

**Expanded Environmental Assessment Form (EAF),
Part 3**

**LONGWOOD PUBLIC LIBRARY
EXPANSION & RENOVATION**

SCTM No. 0200-0402-01-23.1 & 24.9; 0200-403-01-3, 4, 17 & 18

Middle Island, Town of Brookhaven
Suffolk County, New York

NP&V Project No. 72074

August 2012



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Date: August 2012

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- A Architects Plans, Longwood Public Library Additions and Alterations, Peter Gisolfi Assocs. (rev. 3/7/2012)**
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 - Second Floor Demo Plan, Drawing No. A-051
 - Existing Demo Elevations, Drawing No. A-052
 - First Floor Plan, Drawing No. A-100
 - First Floor Partial Plan, Drawing No. A-100.1
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- Elevations, Drawing No. A-200
- Elevations, Drawing No. A-201
- Removals Plan, Drawing No. L-100
- Materials and Planting Plan, Drawing No. L-200
- B Hardship Exemption Approval Resolution, Central Pine Barrens Joint Planning & Policy Commission, May 18, 2005**
- C Environmental Assessment Form, Parts 1 & 2**
- D Library Expansion Planning Process-Related Documents**
- E SONIR Computer Model-Related Documents**
 - E-1 Model User's Guide
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- F Ecology-Related Documents**
 - F-1 NYS Breeding Bird Atlas Data
 - F-2 NYS Natural Heritage Program Correspondence
- G Pine Barrens Plan Clearing Standard Conformance Analysis**

PLANS (in pouches at the end of this document):

Preliminary Sanitary Upgrades, P.W. Grosser (rev. 04/23/2012)

Preliminary Grading & Drainage Site Plan, P.W. Grosser (undated)

1.0 INTRODUCTION

This document is intended to provide supplemental environmental information to the Board of Trustees of the Longwood Public Library (hereafter, “the Library Board”) to assist in the review of the project known as the Longwood Public Library Expansion & Renovation (hereafter, “the proposed project”). The proposed project involves the partial demolition of the existing library building at 800 Middle Country Road, followed by the construction of an expansion of that building, along with renovations of the retained portion of the structure. Minor parking reconfigurations and expansions of the site’s drainage and sanitary systems, minor alterations of the site’s landscaping. Minimal clearing of the existing natural vegetation on-site is expected (this will occur in areas previously landscaped when the library was constructed in 1987), and a total of 0.48 acres of natural plantings (“revegetation”) will also occur as part of the proposed project; this will increase the amount and value of natural lands on the property (to a total of 4.25 acres, or 53.9% of the entire property). A series of detailed architect’s plans for the proposed project are presented in **Appendix A**.

As described in **Section 2.0** below, the project site is comprised of two parcels (totaling 7.89 acres), separated by Lafayette Street: the northern 4.54 acre parcel (specifically, tax lots 24.9, 3, 4 17 and 18) was the subject of a Hardship Exemption application, review and approval (by the Central Pine Barrens Joint Planning & Policy Commission [hereafter, “the Pine Barrens Commission”]) in 2005. (The southern 3.35-acre parcel [tax lot 23.1] was not owned by the Longwood Library until 2009.) The Hardship Exemption approval was related to a library application which, as the site was already in excess of the clearing standard of the Central Pine Barrens Comprehensive Land Use Plan (hereafter, “the Pine Barrens Plan”), involved a small amount of clearing that would incrementally increase the site’s non-conformance with this standard. The Pine Barrens Commission’s resolution approving this prior Hardship Exemption for what is now known as the northern parcel is contained in **Appendix B**. A Full Environmental Assessment Form (EAF), Parts 1 and 2, has been prepared as a screening and coordination document and will be considered as part of the review in connection with the proposed project (see **Appendix C**). This Expanded EAF, Part 3 discusses the potential impacts identified in the EAF, Parts 1 and 2.

Specifically, this document addresses the potential impacts to the following areas of concern, along with corresponding mitigation measures:

- Water Resources
- Ecology
- Land Use Plans
- Visual Resources and Aesthetics

The information and analyses in this document are provided to assist the Library Board in reaching an informed decision on the required Determination of Significance under the State Environmental Quality Review Act (SEQRA), as codified in Part 617, Title 6, New York Code of Rules and Regulations (6 NYCRR Part 617).

2.0 PROJECT BACKGROUND, HISTORY AND NEED

The Longwood Public Library facility is presently a two-story, 31,550 gross square foot (GSF) structure that was constructed in 1987 and opened in 1988. In 2005, the Longwood Library applied for and was granted a Hardship Exemption from the Pine Barrens Commission for a library application involving a parking area expansion and drainage system improvements. This application involved the tax lots that comprise what is now known as the northern parcel, and totaled 4.54 acres. At that time, the library property exceeded the allowed clearing standard of the Pine Barrens Plan. The approval limited the amount of additional clearing to the 0.197 acres requested, and that the specific landscaping improvements in that application be documented. These landscape improvements have been substantially completed, and are currently being mapped in an as-built plan for submission to the Pine Barrens Commission. In addition, these plantings will be monitored for confirmation of their two-year survival. **Section 4.3.2** contains more detailed information on this Hardship Exemption approval.

Since that time, attendance levels for the library have increased such that the utilization of the library has outgrown the current size and amenities provided by the facility. As a result, the Library Board is seeking to expand and upgrade the current facility to better serve the needs of the public by providing a larger and more energy-efficient facility. The Library Board's internal review and planning process was initiated through a series of public meetings held in 2011, to gather input from the public on the greatest needs within the library. Flyers and workshop summaries of this process are provided in **Appendix D**.

A list of goals or "touchstones" was presented to those who attended the workshop meeting of June 10, 2011. Each participant was then asked to rank the top ten most important touchstones, of which "adequate functions/space" received the greatest number of votes. The remaining nine of the top ten objectives (in order of voted importance) included:

1. Daylighting
2. Staying within budget
3. Aesthetics
4. Traffic flow/alternative delivery
5. Efficient functions
6. Green roof
7. Energy efficient
8. Renewable energy
9. Incorporate outdoor space and access to it & expandability/flexibility (tied)

A comparison of the current library facility with other Brookhaven library facilities (see "*Our Brookhaven neighbors*", on last page in **Appendix D**) illustrates the need for expansion. According to the 2010 Census, the Longwood Public Library serves a population of 65,435 persons, second only to the population of the Sachem Library District. Among libraries with populations greater than 30,000 persons, the Longwood Library District has the smallest facility and the third highest circulation of materials. The Longwood library currently has an annual attendance of approximately 357,000 people, with an attendance of 11.32 people per square foot of library facility. As a result of this analysis and the information gathered during the 2011

workshops, the Library Board determined that an expansion and renovation program would be appropriate at this time.

As noted above, tax lot 23.1 (known as the southern parcel for the proposed project) was purchased by the library in 2009 of Suffolk County Sanitary Code (SCSC) Article 6. This tax lot is approximately 3.35 acres in size, of which an estimated 0.64 acres are freshwater wetlands. The library proposes to use the allowable sanitary flow from the southern parcel (814 gallons per day, gpd) with the sanitary flow of the northern parcel (1,358 gpd), to provide a total allowed flow under Article 6 of 2,172 gpd (see **Section 3.3.3** for additional explanation). This will enable the expanded facility to meet conform to the allowable flow pursuant to Article 6 of the Suffolk County Sanitary Code (SCSC). There is a vacant residence on the southern parcel, which the library will use for dry storage¹. The proposed project does not include any development on the southern parcel, though an estimated 0.23 acres of wetland revegetation are proposed on this parcel, including restoration of 0.05 acres within the existing wetland; the library may use this parcel for passive library use in the future. Assigning the allowable sanitary flow of the southern parcel to the northern parcel may cause the Suffolk County Department of Health Services (SCDHS) to require that this parcel be protected by a Covenant & Restriction (C&R) restricting its future use. **Section 4.3.1** discusses the clearing standard of the Pine Barrens Plan that applies to the project site.

¹ The property was occupied by a single family residence as well as four (4) additional buildings consisting of a cottage, a chicken coop, a metal storage shed and a cat house. In addition, a fully intact office trailer as well as a collapsed office trailer and an office trailer frame were also located on the property. The remaining portions of the property consist of wooded land and a circular, pervious access drive which gains access from Lafayette Street. The trailers and debris have been removed from the site by the Longwood Library.

3.0 DESCRIPTION OF THE PROPOSED PROJECT

3.1 Location

A Location Map of the project site is provided as **Figure 1** (*all figures will be found at the end of the main text*). The project site is 7.89 acres in size and is, for descriptive purposes in this document, comprised of “northern” and “southern” parcels, as follows (see **Figure 2**):

Parcel	Acres	Suffolk County Tax Map (SCTM) Numbers			
		District	Section	Block	Lots
Northern	4.54	0200	402	1	24.9
		0200	403	1	3, 4, 17 & 18
Southern	3.35	0200	402	1	23.1
Total	7.89	---	---	---	---

The Longwood Public Library and a small freshwater wetland (also an active recharge basin) occupy the northern parcel. The facility address is 800 Middle Country Road, located on the southwest corner of Middle Country Road (NYS Route 25) and Yaphank-Middle Island Road (County Route [CR] 21) in the hamlet of Middle Island, Town of Brookhaven, Suffolk County. The project site is bisected in the east-west direction by unimproved Lafayette Street, which parallels Middle Country Road 300 feet to the north. The southern parcel is mostly wooded, but includes a former residence and areas of disturbance, debris and other appurtenant structures that have since been cleaned up and improved; freshwater wetlands occupy its eastern portion.

3.2 Existing Site Conditions

The subject property is currently developed with the Longwood Public Library facility, and associated landscaping and parking on the northern parcel, and an unoccupied former residential structure on the southern parcel. A small (0.08 acre) recharge basin, designated by New York State Department of Environmental Conservation (NYSDEC) as a regulated freshwater wetland, is located in the southern portion of the northern parcel, and the eastern 0.64 acres of the southern parcel are also mapped freshwater wetlands (of which 0.05 acres are disturbed, and will be restored). An aerial photograph depicting the existing site conditions is provided as **Figure 3**. The site is located within/served by the following special planning and/or service districts:

- Suffolk Cooperative Library System
- Middle Island Fire District (see **Figure 4**)
- Suffolk County Water Authority (SCWA)
- Long Island Power Authority (LIPA)/National Grid (formerly KeySpan Energy)
- Suffolk County Police Department, 7th Precinct
- Longwood Central School District (LCSD)
- Groundwater Management Zone III (300 gpd/acre)
- Central Suffolk Special Groundwater Protection Area (SGPA)
- Central Pine Barrens Zone, Compatible Growth Area (CGA)
- Town J-Business-6 Zone (northern parcel; **Figure 5**)
- Town A-Residence-5 Zone (southern parcel; **Figure 5**)

3.3 Design and Layout

3.3.1 Proposed Project

It is noteworthy that despite minimal clearing of natural vegetation on the northern parcel, the proposed revegetation program will provide more natural vegetation for habitat use on the northern parcel than was previously approved in the 2005 Hardship Exemption granted by the Pine Barrens Commission. In fact, with the 0.67 acres of wetlands to be retained and the 0.48 acres of natural revegetation/restoration planned, total natural land/habitat area will be increased on the site, from 3.82 acres to 4.25 acres, an 11.3% increase.

The proposed project would occur primarily on the northern parcel; the only activities proposed on the southern parcel would be planting of 0.23 acres of native revegetation. The project involves the partial demolition of the existing 31,550 GSF library building, the construction of a 13,756 GSF addition to the library structure, and renovations to the retained portion of the structure. The overall increase in building floor space would be 43.60% (see **Table 1**). As illustrated on the **Removals Plan (Sheet L-100)**, the **First Floor Demo Plan (Sheet A-050)**, and the **Second Floor Demo Plan (Sheet A-051) of Appendix A**, demolition will include the removal of about 1,250 SF (footprint) of the western portion of the existing building, removal of a parking area and associated drainage system facilities on the south side of the building, and removal of parking and landscaping features in the southeast portion of the parcel. All expansions and renovations are proposed to be located in areas of the parcel that are already disturbed; none of the existing native vegetation will be removed.

Table 1
FOOTPRINTS AND FLOOR AREAS

	Footprint	Total Floor Space	
	SF	GSF	FAR*
Existing Conditions	22,600	31,550	9.18%
Proposed Project	31,010	45,306	13.18%
Changes	8,410 (37.21%)	13,756 (43.60%)	---

* FAR – floor-area ratio

The proposed project will include the construction of an 8,140 SF (footprint) addition on the west side of the existing building, reconfiguration of the parking area on the south side of the building, installation of pedestrian walkways and landscaping, and reconfiguration of the parking area in the southeast corner of the northern parcel. The building expansion would represent a 37.21% increase in overall building footprint, and would increase the FAR from 9.18% to 13.18%. **Figure 6** depicts the arrangement of the proposed project on the overall site. **Table 2** lists the changes in the site’s coverages and utilization of resources as a result of the proposed development.

The library proposes to incorporate energy and water-saving features and equipment in order to achieve certification under the US Green Building Council’s Leadership in Energy and Environmental Design (LEED®) Program. At the present time, the library has not determined a

final roster of these resource-conserving aspects, nor has a decision been made as to the degree of certification to be sought.

3.3.2 Parking

The site presently has a total of 148 parking spaces. Because the proposed project will be developed on surfaces that are presently landscaped on the west side of the library, and on the paved parking area on the south side of the structure, overall parking will be slightly reduced. Specifically, the proposed project will provide a total of 143 parking spaces. The proposed project includes several minor parking area reconfigurations, limited to the southeastern corner of the main parking area, and a reduction of the parking area on the south side of the library building. In addition, the reconfigured parking area south of the building (0.20 acres) will be constructed of pervious surfaces. A small encroachment involving a row of parking stalls at the south property line will encroach by not more than 6 feet into the Town of Brookhaven Lafayette Street right-of-way. The west end of Lafayette Street only serves to provide access to the vacant south parcel owned by the Library and is established as a dirt driveway. The encroachment will not interfere with any present or future function of this right-of-way. An application for authorization of this encroachment is pending with the Town Highway Department. Finally, reinforced grass pavers will be installed on the west side of this pervious parking area for emergency fire access through Lafayette Street.

3.3.3 Sanitary Wastewater

The library's existing sanitary system consists of an effluent pipe that exits from the west side of the building and leads to a pump station. Effluent is then pumped to two septic tanks, which overflow to five interconnected leaching pools in the site's northwestern corner. As shown in the **Preliminary Sanitary Upgrades** plan (*in a pouch at the end of this document*), the site's permitted sanitary density is 2,172 gpd. It is anticipated that the proposed library will generate a flow rate of 2,100 gpd (the residence to be used for dry storage will account for another 45 gpd in its septic system, for a total project sanitary flow of 2,145 gpd), and as a result, the project will conform to SCSC Article 6 density limitations. No additional septic tanks are necessary for the hydraulic capacity needs, and only one additional leaching pool will be necessary to provide a system that is designed for the proposed flow rate of 2,100 gpd. The new leaching structure will consist of a 10-foot diameter pool with a depth of 14 feet, and has a flow rate capacity of 570 gpd, yielding a total flow rate capacity for the leaching pools of 2,300 gpd. The leaching pool will be located in proximity to the existing pools.

Table 2
SITE AND PROJECT CHARACTERISTICS
Existing & Proposed Conditions

Parameter	Existing Conditions			Proposed Conditions		
	Northern Parcel	Southern Parcel	Total	Northern Parcel	Southern Parcel	Total
Coverages (acres):	---	---	---	---	---	---
Pitch Pine-Oak Forest	0.43	2.11	2.54	0.43	2.11	2.54
Successional Southern Hardwood Forest	0.56	0	0.56	0.56	0	0.56
Revegetated	0	0	0	0.25	0.23 ⁽¹⁾	0.48
Building/Impervious	2.05	0.03	2.08	2.11	0.03	2.14
Unvegetated	0	0.08	0.08	0	0.08	0.08
Landscaped	1.42	0.49	1.91 ⁽²⁾	0.91	0.31	1.22 ⁽³⁾
Recharge Basin/Wetland	0.08	0.59	0.67	0.08	0.59	0.67
Disturbed Wetlands	0	0.05	0.05	0	0	0
Pervious Pavers/Gravel	0	0	0	0.20	0	0.20
Totals	4.54	3.35	7.89	4.54	3.35	7.89
Water Resources:	---	---	---	---	---	---
Water Use/Wastewater Generation ⁽⁴⁾	2,1000			2,145		
Irrigation Demand (gpd, annualized) ⁽⁵⁾	782			500		
Total Water Use (gpd)	2,882			2,645		
Recharge Volume (MGY)	5.89 ⁽⁶⁾			6.03 ⁽⁷⁾		
Nitrogen Concentration in Recharge (mg/l)	3.05 ⁽⁶⁾			3.04 ⁽⁷⁾		

- Note: MGY-million gallons per year; mg/l-milligrams per liter.
- (1) Includes the 0.05 acres of existing Disturbed Wetlands to be Revegetated.
 - (2) No fertilization currently occurs.
 - (3) No fertilization proposed.
 - (4) Per SCDHS design criteria for wastewater system sizing.
 - (5) Assumed irrigated at a rate of 5.5 inches over four-month season.
 - (6) See **Appendix E-2**.
 - (7) See **Appendix E-3**.

3.3.4 Stormwater

The volume of stormwater runoff generated on the site (and requiring adequate handling and recharge capacity) would not be significantly changed by the proposed project. This is because impervious surfaces (on which runoff is generated) would remain nearly unchanged (2.14 acres for the proposed project versus 2.08 acres in the existing condition). Two systems are proposed; one to be comprised of eleven subsurface leaching pools to the north of the library, and the other to be located beneath the reconfigured parking area south of the structure, and comprised of a series of drainage galleys. The southern system will overflow (as presently exists in this area) to the recharge basin adjacent to the east. Overall, the **Preliminary Grading and Drainage Site Plan** (*in a pouch at the end of this document*) shows that the site requires a minimum drainage system capacity of 7,335 cubic feet (CF). The two proposed systems will provide a total drainage capacity of 7,784 CF, which is 449 CF (6.12%) in excess of the minimum required.

3.3.5 Landscaping

The Longwood Public Library confirms that none of the existing 1.42 acres of landscaping on the northern parcel are presently fertilized, and that no fertilizers have been used on-site for at least the past three years. There is no landscaping on the southern parcel. However, all 1.42 acres are irrigated, at a rate of 5.50 inches over the 4-month irrigation season. The proposed project will remove an estimated 0.69 acres of landscaped surfaces, for building expansion and gravel parking surfaces, so that landscaped areas will be reduced to 1.22 acres. This coverage type will continue to not be fertilized. It should be noted, that the proposed revegetation (0.48 acres) plantings would improve the overall site as native species appropriate for both pine barrens and freshwater wetlands habitats. Where necessary, invasive species will be removed, and species appropriate and native to Long Island will be installed in their place.

3.4 Approvals

The following provides a list of approvals needed in connection with the proposed project:

Longwood Public Library, Board of Trustees	Approval of Funding/Implementation
Town of Brookhaven Highway Department	Right-of-Way Encroachment
Suffolk County Department of Health Services	Sanitary System and Water Supply Approvals
Central Pine Barrens Commission	Compatible Growth Area Approval
Central Pine Barrens Commission	Hardship Exemption Approval
NYS Department of Environmental Conservation	Article 24 Freshwater Wetlands Permit (northern parcel)
NYS Department of Environmental Conservation	Article 24 Freshwater Wetlands Permit (southern parcel)
NYS Department of Education	Approval

The project has been designed to comply with the clearing that was approved by the Pine Barrens Commission for the Hardship Exemption it granted in 2005. However, as was the case then, the northern and southern parcels were subject to clearing prior to the enactment of the Pine Barrens Plan in 1995, and so do not presently conform to the applicable clearing standards. As a result, it

is expected that the proposed project, which is comprised of more land than was approved in 2005, will require a new Hardship Exemption (see **Section 4.3.2**). This Expanded EAF includes a Consistency Analysis with the standards of the Pine Barrens Plan (see **Section 4.3.2**), and the applicant has been in contact with the staff of the Pine Barrens Commission, which administers the Pine Barrens Plan. As noted previously, all proposed improvements will be located in already disturbed areas and only minimal amounts of the existing natural vegetation associated with prior disturbed and landscaped areas of the site, will be disturbed. This information will be provided to the Pine Barrens Commission for concurrence with the analysis and, if found to be consistent with the standards of the Pine Barrens Plan, no further review by the Pine Barrens Commission is necessary.

4.0 EXISTING CONDITIONS, ANTICIPATED IMPACTS AND PROPOSED MITIGATION

4.1 Water Resources

4.1.1 Existing Conditions

Surface Waters

A 0.08-acre NYSDEC-regulated freshwater wetland associated with the recharge basin is located in the southern portion of the northern parcel, and a second such wetland, of 0.64 acres (including 0.05 disturbed acres), is located along the eastern portion of the southern parcel. Both of these features are identified as Wetland B-2 on the NYSDEC Freshwater Wetlands Map (Middle Island quadrangle) as illustrated in **Figure 7**. Article 24 of the NYS Environmental Conservation Law (ECL) regulates development within 100 feet of freshwater wetlands, and includes requirements for buffer areas and setbacks from freshwater wetlands. At the present time, the nearest portion of the library parking lot is located approximately 15 feet north of the nearest “Standing Water” elevation of the wetland.

Figure 8 presents the National Wetlands Inventory (NWI) Freshwater Wetland Map for the site and vicinity. As can be seen, there are no NWI-mapped wetlands on the subject site, and NYSDEC Wetland B-2 is not so designated on the NWI map. The nearest NWI-designated wetlands are located southeast of the site, across CR 21 and within a residential subdivision.

Hydrogeologic Conditions

Precipitation entering the ground in the form of recharge passes through the unsaturated zone to a level below which all levels of the subsurface are saturated. This level is known as the “water table”. The water table is equal to sea level on the north and south shores of Long Island, and rises in elevation toward the center of the Island. The highest level of the water table forms a line, and is referred to as the “groundwater divide”. The changes in elevation of the water table create a hydraulic gradient that causes groundwater to flow downgradient. Based on the configuration of the water table, the horizontal movement of groundwater beneath the site appears to be southeastward toward the Carmans River.

The United States Geological Survey (USGS), in conjunction with other agencies maintains a network of observation wells for the purpose of determining the elevation of groundwater throughout Long Island, and the USGS prepares maps of groundwater levels on a periodic basis. Using the most recent groundwater map available (**Figure 9**), the elevation of groundwater beneath the site is approximately 50 feet above sea level (asl; **USGS, 2009**), although levels would be expected to vary slightly between years and on a seasonal basis. The highest surface elevation at the site is 89 feet asl in the western portion of the southern parcel, and the lowest surface elevation is 52 feet asl which is located in the southeastern portion of the property and is associated with the recharge basin. Thus, the maximum depth to groundwater on site is in the range of approximately 39 feet in the western portion of the site; and the minimum depth to groundwater is approximately 2 feet at the base of the recharge basin.

Groundwater Quality

Water quality data for the area was obtained from the 2012 SCWA Annual Water Quality Statement. The data reviewed was specifically from wells within water supply Distribution Area 15, which services the subject property, and is therefore expected to be most indicative of groundwater quality in the vicinity of the subject site. The nearest wellfield is the Bailey Road Wellfield, located approximately 3,100 feet to the north of the subject site. The data for this Distribution Area is presented in **Table 3**, which indicates a nitrate concentration in groundwater of 3.29 mg/l.

Table 3
GROUNDWATER QUALITY DATA, 2011
SCWA Distribution Area 15

Parameter	Average Value	Maximum Contaminant Limit (MCL)
Inorganics		
Alkalinity, total mg/l	43.7	n/a
Aluminum, mg/l	0.05	n/a
Ammonia, free mg/l	ND	n/a
Antimony, µg/l	ND	6
Arsenic, µg/l	ND	10
Barium, mg/l	0.02	2
Boron, mg/l	ND	n/a
Bromide, mg/l	ND	n/a
Cadmium, mg/l	ND	5
Calcium, mg/l	20.6	n/a
CO ₂ , calculated mg/l	7.4	n/a
Chloride, mg/l	21.5	250
Chromium, µg/l	ND	100
Cobalt-59, µg/l	ND	n/a
Color, color units	ND	15
Copper, mg/l	ND	AL=1.3
Dissolved solids, total mg/l	123	n/a
Fluoride, mg/l	ND	2.2
Hardness, total mg/l	69.7	n/a
Iron, µg/l	67	300
Lead, µg/l	ND	AL=15
Lithium, µg/l	ND	n/a
Magnesium, mg/l	4.42	n/a
Manganese, µg/l	30	300
Molybdenum, µg/l	ND	n/a
Nickel, µg/l	0.7	100
Nitrate, mg/l	3.17	10
Perchlorate, µg/l	1.07	18
Phosphate, total mg/l	0.46	n/a
pH	7.2	n/a
pH, field pH units	7.1	n/a

Potassium, mg/l	1.25	n/a
Silicon, mg/l	6.9	n/a
Sodium, mg/l	14.4	n/a
Specific conductance, µmho/cm	204	n/a
Strontium-88, mg/l	0.06	n/a
Sulfate, mg/l	10.0	250
Temperature, field °Centigrade	11	n/a
Tin, µg/l	ND	n/a
Titanium, µg/l	ND	n/a
Total Organic Carbon (TOC), mg/l	0.45	n/a
Turbidity, NT units	ND	5
Vanadium, µg/l	ND	n/a
Zinc, µg/l	ND	5
Synthetic Organic Compounds: Pesticides, Herbicides, Pharmaceuticals & Personal Care Products***		
Carbamazepine, µg/l	0.10	n/a
1,4-Dioxane, µg/l	0.3	50
Volatile Organic Compounds***		
Disinfection By-Products***		
Chlorine residual, mg/l	0.9	4
Trihalomethanes, total, µg/l	1.3	80

Source: 2011 SCWA Drinking Water Report for Zone 15.

Notes: Concentration reported represent average concentration for each zone.

ND - Not detected.

N/A - Not applicable.

n/a - No standards for parameter

AL - Action Level.

* - The MCL is the sum of the two starred compounds.

** - The MCL is the sum of the four starred compounds.

*** - No others detected.

Based on the SCWA data, none of the detected compounds were found to be above their respective MCLs. These levels are published by the State, and reflect maximum contaminant levels set by the US Environmental Protection Agency (EPA) under the Safe Drinking Water Act of 1974 (amended in 1986 and 1996).

Groundwater Budget

The groundwater budget for an area is expressed in the hydrologic budget equation, which states that recharge equals precipitation minus evapotranspiration plus overland runoff (**SCDHS, 1987-2; p. 5-29**). This indicates that not all rain falling on the land is recharged to groundwater. Loss in recharge is represented by the sum of evapotranspiration and overland runoff. The equation for this concept is expressed as follows:

$$R = P - (E + Q)$$

where: R = recharge
P = precipitation
E = evapotranspiration
Q = overland runoff

Nelson, Pope & Voorhis, LLC has exclusive use of a microcomputer model developed for the purpose of predicting both the water budget of a site and the concentration of nitrogen in recharge. The model, referred to as SONIR (Simulation of Nitrogen in Recharge), utilizes a mass-balance concept to determine nitrogen in recharge. Critical in the determination of nitrogen concentration is a detailed analysis of the various components of the hydrologic water budget, including recharge, precipitation, evapotranspiration and overland runoff. The basis for this method of nitrogen budget analysis is well established, and 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 (BURBS A simulation of the Nitrogen Impact of Residential Development on Groundwater; Hughes et al., 1985). The SONIR model includes four (4) sheets of computations: 1) Data Input Field; 2) Site Recharge Computations; 3) Site Nitrogen Budget; and, 4) Final Computations. There are a number of variables, values and assumptions concerning hydrologic principles, which are discussed in detail in a user manual developed for the SONIR Model and provided in **Appendix E-1**.

The model has been run for water budget and nitrogen parameters for the existing site conditions. The results are presented in **Appendix E-2**. The site currently generates a total recharge volume of 5.89 MGY.

Sanitary Flow

The sanitary system on the northern parcel is comprised of a septic tank with a capacity of 2,560 gpd and leaching pools capable of handling 1,730 gpd. In order to adequately distribute sanitary wastewater to the sanitary system, the system utilizes a pump station that can accommodate a total flow of 5,760 gpd. Based on flow rates promulgated by the SCDHS to establish design flows for system design, the site currently uses (and generates a sanitary flow of) 2,100 gpd. The septic system on the southern site is presently unused.

Nitrogen Concentration in Recharge

A more detailed assessment of the existing site conditions in regard to the quality of its groundwater resources can be made by calculating the total nitrogen input to groundwater, diluted by the total volume of recharge water. The resulting figure (see **Appendix E-2**) indicates the expected nitrogen concentration in recharge. SONIR was utilized to determine the present recharge and nitrogen entering the site; this calculation estimates a nitrogen concentration of 3.05 mg/l.

Groundwater-Related Plans & Studies

Long Island Comprehensive Waste Treatment Management Plan (the 208 Study, 1972) - The Long Island Regional Planning Board (LIRPB), in conjunction with other agencies, prepared a management plan for Long Island groundwater resources in 1978 under a program funded by Section 208 of the 1972 Federal Water Pollution Control Act Amendments. The purpose of the 208 Study was to investigate waste disposal options and best management practice for ground and surface water protection. The study delineated Hydrogeologic Zones for the formulation of management plans based on groundwater flow patterns and quality (**Koppelman, 1978**). The subject site is located in Groundwater Management Zone III, which is characterized as a deep

recharge zone with vertical flow (SCDHS, 1984). Water from this system is ultimately discharged into Bellport Bay.

Stormwater, as runoff, is the vehicle by which pollutants move across land and through the soil to groundwater or surface waters. Contaminants accumulate or are disposed of on land and improved surfaces. Sources of contaminants include:

- animal wastes
- highway deicing materials
- decay products of vegetation and animal matter
- fertilizers
- pesticides
- air-borne contaminants deposited by gravity, wind or rainfall
- general urban refuse
- by-products of industry and urban development
- improper storage and disposal of toxic and hazardous material

Nationwide Urban Runoff Program (NURP Study, 1982) - To assess the impact that this increase in recharge may have on groundwater resources underlying the site, the NURP Study was consulted. In 1982, the Long Island Regional Planning Board prepared the LI Segment of the NURP Study (LIRPB, 1982). This program attempted to address, among other things, the following:

- the actual proportion of the total pollutant loading that can be attributed to stormwater runoff, given the presence of other point and non-point sources and conditions within the receiving waters;

The purpose of the NURP Study, carried out by the US Geological Survey, was to determine:

- the source, type, quantity, and fate of pollutants in stormwater runoff routed to recharge basins;
- the extent to which these pollutants are, or are not attenuated as they percolate through the unsaturated zone.

In order to accomplish this, five recharge basins, located in areas with distinct land use types, were selected for intensive monitoring during and immediately following storm events. Five recharge basins, three in Nassau and two in Suffolk, were chosen for the study on the basis of type of land use from which they receive stormwater runoff. While this document and the testing conducted dates back to 1982, it is a useful reference given the comprehensive nature of the sampling of sediments from recharge facilities of various land use types. There are no more up-to-date references that resulted in the generation of such comprehensive empirical data for various land use practices on Long Island. The following is a listing and description of each drainage area:

Site Location

Centereach
Huntington
Laurel Hollow
Plainview
Syosset

Land Use

Strip Commercial
Shopping Mall, Parking Lot
Low Density Residential (1 acre zoning)
Major Highway
Medium Density Residential (1/4 acre zoning)

There are no land uses included in the NURP report that are directly comparable to the proposed project; however, for general comparison purposes, the most similar would be strip commercial development (due to the presence of a significant roadway and proximity of residential uses typical of such development). As a result, the Centereach site is the example analyzed here.

The empirical data generated by the NURP Study for this land use type are shown in **Table 4**.

Table 4
STORMWATER IMPACTS FROM LAND USE
NURP Study, Centereach Site (Strip Commercial)

Parameter	Strip Commercial	Standard
Spec. Cond (umhos)	104	[n]
pH	---	6.5-8.5
Turbidity (NTU)	5.45	5
Hardness (mg/l)	33	[n]
Calcium (mg/l)	7.5	[n]
Magnesium (mg/l)	1.4	[n]
Sodium (mg/l)	9.5	[n]
Potassium (mg/l)	1.65	[n]
Sulfate (mg/l)	11.0	250
Fluoride (mg/l)	0.1	1.5
Chloride (mg/l)	8.1	250
Nitrogen-Total (mg/l)	0.91	10
Phosphorus (mg/l)	0.01	[n]
Cadmium (ug/l)	1.0	10
Chromium (ug/l)	1.0	50
Lead (ug/l)	4.5	50
Arsenic (ug/l)	1.0	25
Coliform (MPN)	3.0	[n]
Coliform, fecal	3.0	[n]

Source: Koppelman, 1982, p. 26-29

[n] - no standard for parameter

Based upon information presented in the NURP Study the volume of storm water recharge anticipated to be generated by the current library use is not anticipated to contain significant concentrations of pollutants due to the following reasons:

- The study found that storm water runoff concentrations of most of the inorganic chemical constituents for which analyses were performed were generally low and in most cases, fell within the permissible ranges.

- In general, with the exception of lead and chloride, the concentrations of inorganic chemicals measured in storm water runoff do not have the potential to adversely affect groundwater quality.
- The number of coliform and fecal streptococcal indicator bacteria in storm water range from 10^0 MPN to 10^{10} MPN per acre per inch of precipitation.
- Coliform and fecal streptococcal indicator bacteria are removed from storm water as it infiltrates through the soil.

As noted above, the vertical separation between the water table and the land surface at the site varies from approximately 39 feet to 2 feet. Based on the conclusions of the NURP Study, it is expected that overland flow and volatilization, and the unsaturated zone (i.e., a zone through which recharge percolates downward prior to reaching the water table), will attenuate or filter many of the pollutants that may be contained in the recharge water generated on site.

Suffolk County Comprehensive Water Resources Management Plan (SCCWRMP, 1987) - The SCDHS is presently updating its SCCWRMP, which was prepared in 1987), to reflect more recent development trends, resource plans and studies, and government programs and regulations pertinent to water supply and water resource protection. Task 15 of this update determined groundwater contributing areas to surface water and provides useful information with respect to the subject site. Briefly, a map such as that depicted in **Figure 11** delineates the geographic limits of the area wherein groundwater would naturally flow horizontally and discharge from the ground and into a surface water body such as a creek, river, pond, lake, etc. The determination of groundwater contributing areas was conducted by CDM, a consultant to SCDHS, using a regional groundwater flow model. **Figure 10** depicts the site's relation to the headwaters of the Carmans River. Specifically, the low area along the site's eastern boundary occupies a portion of the dry riverbed. **Figure 11** illustrates the groundwater contributing areas to the Carmans River. The CDM groundwater model results in the most accurate determination of such contributing areas available, based on actual groundwater flow and subsurface outflow as determined using the regional groundwater flow model. It is noted that the site is not within the mapped 50-year travel time groundwater contributing area to the Carmans River as depicted in the Task 15 updated contributing area boundary prepared for SCDHS in 2009. According to the original 2003 SCCWRMP, the subject property is located just north of the 101- to 500-year time of travel groundwater contributing area to the Carmans River.

Special Groundwater Protection Area Plan (SGPA, 1992) - The Long Island SGPA Plan was prepared by the LIRPB to study land use and groundwater quality within the several SGPAs on Long Island. A "Special Groundwater Protection Area" is defined in the NY ECL as:

A recharge watershed area within a designated sole source aquifer area contained within counties having a population of one million or more which is particularly important for the maintenance of large volumes of high quality groundwater for long periods of time. For the purposes of this article, each "special groundwater protection area" shall be classified as a critical area of environmental concern as used under article eight of this chapter (Section 55-0107 ECL Article 55).

The project site is located within the Central Suffolk SGPA (West) as defined under NYS law. The SGPA Plan makes specific land use recommendations for development within each SGPA, as well as general groundwater management recommendations that are applicable to all of the identified SGPAs. The Pine Barrens Plan and more recent planning studies provide more up-to-

date recommendations for the subject site (see **Section 4.3.1**). Where restrictions of the Pine Barrens Plan duplicate those of the SGPA Plan, the former supersede those of the latter.

The plan recommends Commercial Use for the library site (see **Figure 11**). Groundwater-related recommendations address, among other issues, the potential for impacts from recharge of sanitary wastewater and the importance of conformance to SCSC Article 6 as a mechanism to avoid such impacts.

Carmans River Watershed Protection and Management Plan (2012) - The Town has completed a draft plan for the protection and management of the Carmans River watershed (hereafter, “the Carmans River Plan”), which has been subject to SEQRA review (in the form of a Draft GEIS, dated March 2012). At the current time, however, the Carmans River Plan has not been adopted, but builds on the on-going update of the SCCWRMP (discussed above).

As discussed above, the SCCWRMP delineated the groundwater contributing area of the Carmans River; **Figure 11** depicted this area in relation to the subject property. Subsequent analysis for the Carmans River Plan refined this delineation (see **Figure 13**). As can be seen in this updated figure, the subject site remains outside the groundwater contributing area of the Carmans River. In addition, **Figure 14** of the Carmans River Plan shows that the subject site is located beyond (i.e., upstream of) the portion of the Carmans River wherein there is “*no groundwater baseflow under long term average conditions.*” These two figures support a conclusion that, under current conditions, recharge generated on the subject site does not contribute to groundwater baseflow into the Carmans River.

An additional consideration supporting a conclusion that the subject site does not contribute to conditions in the Carmans River concerns nitrogen in recharge. In general, nitrogen load from the site (from precipitation and sanitary wastewater) is reduced through two mechanisms of natural attenuation. The SONIR model, discussed above, accounts for reduction of nitrogen in rainfall within the root zone. Extensive research by **Hughes & Porter (1983)** and the **LIRPB (1984)** carefully documented the uptake of nitrogen by plants and the storage of nitrogen in thatch and soils within the root zone. The resultant leaching rates are applied within the SONIR model. In addition, SONIR accounts for off-gassing of nitrogen through sanitary treatment systems based on **Hughes & Porter (1983)**.

Research performed by **Valiela et al. (1997, 2000)** and supported by **Carmichael, et al. (2004)**, finds that natural attenuation also occurs in the vadose (unsaturated) zone. Review of these published sources finds support for a 61% attenuation factor in the vadose zone. Valiela and Carmichael also documented attenuation factors that occur within the aquifer of as much as 35%. Local research conducted by the SUNY Department of Geosciences for public water supply wells in Northport found overall nitrogen attenuation within a “system” of as much as 50%, but could only attribute 15% to denitrification occurring within the aquifer (**Young, 2007**).

These references support the conclusion that additional reduction of nitrogen concentrations occurs after discharge as a result of chemical, and physical processes in the vadose zone and in groundwater. Processes involving nitrification and denitrification occur in aerobic and anoxic environments in the various groundwater and soil media through which contaminants pass.

Physical processes include adsorption, advection and dispersion, which tend to reduce nitrogen concentrations with distance from a source.

Given that the nitrogen concentration in site-generated recharge of 3.05 mg/l is well within the NYS standard of 10 mg/l, that the Carmans River Plan indicates that the site is outside the contributing area of the Carmans River, and that there are significant mechanisms that naturally attenuate nitrogen in groundwater, no significant adverse impacts to the Carmans River are attributable to the subject site.

4.1.2 Anticipated Impacts

Surface Water

The proposed project includes minor parking lot modifications and landscaping that will situate parking within the 100-foot regulated area of the wetland on the northern parcel. Specifically, a new curb and pavement will be located within approximately 15 feet of the recharge basin. As a result, the proposed project will require an Article 24 wetlands permit from the NYSDEC. It is noted that the pavement will lie within an existing landscaped area, so that no natural buffer will be removed. Further, any pavement will contain all runoff generated on impervious surfaces associated with the parking/driveway expansion, and thus will not cause an impact due to runoff. Finally, the recharge basin is a man-made feature that was constructed to handle runoff during the original parking lot construction approved by the State in 1987; it is not a high-quality native wetland area. NYSDEC was consulted during the preparation of parking lot configuration plans for the proposed library expansion. A NYSDEC freshwater wetland permit will be applied for and obtained in connection with the parking lot reconfiguration. Approval of such a permit will affirm that no impact to this feature is expected. In addition, wetland restoration and buffer revegetation planned on the south parcel may also required NYSDEC Article 24 approval; these proposed activities will be incorporated into the NYSDEC permit..

Hydrogeologic Conditions

Based on the calculated increase of 2.4% in site-generated recharge volume due to the proposed project (see below), no significant impacts in hydrogeologic conditions beneath the site are anticipated. Runoff will be accommodated in drainage structures designed to retain and recharge stormwater based on engineering design standards. This additional volume is not anticipated to be sufficient to raise water table elevation or reconfigure its shape, so that no change in the direction of flow in shallow groundwater would occur, particularly since runoff retention will be distributed across the site, the increase in volume is not significant and the system will be designed to handle the flow. The horizontal movement of groundwater beneath the site would remain southeastward.

Groundwater Quality

The proposed project involves the expansion and partial renovation of an existing public library structure, with some minor exterior improvements. As such, other than small containers of store-bought cleaners, no significant amounts of potentially toxic or potentially hazardous activities or use of chemical substances would be expected. With the exception of landscape materials these items would be stored on the interior of the building in their manufactured packaging and inaccessible to non-employees. The building will be constructed on a concrete floor and, while

any spillage is unlikely, if such were to occur, it would be indoors on an impervious surface where library personnel could ensure containment and cleanup of such an incident.

The project will be required to comply with the regulations and restrictions outlined in Articles 6, 7 and 12 of the SCSC, which set density limitations as well as established regulations regarding the use, handling and storage of hazardous or toxic materials in a deep flow recharge area.

In consideration of the above, no threats to groundwater quality would be present on the site, and no impacts to groundwater quality are expected.

Groundwater Budget

Utilizing the same mass balance model described previously, the water balance and concentration of nitrogen in recharge was calculated for the proposed project. **Table 2** provides a tabulation of existing and proposed site conditions. These coverage quantities were used in the SONIR model to obtain the results described herein.

The SONIR computer model results for the proposed project (**Appendix E-3**) indicate that a total of 6.03 MGY of water will be recharged on the site. This represents an increase in recharge generated on the property of approximately 2.4%.

Sanitary Flow

Based on SCDHS design flow rates, it is expected that the proposed project will consume a slightly greater volume of water for domestic purposes than the existing structure (2,145 gpd versus 2,100 gpd), and so will generate a slightly greater volume of sanitary wastewater. In order to properly treat this volume, the proposed project will utilize and expand the existing on-site septic system. This system will be subject to the review and approval of the SCDHS, ensuring that no impact to groundwater conditions would occur.

Nitrogen Concentration in Recharge

The concentration of nitrates (as nitrogen) in this recharge is anticipated to be 3.04 mg/l, representing a 0.01 mg/l decrease from the current conditions (see **Appendix E-3** and **Section 4.1.1**). This concentration is well below the NYSDEC standard of 10 mg/l for nitrogen, is less than the existing concentration of nitrogen in the local public water supply (3.29 mg/l; see **Section 4.1.1**).

Groundwater-Related Plans & Studies

Long Island Comprehensive Waste Treatment Management Plan (the 208 Study, 1972) - As mentioned previously, the subject site is located in Groundwater Management Zone III. In this zone, much of the area is in low density, primarily non-agricultural, land use. It has been recommended that this zone should be protected by applying land use restrictions as well as strict pollution source controls. This designation allows development of the subject property in accordance with all applicable zoning regulations as long as it is compatible with other property uses in the region. It is recommended in the 208 Study that development in this zone utilize public sewers if available, or provide for wastewater collection/treatment where the wastewater generation rate is 300 gpd/ac or more. As shown on the **Preliminary Sanitary Upgrades** plan, the project site encompasses the sanitary density of 7.24 net acres, which allows for a sanitary

flow of 2,172 gpd. As the project will generate 2,145 gpd, the proposal conforms to this requirement, and the proposed septic tank/leaching pool system can be used to treat wastewater.

The proposed project involves a building expansion that will connect to an existing sanitary system, thereby limiting the potential for impacts associated with sanitary discharges. Adequate depth to groundwater is present on the site in the proposed area of development (between 2 and 39 feet) to allow for sufficient filtration of pollutants from on site sanitary and drainage systems.

Review of sanitary system, drainage system and other site improvement locations will be conducted by the SCDHS. Stormwater from the building and impervious surfaces will be collected in a drainage system and conveyed to either of two subsystems, one of which would overflow to the existing recharge basin. The drainage system will have sufficient capacity to accommodate stormwater runoff as required by the Town; the proposed capacity will be 7,784 CF, which exceeds the engineering design minimum capacity of 7,335 CF.

In addition, the 208 Study recommends: 1) that stormwater runoff be controlled on-site by preventing sediments, nutrients, metals, organic chemicals and bacteria from reaching surface and, eventually, ground waters; 2) that on-site disposal systems should be maintained properly; and 3) fertilizer use should be minimized on lawn areas.

In consideration of the above, the proposed project is designed to implement those recommendations of the 208 Study that involve groundwater protection and best management practice for protection of water supply and management of wastewater, and therefore no adverse impacts are anticipated.

Nationwide Urban Runoff Program (NURP Study, 1982) - It is anticipated that the volume of runoff generated on the site would be slightly increased in comparison to that of the existing condition. As a similar quantity of runoff will be discharged to the drainage system and the continued effects of volatilization and attenuation (as predicted by studies conducted for the NURP Study), which reduce pollutant concentrations, due to stormwater impacts are not expected to be significant. The project will not require a NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001), as the project will not disturb 1 or more acres of land. The project will minimize the potential for adverse impacts from stormwater runoff, by expanding the site's existing drainage system as necessary. Site grading is designed to convey stormwater to drainage inlets, and runoff from impervious roadways will be conveyed to the drainage system.

Development of the site is not anticipated to significantly increase erosion/sedimentation or stormwater impacts as a result of proper site design and grading procedures and incorporation of appropriate mitigation measures. The site will be subject to extensive erosion control requirements, and all drainage will be contained within the site using a subsurface drywell stormwater retention system. An Erosion Control Plan will be prepared prior to development and the control measures will include:

- field delineation of areas to remain undisturbed with temporary fencing,
- Use of silt fence and flow diversion practices on downslope areas to prevent stormwater from impacting the adjacent wetland,

- Inlet protection, temporary barriers installed for the purpose of reducing sediment from entering storm drains before stabilizing the contributing drainage area, will also be constructed on the site.
- Retention of all drainage on site,
- All man-made slopes not to exceed 1:3, and inspection by engineering personnel during construction.

As a result of the mitigation measures noted above, it is not anticipated that the soil and/or drainage-related impacts would occur.

As a result of the continued use and expansion of the site's drainage system use, coupled with proper erosion and sediment control during construction and under post-construction, it is expected that impacts due to stormwater will not occur.

Suffolk County Comprehensive Water Resources Management Plan (SCCWRMP, 1987) - Based on **Figure 11** of the SCCWRMP and supported by **Figure 13** (of the Carmans River Plan), the site is not located within the 50-year travel time groundwater contributing area to the Carmans River.

Special Groundwater Protection Area Plan (SGPA, 1992) - Similar to the existing condition, the proposed project does not conform to the land use recommended for the site by the SGPA Plan, in that it would maintain and enhance the existing Institutional Use of the site, where the SGPA Plan recommends Commercial Use at this location. However, potential impacts from on-site recharge of sanitary wastewater will be minimized by the continued use and expansion of the on-site septic system, which will be subject to the review and approval of the SCDHS. The proposed project does not exceed the allowed sanitary flow under SCSC Article 6.

Carmans River Watershed Protection and Management Plan (2012) - Similar to the discussion presented in **Section 4.1.1**, the proposed project is not expected to result in any adverse impacts to the quality of water in the Carmans River. As presented in **Appendix E-3**, the proposed project will generate an overall nitrogen concentration in recharge of 3.04 mg/l, which is a small decrease in this value as compared to the existing condition. The same attenuating factors will operate to reduce the level of nitrogen in recharge as currently operate, and the project will conform to the requirements of Article 6, which provides an additional level of control over this potential source of impact.

4.1.3 Proposed Mitigation

- The use of on-site sanitary systems in conformance with SCSC Article 6 density requirements will minimize impacts to groundwater, mitigating the SGPA Plan's recommendation for commercial use on the subject property.
- Proper stormwater handling will be employed and an Erosion Control Plan will be prepared to ensure mitigation of potential erosion impacts.
- The proposed project will obtain two ECL Article 24 Freshwater Wetlands permits from the NYSDEC, which would ensure that no impact to either of the two on-site regulated wetland would occur.

- The project has been designed so that all development will occur on surfaces that are already developed for the existing library operation; only minimal clearing of natural vegetation is expected.
- Due to the depth of the natural water table underlying the site (between 2 and 39 feet) and permeability of subsurface soils underlying the site, development of the subject site is not anticipated to adversely impact groundwater resources or the natural water table.
- The SONIR computer model results for the proposed project indicate that a total of 6.03 MGY will be recharged on the site. This represents an increase in recharge generated on the property of approximately 2.4%. The concentration of nitrates (as nitrogen) in this recharge is anticipated to be slightly reduced by to the proposed project to 3.04 mg/l, representing a 0.01 mg/l decrease from the current conditions. This concentration is well below the NYSDEC standard of 10 mg/l for nitrogen.
- All stormwater runoff generated on developed surfaces of the northern parcel will be collected and recharged on-site in the expanded drainage system on the northern parcel, which will be subject to the review and approval of the Town.

4.2 Ecology

4.2.1 Existing Conditions

The subject property is currently comprised of the library, landscaping and parking, a recharge basin, and a small area of wooded land on the northern parcel, and a vacant residential building and vegetated land on the southern parcel. Landscaping occupies about 1.91 acres (24.21%), while the library, its associated parking area and the vacant residence total 2.08 acres (26.36%) of the site. Pitch Pine-Oak Forest occupies the majority of the natural area within the property, totaling approximately 2.54 acres (32.19%) of the site. The remainder of the natural area consists of Successional Southern Hardwood Forest, which occupies 0.56 acres (7.10%) of the site. The recharge basin/wetland areas occupy 0.72 acres (9.12%). **Figure 15** depicts the various habitats identified on the subject property. **Table 5** identifies the acreage of each habitat on the subject site.

Table 5
EXISTING HABITAT QUANTITIES

Habitat Type	Acres	Percent
Pitch Pine-Oak Forest	2.54	32.19%
Successional Southern Hardwood Forest	0.56	7.10%
Buildings/Impervious	2.08	26.36%
Unvegetated	0.08	1.01%
Landscaped	1.91	24.21%
Wetland/Recharge Basin	0.67	8.49%
Disturbed Wetlands	0.05	0.63%
TOTAL	7.89	100.00%

Vegetation

The following descriptions were taken from **Edinger (2002)**, which describes the natural habitat identified on site.

Pitch pine-oak forest: a mixed forest that typically occurs on well-drained, sandy soils of glacial outwash plains or moraines; it also occurs on thin, rocky soils of ridgetops. The dominant trees are pitch pine (*Pinus rigida*) mixed with one or more of the following oaks: scarlet oak (*Quercus coccinea*), white oak (*Q. alba*), red oak (*Q. rubra*), or black oak (*Q. velutina*). The relative proportions of pines and oaks are quite variable within this community type. At one extreme are stands in which the pines are widely spaced amidst the oaks, in which case the pines are often emergent above the canopy of oak trees. At the other extreme are stands in which the pines form a nearly pure stand with only a few widely spaced oak trees. The shrublayer is well-developed with scattered clumps of scrub oak (*Quercus ilicifolia*) and a nearly continuous cover of low heath shrubs such as blueberries (*Vaccinium pallidum*, *V. angustifolium*) and black huckleberry (*Gaylussacia baccata*). The herbaceous layer is relatively sparse; characteristic species are bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), and Pennsylvania sedge (*Carex pensylvanica*). Characteristic birds include rufous-sided towhee (*Pipilo erythrophthalmus*), common yellowthroat (*Geothlypis trichas*), field sparrow (*Spizella pusilla*), prairie warbler (*Dendroica discolor*), pine warbler (*Dendroica pinus*), blue jay (*Cyanocitta cristata*), and whip-poor-will (*Caprimulgus vociferus*). At least two potential regional variants are known or suspected. The typical coastal variant on Long Island and the inland variant of upstate New York.

Successional Southern Hardwood forest: a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. Characteristic trees and shrubs include any of the following: American elm (*Ulmus americana*), slippery elm (*U. rubra*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), box elder (*Acer negundo*), silver maple (*A. saccharinum*), sassafras (*Sassafras albidum*), gray birch (*Betula populifolia*), hawthorns (*Crataegus* spp.), eastern red cedar (*Juniperus virginiana*), and choke-cherry (*Prunus virginiana*). Certain introduced species are commonly found in successional forests, including black locust (*Robinia pseudo-acacia*), tree-of-heaven (*Ailanthus altissima*), and buckthorn (*Rhamnus cathartica*). Any of these may be dominant or codominant in a successional southern hardwood forest. Southern indicators include American elm, white ash, red maple, box elder, choke-cherry, and sassafras. This is a broadly defined community and several seral and regional variants are known.

As noted, the forested habitat found on site is best characterized as the remnant of a Pitch Pine-Oak Forest, which comprises 2.54 acres (32.19%) of the site and Successional Southern Hardwood Forest, which encompasses 0.56 acres (7.10%) of the site. The species composition found on-site suggests that the forested area on the west side of the site was once fully characteristic of Pitch Pine-Oak Forest that has since been altered. White pine and red oak dominate the tree canopy, while low bush blueberry and multiflora rose dominate the understory. Other associated vegetation observed within this habitat include black oak, white oak, black cherry, red cedar, flowering dogwood, autumn olive, honeysuckle, forsythia, wisteria, Oriental bittersweet, butter and eggs, garlic mustard, Pennsylvania sedge, striped wintergreen, greenbriar and brambles. No pitch pine currently exists on the subject site however, pitch pine does occur on the property to the south suggesting that the forested area on site is a small part of the larger community to the south.

The naturally vegetated area on the east side of the property is best described as Successional Southern Hardwood forest. This area contains large oaks that are remnant of the previous

community located on site. This area is now dominated by Norway maple, black cherry, autumn olive and multiflora rose. Other species associated with this area include honey locust, red oak, white oak, red cedar, white pine, winged sumac, honeysuckle, periwinkle, mugwort, garlic mustard, field mustard, dandelion and mullein.

The review of NYSDEC Freshwater Wetland maps identifies freshwater wetland B-2 as being located in the southern part of the northern parcel (the recharge basin) and the eastern portion of the southern parcel (Figure 7). This wetland is not identified on the National Wetlands Inventory (Figure 8).

Freshwater wetlands are important ecological communities. These habitats are generally more productive than upland habitats, and are typically high in both plant and animal diversity. Wetlands are also vital in controlling floodwaters and filtering pollutants, and are valuable as recreation areas and as refuge for rare species. As the intrinsic value of wetlands has become recognized, they have received increasing protection from Federal, State, and local regulations and are often prioritized for public acquisition and preservation. Wetland boundaries are generally defined by the presence of significant numbers of indicator plant species which are typical of flooded or waterlogged soils. The recharge basin is a man-made feature that was constructed to handle runoff during the original parking lot construction approved by the State in 1987; it is not a high quality native wetland area. It is noted that any activity to occur within 100 feet of the wetland boundary will require an Article 24 permit from the NYSDEC.

Wildlife

Relatively few wildlife species were observed on-site, although it is expected that the property should support some wildlife species common to suburban and forested habitats, particularly those that are more tolerant of human activity. Species that avoid humans, and/or those that are sensitive to developed areas and activities associated with such properties are less likely to inhabit the subject site and are not expected to be abundant in the surrounding areas.

Avian species that might be expected on the property include a variety of woodpeckers, wrens, titmice, nuthatches, kinglets, thrushes, creepers, flycatchers, swallows, warblers, corvids, thrashers, orioles and blackbirds, doves, starling, grosbeaks, finches, towhees, juncos, and sparrows. During the warmer months, a variety of warblers may also migrate into the area. Black capped chickadees, robins and mockingbirds were heard on the subject property during NP&V site visits. Data from the 2004 Breeding Bird Survey for the census block that contains the site was obtained from the NYSDEC (Appendix F-1). This study surveyed the entire State by 25 km² census blocks over a five-year period (2000 to 2004) to determine the bird species which breed within the State. Most of the species listed by the NYSDEC breeding bird survey are likely to be found on site, with the exception of species common to habitats not found on site. No unique species were sighted during field inspections on the site nor are they expected, given the prior site disturbance and level of activity in the area.

A variety of small mammals would be expected and include the eastern chipmunk, eastern cottontail, eastern mole, house mouse, meadow-jumping mouse, white-footed mouse, masked shrew, short-tailed shrew, eastern gray squirrel, pine vole and long-tailed weasel. Of the larger mammals, the Virginia opossum and raccoon would also be expected to utilize the property,

although in somewhat lesser numbers than smaller mammals. No mammals were observed during NP&V site visits.

Among amphibian species, the spring peeper, eastern spadefoot toad, red-back salamander, and marbled salamander are expected, as they are found in upland habitats. The red-backed salamander is the most common salamander on Long Island, and is highly terrestrial. It prefers a dry woodland habitat with plenty of leaf litter and fallen logs to forage for insects (**Bishop, 1943**), and generally lays its eggs in clumps on damp logs or moss (**Conant and Collins, 1991**). The marbled salamander may also be present. The most likely reptiles to be present on site are the colubrid snakes, including the eastern garter snake and eastern milk snake. The only turtle species common to terrestrial habitats on Long Island is the eastern box turtle, which requires very little water (**Obst, 1988**). The box turtle is found in a variety of habitats, although it prefers moist woodlands, and would be expected on site and in the surrounding areas.

Rare and Endangered Species/Unique Habitat Potential

No rare, threatened or endangered plants were observed on site. The NYS Natural Heritage Program (NHP) was contacted to determine if there are any records of rare plants or wildlife in the vicinity. **Appendix F-2** includes a copy of the correspondence received from the NHP. The Program lists one community of special concern, one endangered amphibian, and eight threatened or endangered plants within the vicinity of the proposed project. Five historical records of endangered and threatened plants were identified within the vicinity of the proposed project. A review of the habitat requirements and potential presence of this species is provided below, in addition to a description of the significant community identified.

Coastal plain pond shore is described as “A *gently sloping shore of a coastal plain pond with seasonally and annually fluctuating water levels. The plant cover varies with the changing water levels. In dry years when water levels are low, there is a dense growth of annual sedges, grasses, and herbs. This vegetation occurs in distinctive zones or rings around the pond. In wet years when the water level is high the vegetation is sparse. The fluctuating water level also keeps woody vegetation from getting established. The dominant vegetation is often grass like and includes spikerush (*Eleocharis parvula*), beakrush (*Rhynchospora capitellata*) and pipewort (*Eriocaulon aquaticum* (**Edinger et al., 2002**).*” This community was not identified on the subject property.

The tiger salamander (endangered) was listed by the NHP as occurring at the NYSDEC freshwater pond (MD-12) located approximately 430 feet to the north of the boundary of the project site. Cryan (**1984**) had conducted an extensive search for tiger salamander breeding ponds within Suffolk County and concluded that NYSDEC-regulated woodland pond (MD-12) contained 26 larvae. Kelly Hamilton from the NYSDEC indicated that the pond was surveyed in 2009 with no adults or egg masses observed (**personal communication, May 10, 2012**). Typically, NYSDEC policy is to maintain existing suitable upland habitat for the tiger salamander within 535 feet of a breeding pond, with 50 percent of the suitable natural area within 1,000 feet retained as natural vegetation. In addition, if it is determined that an impact on the endangered population would occur, a NYSDEC Article 11 permit would be required for a potential “take” of the endangered species. With respect to the subject site, the library lies across Middle Country Road from the tiger salamander breeding pond, and the subject site does not

contain significant suitable upland breeding habitat for this species. Further information on potential impacts is provided in **Section 4.2.2**.

Rose coreopsis (*Coreopsis rosea*) is a rare vascular plant species that prefers shorelines and bogs. The last report of this species was located in Brookhaven, July 26, 2005. Although some suitable habitat exists along the bank of the recharge basin on the property, this species was not observed during field visits. It should be noted that the recharge basin will not be disturbed and will continue to provide viable habitat.

The three-ribbed spikerush (*Eleocharis tricostata*) is an endangered graminoid plant that prefers coastal plain marshes, sandy lake edges, dune swales, and edges of peaty wetlands. The last report of this species was located in the general area of Middle Island, September 19, 1921. Although some suitable habitat exists along the bank of the recharge basin on the property, this species was not observed during field visits. It should be noted that the recharge basin will not be disturbed and will continue to provide viable habitat.

White boneset (*Eupatorium album var. subvenosum*) is a threatened forb/herb plant that prefers dry, sandy woods. The last report of this species was located in Brookhaven, August 4, 2004. Generally suitable habitat is found on site for this species. This species was not observed during field visits.

Wild ipecac (*Euphorbia ipecacuanhae*) is an endangered forb/herb plant that prefers dry, sandy soil. The last report of this species was in the general area of Brookhaven on August 15, 1923. Generally suitable habitat is found on site for this species. Due to the historical record of the species, it is not expected on site and was not been observed during field visits.

Weak rush (*Juncus debilis*) is an endangered graminoid plant species that prefers open, unshaded habitat in seasonally wet, sandy, peaty or mucky substrate along the coastal plain. This species was last sited on June 30, 1936 in the general area of Brookhaven. Although some suitable habitat exists along the bank of the recharge basin on the property, this species is not expected on site due to the plant's historical record.

Slender pinweed (*Lechea tenuifolia*) is a threatened forb/herb plant that prefers dry, sandy, and rocky woods. The last report of this plant was in the general area of Brookhaven on August 17, 2000. Generally suitable habitat is found on site for this species, although the presence of invasive plant species and high levels of disturbance along the site's western property boundary decreases the suitability of the habitat. It is documented that rare and endangered species are more susceptible to invasive species due to their low abundance (**Hoffmeister et al. 2005**). Habitats with high amounts of fragmentation and disturbance, such as the subject site, are more susceptible to a reduction in biodiversity due to invasive species, which leads to the reduction of species that do not have defense mechanisms for the many modes of dominance strategies of invasive species (**Hoffmeister et al. 2005**). This species was not observed during field visits.

Narrow-leaved bush-clover (*Lespedeza angustifolia*) is a rare forb/herb plant that prefers sandy grassland areas. The last report of this species was in the vicinity of Artist Lake on August 6, 1985. As the subject site does not contain suitable habitat for this species, this species is not expected on site nor was it observed during site visits.

Southern yellow flax (*Linum medium var. texanum*) is a threatened forb/herb plant that prefers rocky open woods with acidic soils. The last report of this species in the area was in the general area of Brookhaven on September 8, 1925. Due to the lack of suitable habitat on site, and the plant's historical record, this species is not expected on site.

Dwarf bulrush (*Lipocarpa micrantha*) is an endangered graminoid plant that prefers lakes, rivers, and emergent shorelines. The last report of this species was in the general area of Brookhaven on September 12, 2005. Although some suitable habitat exists along the bank of the recharge basin on the property, this species was not observed during field visits. It should be noted that the recharge basin will not be disturbed and will continue to provide viable habitat.

Carey's Smartweed (*Persicaria careyi*) is a threatened forb/herb plant that prefers swamps or cleared ground. The last report of this species was in the general area of Brookhaven on August 17, 2000. Although some suitable habitat exists in the area of the recharge basin on the property, this species was not observed during field visits. It should be noted that the recharge basin will not be disturbed and will continue to provide viable habitat.

Rough hedge-nettle (*Stachys hyssopifolia*) is a threatened forb/herb plant that prefers sandy shores and swamps. The last report of this species was in the general area of Brookhaven on August 17, 2000. Although some suitable habitat exists in the area of the recharge basin on the property, this species was not observed during field visits. It should be noted that the recharge basin will not be disturbed and will continue to provide viable habitat.

Silvery Aster (*Symphyotrichum concolor*) is a threatened forb/herb plant that prefers dry, sandy soil, and open woods. The last report of this species was located in the general area of Middle Island on October 8, 1933. Fire suppression is a threat to this species, as it generally requires more open areas, and as a result, the species adapts to grassy openings, roadsides and fence lines of successional coastal heathland. While the site may contain some suitable habitat (e.g. cleared areas in the site), the more developed surrounding areas where historical fire suppression is prevalent and roadsides experience continued disturbance, may be more appropriate habitat. Observations conducted during multiple field visits have not found silvery aster to be present on the property. As a result of the plant's historical record, the species is unlikely to be found on the site.

Small floating bladderwort (*Utricularia radiata*) is a forb/herb plant that prefers ponds. The last report of this species was at Artist's Lake in Brookhaven on August 17, 2000. The recharge basin on the property does not appear to be deep enough to support submerged aquatic vegetation and therefore, no suitable habitat is known to exist on the property. This species is not expected on site and was not observed during field visits.

Striped wintergreen is an "exploitably vulnerable" species that is common in Long Island natural habitats and which were observed within the pitch pine-oak forest on the property. "Exploitably vulnerable" plants are species which are not currently threatened or endangered, but which are commonly collected for flower arrangements or other uses. Native plants listed under NYCRR Section 193.3 are protected pursuant to the NYS Environmental Conservation Law (ECL) Section 9-1503 subdivision (f), which states that no person may knowingly "pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away, without the consent of the

owner, any protected plant" (NYSDEC, 1975). As per this section of the ECL, the site owner would not be restricted in utilizing the site for the intended purpose. Therefore, the presence of protected plants would not restrict use of the site under the ECL.

Of the animal species that may utilize or be expected on the site, Cooper’s Hawk, whip-poor-will, eastern spadefoot toad, and eastern box turtle are listed as special concern species. Special concern species are native species that are not recognized as endangered or threatened, but for which there is documented concern about their welfare in New York State as a whole. Unlike threatened or endangered species, species of special concern receive no additional legal protection under ECL 11-0535. This category is intended to enhance public awareness of those species that deserve additional attention (NYSDEC, 2007).

4.2.2 Anticipated Impacts

Vegetation

The impacts to the ecological resources of a project site are generally a direct result of clearing of natural vegetation, increase in human activity and associated wildlife stressors, and the resulting loss and fragmentation of wildlife habitat. The changes in habitat quantities are listed in **Table 6**.

Table 6
CHANGE IN HABITAT QUANTITIES
Existing and Proposed Conditions

Coverage Type	Existing Conditions		Proposed Project		Change (acres)
	acres	% of site	acres	% of site	
Pitch Pine-Oak Forest	2.54	32.19%	2.54	32.19%	0
Successional Southern Hardwood Forest	0.56	7.10%	0.56	7.10%	0
Revegetated	0	0	0.48	6.08%	+0.48
Buildings/Impervious	2.08	26.36%	2.14	27.12%	+0.06
Unvegetated	0.08	1.01%	0.08	1.01%	0
Landscaped	1.91	24.21%	1.22	15.46%	-0.69
Wetland/Recharge Basin	0.67	8.49%	0.67	8.49%	0
Disturbed Wetlands	0.05	0.63%	0	0	-0.05
Pervious Pavers/Gravel	0	0	0.20	2.53%	+0.20
TOTAL	7.89	100%	7.89	100%	--

The habitats in the areas of development are not unique or sensitive, particularly in view of the prior use and development of the property. The proposed project will not result in clearing of any naturally vegetated areas on site as the building expansion will occur on areas that are previously disturbed and currently landscaped. Although parking reconfiguration will occur within the NYSDEC jurisdictional area of the recharge basin, this reconfiguration is anticipated to be beneficial as a reduction in impervious surfaces will occur through the use of pervious surfaces in parking areas on the south side of the building. It is noted that the pavement will lie within an existing landscaped area, and no natural buffer will be removed. Further, any pavement will contain all runoff generated on impervious surfaces associated with the

parking/driveway expansion, and thus will not cause an impact due to runoff. Finally, the recharge basin is a man-made feature that was constructed to handle runoff during the original parking lot construction approved by the State in 1987; it is not a high quality native wetland area. It is noted that the parking reconfiguration will require a NYSDEC Article 24 permit, as reconfiguration activities will occur within 100 feet of the wetland boundary. Given the planned retention of natural areas and location of the site development, no significant adverse impacts to vegetation or habitat are expected.

As previously stated, the NHP identified the presence of one community of special concern, one endangered amphibian, and eight threatened or endangered plants within the vicinity of the proposed project, in addition to the five historical records of threatened and endangered plants. The significant community was not identified on the subject property, nor was the endangered amphibian or the threatened or endangered plants. As the five endangered and threatened historically listed species have not been sited in the vicinity of the proposed project for over 80 years, these species are not anticipated to occur on the subject site and were not identified during field visits. As such, no impacts to endangered, threatened and rare species are anticipated as a result of the proposed project.

Exploitably vulnerable species are protected primarily because they are indiscriminately collected, rather than due to rarity within the State. The presence of these plants, if encountered during future site visits, would not preclude development of the site, as a property owner is permitted to remove exploitably vulnerable plant species from a site.

Wildlife

The majority of habitat on the property is dominated by pitch pine-oak forest. The property is not expected to act as a refuge for rare native flora or fauna. In addition, all of the existing natural habitat on the subject site will be retained. The proposed project will favor those wildlife species that prefer edge and suburban habitats and those that are relatively tolerant of human activity. Most of the species expected on the property are at least somewhat tolerant of human activity, but others will be impacted by the proposed clearing operation and increase in human activity. It is also expected that wildlife species that may utilize the area to be developed (particularly avian species) will migrate to undisturbed areas on the edges of the property, adjacent or near the site as a result of development. Ultimately, as no natural habitat will be lost, and landscape restoration will utilize native species that will provide habitat for wildlife, no impact on wildlife is anticipated as a result of the proposed expansion.

Rare and Endangered Species/Unique Habitat Potential

As noted above, the subject property is located within 1,000 feet of a known tiger salamander breeding pond. Tiger salamanders require vernal pools or shallow ponds without fish populations to lay their eggs, as well as expansive upland woodlands for the emerged adults. Adult tiger salamanders may begin migrating toward their breeding ponds as early as November or December, burrowing as deep as two feet underground to wait out subfreezing parts of winter (Cryan 1984). Re-emergence and entry into breeding ponds is triggered by several heavy rains in succession during winter thaws, most often beginning in February but sometimes starting in January. The best breeding conditions consist of water over three feet deep with plenty of debris to hide under and attach egg masses to. By May, all of the adults have left the pond; however, during earlier breeding years, they may leave the pond before the end of March. After leaving

the pond, the salamanders move into the surrounding uplands staying beneath logs, leaves, and the top few inches of soil. Adults typically stay within a 500-foot radius of their breeding ponds and therefore, the fate of this endangered species rests on the preservation of their breeding ponds and adjacent woodland habitat. Although the existing recharge basin is located within 1,000 feet from the known tiger salamander pond, the recharge basin exhibits significant slopes that reduce habitat viability, and no source tiger salamander population exists within the immediate vicinity of the recharge basin, the basin is not expected to serve as habitat for the tiger salamander. In addition, the tiger salamander pond and the recharge basin are separated by Middle Country Road, which exhibits high traffic volumes, further reducing the likelihood of salamanders utilizing the recharge basin. As no natural vegetation will be disturbed as a result of the proposed building expansion, all of the woodland area within the 1,000-foot radius from the known tiger salamander pond will not be disturbed and no impacts to this species are anticipated.

There are no rare or endangered wildlife species expected on the site given the habitats present. The Cooper's Hawk, whip-poor-will, eastern spadefoot toad, and eastern box turtle are the only species potentially expected on site that are listed as special concern species. Although there is documented concern about their welfare in New York State, these species receive no additional legal protection under ECL 11-0535. This category is presented primarily to enhance public awareness of these species, which bear additional attention (NYSDEC, 2007).

4.2.3 Proposed Mitigation

- Native plant species that provide food and shelter to wildlife will be utilized in landscaped areas.
- No known invasive plant species will be utilized, including those species listed in Resolution 614-2007 enacted by the Suffolk County Legislature.
- The proposed project will clear only minimal amounts of existing natural land on the site and this will occur in areas that were previously disturbed and landscaped when the library was constructed in 1987.
- Revegetation/restoration of a total of 0.48 acres is proposed: 0.25 acres in the northwestern and northeastern corners of the northern parcel, and 0.23 acres of wetland and buffer restoration on the southern parcel.
- The proposed project will increase natural land/habitat area on the site by 11.3%.

4.3 Land Use Plans

4.3.1 Existing Conditions

The Longwood Mini-Master Plan (1993?)

This Mini-Master Plan was submitted to the Town of Brookhaven on behalf of the Longwood Alliance to provide a supplement to the Town's Comprehensive Land Use Plan. The purpose of the Mini-Master Plan is to provide planning goals, recognize existing problems, identify needed public community facilities and provide guidance for planned future development regarding the specific needs and concerns of the hamlets included within the Longwood set of communities.

The plan acknowledges that the library occupies a site that is “...*the natural center of the Middle Island community*”, and notes that, with the adjacent post office, “*The location of these two public buildings at the center of town is a real plus for the future development of a vibrant community center. This area is the natural hub of the community. It holds tremendous potential to be developed diversely, thus promoting interaction. A mix of uses should be planned here. Commercial, light industrial, and residential uses should be encouraged for this activity center.*”

Thus, the Mini-Master Plan indicates that the existing Institutional Use represented by the library constitutes a node of useful and appropriate land use around which a mix of desirable land uses would be developed at this roadway intersection, to enhance further development of a “community center” here.

Central Pine Barrens Comprehensive Land Use Plan (1995)

The Long Island Pine Barrens Act of 1993 divided the Pine Barrens Zone into two geographic areas, the 52,500-acre Core Preservation Area (CPA) and the Compatible Growth Area (CGA), which is approximately 47,500 acres in size. The project site is within the CGA (see **Figure 16**). The Act also provided for a plan to control future development in the Pine Barrens Zone; this control is provided by the Pine Barrens Commission. Standards, guidelines and procedures that provide this protection are specified in the Pine Barrens Plan. The Pine Barrens Plan 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 Act.

Projects within the CGA are required to meet all standards and guidelines of the Pine Barrens Plan. One of these requirements (Standard 5.3.3.6.1; see **Table 8**) sets an upper limit on the percentage of a site’s natural vegetation that may be cleared for development; conversely, this also sets a minimum on the percentage of the site’s natural vegetation that must remain in an undisturbed state. The percentages are set by the zoning categories of a site at the time the Pine Barrens Plan was adopted (1995); thus, though the northern parcel is presently zoned J-6, for purposes of determining its allowed clearing, its prior zonings are assumed. As shown in **Table 7** for the project site, up to 3.40 acres may be cleared, or 43.1% of the overall property. As shown by the quantities in **Table 2**, an estimated 4.07 acres are already cleared for development, representing 51.6% of the site. Thus, the subject site is presently “*overcleared*” by 0.67 acres as a result of clearing that occurred prior to the enactment of the Pine Barrens Plan.

Town Comprehensive Land Use Plan Update (1996)

Brookhaven Town completed an update to the Town’s Comprehensive Land Use Plan in 1996. This plan reviewed zoning, land use, demographic and environmental trends and provided a basis for land use recommendations to guide the Town into the 21st Century. The subject property is recognized in this plan as appropriate for Commercial Use (see **Figure 17**).

Middle Country Road Land Use Plan (2006)

The Town’s Middle Country Road Land Use Plan for Coram, Middle Island & Ridge (MCRLUP) was created to address strip zoning through these three hamlets along Middle Country Road. As a result of poor planning and suburban sprawl, Middle Country Road has highly fragmented uses that create traffic safety problems. The purpose of the Plan was to examine the land use and zoning trends, together with transportation and environmental needs, in

order to further the Town’s and community’s development goals. The focus of the study is the six-mile section of Middle Country Road between CR 83, Patchogue-Mt. Sinai Road and CR 46, William Floyd Parkway and beyond to the Town line. The plan recommends mixed use, multifamily, and single-family areas for the creation of a hamlet in Middle Island.

Table 7
CLEARING ALLOWED
Pine Barrens Plan

Parcel	Zone*	Acres	Maximum Clearing Allowed	
			Rate (%)	Acres
Northern	J-2	3.08	0.65	2.00
	J-4	0.36	0.65	0.23
	A-1	0.85	0.53	0.45
	A-5	0.25	0.20	0.05
<i>Subtotal</i>	---	<i>4.54</i>	---	<i>2.73**</i>
Southern	A-5	3.35	0.20	0.67
Total Site	---	7.89	---	3.40***

* Per Pine Barrens Plan, reflects zoning of site in 1995, when Pine Barrens Plan adopted.
 ** Represents composite 60.1% clearing allowed on northern parcel.
 *** 43.1% of the subject site.

The subject site is specifically mentioned in this plan for Municipal/Institutional Use (see **Figure 18**).

4.3.2 Anticipated Impacts

Longwood Mini-Master Plan (1993?)

The proposed project is the expansion and renovation of the existing public library at the intersection of NYS Route 25 and CR 21, which the Mini-Master Plan indicates is a nascent “community center” whose further development with a mix of commercial, light industrial and residential growth would benefit the community. The plan also indicates that, with the adjacent post office facility, the library is a community resource that should be retained. Thus, the proposed project plan is consistent with the Mini-Master Plan and no adverse impacts are expected.

Central Pine Barrens Comprehensive Land Use Plan (1995)

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 Act. Since the subject property is located within the CGA, it is subject to the development standards and guidelines of the Pine Barrens Plan.

Based on the quantities presented in **Table 2** and conservatively assuming that the Pine Barrens Commission would consider the revegetated land “cleared”, the proposed project will have 4.07 acres of clearing, or 51.6% of the site. This is in excess of the allowed maximum clearing of 3.40 acres/43.1% of the site. As a result, a Hardship Exemption approval will be required from

the Pine Barrens Commission. **Appendix G** contains depictions of the site’s revegetations, which supports the following analysis of the Pine Barrens Plan clearing standard. **Figure 1** shows the locations of the three areas of the northern parcel that will be subject to revegetation efforts described elsewhere, which total 0.25 acres. The 0.15-acre area in the parcel’s northwestern corner, labeled “Special Restoration Area”, will be subject to an additional restoration program. **Figure 2** shows the location of the 0.23 acres of wetland and buffer restoration in the southern parcel.

It is noted that the northern parcel was granted a Hardship Exemption in 2005 for 76.2% clearing (3.46 acres) where a maximum of 60.1% clearing (2.73 acres) was allowed (see **Table 7**). Based on the quantities listed in **Table 2**, the proposed project will clear a similar acreage (3.47 acres, 76.4%). In this way, the amount of clearing on the northern parcel will be maintained at the level approved by the Pine Barrens Commission when it granted the Hardship Exemption in 2005. In addition, the project includes revegetation of 0.25 acres in its northeastern and northwestern corners, and an additional 0.23 acres of wetlands and buffer restoration are planned for the southern parcel.

Table 8 provides an evaluation of the project’s conformance with all of the standards of the Pine Barrens Plan.

Table 8
CONFORMANCE TO PINE BARRENS PLAN STANDARDS

Standard		Explanation and Document Page Reference
S 5.3.3.1.1	SCSC Article 6 compliance	The proposed project will utilize the existing sanitary system on the northern parcel, and will continue to comply with SCSC Article 6 for density and with SCDHS non-residential design/installation requirements.
S 5.3.3.1.2	STP discharge	N/A; the proposed project does not involve an STP.
S 5.3.3.2.1	SCSC Articles 7 & 12 compliance	As the proposed project involves the expansion of an existing public library, no toxic or hazardous materials would be used or stored on-site (other than household-grade cleaning materials commonly used in such applications).
S 5.3.3.3.1	Significant discharges and public supply well locations	N/A; no public supply wellfields are located within 200 feet of the subject property.
S 5.3.3.4.1	Nondisturbance buffers	NYSDEC Freshwater Wetland B-2 includes a small man-made recharge basin in the southern portion of the northern parcel, and the wetland in the eastern part of the southern parcel. The existing library parking lot is a minimum of approximately 45 feet from the recharge basin. The proposed project involves parking lot reconfigurations and landscaping that will occur within about 15 feet of this feature. All runoff from impervious surfaces will be contained. The proposed project will obtain ECL Article 24 Wetlands permits for the two revegetation plans, which would indicate that no significant adverse impacts would occur. In this way, the proposed project would conform to this standard.
S 5.3.3.4.2	Buffer delineations, covenants and conservation easements	The project will result in the need for an Article 24 Wetlands permits. Appropriate buffers, if required, will be defined through that permit process with NYSDEC. No impacts are expected and no loss of existing native buffer will occur.

S 5.3.3.4.3	Wild, Scenic & Recreational Rivers (WSRR) Act compliance	N/A; the subject site is not within any designated Wild, Scenic, or Recreational River Corridor, though it does abut the northernmost border of the Carmans River WSRR (see Figure 19).
S 5.3.3.5.1	Stormwater recharge	Stormwater runoff generated on developed surfaces within the northern parcel will be retained and recharged to groundwater on-site through the proposed curtain drain which will be connected to existing drainage infrastructure that discharges to the recharge basin. No runoff from developed surfaces will be allowed to exit this parcel. An Erosion Control Plan will be prepared.
S 5.3.3.6.1	Vegetation Clearance Limits	Considering the several applicable clearing standards of the site, no more than 43.1% of the site may be cleared for development. The library was built on the northern parcel in 1987 and opened in 1988, prior to the enactment of the Pine Barrens Act, or of the Pine Barrens Plan, so that it already exceeds its clearing limit of 60.1%; the southern parcel currently meets its clearing limit of 20%. However, the library was granted a Hardship Exemption in 2005 for a clearing of 76.2% on the northern parcel. The proposed project will provide a similar amount of the clearing on the northern parcel, and will maintain the clearing limit on the southern parcel as well. The proposed project will clear only minimal amounts of the existing natural vegetation on the site, and will revegetate and restore 0.48 acres with appropriate native upland and wetland species.
S 5.3.3.6.2	Unfragmented open space	The proposed project involves only minimal clearing of the existing 3.82 acres of natural vegetation on the site. As a result, no open space the depths of these buffers would be slightly reduced, but significant fragmentation would occur. In addition, the project includes revegetation/restoration of 0.48 acres of land, which would increase open space and thereby decrease fragmentation on the site.
S 5.3.3.6.3	Fertilizer dependent vegetation limit	The proposed project will comply with the maximum allowable acreage of fertilizer-dependent landscaping of 15% (1.18 acres); the project will continue to not use fertilizers on its landscaped surfaces. The project proposes supplemental landscape plantings using native species that do not require fertilization, thereby minimizing use of fertilizer.
S 5.3.3.6.4	Native Plantings	The Landscape Plan will include native plant species recommended by the Central Pine Barrens Comprehensive Land Use Plan and contained in Figure 5-2 of the Plan.
S 5.3.3.7.1	Special Species and Ecological Communities	The NHP identified 15 potential special species and ecological communities. Based on a site inspection performed by NP&V in April 2012 and evaluation of habitat needs and occurrences of these species, no endangered or threatened species are expected to be present on the subject site, so no negative impacts to such species are expected.
S 5.3.3.9.1	Receiving entity for open space dedications	N/A; neither the 3.83 acres of existing natural area on the site nor the 0.48 acres of revegetated open spaces are proposed for open space dedication.
S 5.3.3.12.1	Commercial and industrial compliance with SCSC	N/A; the proposed project does not involve a commercial or industrial use.

Town Comprehensive Land Use Plan Update (1996)

The proposed project is not consistent with the Town Comprehensive Land Use Plan Update's recommendation for Commercial Use on the subject site. However, the Institutional Use of the

proposed project is complementary to the pattern of uses that now occupies this intersection, and it represents an important public amenity. In contrast, the provision of incrementally more commercial space along the NYS Route 25 commercial corridor would not materially benefit the community. Therefore, this non-conformance to the Town Comprehensive Land Use Plan Update is not considered to be a significant adverse impact.

Middle Country Road Land Use Plan (2006)

The existing library use of the site conforms to the recommended Municipal/Institutional Use of the MCRLUP; as the proposed project is the expansion and renovation of this facility, the proposed project also conforms to this recommended land use. As a result, no adverse impacts are anticipated.

4.3.3 Proposed Mitigation

- Five of the 15 standards of the Pine Barrens Plan do not apply to the circumstances of the proposed project, and the project complies with an additional seven standards.
- Two of the remaining three standards pertain to wetland buffers, which the project would satisfy by obtaining Freshwater Wetland permits from the NYSDEC under Article 24. Approval of these permits would indicate that no significant adverse impacts to either of the two wetlands would occur, and therefore conformance to these two standards would be expected.
- The remaining standard, S5.3.3.6.1, is concerned with clearing. As the northern parcel was developed prior to the Pine Barrens Plan, it was cleared to a degree in excess of the standard and so can not conform². The southern parcel conforms to the clearing standard, and will continue to do so, as the proposed project does not involve development of this parcel (except for 0.23 acres of wetland and buffer restoration). The northern parcel has been designed so that only minimal clearing of its existing natural vegetation will be necessary, so that development on this parcel would be well below the clearing approved by the Pine Barrens Commission in 2005.
- The proposed project represents an appropriate and desirable Institutional Use that would complement the pattern of local land uses to a higher degree than the Commercial Use recommended by the Town Comprehensive Land Use Plan Update.
- The proposed project conforms to the Municipal/Institutional Use recommended for this site in the MCRLUP.
- The proposed project is the expansion and renovation of a public institutional land use that the Longwood Mini-Master Plan foresees as an important element in establishing a “community center” at the intersection of NYS Route 25 and CR 21.

² It is noted that the library parking lot expansion in 2005 involved the purchase of a parcel east of the library, and the planned parking improvements on that parcel required clearing of 0.197 acres which triggered the hardship.

4.4 Visual Resources & Aesthetics

4.4.1 Existing Conditions

The subject property is currently occupied by the library facility, associated landscaping, parking area, a recharge basin, an unoccupied residence and undisturbed vegetated areas. The library structure is readily visible from Middle Country Road as no intervening vegetation screens the building from this roadway. The current building is in good condition and the northern parcel is well-maintained; the southern parcel has no frontage on a developed roadway, and so is not generally visible to outside observers. The **Existing Demo Elevations** plan (Sheet A-052) in **Appendix A** illustrates the current framework of the library facility and the portions of the facility to be demolished.

4.4.2 Anticipated Impacts

Elevations of the proposed building are presented on the **Elevations** plan (Sheet A-200) in **Appendix A**. As illustrated on this plan, the proposed project will merge the existing structure with the building expansion to create an improved library facility. Modern architecture will be utilized in the building expansion that will complement and enhance the architecture of the existing building in order to ensure that the proposed expansion does not contrast with the portion of the existing building to remain.

Visibility of the library facility is anticipated to remain the same, as the expansion area is located only slightly west of the current western limit of the existing structure. Views of the renovated building are anticipated to be more aesthetically pleasing to the viewer due to the updated architecture and the proposed landscaping, which will include walking paths through native gardens, a rain garden, and improved landscaping within the parking area. As a result, no adverse impacts are anticipated as a result of the building expansion and renovation.

4.4.3 Proposed Mitigation

- The proposed building expansion and renovation will utilize modernized architecture that will not contrast with the architecture of the portion of the building to remain.
- The proposed project will include improved landscaping that will feature walkways, native gardens, a rain garden and improved landscaping within the parking islands that will visually enhance the subject property.

5.0 SUMMARY AND CONCLUSION

This report presents an analysis of the setting of the subject site and an assessment of the importance of the various impacts with regard to the proposed project. Potential areas of concern are discussed in detail, and the potential impacts identified in **Section 4.0** have been investigated. Primary conclusions are noted as follows:

1. The subject site contains two NYSDEC-regulated freshwater wetlands. Any activities proposed within the 100-foot wetland adjacent area of either wetland would require an ECL Article 24 Wetland permit from the NYSDEC. The project will obtain such permits for each wetland. As such, no impacts are expected to the freshwater wetlands on-site.
2. No impacts to un-regulated surface waters are expected; the project will include an Erosion Control Plan that will protect off-site properties from potential impact from stormwater runoff or sediments during and after construction.
3. The quality of groundwater resources would not be adversely impacted. SONIR computer model results indicate that there would be a small decrease in recharge nitrogen concentration, and a 2.4% increase in total recharge volume generated.
4. The continued use of on-site sanitary systems in conformance with SCSC Article 6 density requirements will minimize impacts to groundwater.
5. Due to the depth of the natural water table underlying the site (between 2 and 39 feet) and permeability of subsurface soils underlying the site, development of the subject site is not anticipated to adversely impact groundwater resources or the natural water table.
6. All stormwater runoff generated on developed surfaces of the northern parcel will be collected and recharged on-site in the expanded drainage system, which will be subject to the review and approval of the Town. Except for wetland revegetation plantings, no changes on the southern parcel are proposed.
7. The proposed project conforms to the applicable recommendations of the various water resource-related plans and studies reviewed, including the 208 Study, the NURP Study, the SCCWRMP, the SGPA Plan (with the exception of land use), and the Carmans River Plan.
8. The proposed project would involve only minimal clearing of the 1.07 acres of natural vegetation on the northern parcel, and no clearing at all of the 2.75 acres on the southern parcel. Revegetation plantings using native and/or native-compatible species from the approved Pine Barrens Plan list will be used. As a result, any temporary impacts to natural vegetation on the subject property during the construction process will be mitigated.
9. The project has been designed to minimize impact to any of the existing 3.82 acres of natural surfaces on the site, and will revegetate/restore an additional 0.48 acres. This will increase natural land/habitat spaces by 11.3%; as a result, no adverse impacts to vegetation resources are expected.
10. Analysis indicates that no significant adverse impacts to wildlife resources would occur, and that no impacts to rare, endangered or threatened species will result.
11. The need for a Hardship Exemption for the overall project site is due to the amount of clearing that occurred on the northern parcel well before the Pine Barrens Plan was adopted³. The proposed project will have a similar amount of clearing on the northern parcel as was approved by the Pine Barrens Commission in 2005, when it granted the Hardship Exemption. The southern parcel currently conforms to its clearing standard, and will continue to do so after the proposed project is implemented. Only minimal amounts of the existing 3.82 acres of natural vegetation on the site will be subject to clearing for the proposed project.

³ It is noted that the library parking lot expansion in 2005 involved the purchase of a parcel east of the library, and the planned parking improvements on that parcel required clearing of 0.197 acres which triggered the hardship.

12. The proposed project is an Institutional Use that would complement the land use pattern of the area to a higher degree than would be the case for the Commercial Use recommended by the Town Comprehensive Land Use Plan Update.
13. The proposed project conforms to the Municipal/Institutional Use recommended for this site in the MCRLUP.
14. The proposed project involves the expansion and renovation of an existing public library. Such a land use is seen in the Longwood Mini-Master Plan as an important element in establishing a “community center” at the intersection of NYS Route 25 and CR 21.
15. The architectural treatment of the proposed project will conform to and enhance the existing structure, so that no adverse visual/aesthetic impact would occur for observers of the structure.
16. The landscaping plan for the proposed project will include features that will enhance the overall appearance of the subject property.
17. With respect to construction impacts, the site is publicly-owned and can be developed in accordance with zoning. Impacts will be of short-term duration and are considered temporary.
18. Proper erosion control measures will be in place during construction, construction activity will occur during normal daytime hours (8AM-5PM), and established perimeter buffers will assist in mitigating potential impacts.

The Library Board may rely on this information in its deliberations with respect to the proposed project. This investigation is useful in determining the importance of the impacts based on SEQRA criteria for a determination of significance. The criteria are as follows:

- Probability of the impact occurring,
- The duration of the impact,
- Its irreversibility, including permanently lost resources of value,
- Whether the impact can or will be controlled,
- The regional consequence of the impact,
- The potential divergence from local needs and goals,
- Whether known objections to the project relate to this impact.

The environmental review process is a balancing process. This document addresses issues anticipated to be of concern to the NYS Department of Education. The proposed project is in conformance with local planning initiatives. The Institutional Use is consistent with and complementary to nearby and surrounding land uses. The need for a Hardship Exemption for the proposed project is due to the proposed library expansion and the small amount of additional clearing needed in connection with the expansion; the southern parcel currently meets its applicable clearing standard, and will continue to do so after the project is constructed. The clearing on the northern parcel for the proposed project will be similar to that approved by the Pine Barrens Commission in 2005, when it granted the Hardship Exemption. It is expected that only minimal amounts of the existing natural vegetation on the site will be subject to clearing for the proposed project and this will occur in areas that were previously disturbed in connection with landscaping when the library was constructed in 1987.

The proposed project and its potential impacts will be either insignificant or mitigated, and all such impacts will be localized such that no regional impacts are expected. Therefore, based on this Expanded EAF, no significant impact is expected to occur, and as a result, it is respectfully submitted that a Negative Declaration would be appropriate.

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FIGURES

APPENDICES

APPENDIX C

**ENVIRONMENTAL ASSESSMENT FORM,
PARTS 1 & 2**

APPENDIX D

LIBRARY EXPANSION PLANNING PROCESS- RELATED DOCUMENTS

APPENDIX E

SONIR COMPUTER MODEL-RELATED DOCUMENTS

Appendix E-1 Model User's Guide



Appendix E-2 Model Results, Existing Conditions



Appendix E-3 Model Results, Proposed Project



APPENDIX F

ECOLOGY-RELATED DOCUMENTS

Appendix F-1 NYS Breeding Bird Atlas Data



Appendix F-2 NYS Natural Heritage Program Correspondence



APPENDIX A

ARCHITECT'S PLANS

Longwood Public Library Additions and Alterations

Peter Gisolfi Assocs.

(rev. 3/7/2012)

APPENDIX B

HARDSHIP EXEMPTION APPROVAL RESOLUTION

Central Pine Barrens Joint Planning & Policy Commission

May 18, 2005

APPENDIX G

**PINE BARRENS PLAN CLEARING STANDARD
CONFORMANCE ANALYSIS**