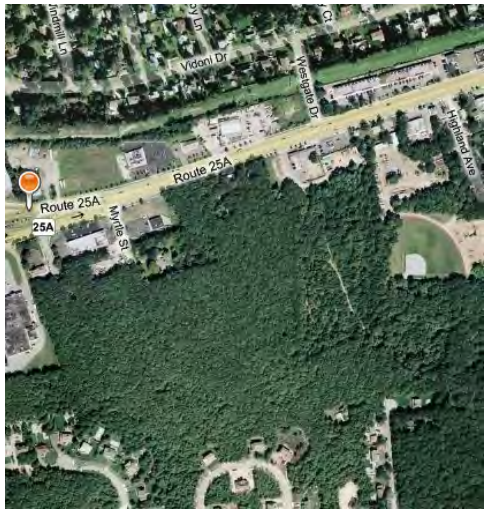
2-3



Approximate Acres	Approximate Percent of Use	Comments
W – 37.0 E -47.6	W - 25% E – 75%	W – mostly vacant; industrial buildings on Bicycle Path; good potential E – Office, medical office, general industrial; some additional potential

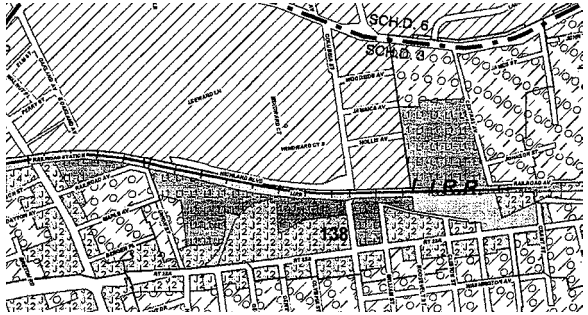
2-4





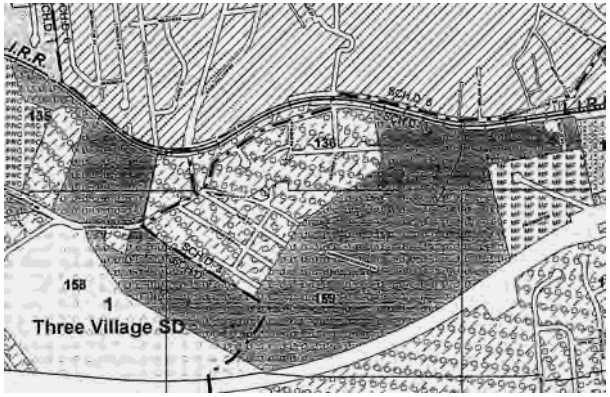
Approximate Acres	Approximate Percent of Use	Comments
30.0	90% for other uses 7% available	Site pending change of zone; industrial not desired by neighbors or Route 25A study; part of site would be available for office use which is allowed in the L-1 zone; site available for development, but only 7% is accounted for as potential use allowed in L-1.

2-5



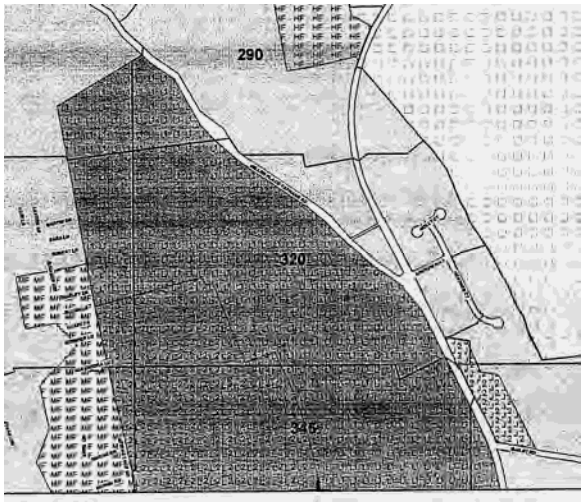
Approximate Acres	Approximate Percent of Use	Comments
From W to E 1.3 5.2 2.4 1.6 8.8	From W to E 1.3 – 100% 5.2 – 100% 2.4 – 100% 1.6 – 100% 8.8 – 100%	From W to E 1.3 – former plumbing store building 5.2 – p/o rail yard 2.4 – p/o Nassau-Suffolk Lumber 1.6 – occupied industrial building 8.8 – contractor yard, industrial buildings, outside storage Possible turnover; tenant opportunities, minimal growth potential

2-6



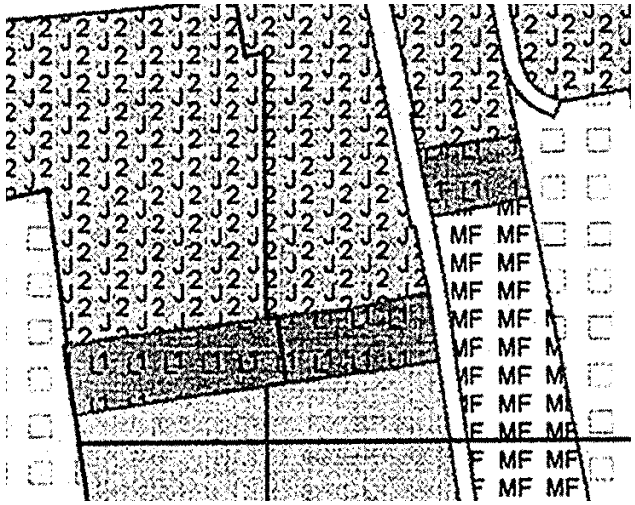
Approximate Acres	Approximate Percent of Use	Comments
W – 22.2 SW – 18.6 SE – 79.0 E – 7.6	W – 20% SW – 0%/100% SE – 25% E – 25%	W – Collaborative industrial use; moderate potential SW – Chip it All considered temporary use; high potential SE – Former Lawrence Aviation; high potential E – Building; limited potential

3-1



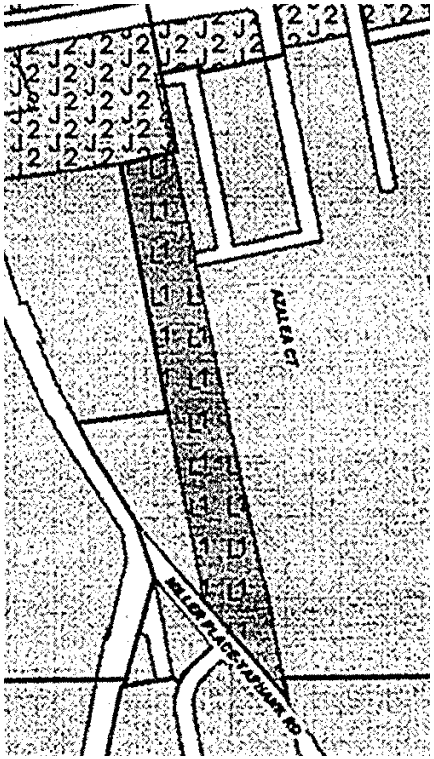
Approximate Acres	Approximate Percent of Use	Comments
190.4	100%	Roanoke Sand & Gravel – being excavated for lake/park Bus yard, contractor yards, industrial use on about 25% of site Potential turnover, tenant opportunities

3-2



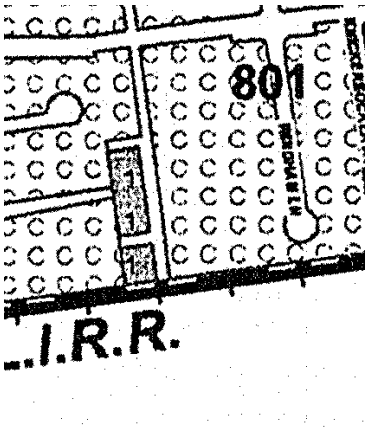
Approximate Acres	Approximate Percent of Use	Comments
W – 4.8 E – 1.4	W – 100% E – 100%	W – Industrial buildings off of Industrial Way E – p/o retail building Possible turnover; tenant opportunities, no growth potential

3-3



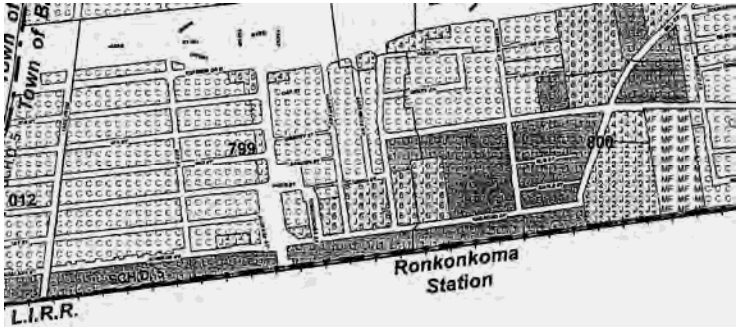
Approximate Acres	Approximate Percent of Use	Comments
5.2	20%	Child care center on south part; potential for part use of north part of site; in Pine Barrens, industrial/office, contractor yard potential

5-1



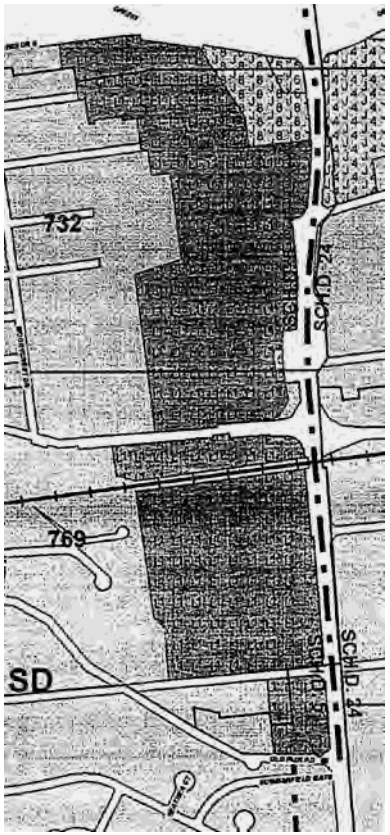
Approximate Acres	Approximate Percent of Use	Comments
0.9	100%	Industrial building; possible turnover

5-2



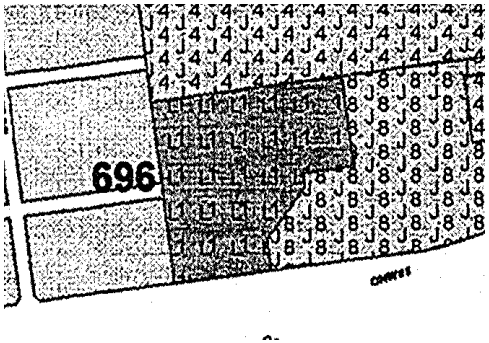
Approximate Acres	Approximate Percent of Use	Comments
12.0	80%	Ronkonkoma hub area; good for redevelopment; good office potential

6-1



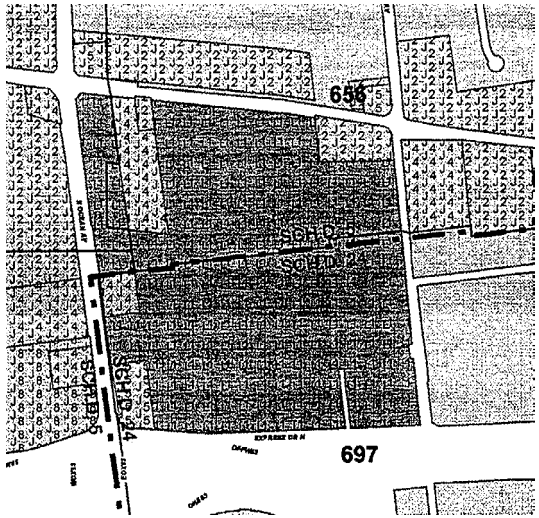
Approximate Acres	Approximate Percent of Use	Comments
N – 40.5 S – 33.9	N – 75% S – 90%	N – Some vacant; Tower Fasteners; Bissett Nursery; church; some potential S – Industrial building; DiCarlo food distributors; possible turnover; limited potential

6-2



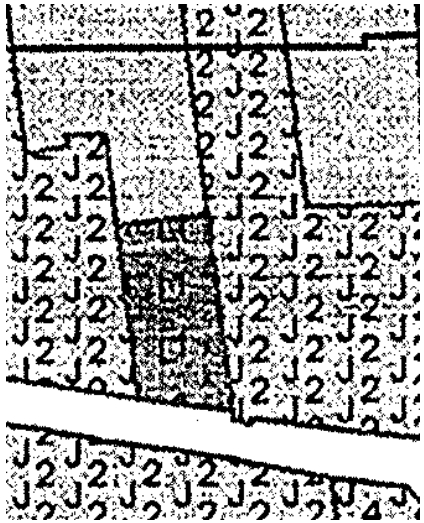
Approximate Acres	Approximate Percent of Use	Comments
7.2	90%	Medical office

6-3



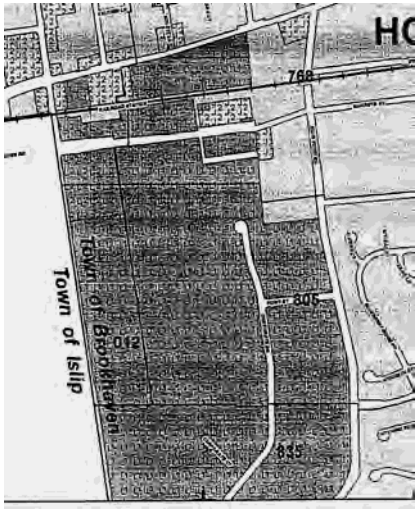
Approximate Acres	Approximate Percent of Use	Comments
S – 41.7 N – 31.3	S - 25% N – 75%	S – vacant land; limited use; 1 house; contractor yards; high potential N – No. Ocean front buildings; former UPS; building; limited potential

6-4

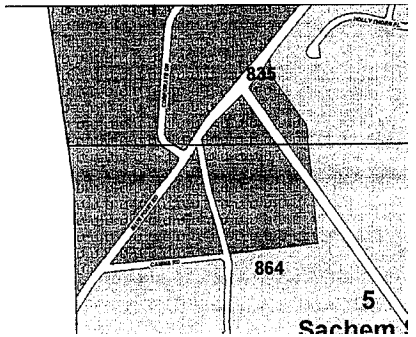


Approximate Acres	Approximate Percent of Use	Comments
1.6	100%	Occupied building; no potential

6-5

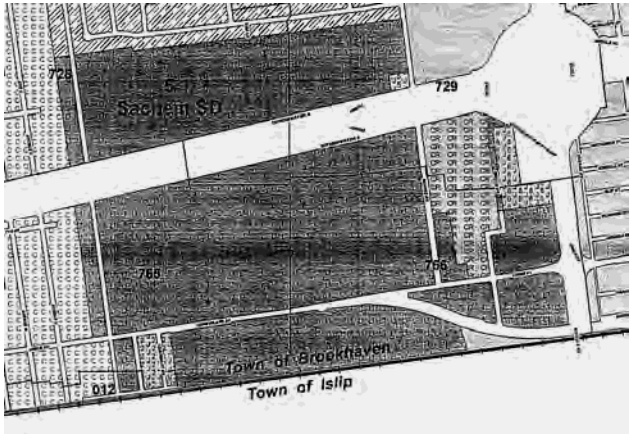


This Section p/o Zoning Map # 11



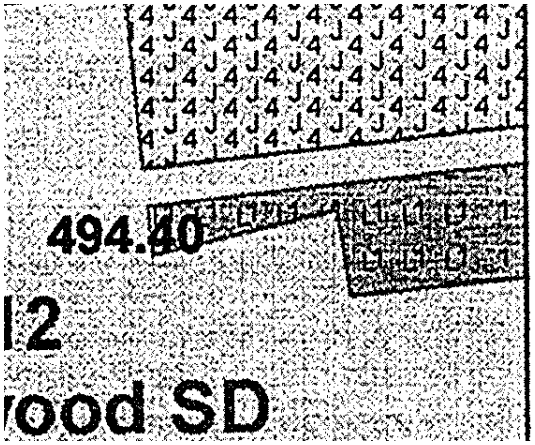
Approximate Acres	Approximate Percent of Use	Comments
N – 14.5 S – 137.7	N - 75% S – 75%	N – Industrial buildings & vacant land near railroad; moderate potential S - Corporate industrial; some new lots; turnover; moderate potential (area within map 6 only)

6-6



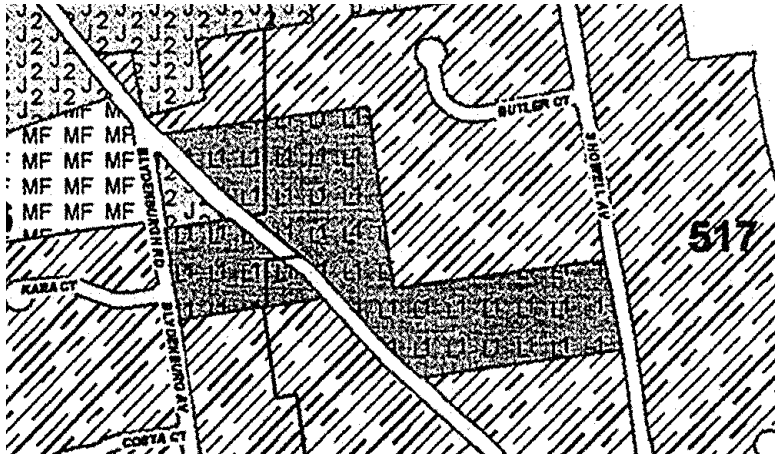
Approximate Acres	Approximate Percent of Use	Comments
N – 72.3 Middle – 120.5 S – 35.8 SE – 10.7	N – 40% Middle – 70% S – 100% SE – 80%	N – Corporate office; 65% vacant land potential Middle – Utility; some tenant buildings; some vacant; limited potential S – Utility, some vacant; limited potential SE – Industrial buildings; possible turnover; tenant opportunities; limited

6-7



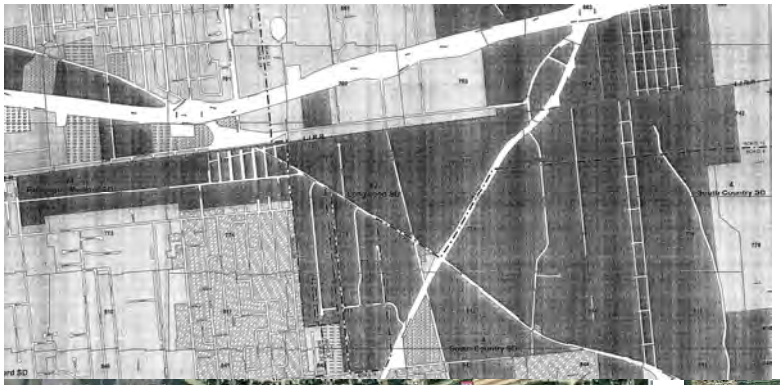
Approximate Acres	Approximate Percent of Use	Comments
4.4	100%	PK Metals – may be future potential

6-8



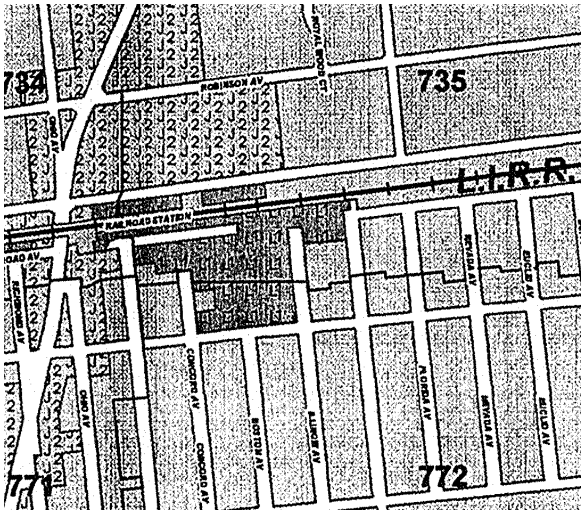
Approximate Acres	Approximate Percent of Use	Comments
14.8	100%	Industrial buildings; contractor yard; possible turnover; tenant opportunities; no growth potential

7-1



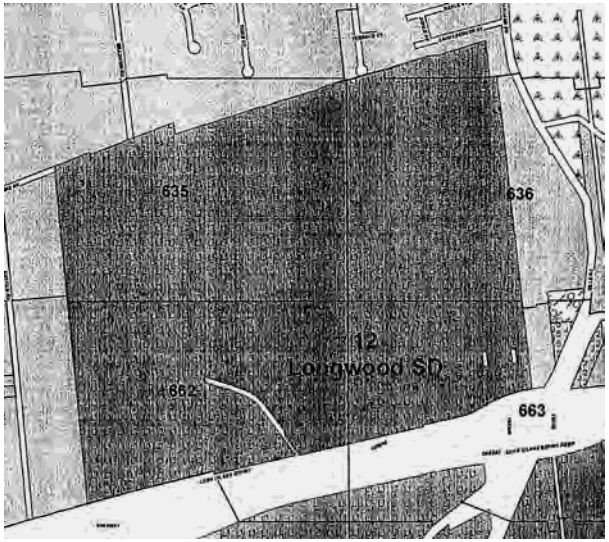
Approximate Acres	Approximate Percent of Use	Comments
2,159.1	50%	Extensive industrial lands both developed and available for development; includes east part of Medford Peconic Avenue/Horseblock Road, lands s/o LIE, Sills Industrial Park, Brookhaven Economic Development Zone, Brookhaven landfill, Silver Industrial Park, Grucci Fireworks, Bittle sand, Caithness site, former Arrow Electronics site, former Isuzu site, etc.; high potential for turnover and new development (area with Map 7 only)

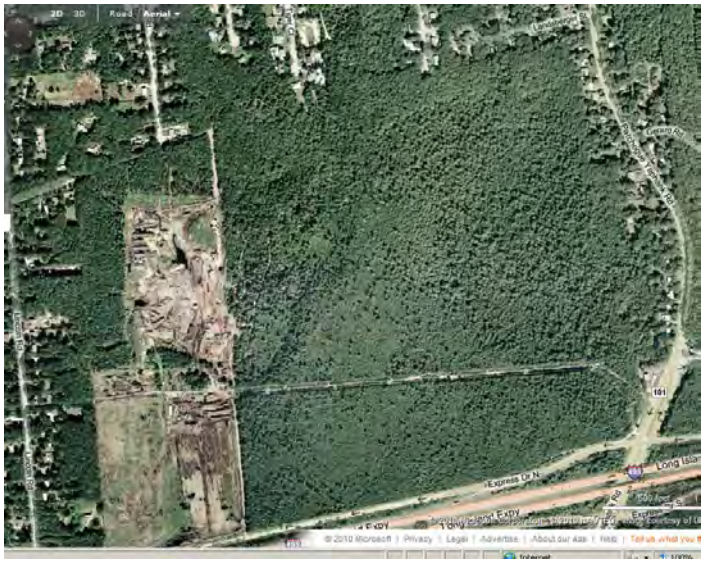
7-2



Approximate Acres	Approximate Percent of Use	Comments
8.1	100%	Auto related uses, contractor yards; possible turnover/tenant opportunities; no growth potential

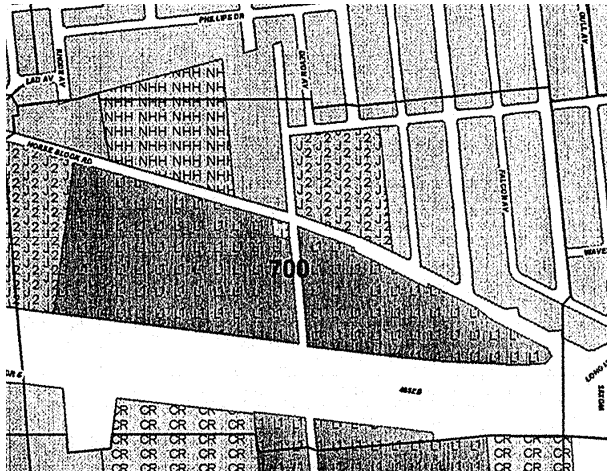
7-3





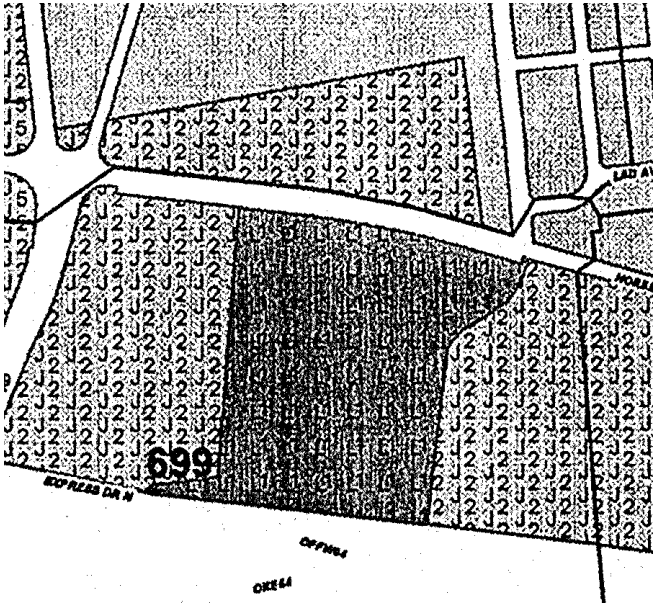
Approximate Acres	Approximate Percent of Use	Comments
220.0	0%	Silver Corporate Park; under consideration for change of zone of part of the site for mixed-senior residential use; part of site would remain available for industrial use; high potential for corporate office near LIE with other office/light manufacture use away from LIE; site has not been developed as industrial and remains an excellent industrial growth opportunity either in whole or in part

7-4



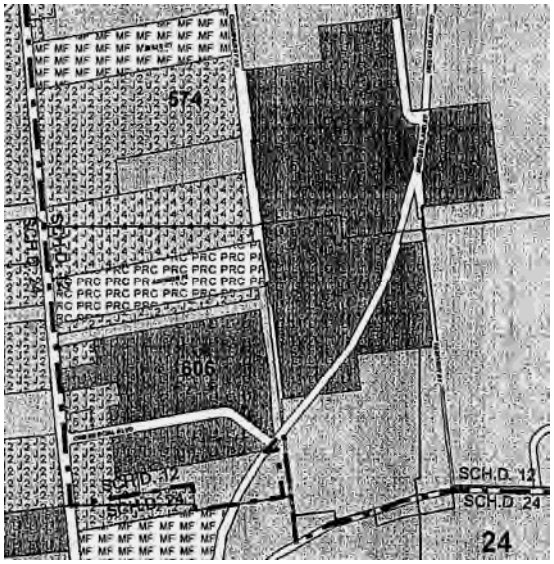
Approximate Acres	Approximate Percent of Use	Comments
31.0	100%	Distribution, warehouse, general industrial; potential for redevelopment, turnover, tenant opportunities; no growth potential

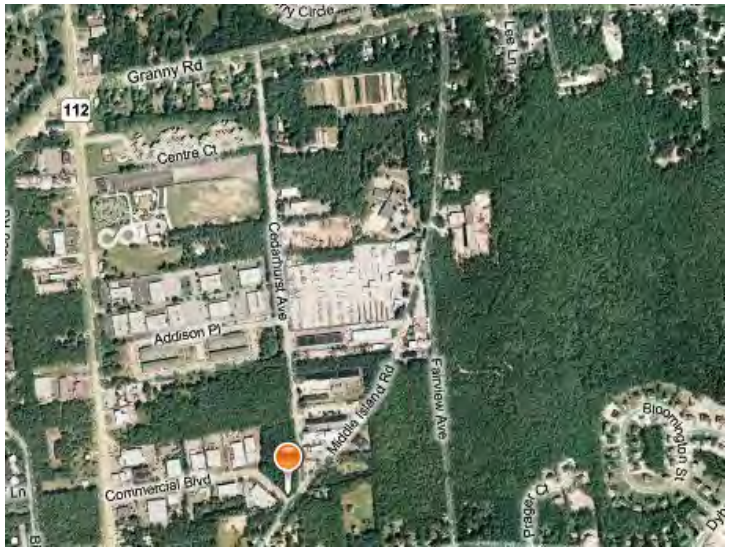
7-5



Approximate Acres	Approximate Percent of Use	Comments
150.2	100%	Sams Club

7-6



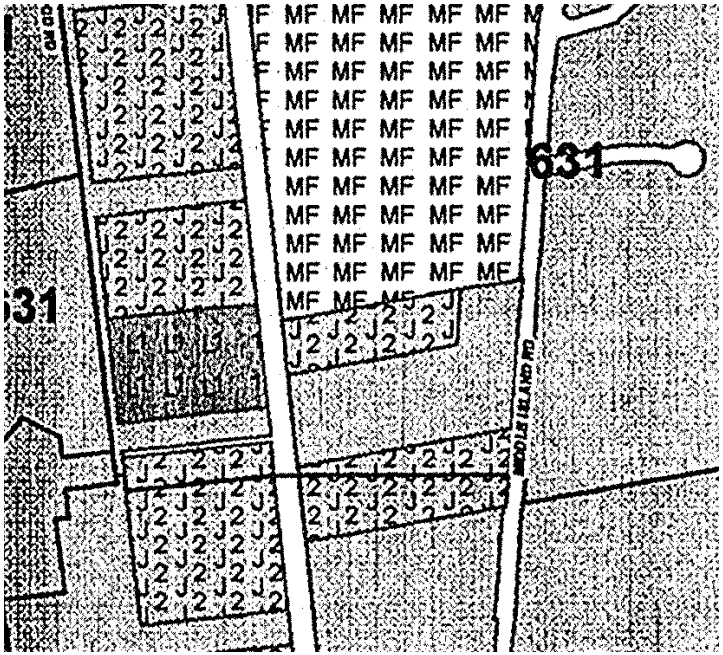


Approximate Acres	Approximate Percent of Use	Comments
76.0	50%	Commercial Boulevard; contractor yards, storage, distribution, warehouse; some vacant land; possible turnover/tenant opportunities; moderate growth potential

7-7

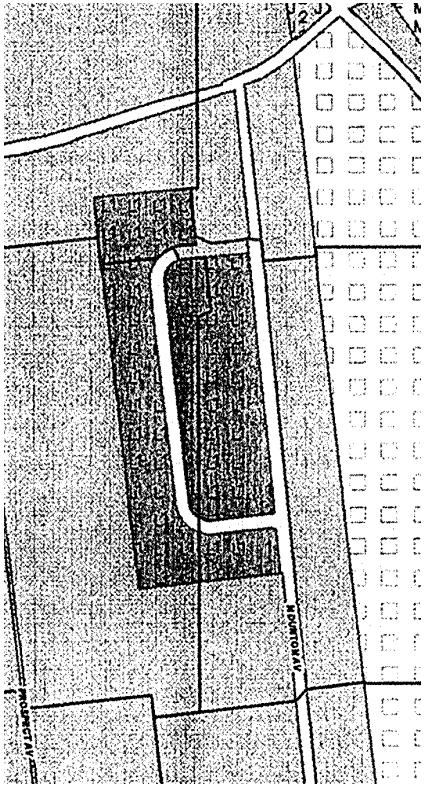
Approximate Acres	Approximate Percent of Use	Comments
2.9	100%	Coal yard; general industrial building; possible turnover/tenant opportunities; no growth potential

7-8



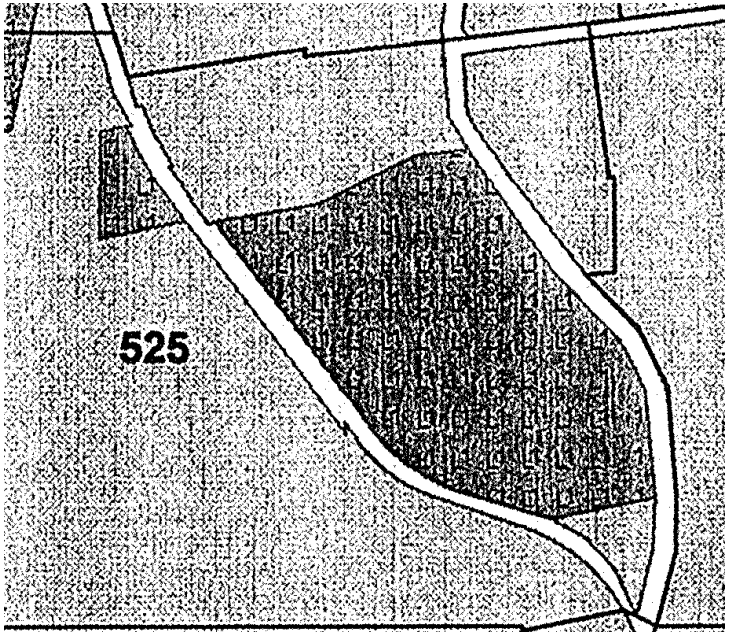
Approximate Acres	Approximate Percent of Use	Comments
2.7	50%	Contractor yard; not fully developed; possible turnover; limited growth potential

7-9



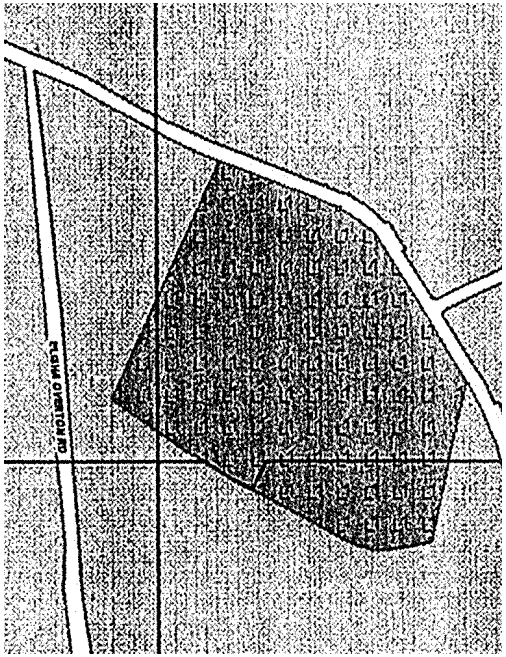
Approximate Acres	Approximate Percent of Use	Comments
17.7	30%	Bus yard, contractor yards, general industrial; subdivision road mapped; high growth potential

7-10



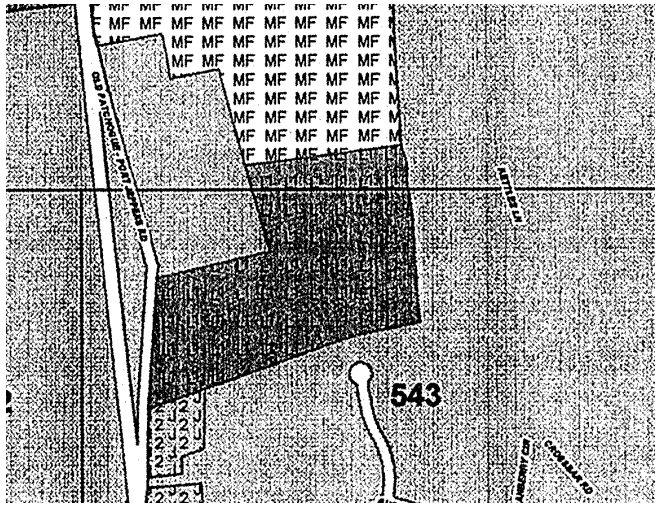
Approximate Acres	Approximate Percent of Use	Comments
E - 19.8 W – 1.1	E - 40% W - 100%	E - Walsh contracting; bus yard; clearing observed; possible turnover, future use potential; moderate growth potential W – industrial building

7-11



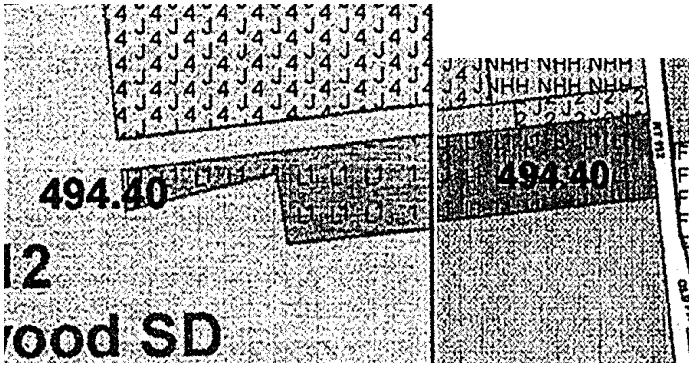
Approximate Acres	Approximate Percent of Use	Comments
29.3	85%	Former wallpaper manufacturer, industrial building, contractor yard and storage; possible turnover/tenant opportunities; limited growth potential

7-12



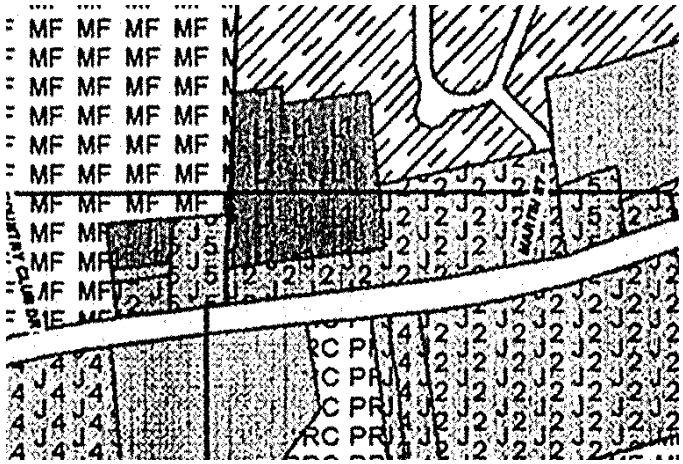
Approximate Acres	Approximate Percent of Use	Comments
17.9	25%	State highway yard, communications installation; moderate growth potential

7-13



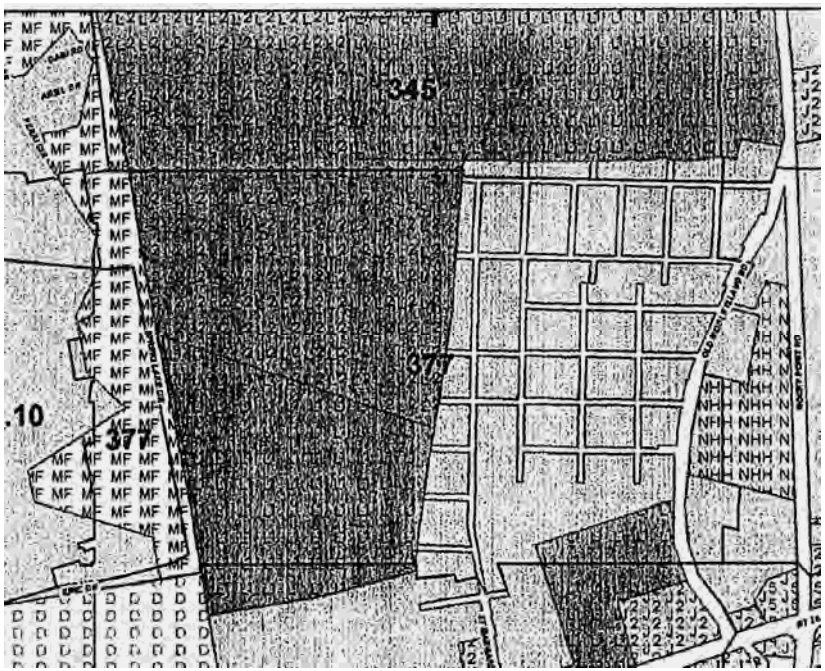
Approximate Acres	Approximate Percent of Use	Comments
Same as 6-7	Same as 6-7	Same as 6-7

7-14



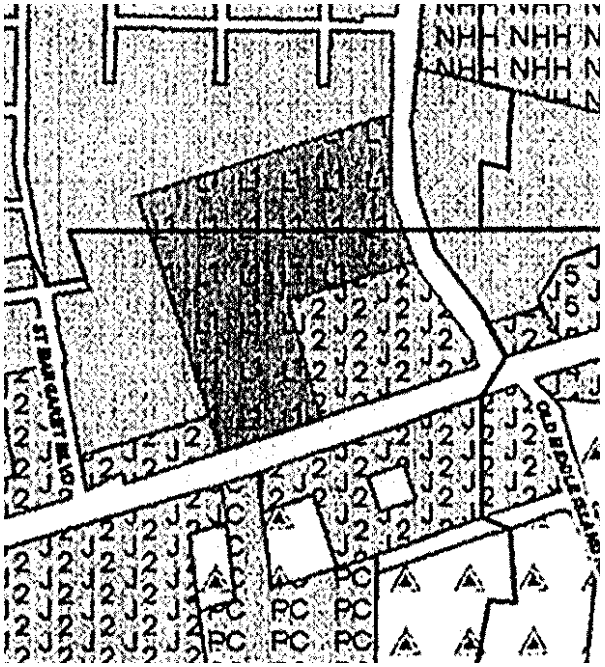
Approximate Acres	Approximate Percent of Use	Comments
W – 0.6 E – 2.7	W – 0% E – 100%	W – vacant; potential, but small, access issue, landlocked; limited potential E – contractor yard multiple tenants; possible turnover/tenant opportunities

7-15



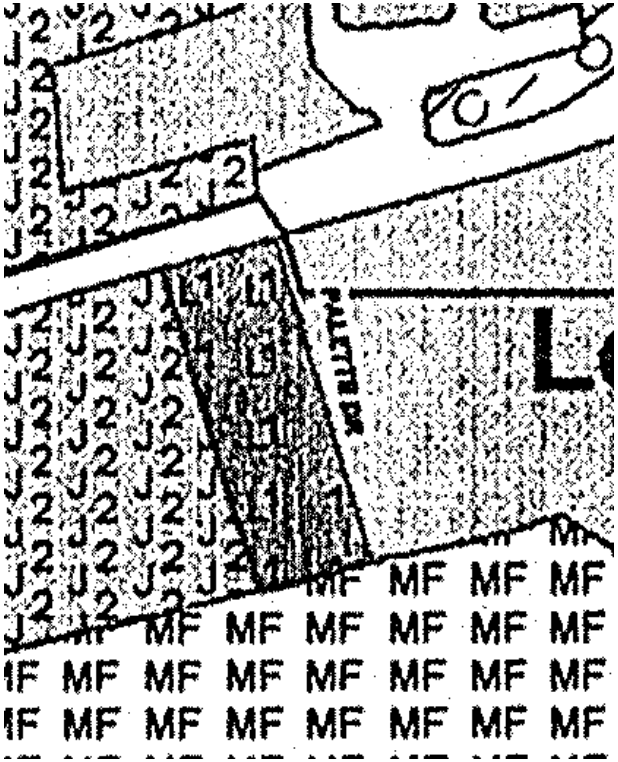
Approximate Acres	Approximate Percent of Use	Comments
106.7	100%	South part of Roanoke Sand & Gravel – being excavated for lake/park; no growth potential

7-16



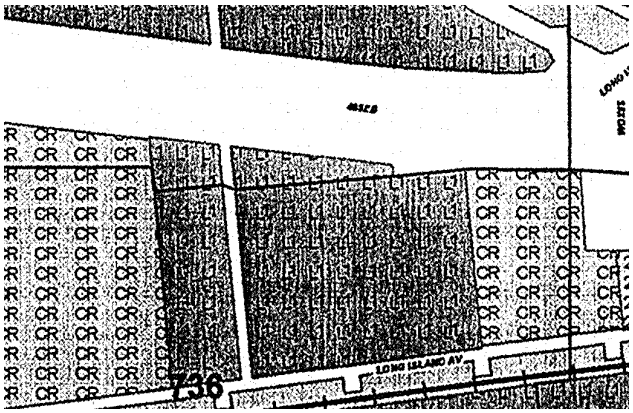
Approximate Acres	Approximate Percent of Use	Comments
6.1	0%	Former Kogel lumber; not occupied; was considered for mixed commercial use/residential project; no active application; moderate growth potential

7-17



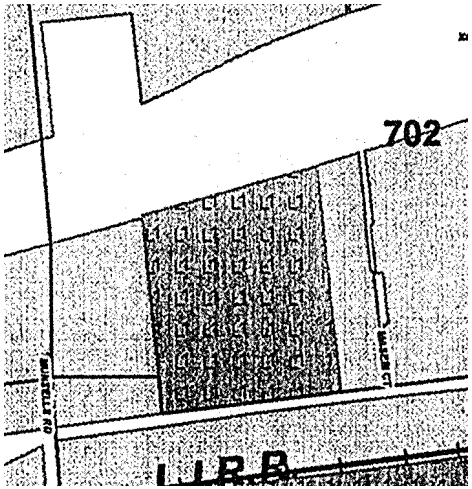
Approximate Acres	Approximate Percent of Use	Comments
2.3	100%	p/o PC Richard; occupied; no growth potential

7-18



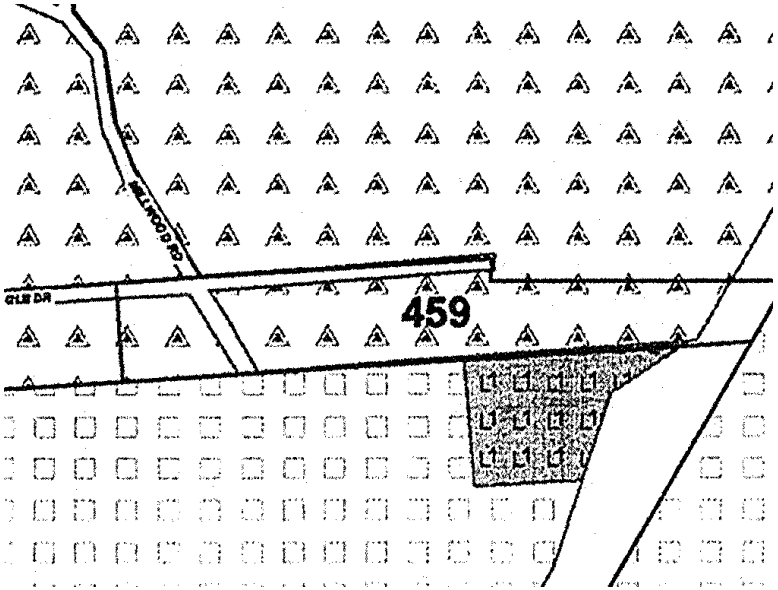
Approximate Acres	Approximate Percent of Use	Comments
23.9	30%	Industrial building, contractor yard, distribution building; vacant land; high growth potential

7-19



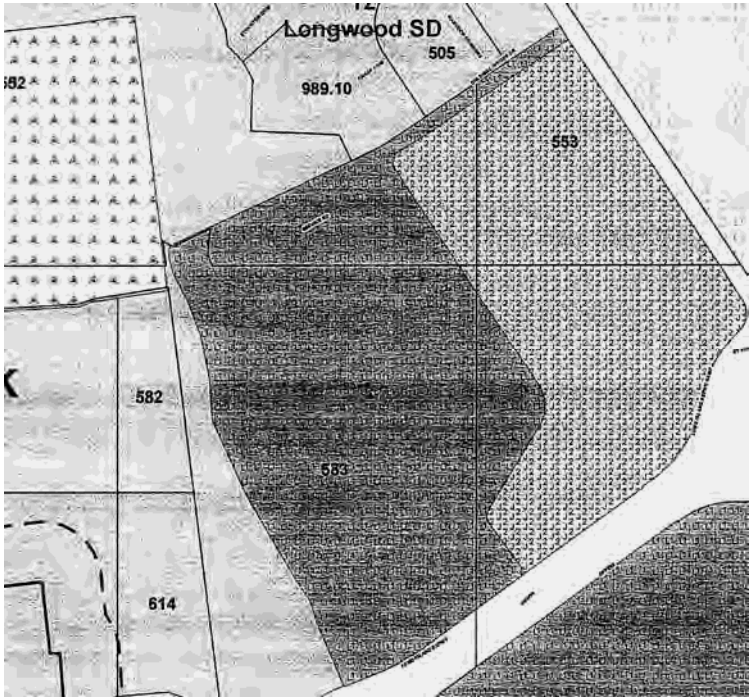
Approximate Acres	Approximate Percent of Use	Comments
12.7	75%	Industrial buildings; contractor yard; some vacant; possible turnover/tenant opportunities; no growth potential

8-1



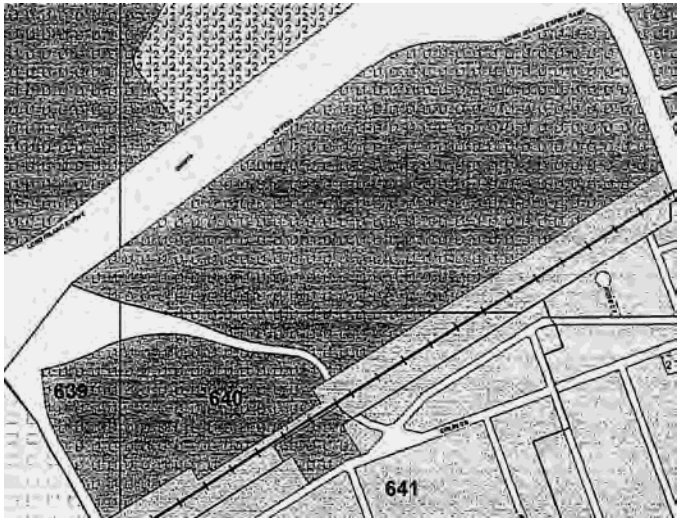
Approximate Acres	Approximate Percent of Use	Comments
3.0 acres	100%; Site in Pine Barrens	Medical office related use

8-2



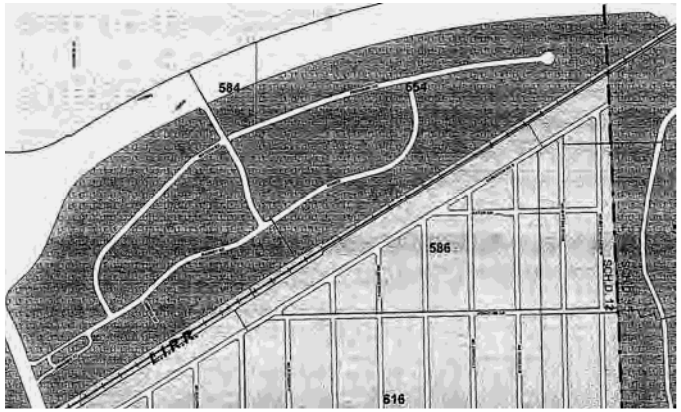
Approximate Acres	Approximate Percent of Use	Comments
172.2 acres	0%; use potential is 50%	Subject site; proposed change of zone to PDD; Use potential involves office-flex and industrial on approximately half the site.

8-3



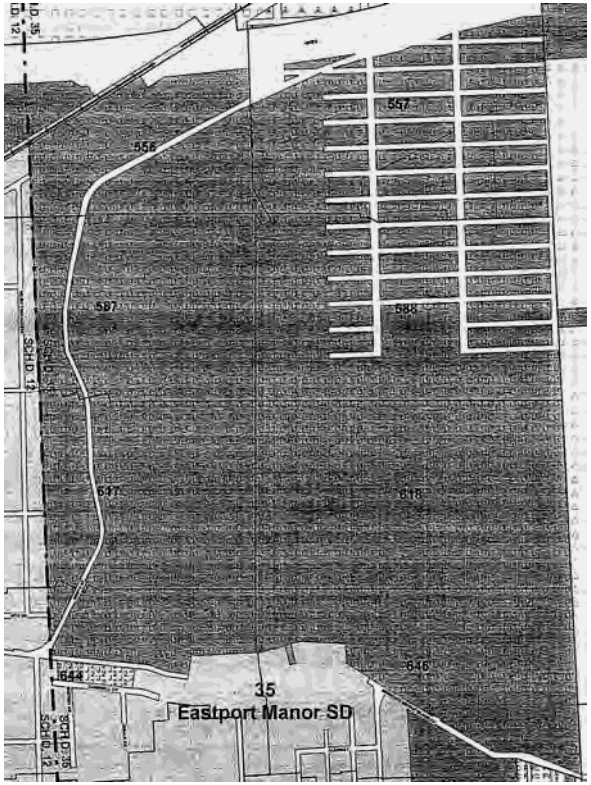
Approximate Acres	Approximate Percent of Use	Comments
108.3 acres	70%	Site subdivided and 34 acres in use by Clare Rose; west part of site dedicated to Town; east part of site has additional development potential

8-4



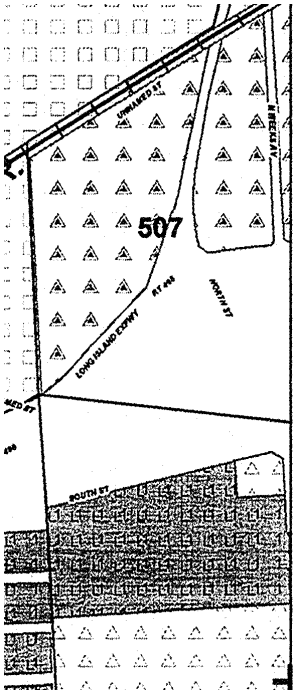
Approximate Acres	Approximate Percent of Use	Comments
238 acres	50%	Former Brookhaven R&D/current Tri-Tec industrial park; approximately 50% developed; with 50% available in vacant industrial lots; STP will expand use potential.

8-5



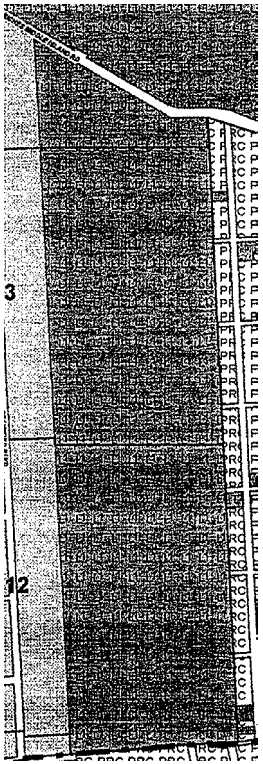
Approximate Acres	Approximate Percent of Use	Comments
660 acres	0%	Vacant industrial land available for development.

8-6



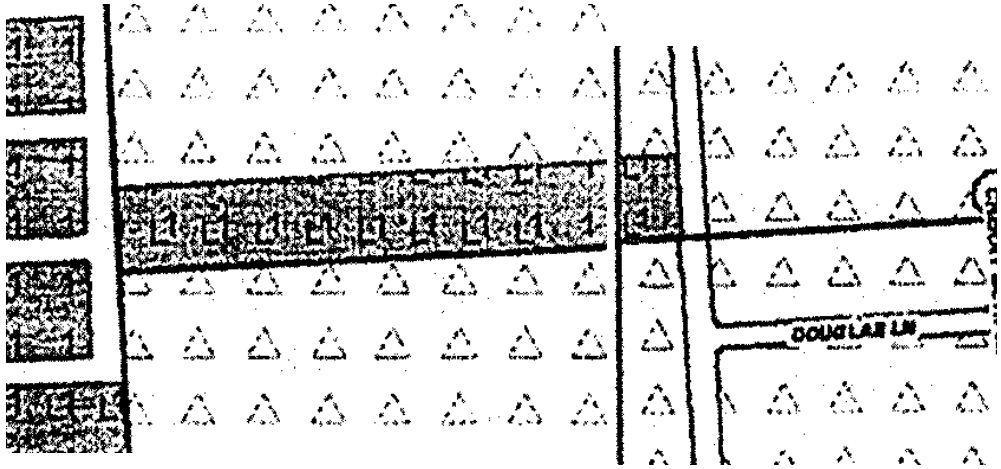
Approximate Acres	Approximate Percent of Use	Comments
17.9 acres	100%	Existing open contractor yards with bare soil and minimal improvements; could experience turnover in use to higher and better use in future; has re-use potential

8-7



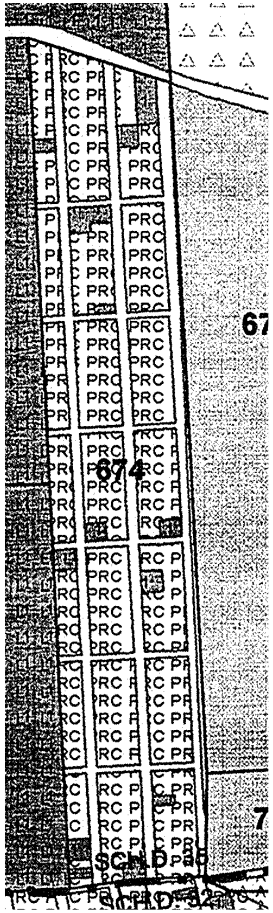
Approximate Acres	Approximate Percent of Use	Comments
100 acres	0%	Vacant industrial land

8-8



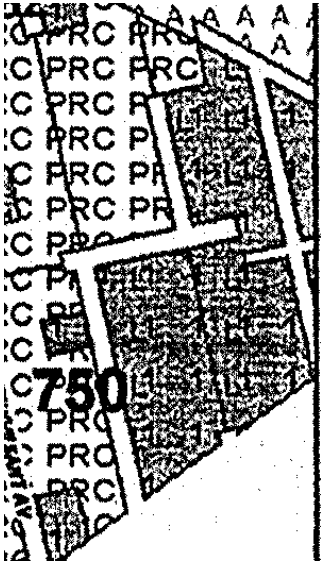
Approximate Acres	Approximate Percent of Use	Comments
4.3 acres	100%	Existing open contractor yards with bare soil and minimal improvements; could experience turnover in use to higher and better use in future; has re-use potential.

8-9- Several



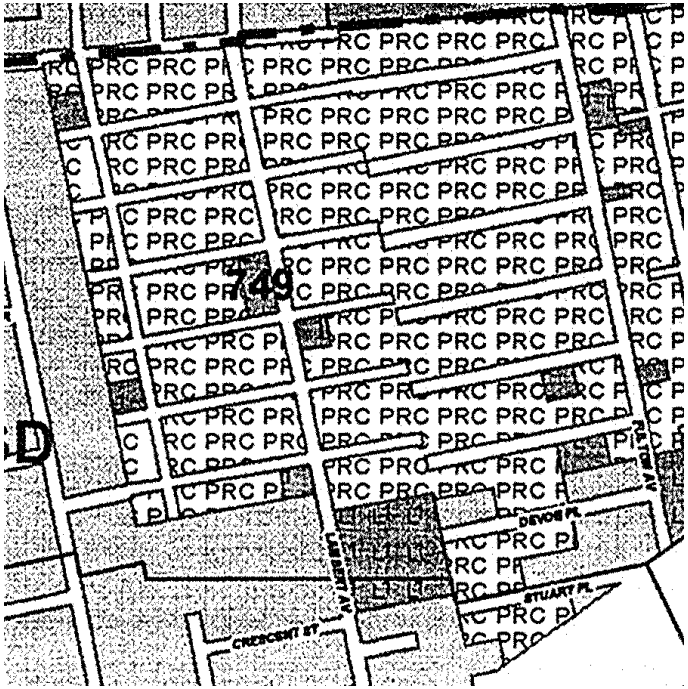
Approximate Acres	Approximate Percent of Use	Comments
Scattered industrial parcels; Total of 3 +/- acres	0%	Surrounded by land dedicated to Town; limited or no access; very limited development potential

8-10



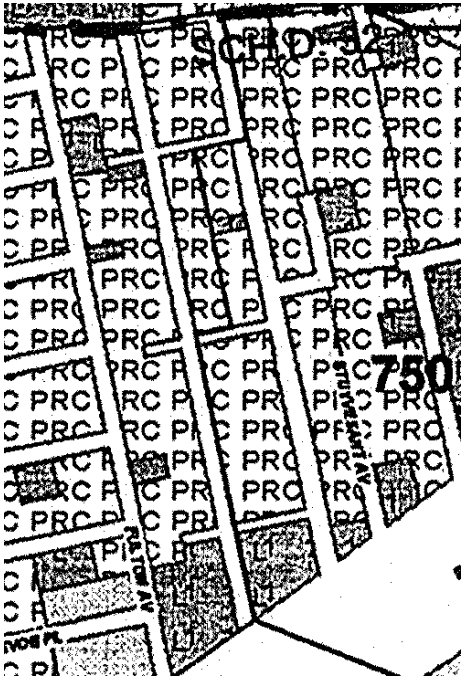
Approximate Acres	Approximate Percent of Use	Comments
7.9 acres	70%	Existing open storage yard with bare soil and minimal improvements; could experience turnover in use to higher and better use in future; has re-use potential

8-11-Several



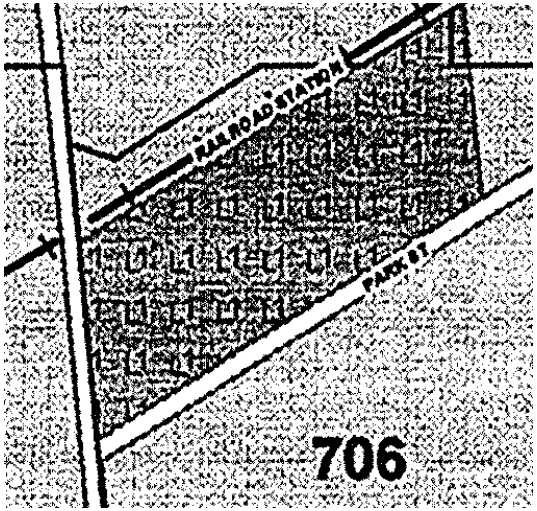
Approximate Acres	Approximate Percent of Use	Comments
Scattered industrial parcels; Total of 6 +/- acres	0%	Surrounded by land associated with former Beechwood MF development; land to be dedicated to Town; limited or no access; very limited development potential

8-12



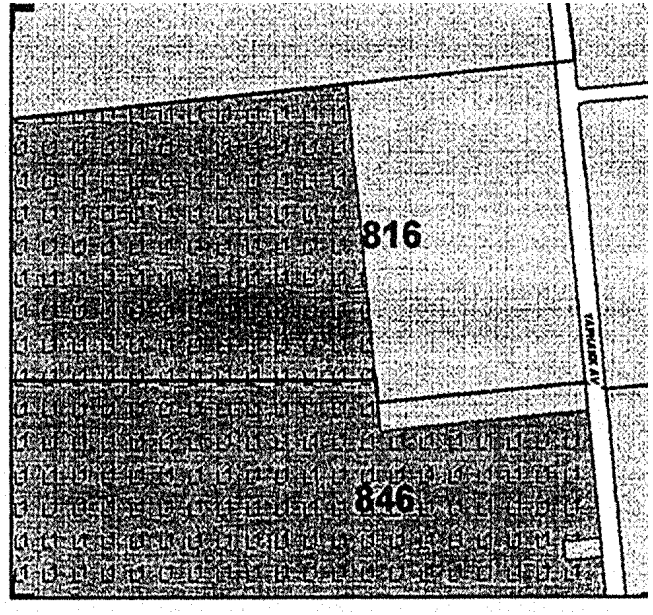
Approximate Acres	Approximate Percent of Use	Comments
2.4 acres	50%	Surrounded by future Town land; limited or no development potential

8-13



Approximate Acres	Approximate Percent of Use	Comments
10.1 acres	100%	Existing industrial use; no current development potential.

8-14



Approximate Acres	Approximate Percent of Use	Comments
71.7 acres in this map section	30%	Some vacant industrial land with use potential