Draft Environmental Impact Statement (DEIS)

For

THE PRESERVE AT INDIAN HILLS

Subdivision Application
21 Breeze Hill Road, Northport
Town of Huntington, Suffolk County, New York
Volume I of II (Main Text, Figures and Full Size Plans)

Prepared for:

The Northwind Group, LLC
1 Rabro Drive, Suite 100
Hauppauge, New York 11788
Contact: Jim Tsunis
(631) 582-8300

For Submission to:

Town of Huntington
100 Main Street
Huntington, NY 11743
(631) 351-3196

Prepared by:

Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, NY 11747
Contact: Charles J. Voorhis, CEP, AICP; Managing Partner
(631) 427-5665

July 2019

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

for

THE PRESERVE AT INDIAN HILLS

SUBDIVISION APPLICATION

21 Breeze Hill Road, Northport
Town of Huntington, Suffolk County, New York

Prepared for:	The Northwind Group, LLC 1 Rabro Drive, Suite 100 Hauppauge, New York 11788 Contact: Jim Tsunis (631) 582-8300
For Submission to:	Town of Huntington 100 Main Street Huntington, NY 11743 (631) 351-3196
Prepared by:	Nelson, Pope & Voorhis, LLC 572 Walt Whitman Road Melville, NY 11747 Contact: Charles J. Voorhis, CEP, AICP; Managing Partner (631) 427-5665

Date of Acceptance by Lead Agency: _____

Comments on this document are to be submitted to the Lead Agency by: _____

TABLE OF CONTENTS

A **Agreement and Release dated April 14, 2003 between the: Town of Huntington, IHCC, Inc.; and, the Fort Salonga Property Owners Association, Inc.**

B **Project Plans; The Preserve at Indian Hills;** Nelson & Pope (Note: Not to scale- reduced to 11x17)

- B-1 Project Plans, N&P, Sheets 1-43, February 25, 2019
- B-2 Project Plans-Alternatives, N&P, 5 sheets, January 2019
- B-3 Cut and Fill Plan, N&P, June 2019
- B-4 Tree Survey, May 2018

C **Architectural Renderings**

D **SEQRA Documents**

- D-1 Part I Environmental Assessment Form (EAF); June 14, 2018
- D-2 Positive Declaration; August 8, 2018
- D-3 Adopted Final Scope; October 18, 2018

E **Planning Board Yield Map Approval Resolution; July 26, 2017**

F **Clubhouse Floor Plans;** George H. Suddell Architect, February 19, 2019 (Note: Not to scale- reduced to 11x17);

G **Golf Course Environmental Management Plan;** Jeffrey Seeman; March 2019

H **Geotechnical Engineering Reports and Correspondence**

- H-1 Geotechnical Engineering Services Report, Phase I of the Bluff Area Stability Evaluation (text only), PS&S; July 25, 2008.
- H-2 Geotechnical Engineering Investigation and Slope Stability Analysis; PS&S; April 15, 2019
- H-3 Dynamic Earth Correspondence, July 8, 2019

I **Environmental Site Assessment (ESA)**

- I-1 Phase I ESA, NP&V; February 4, 2014
- I-2 Limited Phase II ESA, NP&V; August 31, 2015
- I-3 Pesticide Report, NP&V; November 6, 2015
- I-4 Supplemental SCDHS Phase II ESA; December 30, 2016
- I-5 Letter Report; Dump Area and Maintenance Area Sampling Results; February 19, 2019
- I-6 SCDHS; No Further Action Letter; March 20, 2017

J **Water Resource Information**

- J-1 Limited Phase II ESA; Pond & Groundwater Sampling; February 20, 2019
- J-2 SONIR Model Users Guide
- J-3 SONIR Model Results: Existing Conditions/Alternative 1
- J-4 SONIR Model Results: Proposed Project
- J-5 SONIR Model Results: Existing Conditions/Alternative 1/Alternative 7
- J-6 SONIR Model Results: Alternative 2
- J-7 SONIR Model Results: Alternative 3
- J-8 SONIR Model Results: Alternative 4
- J-9 SONIR Model Results: Alternative 5
- J-10 SONIR Model Results: Alternative 6

K **Correspondence and Pesticide Documents**

- K-1 SCWA Correspondence, March 15, 2019 & September 11, 2018
- K-2 NYSDEC Correspondence, June 20, 2019
- K-3 NYSDOS Correspondence, June 19, 2019
- K-4 Current Plant Protectant Inventory, June 25, 2019
- K-5 The Preserve at Indian Hills Irrigation, Well and Pond Overview**;** Aqua Agronomic Solutions, Inc. (AASI); July 15, 2019

TABLES

FIGURES

(following Section 6.0)

POCKETS:

Town Zoning (R-40) Yield Map*;* Nelson & Pope; Last Revised 4/17 and Steep Slope Analysis; Nelson & Pope; Last Revised 3/7/19

Overall Plan; Nelson & Pope; Last Revised 2/25/19

Cut-Fill Plan, North & South Parcels (2 sheets); Nelson & Pope, Last Revised June 2019

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Draft Environmental Impact Statement (DEIS) is submitted to the Town of Huntington Planning Board (Lead Agency) on behalf of The Northwind Group, LLC (Applicant) in compliance with the State Environmental Quality Review Act (SEQRA) and in accordance with requirements of the Town of Huntington. The Draft Environmental Impact Statement (DEIS) examines the potential impacts of the proposed development of (i) residential senior housing on a 154.56 acre site (Site) while preserving the existing recreational land use, a golf course property known as the Indian Hills Country Club (Club), (ii) improvements to Club facilities, including the golf course, and (iii) possible amendment of the previously issued Special Use Permit under Town Code Section § 198-109 and § 198-110 (C) (5).

1.1 Project Location and Description

The Site is located on the north shore of western Suffolk County, overlooking the Long Island Sound (Sound). The site is comprised of two (2) tax parcels on the north side of Breeze Hill Road and five (5) tax parcels on the south side of Breeze Hill Road, between Makamah Road to the west and Fresh Pond Road to the east in Fort Salonga, Town of Huntington, New York.

The proposed action (Project) involves a clustered subdivision of 99 lots (98 senior dwellings and 1 clubhouse/fitness center lot) on an existing golf course and several adjoining properties totaling 154.56 acres zoned R-40. The 98 units will be located in 49 duplex buildings and will be age-restricted (55 and over) senior townhomes. The 98 residences will generally be sited in three (3) areas of the site where there is existing road access, and clustered to preserve open space pursuant to New York State Town Law, Section 278 and Town Code §198-114 Cluster Development.

1.2 Significant Beneficial and Adverse Environmental Impacts

The Project would alter the existing land use on the Site through the addition of a residential community with 99 units on the Site. Although the land use on a portion of the Site would change, the golf course, country club and open space would be maintained in place and improved. The proposed residential and recreational uses on the Site would be consistent with the existing residential and institutional uses in the surrounding area. Cumulative land use and zoning impacts are not anticipated.

The Applicant has designed the proposed project to achieve the highest and best use of the property based on the Horizons 2020 Comprehensive Plan Update, adjacent land uses and residential market trends. The project sponsor believes there is a demand for a well-designed senior duplex townhome residential development at this location that will offer an attractive alternative to individuals seeking high quality housing within a private community that is, in part, maintained and overseen by a property owners association and has amenities including a golf course. The project will increase housing opportunities in the Town by diversifying the housing stock in the area, which includes adjacent residential developments to the east, west and south. The subject property has convenient access to a network of roadways including Breeze Hill Road, Fresh Pond Road, Makamah Road and Mystic Lane.

1.3 Mitigation Measures Proposed

This section briefly summarizes potential Project impacts and required mitigation measures in each of the areas analyzed for the DEIS. Refer to Sections 2, 3 & 4 of this DEIS for a complete discussion of each of these potential impacts and mitigation measures.

1. Topography

Overall the entire property has undulating topography which was first created by natural glacial advance and retreat processes and later altered to accommodate development of the golf course. A significant topographic feature of the site is the Coastal Erosion Hazard Area (CEHA) line and areas north of this line that are subject to erosion hazard. The CEHA line is located on the north side of the subject site near Long Island Sound. No development is proposed on or within the CEHA. The Site design preserves the steep slopes of the property to the maximum extent practicable. The proposed plan ensures that buildings are set back at least 120-feet from the CEHA line.

No significant long-term adverse impacts are expected with respect to topography, since a grading plan has been devised to minimize the area and volume of disturbance. Grading will be the minimum necessary to achieve the goals for the proposed development. Any potential impacts that may occur with respect to steep slopes will be addressed through proper engineering and grading methods including use of retaining walls and maintaining slopes with a suitable angle of repose as well as groundcover stabilization after grading activities are complete. Proper spacing of slopes with the use of retaining walls, located to minimize long slopes and mitigate the rate of water decent allowing heavy rains to soak in rather than runoff. Provision of buffer areas will slow water runoff, trap sediment, and enhance infiltration.

Short term impacts will be controlled by proper grading, erosion control, construction inspection and management, and site stabilization techniques consistent with New York State Department of Environmental Conservation (NYSDEC) and Town of Huntington requirements. Mitigation measures include establishment of an Erosion and Sediment Control Plan, implementation of a Stormwater Pollution Prevention Plan, use of a water truck, rumble strips and proper internal staging areas.

2. Surface and Subsurface Soils

The Soil Survey identifies the subject property as lying within an area characterized by the Carve-Plymouth-Riverhead Association soils. This association is characterized as containing deep, rolling, excessively drained and well drained, coarse textured and moderately coarse-textured soils on moraines. Thirty-seven site specific test borings were installed in the northern, eastern and southern portions of the site in order to characterize subsurface soils conditions on the subject property. Soils on the property have been evaluated in terms of constraints, severity of constraints and engineering methods to address any soil limitations. The site plan has been prepared to address these constraints. Proper grading design and erosion control measures are

included in the site plan, and proper design as well as full site plan review for grading and drainage will preclude adverse impacts.

3. Water Resources

a) Wetlands and Surface Water Resources

Both freshwater and tidal wetlands exist on the subject property. The site consists of a series of ponds located through the central portion of the golf course. Based upon review of the historic aerial photograph, the ponds appear to be manmade. The two ponds in the northwest part of the golf course are mapped by the New York State Department of Environmental Conservation (NYSDEC) as fresh water wetlands and fall under their jurisdiction. The property also maintains approximately 1,500 feet of frontage on the Sound shoreline. The majority of the shoreline is armored with stone revetment (western and central portions) and the eastern portion of the shoreline has been stabilized with a line of partially buried concrete rings. The Sound is a tidal wetland which is regulated by the NYSDEC from the Sound landward to the top of the slope running along the north side of the 12th tee, fairway and green. The shoreline and slope are also regulated by the Town of Huntington under the CEHA regulations.

The man-made ponds/recharge areas on the Site, total approximately 3.2 acres. The freshwater wetlands (no pond) total 0.50 acres. All of the on-site wetlands were disturbed during construction of the original golf course. The surface water quality of the existing ponds is documented in **Section 2.3.1**. Water quality is typical of golf course water features with some elevated nutrient and bacteria concentrations, and limited organic compounds and metals. The intent of this project is to improve pond water quality and curtail/eliminate overflow from the site which currently overflows to Fresh Pond. This will ensure that water quality of the ponds is improved through stormwater storage and a Golf Course Environmental Management Plan, and elimination of the pond overflow. As a result, adverse on-site surface water impacts, and off-site impacts which currently occur will be reduced and/or eliminated as a result of the expanded drainage storage on-site, and the Golf Course Environmental Management Plan. Vegetated buffer strips and fescue areas will be added adjacent to wetland and surface water resources where appropriate.

b) Stormwater Management

The project involves dispersed recharge and surface detention of stormwater, as well as dispersed wastewater disposal system, and as a result, will not alter the regional flow of groundwater. The subject site has adequate depth to the regional groundwater table to ensure that leaching of stormwater recharge will occur efficiently. Extensive soil borings were prepared to understand perched water conditions based on subsurface clays and lower permeability soils. The site drainage system considers these subsurface conditions so that leaching and storage of stormwater is managed in conformance with Town requirements.

For drainage design, the ponds will be expanded, lined to retain water, will be maintained at a minimum water level, and will provide increased stormwater capacity in the “freeboard” or area

above the minimum water level, up to a maximum elevation water level. The full stormwater system, which is designed for a nine (9) inch storm event consistent with Town requirements, includes the stormwater pickup and conveyance system, a recharge basin, and the enlarged ponds. These improvements provide a stormwater management improvement on the site.

All stormwater runoff generated on developed surfaces will be retained on-site and recharged to groundwater through the existing and proposed pond network, a proposed recharge basin, depressions, a system of catch basins and leaching pools, individual roof drains and pervious vegetated/landscaped groundcover that allows for direct filtration.

c) Wastewater and Groundwater Resources

Based upon SCDHS design flow factors, the 98 townhomes are expected to generate 29,400 gallons per day (gpd) based upon 300 gpd/unit. The clubhouse (200 catering seats @ 7.5 gpd; 50 indoor seats @ 30 gpd; and 50 outdoor seats @ 15 gpd) is expected to generate 3,750 gpd. The maintenance building has a design flow of 200 gpd. This results in a total design flow of 33,350 gpd.

The design flow calculation has been prepared based on the combined wastewater flow and additional flow allocated to golf course use. The proposed project is significantly below the allowable flow provided for under SCSC Article 6 (26,266 gpd less).

Suffolk County recently approved an amendment to the SCSC adding Article 19, which gives the County Department of Health Services the authority to promulgate procedures, protocols and standards for the use of innovative and alternative on-site septic treatment and disposal systems (signed by Suffolk County Executive Steve Bellone on August 10, 2016). Article 19 authorizes the first major change to residential wastewater treatment technology since 1973, when rules changed to require a septic tank in addition to a leaching pool. When properly designed, sited, installed, managed, and maintained, I/A OWTS provide a cost-effective and environmentally sound alternative to sewers in portions of Suffolk County that are outside the designated sewer areas, significantly reducing nitrogen in wastewater.

The proposed project is expected to result in the construction of four (4) sanitary system zones for the townhomes, two (2) north and two (2) south of Breeze Hill Road. Each sanitary system zone will be divided into sections comprised of 4 to 5 buildings (8 to 10 townhome units) for achieving an optimal sanitary treatment design based on up a 3,000 gpd or less treatment unit. Each of these subzones will utilize a SCDHS approved I/A OWTS. Treatment systems of this type are designed to reduce biochemical oxygen demand, suspended solids and total nitrogen in order to achieve a reduction in nitrogen load to less than 19 milligrams per liter (mg/l). The drinking water standard is 10 mg/l and the nitrogen concentration in untreated effluent is typically in the range of 50-60 mg/l.

Following tertiary treatment, sanitary waste generated in each zone will be gravity fed or pumped to communal leaching pool systems designed to accommodate the anticipated flow from all the residential units within each subdivided unit. Recharge areas are located based on test hole information that identified suitable soil leaching properties.

Sanitary waste generated by the clubhouse will also utilize an I/A OWTS to provide tertiary treatment within the design capabilities of the system. However, since kitchen waste will also be generated, sanitary effluent will first be discharged to a grease trap prior to transfer to the selected tertiary treatment unit.

If and when a power failure occurs, the I/A OWTS installations are designed to process sewage via gravity flow. Thus, no pumps are required to keep the system in operation. For those occasions that there are power failures at the pump stations, portable skid mounted generators will be placed at the location of the pump stations to assure that sewage can be transmitted to the treatment systems.

The sanitary wastewater handling will be subject to an engineering report, SCDHS review and approval, oversight of installation and monitoring of the effectiveness of systems. The applicant commits to the use of I/A OWTS as outlined above, and will obtain the necessary SCDHS approvals for this installation. No impacts to groundwater quality are expected based on evaluation of the proposed use, stormwater and sanitary waste systems; however, further analysis of the water balance and nitrogen is provided below

4. Air Resources

Studies of potential impacts to air quality and greenhouse gas emissions conclude that the proposed Project would have no long term significant impacts. Temporary short term, construction related impacts are identified and would be mitigated through a variety of best management practices. The proposed Project would include several site and building design features that address greenhouse gas emissions and energy efficiency, including: spray foam insulation; blown fiberglass insulation in the attic areas; EnergyStar compliant windows, doors, and appliances; energy efficient HVAC systems, light bulbs, hot water heaters and furnaces; caulking and sealing of top plates; infiltration tests; taped seams of all exterior house wraps; exhaust fans; programmable thermostats; and, split zone HVACs.

5. Ecology

The subject site is or the most part, the location of an existing golf course and existing developed lands. It is noted that the majority of the proposed development will occur in areas which were previously cleared for landscaping and now consist of Successional Southern Hardwood forest, which is of less ecological value as it is currently impacted by the predominance of invasive species found within this habitat. Development has been carefully planned to protect the on-site wetlands and a 100-foot buffer area, and to situate development in existing cleared and/or previously disturbed areas.

The impacts to the ecological resources of a 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 majority of the subject site is currently mowed with the exception of approximately 43.02 acres of natural area including the habitats listed earlier and 13.08 acres of mainly unvegetated areas which include the ponds, cart paths, gold

bunkers and buildings. The changes in habitat quantities for the overall property are listed in **Table 2-16**. The planned development intends to ultimately provide approximately 4.07% of Coastal Oak Hickory Forest, 4.97% of Successional Southern Hardwood Forest, 1.61% of Maritime Bluff, and 0.32% or 0.49 acres of Red maple-hardwood swamp within the project site. As a result, the site will continue to provide some natural habitat for wildlife, though the removal of the existing woodland vegetation on the property is expected to result in a change in the characteristics of site habitat

Vegetation on-site will be improved through the removal of non-native invasives and the replacement with native trees, shrubs and herbaceous plant material.

The Tree Survey, as provided in **Appendix B-4**, indicates existing trees on the site. This provides a tree preservation plan for those existing trees located out of development areas. The tree preservation plan contemplates retaining existing trees north of the CEHA line and within 100' of the freshwater wetlands. Trees within the golf course will remain subject to ongoing golf course maintenance practices. Tree planting pursuant to the Sheets 29-31 of the N&P site plan will occur and will act as part of the long-term tree preservation for the property. According to the Tree Survey, one significant tree, a 55-inch diameter at breast height (dbh), Fagus sylvatica purpurea, located at the rear (South) of the existing clubhouse is to remain during development. No other unique or significant trees were identified within development areas of the site. The development of the Site is planned to utilize, to the extent practical, already cleared and developed land, thereby reducing impacts to vegetation and wildlife. Significant impact to wildlife is not anticipated. Wildlife habitat, however, will be improved by implementation of the landscape plan, use of native plants where new plantings are proposed.

6. Land Use, Zoning and Plans

a) Land Use

The proposed 98 residential unit development fully complies with the land use requirements of New York State Town Law Section 278, Town Code, Sections 198-14 & 114 (i.e. R-40 Residence District & Cluster Developments), Article X Steep Slope Conservation Law and the site and development provide the necessary services, infrastructure, and utilities to serve the development. The use is appropriate for this location based on its existing recreational use, surrounding land uses and zoning, and has the potential to further enhance the diversity of the local housing stock, which is predominantly composed of conventional single-family residential neighborhoods. The transition from adjacent conventional residential and park uses, is appropriate and fully consistent with land planning practice outlines in the Town's Horizons 2020 Comprehensive Plan Update and Town zoning. Since the subject property and abutting lands are zoned for residential purposes, there is a high degree of compatibility between uses, particularly since the majority of the site is an existing golf course that will remain. The proposed use facilitates retention of the golf course and is a significant improvement over development of the site under current zoning which would involve 99 individual homes. The proposed project includes duplex housing, such that only 49 structures will be built, and the existing clubhouse will be replaced by a new clubhouse.

b) Zoning

The proposed project has been designed in accordance with the standards of Chapters 198-14(E) and 198-114 Height, Area and Bulk Regulations and Cluster Development, respectively of the Town of Huntington.

c) Plans

The proposed use fulfils the goals of the various Land Use Plans referenced in Section 3.1.1; the project will retain the existing golf course, and this is facilitated by providing limited residential use on the site based on the underlying zoning. The proposed project retains the golf course which is the dominant land use character of the areas immediately surrounding the site.

A strategy of the TOH Horizons 2020 Comprehensive Update (A.1.5) is to "Require/encourage alternative site design standards (e.g., conservation subdivisions and lot averaging techniques) to better preserve natural areas on a tract. Conservation subdivisions are a form of residential development that reduces lot sizes so as to set aside a substantial amount of the property as permanently protected open space. This concept differs from “Cluster Development” in a number of ways, particularly in its higher standards for the quantity, quality, and configuration of the resulting open space. The Proposed Action may be considered a Conservation Subdivision due the large contiguous areas of open space that will result.

The Project will maintain the existing golf course as a private recreational open space at the Site. The Club property shall be used solely for a membership club in accordance with the requirements of the Zoning Ordinance, and the portion of the Site on which the golf course is located shall permanently be used only as a golf course or otherwise as open space accessory to the golf course community. Access to open spaces on the Site will remain private, resulting in no change from the existing conditions. Residents of the proposed condominium units would have a full array of recreation facilities at the Club.

Other land use and water-resource land use plans are reviewed in the DEIS and the proposed project is consistent with these plans. Although the proposed Project is not expected to have any significant impact on existing public open spaces and recreational facilities, the Club will continue to sponsor events in support of community organizations.

7. Community Character

The existing character adjacent to the subject parcel is mixed, but includes numerous detached single-family residences with amenities such as swimming pools; Town (Geissler’s Beach) and County (Fresh Pond) wetlands and roadways. Approximately 95 acres of the property is generally part of the golf course including greens, tees fairways, rough and mowed areas under trees, as well as the maintenance area, clubhouse, driving range, pro shop and halfway house. The remainder of the property is either vegetated or beach, or residential use associated with four (4) homes on the south part of the site and two (2) homes on the southwest part of the site.

The property contains a combination of gentle, moderate, and steeply sloping undulating topography, including several knolls on its north side. Passersby traveling on adjacent roadways do not have significant on-site views of the property, due to topography and existing vegetation. The site's interior has limited views as seen by the public from adjoining roadways and private properties due to vegetation and slopes and the large open distances that extends to the property boundaries.

The proposed project will alter the visual character on and around the subject property by changing the use of the site from golf recreational to residential and golf recreational use. The project will increase the overall density of development on the site as compared to existing conditions; however, the level of activity, use and number of buildings will be less as a result of the proposed project than if developed under current zoning. It is the applicant's goal to develop a premier luxury residential community on the property and in doing so, reduce visual impacts by retaining the golf course. An important feature of the project is that the proposed senior units will be duplex's, such that only 49 buildings will be built for housing on the site, as compared with 99 or more units of single-family residential buildings under current zoning.

The overall views of the golf course will not be significantly altered; however, residential use that is characteristic and common in the neighborhood will be introduced. The proposed residences will be setback a minimum of 50 feet from adjacent land to the east, west and south. All homes will comply with R-40 district's 35-foot building height standard and contain no more than 2½ stories. As part of the improvements, the applicant must install street trees which will assist with visual screening. Decorative street lighting will line one side of each of the streets and, like the street trees, will also be spaced at 40-foot intervals. Tree protection will be installed five feet from the outer drip line of trees proposed for retention in construction zones to remain to ensure that workers are aware that the trees are present and must be protected. Individual building lots will include typical landscape installations for foundation and yard plantings. The architecture is attractive and the views of the new uses are limited. The distance from viewpoints and vegetative screening reduces the visual dominance and massing of the new uses, but overall, the use is consistent with neighborhood character, and most important, the existing golf course will be retained.

The change in the visual character of the site, from a golf recreational use to a residential and golf open space cluster use which will be mitigated by retention of buffers along the property, permanent retention of more than 91% open space, installation of screening trees along the disturbed perimeter, as well as the planting of street trees.

8. Community Services

a) Schools

The impact of any project upon the local school district in which it is located depends on the number of school-age children that will be generated, offset by increased tax revenues and the ability of the school district to provide educational services for these children. The ability of a school district to handle increased demand for educational services depends primarily upon the adequacy of long-term planning within the district, in combination with increased tax revenue

generation to strengthen the tax base of the community. Since the proposed project is age-restricted to residents 55 years and older, it is not anticipated that it will generate any school-aged children. It is estimated that the school district will levy over $1.1 million in taxes from the proposed project, without the district incurring costs associated with an increased enrollment. This net revenue could ease the district's need to tap into additional fund balances, reduce their financial burden, and could also help alleviate an increased burden on other taxpayers throughout the district.

b) Emergency Services

It is not anticipated that the proposed project would have a significant adverse impact on the patrol responsibilities of the SCPD for security/safety purposes. While the potential need for police services to the site would be increased by the addition of residences, this increase would not in itself be a significant added burden on patrol activities, as this use does not generate much potential need for response. A request for confirmation that SCPD is able to provide service for the project was sent in a letter dated September 4, 2018. Although no response was received, earlier correspondence from the SCPD dated August 2, 2016 (see **Appendix P**) indicates that the department will adapt as necessary to protect and serve the community for the previously proposed change of zone project.

Similar to police protection, the proposed project is not expected to have a significant adverse impact on the Northport Fire Department (NFD). The project would incrementally increase the potential need for fire protective services, though this increased potential need would not in itself be a significant added burden on the department. This is due to the project's adherence to the NYS Fire Code in construction, and the anticipated use of fire-resistant building materials and smoke/fire alarms and detectors.

9. Transportation

The 98 senior residences are projected to generate 51 trips (16 entering and 35 exiting) during the weekday AM peak hour, 59 trips (35 entering and 24 exiting) during the weekday PM peak hour and 23 trips (10 entering and 13 exiting) during the Saturday midday peak hour.

Due to the fact that the project will be developed in three different quadrants, a percent distribution was prepared for each. During the Weekday AM and PM Peak Hours, most of the traffic would utilize the SW Quadrant to the south of the Site. In the AM, this would amount to approximately 23 trips during the Peak Hour.

The Traffic Impact Study in DEIS Appendix Q concludes that the proposed golf course community will not significantly affect the area roadways. Similar Levels of Service and delays will be experienced under Future No-Build and Future Build Conditions. As a result no roadway improvements are recommended as part of the Project.

10. Human Health

A Phase I Environmental Site Assessment (ESA) was completed for the property in February 2014 to determine whether any potential environmental or public health concerns are present on the site. The purpose of the assessment was to, in part, establish a basis of understanding of the past and present uses of the sites in order to identify any recognized environmental conditions which may exist in connection with the site and surrounding properties. The Phase I ESA report. Reported and closed spills in the NYSDEC database are included in the Phase I ESA. Based on the recommendations of the Phase I ESA report, a Limited Phase II ESA was conducted on the property to address specific issues raised in the Phase I ESA.

A Supplemental Suffolk County Department of Health Services (SCDHS) Phase II ESA was completed to address issues raised by the SCDHS in order to determine if elevated concentrations were present in a small drywell located on the south side of the main club, the Pro Shop building sanitary system and the dirt-filled pit in the maintenance garage the structures sampled. A sampling and analysis program was designed to determine if these structures had been impacted by the prior and existing uses of the subject property.

Site remediation activities were performed to address the issues discovered during the Limited Phase II ESA. All remediation activities were coordinated with the Suffolk County Department of Health Services (SCDHS) to ensure that appropriate methods and procedures are utilized to ensure that all impacted materials are removed in compliance with their requirements and standards. Remediation was completed on the clubhouse kitchen sanitary system in February and March of 2017. A 'no further action' letter was issued by SCDHS.

In response to the Town of Huntington's concerns for adequate protection of the environment, and as a component to the Club's Golf Course Environmental Management Plan, turf management will continue to meet or exceed the Best Management Practices for New York State Golf Courses (NYSBMP). The BMP was developed with Cornell University, New York State's golf course superintendents, the NYSDEC and other stakeholders. It is a State standard for turf management practices, designed to protect natural resources, with an emphasis on water quality. The BMP is a decision-making tool with tools for post decision monitoring and record keeping, conducted to evaluate and adjust applied turf management strategies. The course operations and any modifications caused by the proposed residential development will meet the BMP principals and additional healthy turf management strategies. Indian Hills currently exemplifies environmental stewardship, and coexists with adjoining residential land uses without negative impacts to the environment.

11. Cultural Resources

Phase I, Phase II, Phase IB Archaeological Addendum and Phase II Addendum Archaeological Investigations were conducted for the proposed improvements at the subject site by TRACKER Archaeology, Inc. of Monroe, New York for the proposed Project to determine the prehistoric and historic potential of the property for the recovery of archaeological remains.

The purpose of the Phase I archaeological survey is to establish the presence or absence of archaeological sites. If the site is to be impacted by proposed construction or other activities, Phase II intensive testing of any archaeological site is them specified by the regulations of the New York State Historic Preservation Office and the National Advisory Council on Historic preservation. Phase II investigation methods should interpret the archaeological sites and determine if it is eligible for the nomination to State or National Registers of Historic Places.

Based upon topographic characteristics, distance to other known prehistoric sites and an Indian trail, the property was assessed as having a higher than average potential for encountering prehistoric sites. Based upon topographic characteristics, distance to historic map documented structures, historic sites, historic roads, and an Indian trail, the property was assessed as having a higher than average potential for encountering historic sites. The field testing included the excavation of shovel tests at 15-meter intervals across the project area. No prehistoric or historic artifacts or features were encountered on the golf drive range (SW section) or the maintenance area (NE section). A Native American site was encountered on the northwest section consisting of 7 artifacts of quartz and black/olive green glass, flakes and small tools in 7 positive ST's.

No further work was recommended at the golf drive range (SW section) or the maintenance area (NE section). However, a Phase II intensive testing was recommended and implemented on the North-West Section of the project area (near the bluff overlooking the Long Island Sound) and 2 areas in the northwest part and 1 area on the southeast part of the site. Phase II addendum investigations at Sites A, B, and C included 134 close interval ST's and 14 TU's. The shovel testing started off with ST 398 because the Phase IB addendum ended in ST 397.

The Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP) reviewed the revised report entitled "Phase II Addendum Archaeological Investigation at Indian Hills Prehistoric Sites A, B, & C for proposed Additional Improvements at the Indian Hills Golf Course, Fort Salonga (Northport), Township of Huntington, Suffolk County, New York". A total of three Precontact Period Native American archaeological sites have been identified within the project's Area of Potential Effects (APE). OPRHP concurred with the report recommendation that the three archaeological sites do not meet the eligibility requirements of the State and National Registers of Historic Places (S/NRHP). Therefore, OPRHP had no additional concerns regarding the project's potential impacts to archaeological and/or historic resources.

12. Other Required Sections

The DEIS also contains chapters that analyzes the impacts of the project's potential construction-related impacts, cumulative impacts; unavoidable adverse impacts; irreversible and irretrievable commitments of resources; growth-inducing aspects and the impacts on the use and conservation of energy. Long-term impacts that cannot be fully mitigated include modification of site topography and vegetation; altered drainage patterns and increased energy and water consumption. However, required erosion controls will stabilize soils; replanting will mitigate changes in habitat and visual resources; the collection, treatment and recharge systems will contain all storm and wastewater and water and energy capacity is available. Further, it is noted

that these impacts would also occur, and likely to a greater extent, if the project site were developed under current zoning.

1.4 Alternatives Considered

1.4.1 Introduction

SEQRA requires the consideration of alternatives to the proposed project. Alternatives should represent reasonable and feasible land use, technology and other options to the proposed project that would achieve the applicant's objectives and remain within the applicant's capabilities. The purpose of this analysis is to determine the merits (as reflected in the totality of impacts) of the proposed project as compared to those of other possible uses, sites and technologies that would also achieve the applicant's objectives and potentially reduce environmental impacts. The discussion and analysis of the alternatives should be conducted at a level of detail sufficient to allow for this informed comparison, to be conducted by the decision-making agencies.

Alternative 1 is the "No Action" alternative, which is required by SEQRA and is intended to set a baseline of the existing conditions that characterize the project site, against which the corresponding conditions of the other alternative scenarios can be compared to determine the impacts relative to those of the other potential uses of the site.

Generally, the alternatives evaluation is comprised of analyses of the potential impacts of each alternative scenario on the same range of environmental resources as was conducted for the proposed project. Thus, the review of alternatives takes the form of an analysis of the anticipated impacts of each scenario, as compared to those of the site in its existing condition, which is Alternative 1.

1.4.2 Brief Descriptions of the Alternatives

For the subject application, the following alternatives were evaluated:

- Alternative 1: No Action - assumes that the site remains in its current conditions. This scenario shall reflect a site of 145.32 acres, without the acquisition of land to access the private road to Breeze Hill Road, or for the Makamah Road access.
- Alternative 2: Detached Standard Subdivision without Golf Course - assumes a standard subdivision involving development per existing zoning and the yield map for the proposed project, with removal of the golf course, and acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 152.20 acres.
- Alternative 3: Detached Cluster Subdivision without Golf Course - assumes an alternative cluster subdivision involving development of the number of lots according to existing zoning and the yield map, in a clustered subdivision with removal of the golf course and acquisition of land to access the private road to Breeze Hill Road, and

acquisition of the private road, but no Makamah Road access. This scenario assumes a site of 152.77 acres.

- Alternative 4: Attached Cluster Subdivision with Golf Course and without Makamah Road Access - assumes an alternative cluster subdivision involving development of the number of lots according to existing zoning and the yield map, in a clustered subdivision that retains the golf course, and acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 151.08 acres.
- Alternative 5: Attached Cluster Subdivision with Redesigned Golf Course, Layout A - assumes an alternative cluster subdivision that retains the golf course but assumes a layout that provides greater setbacks for the proposed units from the surrounding residences, with acquisition of land to access the private road to Breeze Hill Road, and acquisition of the private road, but no Makamah Road access. This scenario assumes a site of 151.65 acres.
- Alternative 6: Attached Cluster Subdivision with Redesigned Golf Course, Layout B - assumes an alternative cluster subdivision that retains the golf course and provides greater preservation of slopes and natural areas, redistributes the units toward disturbed areas, and provides an increased separation from sensitive environmental areas per NYSDEC recommendations. His scenario includes acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 151.08 acres.
- Alternative 7: Acquisition of Subject Property's Development Rights, Either in Total or Partially, by Town, County or State - assumes that all or a portion of the property's development rights are obtained by the Town of Huntington, by Suffolk County, or by New York State. This scenario assumes a site of 145.32 acres.

1.4.3 Comparison of Impacts

It must be remembered that Alternative 7 is identical to Alternative 1 in that Alternative 7 would not change the use, operations, or physical condition of the project site; this scenario would merely remove the potential for the site to be re-developed in the future by public purchase of the property's development rights. As such, Alternatives 1 and 7 are fundamentally different from Alternatives 2 through 6; the former assume that no re-development occurs (so that no impacts would occur for these scenarios), while the latter represent changed site conditions and characteristics (so that impacts would occur).

<u>Topography</u>
In general, and like the proposed project, Alternatives 2 through 6 would result in physical alteration of the site's and ground surface, from clearing and grading operations conducted prior to re-development. However, the amount of land to be impacted would vary from a high of 115.15 acres (Alternative 2) to a low of 34.3 acres (Alternative 6). For comparison, the proposed project would disturb 51.94 acres.

The only significant geological feature that may be impacted by either the proposed project or the alternatives are the steep slopes found within and along the golf course, throughout the site. The steep slopes of the natural bluff in the site's northern portion would not be disturbed under

any scenario. The amount of steep slopes that would be subject to disturbance would vary, depending upon whether the golf course is retained or not. Alternative 2 would remove the course and subdivide this area into lots, and so would represent the greatest potential impact to steep slopes.

Soils

Generally, the grading programs for the proposed project and Alternatives 3 through 6 would be similar in terms of location and depths of cut and fill activities, (as these scenarios would retain the golf course), and so the amount of excess soil generated would depend primarily on the acreage of grading. Alternative 2 would grade the most acreage, and so would generate the greatest potential volume of excess soil.

Water Resources

As the existing natural ponds on the site are designated freshwater wetlands, the conceptual plans have been prepared to avoid potential impacts to these features, so that neither the proposed project nor any of Alternatives 2 through 6 would impact these features.

The proposed project and Alternatives 2 through 6 would substantially increase the consumption of groundwater to serve the site with potable water. Further, Alternatives 3, 4, 5 and 6 assume that the existing irrigation well would be retained to continue to provide all landscape irrigation water for the site. Finally, for those scenarios that would retain the golf course, application of the Golf Course Environmental Management Plan would ensure that no operation or maintenance activities. would cause contamination of soil or groundwater resources.

Evaluation of groundwater and subsurface geological conditions indicate that there should be no concerns in regard to inadequate depth to the water table or the ability of subsurface soils to adequately transmit recharge. Further, site plan review would be conducted by Town and County engineering staff, ensuring that proper operations of wastewater treatment and drainage systems would occur.

The subject site is not subject to significant potential for flooding, as it is elevated well above sea level and displays substantial grade changes sufficient to rapidly convey runoff downslope and off-site.

Generally, the three largest factors contributing to recharge volume are acreage of impervious surfaces, on-site wastewater treatment, and irrigated acreage. The results of the SONIR computer model for recharge volume generated indicates that the most recharge would be associated with the proposed project, and the least by Alternatives 1 and 7.

Unlike the proposed project, the residences and clubhouse in Alternatives 2 through 6 are assumed to be served by septic systems. Generally, a septic system does not operate as efficiently in removing nitrogen from wastewater as an enhanced septic system of the type assumed for the proposed project. This is supported by the results of the SONIR computer model runs, which indicate a substantially lower nitrogen concentration in the site's recharge for the proposed project than for Alternatives 2 through 6.

Air Resources

Neither the proposed project nor any of the alternative development scenarios evaluated herein would include any source of air emission that would require state permitting.

Ecological Resources

The most clearing (which indicates potential impact on habitat space and the flora and fauna that lies in or depends upon habitat space) would be associated with Alternative 2, followed by Alternative 3, Alternative 5, then the proposed project, followed by Alternative 4. Alternative 6 would clear the least acreage of the site. Alternative 2 would require the most clearing because it would be distributed over the entirety of the subject site, necessitating development of an extensive internal roadway network and on-lot development of patios and driveways. Additionally, Alternative 2 includes two new recharge basins (totaling 7.96 acres), which are not included in the drainage system design of the proposed project.

Conversely, Alternative 6 would provide the greatest acreage of vegetated surfaces (including landscaping, natural vegetation, the wetlands, beach, bluff, etc), closely followed by the proposed project, then by Alternates, 4, 3, 5 and 2. Thus, Alternative 6 would provide the most acreage for potential future use by wildlife, closely followed by the proposed project., then in decreasing order by Alternatives 4, 3, 5 then 2.

Land Use, Zoning and Plans

Both the proposed project and Alternatives 4, 5 and 6 would add a new land use category to the site; the proposed project would add "Senior Residence" to the existing "Recreation" category, whereas Alternatives 4, 5 and 6 would add the "Residence" category. Alternatives 2 and 3 would remove "Recreation" altogether, and change the land use of the site to entirely "Residence."

As the pattern of land uses in the vicinity is dominated by the "Residence" and "Open Space" categories, implementing the proposed project or Alternatives 4, 5 and 6 would not have an impact on this pattern from the standpoint of uses. Re-development under Alternatives 2 or 3 would eliminate the golf course, an open space resource, which would impact the pattern of land uses in the area. However, it should be noted that the above-noted impacts would be minor in extent and not significant.

Like the proposed project, Alternatives 2 through 6 would result in re-development of the project site. While the nature and density of that re-development would be similar to the proposed project for Alternatives 4, 5 and 6, Alternatives 2 and 3 would represent a somewhat lesser intensity of re-development than the proposed project, as neither of these alternatives would retain the golf course. The general intensity of site uses and activities associated with the Alternatives may be summarized as follows:

1. Alternatives 2, 3 and 5 would physically impact a greater acreage of the site, than would be the case for the proposed project;
2. Alternatives 2 and 3 would remove an existing land use from the site entirely (the Indian Hills golf course, a recreational land use), rather than retaining and improving upon it, as in the proposed project and Alternatives 4, 5 and 6;

3. Alternatives 2 through 6 would provide a significantly greater number of site residents than the proposed project;
4. Alternatives 2 through 6 would produce a substantial number of school-age children (which would not occur under the proposed project); and
5. Alternatives 2 through 6 involve residences that would produce residents having a full range of ages, whereas the proposed project would produce only senior (55 years and above) residents.

In consideration of the above factors, it may be concluded that the impacts on the land use characteristics of the site and vicinity would be greater if Alternatives 2 through 6 were implemented, as compared to those expected if the propose project were built.

Like the proposed project, there would be no change in the zoning of the project site in Alternatives 2 through 6, so that the zoning pattern in the area would not be impacted.

Unlike the proposed project and Alternatives 4, 5 and 6, Alternatives 2 and 3 would not conform to the Parks, Recreation & Conservation Land use of the site as recommended in the Town Comprehensive Plan Update. Alternatives 2 through 6 would not address the plan's action item agenda goals of providing for a range of housing types for underserved portions of the Town's residents (such as senior citizens). Finally, only Alternative 2 would not provide sustainable water resource infrastructure (e.g., the enhanced wastewater treatment systems of the proposed project and Alternatives 3 through 6).

Community Character

With respect to land use, like the proposed project, none of the Alternatives would be inconsistent with the prevailing character of the community; each of the scenarios evaluated here would provide low-density residential development and (except for Alternatives 2 and 3) retain the existing golf course, a Recreational use. These two uses match the land use types that dominate the area.

Not including impacts that would occur during construction, none of the Alternatives considered would result in any increases in noise or odors to a degree greater than that of the proposed project. Potential sources of noise and/or odors would be expected from vehicle movements from either or both the residential component and the golf course, but each of these types of use are well-known to not cause significant noise and/or odor impacts. The similar or greater amounts of internal road length, driveways and patios would tend to result in similar or greater amounts of lighting (to be dispersed throughout the site) than the proposed project, again with similar or greater impacts on the character of the site and the neighborhood. However, each scenario would be subject to the review and approval of the Town, which would apply appropriate restrictions on light fixtures, pole height, illumination, use of shrouds, and setbacks, to ensure that the potential for fugitive lighting impacting the neighbors is minimized.

Like the proposed project, each alternative would be based on a grading plan that avoids grade changes that would block views for the neighbors. Additionally, each scenario would retain substantial vegetated perimeter buffers and setbacks that, with retained and supplemental internal

landscaping, would minimize the potential for significant impacts on views of and across the site for the neighboring properties.

As defined by visual appearance, general level and intensity of activity on the site, and noise, implementing Alternatives 2 through 6 would impact the character of the site and neighborhood to a similar or greater degree than would be the case for the proposed project. Specifically, there would be a substantially higher number of occupants on the site in these Alternatives than for the proposed project. In addition, these scenarios would generate a substantial number of school-age children. The Alternatives would generate similar or greater numbers of vehicle trips than the proposed project, so that there would be similar or greater impacts to community character from traffic-generation than the proposed project.

Community Services

Like the proposed project, Alternatives 2 through 6 would substantially increase the amount of taxes generated by the site as compared to its existing condition; each scenario would also substantially increase its allocation of taxes to the Northport-East Northport UFSD.

In comparison to the proposed project, Alternative 2 would generate more total and school district taxes, while Alternatives 4, 5 and 6 would generate the same amounts of these two figures, and Alternative 3 would generate less total and school district taxes.

Being a senior residential development, the 98 residences in the proposed project would generate no school-age children. In contrast, the 98 residences of Alternatives 2 through 6 would generate an estimated 148 school-age residents, who would attend local schools. These would represent an adverse impact on enrollment of the district (as the schools these students would attend may not have sufficient available classroom space to accommodate them).

Such an enrollment increase would have an adverse effect on district expenditures, by requiring the district to expend an additional $2.7 million annually. While district tax allocations would be increased by the project (see above), that increased allocation would not be large enough to fully offset the increased expenditures necessitated. Conservatively assuming that all such residents would attend the Northport-East Northport UFSD, district expenditures would be increased by roughly $2.7 million annually, but school taxes would be increased by $1.0 to $1.2 million per year.

Specifically, each of Alternatives 2 through 6 would result in a shortfall in school taxes versus school expenditures: Alternative 2 would result in the lowest shortfall ($1.52 million annually), with Alternatives 4, 5 and 6 causing a shortfall of $1.58 million per year, and Alternative 3 having the greatest shortfall,($1.68 million pe year). This shortfall in tax allocation could require the district to increase its tax rate, cut expenditures, or a combination of both.

Such adverse impacts on school district fiscal conditions would not occur for the proposed project, as this scenario would not generate potential school children, there would be no increased enrollment for the Northport-East Northport UFSD, no increased expenditures, and no shortfall in school district tax allocations. In fact, the proposed project represents a significant

fiscal benefit to the district, as all school taxes allocated would be available to the Northport-East Northport UFSD.

For the proposed project and Alternatives 2 through 6, the site would continue to warrant oversight on the part of the SCPD and the Northport Fire Department. It should be noted that the nature of the oversight and the potential need of emergency response would be changed by these scenarios, as a result of the presence of residents. Each of these services would receive substantial increases in site-generated tax allocations, to offset at least portions of any increased expenditures necessitated.

As the golf course operation would continue for the proposed project and Alternatives 3, 4, 5 and 6, use of the on-site well to provide irrigation water would not change (Alternative 2 would close and abandon the irrigation well). As the acreages of irrigated landscaping are assumed to vary from 46± acres (Alternative 6) to 23± acres (Alternative 2), the volume of groundwater used would vary accordingly. In comparison, the proposed project would irrigate 32.52 acres.

The SCWA would provide all water for domestic consumption. The residences in the proposed project and Alternatives 2 through 6 would consume the same amount of water, 29,400 gpd. An additional consumer of domestic water is the golf course clubhouse and maintenance building, if retained (the proposed project and Alternatives 4, 5 and 6, at 3,950 gpd), or the golf course clubhouse retained for a community clubhouse (Alternatives 2 and 3, at 3,750 gpd).

The substantially larger number of site residents in Alternatives 2 through 6 would generate a substantially larger amount of solid wastes than the proposed project, with a correspondingly greater impact on the solid waste removal and disposal services and facilities of the Town.

With regard to impacts associated with potential usage of public parks and local recreation facilities, the nature of Alternatives 2 and 3 are such that residents of these scenarios would be somewhat more likely to use such sites than those of the proposed project or Alternatives 4,5 and 6 (which are designed around a golf course readily available to the site's residents).

Alternative 2 would include roads that would be offered for dedication to the Town for maintenance, whereas those of the proposed project and Alternatives 3, 4, 5 and 6 would remain in private ownership, to be maintained privately. As a result, Alternative 2 would result in a greater adverse impact on the road maintenance services of the Town, by incrementally increasing the amount of roadway that would be maintained.

The proposed project and Alternatives 2 through 6 will increase the demand for and consumption of energy, particularly electricity, on the site. In comparison to the increased usage of the proposed project, it is expected that the increases of Alternatives 2 through 6 would be similar to that of the proposed project, as each scenario includes 98 residences and either the golf course (Alternatives 4, 5 and 6), or the golf course clubhouse retained as a community clubhouse (Alternatives 2 and 3).

Upon consideration of the above-noted impacts, it is expected that Alternatives 2 through 6 would demand more community services than the proposed project, particularly in relation to school services.

Transportation

In comparison to the proposed project, Alternatives 4, 5 and 6 would generate fewer vehicle trips during the weekday AM peak hour, nearly the same number of trips during the weekday PM peak hour, and more trips during the Saturday midday peak hour. Generally, each of these scenarios will increase the trip generation of the site. The sizes of increases would vary due to the difference in the type of residence assumed and whether the golf course is retained or not. The proposed project would generate the most trips during the weekday AM and PM peak hours, but Alternatives 4, 5 and 6 would generate the most trips in the Saturday Midday peak hour. Alternative 2 would generate fewer trips than for all peak hours evaluated, and Alternative 3 would generate the fewest numbers of peak hour trips. Additionally, the directional distributions of the trips generated by the scenarios would be similar to those of the proposed project because each of these scenarios assume new accesses onto Mystic Lane and either Thornton Drive or Frost Pond Road, and Breeze Hill Road. In consideration of these two factors, it would be expected that a similar potential for impacts on local roadways and intersections would occur.

The proposed project was analyzed in a TIS and its impacts were not found to be significant. Therefore, it is expected that the potential impacts of Alternatives 2 through 6 would not differ substantially from those of the proposed project.

Human Health

Evaluations of the site's soil and water resources indicate that there remain no foci of impact on the site. Further, neither the proposed project nor any of the alternative development scenarios would include any activities that could introduce such impact to the site. As a result, none of the development scenarios examined herein would impact human health from exposure to new or existing sources of contaminants.

Cultural Resources

Investigation for the proposed project has determined that the property has no known or suspected cultural resources (whether prehistoric or historic); as a result, no impacts to such resources could occur. Thus, there would be no difference in the potential impact on cultural resources between Alternatives 2 through 6 and the proposed project.

Construction

Generally, it is expected that the geographic and temporal extents of construction would be similar for the proposed project and Alternatives 3 through 6. As Alternative 2 would remove the golf course (for subdivision into residential lots), it is expected that the impacts of construction would be greatest for this scenario. All other impacts associated with construction, such as vehicle trips, duration of impacts, construction noise and dust generated, etc. would be similar for all scenarios evaluated.

1.4.4 Summary and Conclusion

The above general discussions indicate that some of the impacts (both adverse and beneficial) anticipated from the proposed project would be greater than those of the Alternatives, and other impacts would be less than those of the Alternatives. On balance, Alternatives 2 and 3 would produce greater adverse impacts on geology/soils (greater disturbance), water resources (higher nitrogen load), ecology (greater intensity and spatial use of land and domestic impacts), land use/zoning (removal of recreational use), land use plans (does not advance goals of the plan), community character (loss of the golf course), community services (greater burden and less net tax revenue to school district), and transportation (higher peak hour trip generation).

Alternatives 2 and 3 are not in keeping with the goals and objectives of the applicant, which is to provide a high-quality, year-round residential community centered on a revitalized private golf course/country club that minimizes impact on the site and surrounding community, particularly with regard to water quality, the Northport-East Northport UFSD, tax revenue, and conformance to the Town Comprehensive Plan Update. Alternatives 4, 5 and 6 would achieve the goals of the project sponsor with respect to a residential community with a private golf course/country club, but these scenarios would have greater adverse impacts on water resources (total usage, recharge volume, nitrogen recharged), community character (greater number of residents), and community services (greater burden and less net tax revenue to school district), than the proposed project.

In consideration of the above analysis, it may be concluded that, on balance, the potential impacts of Alternatives 2 through 6 would be generally more adverse than those of the proposed project, and therefore there is no compelling reason to pursue these scenarios in preference to the proposed project.

1.5 Issues of Controversy (if any)

<u>Draft Crab Meadow Watershed Hydrology Study and Stewardship Plan</u>

The Town has taken a proactive stance during subdivision and site plan reviews of developments requiring water quality improvements and delineation of private and public watersheds. During review of the proposed development, the Town Highway Department may request that any existing discharge pipes that direct stormwater onto Town roads or right-of-ways be removed. The Town may also require that the natural hydrology of steams and connections be re-established to restore proper flows and limit wetland impacts.

Fresh Pond lies at the extreme northeastern edge of the Town-defined CMW boundary. It is mostly owned by the County of Suffolk. It does not contribute flows into the Crab Meadow wetland system and the majority of the pond area is located in the Town of Smithtown. The pond currently receives stormwater overflow/streamflow from Indian Hills Golf Course and residential areas to the west and discharges through a narrow tidal outlet directly into Long Island Sound. This area of Fresh Pond Road and Breeze Hill Road was visited immediately following a significant rainfall event (e.g., 8"+ in 24 hours) on August 13, 2014, and found to be one of the worst flooding locations within the CMW.

1.6 Matters to be Decided

PERMITS AND APPROVALS REQUIRED

Agency	Approval
Huntington Town Planning Board	Subdivision; Site Plan; Buffer Relief
Huntington Town Zoning Board of Appeals	Special Use Permit Amendment
Huntington Highway Office	Road Access Permit; Drainage
Suffolk County Department of Health Services	Water Supply; Sewage Discharge
Suffolk County Water Authority	Water Supply Connection
NYSDEC	Tidal and Freshwater Wetland Permits; SPDES Stormwater Permit
Huntington Town Building Department	Demolition and Building Permits

SECTION 1.0

DESCRIPTION OF THE PROPOSED PROJECT

1.0 DESCRIPTION OF THE PROPOSED PROJECT

1.1 Introduction

This document is a Draft Environmental Impact Statement (DEIS) for the proposed subdivision of a 154.56 acre site, zoned R-40 Residence District (minimum one acre), in order to construct residential senior housing while preserving the existing recreational land use, a golf course property known as the Indian Hills Country Club (Club).

Project Overview

The proposed action involves a clustered subdivision of 99 lots (98 dwellings and 1 clubhouse/fitness center lot) on an existing golf course and several adjoining properties totaling 154.56 acres. The 98 units will be located in 49 duplex buildings and will be age-restricted (55 and over) senior townhomes. The 98 residences will generally be sited in three (3) areas of the site where there is existing road access, and clustered to preserve open space pursuant to New York State Town Law, Section 278 and Town Code §198-114 Cluster Development. Forty-eight (48) senior townhomes will be located south of Breeze Hill Road with access provided via a new private roadway on a 3.44-acre parcel extending east from Makamah Road. No residential access from Breeze Hill Road will be used and the method for access control is evident in that no residential driveway is provided to Breeze Hill Road. Access will also be provided via private roadways from Fresh Pond Road for 14 townhomes; and, from Mystic Lane where an existing road end abuts the subject site, for 36 townhomes.

The site is zoned R-40 in the Town of Huntington, which has a yield based on 43,560 square foot (SF) lots. The 99-lot yield is supported by a yield map and an updated steep slope analysis **(see Pocket in back of this document)** prepared to Town specifications and approved by the Planning Board for yield purposes, and is less than what would be permitted as-of-right under current zoning if each property were developed independently; a residential yield of 0.64 units per acre is proposed. The yield will also be in conformance with Suffolk County Department of Health Services (SCDHS) yield requirements under Article 6 of the Suffolk County Sanitary Code (SCSC) and General Guidance Memorandum #17 for Agricultural and Golf Course Density.

The existing 18-hole Indian Hills Country Club (IHCC, Inc.) will be modified and maintained as an 18-hole course as part of the site redevelopment plan. A new golf course clubhouse will be constructed on the site in a location north of the existing clubhouse, after which, the existing clubhouse will be demolished. The new clubhouse is in conformance with the Agreement and Release dated April 14, 2003 between the: Town of Huntington, IHCC, Inc.; and, the Fort Salonga Property Owners Association, Inc., a copy of which is provided in **Appendix A**. The existing golf pro-shop building will be retained, renovated and repurposed as a fitness center for the residents of the subdivision, and the existing golf course maintenance area will remain as it currently exists. The subdivision plan includes the site plan alignment for the new clubhouse and associated parking to be reviewed concurrently with the overall subdivision plan and golf course modifications

The subdivision and clubhouse will be served by low-nitrogen, Innovative/Alternative On-site Wastewater Treatment Systems (I/A OWTS) in conformance with SCDHS requirements, review and approval. Golf course management will be addressed in a Golf Course Environmental Management Plan, prepared by a trained professional that specializes in proper golf course management, and implemented by a trained professional golf course superintendent. The management plan includes proper techniques for soil preparation, fertilizer applicant rates, pesticide handling and spot application techniques, irrigation controls and overall golf management techniques.

Public water from the Suffolk County Water Authority (SCWA) will be provided for potable/domestic water supply. The existing golf course clubhouse is served by SCWA and the new clubhouse and new units will connect to the existing water main distribution system for potable/domestic water. An existing on-site irrigation well that is currently used for golf course irrigation will remain in use to reduce the burden on the water authority distribution system.

The site has a series of existing ponds that are groundwater fed and currently receive runoff from the golf course. This pond system flows through the site and discharges through an outlet on the east side of the property, then flows north along the west side of Fresh Pond Road, then is conveyed under Fresh Pond Road to outflow at Fresh Pond; this is an existing condition. The proposed project will install a new drainage system for new development and existing golf course conditions that will retain stormwater from a 9-inch design storm (including catch basins, leaching pools, recharge basins and detention areas, and expanded ponds). This will effectively capture all runoff from the site based on the design storm and will substantially increase the amount of on-site stormwater retention storage over what currently exists. The existing overflow will be effectively controlled such that flow will be eliminated for storm events and overflow will only occur for base flow conditions should this occur. In any case, the expanded drainage system will provide a substantial improvement as compared to existing conditions. Pond and groundwater sampling are presented in this DEIS to establish baseline conditions (see **Section 2.3.1**) and further stormwater, groundwater and surface water evaluations are presented in appropriate sections of this DEIS.

Excavated soils resulting from grading, sanitary and drainage work are expected to remain on-site. The project is intended to be designed for balanced "cut" and "fill," and this information is provided in the appropriate sections of this DEIS (see **Sections 2.1** and **2.2**).

Pursuant to Chapter A202 Town of Huntington Subdivision and Site Plan Regulations, segmental retaining walls, tiered and non-tiered, ranging from approximately 0.5 to 5 feet in height with a total of approximately 10,000 linear feet or 25,000 square feet of wall face are proposed in key locations. Retaining walls are proposed to achieve suitable lot grading and grade transitions on the site, pursuant to the development plans. Such walls will be constructed of structural concrete, reinforced as required or dry masonry with geo-grid reinforcement unless special written permission to substitute other materials is granted by the Planning Board. Retaining walls will be designed to visually complement buildings on the site and in the immediate vicinity. Materials and colors will be coordinated with other built landscape elements on the site such as walkway paving and curbing.

All units will be for-sale on individual lots, with the common area immediately surrounding the lots managed by a Homeowners Association (HOA). The golf course will be managed by a Golf Course Association (GCA). The existing groundskeeping staff for the golf course will remain and be used to maintain landscaping on the site internally, thus reducing impact of off-site landscape vendors coming to the site.

The residential units associated with the project will be or persons aged 55 years and older. As a result, the site will be occupied by active senior citizens seeking the type of lifestyle that the project offers. The range of services and amenities for senior residents will include:

- Accommodations with a variety of senior-friendly floor plans
- Daily social, cultural and recreational activities
- Beautifully decorated common areas and landscaped outdoor areas
- 24-hour medical alert system and emergency response programs in every residence
- Activities which will be offered in the community fitness center include: exercise and game rooms; library and/or reading rooms; community activity center

This document has been prepared in conformance with the New York State Environmental Quality Review Act (SEQRA), as administrated by the Huntington Town Board (hereafter, *"the Board"*). This DEIS is submitted on behalf of The Preserve at Indian Hills, LLC (hereafter, "*the Applicant"*) in compliance with the State Environmental Quality Review Act (SEQRA) and in accordance with the requirements of the Town Board of the Town of Huntington, the Lead Agency under SEQRA. This Draft Environmental Impact Statement (DEIS) examines the potential impacts of (i) the proposed development of a residential "golf course community" on the approximate 155-acre site (hereafter, *the subject site or project site*) and improvements to Club facilities, including the golf course.

Description of Site and Area

The subject site is comprised of two (2) tax parcels on the north side of Breeze Hill Road and five (5) tax parcels on the south side of Breeze Hill Road, designated on the Suffolk County Tax Map as lots: 0400-014-04-1 & 2 and 0400-015-01-3.3, 11, 12, 19 & part of 22. The subject property is an existing golf course and is located within an existing residential community containing single family residences. The zoning of the site and area is R-40, for single family homes on minimum lot sizes of 43,560 SF. **Figure 1-1** is a location map of the site and **Figure 1-2** is an aerial photograph showing relatively recent (2016) conditions at the project site and the buildings, structures, streets, parking lots and the general development pattern of the surrounding area.

General Project Description

The golf course will be substantially maintained in its present configuration to provide for the conservation and preservation of open space and the support of private recreational use in conformance with the Town Comprehensive Plan Update, codified in Town Code §198-114 Cluster Development [Amended 2-10-2015 by L.L. No. 16-2015]. The retention of the golf course with the addition of senior residential units allows this recreational open space feature to remain in the community.

As noted, the minimum lot area requirement in this zone is 43,560 SF (1-acre) in the R-40 zoning district. Lot widths must be no less than 125 feet at the front yard setback line, and the minimum lot frontage is 40 feet. A yield plan, prepared by Nelson & Pope Engineers and Surveyors (provided in a pocket **at the back of this document**) depicts a total of 99 residential lots on 151.08 acres, in compliance with the R-40 standards, as set forth by Chapter 198, "Zoning," of the Town Code. An additional parcel consisting of 3.44 acres (SCTM No 0400-015-01-3.3) is included as part of the subject property; this parcel is zoned R-40 and has 2 existing dwellings on it, thus increasing the yield further. As noted, the proposed project consists of 98 proposed senior dwellings.

It is the intention of the Applicant to build a development whose focus is the retention of recreational open space to preserve the character of the property, while providing quality homes for seniors and ensuring the financial viability of the golf course. The proposed layout, as depicted in Project Plans; The Preserve at Indian Hills; Nelson & Pope; Sheets 1-43 **provided in Appendix B** and **a pocket at the back of this document),** maximizes retained recreational open space and preserves ecological features, topography, scenic views, and community character in conformance with Town Code §198-2 and the definition of Open Space.

Site design will be consistent with the principles required by Town of Huntington, Subdivision Regulations and Site Plan Specifications, **Section 5.2.2.2.7** Architectural and Site Design Requirements based upon property location. These requirements establish the proposed design intent for the proposed project including a high standard of design quality and visual consideration for the proposed homes. As demonstrated by the design requirements and indicated in the architectural renderings provided in **Appendix C**, particular attention will be given to the architectural design, building materials and landscaping, interior and exterior layout of the site and homes, and common area maintenance.

The proposed homes will fully comply with Town height requirements (maximum 35 feet) and building footprints have been determined to be less than 8 percent of the area of the site, resulting in an average of 4,400 square feet (SF) per building. The clubhouse, which is a recreational amenity for the use of residents, members and guests, is included on the Clubhouse Alignment Plan, Sheet 5 of 43 and is located within the permitted setbacks of the R-40 District (100 feet from all exterior lot lines of the property). A 10,247 SF (footprint) clubhouse and associated parking area are illustrated on the Overall Plan, Sheet 1 of 43. Access to the residential areas will remain open and un-gated, with the exception of residential areas where any gate related structure such as the maintenance building is located on a private road. Such accessory structures are typical of outdoor recreational uses such as golf courses and where clustering of development to provide for the preservation and enhancement of open space is mandated. Development will be subject to individual plot plan review by the Planning Board pursuant to **Section 5.2.2.2.7 Architectural and Site Design Requirements** of the Town Subdivision and Site Plan Regulations. The proposed subdivision includes not less than eighty-five (85%) percent of the site reserved as open space in perpetuity in the manner provided for in § 278 of Town Law and as specified in Town Code § 198-114. More specifically, Town Zoning Code defines Open Space as follows (§198-2): "A portion of land where buildings and roadways are prohibited. Open space shall include natural areas, agricultural fields, parks, playgrounds, athletic fields, and landscaped areas such as lawns and buffer strips." Using this definition and

the applicable site quantities for buildings and paved surfaces (13.49 acres) and the lawn around the residences (8.71 acres), the sum of acres is subtracted from the total acreage of 154.56, resulting in 132.61 acres of open space or approximately 85%.

The development will be served by a network of internal streets that will be privately owned and maintained by the Home Owners Association (HOA). All wastewater generated in connection with the senior townhomes and clubhouse will be treated by I/A OWTS to be approved by the SCDHS. SCWA provides water service in the area and will be the source of potable drinking water for future homeowners. The HOA will be responsible for the collection and disposal of refuse, including the collection of recyclables, generated by residences. Refuse pick-up will be twice per week and recyclables once per week. **Section 1.6** provides a more detailed description of the proposed project.

State Environmental Quality Review Act (SEQRA)

This DEIS has been prepared in accordance with the SEQRA) and its implementing regulations under Part 617, Title 6 of the New York Code of Rules and Regulations (6 NYCRR Part 617). The DEIS describes the proposed project, existing conditions, potential environmental impacts, methods and techniques proposed by the Applicant to eliminate or mitigate potential environmental impacts, alternatives and other required sections. The DEIS will be the subject of a comment period and a Final EIS (FEIS) to address substantive comments, after which the Town will adopt a Statement of Findings as required by 6 NYCRR Part 617, SEQRA.

1.2 Application History

A zone change application was submitted to the Town in January of 2016 for 145.32 acres of the subject property to implement land use policies set forth in the Residence Open Space District (R-OSC) zoning district. This prior application was withdrawn and followed by the submission of the current application for a clustered subdivision and site plan. The application has been amended to include a site plan for the clubhouse.

A proposed preliminary subdivision application was submitted to the Town of Huntington Planning Board on December 28, 2017. A coordinated review was completed, and the Planning Board assumed lead agency in review of the project. This application was reviewed by the Town planning staff and Planning Board and a Positive Declaration was issued by the Planning Board on March 28, 2018. The Positive Declaration included a Part 2 and Part 3 Environmental Assessment Form (EAF) documents that were prepared by the Planning Staff. The proposed project was found to result in a number of potential significant adverse environmental impacts, in large part due to some design features related to excavations within the Coastal Erosion Hazard Area (CEHA). This plan also located one golf hole in the CEHA, required access across an existing driveway that traversed a freshwater wetland, and involved certain drainage handling methods resulting in conveyance of stormwater from the south parcel to the north parcel. Based on the Part 3 EAF, the applicant modified the design to remove the golf hole and grading from the CEHA area, relocate the driveway to avoid the freshwater wetlands area, and provide for more localized stormwater management methods. An additional 3.44-acre parcel which connects Makamah Road to the subdivision was added to the project site to provide improved access and avoid traversing the freshwater wetlands. No additional density is

proposed with the addition of this 3.44-acre parcel, therefore, the density of development is reduced as a result of the amended subdivision. The amended subdivision was filed on June 15, 2018. Further refinement of the subdivision plans is reflected in the plans that accompany this DEIS and have been submitted as an amended site plan to the Town Planning Department. These refinements address the proposed clubhouse site plan portion of the development as well as additional refinements as described as components of the project (see **Section 1.6**).

A copy of the application submission and Full Environmental Assessment Form (EAF) Parts 1, 2 & 3 are included in **Appendix D-1**. **Appendix D-2** includes the Positive Declaration of the Planning Board which required the preparation of this DEIS. **Appendix D-3** includes the Final Scope dated October 18, 2018 that determined the necessary content for this DEIS.

The application review will continue after the filing of this DEIS to provide information for consideration by the Town Planning Board in connection with the environmental review of the subdivision application. This DEIS includes detailed analyses and supporting reports, including but not limited to: a Traffic Impact Study, a Geotechnical Engineering Investigation and Slope Stability Analysis, a Golf Course Environmental Management Plan, a Property Value Impact Report, an Archaeological investigation and engineering plans. A public hearing will be held and the public, community groups, Planning Board and other involved and interested agencies and organizations will provide commentary on the proposed project.

1.3 Project Benefits

The public need for the project is related to the benefits to be derived if the project is implemented. The Applicant has designed the proposed project to achieve the highest and best use of the property based on the Horizons 2020 Comprehensive Plan Update, adjacent land uses and residential market trends. The project sponsor believes there is a demand for a well-designed senior duplex townhome residential development at this location that will offer an attractive alternative to individuals seeking high quality housing within a private community that is, in part, maintained and overseen by a property owners association and has amenities including a golf course. The project will increase housing opportunities in the Town by diversifying the housing stock in the area, which includes adjacent residential developments to the east, west and south. The subject property has convenient access to a network of roadways including Breeze Hill Road, Fresh Pond Road, Makamah Road and Mystic Lane.

The property contains adequate infrastructure resources and public facilities (including the local and regional transportation network, water supply, parks, utilities, and fire and police protection) to permit, serve, and support the proposed development. The subdivision complies with the standards, spirit, and intent of the Town's R-40 Residential zoning district through clustered subdivision design. Conformance to Town zoning standards is not only necessary to ensure a well-planned compatible residential development but also to demonstrate consistency with the comprehensive long-range land management goals and overall community vision for the site and area, as embodied in the policies of the Town Code.

The project is also consistent with the Town Comprehensive Plan Update land use recommendation for the property indicated on the Master Plan's future land use map. The Plan specifically identifies the project site as one that should be developed for "Parks, Recreation & Conservation Land." The intent is to maintain and preserve the established character of these neighborhoods through conservation strategies; although it provides no further specific recommendations for the property. The proposed development would be developed with 98 homes and a clubhouse lot at an average density of approximately 0.64 units per acre. As a point of reference, a Yield Map was submitted and approved by the Town Planning Board at their regular meeting of July 26, 2017, depicting 98 building lots on 151.08 acres in full compliance with the R-40 Residence District zoning requirements. A copy of the Planning Board's approval resolution is provided in **Appendix E.**

After calculating the average slope of hillside areas on the site pursuant to Town Code, Article X Steep Slope Conservation Law and setting aside (subtracting) land for freshwater wetlands, streets and stormwater recharge areas, the density for the Project would continue to remain low in the Town's classification system. Providing development at this lower density not only complies with County and Town land development goals for the site. The site is also within the Crab Meadow Watershed adjoins the Fresh Pond Greenbelt Special Critical Environmental Area (CEA) located immediately to the east of the site. Design features incorporated into the project ensure the protection of the resource areas to the maximum extent practicable. Such features include increasing stormwater retention on the site ensure that overflow from the site is decreased or eliminated, use of I/A OWTS to reduce nitrogen load, retention of the existing golf course with improved management practices through a Golf Course Environmental Management Plan, protection of freshwater wetlands on the site, avoidance of the CEHA portion of the site and distributing new units across three separate areas of the site with three separate access roads to minimize impact in any one location. The project is compared with use of the site in conformance with existing R-40 zoning (Alternative 1, Section 5.0), which has a greater adverse environmental impact, therefore, the features noted herein are considered benefits of the project.

The proposed project will provide a permanent high-quality use on a property. The development will preserve a recreational land use that is becoming less economically viable and has the potential to be discontinued. The overall site development will become a combined residential-recreational use development that is in high demand and complies with the proposed zoning of the property and long-range planning policies. The proposed project will provide an opportunity for senior duplex townhome residential use within an area of the Town that is well-suited to accommodate the project and will result in the permanent retention of the golf course. At the same time the residential units will provide greater variety of options in the Town's housing stock when compared to the conventional residential developments to the south, east and west of the site. The proposed use retains open space, complements the surrounding area through design and offers a use that is suitably transitional and compatible with adjacent development.

It is the intention of the Applicant to build a development whose focus is the creation of conservation area to preserve the environmental integrity of the property while adding a taxable use to supplement the existing golf course and improve the financial viability of the overall site use. The objectives of the project sponsor include the desire to produce a profitable economic return on a substantial financial investment, which would result from a senior residential

community that addresses a need the Applicant believes is unmet in the area. The project would establish a well-planned senior residential community that is complementary to surrounding land uses, consistent with Town and County land management goals, provides fiscal and secondary economic benefits, and is compatible with the surrounding community. The Applicant is seeking to provide a use that will conform to existing zoning, while at the same time, mitigating environmental impacts to the maximum extent possible.

Additional Benefits of the proposed project are based on social, economic and land use considerations that include new housing opportunities, substantial fiscal (tax revenue generation) and economic (job creation) benefits, and the preservation and enhancement of open space into a more viable permanent productive land use. Total tax revenue expected from this project is $1,774,129 to all applicable taxing jurisdiction. The project will not generate any school-age children, yet the total tax revenue allocated to the Northport-East Northport Union Free School District (UFSD) is $1,136,512 based on the distribution of taxes for the site. This is a significant benefit.

The project will provide an opportunity for high quality residential housing in a desirable area of the hamlet of Fort Salonga. According to the Long Island Index (longislandindexmaps.org), there is only one other multifamily housing community in Fort Salonga; the Colony Club, which consists of 38 units and was constructed in the 1980's. The project fulfills a need for alternative housing in the hamlet of Fort Salonga. The community will benefit economically from the increased value of the property. The development will be self-contained and will be responsible for maintenance of its own private streets, thereby absorbing the costs associated with their maintenance and upkeep. The proposed project will also result in the generation of a substantial number of jobs during the construction phase of the project, with subsequent secondary spin-off or "ripple" effects that will increase the demand for goods and services within the local area, during and following construction (i.e., clearing, landscaping, maintenance, plowing) and consumer spending (food, furnishings, apparel, personal services, entertainment, etc.). A Home Owners Association (HOA) will be established to maintain common areas, drainage features and landscaping, thereby relieving the Town of this responsibility and expense. The project will also provide a permanent land use for the site that is viable and consistent with local zoning.

Several additional benefits will accrue to the surrounding community as a result of the construction and operation of The Preserve at Indian Hills. The Applicant will extend natural gas mains to serve the new construction. This will provide a benefit to the surrounding community by making natural gas service available where it is currently not available. It is proposed that landscaping for the residential units be done by the groundskeeping staff of the Indian Hills Country Club. This will significantly reduce impact on neighborhoods from landscaping equipment, as all necessary equipment and staff are currently maintained on site, and will have the ability to internally access residential areas for lawn care and maintenance. This is a significant benefit of the project which is contrasted with single family residential use under existing zoning, where each individual homeowner could have their own lawncare and landscape maintenance contractors accessing the site. The proposed subdivision will also result in a limit on the membership of the Indian Hills Country Club, where no such limits exists, specifically the current golf membership is 390 total, and a cap of 425 golf members will be incorporated into approvals. Finally, the operation of Indian Hills Country Club and The

Preserve at Indian Hills will result in many levels of employment that will benefit the locale and the region.

In summary, The Preserve at Indian Hills will provide an opportunity for viable residential growth within an area of the Town of Huntington well-suited to accommodate such growth and will comply with Town Zoning Code preserving open space and an important recreation use. The project will address the public need for a luxury senior residential community in an attractive setting and a desirable area.

1.4 Location

The 154.56-acre property, comprising seven (7) tax parcels is located on the north and south sides of Breeze Hill Road, west of Fresh Pond Road in the hamlet of Fort Salonga, County of Suffolk, New York. The physical address of the property is 21 Breeze Hill Road and its Suffolk County tax lot designations are: 0400-014-04-1 & 2 and 0400-015-01-3.3, 11, 12, 19 & part of 22 (see **Figure 1-3**).

The subject site is within the following service and planning districts:

- Northport - East Northport Union Free School District
- Northport Fire District
- Suffolk County Water Authority
- Suffolk County Police Department (SCPD), 2nd precinct
- PSEG Long Island (electricity)
- National Grid (natural gas)

The subject property is located within the Crab Meadow Watershed area and is adjacent to the Fresh Pond Greenbelt Critical Environmental Area (CEA) as designated by Suffolk County in 1988. This greenbelt includes lands east of Fresh Pond Road and does not include the subject site.

1.5 Existing Site Development

The subject property is the site of the Indian Hills Country Club. The 18-hole "Indian Hills" course at the Indian Hills Country Club facility features 6,631 yards of golf from the longest tees for a par of 72. The Indian Hills golf course opened in 1961. The structures currently present on the subject property include: six (6) single family homes, three (3) sheds, the main clubhouse, a pro shop,[1] a halfway house, a barn utilized for storage, an equipment shed, a fertilizer and spray rig storage structure, and a maintenance garage with associated offices. All of the buildings are connected to separate sanitary systems with the exception of the storage barn, the equipment shed, and the fertilizer storage structure, which are not connected to sanitary systems. The

[1] This is a 2-story building that includes the pro shop, storage and auxiliary spaces.

clubhouse is connected to two (2) separate sanitary systems, one (1) for the kitchen and one (1) for the bathrooms. These structures will be removed and the sanitary systems, properly abandoned under the auspices of the SCDHS.

1.6 Project Description

1.6.1 Overall Subdivision Design

The proposed action involves a clustered subdivision of a 154.56-acre golf course property zoned R-40 (minimum one acre) Residence District to provide for the conservation and preservation of open space and the support of private recreational use in conformance with the Town of Huntington Horizons 2020 Comprehensive Plan Update (pg. 3-8). The proposed residential development will include 98 senior duplex townhomes and 1 clubhouse/fitness center lot. The development site is comprised of a total of seven (7) tax parcels located on the north and south sides of Breeze Hill Road, west of Fresh Pond Road, and east of Makamah Road in the hamlet of Fort Salonga, Town of Huntington, Suffolk County, New York. The buildings will be sited in areas where there is existing road access and clustered to preserve recreational open space in a single contiguous block. Access to the 48 town homes south of Breeze Hill Road will be provided via Makamah Road. Access to the 14 townhomes in the northeast corner of the subject site will be provided from Fresh Pond Road. Access to the 36 townhomes in the northwest corner of the subject site will be provided from Mystic Lane. Each of the proposed dwellings will be served by public water and I/A OWTS sanitary waste treatment systems approved by SCDHS. Simultaneous to subdivision, site plan review/approval will be required for the proposed development prior to the issuance of building permits. This DEIS will serve to address SEQRA requirements for both subdivision and site plan applications.

The proposed interior roadways will be privately owned and maintained by the HOA. The right of way and pavement width is proposed to be 30 feet wide to provide safe access to and within the site.

Several accessory structures are proposed in support of the proposed recreational-residential development: a 2-½ story clubhouse located south of Breeze Hill Road and north of the existing clubhouse; retention of the existing golf pro shop as a fitness center for the residents of The Preserve at Indian Hills; and retention of the existing maintenance building located within an approximate 12,000 SF maintenance area on the northwest side of Fresh Pond Road. The clubhouse is anticipated to be two-story building with a lower level, which will provide an on-site amenity for the exclusive use of the homeowners, members and their guests. A 146-space parking area will be provided for employees and residents. Each residential unit will have parking for a minimum of two vehicles (196 spaces) for a project total of 342 spaces (146 + 196 = 342).

1.6.2 Conformance to Zoning and Other Development Regulations

The proposed subdivision fully complies with the zoning and use requirements of the district as set forth under § 198-14 of Town Code. The existing Special Use Permit authorizes the

establishment of a golf course in a residence district, and the 2003 Settlement and Release Agreement between the Town of Huntington and the Indian Hills Country Club allow for the proposed use. The proposed clubhouse has been designed to maintain the existing 10,247 SF building footprint as shown in the Existing Footprint and Calculations, prepared by George H. Suddell, Architect, Sheet EX-1, dated revised 2/19/19 provided in **Appendix F**. It is the Applicant's intention to maintain the existing golf course facility, as an accessory to the residential development and in the spirit of recreational open space, as has been previously granted by the town for both the Hamlet Golf & Country Club in Commack, and the Greens at Half Hollow (Greens of Melville portion) in Melville. The golf course exists at the subject property in accordance with a Special Use Permit previously issued by the ZBA. During the course of review, the matter may be referred to the ZBA or an application may be made for amendment of the previously issued Special Use Permit under Town Code Section § 198-109 and § 198-110 (C) (5). The proposed subdivision will also comply with the dimensional zoning standards set forth by the Town of Huntington Code. In particular, Chapter 198, Article IX Height, Area and Bulk Regulations, § 198-14, R-40 Residence District and § 198-114, Cluster Development of the Town Code shall apply. The later includes the following specific requirements:

> *Simultaneously with the approval of any plat upon which the Planning Board is empowered to act pursuant to § 276 of the Town Law, such Board may make any reasonable modification of the zoning regulations applicable to the land so platted as authorized by § 278 of the Town Law and as specified in this article. Any such modification of the zoning regulations shall be made to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks and landscaping in order to preserve the natural and scenic qualities of open space including historic landmarks and sites. Unless otherwise specified in this article, any modification of the zoning regulations made by the Planning Board in connection with plat approval shall be limited to size of lot, minimum yard dimensions, location of buildings, location and extent of parking and loading areas and provision of public recreation areas, including parks and playgrounds, or public school sites.*

The building footprints have been determined to be less than 8 percent of the area of the site, resulting in an average of 4,400 square feet (SF) per building. The community building (clubhouse) is located within the permitted setbacks of the R-40 District (100 feet from all exterior lot lines of the property). The proposed subdivision includes not less than eighty-five (85%) percent of the site reserved as open space in perpetuity in the manner provided for in § 278 of Town Law and as specified in Town Code § 198-114.

The proposed project includes the relocation of tees, fairways and greens for golf course holes #'s 3, 4, 5, 6, 7, 10 & 11 in connection with the project (see proposed golf course design as shown on the Overall Plan provided in **Appendix B and pocket at the back of this document**). The relocated play areas will be installed and landscaped to maintain similar characteristics of the existing golf holes. Overall, the changes are minor without any revision to play areas within the Coastal Erosion Hazard Area or designated freshwater wetland boundaries. The re-design provides safe play areas for golf in consideration of the added residential use of the site.

The proposed project will include landscaping to maintain harmony with neighboring uses, provide privacy and buffer the proposed development. This proposed landscaping and the retention of natural areas will screen the proposed improvements from adjacent properties.

Street trees will be planted along both sides of each of the proposed streets, and will be spaced, on average, 40 feet on center. Decorative street lighting will line one side of each of the streets and, like the street trees, will also be spaced at 40-foot intervals. Extensive landscaping will also be installed around the proposed clubhouse parking lots to enhance the aesthetic setting and provide screening from adjacent properties. Residential use areas will be landscaped after dwellings are constructed, to further enhance residential privacy, the physical beauty and character of the development and area, and to provide screening and buffering.

The **Table 1-1** provides a list of the subject site's existing and proposed coverages and physical characteristics.

TABLE 1-1
SITE AND PROJECT CHARACTERISTICS

Parameter	Existing Conditions	Proposed Project
Use	Recreational	Residential & Recreational
Yield	Golf course & clubhouse	98 senior units, golf course & clubhouse
Wastewater Treatment System	Septic	I/A OWTS
Open Space (acres)	138.54	141.07[(1)]
Total Fertilized (acres)	28.12	32.77
Coverages (acres):	**---**	**---**
Buildings	0.47	5.11
Paved / Impervious Surfaces	6.31	8.38
Non-Golf Landscape (*unfertilized*)	0.38	0.24
Golf Play Surfaces:	95.25	95.19
Greens (fertilized)	2.47	2.35
Fairways (fertilized)	23.87	20.62
Tees (fertilized)	1.77	1.09
Rough (mowed)	57.44	64.89
Between fairways (mowed, with trees	9.70	6.28
Lawn Around Residence (f*ertilized*)	0	8.71
Unvegetated	1.77	1.09
Man-Made Ponds/Recharge Basins	3.20	14.61
Freshwater Wetlands (no pond)	0.50	0.50
Beach	4.26	4.26
Coastal Oak Vegetation	10.65	6.29
Successional Southern Hardwoods	20.03	7.69
Maritime Bluff	2.49	2.49
Left to Undergo Succession (grass)	0.00	0.00
Total Site Acreage	**145.32**	**154.56**
Trip Generation (vph)**:**	**---**	**---**
Weekday AM Peak Hour [(3)]	37	98 [(1)]
Weekday PM Peak Hour [(3)]	53	112 [(1)]
Saturday Midday Peak Hour [(3)]	83	106[(1)]
Water Resources:	**---**	**---**
Residential Use (gpd)	0	29,400
Clubhouse & Maint. Bldg.	3,950	3,950
Irrigation	63,848	63,848
Total Water Use (gpd)	67,798 [(2)]	97,198[(2)]
Recharge Volume (MGY) [(4)]	121.63	140.63
Nitrate Concentration (mg/l) [(4)]	0.76	1.95
Nitrate Load (lbs) [(4)]	773.98	2,289.99
Miscellaneous:	**---**	**---**
Total Residents (capita) [(5)]	0	147
School-Age Children (capita) [(6)]	0	0
Tax Revenues ($/year) [(7)] [(8)]	167,191	1,774,129
School Tax Revenues ($/year) [(8)]	108,898	1,137,512
Solid Waste (lbs/day) [(9)]	265	780

Notes for **Table 1-1**:

(1) Huntington Town Code §198-2. "Definitions and word usage. "A portion of land where buildings and roadways are prohibited. Open space shall include natural areas, agricultural fields, parks, playgrounds, athletic fields, and landscaped areas such as lawns and buffer strips."
(2) Based on actual usage for golf course irrigation, as reported to NYSDEC: 63,848 gpd plus projected domestic use.
(3) Based on SONIR model output provided in **Appendices I-1 through I-3**.
(4) As: trips generated by senior residences/trips generated by senior residences plus golf course trips (see **Appendix M**; Traffic Impact Study)
(5) Assuming 1.5 capita/senior unit.
(6) Since the proposed project is age-restricted, it is not anticipated that it will generate any school-aged children.
(7) Assuming tax data as provided by Town Tax Assessor's Office for the 2018-2019 tax year.
(8) Based on fiscal analysis included in **Section 3.3.2**.
(9) Assuming 3.5 lbs/day/capita/senior unit, 0.013 lbs/SF/day for clubhouse, and 5 lbs/day/capita for subdivision units.

Abbreviations: vph (vehicles per hour); gpd (gallons per day); MYG (million gallons per year); mg/l (milligrams per liter)

The proposed homes will fully comply with Town Height, Area and Bulk density requirements of the R-40 Residence District zone, modified to preserve open space. All structures, including the proposed Clubhouse and the Maintenance Area building as well as parking lots have been included on the Overall Plan (see **Appendix B & pocket at the back of this document**). As shown in the Floor Plans, prepared by George H. Suddell, Architect, **Appendix F**) the Clubhouse also complies with the permitted coverages specified in the 2003 Settlement and Release Agreement. Such structures are typical of residential-recreational development, and will be subject to Planning Board approval pursuant to Town of Huntington, Chapter A202 Subdivision and Site Plan Regulations.

1.6.3 Grading and Drainage

Clearing and Grading

Soil disturbance is necessary to establish suitable grades for the proposed paved areas, driveways, recharge features and building locations. Site grading and established surface slopes must consider requirements for stable slopes, directing proper drainage, road grades, conformance with requirements of the Americans with Disabilities Act (ADA), and the safe use of the site. Grade transitions will be made using slopes not to exceed 1:3. As the portions of the site proposed for development are utilized for the existing golf course and characterized by slopes ranging from 1% to 16%, grading consisting of cutting and filling will be required. All disturbed soil areas will be stabilized and all areas other than buildings, paved surfaces and athletic fields will be landscaped. Generally, the applicant anticipates that grading will be balanced between cut and fill resulting in the re-use of excavated soil on-site, so that no significant import or export of soil is necessary (see **Section 2.1.2** for additional information regarding potential impact of grading activities). Overall, it is anticipated that grading activities will require cuts ranging from less than 1 foot to approximately 20 feet and fill ranging from 0 feet to 20 feet.

Drainage

Both freshwater and tidal wetlands exist on the subject property. The site consists of a series of ponds located through the central portion of the golf course. Based upon review of the historic aerial photograph, the ponds appear to be manmade. The two westerly-most ponds are listed by the New York State Department of Environmental Conservation (NYSDEC) as fresh water wetlands and fall under their jurisdiction. These are the only freshwater wetlands on the subject property regulated under Article 24 of the NYS Environmental Conservation Law (NYSECL); however, no disturbance will occur within the 100-foot jurisdiction area of these wetlands. There are several areas of wetlands off-site, including wetlands east of Fresh Pond Road, south of Breeze Hill Road and west of Makamah Road. Parts of the site are within 100 feet of these wetlands and activity in these areas will require a Freshwater Wetlands Permit under Article 24. The property also maintains approximately 1,500 feet of frontage on the Long Island Sound shoreline. The majority of the shoreline is armored with stone revetment (western and central portions) and the eastern portion of the shoreline has been stabilized with a line of partially buried concrete rings. Apparent high water is typically less than 50 feet from the stone revetment; however, in some areas high water reaches the revetment. Long Island Sound is a tidal wetland which is regulated by the NYSDEC under Article 25 of the NYSECL from the Sound landward to the top of the slope running along the north side of the 12th tee, fairway and green. Pursuant to Article 24 and 25 of the NYSECL, permits from the NYSDEC will be necessary for construction activities within the jurisdictional limits (100 feet from the delineated freshwater wetland boundary and either 300 feet from the tidal wetland boundary, or to the top of the adjacent slope or bluff). The shoreline and slope north of the CEHA boundary are also regulated by the Town of Huntington. These resources will be addressed in **Section 2.0** (Natural Environmental Resources) of this DEIS.

Town stormwater regulations require that all on-site stormwater (rainfall) runoff be collected and recharged on-site pursuant to design storm criteria for a nine (9) inch storm event. All stormwater runoff generated on developed surfaces will be retained on-site and recharged to groundwater through the existing and proposed pond network, a proposed recharge basin, depressions, a system of catch basins and leaching pools, individual roof drains and pervious vegetated/landscaped groundcover that allows for direct filtration. As shown on the site plans prepared by Nelson & Pope, **Sheets 20 & 21** (see **Appendix B**) development on the subject property will be partitioned into eight (8) and fifteen (15) separate drainage areas, north and south of Breeze Hill Road, respectively, to accommodate stormwater runoff and are designated Drainage Areas A-G, F-1 and H-V.

Area A consists of the portion of the development located in the northwestern portion of the property which will consist of 36 units. This area will utilize the conveyance system and a recharge basin for storage and will overflow to the pond system. Area G will provide a localized depression and leaching structures for the north part of the northwest development area. Areas B-E consist of the existing golf course in the central part of the site north of Breeze Hill Road and will provide drainage containment in the conveyance system and modified pond areas. Areas F and F-1 consist of the portion of the development located in the eastern portion of the property which includes 14 units. Area F will utilize a depression for containment and recharge, and Area F-1 will use leaching pools to ensure containment of a portion of the road runoff.

Areas H-V will consist of the portion of the proposed development south of Breeze Hill Road and will consist of the golf course clubhouse, the proposed community fitness center (former pro shop), driving range and 48 units and will utilize a combination of depressions and leaching pools.

As noted, the system is designed to accommodate a nine (9) inch storm event. Under current conditions, the golf course does not meet Town required drainage containment, and the current overflow from this pond enters a drainage ditch along Fresh Pond Road and ultimately overflows to Fresh Pond. Proposed conditions will provide drainage to full Town specifications. The drainage systems is designed in accordance with the requirements of the Town and will be the subject of a Stormwater Pollution Prevention Plan (SWPPP) which will undergo review by the Town and will be filed with a Notice of Intent (NOI) with NYSDEC in conformance with the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002).

1.6.4 Driveways and Site Access

The subject site is presently accessible from Breeze Hill Road, which has convenient access off of Makamah and Fresh Pond Roads via Fort Salonga Road (New York State 25A). The existing entrance on the south side of Breeze Hill Road is proposed to remain unchanged. This entrance provides vehicle access to the clubhouse, pro shop, golf cart storage barn and practice facilities. The access consists of a drive, approximately 50 feet in total width at its entrance point which immediately splits as it extends into the site and parking areas. Parking for 146 vehicles is proposed for the golf course clubhouse and community golf pro shop. Golf carts will continue to be stored on the south side of Breeze Hill Road and cross through a striped cart crossing to the north side to access the golf course. No change is proposed with respect to this operation other than to upgrade the facilities in the new clubhouse.

As depicted on the site plan, the proposed 98 units will be divided into 3 locations; northwest, northeast and southwest quadrants. The northwest quadrant will be comprised of 36 senior housing units and access will be provided via an easterly extension of Mystic Lane. The northeast quadrant will be comprised of 14 senior housing units and access will be provided via a newly constructed access extending west from Fresh Pond Road approximately 1,250 feet north of Breeze Hill Road. The southwest quadrant will be comprised of 48 senior housing units and access will be provided via a newly constructed access approximately 925 feet south of Breeze Hill Road extending east from Makamah Road.

Adjacent existing roadways (Breeze Hill Road, Fresh Pond Road, Mystic Lane and Makamah Road) are under the jurisdiction of the Town of Huntington. The proposed project has been designed to disperse traffic via the existing roadway system. This will lessen vehicle trips in any one area by utilizing multiple access points for operational efficiency.

Internal streets will be designed to buffer adjoining properties from vehicular impacts and provide ample access to resident and guest vehicles and emergency vehicles. The road system has been designed by a professional engineer and will be reviewed by the Town Engineer to ensure that street design and construction materials satisfy the requirements of the Town. All

internal roadways and will be maintained by the HOA. Section 198-47 of Town Code, "Table of Minimum Spaces Required" requires that there shall be at least one space per dwelling. Private parking will be provided within individual driveways and two-car garages and will comply with the above requirement. Parking for the golf course clubhouse and community golf pro shop buildings will consist of 146 stalls, where 145 spaces are required.

1.6.5 Utilities

Sanitary Wastewater

The project site is located in Groundwater Management Zone VIII as defined by SCDHS. Based on the requirements of Article 6 of the Suffolk County Sanitary Code (SCSC), allowable sanitary flow on a site that is subject to subdivision is based on the 20,000 SF yield map, with the number of lots multiplied by 300 gpd per unit. In lieu of a 20,000 SF yield map, SCDHS provides a formula for determining allowable flow. For the proposed project, the allowable sanitary flow is based on the calculation:

(Site acres - wetland acres) x 0.75 x [(43,560 SF/acre)/(20,000 SF/unit)] = allowed units,

Thus, the calculation for allowable density under Article 6 of the SCSC is as follows:

(154.56 – 3.2) x 0.75 x 2.178 = 247.24 units

As each unit is allocated a flow of 300 gpd, the total allowed sanitary flow for the project site is obtained from: 247 units x 300 gpd/unit = 74,100 gpd.

The design flow is based on the sanitary wastewater generated by the proposed use. It is noted that the proposed project involves a golf course. Under *"General Guidance Memorandum #17, Agricultural and Golf Course Density,"* only land that is not used for recreational turf is considered to be developable. This is due to the nitrogen load from fertilization and as a result, the developable area is reduced by the number of acres used as recreational turf. The resulting calculation using the fertilized area consisting of greens, fairways and tees is as follows:

(154.56 – 3.2 – 32.77) x 0.75 x 2.178 = 198.72 units

Using the allowable flow per unit of 300 gpd, the total allowable sanitary flow for the project site is calculated as follows: 198.72 units x 300 gpd/unit = 59,616 gpd.

Based upon SCDHS design flow factors, the 98 townhomes are expected to generate 29,400 gallons per day (gpd) based upon 300 gpd/unit. The clubhouse (200 catering seats @ 7.5 gpd; 50 indoor seats @ 30 gpd; and 50 outdoor seats @ 15 gpd) is expected to generate 3,750 gpd. The maintenance building has a design flow of 200 gpd. This results in a total design flow of 33,350 gpd.

The design flow calculation has been prepared based on the combined wastewater flow and additional flow allocated to golf course use. The proposed project is significantly below the allowable flow provided for under SCSC Article 6 (26,266 gpd less).

The proposed project will have significantly less sanitary wastewater than what is permissible under Article 6 of the SCSC. Nevertheless, the applicant plans to use I/A OWTS systems for the new 98 townhomes and clubhouse in order to reduce nitrogen load associated with site use. The existing maintenance facility will not change and will retain its current conventional sanitary system. The golf course is demonstrated to have a very low fertilization rate and will be managed under a Golf Course Environmental Management Plan to ensure that nitrogen load and concentration of nitrogen in recharge are minimized (see **Section 2.3.2**).

Suffolk County recently approved an amendment to the SCSC adding Article 19, which gives the County Department of Health Services the authority to promulgate procedures, protocols and standards for the use of innovative and alternative on-site septic treatment and disposal systems (signed by Suffolk County Executive Steve Bellone on August 10, 2016). Article 19 authorizes the first major change to residential wastewater treatment technology since 1973, when rules changed to require a septic tank in addition to a leaching pool. When properly designed, sited, installed, managed, and maintained, I/A OWTS provide a cost-effective and environmentally sound alternative to sewers in portions of Suffolk County that are outside the designated sewer areas, significantly reducing nitrogen in wastewater.

The proposed project is expected to result in the construction of four (4) sanitary system zones for the townhomes, two (2) north and two (2) south of Breeze Hill Road. Each sanitary system zone will be divided into sections comprised of 4 to 5 buildings (8 to 10 townhome units) for achieving an optimal sanitary treatment design based on up a 3,000 gpd or less treatment unit. Each of these subzones will utilize a SCDHS approved I/A OWTS. Treatment systems of this type are designed to reduce biochemical oxygen demand, suspended solids and total nitrogen in order to achieve a reduction in nitrogen load to less than 19 milligrams per liter (mg/l). The drinking water standard is 10 mg/l and the nitrogen concentration in untreated effluent is typically in the range of 50-60 mg/l.

Following tertiary treatment, sanitary waste generated in each zone will be gravity fed or pumped to communal leaching pool systems designed to accommodate the anticipated flow from all the residential units within each subdivided unit. Recharge areas are located based on test hole information that identified suitable soil leaching properties.

Sanitary waste generated by the clubhouse will also utilize an I/A OWTS to provide tertiary treatment within the design capabilities of the system. However, since kitchen waste will also be generated, sanitary effluent will first be discharged to a grease trap prior to transfer to the selected tertiary treatment unit.

The sanitary wastewater handling will be subject to an engineering report, SCDHS review and approval, oversight of installation and monitoring of the effectiveness of systems. The applicant commits to the use of I/A OWTS as outlined above, and will obtain the necessary SCDHS approvals for this installation.

Water Supply

Potable water will be furnished by SCWA. The existing Indian Hills Golf Club is connected to the existing water main distribution system of the SCWA. The Preserve at Indian Hills is proposed to also be connected to public water which includes existing well fields and water mains in the area of the subject site. Interconnection to the existing water main distribution system will be subject to SCWA connection and tariff requirements.

Sustainable strategies will be incorporated into the home designs to provide both efficiency and energy savings. These include compliance with the following:

- All homes will achieve WaterSense label (an U.S. Environmental Protection Agency, "EPA" Partnership Program[2]), which are designed to reduce residential water use indoors and out by approximately 20 percent, allowing homeowners to use less water and energy. Design considerations include demand-controlled recirculating hot water systems and WaterSense labeled fixtures for kitchens and bathrooms.
- All homes will meet Energy Star homes design standards, which provide energy efficiency savings of up to 30%, including excellent air sealing, appropriately-sized mechanical equipment, and proper ventilation in bathrooms and kitchens.
- All homes will meet EPA Indoor air PLUS labeling in conjunction with the Energy Star label. This label requires installation of features that do not introduce pollutants to the air in and around the home during construction and occupancy

The golf course is irrigated using an existing on-site water supply well. This well will remain and will continue to supply irrigation water supply for the course. The well is permitted by NYSDEC under the New York well permit program (Permit # W-4813) and is identified as S-114017. The well is permitted to be pumped at a rate of up to 35 million gallons per year. The average annual pumpage from the years 2005 through 2018 was 21,175,842 gallons based on annual pumpage data listed below:

2018	15,926,955	2011	20,443,000
2017	16,775,296	2010	26,793,000
2016	27,223,874	2009	17,970,000
2015	26,667,723	2008	22,736,000
2014	20,521,592	2007	26,816,000
2013	22,724,626	2006	17,344,534
2012	16,892,946	2005	17,626,246

Pumpage records are maintained by the site operator and transmitted to NYSDEC on an annual basis per the well permit. As noted, this is an existing and ongoing golf facility that will continue to operate irrigation systems for turf maintenance of the course.

It is the applicant's intention to install systems for reuse of pond water for irrigation. **Appendix G-1** provides a complete description of the methods for reuse of irrigation water, specifically: The Preserve at Indian Hills Irrigation, Well and Pond Overview; prepared by Aqua Argononic Solutions, Inc. (AASI), a noted expert in golf course irrigation systems. This Overview determines the amount of irrigation needed based on average precipitation and

[2] http://www3.epa.gov/watersense/

evapotranspiration data and projects that 28,360,692 gallons per year is needed for irrigation. This is greater than actual pumpage noted above, and so, actual on-site conditions will determine the actual irrigation needed, and adjustments will be made for actual precipitation and evapotranspiration conditions and water needs of the course.

Irrigation is currently provided from the on-site well. Proposed conditions are such that the well will be used to supplement pond water (which wall also receive runoff from the golf course), and the pond storage will be used for irrigation. This effectively "reuses" water on-site that flows the ponds as stormwater runoff, and applies it to the golf course for irrigation. As described in **Appendix G-2**:

> The combined lakes for irrigation are 14.6 acres with a combined storage of 640,000 cubic feet or 4,787,532 gallons. There are 4 ponds created for reuse on the golf course. The uppermost pond, next to hole 15 stores 173,000 cu. Ft. of water or 1,294,129 gallons. This pond is physically connected to the second pond on hole 14 thru a pipe. This pond stores 52,600 cu. ft. of water or 393,475 gallons at normal elevation. The pond at 14 is physically connected to the pond at hole 8 through a pipe. The pond at hole 8 will be the irrigation pond. At present, the difference between the bottom of the pond and normal water elevation is four feet (4'). At present, it will store 70,200 cu. Ft. of water or 525,132 gallons of water. We propose to deepen this pond by approximately six feet (6') which will double the storage in this pond to 140,400 cu. ft. or 1,050,264 gallons. A typical irrigation cycle will drawdown the pond on hole 8 approximately 30" during the night. The final pond in the series is the pond is the pond on Hole 2. It is capable of storing 270,000 cu. ft or 2,019,740 gallons. It is connected to hole 8 through and overflow and stream.
>
> Presently the golf course has a permitted well capable of 500 g.p.m. with a permitted use of 32,000,000 g.p.y. The plan is to keep all ponds at their normal level at all times. There will be a SCADA-type system set up to monitor the water level in all ponds. A transfer system from the pond on hole 2 will automatically transfer water to the other ponds by priority to pond on 8 first, then pond 14, and finally pond 15 anytime it exceeds the normal water elevation of 12.0".
>
> In addition to the above, the well will be set to refill all water levels in the same priority as the above. If the well is the primary source to fill the irrigation pond, it will take approximately 10.8 hours to bring the pond on Hole 8 back to its normal elevation.

As a result, stormwater storage and reuse, combined with well water will provide irrigation water for the golf course once this system is installed. This is consistent with state-of-the-art technology for golf course irrigation and will effectively allow for the reuse of stormwater which originates from the golf course.

Solid Waste Handling and Disposal

The proposed project will increase the amount of solid waste generated on the site. Solid waste generated on-site, including waste from the golf course, residences and the clubhouse, will be taken by Town certified private carters (operating under contract with the HOA/GCA for the site) to the Town Resource Recovery Facility for disposal or further processing. Golf course landscape maintenance practices would continue to store, remove and dispose of chemical wastes under separate procedures professionally developed for this type of process.

Solid waste generated by the residences is expected to be removed by curbside pick-up and adhere to all dual-stream recycling requirements that became effective in January 2019. Solid waste from the clubhouse and golf course maintenance area will be handled, stored in dedicated dumpsters in their respective areas and disposed of separately from those of the residential components.

Natural Gas

The Applicant will extend natural gas where needed to service the new homes of the subdivision. Natural gas provided by National Grid is not currently available in the areas of the residential homes surrounding The Preserve at Indian Hills. The Applicant will extend natural gas mains to serve the new construction. This will provide a benefit to the surrounding community by making natural gas service available where it is currently not available.

1.6.6 Site Landscaping and Amenities

The type, amount and location of proposed landscaping to be installed in connection with the subdivision is provided in the site plans prepared by Nelson & Pope, **Sheets 29-31** (see **Appendix B**). Landscaping includes planting of street trees, perimeter screening vegetation and the installation of street lighting. Street trees will be planted 40 feet on center, including those native species listed in Appendix H of the Town of Huntington's Subdivision Regulations and Site Plan Specifications. Landscape Plan 3 (Sheet 31) includes a planting schedule for evergreen installation in proximity to the clubhouse as well as the street tree planting schedule. All disturbed areas that are not proximate to residential units or part of golf course play areas will be established in a native seed mix also noted on Sheet 31 as the Ecology Summer Seed Mixture.

Trees and shrubs, including both evergreen and deciduous species, will also be provided within the site around the residential units after home construction and this will be reviewed in greater detail at the time of site plan review. All existing golf course areas to be modified will be reestablished in similar groundcover to current conditions.

Maintenance requirements will be minimal based on the intended planting schedules. Trees and seeded areas will require proper installation per the specifications on Sheet 31. Once planted during spring or fall planting seasons, plant material will require seasonal temperatures and precipitation and temporary supplement irrigation to become established. Once vegetation is established through one to two growing seasons, temporary irrigation can be removed and vegetation will not require further maintenance requirements.

Section 1.6.5 outlines the use of pond water for irrigation. This is an added benefit of modifications to the golf course which will allow for irrigation of the entire site using on-site ponds that will receive stormwater originating on the site and will be supplemented by the existing on-site well. Pond water in storage will be used/reused for irrigation.

Subdivision streetlights will be installed to provide night time illumination of streets for resident and visitor safety and security. Street lighting will consist of decorative lantern-style fixtures

mounted on 15-foot high light poles. Streetlights will be installed along one side of each of the proposed subdivision streets and the access road and will be spaced on average 40 feet on center. Electrical connections will be underground in accordance with Town Subdivision Regulations and Site Plan Specifications, Section 5.2.2.2.5**,** Right-of-Way Improvements and Dedications.

1.7 Construction Schedule and Operations

Construction Schedule

As shown on the Overall Plan (**Appendix B & pocket at the back of this document**), development will involve clearing, grading and installation of streets, drainage improvements, utilities and home and driveway construction.

Initially, the site will be prepared for construction commencing with demolition. All of the existing buildings will remain except for the single-family homes and associated sheds and the existing clubhouse, which will be replaced. The pro shop will be incorporated into the new development as a fitness center for residents. The clubhouse is connected to two (2) separate sanitary systems, one (1) for the kitchen and one (1) for the bathrooms. Buildings and structures that include the clubhouse proposed for demolition will be properly demolished by a properly licensed contractor, and solid waste will be transported to a licensed off-site location that accepts C&D materials for proper disposal. Prior to demolition, the sanitary systems will be properly abandoned in conformance with SCDHS protocols. In addition, a demolition permit will be obtained from the Town. An asbestos survey will be conducted to determine if asbestos is present in any of the structures to be removed. Any known or suspected asbestos containing materials (ACM) that are identified will be removed prior to demolition in accordance with the NYS Department of Labor Industrial Code, Part 56. Environmental remediation, system closure/abandonment will occur prior to demolition of the building. Once structures are demolished, the debris generated from this demolition will be trucked off-site to an approved construction and demolition (C&D) landfill for disposal. Overall, demolition activities and sanitary system abandonment are expected to take a limited period of time (2-3 months).

Site grading and initial construction activities may occur in parts of the site simultaneous with demolition and site preparation. Access to the property during construction will be via Breeze Hill Road, Makamah Road, Fresh Pond Road and Mystic Lane. The property is large enough to provide staging areas and worker parking on-site; thus no worker parking is anticipated to occur on public streets.

The construction process will begin with the installation of project limiting fencing to establish clearing limits, and for protecting public safety. Silt fencing and perimeter erosion controls will also be put into place at this time to minimize the transport of soil on- and off-site during the construction period. Limited areas of tree clearing pursuant to plans will then occur, followed by overall rough grading, recharge basin excavation and the installation of landscape retaining walls (if necessary) to establish the required street grades and lot areas for future individual building construction. Permanent evergreen screening will be planted on the east side of the proposed 23 space parking lot and between the interior road and the southeast boundary of tax lot 0400-015-01-12 as early in the construction process as possible. Drainage improvements, stabilization of

the interior roadways and the emergency access, and underground utilities will then be constructed or installed. Exposed soils will be seeded as soon as possible after disturbance to help stabilize them. The site entrance roadway from Breeze Hill Road and related roadway improvements are expected to first be completed, for safe construction access in this area. Installation of the interior roadways, drainage and subsurface utilities may proceed in a single phase or in multiple phases depending on lot sales. Remaining common area landscaping will be installed as season permits, once rough grading is completed and interior access roadways are established. Site preparation work is anticipated to require 3-6 months, with home construction beginning during this time, as individual building permits are issued.

Site development will be subject to architectural review by the Planning Board with site plan application. Pursuant to Town Code § 198-116, the project will be designed with respect to the local community context in terms of building and parking location, massing, scale, materials, color, and style. Construction on each lot is anticipated to proceed as necessary approvals are received. It is anticipated that the overall construction period will be 18 months and be completed in one phase overlapping with other construction activities. Construction will proceed as follows:

- Stabilized construction entrances will be provided at each subdivision roadway where construction vehicles enter and exit.
- Project limiting construction fencing will be installed to provide a visual barrier, as well as security during construction activities.
- Erosion controls will be installed, including perimeter silt fencing and drainage inlet protection around all grated drainage inlets to prevent sediments from entering and settling within any subsurface drainage structures.
- Clearing and rough grading for roadway improvements and of the individual lot in accordance with the approved Site Plan and installation of evergreen screening, as necessary. Material staging areas and designated stock pile locations will be identified and protected.
- Foundation excavations, pouring of concrete and backfilling around basement walls would occur next. Temporary soil stabilization by the use of erosion control measures immediately following backfilling of the foundation on each lot would follow.
- Installation of subsurface utilities connections, drainage and sanitary systems.
- Final grading and temporary seeding of disturbed areas to stabilize disturbed areas and prevent or minimize sediment from washing on to adjacent properties. Dust control will be implemented during the course of soil disturbing activities.
- Exterior framing, installation of windows and doors, interior framing and utility hookups, and interior/exterior finishing.
- Final landscaping and driveway paving.

Construction Noise Control

Daytime noise levels would increase in the vicinity of the project site during the construction phase of the project. During the construction period, trucks and other heavy equipment working within the Project Site as well as conveying equipment and materials to the location, will generate noise in excess of the ambient noise levels. The effect of this noise generation will be attenuated as one moves away from the source of the noise through a combination of factors, including distance, intervening topography and vegetation. Noise levels will be higher during initial site grading and road construction and more limited during home construction. The noise

impacts will be temporary in nature and intermittent depending on the construction stage. Construction activities are limited to Monday through Friday between the hours of 7:00 am and 6:00 pm to conform to Chapter 141-4, "Noise disturbances enumerated," of the Town Code.

Construction Erosion Control

To minimize sediment and debris transported off-site by stormwater runoff and the impact to local water quality, erosion and sedimentation controls will be provided during project construction activities. Coverage under the NYSDEC General Permit for Stormwater Discharges from Construction Activities (GP-0-15-002, or General Permit) will be obtained prior to the initiation of construction activities. Prior to filing for any coverage, the NYSDEC requires that a SWPPP be prepared, including a detailed erosion and sediment control plan, to manage stormwater generated on-site during construction activities, and for post-construction stormwater management. A SWPPP will be prepared to ensure compliance with water quality and quantity requirements pursuant to NYSDEC Technical Guidance and the General Permit requirements. In addition, an erosion control plan incorporating the NYSDEC Technical Guidance manual, and use of erosion and sedimentation control measures such as silt fencing, storm drain inlet protection, turf reinforcement mat, and good housekeeping procedures will be utilized.

Construction Dust Control

Large trucks and project site excavation have the potential to create fugitive emissions during the construction phase of the project. Dust control measures including use of watering trucks, limited the areas of disturbance undergoing grading activities, and temporary seeding, mulching and stabilization practices will reduce the potential for fugitive dust generation at the site. Additional best management practices that will be included in the SWPPP include covering of all trucks transporting soils and ensuring control of exhaust emissions from construction vehicles through documented maintenance of the vehicles' air pollution controls. The drainage system and revegetation of the site will further provide permanent stormwater controls once construction is completed. Development of the property is not anticipated to significantly increase erosion/sedimentation or stormwater impacts, as a result of proper site grading procedures, erosion controls, and drainage system design.

Construction Vehicle/Truck Control

Truck trips to and from the site will occur as a result of construction activities associated with site preparation, earthwork, road construction, clubhouse construction and construction of residential units. These trips are primarily associated with delivery of equipment and materials. Truck trips may vary depending on the stage of construction, number of homes being constructed and overlapping construction activities, availability of materials and other factors. Truck trips may also involve many deliveries in one day, and then no deliveries for a time period until more material is needed. An example would be delivery of forms for concrete setup which could involve multiple deliveries in a day, and then no deliveries until concrete is ready to be poured or forms are ready to be removed. Over the course of a day, if the worst-case scenario involves simultaneous construction of roads, clubhouse and residential units (which could occur at times during the construction schedule), estimates can be provided of the average number of trucks per day for construction of various components of the project as well as worker vehicles.

From a conservative standpoint, simultaneous construction of roads, the clubhouse and residential units could occur. Trucks would primarily include delivery box trucks, flatbed trucks, and trailers with equipment with less potential for 18-wheelers to access the site. All roads that access the have some residential development that may experience temporary truck activity associated with the development of the site. It is noted that whether developed as proposed or developed in conformance with zoning, truck activity is inevitable. It is further noted that all of the roads surrounding the site receive truck traffic from homesite construction, renovations, garbage trucks, delivery trucks, and moving vans (18-wheelers). An approximation of truck activity would anticipate that road construction could generate on the order of 3 truckloads per day (6 trips); clubhouse construction may generate 4 truckloads per day (8 trips) and residential construction may generate 2 truckloads per day per unit, with 10 units under construction at one time (40 trips); this would total 54 truck trips per day, if all of these activities are under construction at one time. Measurements of road widths of access roads are as follows: Makamah Road is 20 feet wide exclusive of striped shoulders with a double yellow strip in the middle (10' lanes); Fresh Pond Road is 16 feet in width, no striping and minimal shoulders (8' lanes) and Breeze Hill Road is 25 feet wide with no striping. Given the three development locations with the least number of units to be placed along Breeze Hill Road, it is noted that Makamah Road will be used more for access to the south part of the development and the Mystic Lane area. This logically distributes truck traffic in a manner that favors the wider road that is in excellent condition, specifically Makamah Road to Mystic Lane. Comparing development of the site as proposed with development under current zoning provides additional insight into relative truck activity. The proposed project will construct duplex units such that for 98 units, only 49 buildings will be built, or less than half the number that would be built if developed with the full yield of single-family homes. The clubhouse involves additional activity; however, a single-family residential use could also include a clubhouse. Truck access is temporary during the construction period, intermittent due to delivery schedules, dispersed due to road configuration, and not excessive given the estimates provided above. Truck materials and equipment deliveries are also intermittent and not likely to coincide with peak traffic on the roadways. As a result of these factors, significant adverse impacts due to truck activity are not expected.

All of the access roads are in good condition as noted above, and capable of truck delivery activity. All truck activity associated with development will conform in all respects with Town roadway requirements in regard to vehicle, weight, speed, roadway sweeping, bonding for road repair and other applicable Town requirements. This can be incorporated into subdivision conditions of approval to ensure that road conditions are maintained.

With respect to construction worker traffic, such activity will be associated with smaller vehicles and therefore less impact that is more typical of residential street traffic. Since some workers will carpool to/from the site in personal vehicles or arrive/depart via large groups in commercial vehicles, it is reasonable to assume vehicle occupancy of more than one worker per vehicle. The applicant will encourage, promote and facilitate car-pooling through construction contracts and construction management during this phase of the project. The trip generation for the proposed project is determined to be: 51 AM peak hour trips, 59 peak hour trips and 23 Saturday midday peak hour trips (see **Section 3.4.2**). It is expected that construction workers will arrive earlier than the AM peak hour and depart earlier than the PM peak hour based on standard construction practice. Given the earlier hours arriving at and leaving the site and the variability of

construction worker activity, as well as the sites location with respect to NYS Route 25A and two Town roads that access the site from the east and west, specifically, Fresh Pond Road to the east and Makamah Road to the west, worker vehicle trips are not expected to exceed the trip generation associated with the proposed project. Based on traffic analysis (see **Section 3.4.2**), no significant adverse traffic impacts are expected based on-site generated traffic and therefore, it is not expected that construction worker traffic will impact area roads.

Operations

The development will be operated by an HOA and GCA established for the purpose of maintaining common elements of the project. It is also proposed that landscaping for the residential units be done by the groundskeeping staff of the Indian Hills Country Club. This will significantly reduce impact on neighborhoods from landscaping equipment, as all necessary equipment and staff are currently maintained on site, and will have the ability to internally access residential areas for lawn care and maintenance. This is a significant benefit of the project which is contrasted with single family residential use under existing zoning, where each individual homeowner could have their own lawncare and landscape maintenance contractors accessing the site. Sanitary facilities, drainage improvements, roads maintenance/plowing and other common area improvements will be maintained through contracts with service companies as needed. This will reduce the burden on Town highway maintenance services as compared with single family use. Once established, and post-development, the HOA will manage the affairs of the community.

Golf Course Management

A Golf Course Environmental Management Plan has been prepared and provided in **Appendix G**. This plan addresses the storage and use of pesticides, herbicides and other chemicals for maintenance of the golf course. The golf course is an existing and on-going operation; however, going forward, the course will be managed under this plan to ensure continuing proper use and handling of materials used at the facility.

Operational Membership

The current membership of Indian Hills Country Club is approximately 390 golf members. Many existing members are expected to purchase homes at The Preserve at Indian Hills. The proposed project will seek to not disrupt the ongoing membership of the country club for its members. There is currently no limit on membership at the Indian Hills Country Club. Through this proposed project, the Applicant will agree to limit the membership to 425 total golf members. This represents only a 9% increase over current membership.

Clubhouse Operations

The clubhouse at Indian Hills operates year-round with some off-season closure for maintenance; the peak season is from March 15 to December 31 each year. The clubhouse offers dining, locker rooms and other services to members. Golf member and a la carte dining are offered from Wednesday through Sunday each week. The clubhouse is open all year for special events. The dining room seats 160 and the lounge area seats 65. There is an upstairs private dining room for 20.

The new clubhouse will have a 200-seat dining hall on the upper floor, a main dining room that seats 70 and a cocktail lounge that seats 30. The proposed increase is modest and necessary for

member events to be accommodated in the new clubhouse facilities.

The existing golf pro shop is a separate building which is proposed to be retained, renovated and repurposed as a fitness center for residents of The Preserve at Indian Hills. The proposed parking lot for 146 vehicle stalls is depicted on the project plans.

Golf Course Operational Employment

Full staffing of the golf and clubhouse operations occurs during the months April through October. During this period, currently there are 20 maintenance employees; this is proposed to be increased to 30 maintenance employees. Seasonal employment for other golf course operations is currently 25 which will be increased to a staff of 35. Food and beverage staff is currently 25, which will be increased to approximate 35. These are all seasonal employment numbers which are needed to properly serve the patrons/members of the clubhouse and golf facilities at Indian Hills Country Club. An administrative staff of 6 is employed full time, and it is expected that this will be increased to a staff of 10. These are approximate staffing numbers as employees may come and go and operations may change from time to time. Employment is a benefit to the area as many levels staff help are needed including administrative, food preparation, professional golf course management, laborers and general maintenance staff. Maintaining and creating jobs is considered a benefit to the locale and the region.

1.8 Permits and Approvals Required

This DEIS has been prepared in accordance with the NYS Environmental Quality Review Act (SEQRA) and its implementing regulations under Part 617, Title 6 of the New York Code of Rules and Regulations (6 NYCRR Part 617). The Applicant has prepared this DEIS for the Planning Board, as lead agency, with complete information in fulfillment of the Positive Declaration and Final Scope dated October 18, 2019. The DEIS review will proceed through the SEQRA process. **Table 1-2** lists the permits and approvals required for the proposed project, along the reviewing/issuing agency.

TABLE 1-2
PERMITS AND APPROVALS REQUIRED

Agency	Approval
Huntington Town Planning Board	Subdivision; Site Plan; Buffer Relief
Huntington Town Zoning Board of Appeals	Special Use Permit Amendment
Huntington Highway Office	Road Access Permit; Drainage
Suffolk County Department of Health Services	Water Supply; Sewage Discharge
Suffolk County Water Authority	Water Supply Connection
NYSDEC	Tidal and Freshwater Wetland Permits; SPDES Stormwater Permit
Huntington Town Building Department	Demolition and Building Permits

SECTION 2.0

NATURAL ENVIRONMENTAL RESOURCES

2.0 NATURAL ENVIRONMENTAL RESOURCES

2.1 Topography and Erosion Hazard

2.1.1 Existing Conditions

Overall the entire property has undulating topography which was first created by natural glacial advance and retreat processes and later altered to accommodate development of the golf course. The subject property is transected by Breeze Hill Road which divides the property into a northern parcel which is occupied by the golf course and a southern parcel which is occupied by the clubhouse and driving range and single-family homes.

A significant topographic feature of the site is the Coastal Erosion Hazard Area (CEHA) line and areas north of this line that are subject to erosion hazard. The CEHA line is located on the north side of the subject site near Long Island Sound, and is depicted as a dashed line on Sheet 2 of the plan set (see **Appendix B**). This line was accurately transferred from NYSDEC Article 34 maps for the purpose of avoiding this hazard area. Consequently, no development is proposed on or within this area; however, it is noted that under existing conditions, golf holes 12 and most of 13 are located in this area. This area is historically an area of bluff slumping and land movement as a result of underlying clay resulting in unstable soil conditions **(Fuller, 1914)**.

Other areas of the site south of the CEHA line include a hill located just south of the ridgeline (CEHA) and a glacial outwash valley which arcs from the center of the western golf course boundary to the southeastern portion of the golf course. This valley is occupied by a network of natural and man-made ponds which create water hazards that have been incorporated into the golf course design. The highest point on the property is found at the crest of the hill which is centrally located south of the ridgeline in the northern end of the property and is encountered at an elevation of approximately 157 feet above mean sea level (msl). The lowest point on the property is located in the southeastern portion of the property at the end of the glacial outwash valley and is encountered at an elevation of approximately eleven feet above msl.

The western end of the ridgeline sits at an elevation of approximately 50 feet above msl and ascends to an elevation of approximately 100 feet at its eastern end. From the ridgeline, the topography of the northern parcel descends to the north at varying slopes ranging from approximately 25% to 50% to a bench which comprises the thirteenth fairway of the golf course and then down a secondary slope that ranges from 20% to 40% down to a second bench which comprises the twelfth fairway. From the second bench the property then descends down a bluff at slopes ranging from 20% to 60% which terminates at the beach along the Long Island Sound.

From the glacial outwash valley the property ascends to the northeast towards the ridgeline at slopes ranging from 5% to 40% and the southwest at slopes ranging from 10% to 20% towards the southwest corner of the golf course. The glacial outwash valley itself descends from a high elevation of approximately forty feet above msl towards the southeast at a slope of approximately 2% to an elevation of approximately fourteen feet above msl in the southeastern portion of the golf course.

The southern parcel is dominated by an elevated plateau on which lies the golf course clubhouse and paved parking areas. The plateau sits at an elevation of approximately 125 feet above msl and slopes towards the north at slopes of approximately 5%, east at a slope of approximately 50% and the west at a slope of approximately 15%. The lowest elevation in this portion of the property is found at 26 above msl and is located along the western boundary.

Additional residential properties south of the site and west to Makamah Road are included as part of the development area. These parcels also exhibit undulating topography, but have been modified as a result of residential development including homesites, yards and appurtenances. The southwest parcel that connects to Makamah Road has a topographic mound to an elevation of approximately 72 feet above msl in the north-central part of this site, from which the elevation decreases to the west and east to approximately 30 feet above msl. There is also a topographic mound on the south part of the site at an elevation of approximately 76 feet above msl, that also decreases in elevation to the north and south. An existing driveway located between the two mounds traverses this property in an east-west orientation. The high elevation between the two mounds is approximately 54 feet, and the elevations likewise decrease to the east and west.

The south property has an existing driveway from Breeze Hill Road that ascends into the property from west to east to access existing residences. This property slopes from a high of approximately 105 feet in the southernmost part of the overall site, to the west and to the north, with a general topographic trend of decreasing elevation to the west.

Figures 2-1 through 2-7 depict topography, landforms, slopes, soils, wetlands, habitat and flood zones on and in the vicinity of the project site. **Appendix B, Sheet 2** provides an existing conditions map that includes topography and site features.

2.1.2 Anticipated Impacts

Overall, grading will occur in limited areas of the site specific to three residential development areas and drainage improvements that will benefit the overall golf course stormwater management systems. The residential areas are limited to the northwest, northeast and south parts of the site. The drainage improvements relate to the interior of the golf course where existing man-made ponds will be expanded to provide additional stormwater retention for golf course watershed areas. The limited residential areas enable the balance of the golf course to remain, and the drainage improvements have beneficial implications to water quality as the existing golf course ponds drain to a ditch on the west side of Fresh Pond Road, which runs north, under the road and overflows to Fresh Pond. Grading plans are found in **Appendix B-1** as Sheets C-105 through C-113. A cut and fill plan is provided in **Appendix B-3**, as well as printed full size in the pockets in the back of the Volume I (Sheets C-001 and C-002)..

Grading activity will be conducted internally within the site and will not impact adjacent properties. As the portions of the site proposed for development are utilized for the existing golf course and characterized by slopes ranging from 1% to 16%, grading consisting of cutting and filling will be required. These activities will be described in more detail herein. In addition, construction management techniques outlined in **Section 1.7** will ensure that erosion and sediment

control measures are implemented. Most importantly, no new construction activity will occur north of, or near the CEHA line in order to avoid the unstable land areas of the site.

In order to ensure that slopes on the north part of the property remain stable and are considered as part of the proposed development of the site, the Applicant retained a professional geotechnical engineering firm to study this area and provide recommendations related to placement of buildings in relation to the CEHA line. This report, dated January 14, 2019 and revised April 15, 2019 as well as the text of the original Geotechnical Engineering Services Report, dated July 25, 2008, by PS&S for Phase I of the Bluff Area Stability Evaluation prepared by PS&S, and supporting information provided by Dynamic Earth, LLC[1] in a letter dated July 8, 2019 and used in the responses below are included as **Appendix H-1, H-2** and **H-3** respectively. Engineering report findings are summarized herein.

Historical rates of erosion were considered in the PS&S reports and are further explained in **Appendix H-3**. The 2008 PS&S report reviewed topographic surveys dated 2000, 2002, 2003, and 2008 and documented surficial movements at 16 monitoring points throughout the subject area. A comparison of the topographic surveys indicated that the ground surface within the landslide impacted area (north of the CEHA line) generally moved downward and laterally northward toward Long Island Sound. The 2008 topography also indicated that the rip-rap revetment wall (beach shoreline erosion protection) reportedly constructed in 2002 had moved up to about 17 feet farther north (outward) than where it was originally constructed. The monitoring points were surveyed eight times from March 24, 2008 through July 8, 2008 which indicated total movements ranging from about 4.5 inches to 7.4 inches within the landslide impacted area (north of the CEHA line) but relatively negligible movement outside the impacted area (south of the CEHA line). Historical documents indicate this northward land movement has been ongoing since well before 1904. However, the boundaries (location, length, width) of the landslide appear to be roughly the same since 1904 as supported by the location of the CEHA line which has not substantially changed since it was surveyed in the 1980s.

As stated in the **Discussion and Evaluation** section on page 7 of the 2008 PS&S report:

> *"Slopes become unstable by either an increase in the driving forces, a decrease in the resisting forces, or a combination of both. Driving forces are typically increased when weight is added to the upper portion of the slope by water infiltration, fill placement, or surcharge loads (i.e., loads from traffic or structures). Resisting forces are typically decreased when the weight of soil is reduced at the lower portion or toe of the slope by either natural processes (i.e. erosion or scour along the water's edge) or mechanical excavation. It is also possible to decrease the resisting forces by lowering the shear strength of the supporting soils. An increase in the soil moisture content may result in a softening of the soil and a decrease of the shear strength of that soil. As such, groundwater plays an important factor in the stability of a slope because it can reduce the resisting force and increase the driving force."*

[1] Dynamic Earth, LLC includes principal Marc Dyer, P.E., a former employee of PS&S who previously worked on the Indian Hills site reports with PS&S.

The 2018/2019 PS&S report includes the following major sections: Field Exploration Program, Laboratory Tests, Subsurface Conditions, Stability Analysis and Closure. Based on the **Stability Analysis**, the report provides the following:

> *The results of the stability analyses, …, indicate that the proximity of the proposed development to the existing slope has a considerable effect on the factor of safety of the existing slope. The closer the proposed development is to the existing crest of the slope, the more the factor of safety decreases and the greater potential for increased slope instability. Through numerous analysis and modelling, PS&S calculated that a minimum 120-foot buffer from the crest of the existing slope should be maintained so as not to adversely impact the existing slope condition, provided the surcharge load from the proposed development (buildings, construction loads, landscaping, etc.) is maintained less than 300 pounds per square foot (psf). The analyses indicate that by maintaining a minimum 120-foot buffer, the slope stability factor-of-safety for the proposed development was calculated to be the same as for the current existing conditions and therefore would not have an adverse impact on existing conditions. It is PS&S's recommendation that all proposed site improvements, including buildings, landscaping, etc, be maintained outside the 120-foot buffer zone. PS&S also recommends that the buildings closest to the buffer zone consist of light weight construction (i.e., wood frame, stick-build) and no more than two stories to maintain a surcharge load less than 300 psf.*

In summary, as discussed in the aforementioned reports by PS&S and Dynamic Earth, provided there are no activities that raise grades within the 120-foot buffer zone and further that there are no drainage changes that increase water infiltration within the 120-foot buffer zone, no adverse impact on slope stability or potential increased bluff erosion is expected. It is recommended that site improvements, including raising grades and increasing surface infiltration, be limited to outside the 120-foot buffer zone. The proposed plan ensures that buildings are set back at least 120-feet from the CEHA line. Other improvements in the area identified in the report are minimized to the maximum extent practicable, consistent with the findings of the geotechnical engineering report.

The northwest part of the site will involve grading activity to provide suitable road access and development of proposed homesites. All grading in this area is within a defined limit of clearing as depicted on plans (see Grading Plans; **Appendix B**). The extension of Mystic Lane into the site will conform as much as possible to existing topography, while establishing safe road grades of less than 10 percent. This road extension will create a loop that will allow for placement of 18 buildings within this development area. The homesites will involve topographic adjustments using segmental block retaining walls of 4-6 foot heights in the west, south and east parts of this development area. These retaining walls allow for grade transitions to be made with the minimum disturbance. East of the northwest development area, retaining walls are used for grade transitions to relocate the tee boxes for the 14th hole. An excavated recharge basin is proposed to the southeast of this component of the residential development. The proposed grading establishes road locations, homesites, drainage, landscaping and related improvements to facilitate the placement of 36 senior housing units in this area.

The northeast part of the site will similarly involve grading activity to provide suitable road access and development of 14 proposed homesites in the area off of Fresh Pond Road **(Appendix B)**. A new internal site road will be constructed west into the site, then northward to a cul-de-sac. This

new internal road will conform as much as possible to existing topography, while establishing safe road grades of less than 10 percent. The homesite development will involve topographic adjustments using segmental block retaining walls of 4-8 foot heights to the west of the proposed units. These retaining walls allow for grade transitions to be made with the minimum disturbance. West of the retaining walls, grading up the slope of the existing golf course will occur, and this area will be stabilized as part of the edge of the golf course with slopes of 1:3 and established in typical golf course groundcover vegetation. East of the northeast development area, grading is proposed to create depressions that will retain stormwater on the site in connection with this development area. These drainage retention areas are proposed north and south of the access road, will have slopes not to exceed 1:3, and will be planted with native vegetation. The proposed grading establishes road locations, homesites, drainage, landscaping and related improvements to facilitate the placement of 14 senior housing units in this area.

The south part of the site will similarly involve grading activity to provide suitable road access and development of 48 proposed homesites in the area south of Breeze Hill Road and east of Makamah Road **(Appendix B)**. A new internal site road will be constructed east into the site from Makamah Road, which will join the basic alignment of the existing driveway into parts of the site south of the driving range to access the 48 units ending in a cul-de-sac. The access road and unit construction area will reduce the existing mounds to establish the necessary road grades for safe roadway design. This new internal road will conform as much as possible to existing topography, while establishing safe road grades of less than 10 percent. The homesite development will involve topographic adjustments using segmental block retaining walls of 4-6 foot heights to the north and south of the access road and proposed units. These retaining walls allow for grade transitions to be made with the minimum disturbance. Four structures will be placed north of the roadway, and drainage detention areas will be located in the northwest, southwest, northeast and southeast areas of this component area of the south residential development. As this internal roadway extends eastward, it will ascend the slope to provide access to twenty buildings that comprise the remain units of the development. Retaining walls will be used to the south and east of the rear yards of the units along this roadway. Localized grading will occur for directing drainage, and two detention areas will be placed at the downslope areas of this overall component of the south development area. The proposed grading establishes road locations, homesites, drainage, landscaping and related improvements to facilitate the placement of 48 senior housing units in this area.

Grading for the expanded pond areas of the golf course will occur around each of the existing man-made ponds that transect the central part of the golf course. Pond enlargement is critical to providing additional drainage containment for watershed areas that include the existing golf course, such that capacity for a nine (9) inch storm is provided. This is a substantial increase in drainage containment as compared to existing conditions. The ponds will remain as water features and will therefore be lined. The "freeboard" area between the low maintained level of the ponds and the high maximum level of the ponds will provide this storage. Pond enlargement will require regrading around these existing water features involving primarily existing disturbed golf course areas. An expanded grading area is needed to the north of the easternmost pond, where an existing hillside will be regraded for pond enlargement; the regraded area will be established at a 1:3 slope and will be stabilized with groundcover vegetation typical of the existing course.

Staging and management of material removed from the ponds is handled on-site consistent with long-standing practice. Pond sediment consists mostly of organic material, primarily leaves that have accumulated over the years. The use of spoilage pits as part of the dredging of existing ponds and construction of new larger ponds will make it possible to drain and bury these organic materials on-site. Spoilage pits will be located adjacent to existing and future ponds so as to minimize need to transport or stage these materials. Spoilage pits are designed to drain water from dredged sediment, dry the material and turn it into composting and fill material. These materials will serve as fill for golf course landscape mounding and berms for new pond construction.

Once grading is complete, slopes of 1:3 or less will be established in all newly graded areas. These areas will utilize groundcover techniques that do not require fertilization, as is the case with existing golf course outside of the tees, greens and fairways. All disturbed soil areas will be stabilized and all areas other than buildings, paved surfaces and athletic fields will be landscaped. Overall, it is anticipated that grading activities will require cuts ranging from less than 1.0 foot to approximately 35 feet and fill ranging from 0.0 feet to 20 feet. Total grading will involve approximately 225,000 CY of cut, and 160,000 CY of fill. Grading will be balanced between cut and fill resulting in the re-use of excavated soil on-site, so that no export of soil is necessary.

The proposed grading program has been designed to minimize potential impacts to topography to the maximum extent practicable and achieve the safe and efficient design of the residential and drainage areas such that the golf course will remain, and residential use will be accommodated. Measures include proposed 1:3 grade transitions, planting of ground cover materials, installation of retaining walls and stormwater retention facilities. As noted, all created slopes will be 1:3 or less and will be stabilized using ground cover material. It is noted that the proposed project will be subject to review by the Town of Huntington Planning Board which pursuant to §198-65(H) of the Town of Huntington Code, allows the Planning Board to "make changes to a site plan in order to protect steep slopes and the environment, and may require conditions and restrictions as deemed necessary to assure compliance with all applicable laws, rules and standards." The Board may take into account the degree of slope, the suitability of the location for construction, attempts to mitigate clearing and grading and the environmental features of the lot during this review. As a result, the potential erosion of surface soils and proposed grades will be mitigated through project design combined with further measures described below.

Precautions will be taken to ensure sediment will not be transported off-site by stormwater runoff both during and post construction. In accordance with the NYSDEC SPDES Phase II Program and Chapter 170, Article II of the Town of Huntington Code, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the development of the property, including a detailed erosion and sediment control plan to manage stormwater generated on-site during construction activities, and for post-construction stormwater management. The SWPPP will ensure compliance with water quality and quantity requirements pursuant to the 2010 NYS Stormwater Management Design Manual ("Design Manual"), Chapter 170 of the Town of Huntington Code and NYSDEC requirements and will be submitted to the Town for review and approval prior to final site plan approval and filing with the NYSDEC. The SWPPP will include detailed erosion control and phasing plans incorporating the NYSDEC Guidelines for Urban Erosion and Sediment Control, and use of measures such as:

- Silt fencing, storm drain inlet protection, sediment traps, settling basins and good housekeeping procedures will be utilized.
- Construction equipment and vehicles will be parked and loaded/unloaded within the site.
- A construction entrance with "rumble strips" will be placed at the site entrance to prevent soil on truck tires from being tracked onto the public road system.
- The construction process will begin with establishment of flagged clearing limits, followed by installation of the erosion control measures.
- Construction of the structures can then begin concurrent with the utility connections. Once heavy construction is complete, finish grading will occur followed by soil preparation using topsoil mix, seeding and installation of the landscaping, which will be performed while the structures are being completed.
- Weekly inspections of erosion controls will occur in accordance with Chapter 170 of the Town Code to ensure proper installation and maintenance of erosion controls.
- The drainage system and revegetation plan will further provide permanent stormwater controls once construction is completed.

Development of the property is not anticipated to significantly increase erosion/sedimentation or stormwater impacts as a result of proper site grading procedures, erosion controls, and drainage system design. It is anticipated that clearing, grading, drainage excavations and road, utility, and commencement of construction (final grading, construction and finishing) will take approximately 24 months. During grading operations, truck traffic to and from the site will be routed to each individual development area using the same access roads that will be used for driveways to the three (3) development areas. Trucks waiting to load or unload will be routed and parked within the site in proximity to the grading area, to minimize the amount of truck movements, thereby minimizing the potential to raise dust.

No significant long-term adverse impacts are expected with respect to topography, since a grading plan has been devised to minimize the area and volume of disturbance; the grading will be the minimum necessary to achieve the goals for the proposed development. Short term impacts will be controlled by proper grading, erosion control, construction inspection and management, and site stabilization techniques consistent with NYSDEC and Town requirements.

Pursuant to Article 23, Environmental Conservation Law Implementing Regulations, a Mined Land Reclamation Permit is not required for the proposed project. A New York State Department of Environmental Conservation Mined-Land Reclamation permit is required for all excavations and related activities defined as mining; however, the activity proposed on-site is not defined as mining and therefore, no such permit is needed. Under the Mined Land Reclamation Law, a "Mine" means any excavation from which a mineral is to be produced for sale or exchange, or for commercial, industrial, or municipal use. The most common exemption of the Law is excavation or grading operations which are conducted solely in aid of on-site construction. The Regional Mined Land Reclamation Specialist (RMLRS) was requested to determine whether a mining permit is required for the proposed project. As indicated in correspondence from the RMLRS provided in **Appendix K-2,** a Mined-Land Reclamation Permit is not required for the proposed project.

2.1.3 Proposed Mitigation

- Mitigation designed to limit the impact on topography at the subject property will consist of limiting the grading necessary in the steep sloped areas of the site using retaining walls and retaining many of the steep slope areas as undisturbed open space (see Grading Plans, Sheets 6-14 provided in **Appendix B).** The design has been prepared to minimize the area and volume of disturbance; the grading envisioned is the minimum necessary to achieve the goals for the proposed development. Resultant development areas will be permanently stabilized with retaining walls, slopes not exceeding 1:3 and groundcover vegetation.
- An erosion control plan has been prepared (see Grading Plans, Sheets 26-28 provided in **Appendix B)** which demonstrates the protection methods that will be utilized during construction to control transport of sediment and stormwater runoff and ensure slope stabilization during and after completion of construction activities.
- Use of a water truck, rumble strips, proper internal staging areas and provision of buffer areas.
- During grading operations, truck traffic to and from the site will be routed to each individual development area using the same access roads that will be used for driveways to the three (3) development areas. Equipment/trucks waiting to load or unload will be routed and parked within the site in proximity to the grading area, to minimize the amount of truck movements, thereby minimizing the potential to raise dust.
- Applicable erosion and sedimentation control guidelines will be observed during construction of the proposed project in order to minimize impacts. In accordance with the requirements of NYSDEC and Chapter 170 of the Town Code, a SWPPP be prepared for the development of the property, including a detailed erosion and sediment control plan, to monitor and manage stormwater generated on-site during construction activities, and for post-construction stormwater management to reduce and maintain flow volumes and infiltrators particularly upgradient of Fresh Pond to capture and treat the first flush of stormwater.
- As demonstrated in the FEMA Flood Map**, Figure 2-8**, a Flood Monitoring Plan is not required as development is not within a floodway.
- The Final Scope requests confirmation of the CEHA line. The location of the CEHA line, as shown on attached project plans was confirmed in the field by Nelson, Pope & Voorhis, LLC with on-site flagging on Wednesday, August 29, 2018. Nelson & Pope surveyors plotted and mapped the CEHA line using state-of-the-art equipment including total station, robotic, GPS in the field to finish ensuring accuracy and precision of the work.
- No mitigation is required for bluff slumping other than to eliminate grade increases and supplemental infiltration within 120-feet of the CEHA line, consistent with engineering recommendations outlined in Section 2.1.2.
- Per the Final Scope, Section 2.1.2 outlines the potential impact of irrigation as related to added burden on underlying clay, slippage and slope failure. In terms of mitigation, this is addressed by adherence to the setback recommendations.
- Potential impact of development south of the bluff as related to a change in drainage patterns is addressed by adherence to the setback recommendations.
- Site reclamation goals and plans are to limit the area of grading and volume of excavation for maintaining the golf course and topography as it currently exists, maintain all activity south of the CEHA line, and eliminate grade increases and supplemental infiltration within 120-feet of the CEHA line, consistent with engineering recommendations outlined in Section 2.1.2.
- Dynamic Earth (Appendix **H-3**) recommends that topographic surveying and surface monitoring be continued on a quarterly annual basis, and that additional surface monitoring points be established in the buffer zone in the area of the proposed development.

- Landscaping at the site shall include species that are well adapted for site soil conditions to promote species survival and soil stability. No activity is proposed on the slope. The Landscape Plan (Plan 3); LP-103; Sheet 31 of the Preserve at Indian Hills plan set included in this DEIS identifies the Ecology Summer Mixture seed to be used consistent with these parameter for soil stability.

2.2 Surface and Subsurface Soils

2.2.1 Existing Conditions

Surface Soils

The U.S. Department of Agriculture's Soil Survey of Suffolk County, New York **(Warner, 1975)** provides a complete mapping, categorization, and description of soils found in the County. Soils are classified by similar characteristics and depositional environment into soil series, which are in turn grouped into soil associations. An understanding of soil character is important in environmental planning as it aids in determining vegetation type, slope, drainage characteristics, engineering properties, and land use limitations. These descriptions are general, however, and soil characteristics may vary greatly from place to place; particularly soils of glacial origin.

See reports by PS&S dated July 25, 2008 and January 14, 2019 (revised April 15, 2019) provided in **Appendix H** which discuss regional geology based on readily available public information and site-specific subsurface conditions based on subsurface investigations previously performed by Soil Mechanics Drilling Corp. in August 1994; Nelson and Pope, LLP in August 2001; Roux Associates, Inc. in September 2007; and PS&S in June/July 2018 and Section 2.1.2 above regarding the historical rate of erosion and documented surficial movements.

The Soil Survey identifies the subject property as lying within an area characterized by the Carve-Plymouth-Riverhead Association soils. This association is characterized as containing deep, rolling, excessively drained and well drained, coarse textured and moderately coarse-textured soils on moraines.

Twelve soil types have been identified on the project site. The approximate locations and aerial extent of these soils are depicted in **Figure 2-3**. As can be seen, the Carver and Plymouth sands (Cp) of varying slopes is the most prevalent soil type identified on the property, and has been disturbed in part by grading associated with the golf course. None of the remaining on the property are particularly dominant and are distributed in varying degrees across the site. A detailed description of each of the soil types identified on-site is provided below:

Beaches (Bc) – Beaches are made up of sandy, gravelly or cobbly areas between water at mean sea level and dunes or escarpments. Slope is nearly level in most areas but it is as much as 15% in some places on the Atlantic shore. All beaches along the Long Island Sound are very gravelly and cobbly. A few very large boulders that rolled down from the adjoin bluffs of the Harbor Hill Moraine are present. Measures should be taken to control erosion to keep the beaches wide enough to protect nearby dunes or uplands.

Berryland Mucky Sand, (Bd) - The Berryland series consists of deep, very poorly drained coarse-textured soils. These nearly level soils formed in deep sandy outwash deposits on low lying wet areas adjacent to ponds, tidal creeks and low gradient streams or between areas of tidal marsh

and better drained uplands. This (Bd) is the only Berryland soil mapped in the county. The hazard for erosion is slight.

Carver and Plymouth sands, 15-35% slopes (CpE) - The Carver series consists of deep, excessively drained coarse-textured soils. This soil type is found almost exclusively on moraines except for a few steep areas on side slopes along some of the more deeply cut drainage channels on outwash plains. The hazard for erosion is moderate to severe.

Cut and fill land, gently sloping (CuB) - This series is comprised of areas that have been cut and filled for nonfarm uses. The areas generally are large, but some areas are about five (5) acres in size. This soil type is comprised of moderately sloping areas that have been graded for building sites. Slopes range from 1 to 8 percent.

Cut and fill land, sloping (CuC) - This series is comprised of areas that have been altered in grading operations for housing developments, shopping centers, and similar nonfarm uses. Generally, the initial grading consists of cuts and fill for streets or parking lots. This soil type is comprised of moderately sloping areas that have been graded for building sites. Slopes range from 8 to 15 percent.

Escarpments (Es) – Escarpments are made up of bluffs that have slopes greater than 35%. Except for a few scattered areas, this unit is devoid of vegetation. Generally, the slopes are uniform with very little dissection. Height of the escarpments range from 20 to more than 100 feet. The material in the escarpments along the north shore is sand. Many escarpments have large boulders embedded in the soil, which rolls to the beach as the escarpment erodes. Escarpments are used by some species of songbirds. Where possible, slopes should be stabilized to reduce erosion.

Plymouth loamy sand, 3-8% slopes (PlB) - Consists of deep, excessively drained, coarse-textured soils that formed in a mantle of loamy sand over thick layers of stratified coarse sand and gravel. This soil is on moraines and outwash plains. The erosion hazard is slight and soil tends to be droughty.

Raynham loam (Ra) - This nearly level soil is in low lying areas besides marshes and creeks. In many areas it forms a transition between poorly drained areas and better drained areas on uplands. It is on outwash plains and moraines. Because of its position on the landscape, it is difficult to locate adequate drainage outlets. This soil is better suited to woodland and to recreational uses than to other uses.

Riverhead Sandy Loam, 8-15% slopes (RdC) - Consists of deep, excessively drained, coarse - textured soils that formed in a mantle of sandy loam or fine sandy loam over thick layers of coarse sand and gravel. This soil is found in narrow bands on outwash plains along the side slopes of deep intermittent drainageways. Hazardous of erosion is moderately severe.

Scio silt loam, sandy substratum, 2-6% slopes (SdB) – This soil is found on moraines and outwash plains. The hazard of erosion is moderate to slight and measures are required to help erosion control.

Sudbury sandy loam (Su) – This nearly level soil is between areas of more poorly drained soils and adjoining well drained soils of the Riverhead series. In a few places this soil is in the bottom of closed depressions in large tracts of Riverhead sandy loam and these areas are small. The hazard of erosion is slight and this soil is used for building sites if it is part of a larger development area.

Walpole Sandy Loam (Wd) - The Walpole series consists of deep, somewhat poorly drained and poorly drained, moderately coarse textured soils that formed in a mantle of sandy loam or fine

sandy loam over coarse sand or sand and gravel. This (Wd) is the only Walpole soil mapped in the county. Slopes are 3 percent or less. The hazard of erosion is slight.

The Soil Survey was reviewed for information relating to possible limitations that the identified soils may present. Constraints commonly associated with these soils are summarized below in **Table 2-2**.

As noted in **Table 2-2**, all but one of these soils were found to pose "moderate" and "severe" limitations for site use and development due to high water table, sandy surface layer, slopes and slow permeability.

TABLE 2-1
SOIL RESTRICTIONS AND LIMITATIONS

Soil Type	Beaches (Bc)	Berryland Mucky Sand (Bd)	Carver and Plymouth Sands, 15-35% slopes (CpE)	Cut and fill land, gently sloping (CuB)	Cut and fill land, sloping (CuC)	Escarpments (Es)	Plymouth Loamy Sand, 3-8% slopes (PlB)	Raynham Loam (Ra)	Riverhead Sandy Loam, 8-15% slopes (RdC)	Scio Silt Loam, sandy substratum, 2-6% slopes (SdB)	Sudbury Sandy Loam (Su)	Walpole Sandy Loam (Wd)
Limitations for:	---	---	---	---	---	---	---	---	---	---	---	---
Sewage disposal fields	Severe: high water	Severe: prolonged high water table	Severe: slopes	Slight	Moderate: slopes	Variable; no interpretations made	Slight	Severe: moderately slow permeability; seasonal high water table	Moderate: slopes	Severe: moderately slow permeability in substratum	Moderate: seasonal high water table	Severe: seasonal high water table
Homesites								Severe: seasonal high water table		Moderate: seasonal high water table		
Streets and Parking lots				Moderate: slopes	Severe: slopes		Moderate: slopes	Moderate: seasonal high water table	Severe: slopes			
Lawns and Landscaping		Severe: sandy surface layer; high water table	Severe: slopes; sandy surface layer	Severe: sandy surface layer	Severe: sandy surface layer		Severe: sandy surface layer		Moderate: slopes	Slight	Slight	
Picnic areas		Severe: prolonged high water table		Moderate: sandy surface layer	Moderate: sandy surface layer		Moderate: sandy surface layer		Moderate: slopes			
Paths and trails									Slight			
Engineering Properties:	---	---	---	---	---	---	---	---	---	---	---	---
Top soil	Characteristics too variable to estimate	Poor: prolonged high water table; coarse texture	Poor: coarse texture	Characteristics too variable to estimate			Poor: coarse texture	Fair: seasonal high water table	Good	Good: seasonal high water table		
Embankment foundations		Strength generally adequate for high embankments; slight settlement; moderately steep to steep slopes on CpE					Strength generally adequate for high embankments; slight settlement					
Low building foundations		Poor: prolonged high water table; low compressibility	Low compressibility; large settlement possible under vibratory load; moderately steep to steep slopes				Low compressibility	Season high water table; low compressibility; large settlement possible under vibratory load	Low compressibility; moderate and moderately steep to steep slopes	Seasonal high water table; low compressibility		
Embankments		Poor resistance to piping; fair stability; moderate to high permeability	Fair to poor resistance to piping; fair stability; high permeability				Fair to poor resistance to piping; fair stability; high to moderate permeability	Fair to poor resistance to piping; fair to poor stability; moderate permeability	Fair to poor resistance to piping; fair to poor stability; moderate to high permeability			
Irrigation		Prolonged high water table; very low available moisture capacity; rapid water intake	Very low available moisture capacity; rapid water intake; moderate and moderately steep to steep slopes				Very low available moisture capacity	Seasonal high water table; moderate to slow water intake; moderate to high available moisture capacity	Moderate to rapid water intake; moderate available moisture capacity; moderate and moderately steep slopes	Seasonal high water table; moderate to slow water intake	Seasonal high water table; moderate to slow water intake; moderate available moisture capacity	Seasonal high water table; moderate to rapid water intake; moderate available moisture capacity

Subsurface Soils

Thirty-seven site specific test borings were installed in the northern, eastern and southern portions of the site in order to characterize subsurface soils conditions on the subject property. Groundwater was encountered in eight of the soil borings with all but three being representative of perched conditions due to low permeability clay and silty clay units that underlie portions of the site. The first boring which was found to intersect the underlying water table and was located in the eastern end of the site near fairway #3. Groundwater was encountered in this area at a depth of approximately twenty-five feet below ground surface (bgs). The remaining two (2) soil borings that encountered groundwater were located in the southwest corner of the property at 40-42 Makamah Road. Groundwater was encountered in this area at depths ranging from eighteen to nineteen feet bgs. Review of soil boring data for the site indicates the presence of a variety of soil textures and mixtures, with much of the upper layers of soils consisting of low permeability and poorly drained SM, ML, SC or CL classified soils consisting of silt, silty sand, silty clay and clay. These soils were found to extend to depths ranging from 10 to at least 70 feet bgs. Well drained SP or SW classified soils consisting of sand and gravel mixes were identified in the lower layers of the majority of the borings. However, extensive clay zones were encountered in several borings and revealed clay zones ranging from twenty to forty feet in thickness. These areas were encountered in the far northern and central areas of the golf course as well as the western end of the existing driving range. The complete boring logs for each of the on-site test borings, including characterization of the soils at greater depths, are included on site plans included in **Appendix B**.

The environmental quality of soils is determined through a series of reports that involved soil evaluation and testing on the site, starting with a Phase I Environmental Site Assessment (ESA) to determine the potential for Recognized Environmental Conditions (RECs) on the property. The Phase I ESA was completed in February 2014 to determine whether any potential environmental or public health concerns were present on the site. The purpose of the assessment was to, in part, establish a basis of understanding of the past and present uses of the sites in order to identify any RECs which may exist in connection with the site and surrounding properties. The Phase I ESA report is provided in **Appendix I-1** and the findings were as follows:

Two (2) RECs and four (4) de minimus conditions were noted on the subject property based on the site reconnaissance, interviews and regulatory agency records review. The following recommendations were offered in the Phase I ESA:

1. The sanitary systems and grease traps connected to the clubhouse kitchen, the halfway house kitchen and the maintenance building should be sampled to ensure that current and past operations have not adversely affected the subsurface resources of the subject property.
2. The outdoor underground storage tank located on the east side of the clubhouse should be tested in order to ensure that it is not negatively affecting the subsurface resources of the subject property.
3. Any drums that are not being utilized should be properly removed and disposed of. Any drums that are being utilized should be properly stored on secondary containment, and labeled in accordance with Article 12 of the Suffolk County Sanitary Code and NYSDEC PBS regulations. In addition, the permits for these drums should be renewed in order to avoid violation.
4. All of the storage tanks present on the subject property should be registered in accordance with Article 12 of the Suffolk County Sanitary Code and NYSDEC PBS regulations and any outdated permits should be updated in order to avoid violation.

5. If the property is to be used for residential purposes in the future, it is recommended that a pesticide survey be conducted in order to ensure that the surface soils have not been impacted by previous agricultural operations.

Based on the recommendations of the Phase I ESA report, a Limited Phase II ESA (dated August 31, 2015; see **Appendix I-2**) and a Pesticide Report (dated November 6, 2015; see **Appendix I-3**) was conducted on the property to address specific issues raised in the Phase I ESA specifically related to items #'s 1, 2 and 4. The results of the Limited Phase II ESA and Pesticide Report are summarized below:

1. Leaching structures from four (4) on-site sanitary systems were sampled and analyzed for the presence of volatile and semi-volatile organic compounds and metals. No elevated concentrations of any semi-volatile organic compounds were detected. Many of the analyzed volatile and metal constituents exhibited elevated concentrations. Several of the analyzed constituents in samples CHST-S, CH-1S, CHST-N & CH-1N exceeded the regulatory guidance values set forth in the SCDHS SOP 9-95. Since these concentrations exceed the SCDHS guidance values, it is recommended that these four (4) systems be remediated under the auspices of SCDHS personnel.
2. The 1,500 gallon underground fuel oil storage tank which supplies the main clubhouse building recently underwent a tank tightness test at the request of SCDHS. The results of the tank tightness test indicated that the tank passed the tightness test at the time the test was conducted.
3. Soil samples were collected from nine (9) locations on the subject property at five (5) depths, 0-3, 3-6, 6-12, 12-18 and 18-24 inches. Initially, four (4) of the 0-3 inch samples were analyzed for the presence of pesticides and metals and five (5) of the 0-3 inch samples were analyzed for the presence of arsenic only. The laboratory analysis revealed that none of the pesticides or metals exceeded their regulatory guidance values. In addition, none of the arsenic samples exhibited elevated concentrations in excess of 4 ppm. As a result, none of the deeper samples were analyzed. Based on these findings, no soil management is required in the areas discussed above.

Additionally, a Supplemental Suffolk County Department of Health Services (SCDHS) Phase II ESA (dated December 30, 2016; see **Appendix I-4**) was completed to address issues raised by the SCDHS in order to determine if elevated concentrations were present in a small drywell located on the south side of the main club, the Pro Shop building sanitary system and the dirt-filled pit in the maintenance garage the structures sampled. A sampling and analysis program was designed to determine if these structures had been impacted by the prior and existing uses of the subject property.

1. The drywell on the south side of the main clubhouse, the Pro Shop sanitary system leaching pool and the former maintenance pit from the maintenance garage were sampled and analyzed for the presence of volatile and semi-volatile organic compounds and metals. No elevated concentrations of any semi-volatile organic compounds and metals were detected in any of the samples. Several of the analyzed volatile constituents exhibited elevated concentrations; however, only three (3) constituents from sample CH-K exceeded the regulatory guidance values set forth in the SCDHS SOP 9-95. Since these concentrations exceed the SCDHS guidance values, it is recommended that CH-K be remediated under the auspices of SCDHS personnel along with the other structures which were identified during the original Limited Phase II ESA report.

The recommendations of the Supplemental SCDHS Phase II ESA were completed as noted below in **Section 2.2.2**.

In February 2019 surface soil samples were collected from the backfilled parking area in the maintenance yard as well as the organic material dumping area in the east-central portion of the golf course. Golf course practice for the disposition of pond sediment has consisted of the dredging of organic materials and accumulation of sediment materials in an open pit, mixing in of wood chips and other organic materials to create a composite area. This area has grown vegetation naturally and become part of the golf course perimeter landscape.

Samples were collected by trained and qualified personnel of NP&V and samples were subject to cooler storage for transport and proper chain-of-custody and other protocols as outlined in the Phase II ESA reports included in **Appendices I-2** through **I-4**.

Review of the analytical results for this area did not detect the presence of any semi-volatile organic compounds or herbicides in any of the samples collected. Several pesticides, PCBs and metals were detected in all or some of the samples collected but at concentrations below their respective Part 375 soil cleanup objectives (SCOs) for the protection of groundwater. Finally, the only volatile organic compound detected consisted of acetone and was only found in samples parking area sample PA-2 and dumping area sample DA-1 at concentrations of 74.2 micrograms per liter (ug/l) and 76.5 ug/l, respectively. These concentrations slightly exceeded the Part 375 SCO for the protection of groundwater of 50 ug/l established for acetone. However, acetone is an extremely volatile organic compound with a relatively short-half life in nature. Based on the low levels found in the samples collected and its high volatility, the concentrations detected are not expected to present a significant impact to the subject property. A copy of this letter report, dated February 19, 2019 is provided in **Appendix I-5**.

2.2.2 Anticipated Impacts

Soils on the property have been evaluated in terms of constraints, severity of constraints and engineering methods to address any soil limitations. Nine of the twelve soil types present on the property pose "severe" limitations for development due to steep slopes, high water table, slow permeability and a sandy surface layer. It should be noted that the area of the property proposed for development is currently occupied by the existing golf course and amenities and has been previously graded and stabilized for this use.

With respect to steep slopes, it is noted that no development is proposed north of the CEHA boundary on the property. As a result, the bluff and shoreline areas will remain as they do under current conditions. Any potential impacts that may occur with respect to steep slopes will be addressed through proper engineering and grading methods including use of retaining walls and maintaining slopes with a suitable angle of repose as well as groundcover stabilization after grading activities are complete. The site plan has been prepared to address these constraints. Proper grading design and erosion control measures are included in the site plan, and proper design as well as full site plan review for grading and drainage will preclude adverse impacts due to slopes.

Limitations related to high water table are addressed through engineering design as depicted on the site plan. The residential homesite areas are situated well above groundwater levels and based on an extensive test home program, suitable soils have been located for drainage and sanitary effluent leaching. Drainage detention areas are placed at downslope, low elevation areas

so that gravity will allow stormwater to flow through the pick-up and conveyance systems to these detention areas. The water table in these areas has been documented and the base of any detention areas has been designed to be above water table elevations. The existing man-made ponds will be enlarged to increase drainage storage capacity to improve the retention of stormwater on-site an reduce off-site overflow that currently occurs. The pond system is located in a valley on the site that trends from northwest to southeast. Underlying clay and stormwater flow provide the water source for these ponds. Groundwater below the majority of the ponds is not an issue. The easternmost pond is nearest the existing groundwater elevation; however, the enlarged pond will remain above the water table. No significant adverse impacts are expected with respect to high water table conditions based on the design parameters that have been used in engineering the site plan. Details related to the drainage system, stormwater and water resource impacts are discussed further in **Section 2.3.3**.

Limitations related to slow permeability are addressed through evaluation of soils by an extensive soil boring program, so that design of stormwater and treated effluent recharge systems are placed in areas with suitable leaching soils. The site plan has been designed by licensed engineering professionals, and the Town Engineer will review drainage system design and SCDHS will review sanitary system design. During construction, if any unsuitable soils are encountered, they will be removed and replaced good leaching quality soils.

With respect to a sandy surface layer, topsoil present on the subject property is suitable for growth of vegetation as evidenced by the current property use for a golf course and existing vegetated areas. Topsoil will be stockpiled and re-used for landscape areas in the developed parts of the site. Soil augmentation is not expected to be necessary, but can be used if necessary.

The site plan includes Town required landscaping with street trees as well as the clubhouse areas landscaping, and groundcover will be established as soon as final grading is completed. Individual site landscaping will be completed around buildings as they are constructed. These measures will ensure that potential impacts with respect to a sandy surface layer and steep slopes are adequately addressed and as a result, no long-term soil impacts are expected. Short-term soil impacts will be mitigated through the previously outlined erosion control measures and erosion control measures included with the site plan.

Site remediation activities were performed to address the issues discovered during the Limited Phase II ESA (see **Appendix I-2**). All remediation activities were coordinated with SCDHS to ensure that appropriate methods and procedures were utilized for the remediation of soils in compliance with their requirements and standards. Remediation was completed on the clubhouse kitchen sanitary system in February and March of 2017. Removed soils were transported by a licensed waste hauler to an appropriate facility for disposal. A 'no further action' letter was issued by SCDHS, dated March 2, 2017 and is included in **Appendix I-6**. Given this oversight, no significant adverse impacts are anticipated with respect to soils due to past site uses or existing contamination conditions

2.2.3 Proposed Mitigation

- Any potential impacts that may occur with respect to steep slopes will be reduced by observation of sound grading principals and maintaining slopes with a suitable angle of repose. As noted, erosion control measures and full site plan review for grading and drainage will preclude adverse impacts to surface soils. With respect to a sandy surface layer, topsoil present on the subject property is assumed to be suitable for growth of vegetation as evidenced by the current vegetated condition of the property. Topsoil is intended to be stockpiled and re-used for landscape areas in the developed parts of the site. Soil augmentation is not expected to be necessary, but can be used if necessary. This will ensure that potential impacts with respect to a sandy surface layer and steep slopes are adequately addressed and as a result, no long-term soil impacts are expected. Short-term soil impacts will be mitigated through erosion control measures. High water table issues will be addressed through an engineered drainage plan and low permeability soils will be replaced where necessary with soils that possess more conducive leaching characteristics.
- The developed portions of the site will first be subject to grading operations in order to provide an acceptable surface on which development can take place, followed by installation of landscaping to provide a means of stabilizing the soil to prevent erosion as soon as practicable following grading.
- Proper abandonment of systems in use on the site consistent with SCDHS requirements.
- Dust control and construction management will be utilized to avoid dermal contact and inhalation of soils containing agricultural chemicals.
- As noted in Section 1.1.6, the type, amount and location of proposed landscaping to be installed in connection with the subdivision is provided in the site plans prepared by Nelson & Pope, **Sheets 29-31** (see **Appendix B**). Landscape Plan 3 (Sheet 31) includes a planting schedule for evergreen installation in proximity to the clubhouse as well as the street tree planting schedule. All disturbed areas that are not proximate to residential units or part of golf course play areas will be established in a native seed mix also noted on Sheet 31 as the Ecology Summer Seed Mixture.

2.3 Water Resources

2.3.1 Existing Conditions

Surface Waters and Wetlands

Both freshwater and tidal wetlands exist on the subject property. The site consists of a series of ponds located through the central portion of the golf course. Based upon review of the historic aerial photograph, the ponds appear to be manmade. The two ponds in the northwest part of the golf course are mapped by the NYSDEC as freshwater wetlands and fall under their jurisdiction (see **Figure 2-4**). The property also maintains approximately 1,500 feet of frontage on the Long Island Sound shoreline. The majority of the shoreline is armored with stone revetment (western and central portions) and the eastern portion of the shoreline has been stabilized with a line of partially buried concrete rings. Apparent high water is typically less than 50 feet from the stone revetment; however, in some areas, high water reaches the revetment. The Sound is a tidal wetland (see **Figure 2-4**), which is regulated by the NYSDEC from the Sound landward to the top of the slope running along the north side of the 12th tee, fairway and green. The shoreline and slope are also regulated by the Town of Huntington under the CEHA regulations (see **Appendix B and pocket at the back of this document**; Overall Plan which includes Coastal Hazard Erosion Area limits).

The NYSDEC regulates freshwater wetlands under Article 24 and tidal wetlands under Article 25 of the NYSECL. Pursuant to Article 24 and 25 of the ECL, permits from the NYSDEC will be necessary for construction activities within the jurisdictional limits (100 feet from the delineated freshwater wetland boundary and either 300 feet from the tidal wetland boundary, or to the top of the adjacent slope or bluff).

Data and findings from NYSDEC and Suffolk County Department of Health Services Pesticide Management studies were examined as part of the NP&V Phase I ESA for the site (e.g. see pg. 21 of Phase I, **Appendix I-1**). As indicated, the SCDHS conducted an eighteen (18) month long study of the impact pesticides have had on the groundwater (Water Quality Monitoring Program to Detect Pesticide Contamination in Groundwaters of Nassau and Suffolk Counties, NY, Final report for the NYSDEC Water Quality Monitoring Program, June 1999). As noted in the Phase I ESA: "The study obtained water quality information from across the full geographic area of both counties in order to identify if any pesticides and metabolites had leached into the groundwater. The data from the wells in Nassau County and the five (5) western Towns of Suffolk show that only 1.5 and 2.0%, respectively, exceeded the pesticide related drinking water MCL and 15.4% of the wells in the five (5) eastern Suffolk Towns exceeded the MCL. Private wells in the five (5) eastern towns are at the highest risk of pesticides contamination. Based on the maps provided in the appendix of the SCDHS report the subject property is not located in the vicinity of any public water supply wells with pesticide detections. Susceptibility to pesticides is rated as low to medium throughout most of the County, except on the North Fork, where community supply wells are highly or very highly susceptible to pesticide contamination due to agricultural land uses."

Supplemental on-site sediment and water sampling was completed per the Final Scope. Surface water and pond sediment quality has been determined by collection of sediment and surface water samples. Samples were collected from each of the five on-site ponds as well as from two locations within Fresh Pond on October 29, 2018. All of the samples were analyzed for the presence of volatile and semi-volatile organic compounds as well as pesticides, herbicides, PCBs and metals. In addition, the samples were also analyzed for general chemistry parameters which include total nitrogen, nitrate, nitrite, total kjeldahl nitrogen, total phosphorus, total coliform and fecal coliform. The sediment analytical results were compared to the New York State Department of Environmental Conservations (NYSDEC) Part 375 recommended soil cleanup objectives (SCO) for the protection of groundwater and ecological resources.

Review of the analytical results for the sediment samples collected from the five (5) ponds located within the golf course did not reveal the presence of any volatile organic compounds, semi-volatile organic compounds, herbicides or PCBs in any of the samples collected. Several pesticides were detected in all of the golf course pond sediments but only the detection of 4,4-DDD in Pond 2; 4,4-DDE in Ponds 3 & 4 and dieldrin in Pond 4 were found to exceed their Part 375 recommended soil cleanup objectives (SCOs) for the protection of ecological resources. None of the pesticides detected were found to exceed their respective Part 375 SCOs for the protection of groundwater. Several metals were also detected in the golf course pond sediments but only chromium was found to exceed its Part 375 RCO for the protection of ecological resources and/or the protection of groundwater. Chromium was found to exceed its Part 375 RCO for the protection of ecological resources in all of the golf course pond sediment samples but only exceeded its Part 375 RCO for

the protection of groundwater in the sediment samples collected from Ponds 4 & 5. Of the general chemistry parameters analyzed only phosphorus was detected and was found to be present in all of the golf course pond sediment samples at concentrations ranging from 453 to 1,060 milligrams per kilogram (mg/kg). No part 375 RCO has been established for phosphorus for either the protection of ecological resources or groundwater. .

Review of the analytical results for the sediments collected from the two (2) locations within Fresh Pond did not reveal the presence of any semi-volatile organic compounds, herbicides or PCBs in any of the samples collected. Acetone was the only volatile organic compound detected in the Fresh Pond sediment samples at concentrations of 50 ug/l and 121 ug/l. These concentrations are below acetones Part 375 SCO established for the protection of ecological resources but above the Part 375 SCO established for the protection of groundwater. Several pesticides were detected in both of the Fresh Pond sediment samples but none were found to exceed their respective Part 375 SCOs for the protection of groundwater. However, the detections of 4,4-DDD and 4,4-DDE in sample Fresh Pond 2 were found to exceed their respective Part 375 SCOs for the protection of ecological resources. Several metals were also detected in both of the sediment samples collected from Fresh Pond but only chromium was found to exceed its Part 375 RCO for the protection of ecological resources and/or the protection of groundwater. Chromium was found to exceed its Part 375 RCO for the protection of ecological resources in both of the Fresh Pond sediment samples but these detections were below the Part 375 SCO for the protection of groundwater established for chromium. Of the general chemistry parameters analyzed only phosphorus was detected and was found to be present in both of the Fresh Pond sediment samples at concentrations of 65.1 to 302 mg/kg. No part 375 RCO has been established for phosphorus for either the protection of ecological resources or groundwater.

A summary of the laboratory analytical results for sediment samples collected is provided in **Table 2-2**. The location of each sample is provided in **Figure 2-5**.

Review of the analytical results for the surface water samples collected from the five (5) ponds located within the golf course did not reveal the presence of any semi-volatile organic compounds, pesticides, herbicides or PCBs in any of the samples collected. Benzyl alcohol was detected in the surface waters of Pond 4 but there is no standard for this compound. Several metals were detected in all of the golf course ponds sampled but only the detection of iron was found to exceed the TOGS 1.1.1 standards established for general aquatic life. With regard to the general chemistry analysis total coliform and fecal coliform were all detected in all of the ponds sampled but no TOGS 1.1.1 standards for general aquatic life has been established for these constituents. Total phosphorus was detected in the surface waters of Pond 4 at a concentration that exceeded its respective TOGS 1.1.1 standard for general aquatic life.

Review of the analytical results for the surface water samples collected from Fresh Pond did not reveal the presence of any volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides or PCBs in any of the samples collected. Several metals were detected in all of the Fresh Pond samples but only the detections of aluminum, iron, magnesium, and manganese were found to exceed their respective TOGS 1.1.1 standards established for general aquatic life. With regard to the general chemistry analysis total coliform and fecal coliform were all detected in all of the samples but no TOGS 1.1.1 standards for general aquatic life have been established

for these constituents. Total phosphorus was detected in the surface waters of Pond 2 but at a concentration below its respective TOGS 1.1.1 standard for general aquatic life. The location of each of the surface water samples is provided in **Figure 2-5**. A summary of the Fresh Pond surface water results is provided in **Table 2-3**. A copy of the report summarizing the results of the sampling is provided in **Appendix J**.

Additional water samples were collected from the outfall of the easternmost pond located on the property during two separate sampling events in May and August of 2016. Samples were collected by trained and qualified personnel of NP&V and samples were subject to cooler storage for transport and proper chain-of-custody and other protocols as outlined in the Phase II ESA reports included in **Appendices I-2** through **I-4**. Both samples were analyzed for the presence of nitrogen and related compounds to assess what impact site use may be having on the pond water quality. A summary of the analytical results is provided in **Table 2-4**.

TABLE 2-2
IHCC POND & FRESH POND SEDIMENT SAMPLE RESULTS

Sample ID	Pond-1	Pond-2	Pond-3	Pond-4	Pond-5	Fresh Pond-1	Fresh Pond-2	Part 375 Protection of Groundwater	Part 375 Protection of Ecological Resources
Volatiles	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**
Acetone	ND	ND	ND	ND	ND	**50**	**121**	**50**	*2,200*
Pesticides	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**	**ug/kg**
4,4-DDD	ND	*3.90*	2.60	ND	ND	ND	*7.74*	**14,000**	*3.3*
4,4-DDE	ND	ND	*4.06*	*5.89*	1.61	ND	*10.1*	**17,000**	*3.3*
4,4-DDT	ND	ND	ND	ND	ND	ND	2.81	**136,000**	*3.3*
Aldrin	ND	1.64	ND	ND	ND	0.666	ND	**190**	*140*
alpha-BHC	9.38	8.50	ND	ND	8.64	2.57	6.03	**20**	*40*
beta-BHC	ND	4.83	2.71	5.30	ND	2.55	ND	**90**	*600*
cis-Chlordane	ND	ND	ND	72	ND	ND	0.905	**2,900**	*1,300*
delta-BHC	6.71	3.82	3.61	6.95	4.97	1.26	1.91	**250**	*40*
Dieldrin	ND	ND	1.19	*11*	ND	ND	0.771	**100**	*6*
Endosulfan I	ND	ND	ND	4.71	ND	ND	1.37	**102,000**	*NS*
Endosulfan II	2.24	ND	ND	4.24	ND	0.857	0.670	**102,000**	*NS*
Endrin	ND	6.94	4.85	ND	6.42	ND	1.11	**60**	*14*
Endrin Aldenhyde	5.42	ND	0.959	2.71	ND	1.12	2.88	**NS**	*NS*
gamma-BHC	3.44	7.25	5.08	ND	ND	1.40	1.98	**NS**	*NS*
Heptachlor	ND	ND	ND	ND	ND	0.381	ND	**380**	*140*
trans-Chlordane	ND	7.17	5.14	102	10.9	ND	1.84	**14,000**	*NS*
Metals	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Aluminum	5,240	7,470	8,250	11,900	9,620	586	3,970	**NS**	*NS*
Arsenic			5.38	14.2	5.23		3.12	**16**	*13*
Barium	74.9	57	44.3	70.7	52.5	3.48	30.2	**820**	*433*
Calcium	1,840	2,100	1,160	2,690	1,660	232	409	**NS**	*NS*
Chromium	*11.4*	*16.2*	***19.9***	***20***	***19.5***	*2.13*	*8.09*	**19**	*1*
Cobalt		7.03	4.49	ND	5.03		3.55	**NS**	*NS*
Copper	8.76	11.6	11.8	27.3	16.8		19.3	**1,720**	*50*
Iron	17,300	9,690	7,630	11,200	9,190	1,390	14,100	**NS**	*NS*
Lead	13.3	24.4	24.1	29.3	23.3		180	**450**	*63*
Magnesium	921	1,310	1,390	1,880	1,600	227	672	**NS**	*NS*
Manganese	619	316	195	295	268	16	74.9	**2,000**	*1,600*
Nickel	6.14	7.70	8.42	14	12		7.50	**130**	*30*
Potassium	369	536	524	629	577	92.6	401	**NS**	*NS*
Sodium	94.6	79.8	60.9	114	77.3	55.2	118	**NS**	*NS*
Vandium	16.4	21.3	19.8	42	27.7	3.62	18.2	**NS**	*NS*
Zinc	32.3	46	37.6	63.1	50.2	3.34	62.9	**2,480**	*109*
Mercury	ND	ND	ND	ND	ND	ND	ND	**0.73**	*0.18*
Semi-volatiles	**None Detected**								
Herbicides	**None Detected**								
PCBs	**None Detected**								

TABLE 2-2, CON'T
IHCC POND & FRESH POND GENERAL CHEMISTRY SEDIMENT SAMPLE RESULTS

Sample ID	Pond-1	Pond-2	Pond-3	Pond-4	Pond-5	Fresh Pond-1	Fresh Pond-2	Part 375 Protection of Groundwater	Part 375 Protection of Ecological Resources
General Chemistry	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
Total Nitrogen	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*
Nitrate	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*
Nitrite	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*
Total Kjeldahl Nitrogen	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*
Total Phosphorus	572	509	453	1,060	680	65.1	302	**NS**	*NS*
Total Coliform	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*
Fecal Coiform	ND	ND	ND	ND	ND	ND	ND	**NS**	*NS*

Table 2-3

IHCC POND & FRESH POND SURFACE WATER SAMPLE RESULTS

Sample ID	Pond-1	Pond-2	Pond-3	Pond-4	Pond-5	Fresh Pond-1	Fresh Pond-2	TOGS 1.1.1
Volatiles	**ug/l**	**ug/l**	**ug/l**	**ug/l**	**ug/l**	**ug/l**	**ug/l**	**ug/l**
Benzyl alcohol	ND	ND	ND	5.88	ND	ND	ND	**NS**
Metals	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**
Aluminum	ND	ND	ND	ND	ND	ND	**0.38**	**0.1**
Calcium	8.68	8.92	8.33	7.43	7.70	21.1	22.8	**NS**
Iron	**0.93**	**0.69**	**0.53**	**0.44**	**0.40**	ND	**6.96**	**0.3**
Magnesium	4.17	4.14	3.72	3.53	3.42	**36.8**	34.2	**35**
Manganese	0.13	0.07	0.08	0.14	0.07	0.06	**0.38**	**0.3**
Potassium	3.35	4.29	4.38	4.21	4.27	15.7	16.4	**NS**
Sodium	12.3	11.9	10.5	9.74	9.24	323	295	**NS**
General Chemistry	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**	**mg/l**
Total Nitrogen	ND	ND	ND	ND	ND	ND	ND	**NS**
Nitrate	ND	ND	ND	ND	ND	ND	ND	**10**
Nitrite	ND	ND	ND	ND	ND	ND	ND	**1**
Total Kjeldahl Nitrogen	ND	ND	ND	ND	ND	ND	ND	**NS**
Total Phosphorus	ND	ND	ND	**0.105**	ND	ND	**0.113**	**0.02**
Total Coliform	920	540	350	170	240	920	ND	**NS**
Fecal Coiform	220	240	130	170	130	540	ND	**NS**
Semi-volatiles	**None Detected**							
Pesticides	**None Detected**							
Herbicides	**None Detected**							
PCBs	**None Detected**							

Table 2-4
POND OUTFALL ANALYTICAL RESULTS (2016)

Parameter	Results	
	May, 2016	August, 2016
Total Kjeldahl Nitrogen	1.50 mg/L	5.90 mg/l
Total Nitrogen	1.73 mg/L	6.03 mg/L
Nitrate	0.23 mg/L	0.13 mg/L
Nitrite	ND	ND
Orthophosphate	ND	ND
Ammonia	ND	ND
Total Phosphorus	ND	1.75 mg/L

Notes: mg/L – milligrams per liter; ND – non-detect

Groundwater Elevations and Flow

Water table contours from the USGS (2009) indicate that the groundwater table in the area of the site is encountered at an elevation ranging from sea level along the Long Island Sound to approximately seventeen feet in the southern end of the property. The topographic elevation across the site ranges from 0 feet to 157 feet above msl, resulting in a depth to groundwater ranging from 0 feet to approximately 155 feet below the site's ground surface. The project site is located on the north shore of Long Island indicating that groundwater flows towards the north and eventually discharges to the Long Island Sound. Water table elevations and contours are illustrated in **Figure 2-6**.

Stormwater and Drainage

Precipitation falling on the subject property is either recharged directly into the ground, evaporated, absorbed by plant life, captured by stormwater infrastructure, runs off to flatter and/or more pervious ground where it infiltrates the soil, or runs off to the network of ponds within the golf course where it evaporates, recharges or is transported off-site. Stormwater generated on the subject site that is not directly recharged, evaporated or absorbed and transpired by plant life, would flow toward lower elevations, which, in general, is from upper elevations downward to the north, south and east.

Stormwater runoff in the northern portion of the site generally drains from the ridgeline located in the northern end of the property to north towards the beach along Long Island Sound and to the south towards the glacial outwash valley located in the center of the property which contains the network of interconnected ponds. This outwash valley also receives runoff from higher elevations to the southwest as well as the northwest portions of the golf course. Precipitation within the outwash valley descends through the network of ponds and eventually exits the eastern end of the property where it flows to a drainage ditch on the west side of Fresh Pond Road.

Stormwater runoff in the southern portion of the property falls on the elevated plateau upon which rests the clubhouse and paved parking areas. Stormwater runoff which is not collected by parking lot leaching pools and catch basins for direct recharge to the subsurface is directed to lower elevations to the north, east and west where it will be subject to evapotranspiration processes, infiltrates overlying soils or is transported to adjacent properties.

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

In 1982, the Long Island Regional Planning Board (LIRPB) prepared the L.I. Segment of the Nationwide Urban Runoff Program (NURP Study). 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 USGS, was to determine:

- the source, type, quantity, and fate of pollutants in stormwater runoff routed to recharge basins, and
- 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. The following is a listing and description of each drainage area:

Site Location	Land Use
Centereach	Strip Commercial
Huntington	Shopping Mall, Parking Lot
Laurel Hollow	Low Density Residential (1-acre zoning)
Plainview	Major Highway
Syosset	Medium Density Residential (1/4 acre zoning)

Based on the sampling program, the NURP Study reached the following relevant findings and conclusions:

Finding: Stormwater runoff concentrations of most of the inorganic chemical constituents for which analyses were performed were generally low. In most cases, they fell within the permissible ranges for potable water; however, there were two notable exceptions:

- median lead concentrations in stormwater runoff samples collected at the recharge basin draining a major highway (Plainview) consistently exceeded the drinking water standards;

- chloride concentrations in stormwater runoff samples generally increase two orders of magnitude during the winter months.

Conclusion: In general, with the exception of lead and chloride, the concentrations of inorganic chemicals measured in stormwater runoff do not have the potential to adversely affect groundwater quality.

Finding: The number of coliform and fecal streptococcal indicator bacteria in stormwater range from 10^0 MPN (Most Probable Number) to 10^{10} MPN per acre per inch of precipitation.

Conclusion: Coliform and fecal streptococcal indicator bacteria are removed from stormwater as it infiltrates through the soil.

The handling of stormwater for the proposed use and potential impact on groundwater will be considered in **Section 2.3.2**.

FEMA Flood Zones

The northern perimeter of the subject property, along the Long Island Sound shoreline and north of the Coastal Erosion Hazard Area (CEHA) is classified as VE elevation (el.) 17′ and AFH Annual Flood Hazard Area (0.2%) by the Federal Emergency Management Agency (FEMA). VE zones have a one percent chance of inundation to the elevation above mean sea level (msl) indicated during any given year (i.e., on average once every 100 years) but may also be subjected to the erosive and potentially damaging forces of storm wave action during such events. The generally flat low-lying area east of the subject property across Fresh Pond Road is located within three separate FEMA Areas, including zones AE el. 9′, AE el. 10′ and AFH 0.2%. Like the VE zones, AE areas are categorized as 100-year flood zones with a projected one percent chance of flooding to the elevation indicated during any given year or on average, once every 100 years.[2] **Figure 2-7** shows the locations and areal extent of FEMA-designated flood zones on the site.

Localized flooding occurs west of Fresh Pond due to overland runoff from roads and adjoining residential areas as well as from some of the open space areas of the Indian Hills Golf Course; these areas are identified in **Figure 2-7** as AFH Annual Flood Hazard Area (0.2%) by FEMA. This area was examined and addressed as part of the drainage study for the proposed project for drainage infrastructure improvements and stormwater controls for eliminating site runoff discharging into Fresh Pond. All stormwater runoff generated on developed surfaces will be retained on-site and recharged or used for golf course irrigation through the existing and proposed pond network. Stormwater retention for new construction also includes the proposed recharge basin, depressions, a system of catch basins and leaching pools, individual roof drains and pervious vegetated/landscaped groundcover that allows for direct filtration, which is further discussed in **Section 2.3.2**.

[2] AE zones are areas inundated by the 1-percent chance annual flood with wave effects between 1.5 feet to less than 3.0 feet in height. These areas are subdivided into elevation zones with Base Flood Elevations (BFEs) assigned. The AE zone will generally extend inland to the limit of the 1-percent-annual-chance Stillwater Flood Level (SWEL).
VE zones are coastal high hazard areas where wave action and/or high-velocity water can cause structural damage during the base flood. They are subdivided into elevation zones with BFEs assigned. VE flood zones are expected to have wave effects that are equal to or greater than 3.0 in height.

Water Resources Plans and Studies

This section will describe the water resource recommendations pertinent to the Project and site relative to the 208 Study; the Suffolk County Comprehensive Water Resources Management Plan (SCCWRMP), Non-Point Source Management Handbook, Draft LWRP for All Unincorporated Areas, Fresh Pond Critical Environmental Area and the Jerome Ambro Preserve. The Draft Crab Meadow Watershed Hydrology and Stewardship Plan; the Suffolk County North Shore Embayment Watershed Management Plan, and the Long Island Sound Comprehensive Conservation and Management Plan are reviewed in the land use sections, specifically **Sections 3.1.1** and **3.1.2** of this DEIS.

208 Study - 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 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**). These delineations were the basis for the establishment of Groundwater Management Zones by the SCDHS, and have been utilized to establish the SCSC Article 6 standards applied to sanitary wastewater treatment requirements. The subject site is located in Groundwater Management Zone VIII, which is characterized as a shallow flow system which discharges to streams and saltwater bays, and hence will affect the quality of surface water.

The Nonpoint Source Handbook (1984) – The purpose of this Handbook is to identify cause-effect relationships and to provide the best available guidance for use by public officials, developers and Long Island residents concerned with the protection of ground and surface waters. The major objectives, which underlie the recommendations, are maximization of the recharge of high-quality groundwater to the aquifers, minimization of pollutant loadings from all land uses and reduction of the amount of consumptive use of groundwater, particularly in shoreline areas or other areas where quantities are limited.

There are ten chapters in the Handbook, eight identify and discuss specific non-pint sources: Land Use; Well Location, Construction, Use and Abandonment; On-Site Systems; Stormwater Runoff; Fertilizers; Animal Wastes, Highway Deicing and Boat Pollution. The last two chapters, Site Plan Review and Ordinances provide recommendations for implementation by county, city, town and village municipalities. Recommendations from the Handbook most relevant to the project comprise land use and preventative measures that can be used to minimize stormwater contamination of surface waters and groundwater resulting from site development and future land use activities as well as suggestions for reducing or eliminating existing impacts. Details for the control of stormwater runoff in the Town of Huntington, like many towns throughout Nassau and Suffolk has ordinances within the subdivision regulations. The most typical is the use of design criteria for various structural drainage collection systems. Golf course maintenance is another concern since extensive use of fertilizers may cause nitrogen contamination and irrigation practices may cause over-pumpage of aquifers. The project is consistent with the Handbook for the following reasons:

- Land Use: The project conforms to zoning, subdivision regulations and sanitary code for residential densities at less than 1 dwelling unit/acre. In addition, the project limits development and the establishment of impermeable paving on lands located near surface waters and wetlands.
- Stormwater Systems: The project provides stormwater systems and control measures to minimize impacts upon surface waters and adjacent areas, reducing or eliminating existing impacts.
- Golf Course Maintenance: The Indian Hills Country Club Golf Course Environmental Management Plan provided in Appendix G identifies golf course management and operational procedures to minimize or avoid potential adverse environmental impacts from the golf course its amenities and future development plans.

Suffolk County Comprehensive Water Resource Management Plan, 2015 - The 2015 Suffolk County Comprehensive Water Resource Management Plan (SCCWRMP) is an update to the 1987 SCCWRMP to reflect more recent development trends, resource plans and studies, and government programs and regulations pertinent to water supply and water resource protection. The following description of that update program has been taken from the Executive Summary, dated March 2015:

Introduction

Water is the single most significant resource for which Suffolk County bears responsibility. As the impact of Superstorm Sandy underscored, more than at any time in our history, we are obliged to come to terms, in every sense, with the water that surrounds us. Suffolk County's water quality is at a tipping point. We face an alarming trend in the quality of the water our families drink, compounded by impairment of many bodies of water in which our families play. Moreover, the source of these impairments has demonstrably degraded the wetlands that serve as our last line of natural defense against storm surge.

While today our drinking water generally meets quality standards, elevating levels of contaminants raise serious concern. Many of our rivers, estuaries and bays are impaired as result of eutrophication. Nitrogen, which primarily spews from residential septics and cesspools, as well as fertilizer, are the principle culprits that spur hypoxia, harmful algal blooms, diminution of sea and shellfisheries, and degradation of our protective natural infrastructure – wetlands and seagrass beds that act as wave and storm surge buffers. Sea level rise, which also contributes to marshland degradation, is projected to raise groundwater levels, increasing vulnerability to saltwater inflation, and further compromising on-site wastewater treatment infrastructure largely composed of cesspools and septic tanks.

Perhaps nowhere have we seen the impact of nitrogen pollution in more stark terms than in the Great South Bay. At one time, this bay produced more than half the clams eaten in our country. However, over the past quarter-century, the clam harvest in the Great South Bay has fallen by 93 percent, destroying an entire industry which once accounted for 6,000 jobs. While clams were once over-harvested, they have largely failed to recover due to recurrent brown tides fed primarily from nitrogen from septic systems and cesspools. We must decide if this type of impaired surface water body will be our region's future or if we can restore our bays to health.

In advance of the release of the 2015 Suffolk County Comprehensive Water Resources Management Plan ("Comp Plan"), this Executive Summary Update is spotlighting the Comp Plan's critical findings, and relevant post-Superstorm Sandy considerations, in order to spur a critical public dialogue about the scope of the problem and begin to frame near-term solutions. While many environmental issues related to groundwater and surface waters have arisen since the previous Plan (1987), one elemental condition has remained constant: the vast majority of Suffolk residents rely on on-site wastewater disposal systems that

discharge to groundwater. In addition, fertilizer use, industrial and commercial solvents, petroleum products, pesticides and a host of other manmade contaminants have had profound and long-lasting impacts on groundwater quality, as well as on fresh surface waters and coastal marine waters into which groundwater and stormwater runoff discharge.

In the face of sea-level rise and extreme weather events, Suffolk County is compelled to devise the means and methods to live and thrive with the water beneath, by and around us.

The updated SCCWRMP delineated and addressed the following Critical Findings:

Critical Findings

*"We have a million and a half people, approximately 74%, or roughly a million people, who are **not sewered**. This is probably the only place in the world with that large a density in this tight a space where the waste is going into a sole source aquifer immediately beneath us that we're drinking, and this is **a big concern.**"*

Downward Trajectory in Groundwater Quality:

1. Nitrogen is public water enemy #1, as **nitrate contamination** from unsewered housing and fertilizer use poses a threat to both drinking water supplies and coastal marine habitat and resources. Nitrogen-induced nutrient loading and eutrophication can lead to many negative impacts on estuarine environments including harmful algal blooms (HABs), hypoxia [little or…], and even anoxia [no oxygen];
2. Volatile organic chemicals (VOCs), another **priority contaminant group**, derived from commercial, industrial, and consumer use, impacting large portions of the aquifer, public water supply and private wells;
3. Pesticides pose a threat, especially to private wells in agricultural areas; and,
4. Pharmaceuticals and personal care products are an **emerging concern.**

Surface Water Impairments:

5. Due to excess coliform bacteria and nitrogen, **many of the water bodies surrounding Suffolk County have been designated as impaired by the New York State Department of Environmental Conservation** (NYSDEC). In fact, the vast majority of Long Island's 60-mile long South Shore Estuary Reserve was declared impaired by the NYSDEC in 2010.
6. **Brown tide** algae invasions have been plaguing Long Island estuaries for nearly a quarter-century, according to Dr. Chris Gobler of Stony Brook's School of Marine & Atmospheric Sciences (SoMAS), **obliterating a shellfish habitat** that once provided one half of all hard clams for the nation.
7. There was an 18-36% **loss of tidal wetlands** between 1974 and 2001 according to NYSDEC.
8. The NYS Seagrass Taskforce estimates that the 200,000 acres of seagrass in Long Island's bays and harbors in 1930 have shrunk by nearly 90% to 22,000 acres.

*The costs of redressing water-related issues are significant; the economic consequences of not doing so are **potentially devastating in property values alone.** Then there is Long Island tourism, producing revenues of $4.7B/yr, with approximately 28% of visitors – 5.1M/yr – visiting parks and beaches. "Coastal habitats shield people and property from sea-level rise and storms," reducing their exposure by half, according to marine ecologists at Stanford Woods Institute for the Environment.*

Nitrogen from Unsewered Areas

Suffolk County, with a population larger than 11 states and a region that derives its drinking water from the ground, must pay particular attention to the 360,000 sub and non-performing septic/cesspools in Suffolk, accounting for well over 74% of the homes. They are particularly problematic in areas with

high water tables and in close proximity to surface waters. When flooded or submerged in groundwater, septic systems do not function as designed and they fail to adequately treat pathogens. Excess nitrogen from sewage threatens our valuable natural resources, coastal defenses, and human health.

Suffolk County has identified priority high density (greater than 5 homes per acre) and medium density (1 to 5 homes per acre) residential subregions within the contributing areas with the following characteristics:

1. With a depth to groundwater of 10 feet or less; and/or
2. Contribute to an area that is listed as a 303(d) impaired water body.

Finally, the updated SCCWRMP settled on the following management goals, designed to protect groundwater and surface water resources:

Water Resource Management Plan Goals

The goals and objectives summarized on Table ES-1 are targeted to protect and improve ground and surface water quality in the coming years, recognizing that maintenance of these invaluable resources is vital to the health and economic well-being of Suffolk County residents, and to enable provision of a healthy and safe supply of potable water to County residents through 2030. Although it is acknowledged that full achievement of these goals within the next twenty years may not be realized, the recommendations presented in this document provide the framework for continued improvement of the County's water resources and provision of a reliable, high quality potable supple for future generations.

The goals and objectives are consistent with County policy declarations that are articulated in the Suffolk County Sanitary Code:

…760-701: "The designated best use of all groundwaters of Suffolk County is for public and private water supply, and of most surface waters for food production, bathing and recreation…it is hereby declared to be the policy of the County of Suffolk to maintain its water resources as near to their natural condition of purity as reasonably possible for the safeguarding of the public health, and to that end, to require the use of all available practical methods of preventing and controlling water pollution from sewage, industrial and other wastes, toxic or hazardous materials, and stormwater runoff" and

760-401: "the policy of the County of Suffolk is to protect the groundwater to insure the availability of an adequate and safe source of water supply for generations to come by: enforcing the local, state and federal laws regulating water supply; promoting the extension of public water supply to all areas of the County; maintaining a process of groundwater planning; carrying out research and development in the field of alternatives to community water supply; and by promoting education and acceptance of the importance of groundwater management and protection."

Groundwater Quality

Water samples were collected from the irrigation well located on the property during two separate sampling events in May and August of 2016. Both samples were analyzed for the presence of nitrogen and related compounds to assess what impact site use may be having on the pond water quality. A summary of the analytical results is provided in **Table 2-5** presented below.

Table 2-5
IRRIGATION WELL ANALYTICAL RESULTS (2016)

Parameter	Results	
	May	August
Total Kjeldahl Nitrogen	ND	ND
Total Nitrogen	7.21 mg/L	7.56 mg/L
Nitrate	7.21 mg/L	7.56 mg/L
Nitrite	ND	ND
Orthophosphate	ND	ND
Ammonia	ND	ND
Total Phosphorus	ND	2.04

Notes: mg/L – milligrams per liter; ND – non-detect

Nitrogen is elevated above ambient conditions at the location of the irrigation well. Based on the anticipated direction of groundwater flow **(Figure 2-6)**, the contributing area to this well includes only a small part of the golf course and areas of residential development upgradient of the subject site. Residential use on lots of less than 1 acre may result in nitrogen in the range of 6-8 mg/l. Nitrogen present in the aquifer in the vicinity of the subject site is expected to be due to sanitary wastewater and use of fertilizer on turfed land within the watershed area, and is not expected to be a direct reflection of the golf course given the limited area of the golf course upgradient of the well, and the residential density of land use in the upgradient watershed area.

An additional groundwater sample was collected from the on-site irrigation well on October 29, 2018 as part of a larger environmental evaluation of the subject property. Review of the analytical results for the groundwater sample collected from the golf course irrigation well did not reveal the presence of any volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides or PCBs. Several metals were detected but all were below their respective TOGS 1.1.1 standards or guidance values for class GA groundwater. With regard to the general chemistry analysis total nitrogen, nitrate, total coliform and fecal coliform were all detected in the irrigation well sample. Of these compounds only nitrate has an established TOGS 1.1.1 standard of 10 mg/l and the sample detected nitrate at a concentration of 7.08 mg/l. Nitrogen concentrations are reasonably consistent with concentrations detected in 2016 sampling noted in **Table 2-5** above. A summary of the irrigation well sampling results in provided in **Table 2-6**. The report that provides a summary of this groundwater sampling is provided in **Appendix J-1**, which also included the pond sampling.

Table 2-6
IHCC IRRIGATION WELL SAMPLE RESULTS (2018)

Sample ID	IW	TOGS 1.1.1
Metals	**mg/l**	**mg/l**
Calcium	18.9	**NS**
Iron	0.25	**0.30**
Magnesium	7.30	**35**[1]
Potassium	1.18	**NS**
Sodium	19.3	**20**
General Chemistry	**mg/l**	**mg/l**
Total Nitrogen	7.08	**NS**
Nitrate	7.08	**10**
Nitrite	ND	**1**
Total Kjeldahl Nitrogen	ND	**NS**
Total Phosphorus	ND	**0.02**
Total Coliform	7.8	**NS**
Fecal Coiform	1.8	**NS**
Volatiles	**None Detected**	
Semi-volatiles	**None Detected**	
Pesticides	**None Detected**	
Herbicides	**None Detected**	
PCBs	**None Detected**	

Water quality data was also available for a United States Geological Survey (USGS) monitoring well (S-115186) located in the maintenance yard area of the golf course. The most recent sampling event occurred on September 22, 2015 with the collected groundwater sample being analyzed for a variety of parameters which included volatile and semi-volatile organic compounds as well as pesticides, metals, standard organics and radiological compounds. Review of the results revealed that no volatile or semi-volatile organic compounds were detected. Several metals, general chemistry parameters and herbicides were detected but all were found to be below their respective NYSDEC TOGS 1.1.1 guidance values for Class GA groundwater. A summary of the results is provided in **Table 2-7**.

Table 2-7
USGS WELL S-115186 GROUNDWATER SAMPLE RESULTS
September 22, 2015

Sample ID	IW	TOGS 1.1.1
Metals	**mg/l**	**mg/l**
Aluminum	1.5	**NS**
Barium	0.043	**1**
Chromium	0.0067	**0.05**
Cobalt	0.0012	**NS**
Manganese	0.056	**NS**
Strontium	0.080	**NS**
Titanium	0.027	**NS**
Vanadium	0.036	**NS**
General Chemistry	**mg/l**	**mg/l**
Chloride	33	**250**
Nitrate	5.3	**10**
Herbicides	**ug/l**	**ug/l**
Caffeine	Trace	NS
Tetrachloroterephthalic Acid	16	50
Volatiles	**None Detected**	
Semi-volatiles	**None Detected**	

Well data from 2015 in an area that is more representative of upgradient golf use recorded nitrate at a concentration of 5.3 mg/l, with all other parameters at very low concentrations.

Water Balance and Nitrogen

Groundwater flows generally perpendicular to the lines of equal water table elevation as a result of this hydraulic gradient.

The groundwater budget for an area is expressed in the hydrologic budget equation, which states that recharge equals precipitation minus evapotranspiration plus overland runoff. This indicates that not all rain falling on the land is recharged. Loss in recharge is represented by the sum of evapotranspiration and overland runoff. The equation for this concept is expressed as follows:

$$\mathbf{R = P - (E + Q)}$$

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

NP&V has utilized a microcomputer model developed for its exclusive use in predicting both the water budget of a site and the concentration of nitrogen in recharge. The model, named **SONIR** (**S**imulation **O**f **N**itrogen **I**n **R**echarge), utilizes a mass-balance concept to determine the nitrogen concentration 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 **SONIR** model includes four sheets of computations: 1) Data Input Field; 2) Site Recharge Computations; 3) Site Nitrogen Budget; and 4) Final Computations. All information required by the model is input in Sheet 1. Sheets 2 and 3 utilize data from Sheet 1 to compute the Site Recharge and the Site Nitrogen Budget. Sheet 4 utilizes the total values from Sheets 2 and 3 to perform the final Nitrogen in Recharge computations. Sheet 4 also includes tabulations of all conversion factors utilized in the model.

It should be noted that the simulation is only as accurate as the data which is input into the model. An understanding of hydrologic principles is necessary to determine and justify much of the data inputs used for water budget parameters. Further principles of environmental science and engineering are applied in determining nitrogen sources, application and discharge rates, degradation and losses, and final recharge. Users must apply caution in arriving at assumptions in order to ensure justifiable results. 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 J-2.**

The model was run to obtain the existing water budget and nitrogen concentration in recharge. The run was based on current site conditions and land use coverages for the overall Indian Hills golf course property which includes 37.43 acres of natural area, 6.78 acres of impervious surfaces, 28.11 acres of fertilized landscaping, 3.70 acres of surface water, 0.50 acres of wetlands and 1.77 acres of unvegetated area. Based on the SONIR model calculations the site currently has a total site recharge of 121.63 million gallons per year (MG/Y), with a total nitrogen concentration of 0.76 milligrams per liter (mg/l). The nitrogen load is 773.98 pounds per year. Of the total nitrogen concentration approximately 26.31% is attributed to fertilization of the golf course and landscaping, 65.30% is attributed from on-site sanitary discharge, and 8.19% is attributable to precipitation. The results of this analysis are presented in **Appendix J-3.**

Non-Point Source Management Handbook - The goals of the Nonpoint Source (NPS) Program are to control pollution from nonpoint sources to the waters of the state and to protect, maintain and restore waters of the state that are vulnerable to, or are impaired by nonpoint source pollution. NY's NPS Pollution Program was updated and approved by EPA in 2014, Nonpoint Source Management Program (PDF, 367 KB).

2005 Draft LWRP for All Unincorporated Areas
This document is in draft form, has not been approved, and is not available for review.

Fresh Pond Critical Environmental Area
The Fresh Pond Critical Environmental Area was designated by Suffolk County, effective February 10, 1988. The reason for its designation was to benefit to human health & protect

drinking water. Following designation, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the CEA is a relevant area of environmental concern and must be evaluated in the determination of significance prepared pursuant to Section 617.7 of SEQR. This CEA is shown in **Figure 2-7,** is generally developed as low-density single family residential. The project site will be developed in accordance with existing zoning which calls for the same low-density residential uses.

Water Supply

The overall project site lies within distribution area #9 of the SCWA, which currently serves the existing golf course. The SCWA maintains seven (7) active wells within distribution area #9. Correspondence from the SCWA (letters dated September 11, 2018 & March 15, 2019, provided in **Appendix K**) indicate that public water service will be provided to the subject site from water mains within Breeze Hill Road, Mystic Lane and Fresh Pond Road.

The golf course is irrigated using an existing on-site water supply well. The well is permitted by NYSDEC under the New York well permit program (Permit # W-4813) and is identified as S-114017. The well is permitted to be pumped at a rate of up to 35 million gallons per year. The average pumpage from the years 2005 through 2016 was 21,979,962 gallons based on annual pumpage data listed below:

2018	15,926,955	2011	20,443,000
2017	16,775,296	2010	26,793,000
2016	27,223,874	2009	17,970,000
2015	26,667,723	2008	22,736,000
2014	20,521,592	2007	26,816,000
2013	22,724,626	2006	17,344,534
2012	16,892,946	2005	17,626,246

Pumpage records are maintained by the site operator and transmitted to NYSDEC on an annual basis per the well permit. As noted, this is an existing and ongoing golf facility that will continue to operate irrigation systems for turf maintenance of the course.

2.3.2 Anticipated Impacts

Surface Water and Wetlands

The surface water quality of the existing ponds is documented in **Section 2.3.1**. Water quality is typical of golf course water features with some elevated nutrient and bacteria concentrations, and limited organic compounds and metals. The intent of this project is to improve pond water quality and curtail/eliminate overflow from the site which currently overflows to Fresh Pond. This will ensure that water quality of the ponds is improved through stormwater storage and a Golf Course Environmental Management Plan, and elimination of the pond overflow. As a result, no adverse on-site surface water impacts, and off-site impacts which currently occur will be reduced and/or eliminated as a result of the expanded drainage storage on-site, and the Golf Course Environmental Management Plan.

As noted in **Section 2.3.1**, there are on-site NYSDEC designated wetlands in the northwest part of the site, and man-made ponds that are part of the golf course in the central part of the site. No

activity is proposed within 100 feet of the designated wetlands and therefore no adverse impact to on-site wetlands is anticipated as a result of the project. It is noted that the site is within 100 feet of freshwater wetlands associated with Fresh Pond east of the site, and the Makamah Nature Preserve west of the site. Fresh Pond is located on the east side Fresh Pond Road. The wetlands have been delineated in this area and are shown on project plans. Activity involving the construction of the cul-de-sac which will service 14 units off of Fresh Pond Road will occur within 100 feet of these wetlands. Potential impacts include erosion and sedimentation during construction and stormwater impacts post-construction. Erosion and sedimentation control plans have been prepared (see **Appendix B**; Site Plan) to address erosion control during construction, such that no adverse impact is expected. Stormwater design for the proposed project includes stormwater storage for the buildings and roads, and stormwater will be retained at the lowest elevation of the road as it intersects Fresh Pond Road, in order to ensure that no impacts will occur. The Makamah Nature Preserve is west of Makamah Road but opposite the southwest access to the subject site. In this area, erosion control measures are also proposed, and stormwater from the development will be retained, such that no adverse impacts are anticipated. A NYSDEC Article 24 Freshwater Wetlands permit will be obtained for any activity within 100 feet of wetlands to further ensure that no impact will occur.

The golf course water features are not regulated wetlands; these ponds will remain and will be expanded for increased drainage capacity. No adverse surface water impacts are expected with respect to the improved stormwater management on the site. The subsection Stormwater and Drainage, below, will further discuss the proposed drainage system as related to potential impacts.

Groundwater Elevation and Flow

Groundwater flows from south to north beneath the site. The project involves dispersed recharge and surface detention of stormwater, as well as dispersed wastewater disposal system, and as a result, will not alter the regional flow of groundwater. The subject site has adequate depth to the regional groundwater table to ensure that leaching of stormwater recharge will occur efficiently. Extensive soil borings were prepared to understand perched water conditions based on subsurface clays and lower permeability soils. The site drainage system considers these subsurface conditions so that leaching and storage of stormwater is managed in conformance with Town requirements. Wastewater systems will comply with SCDHS requirements for design, installation, maintenance and overall function. As a result, no adverse impacts to groundwater elevation and flow hydrology are expected.

Stormwater and Drainage

Construction and operation of the proposed project is not anticipated to have a significant adverse impact on drainage on or in the vicinity of the subject property. To the contrary, the increase in stormwater storage is a significant benefit in terms of eliminating the existing outflow off the site to Fresh Pond.

For drainage design, the ponds will be expanded, lined to retain water, will be maintained at a minimum water level, and will provide increased stormwater capacity in the “freeboard” or area above the minimum water level, up to a maximum elevation water level. The full stormwater system, which is designed for a nine (9) inch storm event consistent with Town requirements, includes the stormwater pickup and conveyance system, a recharge basin, and the enlarged ponds.

These improvements provide a stormwater management improvement on the site and are discussed in more detail herein.

All stormwater runoff generated on developed surfaces will be retained on-site and recharged to groundwater through the existing and proposed pond network, a proposed recharge basin, depressions, a system of catch basins and leaching pools, individual roof drains and pervious vegetated/landscaped groundcover that allows for direct filtration. As shown on the site plans prepared by Nelson & Pope, **Sheets 20 & 21** (see **Appendix B**) development on the subject property will be partitioned into eight (8) and fifteen (15) separate drainage areas, north and south of Breeze Hill Road, respectively, to accommodate stormwater runoff and are designated Drainage Areas A-G, F-1 and H-V.

Area A consists of the portion of the development located in the northwestern portion of the property which will consist of 36 units. This area will utilize the conveyance system and a recharge basin for storage and will overflow to the pond system. Area G will provide a localized depression and leaching structures for the north part of the northwest development area. Areas B-E consist of the existing golf course in the central part of the site north of Breeze Hill Road and will provide drainage containment in the conveyance system and modified pond areas. Areas F and F-1 consist of the portion of the development located in the eastern portion of the property which includes 14 units. Area F will utilize a depression for containment and recharge, and Area F-1 will use leaching pools to ensure containment of a portion of the road runoff. Areas H-V will consist of the portion of the proposed development south of Breeze Hill Road and will consist of the golf course clubhouse, the proposed community fitness center (former pro shop), driving range and 48 units and will utilize a combination of depressions and leaching pools.

As noted, the system is designed to accommodate a nine (9) inch storm event. Under current conditions, the golf course does not meet Town required drainage containment, and the current overflow from this pond enters a drainage ditch along Fresh Pond Road and ultimately overflows to Fresh Pond. Proposed conditions will provide drainage to full Town specifications. The drainage systems is designed in accordance with the requirements of the Town and will be the subject of a Stormwater Pollution Prevention Plan (SWPPP) which will undergo review by the Town and will be filed with a Notice of Intent (NOI) with NYSDEC in conformance with the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002). Based on the extensive additional drainage that will serve the existing golf course as well as new development, it is expected that stormwater impact will be reduced as a result of the proposed project.

Section 1.6.5 outlines the use of pond water for irrigation. This is an added benefit of modifications to the golf course which will allow for irrigation of the entire site using on-site ponds that will receive stormwater originating on the site and will be supplemented by the existing on-site well. Pond water in storage will be used/reused for irrigation. Potential impacts associated with use of pond water for irrigation are beneficial. Currently, a well feeds the golf course irrigation system. The use of ponds will allow stormwater that originates on the site to be reused for irrigation. Minor modifications including pumps, controls, updated irrigation delivery and the deepening of one pond will be used to accommodate this system. This will reduce well water demand and allow stormwater that may contain some nutrients from the golf course to be reused

for irrigation and associated plant uptake. As a result, no adverse impacts are anticipated and beneficial impacts associated with water reuse and reduced groundwater pumping are expected.

Water Resources Plans and Studies

The Long Island Comprehensive Waste Treatment Management Plan (208 Study) – The Preserve at Indian Hills project is in conformance with the recommendations of the 208 Study which would have projects that exceed 1 unit per acre provide for wastewater treatment. The proposed project is far below this density. The proposed project will conform to SCSC Article 6, 7 and Article 12 requirements which will minimize potential adverse impacts to groundwater quality. In addition, since the project is primarily residential in nature, few potentially toxic or hazardous substances would be present or used on the site and any such materials will be in limited quantities per Article 7 and stored in conformance with Article 12.

The developed area will be served by a comprehensive stormwater drainage system comprised of roadside catch basins, subsurface leaching pools as well as new and existing ponds to gather, store and recharge all runoff generated on the site within the site.

Further discussion of the projects impact related to the 208 Study as it relates to wastewater discharge in Groundwater Management Zone VIII is provided in the subsection, Groundwater Quality, below.

Suffolk County Comprehensive Water Resource Management Plan, 2015 - The following lists the Goals of the updated SCCWRMP, along with brief discussions as to the project's conformance to each.

Groundwater Resource Management Goals

GOAL 1: All groundwater shall be in compliance with the stricter of New York State Ambient Groundwater standards and guidance values or Maximum Contaminant Level Goals (MCLGs) to the greatest extent feasible and practical. Water quality that is better than the existing standards should be preserved, to the greatest extent feasible and practical.

This Goal is addressed to regulating agencies and public water suppliers. However, the proposed project will support this Goal to the extent that it will conform to SCSC Article 6 and Article 12 requirements which will minimize potential adverse impacts to groundwater quality.

GOAL 2: Nitrogen loading should be reduced to the greatest feasible and practical for the protecting of current and future drinking water supplies and to restore/maintain ecological functions of streams, lakes, estuaries and marine waters. Arrest and reverse the trend of increasing nitrogen concentrations in ground and surface waters to the greatest extent feasible and practical by decreasing the nitrogen loading from septic systems and fertilizers.

Nitrogen loading will be significantly less than if the site was developed under current zoning. As a result, the proposed land use represents a reduction of nitrogen load as compared to current zoning. The proposed project will increase nitrogen load as compared with current conditions; however, this increase is limited to the greatest extent feasible through the use of innovative treatment sanitary effluent (I/A OWTS). These systems will treat wastewater from 50-65 mg/l, to less than 19 mg/l In addition, the reduction implementation of a Golf Course Environmental Management Plan will assist in ensuring that fertilization of the subject property is the minimum necessary to promote healthy turf and maximum uptake of nutrients.

GOAL 3: Concentrations of other regulated and unregulated contaminants in groundwater should be minimized to the greatest extent feasible and practical, to protect current and future drinking water supplies and to restore/maintain ecological functions of streams, lakes, estuaries and marine waters. Reduce the discharge of volatile organic compounds and other regulated and unregulated contaminants to groundwater.
The proposed project will support this Goal to the extent that it will conform to SCSC Article 6 and Article 12 requirements which will minimize potential adverse impacts to groundwater quality. In addition, since the project is primarily residential in nature, few potentially toxic or hazardous substances would be present or used on the site. It is noted that the project has facilitated the cleanup of existing conditions with respect to the clubhouse and other sources identified and remediated through Phase I, II and III ESAs as documented in ***Section 2.2.1****.*

GOAL 4: Land use patterns should be consistent with the protection of the County's groundwater and surface water resources, including the protection of existing and future drinking water supplies.
The project site is an existing golf course. There are no existing or future drinking water supplies downgradient of the site. The proposed project will provide a land use pattern that is in keeping with protection of groundwater and surface water resources. The project will retain natural vegetation, limit fertilizer dependent vegetation, and will limit nitrogen load to the greatest extent feasible. The proposed septic systems will not be in close proximity to either the water table or surface water bodies, so that the project will conform to the SCCWRMP with respect to minimizing nitrogen impacts originating in unsewered areas.

GOAL 5: Groundwater quality and quantity should be maintained to protect and preserve the County's drinking water supply and natural resources.
There is no impact to drinking water supply as indicated by SCWA in correspondence to the applicant. Public water will be used for domestic supply and natural resources will be retained to the greatest extent practicable with natural restoration of additional land to natural conditions.

GOAL 6: Groundwater levels should be maintained to protect and preserve the long-term sustainability and ecological functions of existing surface water resources.
The proposed project is not expected to change groundwater levels as stormwater and wastewater recharge are dispersed across the site. This dispersal will distribute recharge around the site and thus is not expected to impact groundwater elevations. The site will be served by water supply by the SCWA.

GOAL 7: Existing programs to monitor, prevent contamination of, and manage Suffolk County groundwater resources should be enhanced and improved to provide the data and programs necessary to protect the groundwater resource that provides the County's drinking water supplies, and to provide the information necessary to develop a long term approach to mitigate expected impacts of sea level rise upon existing infrastructure.
This Goal is addressed to regulating agencies and public water suppliers. The project will contribute to water quality protection and enhancement through the use of innovative sanitary system design and related water quality support to further ensure that surface water quality is improved.

<u>Drinking Water Supply Goals</u>
GOAL 1: All County residents should have access to safe potable water that is in compliance with drinking water MCLs, USEPA health advisories and New York State guidance levels.
This Goal is addressed to regulating agencies and public water suppliers. The project will contribute to water quality protection and enhancement through the use of innovative sanitary system design and related water quality support to further ensure that surface water quality is improved.

GOAL 2: A community public water supply should be available to all Suffolk County residents.
This Goal is addressed to regulating agencies and public water suppliers. It is noted that the proposed project will connect to the public water supply network of the SCWA for drinking water purposes, and will provide necessary connections to that network

GOAL 3: Residential and commercial irrigation should be managed to reduce peak demands on water supply infrastructure.
The existing irrigation well system is subject to NYSDEC well permits. The existing irrigation well system is independent of the SCWA system and therefore will not affect peak demands of the SCWA for drinking water supply.

Surface Water Resource Management Goals
The five Surface Water Resource Management Goals are addressed to regulating agencies. Additionally, there are no surface water bodies on the portion of the subject property scheduled for development or in proximity to the subject site.

Wastewater Management Goals
GOAL 1: Improve groundwater quality to maintain a potable water supply to serve existing and future populations by reducing effluent nitrogen loads from existing and future onsite sewage disposal systems and sewage treatment plants.
The subject site is an existing golf course. Nitrogen loading will be significantly less than if the site was developed under current zoning. As a result, the proposed land use represents a reduction of nitrogen load as compared to current zoning. The proposed project will increase nitrogen load as compared with current conditions; however, this increase is limited to the greatest extent feasible through the use of innovative treatment sanitary effluent (I/A OWTS). These systems will treat wastewater from 50-65 mg/l, to less than 19 mg/l In addition, the reduction implementation of a Golf Course Environmental Management Plan will assist in ensuring that fertilization of the subject property is the minimum necessary to promote healthy turf and maximum uptake of nutrients.

GOAL 2: Improve surface water quality to increase coastal resiliency and rehabilitate and maintain a vibrant coastal ecosystem by improving dissolved oxygen levels, reducing harmful algal blooms, and controlling nutrient levels through the reduction of effluent wastewater nitrogen loads from existing and future onsite sewage disposal systems and sewage treatment plants.
There are no natural surface water bodies with a connection to groundwater on the subject property. The proposed stormwater system will significantly increase stormwater storage on the site and will reduce/eliminate an existing pond system overflow to Fresh Pond. This will improve water quality in the coastal ecosystem. Nitrogen loading will be significantly less than if the site was developed under current zoning. As a result, the proposed land use represents a reduction of nitrogen load as compared to current zoning. The proposed project will increase nitrogen load as compared with current conditions; however, this increase is limited to the greatest extent feasible through the use of innovative treatment sanitary effluent (I/A OWTS). These systems will treat wastewater from 50-65 mg/l, to less than 19 mg/l In addition, the reduction implementation of a Golf Course Environmental Management Plan will assist in ensuring that fertilization of the subject property is the minimum necessary to promote healthy turf and maximum uptake of nutrients.

GOAL 3: Reduce and/or eliminate the impacts of pharmaceuticals and personal care products from wastewater effluent for increased public health and marine life protection.
This Goal is addressed to regulating agencies and public water suppliers. The proposed project is not of a type that would increase use of pharmaceuticals and personal care products any more than the

existing zoning, and the reduced seasonal occupancy would tend to reduce all forms of wastewater flow as compared to existing zoning.

GOAL 4: Provide development opportunities for continued economic growth to support future population growth while limiting wastewater nitrogen discharge.
The proposed project will maintain the existing golf course, and allow for this to continue by providing limited residential development on the site. The use is consistent with existing conditions and the surrounding property use and is therefore an appropriate development that is intended to provide economic growth and benefit. The project will not contribute school aged children which could present a financial burden to the local school district. The project will provide consumers for local business and will increase employment opportunities providing a significant economic benefit from construction, operation and beneficial ripple effect on the economy. The project limits wastewater discharge through low density occupancy and will employ approvable advanced wastewater treatment recognized by SCDHS.

GOAL 5: Improve operations and maintenance of onsite sewage disposal systems and sewage treatment plants to maintain compliance with effluent nitrogen limit and achieve more stringent goals where feasible and appropriate to protect ground/surface waters.
It is noted that one of the public benefits of the project is the applicant's commitment to provide enhanced wastewater treatment where feasible for the project. The existing golf course clubhouse uses a conventional sanitary system which will be upgrade to an I/A OWTS for the new clubhouse. This reduces the nitrogen load of the clubhouse. All new units will also use I/A OWTS to minimize nitrogen load to the maximum extent practicable.

GOAL 6: Provide funding sources to the residents of Suffolk County to permit affordable upgrades to existing onsite sewage disposal systems or connection to community sewers.
This Goal is addressed to regulating agencies; however, the proposed project will utilize innovative sanitary treatment technologies to limit nitrogen discharge to underlying groundwater.

GOAL 7: Promote the reuse of effluent wastewater for irrigation and grey water uses to preserve the volume of potable groundwater water supply to serve anticipated future population growth.
The project site is an existing golf course. The golf course uses an on-site well. Operations will consider use of pond water for irrigation through an upgraded irrigation system design. Revenue from residential use of the site is needed to achieve this costly upgrade.

<u>Groundwater Quality</u>
Groundwater impacts which may occur during construction activities could potentially result from building materials and equipment stored on-site. Building materials stored on-site are anticipated to be inert and therefore are not expected to have an adverse impact on the site. Equipment stored on-site which will be utilized during clearing and construction activities will be properly maintained and reputable contractors will be used for all site work.

The proposed project will consist of a senior multi-family residential development and is not expected to result in the use, generation or disposal of toxic substances which may be discharged to the subsurface. Household chemicals will likely be the only toxic or hazardous materials used in the residential portions of the on-site. Such materials, termed "household hazardous waste" (HHW) include any waste that is flammable, toxic, corrosive or reactive, and includes many household cleaners, paints, automobile maintenance wastes, pesticides, batteries, etc. These wastes may be exposed to individuals during use, may contaminate groundwater supplies when

improperly discarded, and may injure sanitation workers or react with other substances during transport to or deposition in a landfill. According to the NYSDEC Household Hazardous Waste Report (April, 2000), education leading to waste reduction is by far the best approach to managing HHW, and the most environmentally sound method of disposal for many hazardous products is through a community HHW collection program. It is recognized that enforcement of limiting HHW use within the proposed project is generally not feasible. The NYSDEC offers several informational pamphlets concerning the use and disposal of HHW.

Stormwater will be recharged on-site through the use of leaching pools. Based on information presented in the NURP Study, this is an appropriate means of handling stormwater and as a result, such recharge is not anticipated to contain significant concentrations of pollutants. Therefore, the proposed project is in conformance with the applicable recommendations of the NURP Study in regard to the proposed stormwater recharge system and no significant adverse impacts are expected.

The project site is located in Groundwater Management Zone VIII as defined by SCDHS. Based on the requirements of Article 6 of the Suffolk County Sanitary Code (SCSC), allowable sanitary flow on a site that is subject to subdivision is based on the 20,000 SF yield map, with the number of lots multiplied by 300 gpd per unit. In lieu of a 20,000 SF yield map, SCDHS provides a formula for determining allowable flow. For the proposed project, the allowable sanitary flow is based on the calculation:

(Site acres - wetland acres) x 0.75 x [(43,560 SF/acre)/(20,000 SF/unit)] = allowed units,

Thus, the calculation for allowable density under Article 6 of the SCSC is as follows:

(154.56 – 3.2) x 0.75 x 2.178 = 247.24 units

As each unit is allocated a flow of 300 gpd, the total allowed sanitary flow for the project site is obtained from: 247 units x 300 gpd/unit = 74,100 gpd.

The design flow is based on the sanitary wastewater generated by the proposed use. It is noted that the proposed project involves a golf course. Under *"General Guidance Memorandum #17, Agricultural and Golf Course Density,"* only land that is not used for recreational turf is considered to be developable. This is due to the nitrogen load from fertilization and as a result, the developable area is reduced by the number of acres used as recreational turf. The resulting calculation using the fertilized area consisting of greens, fairways and tees is as follows:

(154.56 – 3.2 – 32.77) x 0.75 x 2.178 = 198.72 units

Using the allowable flow per unit of 300 gpd, the total allowable sanitary flow for the project site is calculated as follows: 198.72 units x 300 gpd/unit = 59,616 gpd.

Based upon SCDHS design flow factors, the 98 townhomes are expected to generate 29,400 gallons per day (gpd) based upon 300 gpd/unit. The clubhouse (200 catering seats @ 7.5 gpd; 50 indoor seats @ 30 gpd; and 50 outdoor seats @ 15 gpd) is expected to generate 3,750 gpd. The maintenance building has a design flow of 200 gpd. This results in a total design flow of 33,350 gpd.

The design flow calculation has been prepared based on the combined wastewater flow and additional flow allocated to golf course use. The proposed project is significantly below the allowable flow provided for under SCSC Article 6 (26,266 gpd less).

The proposed project will have significantly less sanitary wastewater than what is permissible under Article 6 of the SCSC. Nevertheless, the applicant plans to use I/A OWTS systems for the new 98 townhomes and clubhouse in order to reduce nitrogen load associated with site use. The existing maintenance facility will not change and will retain its current conventional sanitary system. The golf course is demonstrated to have a very low fertilization rate and will be managed under a Golf Course Environmental Management Plan to ensure that nitrogen load and concentration of nitrogen in recharge are minimized.

Suffolk County recently approved an amendment to the SCSC adding Article 19, which gives the County Department of Health Services the authority to promulgate procedures, protocols and standards for the use of innovative and alternative on-site septic treatment and disposal systems (signed by Suffolk County Executive Steve Bellone on August 10, 2016). Article 19 authorizes the first major change to residential wastewater treatment technology since 1973, when rules changed to require a septic tank in addition to a leaching pool. When properly designed, sited, installed, managed, and maintained, I/A OWTS provide a cost-effective and environmentally sound alternative to sewers in portions of Suffolk County that are outside the designated sewer areas, significantly reducing nitrogen in wastewater.

The proposed project is expected to result in the construction of four (4) sanitary system zones for the townhomes, two (2) north and two (2) south of Breeze Hill Road. Each sanitary system zone will be divided into sections comprised of 4 to 5 buildings (8 to 10 townhome units) for achieving an optimal sanitary treatment design based on up a 3,000 gpd or less treatment unit. Each of these subzones will utilize a SCDHS approved I/A OWTS. Treatment systems of this type are designed to reduce biochemical oxygen demand, suspended solids and total nitrogen in order to achieve a reduction in nitrogen load to less than 19 milligrams per liter (mg/l). The drinking water standard is 10 mg/l and the nitrogen concentration in untreated effluent is typically in the range of 50-60 mg/l.

Following tertiary treatment, sanitary waste generated in each zone will be gravity fed or pumped to communal leaching pool systems designed to accommodate the anticipated flow from all the residential units within each subdivided unit. Recharge areas are located based on test hole information that identified suitable soil leaching properties.

Sanitary waste generated by the clubhouse will also utilize an I/A OWTS to provide tertiary treatment within the design capabilities of the system. However, since kitchen waste will also be generated, sanitary effluent will first be discharged to a grease trap prior to transfer to the selected tertiary treatment unit.

Should a power failure occur, the I/A OWTS systems are designed to process sewage via gravity flow. Thus no pumps are required to keep the system in operation. For those occasions that there

are power failures at the pump stations, portable skid mounted generators will be placed at the location of the pump stations to assure that sewage can be transmitted to the treatment systems.

The sanitary wastewater handling will be subject to an engineering report, SCDHS review and approval, oversight of installation and monitoring of the effectiveness of systems. The applicant commits to the use of I/A OWTS as outlined above, and will obtain the necessary SCDHS approvals for this installation. No impacts to groundwater quality are expected based on evaluation of the proposed use, stormwater and sanitary waste systems; however, further analysis of the water balance and nitrogen is provided below.

Water Balance and Nitrogen

Utilizing the same mass balance model described in **Section 2.3.1**, the water balance and concentration of nitrogen in recharge was calculated for the proposed project. **Table 1-1** provides a tabulation of existing and proposed site conditions. These coverage quantities were used in the SONIR (Simulation of Nitrogen in Recharge) model to obtain the results described herein.

The SONIR computer model results for the overall property following development of the proposed project (**Appendix J-4)** indicate that a total of 140.63 MG/yr of water will be recharged on the site. This represents an increase of approximately 15.62% in recharge generated on the property. This anticipated recharge volume represents 33.51 inches of water distributed annually over the 154.56-acre site.

The concentration of nitrates (as nitrogen) in this recharge is anticipated to be increase due to the proposed project to a total of 1.95 mg/l. The increase in recharge and nitrogen concentration is attributable primarily to the increase in sanitary discharge on the subject property; however, the magnitude of this increase is limited through the use of I/A OWTS technologies and remains substantially below existing ambient nitrogen concentration in groundwater which is in the range of 7 mg/l. The concentration is attributable to the existing density of residential development in the watershed. The 1.95 mg/l is also substantially less than the stringent Central Pine Barrens Comprehensive Land Use Plan standard of 2.5 mg/l at the property lines of a development in the sensitive pine barrens areas of Suffolk County.

Nitrogen load will be increased to 2,289.99 pounds/year as a result of the project. This increase is due to increased wastewater discharge on-site, even at the treated levels. It is important to note that as will be noted in **Section 5.0**, the concentration of nitrogen in recharge and nitrogen load will be substantially less than would occur under as-of-right zoning if the site were developed as a subdivision based on its R-40 zoning.

Consistency with The Draft Crab Meadow Watershed Hydrology and Stewardship Plan; the Suffolk County North Shore Embayment Watershed Management Plan, and the Long Island Sound Comprehensive Conservation and Management Plan are reviewed in the land use sections, specifically **Sections 3.1.1** and **3.1.2** of this DEIS.

Water Supply

In a letter dated September 7, 2016, information was requested from the SCWA indicated that there is an existing water main available in the area of the property from Breeze Hill Road, Mystic

Lane and Fresh Pond Road. Accordingly, public water service for the proposed project will be provided in accordance with the rates and charges applicable at the time of connection. If a main extension is required, the applicant will be responsible for costs associated with the extension and if appropriate, an easement must be provided to the SCWA. Copies of each of the correspondence from the SCWA are provided in **Appendix K-1**. It should be noted that design of the water supply system will be subject to review and approval by SCDHS.

As noted in **Section 2.3.1**, the golf course is irrigated using an existing on-site water supply well and it will remain and will continue to supply irrigation water supply to a modified pond storage and water reuse program for the course, as described in **Section 1.6.5** and **Appendix G-1**.

For helping to meet water supply demand and benefit community and environmental resources, golf course ponds will be utilized to store and recycle stormwater. Recycled water is most commonly used for nonpotable (not for drinking) purposes, such as agriculture, landscape, public parks, and golf course irrigation. An overview of the proposed golf course irrigation system is provided in **Appendix K-5** (*The Preserve at Indian Hills Irrigation, Well and Pond Overview,* prepared by Aqua Agronomic Solutions, Inc., dated July 14, 2019). There are 4 ponds created for reuse on the golf course. The uppermost pond, next to hole 15 stores 173,000 cu. Ft. of water or 1,294,129 gallons. This pond is physically connected to the second pond on hole 14 thru a pipe. This pond stores 52,600 cu. ft. of water or 393,475 gallons at normal elevation. The pond at 14 is physically connected to the pond at hole 8 through a pipe. The pond at hole 8 will be the irrigation pond. At present, the difference between the bottom of the pond and normal water elevation is four feet (4'). At present, it will store 70,200 cu. Ft. of water or 525,132 gallons of water. This pond will be deepened by approximately six feet (6') which will double the water storage to 140,400 cu. ft. or 1,050,264 gallons. A typical irrigation cycle will drawdown the pond on hole 8 approximately 30" during the night. The final pond in the series is the pond is the pond on Hole 2. It is capable of storing 270,000 cu. ft or 2,019,740 gallons. Presently the golf course has a permitted well capable of 500 g.p.m. with a permitted use of 32,000,000 g.p.y. The plan is to keep all ponds at their normal level at all times.

The Preserve at Indian Hills control system will be based upon evapotranspiration (this is the amount of water lost during the day between the turf grass plant and the soil). In conjunction with an on-site weather station, the control system will determine how much water was lost from the plant and soil during the day, determine how long each individual station needs to run to replenish this amount, and then communicates this information to the satellite controller or sprinkler. This reduces the amount of excess irrigation that is done, shortens the water time window and reduces the cost of pumping, resulting in an overall positive impact to water supply and environmental resources.

2.3.3 Proposed Mitigation

- It has been determined that the proposed expansion of the on-site ponds will not require a NYSDEC Mined Land Reclamation Permit as indicated in an email from Robert Yager, NYSDEC, dated 6/21/19, a copy of which is provided in **Appendix K-2**.

- It has been determined that a consistency review by the DOS is not required as indicated in an email from Rebecca Ferres. NYSDOS, dated 6/19.19, a copy of which is provided in **Appendix K-3**.
- The developed area will be served by a comprehensive stormwater drainage system comprised of roadside catch basins, subsurface leaching pools, a recharge basin and new and existing ponds to gather, store and recharge all runoff generated on the site within the site.
- As a result of diverting stormwater to the site's ponds for storage and irrigating the golf course, water supply demand is supplemented, which can free considerable amounts of water for the environment and increase flows to vital ecosystems. Water recycling can also decrease the diversion of water from sensitive ecosystems (i.e. Fresh Pond), reducing and preventing pollution.
- All sanitary effluent generated from the proposed project will be disposed of on-site through utilization of a I/A OWTS wastewater treatment methods subject to approval by SCDHS. Should a power failure occur, the I/A OWTS systems are designed to process sewage via gravity flow. Thus no pumps are required to keep the system in operation. For those occasions that there are power failures at the pump stations, portable skid mounted generators will be placed at the location of the pump stations to assure that sewage can be transmitted to the treatment systems.
- The project will utilize public water, to be supplied by the SCWA.
- Flooding on Fresh Pond Road is a current condition caused by low lying areas on Town roads that receive water from adjoining lands. Based on the extensive additional drainage that will serve the existing golf course as well as new development, it is expected that stormwater impact will be reduced as a result of the proposed project. Since the reported flooding is an off-site existing condition which will not be exacerbated but rather improved as a result of the proposed project, a flood monitoring plan is not warranted or necessary. The Town Highway Department may wish to review site conditions and address any drainage deficiencies related to Town roads.
- The project consists entirely of residential uses and a clubhouse and maintenance building associated with an existing golf course; no industrial uses are proposed. As a result, household and household-type cleaners and lawn fertilizers are likely to be the only toxic or hazardous chemicals present that could adversely impact groundwater quality. Educational materials regarding HHW and proper use of such substances could be made available to future condo owners and occupants through the site owner, and notification of the Town sponsored collection programs will be provided to residents and occupants, so that potential for spills or leakages of toxic materials can be minimized.
- A list of Indian Hills Golf Course's current types and quantities of pesticides, herbicides and other chemicals (a.k.a. *Plant Protectant Inventory*) is provided in **Appendix K-4**. This list follows NYS BMP procedures (Best Management Practices) and IPM (Integrated Pest Management) Plan, including, but not limited to:
    - Systematically managing pests by incorporating all reasonable measures to prevent pests including cultural, physical, biological, and chemical methods.
    - Apply pesticides with the lowest hazard rating according to site specific needs. Only use pesticides that are registered in New York State.
    - Implement as many non-chemical pest prevention practices (i.e. pest resistant turf, etc.) as possible to reduce the need for pesticide.
    - Avoid applying pesticides within recharge areas and maintain all required setbacks from surface water resources.
    - Consider weather conditions before applying pesticides. When conditions are less than favorable, pesticide contamination can occur through runoff or drift. To prevent contamination avoid spraying before/during a rain event or when wind speeds are greater than 5 mph.

- Calibrate sprayer/applicator equipment frequently and on a regular basis to ensure the appropriate quantity of pesticides is being applied accurately.
- Maintain records of pesticide application and be sure to include all necessary information. If applicable, records must be kept for a minimum of three years.

2.4 Air Resources

2.4.1 Existing Conditions

The 1970 Clean Air Act (CAA) required the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six principal pollutants; carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), particulate matter (PM), and sulfur dioxide (SO_2). NAAQS are presented in **Table 2-8**.

Table 2-8
NATIONAL AMBIENT AIR QUALITY STANDARDS*

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Lead	Primary & Secondary	Rolling 3-month average	0.15µg/m^3	Not to be exceeded
Nitrogen Dioxide	Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary & Secondary	Annual	53 ppb	Annual Mean
Ozone	Primary & Secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution, $PM_{2.5}$	Primary	Annual	12 µg/m^3	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
	Primary & Secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
Particle Pollution, PM_{10}	Primary & Secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulphur Dioxide	Primary	1-hour	75 ppb	Not to be exceeded more than once per year on average over 3 years
	Secondary	8-hour	0.5 ppm	Not to be exceeded more than once per year

* http://www.dec.ny.gov/chemical/8542.html

Under the requirements of the Clean Air Act, States are required to ensure that air quality levels do not exceed the NAAQS. Areas that exceed the NAAQS for any of the six criteria pollutants are designated nonattainment areas. Currently, Suffolk County is a moderate nonattainment area

for ozone (8-Hr Ozone 2008 standard)[3]. Accordingly, New York State has a State Implementation Plan (SIP), which describes plans for attaining and maintaining compliance with the NAAQS for ozone. It is noted that the area was also formerly a nonattainment area for inhalable fine particulate matter ("$PM_{2.5}$"); however, on June 27, 2013, the NYSDEC submitted a redesignation request/maintenance plan to EPA for the New York metropolitan area for PM2.5[4] and this plan was approved by EPA on April 18, 2014.

The NYS DEC issues three types of air permits to facilities that are sources of air pollution. There are three levels: Registrations (issued to non-major facilities such as dry cleaners and gas stations); Facility Permits (medium-sized commercial or industrial facilities or larger facilities that have agreed to limit their emissions); and Title V Permits (major facilities as determined by DEC's regulations). According the DEC, Title V permits reduce violations of air pollution laws and improve enforcement of those laws by recording pollution control requirements to keep air emissions within legal limits, requiring reporting on how the facility is tracking emissions and the controls being used to limit pollution and requiring certification on a yearly basis, among other requirements.

There are two major sources of air pollutants which require Title V permits within a radius of five miles of the property. One facility is the Huntington Resource Recovery Facility which is a waste to energy facility located 99 Town Line Road in East Northport. According to the Title V permit, the facility utilizes combustion to reduce solid waste by 90% of its volume and the heat energy generated through the combustion process is utilized to produce energy. As of the most recent permit of February 21, 2018, the facility is in compliance with all requirements of the permit. The second facility is the Northport Power Station located at 301 Waterside Avenue in Northport. As of the most recent permit available of March 2012, the facility is in compliance with all requirements of the permit.

Existing sources of air emissions on the subject site include: motor vehicles, golf course maintenance equipment, heating and ventilation systems for the clubhouse and accessory structures. Since these are the only sources, no air permits are required.

Air quality monitoring data is published by the NYSDEC Division of Air Resources for the continuous and manual ambient air monitoring systems that exist throughout the State to establish ambient air quality. Air quality data is compared to the NAAQS and New York State standards. Four monitoring systems are located on Long Island; the locations and pollutants monitored at these stations are identified in **Table 2-9**.

[3] https://archive.epa.gov/ozonedesignations/web/html/index-4.html
[4] http://www.dec.ny.gov/chemical/92166.html

Table 2-9
CONTINUOUS AIR MONITORING STATIONS ON LONG ISLAND AND POLLUTANTS MONITORED

Monitoring Station Location	Pollutants Monitored
Eisenhower Park (approximately 19 miles from the site)	Sulfur Dioxide Inhalable particulates $PM_{2.5}$
Babylon (approximately 13 miles from the site)	Inhalable particulates $PM_{2.5}$ O_3
Holtsville (approximately 14 miles from the site)	Sulfur Dioxide Inhalable particulates $PM_{2.5}$ O_3
Riverhead (approximately 31 miles from the site)	 O_3

Regional air quality can be characterized from a review of data collected at the closest NYSDEC air quality monitoring stations. The nearest monitoring station for ozone and inhalable particulates (PM2.5) is located in Babylon approximately 13 miles to the southeast and the nearest station which monitors sulfur dioxide, as well as $PM_{2.5}$ and O_3 is located approximately 14 miles to the southwest in Babylon.

The most recent ten years of available air quality monitoring data is available on the NYSDEC's website through 2017. **Table 2-10** provides the most recent reported annual air quality monitoring data for Sulfur Dioxide, O_3, and $PM_{2.5}$.

The data indicates generally excellent air quality for the parameters in areas where monitoring is conducted and the full data for the Long Island monitoring stations in NYSDEC Region 1 (see http://www.dec.ny.gov/docs/air_pdf/2017airqualreport.pdf) indicate a trend of general maintenance or improvement in air quality for those parameters sampled. With the exception of ozone, the parameters monitored have maintained the NAAQS for the past four years at least. Ozone is the only pollutant that occasionally exceeds the NAAQS on Long Island (as well as statewide). It is noted that the three-year average for ozone levels at the Holtsville are within the 0.070 ppm standard but that the levels in Babylon slightly exceed the standard at least once per year, with an average of 0.076 ppm (0.006 ppm greater than the standard). Ground-level ozone is considered a secondary pollutant, since it is formed through a photochemical reaction between nitrogen oxides and reactive hydrocarbons (Volatile Organic Compounds) in the presence of elevated temperatures and ultraviolet light. The sources of the primary pollutants that form ozone include automobiles, trucks and buses, large combustion sources such as utilities, fuel stations, print shops, paints and cleaners, and engines (including construction and lawn equipment). Ozone level concentrations that exceed the NAAQS usually occur on hot sunny summer days with little to no wind. The dates of exceedances for each year are shown in the data tables provided in http://www.dec.ny.gov/docs/air_pdf/2017airqualreport.pdf**.** The present air quality in the vicinity of the project site is expected to be excellent for the majority of the year, with the exception of a few days in summer when ozone levels are higher than normal.

Table 2-10
2017 AIR MONITORING DATA

Pollutant	**Standard**	**2015, 2016, 2017 and Average 2015-2017**
Sulfur Dioxide	12-month average not to exceed 30 parts per billion (PPB) One Hour Averages -average of 99th percentile for last 3 years not to exceed 75 PPB	0.77, 0.39 and 0.16 ppb 99^{th} percentile of 4.43 PPB (3-year avg.)
$PM_{2.5}$	Average of last 3 years' annual means not to exceed 15 $\mu g/m^3$	Average of annual means: Holtsville: 6.7 $\mu g/m^3$ Babylon: 6.8 $\mu g/m^3$
	Average of 98^{th} percentile for last 3 years not to exceed 35 $\mu g/m^3$	Average of 98^{th} percentile: 15.7 $\mu g/m^3$
Pollutant	**Standard**	**4th highest maximum 8-hour average Calendar Year 2017**
O3	4^{th} highest maximum 8-hour average not to exceed an avg of 0.075 ppm during the last 3 years, *changed* to 0.070 ppm beginning 1/1/2016*	Holtsville: 0.069 ppm Babylon: 0.076 ppm**

Notes: $\mu g/m^3$: microgram per cubic meter
*: Federal Ambient Air Quality Standard
**: Denotes a contravention of Federal AAQS (occurred each year)

2.4.2 Anticipated Impacts

None of the features of the proposed subdivision will result in air emissions which may require a NY State Air Registration, Air Facility Permit, or a Federal Clean Air Act Title IV or Title V Permit, nor are any of the proposed elements of the project anticipated to result in air emissions resulting in local exceedances in the state or national air quality standards. There will be no significant changes in the sources of air emissions from the existing golf course (including use of lawn mowers). Other existing air emission sources will remain, including: motor vehicles, golf course maintenance equipment, heating and ventilation systems for the clubhouse and accessory structures. The only addition to air emissions will be from the addition of residential homes which will require heating systems with emissions. Motor vehicles will increase, but will be distributed within three (3) development areas of the site. Since these are the only sources, no air permits are required and no adverse impacts are expected as the site is used in manner consistent with zoning, the subdivision will be clustered and dispersed, no major sources are anticipated, and prevailing winds at this location near Long Island Sound will increase dispersion characteristics of any minor increased emissions that may occur as a result of the project.

The only potential impact to local air quality related to the project may be short-term impacts which may result during construction. In the short term, use of construction equipment will result in an increase in particulate emissions which will be temporary in nature. During site preparation

(clearing and regrading) there is the potential for particles of dust to become airborne, which depending upon wind conditions, may result in fugitive dust off site. In addition, exposed soils have the potential to be sources of fugitive dust in high wind and dry weather conditions. Such construction related air quality impacts are temporary in nature; however, steps will be employed to minimize the potential for the generation of fugitive dust, such as use of water trucks to moisten bare earth during dry periods and revegetation of disturbed areas as soon as practical following earth moving and construction activities.

With respect to odor, the Town of Huntington Code does not regulate odors for residential uses, except stating that exhaust vents (pipes, ducts, conductors, fans and blowers) shall not discharge odors (as included with other gaseous releases gases directly upon adjacent public or private property, or in the spaces of another tenant. In addition, the Town Code does regulate odors for industrial and certain commercial uses.

The proposed residential development on the property will not generate any significant odor following construction. Consideration has been given to removal of material from ponds and potential odors. This is an existing condition, which is managed on-site to ensure that no odor impacts occur within the neighborhood. Currently, there is a plan to manage dredged material in spoil pits adjacent to the existing ponds where materials will be placed and immediately covered. The nearest pond to be dredged is at least 100' from the nearest residential property line which will allow dispersion of gases that are the source of any odors, before reaching any neighbors. Current management practices will continue, and as a result, no significant odors will result from this practice. Other potential odor sources are minor. A new clubhouse will be constructed in a similar location and will include updated kitchen equipment and operations. Homes to be constructed east of Makamah Road and South of Breeze Hill Road, east of Mystic Lane and west of Fresh Pond Road will only involve heating systems for residential units typical of any residential area, and operation of motor vehicles. As a result, no significant adverse impacts are anticipated, even with the removal of buffers along Makamah Road.

Given the generally excellent air quality and the fact that the project will not result in the introduction of any air pollution sources, analyses provided herein, no significant adverse air quality impacts are expected as a result of the implementation of the proposed project. It is recommended that measures be implemented to control fugitive dust during construction.

2.4.3 Proposed Mitigation

- Dust control measures are recommended during construction. Measures outlined in **Section 1.7**, Construction and Operation, are sufficient to control these potential impacts. It is noted that any such impacts are short-term, temporary impacts and do not represent a long-term impact.
- Dust monitoring and mitigation measures are a part of the NYSDEC SPDES General Permit requirements for preparation of an erosion and sedimentation control plan, preparation of a SWPPP and installation and maintenance procedures in accordance with these plans during construction; therefore, potential impacts from dust raised by disturbance of impacted soils will be subject to a high level of control.
- The proposed residential development on the property will not generate any significant odor following construction. Current management practices for pond sediments will continue, and as a

result, no significant odors will result from this practice. Other potential odor sources are minor. A new clubhouse will be constructed in a similar location and will include updated kitchen equipment and operations. Homes to be constructed east of Makamah Road and South of Breeze Hill Road, east of Mystic Lane and west of Fresh Pond Road will only involve heating systems for residential units typical of any residential area, and operation of motor vehicles. As a result, no significant adverse impacts are anticipated, even with the removal of buffers along Makamah Road.

- No further analysis in regard to potential air quality impacts due to implementation of the project, as it is not expected to result in a significant adverse impact on air quality.

2.5 Ecological Resources

2.5.1 Existing Conditions

Vegetation

The project site is predominantly developed with a golf course and associated landscaping. Areas of natural vegetation exist in patches within the north and south parcels that comprise the site. The site is primarily surrounded by residential development. Contiguous vegetation in the area generally does not exist, as the landscape is highly fragmented due to the existing residential development, with the exception of the Makamah Nature Preserve and Jerome A. Ambro Memorial Wetland Preserve that lie to the west of the project site.

The 154.56 acre subject parcel was inspected on December 11, 2016, June 9, 2016, July 29, 2016 and June 15, 2018. Qualifications of NP&V staff that inspected the subject parcel are included in **Appendix N-1**. The natural areas within the property can best be described as containing Coastal Oak-Hickory Forest, Successional Southern Hardwood Forest, Red Maple-Hardwood Swamp, Maritime Bluff and Sand Beach as defined by the classification system developed by the NYSDEC **(Edinger *et al.*, 2014).** Areas of the project site developed with the golf course and associated facilities can best be described as Mowed Lawn, Mowed Lawn with Trees, and Paved and Unpaved Paths/Roadways as defined by **Edinger *et al.* 2014**. The Indian Hills Country Club main building as well as associated structures are located on the southern parcel, and the maintenance shed for the golf course exists within the northeastern portion of the north parcel. A small "snack bar" and two sheds are located on the south side of parcel on the north side of Breeze Hill Road. Along the western addition of the southern parcel are two residential structures and three sheds. The remainder of the development area is landscaped and maintained as the golf course. **Figure 2-8** provides a habitat map of the subject property. The existing site habitat quantities as determined by aerial photography and field inspections by NP&V are presented in **Table 1-1** and changes in habitat quantities will be described further herein. Below is a detailed description of the habitat types found on site along with a list of species present or expected on the site.

Edinger (2014), defines Coastal Oak-Hickory Forest as "*a hardwood forest with oaks (Quercus spp.) and hickories (Carya spp.) codominant that occurs in dry well-drained, loamy sandof knolls, upper slopes, or south-facing slopes of glacial moraines of the Atlantic Coastal Plain. The forest is usually codominated by two or more species of oaks, usually white oak (Q. alba), black oak (Quercus velutina) and chestnut oak (Q. montana). Scarlet oak (Quercus coccinea) is also a common associate. Mixed with the oaks, usually at moderate densities, are one or more of the following hickories: pignut (Carya glabra), mockernut (C. tomentosa), and sweet pignut (C.*

ovalis). These hickories can range from nearly pure stands to as little as about 25% cover. There is typically a subcanopy stratum of small trees and tall shrubs including flowering dogwood (Cornus florida) and highbush blueberry (Vaccinium corymbosum). The shrublayer and groundlayer flora may be diverse. Common low shrubs include maple-leaf viburnum (Viburnum acerifolium), blueberries (Vaccinium angustifolium, V. pallidum) and huckleberry (Gaylussacia baccata). Characteristic groundlayer herbs are Swan's sedge (Carex swanii), panic grass (Panicum dichotomum), poverty grass (Danthonia spicata), cow-wheat (Melampyrum lineare), spotted wintergreen (Chimaphila maculata), rattlesnake weed (Hieracium venosum), white wood aster (Aster divaricatus), false Solomon's seal (Smilacina racemosa), Pennsylvania sedge (Carex pensylvanica), and white goldenrod (Solidago bicolor). Characteristic animals include eastern towhee (Pipilo erythrophthalamus), vireos (Vireo spp.), woodpeckers, and white-tailed deer (Odocoileus virginianus). Two or more topoedaphic variants are possible." The 10.65 acres of Coastal Oak Hickory forest within the overall property is located primarily in the northeast portion of the property in the only area not identified as previously cleared. Dominant canopy species observed include shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), white oak (*Quercus alba)* and scarlet oak (*Quercus coccinea*). It should be noted that the overall quality of the Coastal Oak-Hickory forest found on the subject site is diminished due to the significant presence of invasive species (particularly multiflora rose, Oriental bittersweet and autumn olive) located along the disturbed edges of the habitat patch.

Edinger (2014), defines Successional Southern Hardwood Forest as *"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 elms (Ulmus americana), slippery elm (Ulmus rubra), white ashs (Fraxinus americana), red maples (Acer rubrum), box elders (Acer negundo), silver maple (Acersaccharinum), sassafrass (Sassafras albidum), gray birch (Betula populifolia), hawthorns (Crataegus spp.), eastern red cedar (Juniperus virginiana), and choke-cherrys (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. This is a broadly defined community and several seral and regional variants are known."* Species found within this habitat type include multiflora rose (*Rosa multiflora*), sassafrass (*Sassafrass albidum*), black cherry (*Prunus serotina*), white oak (*Quercus alba*), red maple (*Acer rubrum*) and tree-of-heaven (*Ailanthus altissima*). As evidenced in historic aerial photographs included in **Appendix L**, the majority of the area dominated by this forest type was previously cleared. As a result of the previous clearing in this area and subsequent lack of maintenance, this forest type became established within a 25.12 acre portion of the overall site.

Red maple-hardwood swamp was identified in the northwest portion of the site and is defined by **Edinger (2014)** as "*a hardwood swamp that occurs in poorly drained depressions or basins, usually on inorganic soil, but occasionally on muck or shallow peat, that is typically acidic to circumneutral. This is a broadly defined community with several regional and edaphic variants. The hydrology varies from permanently saturated to the surface to seasonally flooded/wet with hummocks and hollows. In any one stand red maple (Acer rubrum) is either the only canopy dominant, or it is codominant with one or more hardwoods including ashes (Fraxinus pennsylvanica, F. nigra, and F. americana), elms (Ulmus americana and U. rubra), and yellow birch (Betula alleghaniensis). Other trees with low percent cover include butternut (Juglans*

cinerea), bitternut hickory (Carya cordiformis), blackgum (Nyssa sylvatica), American hornbeam (Carpinus caroliniana), swamp white oak (Quercus bicolor), and white pine (Pinus strobus). The trunks of maples are typically single-trunked unlike those of floodplain forests with multiple trunks. The shrub layer is usually well-developed and may be quite dense. Characteristic shrubs are winterberry (Ilex verticillata), spicebush (Lindera benzoin), alders (Alnus incana ssp. rugosa and A. serrulata), viburnums (Viburnum dentatum var. lucidum, V. nudum var. cassinoides), highbush blueberry (Vaccinium corymbosum), common elderberry (Sambucus nigra ssp. canadensis), and various shrubby dogwoods (Cornus sericea, C. racemosa, and C. amomum). Swamp azalea (Rhododendron viscosum) is more common in southern examples, and poison sumac (Toxicodendron vernix) and black ash are more common in mineral-rich examples with slightly higher pH. The herbaceous layer may be quite diverse and is often dominated by ferns, including sensitive fern (Onoclea sensibilis), cinnamon fern (Osmunda cinnamomea), royal fern (O. regalis), and marsh fern (Thelypteris palustris), with much lesser amounts of crested wood fern (Dryopteris cristata), and spinulose wood fern (Dryopteris carthusiana). Characteristic herbs include skunk cabbage (Symplocarpus foetidus), white hellebore (Veratrum viride), sedges (Carex stricta, C. lacustris, and C. intumescens), jewelweed (Impatiens capensis), false nettle (Boehmeria cylindrica), arrow arum (Peltandra virginica), tall meadow rue (Thalictrum pubescens), and marsh marigold (Caltha palustris). Open patches within the swamp may contain other herbs characteristic of shallow emergent marsh. Examples of wetland fauna that occur in the glaciated northeast red maple-hardwood swamps include wood duck (Aix sponosa), American black duck (Anas rubripes), northern waterthrush (Seiurus noveboracensis), beaver (Castor canadensis), riverotter (Lutra canadensis), and mink (Mustela vison). These swamps provide breeding habitat for many wetland-dependent species, such as northern spring peeper (Pseudacris crucifer crucifer), American toad (Bufo americanus americanus), wood frog (Rana sylvatica), and spotted salamander (Ambystoma maculatum) (Golet et al. 1993). More data on characteristic fauna, especially invertebrates, are needed. More data are needed on reported variants of this community, such as forested seeps, successional hardwood swamp, red maple-white pine swamp on sandy soils, and red maple-tussock sedge swamp with shallow peat." Species identified within the understory of the red maple-hardwood swamp during site visits included bitter dock, jewelweed and yellow sedge (*Carex flava*). The predominant canopy species was red maple (*Acer rubrum*). As evidenced in historic aerial photographs included in **AppendixM**, the area identified as red maple-hardwood swamp was previously cleared and as such features an abundance of invasive species along the edges of the habitat including mutiflora rose, oriental bittersweet, autumn olive and mugwort. A significant lack of understory was also present, which may also be due to the previous disturbance associated with the wetland.

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. This approach may be somewhat arbitrary and is open to individual interpretation, particularly in areas with shallow slopes and broad transition zones. It is noted that the wetlands are regulated by the NYSDEC under Article 24 and are identified as freshwater

wetland N-13. The on-site wetland boundary was flagged on December 11, 2015 and May 20, 2016 by NP&V. Off-site wetlands were delineated and appear on the Site Plan **(Appendix B)**. It should be noted that any development located within 100 feet of a regulated Article 24 wetland must be approved by NYSDEC through a permitting process as noted in **Sections 2.3.1** and **2.3.2**.

Edinger (2014) defines maritime bluff as *"a sparsely vegetated community that occurs on vertical exposures of unconsolidated material, such as small stone, gravel, sand, and clay, that is exposed to maritime forces, such as water, ice, or wind. There are very few woody species present because of the unstable substrate. Most abundant species are usually annual and early successional herbs. These bluffs are adjacent to maritime and marine communities and are actively eroded by the oceanic forces. The maritime bluff is comprised of areas of unvegetated, near vertical morainal sand cliffs, and less steep (about 45°) areas of slumped bluff-face at the base of the bluff that support beach grass (Ammophila breviligulata), seaside goldenrod (Soligago sempervirens), and bayberry (Myrica pensylvanica). More data are needed for this community."* Maritime bluff is located along the northern portion of the site. Species identified in this area include Elliot's goldenrod, Queen Anne's lace, St. John's wort and spotted knapweed.

Edinger (2014) defines Cropland/Row crops as *"an agricultural field planted in row crops such as corn, potatoes, and soybeans. This community includes vegetable gardens in residential areas."* This classification is used to describe 0.14 acres of the subject property which align with the vegetable garden description.

The remainder of the site is comprised of landscaped areas, golf course ponds, unvegetated beach, and impervious surfaces/structures. **Table 2-11** below provides the quantities of the habitats encountered on the site.

Table 2-11
HABITAT QUANTITIES
Existing Conditions

Coverage Type	Existing Conditions Within the Total Site	
	Coverage (Acres)	**Percent**
Mowed	**98.32**	**63.61**
Mowed with Trees	9.70	6.28
Greens (Fertilized)	2.47	1.60
Fairways (Fertilized)	23.87	15.44
Tees (Fertilized)	1.77	1.15
Rough	60.51	39.15
Natural	**43.02**	**27.83**
Coastal Oak – Hickory Forest	10.65	6.89
Successional Southern Hardwood	25.12	16.25
Maritime Bluff	2.49	1.61
Red Maple Swamp (Wetlands)	0.50	0.32
Beach & Tidal Waters	4.26	2.75
Cropland/ Row Crops	**0.14**	**0.09**
Ponds	**3.20**	**2.07**
Other Landscaped	**0.33**	**0.21**
Unvegetated	**1.91**	**1.24**
Bunkers	0.62	0.40
Cleared Areas	1.29	0.83
Cartpaths/Roads/Parking Lots	**6.96**	**4.50**
Buildings	**0.68**	**0.44**
Total	154.56	100.00

Table 2-12 presents a list of vegetation observed or expected on site given the habitats present; it is based upon field investigations conducted by NP&V on December 11, 2016, June 9, 2016, July 29, 2016 and June 25, 2018. This list is not meant to be all-inclusive but was prepared as part of several field inspections to provide a detailed representation of what is found on site. Care was taken to identify any species that might be unusual for the area.

Table 2-12
VEGETATION SPECIES

Trees

* Norway Maple	Acer platanoides [i]
* Red Maple	Acer rubrum
Silver Maple	Acer saccharinum
Sugar Maple	Acer saccharum
* Tree-of-heaven	Alianthus altissima [i]
Alder	Alnus serrulata
* Yellow Birch	Betua allaghaniensis
* Black Birch	Betula lenta
* White Birch	Betula papyrifolia
Gray Birch	Betula populifolia
Bitternut Hickory	Carya cordiformis
* Pignut Hickory	Carya glabra
* Shagbark Hickory	Carya ovata
* Mockernut Hickory	Carya tomentosa
American Chestnut	Castanea dentata
Northern Catalpa	Catalpa bignonioides
* Flowering Dogwood	Cornus florida [p]
Gray Dogwood	Cornus foemina racemosa
* Kousa Dogwood	Cornus kousa
Red Osier Dogwood	Cornus stolonifera
Hawthorne	Craetagus sp.
* American Beech	Fagus grandifolia
* American Holly	Ilex opaca [p]
Walnut	Juglans nigra
* Eastern Red Cedar	Juniperus virginiana
* Tulip Poplar	Liriodendron tulipifera
Magnolia	Magnolia sp.
Crab apple	Malus coronaria[p]
Common apple	Malus pumila
* Mulberry	Morus rubra
* Sour Gum	Nyssa sylvatica
* Princess Tree	Paulownia tomentosa [i]
Pitch Pine	Pinus rigida
* White Pine	Pinus strobus
Eastern Cottonwood	Populus deltoides.
* Bigtooth Aspen	Populus grandidentata
* Black Cherry	Prunus serotina
* Choke Cherry	Prunus virginiana
* White Oak	Quercus alba
Swamp White Oak	Quercus bicolor
* Scarlet Oak	Quercus coccinea
* Blackjack Oak	Quercus marilandica
Pin Oak	Quercus palustris
* Chestnut oak	Quercus prinus
Red Oak	Quercus rubra
* Black Oak	Quercus velutina

* Black Locust	Robinia pseudoacacia [i]
Pussy Willow	Salix discolor
Gray Willow	Salix humilis.
* Black Willow	Salix nigra
* Sassafras	Sassafras albidum
* Yew	Taxus floridana
Linden	Tilia sp.
Eastern Hemlock	Tsuga canidensis
Slippery Elm	Ulmus rubrai
American Elm	Ulnus americana
Bamboo (several "running" varieties) [i]	
Northern Prickly-Ash	Zanthoxylum americanum
* Hercules Club	Zanthoxylum clava-herculis

Shrubs and Vines

Shadbush	Amelanchier canadensis
Porcelain-berry	Ampelopsis brevipedunculata [i]
* Chokeberry	Aronia arbutifolia.
* Japanese Barberry	Berberis thunbergii [i]
* Boxwood	Bux sempervirens
Trumpet Creeper	Campsis radicans
* Oriental bittersweet	Celastrus orbiculatus [i]
American bittersweet	Celastrus scandens [p]
* Sweet Pepperbush	Clethra alnifolia
Sweetfern	Comptonea peregrina
* Autumn Olive	Elaeagnus umbellata [i]
Trailing Arbutus	Epigaea repens[p]
Winged Eunonymous	Euonymus alatus [i]
* Burningbush	Euonymus atropurpureus
Wintercreeper	Euonymus fortunei [i]
Forsythia	Forsythia sp.
* Black Huckleberry	Gaylussacia baccata
* English ivy	Hedera helix[i]
Hydrangea	Hydrangea sp.
Inkberry	Ilex glabra [p]
Winterberry	Ilex verticillata [p]
Mountain Laurel	Kalmia latifolia [p]
Bush Clover	Lespedeza sp.
Fetterbush	Leucothoe racemosa
Spicebush	Lindera benzoin
* Japanese Honeysuckle	Lonicera japonica [i]
Fly Honeysuckle	Lonicera morrowii [i]
Trumpet Honeysuckle	Lonicera sempervirens
Honeysuckles	Lonicera spp.
Tartarian Honeysuckle	Lonicera tatarica [i]
* Sargent Crabapple	Malus sargentii
* Bayberry	Myrica pensylvanica [p]
* Virginia Creeper	Parthenocissus quinquefolia
Mile-a-minute vine	Polygonum perfoliatum [i]
* Bitter Dock	Rumex obtusifolius
* Common Buckthorn	Rhamnus cathartica [i]

	Pinkster Bloom	Rhododendron nudiflorum [p]
	Azaelea	Rhododendron sp. [p, native only]
	Rhododendron	Rhododendron sp. [p]
	Swamp Azalea	Rhododendron viscosum [p]
*	Winged Sumac	Rhus copallina
	Smooth Sumac	Rhus glabra
*	Staghorn Sumac	Rhus typhina
	Currant	Ribes lacustre
	Gooseberry	Ribes sp.
*	Multiflora Rose	Rosa multiflora [i]
	Swamp Rose	Rosa palustris
	Wild Rose	Rosa sp.
*	Blackberry	Rubus allegheniensis
	Common Dewberry	Rubus flagellaris
*	Wineberry	Rubus phoenicolasius [i]
	Brambles	Rubus sp.
	Common Elderberry	Sambucus canadensis
	Cat Greenbrier	Smilax glauca
*	Common Greenbrier	Smilax rotundifolia
	Bittersweet Nightshade	Solanum dulcamara
	Japanese Spiraea	Spiraea japonica [i]
	Meadowsweet	Spirea latifolia
	Hardhack	Spirea tomentosa
*	Poison-Ivy	Toxicodendron radicans
*	Low Bush Blueberry	Vaccinium angustifolium
*	High Bush Blueberry	Vaccinium corymbosum
*	Maple-Leaved Viburnum	Viburnum acerifolium
	Arrowwood	Viburnum dentatum
	Myrtle	Vinca minor[i]
*	Grape	Vitis sp.
	Japanese Wisteria	Wisteria floribunda [i]
	American Wisteria	Wisteria frutescens
	Chinese Wisteria	Wisteria sinensis [i]

Herbaceous Species

*	Yarrow	Achillia millefolium
	Sweet Flag	Acorus americanus
	Redtop	Agrostis gigantea
*	Garlic Mustard	Alliaria petiolata [i]
*	Wild Onion	Allium stellatum
	Wild Leek	Allium tricoccum
	Pigweed	Amaranthus sp.
	Ragweed	Ambrosia artemisiifolia
	Big Bluestem	Andropogon gerardii
	Little Bluestem Grass	Andropogon scoparius.
	Wood Anemone	Anemone quinquefolia
	Dogbane	Apocynum maculosa
	Wild Sarsaparilla	Aralia nudicaulis
	Jack-In-The-Pulpit	Ariasaema triphyllum
*	Common Mugwort	Artemisia vulgaris [i]

	Common Milkweed	Asclepias syrica
*	Aster	Aster sp.
	Lady Fern	Athyrium filix-femina [p]
	Yellow Rocket	Barbarea vulgaris
	Bald Rush	Brasenia schreberi
	Mustard	Brassica sp.
	Bluejoint Grass	Calamagrotis canadensis
	Marsh Bellflower	Campanula aparinoides
*	Yellow Sedge	Carex flava
	Bladder Sedge	Carex intumecens
	Lurid Sedge	Carex lurida
*	Pennsylvania Sedge	Carex pensylvanica
	Sedge	Carex sp.
*	Umbrella Sedge	Carex strigosus
	Spotted Knapweed	Centurea maculosa
	Coontail	Ceratophyllum demersum
	Common Lamb's Quarters	Chenopodium album
	Spotted Wintergreen	Chimaphila maculata [p]
	Chicory	Cichorium intybus
	Enchanter's Nightshade	Circacea quadrisulcata
	Creeping Thistle	Cirsium arvense
	Thistle	Cirsium sp.
*	Asiatic Dayflower	Commelina communis
	Crown Vetch	Coronilla varia
	Dodder	Cuscuta gronovii
	Black Swallow-Wort	Cynanchum louiseae [i]
*	Umbrella Sedge	Cyperus strigosus
	Moccasin Flower	Cypripedium acaule[p]
	Broom	Cytisus scoparius
	Poverty Grass	Danthonia spicata
*	Queen Anne's Lace	Daucus carota
	Hay-Scented Fern	Dennstaedtia punctilobula
	Deertongue	Dichanthelium clandestinum
	Sundew	Drosera filiformes[p]
	Sundew	Drosera intermedia[p]
	Sundew	Drosera rotundifolia [p]
	Crested Wood Fern	Dryopteris cristata[p]
	Woodfern	Dryopteris spinulosa[p]
	Three Way Sedge	Dulichium arundinaceum
	Spikerush	Eleocharis sp.
	Waterweed	Elodea sp.
	Beech Drops	Epifagus virginiana
	Pipewort	Eriocaulon aquaticum
	Cypress Spurge	Euphorbia cyparissias
	Japanese Knotweed	Fallopia japonica
	Common Strawberry	Fragaria virginiana
	Cleavers	Galium aparine
	Wintergreen	Gaultheria procumbens [p]
	Wild Geranium	Geranium maculatum
	Ground Ivy	Glechoma hederaceae

	Mannagrass	Glyceria canadensis
	Gratiola	Gratiola aurea
	Woodland Sunflower	Helianthus divaricatus
	Giant Hogweed	Heracleum mantegazzianum [i]
	Hawkweed	Hieracium sp.
	Canadian St.John's-wort	Hypericum canadense
*	Common St. Johnswort	Hypericum perforatum
*	Jewelweed	Impatiens capensis
	Yellow Flag	Iris pseudoacorus
	Blue Flag	Iris versicolor
	Canada Rush	Juncus canadensis
	Soft Rush	Juncus effusus
*	Bayonet Rush	Juncus militaris
	Rushes	Juncus sp.
	Rice Cutgrass	Leersia oryzoides
	Duckweed	Lemna sp.
	Field Pepperweed	Lepidium campestre
	Tiger Lily	Lilium canadense [p]
	Butter-N-Eggs	Linaria vulgaris
	Rye Grass	Lolium sp.
	Bushy Seedbox	Ludwigia alternifolia
	White Campion	Lychnis alba
	Tree Club Moss	Lycopodium obscurum [p]
	Club Moss	Lycopodium sp.
	Bugleweed	Lycopus virginicus
	Whorled Loosestrife	Lysimachia quadrifolia
	Purple Loosestrife	Lythrum salicaria
	Tufted Loosestrife	Lythrum thrysiflora
	Canada Mayflower	Maianthemum canadense
	Indian Cucumber Root	Medeola virginiana
	Japanese Stilt Grass	Microstegium vimineum [i]
	Chinese Silver Grass, Eulalia	Miscanthus sinensis [i]
	Indian Pipe	Monontropa uniflora
	Milfoil	Myriophyllum sp.
	Naiad	Najas flexilis
	Yellow Pond Lily	Nuphar luteum
	White Waterlily	Nymphaea odorata
	Evening Primrose	Oenethera biennis
*	Sensitive Fern	Onoclea sensibilis
	Sweet Cicely	Osmorhiza claytoni
*	Cinnamon Fern	Osmunda cinnamomea [p]
	Royal Fern	Osmunda regalis [p]
	Wood Sorrel	Oxalis sp.
	Pachysandra	Pachysandra terminalis
	Panic Grass	Panicum sp
	Arrowleaf	Peltandra virginica
	Canary Grass	Phalaris arundinacea
	Timothy	Phleum pratense
*	Common Reed	Phragmites australis [i]
*	Pokeweed	Phytolacca americana

	Coolwort	Pilea pumila
	Plantain	Plantago sp
	Soloman's Seal	Polygonatum biflorum
*	Smartweed Species	Polygonum sp.
	Water Smartweed	Polygonum amphibium
	Nodding Smartweed	Polygonum lapathifolium
	Pink Smartweed	Polygonum pensylvanicum
	Virginia Polyploid Fern	Polyploidium virginianum[p]
	Christmas Fern	Polystichum acrostichoides [p]
	Hair Cap Moss	Polytrichium sp.
	Pondweed	Potamogeton perfoliatus
	Mock or Indian strawberry	Potentilla indica
	Cinquefoils	Potentilla spp.
	Bald Rush	Psilocarya scirpoides[r]
	Bracken Fern	Pteridium aquilinum
	Shinleaf	Pyrola sp.
	Common Buttercup	Ranunculus acris
	Lesser Celandine	Ranunculus ficaria [i]
	Horned Rush	Rhynchospora macrostachya
	Black-Eyed Susan	Rudbeckia hirta
	Dock	Rumex crispus
	Bouncing Bet	Saponaria officinalis
	Pitcher Plant	Sarracenia purpurea
	Hard-Stem Bulrush	Scirpus acutus
	Wool Grass	Scirpus cyperinus.
	Common Three-Square	Scirpus pungens
	Soft-Stem Bulrush	Scirpus validus
	Nutrush	Scleria reticularis [r]
	Skullcap	Scutellaria galericulata
	Green Foxtail	Setaria viridis
	False Soloman's Seal	Smilacina racemosa
	Nightshade	Solanum sp.
*	Goldenrod	Solidago sp.
	Bur-Reed	Sparganium eurycarpum
	Sphagum Moss	Sphagnum sp.
	Skunk Cabbage	Symplocarpus foetidus [p]
	Common Dandelion	Taraxacum officinale
	New York Fern	Thelypteris novaboracensis [p]
	Marsh Fern	Thelypteris thelypteroides [p]
	Virginia Knotweed	Tovara virginina
	Clover	Trifolium sp.
*	Trillium	Trillium sp.
	Cattails	Typha latifolia
	Bladderwort	Utricularia sp.
*	Common Mullein	Verbascum thapsus
	Cow Vetch	Vicia cracca
*	Spring Vetch	Vicia satvia
	Sweet Violet	Viola blanda
	Cocklebur	Xanthium chinense
	Large Yellow-Eyed Grass	Xyris smalliana

Wild Rice	Zizania aquatica
Water Starwort	Zosterella dubia

* Species identified on site during field visits by NPV Staff.
[e] NYS endangered species
[i] NYS invasive species (no legal status)
[p] NYS exploitably vulnerable protected plant

Wildlife

Site inspections were performed on December 11, 2016, June 9, 2016, July 29, 2016 and June 15, 2018 by NP&V staff. Relatively few wildlife species other than song birds were observed on site, although it is expected that the woodland and terrestrial cultural habitats on the property should support a number of wildlife species common to suburban habitats, particularly those species that are more tolerant of human activity. Species that avoid humans and/or those species that are sensitive to development are less likely to inhabit the site. The following paragraphs describe the wildlife observed or expected on site. Further detail regarding potential wildlife on site and adaptability to a change in habitat is provided in **Appendix N-2**.

Birds- Avian species which might be expected on the property include a variety of woodpeckers, wrens, titmice, nuthatches, thrushes, creepers, flycatchers, swallows, warblers, corvids, thrashers, orioles and blackbirds, doves, starling, grosbeaks, finches, towhees and sparrows. During the warmer months, a variety of warblers may also migrate into the area. Owls and raptors may use the site for hunting and limited numbers may breed in the surrounding areas. The subject site is not expected to be critical habitat for any avian species utilizing the site.

During the site visits, northern cardinals, blue jays, mourning doves and mocking birds were all seen or heard on site. In order to provide a more detailed representation of the avian species potentially present on site, the NYS Breeding Bird Atlas was reviewed to obtain data from the 2000-2005 Breeding Bird Survey for the census block encompassing the subject parcel (**Appendix N-3)**. 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. No unique species or species of special concern are expected given the surrounding site uses. **Table 2-13** identifies the bird species either identified or expected to use the site.

Table 2-13
BIRD SPECIES

Cooper's Hawk	Accipiter cooperii [s]
Sharp-Shinned Hawk	Accipiter striatus [s]
Spotted Sandpiper	Actitus macularia
Red-Winged Blackbird	Agelaius phoeniceus
Wood Duck	Aix sponsa
Seaside Sparrow	Ammodramus maritimus
American Widgeon	Anas americana
Green-Winged Teal	Anas crecca
Mallard	Anas platyrhynchos
American Black Duck	Anas rubripes
Gadwall	Anas strepera

*	Great Blue Heron	Ardea Herodias
	Ruddy Turnstone	Arenaria interpres
	Short-Eared Owl	Asio flammeus
	Long-Eared Owl	Asio otus
	Lesser Scaup	Aythya affinis
	Ring-Necked Duck	Aythya collaris
	Greater Scaup	Aythya marila
	Canvasback	Aythya valisineria
	Cedar Waxwing	Bombycilla cedrorum
	Ruffed Grouse	Bonasa umbellus
*	Canada Goose	Branta canadensis
	Great-Horned Owl	Bubo virginianus
	Red-Tailed Hawk	Buteo jamaicensis
	Broad-Winged Hawk	Buteo platypterus
	Green Heron	Butorides striatus
	Sanderling	Calidris alba
	Least Sandpiper	Calidris minutilla
	Semipalmated Sandpiper	Calidris pusilla
	Whip-Poor-Will	Caprimulgus vociferous
*	Northern Cardinal	Cardinalis cardinalis
	American Goldfinch	Carduelis tristis
	House Finch	Carpodacus mexicanus
*	Great Egret	Casmerodius albus
	Veery	Catharus fuscescens
	Hermit Thrush	Catharus guttatus
	Willet	Catoptrophorus semipalmatus
	Brown Creeper	Certhia familiaris
	Chimney Swift	Chaetura pelagica
	Piping Plover	Charadrius melodus
	Semipalmated Plover	Charadrius semipalmatus
	Yellow-Billed Cuckoo	Coccyzus americanus
	Black-Billed Cuckoo	Coccyzus erythropthalmus
*	Northern Flicker	Colaptus auratus
	Rock Dove	Columba livia
*	Eastern Wood-Peewee	Contopus virens
*	American Crow	Corvus brachyrhynchos
	Fish Crow	Corvus ossifragus
*	Blue Jay	Cyanocitta cristata
	Mute Swan	Cygnus olor
	Black-Throated Blue Warbler	Dendroica caerulescens
	Chestnut-Sided Warbler	Dendroica pensylvanica
*	Yellow Warbler	Dendroica petechia
*	Gray Catbird	Dumetella carolinensis
	Little-Blue Heron	Egretta caerulea
	Acadian Flycatcher	Empidonax virescens
	Merlin	Falco columbarius
	American Kestrel	Falco sparverius
	American Coot	Fulica americana
	Common Loon	Gavia immer
	Red-Throated Loon	Gavia stellata

	Common Yellowthroat	Geothlypis trichas
	American Oystercatcher	Haematopus palliatus
*	Barn Swallow	Hirundo rustica
	Wood Thrush	Hylocichla mustelina
	Northern Oriole	Icterus galbula
	Northern (Dark-Eyed) Junco	Junco hyemalis
	Herring Gull	Larus argentatus
	Ring-Billed Gull	Larus delawarensis
	Great-Black-Backed Gull	Larus marinus
	Bonaparte's Gull	Larus philadelphia
*	Laughing Gull	Leucophaeus atricilla
	Short-Billed Dowitcher	Limnodromus griseus
	Hooded Merganser	Lophodytes cucullatus
	Belted Kingfisher	Megaceryle alcyon
	Red-Bellied Woodpecker	Melanerpes carolinus
	Wild Turkey	Meleagris gallopavo
	Song Sparrow	Melospiza melodia
	Red-Breasted Merganser	Mergus serrator
*	Northern Mockingbird	Mimus polyglottos
	Black-And-White Warbler	Mniotilta varia
	Brown-Headed Cowbird	Molothrus ater
	Great-Crested Flycatcher	Myiarchus crinitus
	Yellow-Crowned Night-Heron	Nycticorax violaceus
	Eastern screech owl	Otus asio
*	Osprey	Pandion haliaetus
	Black Capped Chickadee	Parus atricapillus
	Tufted Titmouse	Parus bicolor
	House Sparrow	Passer domesticus
	Savannah Sparrow	Passerculus sandwichensis
	Fox Sparrow	Passerella iliaca
	Rose-Breasted Grosbeak	Pheucticus ludovicianus
	American Woodcock	Philhela minor
	Downy Woodpecker	Picoides pubescens
	Hairy Woodpecker	Picoides villosus
	Rufous-Sided Towhee	Pipilo erythrophthalmus
	Eastern Towhee	Pipilo erythropthalmus
	Scarlet Tanager	Piranga olivacea
	Black-Bellied Plover	Pluvialis squatarola
	Horned Grebe	Podiceps auritus
	Pied-Billed Grebe	Podilymbus podiceps
	Blue-Grey Gnatcatcher	Polioptila caerulea
	Purple Martin	Progne subis
*	Common Grackle	Quiscalus quiscula
	Ruby-Crowned Kinglet	Regulus calendula
	Golden-Crowned Kinglet	Regulus satrapa
	Black Skimmer	Rynchops niger
	Eastern Phoebe	Sayornis phoebe
	Ovenbird	Seiurus aurocapilla
	American Redstart	Setophaga ruticilla
	White-Breasted Nuthatch	Sitta carolinensis

	Yellow-Bellied Sapsucker	Sphyrapicus varius
	Chipping Sparrow	Spizella passerina
	Rough-Winged Swallow	Stelgidopteryx ruficollis
	Least Tern	Sterna antillarum
	Roseate Tern	Sterna dougallii
	Common Tern	Sterna hirundo
*	European Starling	Sturnus vulgaris
	Tree Swallow	Tachycineta bicolor
	Carolina Wren	Thryothorus ludovicianus
	Brown Thrasher	Toxostoma rufum
	Lesser Yellowlegs	Triniga flavipes
	House Wren	Troglodytes aedon
*	American Robin	Turdus migratorius
	Eastern kingbird	Tyrannus tyrannus
	Blue-Winged Warbler	Vermivora pinus
	Yellow Throated Vireo	Vireo flavifrons
	White-Eyed Vireo	Vireo griseus
	Red-Eyed Vireo	Vireo olivaceus
*	Mourning Dove	Zenaida macroura
	White-Throated Sparrow	Zonotrichia albicollis

[s] special concern species
*species observed by NP&V staff during field visits.

Mammals - The habitats found on the proposed project site are expected to support a number of mammal species. Small rodents and insectivores such as mice, shrews and voles are expected to be the most abundant mammals, but the property and surrounding area should also support larger mammals. White-tailed deer and the eastern cottontail rabbit were observed on the subject site.

Table 2-14 is a list of the mammal species that are expected to occur on the property because of existing conditions on-site and in the surrounding area. This list is not meant to be all-inclusive but is intended to provide a list of the most common species.

Table 2-14
MAMMAL SPECIES

Short-Tailed Shrew	Blarina breuicauda
Virginia Opossum	Didelphis virginiana
Big-Brown Bat	Eptesicus fuscus
Southern-Flying Squirrel	Glaucimys volans
Silver-Haired Bat	Lasionycteris noctivagans
Red Bat	Lasiurus borealis
Woodchuck	Marmota monax
Striped Skunk	Mephitis mephitis
Meadow Vole	Microtus pennsylvanicus
Pine Vole	Microtus pinetorum
House Mouse	Mus musculus
Long-Tailed Weasel	Mustela frenata
Mink	Mustela vison
Keen's Bat	Myotis keenii

	Little-Brown Bat	Myotis lucifugus
*	White-Tailed Deer	Odocoileus virginianus
	Muskrat	Ondarta zibethicus
	White-Footed Mouse	Peromyscus leucopus
	Eastern Pipistrelle	Pipistrellus subflavus
	Racoon	Procyon lotor
	Norway Rat	Rattus norvegicus
	Eastern Mole	Scalopus aquaticus
*	Eastern Gray Squirrel	Sciurus carolinensis
	Masked Shrew	Sorex cinereus
*	Eastern Cottontail	Sylvilagus floridanus
	Eastern Chipmunk	Tamis striatus
	Red Fox	Vulpes vulpes
	Meadow-Jumping Mouse	Zapus hudsonicus

* Species observed on site by NP&V staff during field visits.

Amphibians and Reptiles - The site may support a limited number of terrestrial and wetland species. A snapping turtle and multiple painted turtles were encountered during site visits. Two toads are common on Long Island in upland habitats. The spadefoot toad occurs in woods, shrublands and fields with dry, sandy loam soils, and breeds in temporary pools **(Behler and King, 1979)**. The Fowler's toad prefers sandy areas near marshes, irrigation ditches and temporary pools. These species are the most likely amphibians to be present on the site. Salamanders and frogs may also potentially utilize the pond on the property, although no salamanders were visually observed during the site visits; however, an American bullfrog was seen during a site visit. Surveys consisted of traversing the perimeter of the wetlands and water features as feasible. Species that were not observed during these surveys, but would be expected based on-site habitat are included in the species list in order to fully account for potential impacts to observed and expected amphibians and reptiles.

Several species of reptiles might potentially be found on the property, including the eastern garter snake, and eastern milk snake (**Wright, 1957**). All of these species are terrestrial species found in a variety of habitats. The garter snake is relatively tolerant of human activity, but prefers moist soils and would be most likely to be present near the recharge basin to the northwest and in the vicinity of the on-site pond. The milk snake is found in soils of varying moisture content. These snakes are all colubrid snakes, which feed on whole animals such as worms, insects or small amphibians (**Behler and King, 1979**). The larger milk snake will also take small rodents and birds (**Behler and King, 1979**).

The only turtle species common to terrestrial habitats on Long Island (although listed in New York State as a species of special concern) is the eastern box turtle, which requires very little water (**Obst, undated**). The species is found in a variety of habitats, and prefers moist woodlands. The box turtle feeds primarily on slugs, earthworms, wild strawberries and mushrooms (**Behler and King, 1979**). The similar wood turtle utilizes both aquatic and terrestrial habitats, but is restricted to eastern Long Island (**Conant and Collins, 1991**). A snapping turtle as well as painted turtles were observed on the subject property during site visits.

Table 2-15 presents a list of reptile species that might occur on site given the existing habitats. This list is not intended to be all-inclusive but provides a detailed representation of what is or is likely to be found on site. In addition, further information regarding these species can be found in **Appendix N-2.**

Table 2-15
REPTILE AND AMPHIBIAN SPECIES

Amphibians	
Common Gray Treefrog	*Hyla versicolor*
Eastern Spadefoot Toad	*Scaphiopus holbrooki [s]*
Fowler's Toad	*Bufo woodhousei fowleri*
*American Bullfrog	*Rana catesbeiana*
Green Frog	*Rana clamitans*
Marbled Salamander	*Ambystoma opacum [s]*
Red-Backed Salamander	*Plethodon cinerus cinerus*
Red-Spotted Newt	*Notophthalmus viridescens*
Spotted Salamander	*Ambystoma maculatum*
Spring Peeper	*Hyla crucifer*
Wood Frog	*Rana sylvatica*
Reptiles	
*Common Snapping Turtle	*Chelydra serpentina*
Eastern Box Turtle	*Terrepene Carolina [s]*
Eastern Garter Snake	*Thamnophis sirtalis*
Eastern Milk Snake	*Lampropettis d. triangulum*
Eastern Ribbon Snake	*Thamnophis s. sauritus*
Northern Ringneck Snake	*Diadophis punctatus*
Northern Water Snake	*Natrix sipedon sipedon*
*Painted Turtle	*Chrysemys picta*
Stink Pot	*Sternotherus odoratue*

[s] NYSDEC special concern species
* Species observed on site by NP&V staff

Rare and Endangered Species Potential

No rare, threatened or endangered plants were observed on site. The N.Y. Natural Heritage Program (ECL 9-1503) was contacted to determine if there is any record of rare plants, habitats or wildlife in the vicinity. The Natural Heritage Program has one record of known occurrences of rare or state-listed plants or significant natural communities on or in the vicinity of the subject site. High Salt Marsh, which is identified as a significant natural community or other significant habitats was identified as being located within the vicinity of the project site. The identified High Salt Marsh is Crab Meadow Marsh and is approximately 840 feet to the west of the project site. No High Salt Marsh was identified on site. The Natural Heritage Program also reported the presence of three endangered or threatened species within 0.5 miles of the project site; Piping Plover, Common Tern and Least Tern. All three species are shoreline species whose preferred habitat are sparsely vegetated beaches. While this habitat is present along the norther edge of the property, the proposed project areas are located at least 500 feet south of the potentially present habitat. Correspondence with the Natural Heritage Program is contained in **Appendix N-4**.

No endangered species were encountered during NP&V's inspections of the property; however; the Coastal Oak-Hickory habitat identified in the northern parcel represents potential summer roosting habitat for the Northern-long eared bats (*Myotis septentrionalis*).

2.5.2 Anticipated Impacts

Vegetation

The subject site is or the most part, the location of an existing golf course and existing developed lands. It is noted that the majority of the proposed development will occur in areas which were previously cleared for landscaping and now consist of Successional Southern Hardwood forest, which is of less ecological value as it is currently impacted by the predominance of invasive species found within this habitat. Development has been carefully planned to protect the on-site wetlands and a 100-foot buffer area, and to situate development in existing cleared and/or previously disturbed areas.

The impacts to the ecological resources of a 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 majority of the subject site is currently mowed with the exception of approximately 43.02 acres of natural area including the habitats listed earlier and 13.08 acres of mainly unvegetated areas which include the ponds, cart paths, gold bunkers and buildings. The changes in habitat quantities for the overall property are listed in **Table 2-16**. The planned development intends to ultimately provide approximately 4.07% of Coastal Oak Hickory Forest, 4.97% of Successional Southern Hardwood Forest, 1.61% of Maritime Bluff, and 0.32% or 0.49 acres of Red maple-hardwood swamp within the project site. As a result, the site will continue to provide some natural habitat for wildlife, though the removal of the existing woodland vegetation on the property is expected to result in a change in the characteristics of site habitat.

An estimate of coverage proposed in the Overall Plan was used for the purpose of quantifying habitat changes is provided in **Tables 2-16** below.

According to the Tree Survey (see **Appendix B-4**), one significant tree, a 55-inch diameter at breast height (dbh), Fagus sylvatica purpurea, located at the rear (South) of the existing clubhouse is to remain during development. No other unique or significant trees were identified within development areas of the site.

Wildlife

The majority of habitat within the development area is dominated by Successional Southern Hardwood forest. The property is not expected to act as a refuge for rare native flora or fauna, but does contain a small population of local birds and mammals, such as chipmunks and eastern cottontails. The proposed project will favor those wildlife species that prefer edge and suburban habitats and those that are 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 particular mobile species of wildlife (particularly avian and rodent species) will migrate to suitable habitat adjacent or near the site as a result of development.

A total of 21.23 acres of natural vegetation are proposed to remain within the project site. Although the proposed project will provide less habitat than the existing natural area, the development areas are expected to provide some habitat for some species to remain that are tolerant and/or dependent on human activity and are adapted to surviving in multiple habitat types.

Table 2-16
HABITAT QUANTITIES
Existing and Proposed Conditions – Overall Site

Coverage Type	Existing Conditions		Proposed Project		Change (Acres)
	Coverage (Acres)	Percent	Coverage (Acres)	Percent	
Mowed	**98.32**	**63.61**	**103.90**	**67.22**	3.60
- Mowed with trees	9.70	6.28	6.28	4.06	-2.21
- Greens (Fertilized)	2.47	1.60	2.35	1.52	-0.08
- Fairways (Fertilized)	23.87	15.44	20.62	13.34	-2.10
- Tees (Fertilized)	1.77	1.15	1.09	0.71	-0.44
- Rough	60.51	39.15	73.55	47.59	8.44
Natural	**43.02**	**27.83**	**21.23**	**13.74**	-14.10
- Coastal Oak – Hickory Forest	10.65	6.89	6.29	4.07	-2.82
- Successional Southern Hardwood	25.12	16.25	7.69	4.97	-11.28
- Maritime Bluff	2.49	1.61	2.49	1.61	0.00
- Red Maple Swamp (Wetlands)	0.50	0.32	0.50	0.32	0.00
- Beach and Tidal Waters	4.26	2.75	4.26	2.75	0.00
Croplands / Row Crops	**0.14**	**0.09**	**0.00**	**0.00**	-0.09
Ponds	**3.20**	**2.07**	**14.61**	**9.45**	7.38
Other Landscapes	**0.33**	**0.21**	**0.24**	**0.16**	-0.06
Unvegetated	**1.91**	**1.24**	**1.09**	**0.71**	-0.53
- Bunkers/ Sand Pits	0.62	0.40	1.09	0.71	0.31
- Clearings	1.29	0.83	0.00	0.00	-0.83
Cartpaths/Roads/Parking Lots	**6.96**	**4.50**	**8.38**	**5.42**	0.92
Buildings	**0.68**	**0.44**	**5.11**	**3.31**	2.87
Total	**154.56**	100.00	154.56	100.00	0.00

In the short term, given the existing golf course habitat, retention of the 100-foot wetland buffer, and retention of other woodlands and naturalized areas on the site, it is not expected that significant wildlife displacement will occur beyond the site boundaries. Some adjacent lands may experience an increase in the abundance of some wildlife populations due to displacement of individuals by the construction phase of the proposed project. Mobile species and particularly large mammals such as fox and deer would be expected to find suitable habitat south of the site where larger areas of natural open space currently remain. Ultimately, competition with both conspecifics and other species already utilizing the resources of the surrounding lands would be expected to result in a

net decrease in population size for most species. While a significant portion of the existing habitat will remain, site specific populations may decrease from the loss of interior woodland habitat/fragmentation of large contiguous which certain species prefer. It is anticipated that species that prefer edge habitat will be prevalent within the proposed development.

Rare and Endangered Species Potential

As previously stated, the NY Natural Heritage Program identified four records of known occurrences of rare or state-listed plants, significant natural communities or other significant habitats on or in the vicinity of the subject site. As described in **Section 2.5.1** above, the high Salt Marsh community does not occur on the subject site and the three listed avian species would inhabit an area of the subject site that is remaining untouched in the proposed development. As such, no impacts to rare, threatened or endangered plant species or significant natural communities 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. Exploitably vulnerable plants identified on site include American holly, northern bayberry, and cinnamon fern. The presence of these plants would not preclude development of the site, as a property owner is permitted to remove exploitably vulnerable plant species from a site.

While no rare or endangered wildlife species are expected on the site given the current conditions of the habitats present, the Coastal Oak-Hickory habitat located to the northeast of the project site presents a potential summer roosting habitat for the Northern- Long Eared Bat. According to the NYNHP program website[5], these bats are associated with mature interior forests and tend to avoid woodlands with significant edge habitat. As the Coastal Oak hickory area has been highly diminished as a result of the historic clearing of the site and contains a large percentage of edge habitat for the patch size, the presence of Northern-long Eared Bat in the subject property is lessened. No species were identified during site inspections performed by NP&V staff; however, precautions can be taken to limit tree-clearing to winter months when the species is not present on Long Island. The marbled salamander, eastern box turtle and eastern spadefoot toad are the only other species potentially expected on site which 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 Section 11-0535. This category is presented primarily to enhance public awareness of these species that bear additional attention (NYSDEC, Endangered Species Unit).

2.5.3 Proposed Mitigation

- The loss of Successional Southern Hardwood forest and Coastal Oak Hickory habitat on the property will be partially mitigated by the proposed retention of 6.29 acres of Coastal Oak-Hickory forest within the subject site and 7.69 acres of Successional Southern Hardwood forest within the subject site.

[5] New York Natural Heritage Program. 2017. Online Conservation Guide for *Myotis septentrionalis*. Available from: http://www.acris.nynhp.org/guide.php?id=7407. Accessed March 6th, 2018.

- Disturbance will be minimized to the maximum extent practicable, including delineating tree-clearing limits at the site prior to construction in order to avoid inadvertent clearing.
- Tree clearing will be limited to the period August 1 through May 31, and will avoid the period June 1 through July 31.
- No known invasive plant species will be utilized, including those species specifically those species listed in Suffolk County Local Law 27-2009 and 6 NYCRR Part 575.
- The applicant will employ certified rodent control professionals to survey the site prior to construction. If necessary, rodent control shall be part of the construction project for mitigating impacts from displaced or colonizing rodents to existing surrounding infrastructure.
- Native plant species that provide food and shelter to wildlife will be utilized in some of the landscaped areas. Foundation plantings to be native and drought tolerant. See Sheet 31 (LP-103) of the plan set for proposed tree schedule and hydroseeding mix.
- The Tree Survey, as provided in **Appendix B-4**, indicates existing trees on the site. This provides a tree preservation plan for those existing trees located out of development areas. The tree preservation plan contemplates retaining existing trees north of the CEHA line and within 100' of the freshwater wetlands. Trees within the golf course will remain subject to ongoing golf course maintenance practices. Tree planting pursuant to the Sheets 29-31 of the N&P site plan will occur and will act as part of the long-term tree preservation for the property.
- The removal of aquatic vegetation is not necessary for this site. Current ponds to be altered by the proposed project are currently unvegetated.

SECTION 3.0

HUMAN ENVIRONMENTAL RESOURCES

3.0 HUMAN ENVIRONMENTAL RESOURCES

3.1 Land Use, Zoning and Plans

3.1.1 Existing Conditions

Land Use

The Indian Hills Country Club is a notable feature in the area as it has been an established golf course since it opened in 1961. The subject property consists of an irregularly-shaped property that presently contains a landscaped 18-hole golf course with a driving range and associated country club facilities and several parcels with residential homes south and west of the existing golf course. There is an existing clubhouse and pro shop south of Breeze Hill Road and a maintenance facility south of Thornton Drive. There are several small freshwater ponds within the golf course, existing vegetation and the course borders an estuarine and marine wetland to the north (Long Island Sound).

More specifically, the 154.56-acre property is comprised of seven (7) tax parcels located on the north and south sides of Breeze Hill Road, west of Fresh Pond Road and east of Makamah Road in the hamlet of Fort Salonga, County of Suffolk, New York. The physical address of the property is 21 Breeze Hill Road and its Suffolk County tax lot designations are: 0400-014-04-1 & 2 and 0400-015-01-3.3, 11, 12, 19 & part of 22.

The structures currently present on the subject property include: six (6) single family homes, three (3) sheds, the main clubhouse, a pro shop,[1] a halfway house, a barn utilized for storage, an equipment shed, a fertilizer and spray rig storage structure, and a maintenance garage with associated offices.

The main clubhouse, which consists of a two-story building with a painted concrete and wood shingle exterior, was originally constructed in 1896 according to Bob Cornelius, the maintenance manager of the country club. Several additions were added to the original structure over the years to form its current configuration. This building contains locker rooms, a kitchen, dining areas, restrooms, an event hall, a card room, office space, and storage areas. Events services for wedding receptions, bridal and baby showers, communions, bar/bat-mitzvahs and other celebrations and business meetings are available for both members and non-members.

The pro shop consists of a two-story building with a wood shingle exterior. The building contains storage areas for member's golf bags and golf carts in the basement, a retail pro shop on the first floor, and office space on the second floor.

The halfway house consists of a very small, one-story concrete structure with an asphalt shingle roof. The building contains a small storage area, a small kitchen area, and a restroom.

[1] This is a 2-story building that includes the pro shop, storage and auxiliary spaces.

The storage barn located south of the main clubhouse consists of a one-story structure with a vinyl-sided exterior. The structure is utilized for the storage of electric golf carts in addition to furniture. There is a large paved parking area between the storage barn and the clubhouse.

The maintenance buildings include an equipment shed, a fertilizer and spray rig storage structure, and a repair shop with associated offices; these buildings are located in the northeastern portion of the subject property, adjoined by a common paved parking area.

A photo log showing features that currently exist on and adjacent to the project site is provided in **Appendix L**. Photographs depict the existing land use of the subject site as well as the character of the site.

The subject property is located within a low density suburban residential neighborhood in the Hamlet of Fort Salonga, Town of Huntington, Suffolk County, NY. Land surrounding the site is mostly developed with single-family residential lots, zoned R-40 (minimum one-acre). Two lots are residential vacant land (Section 14, Block 4, Lots 10.5 & 11) or Suffolk County Parkland (east side of Fresh Pond Road; Section 14, Block 7, Lots 1.6 & 2). Land farther to the east includes Fresh Pond, located in both the Towns of Huntington and Smithtown and designated as Critical Environmental Area (Fresh Pond Greenbelt CEA, designated by Suffolk County in 1988). Land farther to the north and west is Town Parkland, Geisslers Beach Park and the Crab Meadow Wetlands and Public Golf Course. Land farther to the southwest is Makamah County Nature Preserve.

The Crab Meadow Drainage Basin as depicted in the Town of Huntington Horizons 2030: Comprehensive Plan Update, Figure 3.1 Environmental Resources, encompasses the subject site. All of the municipal lands in the Crab Meadow area (Crab Meadow Beach, Jerome Ambro Memorial Wetlands Preserve, and Crab Meadow Golf Course) are under the jurisdiction of the Town Board of the Town of Huntington and are recognized as parkland in the Town Comprehensive Plan (1993) and carried as such on Section VIII of the Town Assessment Roll.

Figure 3-1 is an aerial photograph with labels indicating land use in the vicinity of the project site. This map provides an illustration of current recreational/golf land use at the subject site as well as the uses in the surrounding area.

Existing land use at the subject site involves golf club members and their use of the golf course and clubhouse. The clubhouse is available for special events and Indian Hills Country Club is used for "outings" by various community groups for fundraising and social gatherings. The current membership is 390 members; however, not all members use the course or clubhouse at any one time. There is a summer staff of approximate 20. The maximum number of persons that may be on the site at one time would occur during an event/outing. The staff would be the same, and the number of players based on 8 per hole is in the range of 144. Additional attendees may involve strictly dinner guests which could account for another 60 participants. Assuming staff, golfers and dinner guests, the maximum number of individuals that may use the property at any one time is in the range of 224 persons.

Under current conditions, the peak season is April through October, when members/guests use the club. The off-season is November through March, with January, February and March being the months of minimal usage of the club. Some changes in the use of the site will occur as a result of the project; this is discussed in **Section 3.1.2**.

Zoning

The Town of Huntington relies primarily on its duly adopted Zoning Code (Chapter 198, "Zoning") and its Official Zoning Map to manage growth, guide land development activities, promote land use compatibility and suitable patterns of development, provide housing and economic development opportunities, and protect the environment. The zoning pattern of the area is shown on the Zoning Map provided (**Figure 3-2**). Pursuant to a Huntington Town Planning Board Resolution dated July 26, 2017 (see **Appendix E**), under the existing R-40 Residence zoning, and Town Code, Article X The Steep Slopes Conservation Law, 99 individual single-family lots can be accommodated on the property while maintaining the existing clubhouse and pro shop.

The Town adopted a Comprehensive Plan/Master Plan document: Horizons 2020: Huntington Comprehensive Plan Update [hereafter the: *Comprehensive Plan*] on December 9, 2008 for the development of the Town in the years beyond 2020 based on extensive citizen input. As expressed in the document's Executive Summary 'It (i.e,. the Comprehensive Plan) provides the means to realize the improvement and future growth of the Town through clear and consistent goals, policies, and strategies to achieve expressed citizens values and aspirations for our community'. The Land Use Element includes a Generalized Future Land Use Map for use in conjunction with the policies and strategies to guide Town decision-making on land use issues. Land Use Map was prepared to illustrate the desired general pattern of future land use in Huntington. The Generalized Future Land Use Map (Figure 6.3) identifies the desired general pattern of future land use in Huntington for application of the policies and strategies contained in the Land Use Element and other elements of the Comprehensive Plan. It does not replace the Town's current Zoning Map, but rather provides a framework for identifying zoning changes needed to implement the plan policies and strategies. The Generalized Future Land Use Map **(Figure 3-3)** identifies the subject site for use as Parks, Recreation & Conservation Land. This category includes both public parks and conservation areas and lands used for outdoor recreation, which in some cases may not be permanently protected as open space.

The project site is zoned Residential "R-40" which allows single-family residential development on lots of 43,560 SF or more. Adjacent land to the south, east, and west is also zoned R-40, with nearly all privately-owned land currently developed for residential use.

The R-40 Residential zoning district is primarily a single-family residential zone; however, a few additional land uses are permitted as-of-right. The following is a list of permissible land uses in the Town's R-40 zoning district:

1. Single-family dwellings.
2. Farm, nursery, truck garden, country estate.
3. Churches, temples, parish houses, convents, monasteries.
4. Public schools.

5. Private elementary and secondary schools providing full-time day instruction and having a course of study approved by the New York State Department of Education, colleges and universities, provided that the plot shall comprise at least eight (8) acres and that the building and site development plans have been first submitted to and approved by the Planning Board as providing adequate parking, traffic control, setbacks and recreation areas for the proposed use. The Planning Board may make any reasonable modifications in such plans to promote safety, health and general welfare of the community, preserve the general character of the neighborhood and conserve property values, and no building permit shall be issued until such plans have been approved.
6. Library, museum or art gallery conducted to serve primarily the residents of the Town and operated by a municipal agency or by a nonprofit agency organized or chartered locally for the purpose.
7. Town park, playground, athletic field, beach, bathhouse, boathouse, marina or other Town recreational use.
8. Municipal parking field.
9. Fire station.
10. Municipal water supply reservoir, tank, standpipe, pumping station or filter bed, provided any tank or standpipe shall be set back from all lot lines a distance equal to the height of the structure.

Town Code Section 198-110 provides the Zoning Board of Appeals with the authorization to issue special use permits for the establishment of a golf course in a residence district. The Indian Hills Country Club operates under an existing Special Use Permit.

Land Use Plans

Multiple land use plans are reviewed herein to establish the planning documents that would guide use of the subject site. These include both land use planning and resource related documents in order to identify important and recognized resources of the site and area.

Horizons 2020: Huntington Comprehensive Plan Update (December 2008)

The proposed use of the project site would be guided by several action agenda items and goals identified in the Comprehensive Plan and is divided into four themes:

1. Community Character
2. Quality of Life
3. Sustainable Community Structure
4. Responsive Town Government

It is the intention of the Town Board to implement land use policies set forth in the Huntington Comprehensive Plan with specific reference to the conservation and preservation of open space and the support of private recreational endeavors.

The following action agenda items from the Vision Statement are relevant to the proposed project:

1. We honor our rich heritage by protecting and restoring our historic buildings, districts and landmarks; and by interpreting Huntington's history for present and future generations.
2. We preserve and enhance the Town's unique aesthetic character and identify by setting high standards for quality, by protecting our neighborhoods and villages from incompatible influences, and by continually enhancing our scenic corridors, open space network, public access to the waterfront, and civic facilities and landmarks.

3. Quality housing, including a broader array of housing choices, is accessible to and affordable for households of different ages, lifestyles and economic means.
4. New development and redevelopment throughout Huntington is carefully managed to protect the character of neighborhoods, villages and other established land use patterns; preserve open space; and set high standards for aesthetic quality.
5. Sustainable water, sewer and stormwater infrastructure systems meet community needs while safeguarding environmental quality and the quality of our drinking water supply.

The Plan classifies the Town's remaining open space resources into five categories, one of which is recreational open space. The Plan states that the continued operation of day camps, golf courses and riding schools should be encouraged and they should be considered key priorities for acquisition by the Town should their continued use be threatened. The Plan contains several policy recommendations in the Environmental Resources and Open Space section that could relate to golf courses and critical recreational resources in Huntington, including the following:

1. Permanently preserve Huntington's unique environmental resources.
2. Permanently protect lands with highly valuable environmental resources through fee simple acquisition, easements or other conservation techniques.
3. Preserve open space within new developments.
4. Require a minimum open space set aside within new developments, together with standards to ensure that open space is meaningful and publicly accessible.
5. Encourage voluntary open space dedications through conservation subdivisions.
6. Investigate use of the Transfer of Development Rights (TDR) program enabled by Town Code to preserve open space.
7. Work with Huntington's private owners of substantial undeveloped property to explore preservation and recreation opportunities.
8. Maintain and promote Huntington's parks and recreational facilities.
9. Establish a new zoning district or districts to reinforce the status and function of Huntington's open space/recreation resources.
10. Develop strategies to meet needs for different types of parks and recreational facilities geographically distributed throughout the Town.

The proposed open space subdivision allows development of the townhomes while preserving the recreational and open space uses of the golf course. As a result, the proposed project will conform to the recommendations of the Comprehensive Plan Update.

Figure 3-3 provides the Generalized Future Land Use for the subject site, as identified in the Comprehensive Plan Update. The site is identified as appropriate for low-density residential development, which is defined as single-family residential with a minimum lot size of 20,000 SF (R-20, R-40, and R-80 zoning districts). It is recognized that existing zoning has a minimum lot size of one (1) acre or 43,560 square feet. Consistent with this policy, the proposed project provides a yield of yield of 0.64 units per acre, less than what would be permitted as-of-right under current zoning if each property were developed independently.

Private Golf Course Moratorium Proposed Planning Options Report (January 2009)
The Report identified parameters that should guide future decision-making for private golf courses, including:

1. Golf is on the upswing with participation projected to rise statewide.
2. The private golf course represents the largest remaining class of underdeveloped open space in the Town.
3. Market pressures and high land valuation in Huntington are not conducive to establishing new golf courses on the few remaining large properties.
4. Existing residential development surrounds the private golf courses at similar or higher density zoning.
5. The loss of any of the private golf courses is likely to affect demand for the Town's two municipal courses.
6. Best environmental management of the private courses should be encouraged to maintain significant natural resources (such as wetlands, woodland cover and steep slopes), biodiversity and quality of recharge contributed to the underlying aquifer system.
7. There is no inherent incentive in the existing residential zoning categories in which the private courses lie to conserve the recreational use or resources.
8. Regional plans and studies recommend that golf courses be rezoned to the zoning classification with the lowest development density.

The Report recommends of the fifteen alternatives posed, there are three options that provide the strongest protections for open space while limiting the impacts on the current landowners. The first is a *Planned Recreational Overlay District*; the second, a *Residential Open Space Cluster Ordinance* and a third was a *Golf Course Incentive District*.

The proposed project results in a Residential Open Space Cluster as recommended in the report to facilitate continued use of private golf courses. The use addresses a significant and sensitive resource in the Town of Huntington and enables addition of compatible amenities. Single-family residential uses that engender outdoor recreational use are encouraged. The proposed project results in complementary residential use of the site, which allows preservation of the golf course. The proposed cluster project and resultant preservation of open space conforms to the intent of preserving private golf courses within the Town.

Environmental Open Space and Park Fund Program (EOSPA)

A 1998 *OASIS (Open Areas Information System) Draft Staff Study* provided a retrospect on what has happened to lands mapped on the 1974 Open Space Index (OSI) from January 1, 1975 to July 31, 1998; the Town's Protected Lands Inventory; and a Proposed 1998 Open Space Index Update. This 1998 study evaluated opportunities where lands that adjoin public parkland may be presented for dedications, such as Indian Hills Golf Course which adjoins the Town's Geissler's Beach. However, the subject site was not recommended for acquisition for open space preservation purposes in the Town of Huntington EOSPA Fund and Land Conservation Progress Report from 1998 program initiation to August 2008.

Town of Huntington Open Space Index (1974)

Based on the September 1974 Open Space Index for the Town of Huntington, the Site is part of a larger 196.9 acre Town designated Open Space Index Parcel (OSI # NE-6 comprising 123.4 acres and NE-9 comprising 73.5 acres) that primarily includes the Site and other properties. These properties are described in the index as landscaped area; land groomed or cleared or otherwise showing development, beach or bay frontage; waterfront property, woodland, forest and second-

growth woodland pond, stream or other surface water, resh or saltwater. Open Space Index recommendations include calls for immediate affirmative action to preserve the property or to conserve its open space value and natural features and explicit decision-making in land use planning by governing agencies. The Open Space Index does not confer any regulatory authority, but provides an inventory of open space that existed in the Town in 1974 when the plan was prepared.

Water and Resource Land Use Plans

Crab Meadow Watershed Hydrology Study, June 2015, Prepared by GEI Consultants, Inc.
The purpose of this study was to perform a preliminary hydrology analysis that characterizes the watershed, describes its flow patterns, and to identify potential flooding impacts to help assess the drivers and stressors to this unique ecosystem with the intent of protecting its vitality through implementation of a community-based Stewardship Plan.

The Crab Meadow Wetlands are designated by the New York State Department of State (NYSDOS) as a Significant Coastal Fish and Wildlife Habitat, since they represent one of the largest tracts (approximately 300 acres) of undeveloped salt marsh on Long Island's north shore. The Crab Meadow Wetlands are recognized by the Long Island Sound Study initiative as a Stewardship Site which seeks to preserve native communities, protect critical habitats for endangered and threatened species, and promote multiple uses balanced with long-term scientific research and education.

The preliminary model in the study provides the Town of Huntington the framework to develop future analyses to improve the accuracy of results to include the following:

- Highway and roadway As-Builts from the Department of Transportation.
- Storm Sewer Network within the Watershed
- Dam Embankment, Spillways, Storage Reservoirs, Levees, and other flood control
- Structures
- Site specific topographic survey data
- Updated LiDAR data
- Current and projected future land use
- Infiltration testing
- Storm Surge
- Climate Change

The study concludes [Limitation of Liability]:

> *This report presents the results of preliminary flood routing for the 2-, 10- and 100-year storm events in the Crab Meadow Watershed. The results are based on engineering judgment and best available data available at the time of the study. The results of this study should only be used to identify potential drainage patterns and hypothetical flooding impacts for various storm events. If any portion of the Crab Meadow Watershed were to experience flooding from a storm event, actual flooding limits, conditions, peak flows, peak velocities, duration and water surface elevations will vary from those presented in this study. Reuse of this study and FLO-2D model for any other purpose, in part or in whole, is at the sole risk of the user.*

This Plan is not complete or currently adopted by the Town Board. The Town's plan for 2019 is to complete the work with the consultant and community and finalize the study and stewardship plan initiated in 2014 (see also **Section 3.1.2**.)

Crab Meadow Watershed Wildlife Environmental Education Manual
The Crab Meadow Watershed is an area of 680 acres located north of Route 25A in Northport, New York. The watershed includes Henry Ingraham Nature Preserve, Fuchs Pond Preserve, Makamah County Park, Crab Meadow Golf Course, Jerome A. Ambro Memorial Wetlands Preserve, Crab Meadow Beach and Kirschbaum Park. A majority of the water from the forests, ponds, marshes and beaches of the Crab Meadow Watershed drains into the Long Island Sound. The manual applies to the public parklands identified above, and would not pertain to the subject site which is a long term active recreational use in the community.

2015 (Revised) Suffolk County Comprehensive Water Resource Management Plan.
Suffolk County has long recognized the importance of managing and protecting its water resources and has developed and implemented drinking water and groundwater management regulations and programs for decades. Water resource management and protection are of utmost importance in Suffolk County, since residents rely upon groundwater as their sole source of drinking water supply. Because groundwater provides stream baseflow and discharges to surrounding coastal waters, the water quality of Suffolk County freshwater streams and marine waters is also directly affected by legislation enacted to protect groundwater and drinking water supplies.

This updated version now incorporates the principles of coastal resiliency, including controlling nutrient inputs to enhance the health of wetlands and eelgrass. The Executive Summary also has a broader ecological perspective on nutrient impacts, addressing harmful algal blooms and shellfish. This fully revised Plan includes updates on water quality-related issues and sea level rise. Working with stakeholders, the County has developed a more focused action plan. The Department of Economic Development and Planning has been a major partner in updating the plan.

Suffolk County has identified priority high density (greater than 5 homes per acre) and medium density (1 to 5 homes per acre) residential subregions within the contributing areas with the following characteristics:

1. With a depth to groundwater of 10 feet or less; and/or
2. Contribute to an area that is listed as a 303(d) impaired water body

Smithtown Bay is not included on the current (2014) NYS Section 303(d) List of Impaired/TMDL Waters. Although it is assessed as an impaired water, it is categorized as an IR Category 4a water that is not listed due to the completion and implementation of the Long Island Nitrogen TMDL. This updated assessment also suggests it may be appropriate to include this waterbody on the next list of pathogens due to the frequency of beach closures (DEC/DOW, BWRM, January 2015).

LIS Comprehensive Conservation and Management Plan (CCMP)

In 1994, the states of Connecticut and New York and the United States Environmental Protection Agency approved the Comprehensive Conservation and Management Plan for Long Island Sound. Developed by the Long Island Sound Study, the Plan identifies the specific commitments and recommendations for actions to improve water quality, protect habitat and living resources, educate and involve the public, improve the long-term understanding of how to manage the Sound, monitor progress, and redirect management efforts. Using the Plan as a blueprint, the Long Island Sound Study has continued to refine and add detail to commitments and priorities, including with the 1996 Long Island Sound Agreement and the 2003 Long Island Sound Agreement.

Five areas were identified as critical to enhancing land planning and use to improve water quality, habitat protection, and public access throughout watershed. Recommendations were developed in each area.

- The impacts from existing development are significant, particularly in urbanized areas, and must be reduced to improve coastal water quality. These areas should be targeted for nonpoint source management, including public education, infrastructure upgrades, spill prevention and response, and flood and erosion control. Also, abandoned or underutilized sites should be a high priority for remediation and reuse.
- The impacts from new development are also significant and must be minimized to prevent further degradation of water quality. Progressive planning and management should ensure the application of best management practices, protect wetlands, minimize land disturbances, improve access, and maintain appropriate water- dependent uses.
- To improve land use decision making that incorporates effective water quality and habitat protection, better information, training, and technical assistance must be available. Training, technical assistance, and financing should be made available to local governments, as well as education for the public, professionals, and trade organizations. This will help develop consistent land use and natural resource information and management practices in the region.
- Conservation of natural resources and open space is vital to the long-term protection of Long Island Sound. Open space preservation and conservation practices must be aggressively pursued. This might be accomplished through a watershed-based planning approach that integrates protection of surface waters with programs and plans that guide growth and development.
- Public access is essential to public use and enjoyment of Long Island Sound, especially since improvements to water quality involve public costs. Public access improvements should be aggressively pursued throughout the watershed using a combination of traditional techniques, such as fee-simple acquisition, and innovative techniques, such as transfer of development rights and tax credits.

Of the 38 classified saline waters in Suffolk County including the Long Island Sound and those that discharge to the Long Island Sound, 19 are identified as impaired according to the NYSDEC's *All Impaired Waters List*. This includes a large portion of the Long Island Sound as well as all of the county's north shore harbors (Huntington Harbor, Centerport Harbor, Northport Harbor, Nissequogue River, Stony Brook Harbor, Port Jefferson Harbor, Mt. Sinai Harbor and Mattituck Creek).

Within the Suffolk County watershed area, nonpoint sources are the major contributors of nutrients and pathogens. Recommendations identified by each of the estuary programs focus on reducing nitrogen loading from sanitary wastewater and fertilization, implementation of best management

practices (BMPS) to improve stormwater quality, and open space preservation to improve water quality and reduce impacts on the ecology of Suffolk County's coastal waters

The proposed project incorporates water quality and resource-based planning and management measures consistent with CCMP's watershed recommendations.

North Shore Embayment Watershed Management Plan (NSEWMP) (2007)
The NSEWMP was an intensive watershed study prepared by Nelson, Pope & Voorhis, LLC for Suffolk County. The plan was prepared to determine the Suffolk County Zone 11 of the Long Island Sound Study and Total Maximum Daily Load (TMDL) limit as well as conformance to the nitrogen reduction goals of the TMDL. The study specifically addressed the north shore of Suffolk County to estimate water quality influence on Lon Island Sound with respect to water quality of embayments (harbors and bays), streams and groundwater; land use and nitrogen pollution loading from point (e.g., sewage treatment plants) and nonpoint sources (e.g. lawn fertilization, pet waste, etc.) and natural resources. The plan established the Long Island Sound Nitrogen Influx Reduction (LISNIR) model that quantified the relative inputs of nitrogen to the Long Island Sound basin using source-based methods. LISNIR refine the relative contributions of point and non-point source nitrogen. It was determined that given the higher nitrogen load from subsurface outflow than previously predicted, the relative nitrogen inputs create a significant challenge to achieving the goal of a 58.5 percent non-point source nitrogen reduction with respect to conformance with the TMDL. The plan further outlined measures to continue nitrogen reduction goals with an emphasis on non-point source contributions. Measures included best management practices point-source (ie., expanded sewering and treatment plant efficiencies) and non-point source (i.e., increases in non-fertilizer dependent vegetation, reductions in fertilizer usage, reduced nitrogen in groundwater through on-site sanitary system upgrades to reduce subsurface outflow of groundwater; control of wildfowl populations and continued zero discharge in the marine environment).

3.1.2 Anticipated Impacts

Land Use
The proposed 98 residential unit development fully complies with the land use requirements of New York State Town Law Section 278, Town Code, Sections 198-14 & 114 (i.e. R-40 Residence District & Cluster Developments), Article X Steep Slope Conservation Law and the site and development provide the necessary services, infrastructure, and utilities to serve the development. The use is appropriate for this location based on its existing recreational use, surrounding land uses and zoning, and has the potential to further enhance the diversity of the local housing stock, which is predominantly composed of conventional single-family residential neighborhoods. The transition from adjacent conventional residential and park uses, is appropriate and fully consistent with land planning practice outlines in the Town's Horizons 2020 Comprehensive Plan Update and Town zoning. Since the subject property and abutting lands are zoned for residential purposes, there is a high degree of compatibility between uses, particularly since the majority of the site is an existing golf course that will remain. The proposed use facilitates retention of the golf course and is a significant improvement over development of the site under current zoning which would involve 99 individual homes. The proposed project includes duplex housing, such that only 49 structures will be built, and the existing clubhouse will be replaced by a new clubhouse.

Land use diversity is improved as a result of the proposed project. According to the Long Island Index (longislandindexmaps.org), there is only one other multifamily housing community in Fort Salonga; the Colony Club, which consists of 38 units and was constructed in the 1980's. The project fulfills a need for alternative housing in the hamlet of Fort Salonga.

Huntington Town Code §198-2 defines Open Space as: "A portion of land where buildings and roadways are prohibited. Open space shall include natural areas, agricultural fields, parks, playgrounds, athletic fields, and landscaped areas such as lawns and buffer strips." The proposed project provides more than 91% open space pursuant to this definition. This is a significant beneficial feature of the project.

The plan has been designed to limit clearing and grading and place development on the site in a manner that allows the golf course to continue to operate as a full 18-hole club. Clearing limits and jurisdictional wetland boundaries are shown on plans included in **Attachment C**. Permitted accessory buildings and uses are listed in the Town Code under § 198-21.3(C) and are subject to permits and approvals.

Most of the subject property and/or adjacent lands have screening or vegetated buffers. The installation of street trees and buffer plantings proposed around the perimeter of the property (see **Appendix B**, Landscape Plans) as part of the proposed project, and the preservation of existing trees will help to maintain homeowner privacy and screen the proposed homes from the adjacent residential uses and roadways. Installation of decorative street lighting, the erection of fencing, and the high-quality architecture of the proposed homes will further preserve and enhance scenic resources, while mitigating potential adverse conditions.

The proposed use fulfils the goals of the various Land Use Plans referenced in Section 3.1.1; the project will retain the existing golf course and this is facilitated by providing limited residential use on the site based on the underlying zoning. The proposed project retains the golf course which is the dominant land use character of the areas immediately surrounding the site. Residential use is placed in three (3) separate areas of the site with separate access to each area. This disperses the proposed use and allows areas of the property that are not used for golf to be utilized. Overall consistency with land use compatibility, Land Use Plans, Town Code and the design as described herein ensures that no significant adverse land use impacts will occur as a result of the project.

Proposed land use at the subject site will continue to involve golf club members and their use of the golf course and clubhouse. In addition, the residential component will contribute population to the site. The total number of residents expected to reside on the property is 147, as indicated in **Table 1-1**. The proposed residential component of the project will be age-restricted, such that owners must be 55 years old or more. Based on the experience of the builder, who has built other senior communities on Long Island, in the range of 5 percent of the occupants may be less than 55 years of age. This would include a spouse or other family member of an owner that may be less than 55. No children under the age of 19 are permitted, in keeping with restrictions placed on other similar communities. It is expected that many residents of The Preserve at Indian Hills will not occupy the residential project during winter months as is the pattern of use/occupancy of other similar senior communities.

The proposed subdivision will also result in a limit on the membership of the Indian Hills Country Club, where no such limits exists, specifically the current golf membership is 390 total, and a cap of 425 golf members will be incorporated into approvals. This will marginally increase the total number of members from existing to proposed conditions; however, as noted, there is no limit under current conditions and therefore, the proposed project offers the ability to restrict membership.

The clubhouse will remain available for special events such as "outings" by various community groups for fundraising and social gatherings. The number and frequency of events is expected to be the same for proposed conditions as it is for current conditions. The proposed membership is 425 members; however, not all members will use the course or clubhouse at any one time. The summer staff will remain in the range of 20. The maximum number of persons that may be on the site at one time would occur during an event/outing. The staff would be the same, and the number of players based on 8 per hole is in the range of 144. Additional attendees may involve strictly dinner guests which could account for another 60 participants. Assuming staff, golfers and dinner guests, the maximum number of individuals that may use the property at any one time is in the range of 224 persons. Add to this the resident population of 147, and the maximum number of persons on the site at one time would be in the range of 371 under proposed conditions.

The impacts to the intensity of seasonal use of the property will not change. Under current conditions, the peak season is April through October, when members/guests use the club. The off-season is November through March, with January, February and March being the months of minimal usage of the club. This pattern of seasonal use is expected to remain. Hours of operation of the clubhouse will remain unchanged and will be from sunrise to midnight with the greatest usage during April through October.

Zoning

The proposed project has been designed in accordance with the standards of Chapters 198-14(E) and 198-114 Height, Area and Bulk Regulations and Cluster Development, respectively of the Town of Huntington as indicated in **Table 3-1**, as discussed in greater detail following the table.

As can be seen by analysis of the Overall Plan (**Attachment C**) and the "Zoning Compliance" table (**Table 3-1**), the proposed project complies with the requirements of the Town Code.

Table 3-1
ZONING AND DEVELOPMENT STANDARDS COMPLIANCE TABLE
(Cluster Golf Development in the R-40 Zone)

Parameter	Requirement	Proposed Development
Golf Course	Special Permit issued by the Zoning Board of Appeals pursuant to Town Code Section 198-110 Issuance of Special Permits and Special Exceptions.	Granted without any requirement specified for renewal or extension.
Open Space	The preservation of the natural and scenic qualities of open lands in perpetuity	91%
Area per Dwelling Unit	Modified lots conforming to the minimum lot size and density requirements of the applicable zoning ordinance as well as all environmental and historical factors for cluster development	98 units based upon a Yield Map showing lots conforming to the minimum lot size and density requirements of the applicable zoning ordinance as well as all environmental and historical factors; a total of 98 units and continuation of a golf course on 154.56 acres.
Maximum Bldg. Height	2 stories / 35 feet	2 stories / 35 feet
Front Yard Setback	Minimum 50 feet	Minimum of 10 feet
Rear Yard Setback	Minimum 50 feet	Minimum 10 feet
Side Yard Setback / Interior Lot	Combined total of 50 feet for two yards; 25 feet minimum for each yard	Combined total of 8 feet for two yards; 0 feet minimum for each yard
Building and Parking Lot Setback	A building and parking lot setback of at least fifty (50) feet in depth shall be provided, as measured from all exterior lot lines of the property under review. Any community building, recreational or related amenity developed for the exclusive use of residents of the cluster development must be set back at least fifty (50) feet from all exterior lot lines of the property under review.	At least 50 feet
Parking Spaces	Golf Course Clubhouse: Dining Area: 2,996 sq.ft. x 1 / 50 aq.ft. = 60 Stalls Golf Course: 18 Holes x 3 / Hole = 54 Stalls Driving Range: 12 Positions x 1 / 1 = 12 Stalls Community Golf Pro Shop: 3,750 sq.ft. x 1 / 200 sq.ft. = 19 Stalls Total General Parking Required = 145 Stalls Senior Housing: Independent Dwelling Unit: x 1.5 Stalls = 147 Stalls Total Residential Parking Required=147 Total Sum Parking Required=292	146 (general) + 196 (private, 2 car garage per unit) =Total Sum of 342 parking spaces.

As indicated in **Section 5.0,** Alternative 2: As-of-Right Subdivision assumes that the project site is developed under its existing R-40 zoning with a 99-lot subdivision that conforms to all applicable zoning and planning requirements and standards, including the Steep Slope Ordinance and providing area for parkland dedication. However, yield is ultimately determined by the Planning Board as outlined in Section 4.9.3.2 of Chapter A202 of the Town's Subdivision Regulations and Site Plan Specifications.

> *Factors include, but are not limited to consideration of the Town's Steep Slope Ordinance; Height, Area and Bulk Requirements; street frontage; conforming street width and radius; parkland set-aside; wetlands, if present (only the regulated area beyond the state designated wetlands boundary); and historic significance of the site and surroundings. Special site features, such as state-designated wetland(s), shall be excluded from yield calculations subject to Planning Board determination.*

An alternative to a standard subdivision is cluster development (Pursuant to New York State Town Law, Section 278 and Town of Huntington, Chapter A202 Subdivision and Site Plan Regulations, Section 4.7. A cluster designation is applicable in all residential zoning districts.

> *"Cluster development" refers to the modifications of the applicable zoning regulations to provide an alternative permitted method of development on a particular parcel of land in accordance with an approved yield map. In no case shall the number of building lots or dwelling units exceed the number that could be permitted, in the Planning Board's judgment, if the land were subdivided into lots conforming to the applicable zoning ordinance or local law.*
>
> *The purpose of a cluster designation is to enable and encourage flexibility of design and development of land in such a manner as to promote the most appropriate use of land, to facilitate the adequate and economical use of streets and utilities, and to preserve the natural and scenic qualities of open lands. There shall be a measurable qualitative or quantitative public benefit associated with any cluster development as determined by the Planning Board or its designee.*
>
> *If the applicant chooses to pursue a cluster development, their licensed professional shall first prepare a Yield Map for review by the Planning Board. The Yield Map shall show lots conforming to the minimum lot size and density requirements of the applicable zoning ordinance as well as all environmental and historical factors (see Section 4.9.3.2). The yield of the proposed development should be determined at the earliest possible date.*
>
> *Once the Planning Board has approved the yield, the applicant shall prepare a Cluster Map depicting no more lots than those depicted on the approved Yield Map. However, the Cluster Map shall show clustered lots or dwelling units, and shall depict a Table of Modifications that provides the zoning modifications required to produce the established yield. The Cluster Map must clearly depict the most adequate and economical use of streets and utilities, and depict the preservation of the natural and scenic qualities of open lands in perpetuity.*

At their regular meeting dated July 26, 2017, the Huntington Town Planning Board approved the Yield Map submitted on July 18, 2017 depicting ninety-nine (99) lots (see correspondence dated August 2, 2017 from Robert Riekert, Deputy Director). This Yield Map does not account for the additional 3.44-scre parcel added after the approval from which no additional density is realized (SCTM # 0400-014-04-3.2).

A further Town land use consideration with respect to cluster development is as follows:

> *"Sometimes the Town Board, Planning Board and/or Zoning Board of Appeals require lands to be held as protected private passive or recreational open space as mitigation during the planning process and application review. Whether this involves rezoning requirements, clustered subdivisions (where the conforming yield for a property is concentrated on a component of a site), or conservation buffers, the resulting open space reservation can be substantial. In these cases management for the affected properties vests with the private owner. In the eighteen years since the EOSPA Program began, over 150 acres have been conserved as privately-held open space. Examples of some of these projects include: private recreation and common areas (The Greens at Half Hollow golf course; Beechwood at Half Hollow Hills; The Legends at Half Hollow, and The Villages at Huntington) and conservation areas (Old Orchard Woods, Huntington Harbor Estates, and Dalton Meadows)."* [2]

In many cased much of the common area is "managed" and/or "active" open space (e.g., lawn, recreational amenities, ponds). In these cases, its use and/or viewscape is similar in most cases to that of improved parkland. Cluster development has been successful as a planning tool in preserving open space, resulting in additional acreage set aside to complement dedicated as parkland. The proposed project also proposes attached units which offers significant benefits for open space conservation as compared to individual single-family homes.

A strategy of the TOH Horizons 2020 Comprehensive Update (A.1.5) is to "Require/encourage alternative site design standards (e.g., conservation subdivisions and lot averaging techniques) to better preserve natural areas on a tract. Conservation subdivisions are a form of residential development that reduces lot sizes so as to set aside a substantial amount of the property as permanently protected open space. This concept differs from "Cluster Development" in a number of ways, particularly in its higher standards for the quantity, quality, and configuration of the resulting open space. The Proposed Action may be considered a Conservation Subdivision due the large contiguous areas of open space that will result.

A cluster development requires flexibility in application of zoning dimensional/bulk requirements in order to achieve retention of open space. Requested Planning Board modifications and expansion/continuation of ZBA special exception permitted use for the country club are described below:

- Lot Area, Front, Side, Rear Yards and Lot Width at Setback: A Planning Board modification is required for the relaxation of the minimum area requirements as permitted by Height, Area and Bulk regulations, see Article IX and § 198-110(C)(5)(i) of Town Code to allow for a cluster conservation development as detailed in the Table of Modifications on the Overall Plan, provided as **Attachment C**, herein in this DEIS.

- Special Exception Permitted Use: A ZBA special use permit is required for continuing the existing special exception permitted use for the expansion of the country club.

In regard to the area requirements, a modification is requested from the Planning Board for what is permissible pursuant to § 198-114 of the Town Code, which states that:

[2] Town of Huntington EOSPA Fund and Land Conservation Progress Report, 1998-2018

"Simultaneously with the approval of any plat upon which the Planning Board is empowered to act pursuant to § 276 of the Town Law, such Board may make any reasonable modification of the zoning regulations applicable to the land so platted as authorized by § 278 of the Town Law and as specified in this article. Any such modification of the zoning regulations shall be made to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks and landscaping in order to preserve the natural and scenic qualities of open space including historic landmarks and sites. Unless otherwise specified in this article, any modification of the zoning regulations made by the Planning Board in connection with plat approval shall be limited to size of lot, minimum yard dimensions, location of buildings, location and extent of parking and loading areas and provision of public recreation areas, including parks and playgrounds, or public school sites."

Modification of the zoning regulations such as those requested, size of lot and minimum yard dimensions as indicated by the Code is fully permissible, subject to the discretion of the Planning Board and adverse impacts to land resources and community character are not anticipated for the following reasons:

- The plan is consistent with the Town's land use, open space and lot yield zoning requirements outlined in the Code.
- Area modifications will not negatively affect the form and pattern of this new development as it will be applied across the site but instead will provide the flexibility needed to provide the best design.
- The development will have a relatively low density consistent with adjacent single-family residential developments to the south, east and west.
- The proposed homes will be high-end homes with exceptional architectural quality that will provide a level of visual quality that enhances the integrity of the built environment.
- The planting of street trees, protection of existing trees and tree clusters, retention of natural vegetation for buffering and screening, and ultimately fine landscaping of lots anticipated will promote aesthetic benefits, while screening any less desirable aspects of development from public view.

A special exception use shall be authorized by a special use permit, and before such permit is issued, the appropriate Board shall find that the proposed use (§ 198-66):

(1) Will be properly located in regard to transportation, water supply, waste disposal, fire protection and other facilities.
(2) Will not create undue traffic congestion or traffic hazard.
(3) Will not adversely affect the value of property, character of the neighborhood or the pattern of development.
(4) Will encourage an appropriate use of land consistent with the needs of the Town.
(5) Will not impair the public health or safety and will be reasonably necessary for the public health or general welfare and interest.

The proposed modification also meets the requirements for Preliminary Subdivision Application (#18 on the list). The proposed modifications will provide a public benefit by promoting the most appropriate use of land, facilitating the most economical use of existing streets for access while preserving open space and the natural scenic qualities of the land.

The proposed project has been designed in a manner that is consistent with the intent of the R-40 cluster development § 198-114 and Preliminary Subdivision Application specifically stated as follows:

> *"The golf course exists at the subject property in accordance with a special use permit previously issued by the ZBA. It is the applicant's intention to maintain the existing golf course facility, as an accessory to the residential development and in the spirit of recreational open space, as has been previously granted by the town for both the Hamlet and the Greens. If during the course of review the application is referred to the ZBA for an interpretation of the existence of the previously issued special use permit, that application would be made under the auspices of Town Code section 198-109 and 198-110 (C) (5)."*

This project was specifically designed to allow for protection and retention of the existing golf course consistent with the goal of the Town's Horizons 2020 Comprehensive Plan Update for preserving recreational open space and community character. The proposed project will retain the golf course, while providing senior housing that will complement the Town's housing stock and provide attractive alternative housing to the dominant single-family development in the area. As a result, no significant adverse zoning impacts are anticipated, and the project is found to further the goals of the Town in terms of utilizing a zoning district that is specifically designed for the purpose that is advanced by the proposed project.

Town of Huntington Land Use Plans and Principles

Horizons 2020: Huntington Comprehensive Plan Update (December 2008)
The proposed clustered subdivision is in conformance with Town Code and allows development of the townhomes while preserving the recreational and open space uses of the golf course. The project also implements key elements of the Plan in terms of providing quality design, retention of recreational open space, avoidance of unique environmental features, offering alternative housing, supporting the senior population, and enhancing and retaining recreational use. As a result, the proposed project will conform to the recommendations of the Comprehensive Plan Update.

As noted in Policies A.8, A.9 and A.12, Chapter 3.3 Policies and Strategies of the Huntington Comprehensive Plan, the proposed project will incorporate strategies from the plan elements to avoid and minimize impacts on users of surrounding public parks, preserves and private open spaces that includes the following:

> **A.8.1** Require a minimum open space set aside (e.g., 20-30%) within new developments, together with standards to ensure that the open space is meaningful (e.g., central greens or greenway linkages) and publicly accessible.
> **A.8.2** Encourage voluntary open space dedications through conservation subdivisions (see Environmental Resources and Open Space Policy A.1).
> **A.9.1** Work with private landowners and non-profit land conservation organizations (e.g., the North Shore Land Alliance) to protect privately owned open space through techniques such as conservation easements and limited development options.
> **A.9.6** Work with Huntington's private owners of substantial undeveloped property to explore preservation and recreation opportunities.
> **A.12.5** Encourage private sector development of recreational facilities to help meet demand

for playing fields.

The cluster design allows golf course open space to be retained in conformance with the Town Comprehensive Plan.

Private Golf Course Moratorium Proposed Planning Options Report (January 2009)
The proposed project results in a development that is consistent with the recommendations of this report, which will facilitate continued use of private golf courses (a significant resource in the Town of Huntington), and enabling addition of compatible amenities. The proposed project results in complementary residential use of the site, which allows preservation of the golf course. The proposed cluster and resultant preservation of open space conforms to the intent of preserving private golf courses within the Town.

Principles of Smart Growth (October 1999)
Design of the proposed project incorporates The Principles of Smart Growth & Livability, as adopted by the Huntington Smart Growth Steering Committee, in the review of applications, land use decisions and amendments to the Town Code and regulations as adopted by the Town Board per resolution 1999-610 of October 5, 1999. The project clusters development into three areas of the subject site to avoid suburban sprawl, integrates residential and recreational use and provides senior housing, an alternative housing choice within the community.

Environmental Open Space and Park Fund Program (EOSPA)
The proposed project does not have any direct relation to this program; however, it is noted that the subject site was not recommended for acquisition. Nevertheless, the proposed project will result in the retention of the existing golf course, a goal which is consistent with open space protection the Town.

Town of Huntington Open Space Index (1974)
The proposed action will result in the retention of golf course open space, with a reduction of open space associated with proposed new home construction and roadways. Other open space including beach and bluff areas, designated freshwater wetlands and buffers, and other areas of open space are retained in addition to the golf course open space areas. Consistent with this recommendation and Article X of the Town of Huntington Subdivision Regulations and Site Plan Specifications, 103.9 acres of landscaped area (golf course), 21.23 acres of natural and 14.61 acres of ponds are proposed for dedication as open space. The potential amount of open space resulting from the proposed project will be greater than if a conventional subdivision were constructed on the site. No adverse impact is expected with respect to the Open Space Index based on the following considerations: the Open Space Index does not confer any regulatory authority and only represents an inventory of open space that existed in the Town in 1974; proposed project will retain substantial open space as both recreational area and through protection of constrained portions of the site (beach, bluff, wetlands, buffers); and, the proposed project will retain substantially more open space through cluster design than a conventional subdivision.

Water and Resource Use Plans

Draft Crab Meadow Watershed Management Plan, March 2018 (GEI Consultants, Inc.)
Draft Crab Meadow Watershed Hydrology Study, June 2015
The Town released the draft Crab Meadow Watershed Management Plan on 3/27/2018 and provided the opportunity for public review and comment. The plan remains a draft and is not adopted by the Town Board.

The draft Crab Meadow Watershed (CMW) study evaluates potential risks from future development. Adding new development increases the amount of impervious surface in the form of rooftops, driveways, asphalt, and compacted earth, preventing the infiltration of water into the ground. As a result, stormwater runoff over the land surface increases. This alteration can impact waters and habitat of the CMW. The Town will use land cover and use data being collected as part of the watershed characterization study, to develop a hydrologic model to help inform planning decisions within the CMW. General information pertaining to the CMW is presented below:

- Private and public watersheds should be delineated.
- During review of the proposed developments, the Town Highway Department may request that any existing discharge pipes that direct stormwater onto Town roads or right-of-ways be removed. The Town may also require that the natural hydrology of streams and connections be re-established to restore proper flows and limit wetland impacts.
- The Town should continue efforts to protect parklands and acquire additional contiguous open space parcels within the CMW.
- Promote sustainability for areas located within the CMW which highlight the need for additional long-term coastal and resiliency planning for properties fronting Long Island Sound.
- The Town was encouraged to implement Best Management Practice (BMP) pilot projects throughout the CMW, to provide working examples for the residents. As new homes are developed and/or expanded, as infill on previously vacant parcels or replacing existing residences, owners should be informed of the potential impact of their actions and individual stewardship actions should be encouraged. The watershed brochure that encourages individual stewardship actions should be shared when new building permits are issued.

The draft CMW Management Plan specifically identifies the Indian Hills Country Club site in several places within the document, noted as follows:

- Residents expressed concerns about further development in the watershed. Sites of particular interest identified for preserving open space include the Indian Hills golf course.
- Runoff controls to protect Fresh Pond. Fresh pond collects drainage from Indian Hills Golf Course and residential areas to the west and discharges through a narrow tidal outlet directly into Long Island Sound. This area was visited immediately following a significant rainfall event (e.g., 8"+ in 24 hours) on August 13, 2014, and found to be one of the worst flooding locations within the CMW.
- Significant slumping is noted within the coastal area at Indian Hills golf course, possibly due to springs.
- Indian Hills golf course beach access is intersected by stone groins, which makes beach access difficult.

As noted, the plan is not adopted at present; however, review of these draft comments in relation to the proposed project is provided for informational purposes. Preservation of the Indian Hills

Country Club is laudable and is accommodated as part of the development, consistent with this recommendation. The applicant seeks to retain the golf course, and residential use is proposed to allow the golf course to remain. Limited residential use, below what the property would yield under current zoning, is proposed as a cluster development in three (3) areas of the site to disperse the new use and retain the golf course. Natural resources including wetlands, the shoreline/bluff area and other vegetated areas are being retained. The proposed project will facilitate increased retention of stormwater on the site to reduce/eliminate the pond overflow that travels to Fresh Pond, also consistent with the draft CMW Management Plan. The land slumping associated with the shorefront and bluff areas of the property have been documented for more than 100 years. Underlying clay appears to promote this slumping and a Coastal Erosion Hazard Area boundary has been designated on the site due to these conditions. No new activity is proposed within this CEHA area and new improvements will be setback sufficiently from the active terrain area to ensure stability. As a result, the bluff slumping condition will remain an ongoing condition that will not change as a result of the project. Similarly, beach access conditions will not change as a result of the project as there is no plan to remove the stone groins. It is important to note that the proposed project retains the golf course, and substantially reduces the nitrogen load in the Crab Meadow watershed, below what would occur if the property were developed under current zoning (see **Section 5.0**). The proposed project also includes a Golf Course Environmental Management Plan to implement BMPs associated with fertilization and maintenance for minimized nitrogen and other application and maximum nutrient uptake by turf (see **Appendix G**). Based on this information, the proposed project is in keeping with the intent of the CMW Management Plan. As noted, this plan is under review, and not adopted by the Town Board at present.

Crab Meadow Watershed Wildlife Environmental Education Manual
This manual does not have any direct bearing on the proposed use. Nevertheless, the golf course use will continue and will provide wildlife habitat and recreational opportunities associated with the ongoing operation.

2015 (Revised) Suffolk County Comprehensive Water Resource Management Plan.
Water resources are addressed in **Section 2.2** and Alternatives are addressed in **Section 5.0** of this DEIS. The proposed project will allow the golf course to continue and will add a residential component to facilitate retention of the golf course. The project will include Innovative/Alternative Onsite Wastewater Treatment Systems and will continue to employ turf management practices to reduce nitrogen loading. It is noted that the proposed project will have less impact on groundwater resources than the use of the site under R-40 zoning without the golf course. The proposed project will result in additional on-site stormwater retention that will reduce/eliminate the pond overflow to Fresh Pond as compared with current overflow conditions, also a water quality benefit. Traditional R-40 use of the site, which some have described as "checkerboard or cookie-cutter housing development" is not consistent with goals of the Town to protect the golf course. The 2015 SCCWRMP does not specifically reference the subject site; however, the project will advance goals of this Plan by reducing nitrogen loading as compared to use under current zoning.

LIS Comprehensive Conservation and Management Plan (CCMP)
The proposed project incorporates water quality and resource-based planning and management measures consistent with CCMP's watershed recommendations.

North Shore Embayment Watershed Management Plan (NSEWMP)(2007)
The NSEWMP is a comprehensive document prepared by NP&V that analyzes information that was available in 2007 to gain an understanding of the watershed and develop a plan that would allow Suffolk County to reduce 58.5 percent of its non-point source nitrogen load to Long Island Sound by 2014. The report showed that groundwater is the largest contributor of nitrogen to the sound from the Suffolk County Management Zone. Nitrogen from groundwater in terms of magnitude is followed by atmospheric deposition, stream flow, sewage treatment plant discharges and stormwater. It was determined that the relative nitrogen inputs create a significant challenge to achieving the goal of a 58.5 percent reduction in nitrogen. The proposed project incorporates water quality and resource-based planning and management measures consistent with NSEWMP's watershed recommendations such as reducing the quantity of fertilizer applied to turf and preserving open space.

The Preserve at Indian Hills is consistent with the BMPs of the NSEWMP. Specifically, the proposed project will:

- Establish a Groundwater Management Program for the existing golf course;
- Utilize I/A OWTS for sanitary waste management;
- Reduce the overflow of pond water from the existing golf course ponds to Fresh Pond; and
- Contain existing stormwater on-site that is not otherwise contained, and retain all stormwater for new development consistent with Town engineering/design standards.

The overall proposed project employs BMPs for new development and improves the operation of the existing golf course. It is noted that the nitrogen used in fertilization under current golf management practices is low as compared with other golf courses. The Golf Course Management program will ensure that this continues, and will seek to reduce nitrogen application to the maximum extent practicable. Consequently, the proposed project is consistent with the NSEWMP and no significant adverse impacts are expected.

3.1.3 Proposed Mitigation

- In zoning the subject property R-40, the Town deemed the site suitable for single-family residential development on lots of 1 acre or greater. It was determined that such development would meet its land use goals and that this particular use, at its proposed density, would be compatible with the envisioned development and land use pattern of the area. Planning Board modifications are requested to facilitate a cluster design and continuation of a ZBA Special Exemption use for the golf course. To mitigate dimensional/bulk modifications, the subdivision clusters development in three areas of the site, includes the retention of natural buffers and landscaping.
- The proposed development is designed with inherent land use mitigation, as it will provide setbacks and buffers to increase land use compatibility in transition between the town house style development and single-family development directly west, east and south of the site.
- The project exhibits superior site design providing appropriate on-site recreational amenities; landscaping and interior setbacks and open space.
- The proposed project will conform to the review criteria for the R-40 cluster development, which includes:

  - Buildings are adequately grouped to preserve open space resources such that a conservation subdivision[3] will result. To the greatest extent practicable, open space is designated as a single block and not divided into unconnected small parcels located in various parts of the development.
  - Pedestrians can easily access open space.
  - All development is situated to minimize the alteration or disturbance of natural features, natural vegetation, and topography.
  - Existing scenic views or vistas are permitted to remain unobstructed, especially from public streets.
  - Floodplains, wetlands, and steep slopes are protected from development.
- The cluster development advances the spirit and intent of preserving open space consistent with the Town Comprehensive Plan Update Strategy A.8.2. for encouraging voluntary open space dedications through conservation subdivisions and Environmental Resources and Open Space Policy A.1 (Strengthen protection of sensitive environmental resources by applying best management practices through Huntington's development regulations).
- A benefit of this land use is the significant beneficial impact on the Northport UFSD by its generation of significant school taxes and, as there would be no school-age children present, would not contribute to any enrollment increase, thereby not increasing school district expenditures (see **Section 3.3.2**).

- The project is consistent with the spirit and intent, as well as key elements of, the Town Comprehensive Plan Update, which recognizes the importance of providing a mix of housing types in the Town. Specifically, the project will provide an alternative to single-family home ownership in a quality housing development.
- The project is consistent with recommendations of the draft CMW Management Plan:
  - The project provides drainage infrastructure improvements and stormwater control BMPs, such as installing recharge and catch basins and leaching pools higher up in the subwatershed to reduce flow volumes to capture and retain stormwater runoff before discharging into Fresh Pond.
  - The project provides and protects contiguous open space parcels within the CMW.
  - The project promotes sustainability regarding coastal shoreline issues, such as bluff slumping at Indian Hills Golf Course by eliminating development in the Coastal Erosion Hazard Area.
  - The project retains the golf course, and substantially reduces the nitrogen load in the Crab Meadow watershed, below what would occur if the property were developed under current zoning.
  - The use of Best Management Practices for minimizing/eliminating potential impacts by encouraging individual stewardship actions as outlined in the Golf Course Environmental Management Plan.
- The project is consistent with applicable recommendations of the SCCWRMP update by reducing residential density, and conforming with SCDHS Guidance Memo 17 and Article 6 of the SCSC.
- The proposed project is consistent with the applicable recommendations of the Town Open Space Index through retention of golf course recreational open space and protection of constrained areas of the site such as beaches and bluffs, wetlands and buffers.
- The proposed project is consistent with the applicable recommendations of the NSEWMP by reducing nitrogen to the maximum extent through golf course management practices, use of I/A

[3] "*Conservation subdivisions are a form of residential development that reduces lot sizes so as to set aside a substantial amount of the property as permanently protected open space. This concept differs from "Cluster Development" in a number of ways, particularly in its higher standards for the quantity, quality, and configuration of the resulting open space.*" Horizons 2020: Huntington Comprehensive Plan Update, Pg.3-12.

OWTS for sanitary waste, and reduction of stormwater overflow to Fresh Pond with full containment of stormwater from new development based on the applicable design storm.

- The project is expected to have minimal impacts on climate change, and no mitigations are proposed. The effects of climate change on the site's conditions also are predicted to be minimal for the next 50 to 75 years. The high site elevations, with proposed housing development, roads, and utilities well above floodplains, protect the proposed homes from potential flooding due to increased storms and sea level rise. Section 4.1.2 and 4.1.3 of 2015 Town of Huntington Climate Action Plan indicates average precipitation in the area is expected to increase five to fifteen percent by about 2080, and intense downpours will become more frequent. Along the seacoast, sea level could rise more than four feet by 2090. These changes will exacerbate current flooding problems in the Town of Huntington. At the southern entrance to the development off Makamah Road, a wetland complex west off the site is predicted to flood to a height of 9 feet in a 100-year storm. Future floodplains may be expected to be adjusted upward by FEMA in future re-mappings in the coming decades, to account for the anticipated increases in rainfall, but the site access at the south end of the site is at 22 feet in elevation (13 feet above the current 100-year flood height). This height is unlikely to ever be reached by floodwaters. The north access to the site off Mystic Lane is not near any floodplains. Along the Long Island Sound, the current 100 year flood height is 17 feet, and the proposed housing at the northern portion of the development is set at over 70 feet in elevation. With an expected four feet of sea level rise, the areas proposed for housing development will remain well above future flood heights of Long Island Sound. Proposed grading, site disturbance and construction are all set entirely behind the New York State Coastal Erosion Hazard Area line established by the NYSDEC , well south of the top of the bluff above the Long Island Sound. Aerial photography of the shoreline from June 2018 shows a stable, riprap revetment extending approximately 1200 feet along the existing shoreline, where the existing golf course extends to the water, providing further protection. The State has not made any predictions at this time how higher water levels in Long Island Sound may affect erosion rates or the position of the CEHA line, but this particular site provides a large margin of safety with all construction and disturbance well outside of erosion hazard areas.

3.2 Community Character

3.2.1 Existing Conditions

Visual Character

The existing character adjacent to the subject parcel is mixed, but includes numerous detached single-family residences with amenities such as swimming pools; Town (Geissler's Beach) and County (Fresh Pond) passive parks and roadways. Approximately 95 acres of the property is generally part of the golf course including greens, tees fairways, rough and mowed areas under trees, as well as the maintenance area, clubhouse, driving range, pro shop and halfway house. The remainder of the property is either vegetated or beach, or residential use associated with four (4) homes on the south part of the site and two (2) homes on the southwest part of the site. Photographs of the subject site are provided in **Appendix L**. These photographs are captioned as to location and fully characterize the existing site conditions of the subject site.

The property contains a combination of gentle, moderate, and steeply sloping undulating topography, including several knolls on its north side. Passersby traveling on adjacent roadways do not have significant on-site views of the property, due to topography and existing vegetation. The site's interior has limited views as seen by the public from adjoining roadways and private

properties due to vegetation and slopes and the large open distances that extends to the property boundaries.

A photographic study of the subject property for visual assessment purposes is contained in **Appendix M.** The appendix includes existing as well as proposed conditions for nine (9) view locations. These locations were selected consistent with the Final Scope, to reflect the existing visual character of visually accessible portions of the subject site. The following view locations are represented in the photographs:

- View 1 is from Long Island Sound from the north looking south toward the site. The existing holes 12 and 13 of the golf course are visible.
- View 2 is from Hayes Hill Drive from the west looking east toward the site. This view is not included for the existing condition, as it would require trespass onto private land. A simulated review of the proposed condition is provided and referenced in **Section 3.2.2.**
- View 3 is from Claymore Road looking south toward the site. This view depicts the view toward the golf course from the rear of the yard off of Claymore Road where access could be gained.
- View 4 is from Fresh Pond Road looking east toward the site. This view depicts the hillside of the existing golf course.
- View 5 is from Breeze Hill Road looking north across the site. The existing golf course and Long Island Sound are within view.
- View 6 is from Green Knoll Court looking west toward the site. The view includes an existing structure and vegetation on the neighboring site.
- View 7 is from the driveway south of Breeze Hill Road west of the site, looking east toward the site. The lower part of the driving range and cleared areas on the golf course are evident.
- View 8 is from Makamah Road looking east toward the site. This view depicts the existing house on the subject site as viewed from Makamah Road.
- View 9 is from Makamah Road looking south toward the site. This view depicts the wooded areas and hill from the north looking south toward the subject property.

The existing clubhouse is barely visible when looking south from Breeze Hill Road up the clubhouse drive at the location of the driveway and signage. The clubhouse is up a slope and minor feature from this viewpoint, as it is screened by vegetation and distance.

Based on the photographs and above description, it may be concluded that the property in its present condition does not currently offer unique or significant visual resources to the community with the exception of the existing golf course and generally vegetated condition.

Sight Lighting and Sound

There are currently several street lights along the site's access driveway and in the existing clubhouse parking areas. The project site currently generates very little noise due its current use as a golf course. Property maintenance in the form of landscaping will occasionally generate noise at the subject site. These activities are an ongoing condition associated with the existing golf course, have been performed during daylight hours, and are not expected to considerably impact the area. Ambient and intermittent noise from traffic, grounds keeping, operation of generators and air conditioning units and outdoor human activities on adjacent residentially developed sites, comprise the primary noise generators in the area.

3.2.2 Anticipated Impacts

Visual Character

Overall, the Site's visual character will change from that of a membership club with golf course grounds only to a mix of residential use and a golf club. The proposed project will introduce residential development to three (3) areas of the site, in order to retain the existing golf course and cluster residential use in areas that are advantageous from the standpoint of access and minimized impact to golf operations. Landscaping, setbacks and attractive architecture will tend to minimize visual impact and change to area conditions. The central portion of the site will remain a golf course, resulting in little impact to surrounding views. Areas of development will be located on lower slopes in the northwest quadrant and slightly higher slopes in the southwest and southeast quadrants than the surrounding area. Sloping topography and vegetation will significantly limit views deep into the Project Site. Views of the proposed buildings will largely be obstructed by expanses of site vegetation along the property's perimeter. All views will be designed to maintain a buffer to surrounding land uses.

The proposed project will alter the visual character on and around the subject property by changing the use of the site from golf recreational to residential and golf recreational use. The project will increase the overall density of development on the site as compared to existing conditions; however, the level of activity, use and number of buildings will be less as a result of the proposed project than if developed under current zoning. It is the applicant's goal to develop a premier luxury residential community on the property and in doing so, reduce visual impacts by retaining the golf course. An important feature of the project is that the proposed senior units will be duplex's, such that only 49 buildings will be built for housing on the site, as compared with 99 or more units of single-family residential buildings under current zoning.

Appendix M contains a series of photographs of existing conditions and photo simulations to show the potential changes in views from adjacent residential properties and public vantage points including roadways, Town owned properties, County owned properties, private open space and from the Long Island Sound as required by the Final Scope. The following provides a description of the nine (9) locations around the perimeter of the site where photographs of the existing views were taken and photo-simulations of the same view are provided to depict the proposed project once constructed:

- View 1 is from Long Island Sound from the north looking south toward the site. The proposed view depicts residential units in the distance beyond the crest of the bluff which are screened by horizontal separation and vegetation. The residential units are barely visible, and the existing holes 12 and 13 of the golf course remain apparent.
- View 2 is from Hayes Hill Drive from the west looking east toward the site. This view depicts the proposed units and their architecture. There are views of Long Island Sound and attractive residential use on this portion of the subject site.
- View 3 is from Claymore Road looking south toward the site. This view depicts residential structures associated with the proposed project through the trees and off in the distance, partially obscured by vegetation and topography.
- View 4 is from Fresh Pond Road looking east toward the site. This view depicts the hillside with some residential buildings visible. The buildings exhibit attractive architecture and are partially screened by vegetation. The buildings are distant from the road such that their mass is minimized though the buildings are visible.

- View 5 is from Breeze Hill Road looking north across the site. The existing golf course and Long Island Sound are within view with residential units in the distance toward the west. The units are not a dominant feature of the landscape given their distance and smaller appearance, and the clustered location which fits within the setting of the existing golf course. An additional View 5 depiction is provided, which portrays what the site would look like if developed with single-family homes which would be more obtrusive (see **Section 5.0**).
- View 6 is from Green Knoll Court looking west toward the site. The view includes the existing structure and vegetation, beyond which are the new residential buildings that are partially visible through the trees. The architecture is attractive, and the buildings are at a distance. The mass is minimized, and the views are screened, and there is also a topographic factor such that the buildings are downslope and therefore less obtrusive, with tree line visible above the buildings and an overall effect of minimized mass of the new structures.
- View 7 is from the driveway south of Breeze Hill Road west of the site, looking east toward the site. The new residential buildings are visible from this viewpoint, but are in the distance and partially screened by fencing. The buildings are attractive and typical of a residential landscape.
- View 8 is from Makamah Road looking east toward the site. This view depicts the proposed entrance road and residences associated with the new development. There is an attractive fence and gatepost feature, and the homes are somewhat distant from the road, which reduces the visual massing of the structures. There is a change in the visual character, but overall is not significant as the architecture is attractive and the view is typical of residential housing which is characteristic of the community.
- View 9 is from Makamah Road looking south toward the site. This view depicts the wooded areas and hill from the north looking south toward the subject property and there is no change from this viewpoint. The proposed project is not visible from this viewing location.

As noted, and in fulfillment of the Final Scope, these views were chosen to provide; views from adjacent residential properties; and, views from public vantage points including: roadways, Town owned properties, County owned properties and Long Island Sound. The photographs and visual simulations demonstrate that the project site is presently occupied by a country club operation, characterized by open vistas across golf course vegetation (both the fringe of former woods kept as a visual buffer and tended fairways, tees and greens), wetlands and rolling terrain. The overall views of the golf course will not be significantly altered; however, residential use that is characteristic and common in the neighborhood will be introduced. The proposed residences will be setback a minimum of 50 feet from adjacent land to the east, west and south. All homes will comply with R-40 district's 35-foot building height standard and contain no more than 2½ stories. As part of the improvements, the applicant must install street trees which will assist with visual screening. Decorative street lighting will line one side of each of the streets and, like the street trees, will also be spaced at 40-foot intervals. Tree protection will be installed five feet from the outer drip line of trees proposed for retention in construction zones to remain to ensure that workers are aware that the trees are present and must be protected. Individual building lots will include typical landscape installations for foundation and yard plantings. The architecture is attractive and the views of the new uses are limited. The distance from viewpoints and vegetative screening reduces the visual dominance and massing of the new uses, but overall, the use is consistent with neighborhood character, and most important, the existing golf course will be retained.

The clubhouse area will be modified by placing a new clubhouse north of the existing clubhouse. The footprint of the clubhouse will remain the same, but a new building will be constructed nearer Breeze Hill Road. This building is expected to be visible from Breeze Hill Road, but will be

screened by vegetation and reduced in visual appearance by landscaping and distance. The clubhouse area will be screened with a row of evergreen plantings near the east property line that will screen views of the building and parking area. The view will be characteristic of a golf course and clubhouse, which is the historic use of the site since the early 1960's. No significant change in visual character is expected with respect to the clubhouse are given these factors.

Site Lighting, Sound and Odors

Chapter 143: Outdoor Lighting of the Town Code provides outdoor lighting regulations which include three provisions specific to residential development requirements (§143-13 of the Town Code):

> A. No luminaire shall be located or concentrated so as to produce glare or direct illumination across the boundary lines of the property nor shall any such light create a nuisance or hazard or detract from the use and enjoyment of adjacent property.
> B. Any relocation of a lighting fixture or assemblage, or enlargement, change, repair or alteration of existing exterior lighting, and any new installation shall be in conformance with the provisions of this Chapter. Residential outdoor lighting guidelines shall be available at the Department of Engineering Services.
> C. The following guidelines shall be made available by the Department of Engineering Services to residential property owners to facilitate compliance:
> (1) Diagrams of generally acceptable and unacceptable light fixtures.
> (2) Various wattage/lumen conversions.
> (3) General information to educate the public

The only lighting currently proposed by this residential subdivision is street lighting. Based on the size of the property, locations of the streets and street lights, the height of street light fixtures, the planting of street trees, and the retention of trees and vegetated buffers, impacts to adjacent properties from excessive illumination from street lights, are not anticipated. Outdoor lighting for future homes is expected to include typical porch and rear yard patio lighting. The proposed street lighting fixtures will be equipped with solid/opaque hoods to prevent light from being cast upwards and causing sky glow. As required by § 143-6, of Town Code, there will be no projection of lighting off site from the common lighting on the project site.

The ambient noise environment is characteristic of the surrounding land uses, including area roadways such as Breeze Hill and Fresh Pond Roads. The closest receptors include residential properties west, east and south of the subject property. It is expected that noise from vehicles on adjacent roadways will continue to be the dominant source of background noise at the site and in the surrounding area. The only significant sources of noise which may be audible to nearby residents related to the residential use of the property under the proposed development are on-site traffic from the development, property maintenance activities, use and other human activities associated with the proposed residential use of the property. Traffic on-site will be insignificant with vehicles traveling at low speeds due to the residential nature of the subdivision, and therefore, is not expected to result in a significant increase in ambient noise levels. Other post-development noise will be typical of a residential neighborhood and consistent with what currently exists in the area, thus no significant noise-related impacts are expected.

Potential impacts related to odor are addressed in **Section 2.4.2**. Based on evaluation, no significant adverse odor impacts are expected as a result of the project.

3.2.3 Proposed Mitigation

- The change in the visual character of the site, from a golf recreational use to a residential and golf open space cluster use which will be mitigated by retention of buffers along the property, permanent retention of more than 91% open space, installation of screening trees along the disturbed perimeter, as well as the planting of street trees.
- As part of the site plan improvements landscaping is proposed. This landscaping will provide buffers, clubhouse screening, street trees and residential landscaping associated with the dwellings.
- As demonstrated by the renderings, particular attention has been given to the architectural design, building materials and landscaping, exterior layout of the site and homes, compatibility and retention of the golf course. Careful planning of the layout and design of the future homes will help to ensure the character of the proposed subdivision does not adversely impact the surrounding community.
- The proposed street lighting fixtures are equipped with solid/opaque hoods to prevent light from being cast upwards and causing sky glow. As required by § 143-6, of Town Code, there will be no projection of lighting off site from the common lighting on the project site.
- Potential impacts related to odor are addressed in **Section 2.4.2**. Based on evaluation, no significant adverse odor impacts are expected as a result of the project, including consideration of the removal of buffer vegetation in limited locations.

3.3 Community Services

3.3.1 Existing Conditions

Taxes and Fiscal Conditions

During the 2018-19 fiscal year, property owners within this part of the Town of Huntington are taxed at a rate of $272.798 per $100 of assessed valuation. These tax rates account for property taxes paid to Northport-East Northport Union Free School District (UFSD), Library District, Suffolk County, SCPD, various Town funds, Metropolitan Transportation Authority and other local taxing jurisdictions.

According to the Town of Huntington Assessor's Office, the eight (8) tax parcels that comprise the subject property are assessed at $60,850 (100% of the market valuation). This translates into a current generation of $167,191 in property tax revenues. Of this, $108,898 or 65.1% of the total taxes generated by the site are distributed to the Northport-East Northport UFSD, and $7,458 or 4.5% of the taxes are allocated to the Library District. An additional $1,659 or 1.0% of the total tax revenues are distributed to Suffolk County, $25,696 (15.4%) to the SCPD, and $577 to the Out of County Tuition Fund (0.3%). Approximately 9.8% of the tax revenue is levied to the Town of Huntington, which includes the Town/Part Town funds, Highway Fund and Town-Wide Lighting District. These three line items combine to total over $16,000 in revenues. The Fire District levies $2,586, or 1.5% of the total tax revenue generated by the subject parcel. The balance of the current property tax revenues is apportioned to various other town and local taxing jurisdictions. **Table 3-2** provides a summary of the taxing jurisdictions, tax rates and tax revenue compiled for the entire site.

Table 3-2
TAX REVENUES, 2018-19 TAX YEAR

Taxing Jurisdiction	Current Tax Rate (per $100 Assessed Valuation)	Current Tax Revenue	Percent of Total Taxes
Northport-East Northport School District	178.961	$108,898	65.1%
Northport-East Northport Library District	12.257	$7,458	4.5%
Suffolk County	2.726	$1,659	1.0%
Suffolk County Police District	42.228	$25,696	15.4%
Out of County Tuition	0.948	$577	0.3%
Town/Part Town	14.382	$8,751	5.2%
Highway Tax	11.224	$6,830	4.1%
Town-Wide Lighting District	1.208	$735	0.4%
New York State Real Property Tax Law	3.998	$2,433	1.5%
Open Space Bonds II & III	0.463	$282	0.2%
New York State MTA Tax	0.154	$94	0.1%
Refuse District	$397.723/unit	$1,193	0.7%
Fire District - Protection District #1	4.249	$2,586	1.5%
TOTAL: ALL TAXING JURISDICTIONS	**272.798**	**$167,191**	**100.0%**

Source: Town of Huntington Property Tax Record; Analysis by Nelson, Pope & Voorhis, LLC.

Schools

The subject property is located within the Northport-East Northport UFSD. **Figure 3-4** shows the location of the project site in reference to the school district.

The Northport-East Northport UFSD is comprised of nine (9) schools, which includes one (1) high school, Northport High School, two (2) middle schools – East Northport Middle School and Northport Middle School – and six (6) elementary schools: Bellerose Avenue Elementary School, Dickinson Avenue Elementary School, Fifth Avenue Elementary School, Norwood Avenue Elementary School, Ocean Avenue Elementary School, and Pulaski Road Elementary School. The district office is at William J. Bronsan Building, named after the retired Superintendent of Schools William J. Bronsan.

According to New York State Education Department, student enrollment within the Northport-East Northport UFSD has declined by 16.5%, or 1,084 students over the past ten years between the 2006-07 and 2016-17 academic years.[4] Under existing conditions, there are no school-aged children residing at the subject property.

Police Protection

Figure 3-5 shows the location of the public safety services in reference to the project. The subject site lies within the Suffolk County Police Department (SCPD) Second Precinct. Precinct offices are located on 1071 Park Avenue, Huntington.

The current police protection demand of the project site is limited to ordinary patrol and response to nuisance calls.

[4] This represents the most currently published data as of the date of submission of this analysis.

Fire Protection

Figure 3-5 shows the locations of fire protection services for the subject site. Fire protection and ambulance service for the site are provided by the Northport Fire Department, whose headquarters are located at 204 Main Street in Northport and their substation is located at 22 Waterside Rd, Northport.

Water Supply

The overall project site lies within the service district of Suffolk County Water Authority. As shown in **Figure 3-6**, the three closest public supply wells, Wayne Court, Middleville Road and Waterside Road facilities lie 0.68, 0.95 and 1.0 miles distant from the project site, respectively. Wayne Court is screened in the Raritan Clay; Middleville Road is a Magothy well and Waterside Well #1 is Glacial and Well #2 being the Magothy.

Assuming that all wastewater generated will originate from the public water supply, daily water consumption totals approximately 37,250 gallons gpd (excluding irrigation). In addition, it should be noted that irrigation of the existing golf course is provided from an on-site irrigation well. The average annual pumpage from the years 2005 through 2018 was 21,175,842 gallons per year (see **Section 1.6.5**).

Solid Waste Disposal

The Town of Huntington collects and manages municipal (i.e., non-hazardous) solid waste generated within the Town. However, the property owners utilize a private hauler for their solid waste.

Public Parks and Recreational Facilities

The subject site is a source of private recreation for users of the Indian Hills Country Club (IHCC). IHCC is available to the public for special occasions.

Suffolk County (Makamah County Nature Preserve and Fresh Pond) and Town parks [Geissler's Beach (fishing only) and Crab Meadow Beach and Golf Course] are located in relative proximity to the subject site.

Energy Services

PSEG and National Grid are the local providers of electricity and natural gas, respectively, in the vicinity of the site.

Market Value of Existing Homes in the Community

A report was prepared that addresses the probable impacts on the market value for existing homes in the community of the proposed 98 unit "cluster" development as well as the possible effects of an alternative development that would involve a standard subdivision of 98 detached units without the golf course (Alternative 2) by CUSHMAN & WAKEFIELD of Long Island, Inc., dated January 21, 2019 (see **Appendix O)**. Data from the report indicates that residents closer to the Indian Hills Country Club have higher incomes than those farther away. This is due to the presence of the golf course, as well as the fact that the Long Island Sound is adjacent to the golf course. Report findings are further addressed in **Section 3.3.2.**

3.3.2 Anticipated Impacts

Each of the community service providers was contacted with a letter requesting information and a request for input regarding the project. These letters and any responses received from community service providers are included in **Appendix P**.

Taxes and Fiscal Conditions

Many of the Town and County's community services and facilities are supported in large part by the revenues generated through property taxes. The Town of Huntington and Suffolk County, as well as other local taxing jurisdictions will greatly benefit from an increase in such property tax revenues, resulting from the development and operation of the proposed project.

For the purpose of this analysis, it is necessary to determine the assessed valuation for the proposed project. The value was determined based upon estimated selling prices of approximately $850,000 per unit.[5]

Given the above-mentioned assumptions regarding selling prices, and when applied to the 98 units, the estimated market valuation for taxing purposes is $83.3 million. This was then applied to the Town of Huntington's current residential assessment ratio (RAR) of 0.69% and an equalization rate of 100%. This results in a projected assessed valuation of $574,770, upon full build-out and occupancy of the 98 residential units. This is seen in **Table 3-3**.

Table 3-3
ESTIMATED ASSESSED VALUATION: RESIDENTIAL COMPONENT

	Number of Units	Proposed Selling Price	Assessed Valuation
Three (3)-bedroom Townhouse	98	$850,000	$83,300,000
Residential Assessment Ratio	--	--	0.69
Estimated Market Valuation	--	--	$574,770
Equalization Rate			100.00%
Projected Total Assessment			**$574,770**

Source: Data provided by applicant; Analysis by Nelson, Pope & Voorhis, LLC.

Current tax and equalization rates can be applied to the assessed valuation in order to project the impact that the proposed project will have on the local tax base. **Table 3-4** shows the current tax rates/revenue, as well as the revenues that are projected to be levied from full build-out of the proposed project, and the total revenues – which includes the current revenue generated through the golf course, combined with the revenue projected to be generated from the 98 townhomes. The information provided in the table was derived from the current assessment factors and tax rates provided by the Town of Huntington Receiver of Taxes, the Town of Huntington Assessor's Office, as well as the total projected assessed valuation for the development upon full build-out. It is important to note that all analyses are based on current tax dollars, and the revenue allotted among taxing jurisdictions will vary from year to year, depending on the annual tax rates, assessed

[5] Selling prices were provided by the applicant in November 2018. It is important to note that all costs are estimates based upon market conditions as of the date of submission of this analysis.

valuation and equalization rates. Further, the final assessment and levy will be determined by the sole assessor at the time of occupancy. Projections included herein are as accurate as possible using fiscal impact methodologies, for the purpose of the planning and land use approval process.

The development of the 98 townhomes will significantly increase taxes generated by the site, resulting in a substantial increase in revenues distributed to each taxing jurisdiction. At full build-out, this residential component is projected to generate over $1.6 million in annual taxes. When combined with the existing taxes generated by the golf course, total tax revenue is projected to total over $1.7 million per year.

Upon full build-out of the proposed project and inclusive of the taxes generated by the existing golf course, it is projected that the project will levy over $1.1 million to the School District, representing 65.1% of the total tax generated by the site. Likewise, the proposed project will levy $77,908 to the Library District, comprising 4.5% of the tax levy. Approximately $17,327 or 1.0% of the total tax revenues is projected to be distributed to Suffolk County, $268,410 (15.4%) to the SCPD, and $6,026 to the Out of County Tuition Fund (0.3%). Approximately 9.8% of the tax revenue is projected to be levied to the Town of Huntington, which includes the Town/Part Town funds, Highway Fund and Town-Wide Lighting District. These three (3) line items combine to total over $170,000 in revenues. The Fire District is anticipated to generate a total of approximately $27,007, or 1.5% of the total tax revenue generated by the subject parcel. The balance of the projected property tax revenues is apportioned to various other town and local taxing jurisdictions, as shown in **Table 3-4**.

Table 3-4
PROPOSED TAX REVENUES

Taxing Jurisdiction	Current Tax Revenue	Projected Tax Revenue: 98 Townhomes	Projected Tax Revenue: Total
Northport-East Northport School District	$108,898	$1,028,614	$1,137,512
Northport-East Northport Library District	$7,458	$70,450	$77,908
Suffolk County	$1,659	$15,668	$17,327
Suffolk County Police District	$25,696	$242,714	$268,410
Out of County Tuition	$577	$5,449	$6,026
Town/Part Town	$8,751	$82,663	$91,415
Highway Tax	$6,830	$64,512	$71,342
Town-Wide Lighting District	$735	$6,943	$7,678
New York State Real Property Tax Law	$2,433	$22,979	$25,412
Open Space Bonds II & III	$282	$2,661	$2,943
New York State MTA Tax	$94	$885	$979
Refuse District	$1,193	$38,977	$40,170
Fire District - Protection District #1	$2,586	$24,422	$27,007
TOTAL: ALL TAXING JURISDICTIONS	**$167,191**	**$1,606,938**	**$1,774,129**

Source: Town of Huntington Property Tax Record; Analysis by Nelson, Pope & Voorhis, LLC.

Schools

The impact of any project upon the local school district in which it is located depends on the number of school-age children that will be generated, offset by increased tax revenues and the ability of the school district to provide educational services for these children. The ability of a school district to handle increased demand for educational services depends primarily upon the adequacy of long-term planning within the district, in combination with increased tax revenue generation to strengthen the tax base of the community. Since the proposed project is age-restricted to residents 55 years and older, it is not anticipated that it will generate any school-aged children. As seen in **Table 3-4**, it is estimated that the school district will levy over $1.1 million in taxes from the proposed project, without the district incurring costs associated with an increased enrollment. This net revenue could ease the district's need to tap into additional fund balances, reduce their financial burden, and could also help alleviate an increased burden on other taxpayers throughout the district.

Police Protection

It is not anticipated that the proposed project would have a significant adverse impact on the patrol responsibilities of the SCPD for security/safety purposes. While the potential need for police services to the site would be increased by the addition of residences, this increase would not in itself be a significant added burden on patrol activities, as this use does not generate much potential need for response. A request for confirmation that SCPD is able to provide service for the project was sent in a letter dated September 4, 2018. Although no response was received, earlier correspondence from the SCPD dated August 2, 2016 (see **Appendix P**) indicates that the department will adapt as necessary to protect and serve the community for the previously proposed change of zone project.

Fire Protection and Ambulance Services

Similar to police protection, the proposed project is not expected to have a significant adverse impact on the Northport Fire Department (NFD). The project would incrementally increase the potential need for fire protective services, though this increased potential need would not in itself be a significant added burden on the department. This is due to the project's adherence to the NYS Fire Code in construction, and the anticipated use of fire-resistant building materials and smoke/fire alarms and detectors. A request for confirmation that NFD is able to provide service for the project was sent in a letter dated September 4, 2018. Although no response was received, earlier correspondence from the NFD, email undated (see **Appendix P**) did not indicate any issues for serving the previously proposed change of zone project.

Forty-eight (48) senior townhomes will be located south of Breeze Hill Road with access provided via a new private roadway extending more than 900 feet east from Makamah Road. Pursuant to Suffolk County Planning Commission Subdivision Guidebook Rules and Regulations the maximum length of a cul-de-sac within a residential subdivision should not exceed 1000 feet in a low-density area. Similarly, Town of Huntington Planning Board Regulations and Site Plan Specifications require that 'blocks not ordinarily exceed 900 feet in length'. The purpose of these guidelines is to provide safe and efficient access.

In correspondence to the Northport Fire Department (NFD), dated September 4, 2018, the NFD was requested to review the proposed project map and provide any input regarding their ability to

provide services. In an email dated April 15, 2019, the NFD District had no concerns regarding the ability to provide safe and efficient service.

Water Supply

The proposed project will increase the overall consumption of water. It is anticipated that the proposed project will use approximately 33,350 gallons of water per day resulting in an overall water consumption of the site of approximately 97,198 gpd (including golf course irrigation). Golf course irrigation currently exists and will continue to be sourced from an on-site golf course irrigation well.

A request for confirmation that Suffolk County Water Authority (SCWA) is able to provide service for the project was sent in letters dated September 4, 2018. Correspondence from the SCWA (letter dated March 15, 2019, see **Appendix P**) indicates that existing water mains are available to service the subject site from Breeze Hill Road, Mystic Lane and Fresh Pond Road.

Solid Waste Disposal

The proposed project will generate a greater amount of solid waste than the current use, all of which will be collected via private carters. Approximately 780 pounds of solid waste per day is anticipated based on 3.5 pounds per day per resident and 0.013 lbs/SF/day for the clubhouse. Curbside pickup of refuse is anticipated twice per week with recycling on the third day.

Only dwellings with a class of property between 200-299 that are capable of receiving curbside refuse recycling or yard waste collection can be included in the Town of Huntington Residential Refuse District, and therefore served by the Town or an authorized sub-contractor. All other residential dwellings (including the proposed residences at The Preserve at Indian Hills must contract directly with a private waste removal company.

Public Parks and Recreational Facilities

A variety of recreation facilities will be offered for residents of the townhome development. Furthermore, the proposed subdivision will allow preservation of the golf course. It is not anticipated that there will be a burden on public parks or recreational facilities as a result of the increase in residents to the site.

Energy Services

It is expected that there will be no significant adverse impacts to either PSEG or National Grid as a result of the project's increased use of electricity or natural gas, respectively. Correspondence from the PSEG and National Grid (letters dated September 19, 2018 and February 12, 2019, respectively, see **Appendix P**) indicate that electric and natural gas service can be provided for the proposed project. New construction will utilize appropriate and necessary energy-conserving materials and mechanical systems, minimizing the increased consumptions of these energy forms. In addition, these utilities are chartered to serve development within their service areas, and the area is already well-served with electricity and natural gas. It is expected that the project will utilize energy- and resource-conserving features, materials and systems and may incorporate systems and features associated with the LEED system. These will include modern, energy-efficient building materials (e.g., insulation, windows, weather stripping, door seals, etc.) and

mechanical systems, (e.g., air conditioners, heating systems, HVAC systems, water heaters, heat pumps, etc.).

Market Value of Existing Homes in the Community

The proposed development is expected to have the positive/beneficial impact on surrounding homes as a result of the retention of the golf course and open space, allowing many of the adjacent properties to retain their property value enhancing views and proximity to a recreational use. The 55 and over community of townhomes will not be competitive with the existing housing stock, also of benefit to nearby single-family homeowners. This would preserve property values by not adding competitive supply. Over 55 communities also do not significantly increase traffic in an area, do not add students to the public-school system, and contribute to the real estate tax base. Possible negative impacts are changes in the views for several homes. It appears that four (4) homes may experience affected views on the northwest side of the property. This will be mitigated by the fact that the new townhomes will be constructed at a grade level far below the homes on Hayes Hill Drive (see **Section 3.2.2**). There are approximately eleven (11) existing homes located adjacent to the project on the south side of the project. These homes currently view either woods or possibly the driving range and clubhouse, which are not particularly value enhancing views. The anticipated impact on the values of these homes is nominal (also see **Section 3.3.2**).

There are three (3) homes located near the proposed development at the east end of the property that could be affected by the proposed development. One of those houses currently overlooks a maintenance area, therefore any change in view may be positive. The other two homes overlook the golf course. The views from these homes will be affected as depicted in **Section 3.2.2**. Alteration of views is inevitable under any development of the golf course for single-family homes under current zoning, or the clustering of limited units in strategic locations on the golf course property. The overall conclusions of the real estate value study are provided below:

> "The proposed cluster development would have a minimal impact on property values in the area, affecting only 2 homes. The alternative redevelopment of the site would have a significantly greater impact on the community, probably affecting the values of all homes in the short term, while certainly affecting the value of 23 more homes than the cluster development. Traffic would be less under the cluster development than the single-family home development. The benefits to the school district of the over 55 community, as opposed to the current condition or the alternative development of single-family homes is also a consideration. The proposed over 55 community would add no students to the district, while adding tax dollars over and above what is currently received."

Fiscal Impacts to Suffolk County

In an effort to quantify the fiscal impact that the proposed project will have on Suffolk County, it was necessary to apportion costs between residential and non-residential uses and estimate a per-capita and per-employee cost associated with the provision of County services. The residential share of costs was estimated by dividing the residential property values and number of residential parcels by the total property value and number of parcels within the County boundaries. Likewise, the non-residential share of costs was estimated by dividing the non-residential property values and number of non-residential parcels by the total property value and number of parcels within the boundaries of the County. The residential and non-residential percentages of the total property value and total number of parcels were averaged, and the combined value was applied to the total

County expenditures[6] of approximately $3.0 billion.[7] It is noted that Suffolk County funds expenditures through a variety of methods, including grants, state aid, fees and fines, among others. Since only the tax revenue is being considered, it is important to note that this analysis presents a conservative projection on the costs of providing County services – including those funded via the tax levy, as well as those funded from other sources.

As seen in **Table 3-5**, the estimated share of residential-associated expenditures attributed to the provision of services total 82.3%, or $2.5 billion; the estimated share of non-residential-associated expenditures attributed to providing services totals 17.7%, or $540.0 million.

The estimated share of residential-associated expenditures of $2.5 billion was divided by the estimated total population of the County. The latest 2013-2017 5-Year population estimates indicate an estimated 1.5 million residents in Suffolk County.[8] Given these assumptions, this results in a per-capita expenditure of approximately $1,681. The per-capita expenditure is actually a County-wide cost to provide services to the existing population, based on all housing types. With respect to non-residential-associated expenditures, the estimated share of $540.0 million was divided by the estimated total number of employees located within the County. According to 2018 estimates, this included 744,090 employees.[9] Given these assumptions, this results in a per-employee expenditure of approximately $725.70.

The per-capita expenditure of $1,681 that is associated with the provision of County services was applied to the 147 persons[10] projected to reside at the proposed project. Given these assumptions, the total fiscal impact on Suffolk County is projected to total $247,137 per year. The property taxes of $263,831 generated by the proposed project will cover these costs, and are projected to result in a net revenue to the County of approximately $16,693 per year.

[6] Source of methodology: Development Impact Assessment Handbook, Urban Land Institute, 1994.
[7] New York State Office of the State Comptroller, 2018 Report on Financial Data for Local Governments. Data specific to Suffolk County.
[8] According to the 2013-2017 American Community Survey 5-Year estimates published by the U.S. Census Bureau, there are 1,497,595 persons residing within Suffolk County.
[9] According to the 2018 estimates published by ESRI Business Analyst, there are 744,090 persons employed within Suffolk County.
[10] This figure assumes a residential demographic multiplier of 1.5 persons per household, aged 55 years and older.

Table 3-5
PROJECTED FISCAL IMPACT ON SUFFOLK COUNTY

Parameter	Residential	Non-Residential		Total
Total Expenditures (2017-18 Budget)	--	--		$3,057,754,334
Number of Parcels in Suffolk County (2018)	481,944	104,248		586,192
Percentage of Parcels	82.2%	17.8%		100.0%
Total Assessed Value: Suffolk County[11] (2018)	$70,295,874,461	$14,947,655,266		$85,243,529,727
Percentage of Assessed Valuation	82.5%	17.5%		100.0%
Estimated Percentage of Associated Expenditures: Suffolk County	82.3%	17.7%		100.0%
Estimated Apportioned Expenditures	$2,517,767,583	$539,986,751		$3,057,754,334
Number of Residents/Employees: Suffolk County	1,497,595 residents	744,090 employees		--
Per-Capita/Per-Employee Expenditure	$1,681.21	$725.70		--
Number of Persons Serviced: Proposed Project	147 residents	0 employees		147 persons
Total Fiscal Impact on Suffolk County: Proposed Project	$247,137	$0		$247,137
Total Property Tax Revenues Generated to Suffolk County: Proposed Project	--	--		$263,831
Net Fiscal Impact: Suffolk County	--	--		**$16,693**

Source: Suffolk County; New York State Office of Real Property Services; U.S. Census Bureau; ESRI Business Analyst; Analysis by Nelson, Pope & Voorhis, LLC based upon methodology from Development Impact Assessment Handbook, Urban Land Institute, 1994.

Fiscal Impacts to Town of Huntington

In an effort to quantify the fiscal impact that the proposed project will have on the Town of Huntington, it was necessary to apportion costs between residential and non-residential uses and estimate a per-capita and per-employee cost associated with the provision of Town services. The residential share of costs was estimated by dividing the residential property values and number of residential parcels by the total property value and number of parcels within the Town boundaries. Likewise, the non-residential share of costs was estimated by dividing the non-residential property values and number of non-residential parcels by the total property value and number of parcels within the boundaries of the Town. The residential and non-residential percentages of the total property value and total number of parcels were averaged, and the combined value was applied to

[11] This figure reflects the sum of the assessed value among all ten towns located within the County.

the total Town expenditures[12] of approximately $194.2 million.[13] It is noted that the Town funds expenditures through a variety of methods, including grants, state aid, fees and fines, among others. Since only the tax revenue is being considered, it is important to note that this analysis presents a conservative projection on the costs of providing Town services – including those funded via the tax levy, as well as those funded from other sources.

As seen in **Table 3-6**, the estimated share of residential-associated expenditures attributed to the provision of services total 78.5%, or $152.4 million; the estimated share of non-residential-associated expenditures attributed to the provision of services total 21.5%, or $41.7 million.

The estimated share of residential-associated expenditures of $152.4 million was divided by the estimated total population of the Town. The latest 2013-2017 5-Year population estimates indicate an estimated 204,011 residents within the Town of Huntington.[14] Given these assumptions, this results in a per-capita expenditure of approximately $747.45. Likewise, the estimated share of non-residential-associated expenditures of $41.7 million was divided by the estimated total number of employees located within the Town. According to 2018 estimates, this included 125,263 employees.[15] Given these assumptions, this results in a per-employee expenditure of approximately $333.34.

The per-capita expenditure of $747.45 that is associated with the provision of Town services was applied to the 147 persons[16] projected to reside at the proposed project. Given these assumptions, the total fiscal impact on the Town of Huntington is projected to total $109,876 per year. The property taxes of $170,435 generated by the proposed project will cover these costs, and are projected to result in a net revenue to the Town of approximately $60,559 per year.

[12] Source of methodology: Development Impact Assessment Handbook, Urban Land Institute, 1994.
[13] New York State Office of the State Comptroller, 2018 Report on Financial Data for Local Governments. Data specific to the Town of Huntington.
[14] According to the 2013-2017 American Community Survey 5-Year estimates published by the U.S. Census Bureau, there are 204,011 persons residing within the Town of Huntington.
[15] According to the 2017 estimates published by ESRI Business Analyst, there are 125,263 persons employed within the Town of Huntington.
[16] This figure assumes a residential demographic multiplier of 1.5 persons per household, aged 55 years and older.

Table 3-6
PROJECTED FISCAL IMPACT ON TOWN OF HUNTINGTON

Parameter	Residential	Non-Residential	Total
Total Expenditures (2018 Budget)	--	--	$194,244,079
Number of Parcels in Town of Huntington (2018)	64,738	9,077	73,815
Percentage of Parcels	87.7%	12.3%	100.0%
Total Assessed Value: Town of Huntington (2018)	$253,441,112	$112,252,197	$365,693,309
Percentage of Assessed Valuation	69.3%	30.7%	100.0%
Estimated Percentage of Associated Expenditures: Town of Huntington	78.5%	21.5%	100.0%
Estimated Apportioned Expenditures	$152,488,712	$41,755,367	$194,244,079
Number of Residents/Employees: Town of Huntington	204,011 residents	125,263 employees	--
Per-Capita/Per-Employee Expenditure	$747.45	$333.34	--
Number of Persons Serviced: Proposed Project	147 residents	0 employees	147 persons
Total Fiscal Impact on Town of Huntington: Proposed Project	$109,876	$0	$109,876
Total Property Tax Revenues Generated to Town of Huntington: Proposed Project	--	--	$170,435
Net Fiscal Impact: Town of Huntington	**--**	**--**	**$60,559**

Source: Town of Huntington; New York State Office of Real Property Services; U.S. Census Bureau; ESRI Business Analyst; Analysis by Nelson, Pope & Voorhis, LLC based upon methodology from Development Impact Assessment Handbook, Urban Land Institute, 1994.

3.3.3 Proposed Mitigation

- The proposed project will generate significant increases in tax revenues and allocations to each of the pertinent community services would offset the increased costs to the pertinent community services to provide services.
- The proposed units are for seniors, aged 55 or more, and therefore, no school age children will result from the project. This increases the beneficial impact of tax revenue to the school district.
- The school district will levy over $1.1 million in taxes from the proposed project, without the district incurring costs associated with increased enrollment. This net revenue could ease the district's need to tap into additional fund balances, reduce their financial burden, and could also help alleviate an increased burden on other taxpayers throughout the district.
- Smoke and fire detectors will be installed in the proposed homes and current construction standards will be adhered to as mandated by the NYS Building Code.
- Water-conserving plumbing fixtures and mechanical systems will be used where appropriate in order to minimize water consumption.
- While the proposed project will result in an increase in solid waste generated on-site, this waste will be removed from the site and disposed of properly. As a result, no mitigation measures are necessary or proposed.
- Energy-efficient design and current construction methods will be utilized and buildings will be constructed consistent with NYS Building Code.
- The proposed development, overall, would have a positive impact on property values in the area. The 55 and over community of townhomes would also be non-competitive with the existing

housing stock. This would preserve property values by not adding competitive supply. Over 55 communities also do not significantly increase traffic in an area, do not add students to the public school system, and contribute to the real estate tax base.

- Indian Hills Country Club has a history of community service with plans to increase opportunities for charitable, educational and community organizations to utilize the facilities to their benefit. Charity Golf Outings, Fund Raisers for PTA and school organizations, installment dinners for local fire departments, and to provide a home course for the Northport HS Golf Team. These are just a few examples of community, charitable and philanthropic uses available to the public.
- The landscape species to be planted on the subject site are described in **Section 1.6.6** of this DEIS.

3.4 Transportation

3.4.1 Existing Conditions

A Traffic Impact Study (TIS) has been prepared for the project by Nelson & Pope. The TIS, dated January 2019 is provided in **Appendix Q-1.** The study evaluates the potential traffic impacts associated with the proposed application for the addition of 98 senior housing units. This report summarizes the results of a detailed investigation of the traffic impacts associated with the proposed senior housing development by reviewing the area's existing roadway characteristics and traffic conditions, estimating the vehicular volume and pattern that the proposed project will generate during peak hours, and analyzing the effect of the additional volume on the surrounding roadway network. TIS Figure 1 shows the overall study area and Figure 2 shows the study intersections. The key elements of the existing conditions assessment are provided herein:

In executing the scope of work, the following steps were undertaken.

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, location/geometry of existing driveways and intersections along with signing, signal timings, phasing and cycle lengths.
- Turning movement traffic counts were conducted during the weekday morning (7:00 AM to 9:00AM), weekday evening (4:00 PM to 6:00 PM) and Saturday midday (11:00 AM to 2:00 PM) peak periods at the following intersections: o Fort Salonga Road (NYS 25A) at Makamah Road
    - Fort Salonga Road (NYS 25A) at Fresh Pond Road/Bread and Cheese Hollow Road
    - Makamah Road and Breeze Hill Road
    - Makamah Road and Makamah Beach Road/Mystic Lane
    - Fresh Pond Road and Breeze Hill Road
- Automated Traffic Recorder (ATR) machines were placed on Makamah Road in the vicinity of the proposed site access driveway to the southwest quadrant to collect vehicle speeds and volumes.
- The most recent 3-years of accident data for the study intersections and roadways in the vicinity of the site was obtained from NYSDOT. The data was tabulated and summarized.
- The turning movement counts collected at each intersection was tabulated for each time period. Peak hours were identified and peak hour factors calculated for each approach.
- An Estimated Time of Completion (ETC) year of 2020 (2 years) is anticipated for this project. Therefore, a horizon year of 2020 was utilized for No Build and Build conditions to determine the impacts that may be created by the construction of this project.

- An annual growth factor of 1.0% obtained from the NYSDOT LITP2000 Study for the Town of Huntington was applied to the existing traffic volumes to estimate the increase in background traffic that would occur in 2020. These volumes are referred to as the Ambient No Build Volumes.
- The Towns of Huntington and Smithtown were contacted to obtain information on other planned projects in the nearby area that may affect the study intersections. At the time this study was conducted there were no significant planned projects in the vicinity of the proposed project provided by either municipality.
- Estimates of traffic that would be generated by the proposed senior housing development were prepared utilizing trip generation data published by the Institute of Transportation Engineers (ITE) publication, *Trip Generation, Tenth Edition*. The site-generated traffic volumes were assigned to the adjacent street system based upon the anticipated directional trip distribution forecasted by Nelson & Pope.
- The 2020 Build Condition volumes for the proposed senior housing development were developed by adding the site generated traffic volumes to the 2020 No Build Condition volumes.
- Capacity analyses were performed at the study intersections for the Existing Condition, No Build Condition and Build Condition for weekday AM, PM and Saturday midday peak hours.
- The results of the analyses for the 2020 No Build Conditions and 2020 Build Conditions were compared to identify any significant impact associated with the proposed senior housing development.

3.4.2 Anticipated Impacts

In order to identify the potential impacts the proposed senior housing development may have on the adjacent street system, it is necessary to estimate the magnitude of traffic volume generated during the peak hours and to estimate the directional distribution of the site traffic when entering and exiting the subject property. The trip generation estimates for the proposed development were prepared utilizing data within the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, Tenth Edition*. This publication sets forth trip generation data obtained by traffic counts conducted at sites throughout the country. The Land Use Code within the ITE trip generation manual corresponding to the proposed use is Land Use Code # 251, Senior Housing Detached. **Table 3-7** provided below summarizes the trip generation estimates for the proposed development. Appendix B of the TIS contains the trip generation worksheets.

Table 3-7
TRIP GENERATION

Time Period	Distribution	Senior Housing 38 Units (ITE LUC 251) NW Quadrant	Senior Housing 12 Units (ITE LUC 251) NE Quadrant	Senior Housing 48 Units (ITE LUC 251) SW Quadrant	**TOTAL** (98 Units)
Weekday AM Peak Hour	Enter	6	3	7	16
	Exit	14	5	6	35
	Total	**20**	**8**	**23**	**51**
Weekday PM Peak Hour	Enter	14	5	16	35
	Exit	9	4	11	24
	Total	**23**	**9**	**27**	**59**
Saturday Midday Peak Hour	Enter	4	1	5	10
	Exit	5	2	6	13
	Total	**9**	**3**	**11**	**23**

Source: Trip Generation, 10th Edition, published by ITE

As can be seen from **Table 3-7** above, the three locations of proposed senior housing development are projected to generate 51 trips (16 entering and 35 exiting) during the weekday AM peak hour, 59 trips (35 entering and 24 exiting) during the weekday PM peak hour and 23 trips (10 entering and 13 exiting) during the Saturday midday peak hour.

The volume of site traffic anticipated to be generated by the proposed senior housing development during peak hours was distributed and assigned to each intersection movement based on existing roadway volumes and travel patterns. The nature of the proposed land use and its associated travel patterns were considered as well. Due to the fact that the project will be developed in three different quadrants, a percent distribution was prepared for each. **Tables 3-8** through **3-13** below, summarized the analysis results for the 2020 No Build and Build conditions. The six classes of LOS, ranging from LOS A (best) to F (worst), are defined in Appendix C of the TIS.

Table 3-8
LEVEL OF SERVICE SUMMARY (SIGNALIZED) – AM PEAK

			No Build		Build	
Signalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Bread and Cheese Hollow Rd/ Fresh Pond Rd	EB	L	6.8	A	7	A
		T	10.5	B	10.7	B
		R	4.5	A	4.7	A
	WB	L	7.5	A	7.6	A
		TR	10.5	B	10.7	B
	NB	LTR	24.6	C	25.2	C
	SB	LT	18.8	B	20.1	C
		R	7.9	A	7.8	A
	Intersection		11.4	B	11.9	B

Notes: LOS = Level of Service, Delay = seconds/vehicle,

Table 3-9
LEVEL OF SERVICE SUMMARY (UNSIGNALIZED) – AM PEAK

			No Build		Build	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Makamah Rd	EB	LT	0.7	A	0.8	A
	SB	LR	18.6	C	20.1	C
Makamah Rd at Breeze Hill Rd	WB	LR	9.1	A	9.3	A
	SB	LT	4.1	A	4.2	A
Makamah Rd at Makamah Beach Rd/Mystic Ln	EB	LTR	8.5	A	8.5	A
	WB	LTR	9.1	A	9.2	A
	NB	LTR	2.1	A	1.6	A
	SB	LTR	0.0	A	0.0	A
Fresh Pond Rd at Breeze Hill Rd	EB	LTR	9.1	A	9.2	A
	WB	LTR	9.4	A	9.8	A
	NB	LTR	2.9	A	4.0	A
	SB	LTR	0.8	A	0.7	A
Fresh Pond Rd at Northeast Site Access	EB	LR	-	-	8.5	A
	NB	LT	-	-	0.8	A
Breeze Hill Rd at Southwest Site Access	WB	LT	-	-	8.8	A
	NB	LR	-	-	0.5	A

Notes: LOS = Level of Service, Delay = seconds/vehicle

Table 3-10
LEVEL OF SERVICE SUMMARY (SIGNALIZED) – PM PEAK

			No Build		Build	
Signalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Bread and Cheese Hollow Rd/ Fresh Pond Rd	EB	L	8.1	A	8.6	A
		T	11.9	B	12.1	B
		R	4.6	A	4.6	A
	WB	L	7.7	A	8	A
		TR	14	B	14.7	B
	NB	LTR	28.2	C	29.4	C
	SB	LT	20.5	C	21.7	C
		R	4.1	A	4.5	A
	Intersection		14	B	14.7	B

Notes: LOS = Level of Service, Delay = seconds/vehicle

Table 3-11
LEVEL OF SERVICE SUMMARY (UNSIGNALIZED) – PM PEAK

			No Build		Build	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Makamah Rd	EB	LT	1.1	A	1.4	A
	SB	LR	23.5	C	26.7	D
Makamah Rd at Breeze Hill Rd	WB	LR	8.8	A	9.1	A
	SB	LT	2.5	A	2.9	A
Makamah Rd at Makamah Beach Rd/Mystic Ln	EB	LTR	8.5	A	8.5	A
	WB	LTR	9.0	A	9.4	A
	NB	LTR	4.1	A	2.7	A
	SB	LTR	1.5	A	1.5	A
Fresh Pond Rd at Breeze Hill Rd	EB	LTR	9.0	A	9.0	A
	WB	LTR	9.5	A	9.9	A
	NB	LTR	3.7	A	4.4	A
	SB	LTR	0.9	A	0.7	A
Fresh Pond Rd at Northeast Site Access	EB	LR	-	-	8.4	A
	NB	LT	-	-	0.8	A
Breeze Hill Rd at Southwest Site Access	WB	LT	-	-	8.8	A
	NB	LR	-	-	1.6	A

Notes: LOS = Level of Service, Delay = seconds/vehicle

Table 3-12
LEVEL OF SERVICE SUMMARY (SIGNALIZED) – SATURDAY PEAK

			No Build		Build	
Signalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Bread and Cheese Hollow Rd/ Fresh Pond Rd	EB	L	8.2	A	8.2	A
		T	16.1	B	16.2	B
		R	5.6	A	5.7	A
	WB	L	10.4	B	10.5	B
		TR	11.9	B	12	B
	NB	LTR	31.4	C	32	C
	SB	LT	21.9	C	22.4	C
		R	3.3	A	3.6	A
	Intersection		15.8	B	16.1	B

Notes: LOS = Level of Service, Delay = seconds/vehicle

Table 3-13
LEVEL OF SERVICE SUMMARY (UNSIGNALIZED) – SATURDAY PEAK

			No Build		Build	
Unsignalized Intersections	**Approach**	**Movt.**	**Delay**	**LOS**	**Delay**	**LOS**
Fort Salonga Road (NYS 25A) at Makamah Rd	EB	LT	1.1	A	1.2	A
	SB	LR	17.6	C	19.2	C
Makamah Rd at Breeze Hill Rd	WB	LR	9.1	A	9.2	A
	SB	LT	2.1	A	2.4	A
Makamah Rd at Makamah Beach Rd/Mystic Ln	EB	LTR	8.7	A	8.7	A
	WB	LTR	9.6	A	9.6	A
	NB	LTR	3.6	A	3.3	A
	SB	LTR	0.0	A	0.0	A
Fresh Pond Rd at Breeze Hill Rd	EB	LTR	8.8	A	8.9	A
	WB	LTR	9.7	A	9.8	A
	NB	LTR	3.9	A	4.1	A
	SB	LTR	0.0	A	0.0	A
Fresh Pond Rd at Northeast Site Access	EB	LR	-	-	8.5	A
	NB	LT	-	-	0.2	A
Breeze Hill Rd at Southwest Site Access	WB	LT	-	-	8.8	A
	NB	LR	-	-	0.3	A

Notes: LOS = Level of Service, Delay = seconds/vehicle

Fort Salonga Road (NYS 25A) and Bread and Cheese Hollow Road/Fresh Pond Road
In the No Build Condition, the signalized intersection of Fort Salonga Road (NYS 25A) and Bread and Cheese Hollow Road/Fresh Pond Road is, from an overall perspective, projected to operate at overall LOS B during all peak periods. With the construction of the proposed project, the overall intersection as well as the individual movements will continue to operate at No Build conditions during all peak

hours with minimal increase in delay. Therefore, no significant impacts are created and no mitigation measures are proposed at this intersection.

Fort Salonga Road (NYS 25A) and Makamah Road
In the No Build Condition, the eastbound left-turn movement at this unsignalized intersection is projected to operate at LOS A during all peak periods. The southbound stop-controlled approach (Makamah Road) of this unsignalized intersection is projected to operate at LOS C during all peak periods. With the construction of the proposed project, the eastbound left-turn movement will continue to operate at No Build conditions during all peak hours with minimal increase in delay. Under the Build condition, the stop controlled southbound approach is anticipated to have a degradation in LOS from C to D during the PM peak period with an anticipated increase in delay of only 3.2 seconds.

Makamah Road at Breeze Hill Road
In the No Build Condition, the westbound stop-controlled approach of this unsignalized intersection as well as the southbound left-turn movement are projected to operate at LOS A during all peak periods. With the construction of the proposed project, the intersection will continue to operate at No Build conditions during all peak hours with minimal increase in delay. Therefore, no significant impacts are created and no mitigation measures are proposed at this intersection.

Makamah Road at Makamah Beach Road/Mystic Lane
In the No Build Condition, all approaches of this unsignalized intersection are projected to operate at LOS A during all peak hours. With the construction of the proposed project, the intersection will continue to operate at No Build conditions during the analyzed peak periods with minimal increase in delay. Therefore, no significant impacts are created and no mitigation measures are proposed at this intersection.

Fresh Pond Road and Breeze Hill Road
In the No Build Condition, all approaches of this unsignalized intersection are projected to operate at LOS A during all peak periods. With the construction of the proposed project, the intersection will continue to operate at No Build conditions during the analyzed peak periods with minimal increase in delay. Therefore, no significant impacts are created and no mitigation measures are proposed at this intersection.

Fresh Pond Road and Northeast Quadrant Site Access
In the Build Condition, the eastbound stop-controlled approach (Site Access) of this unsignalized intersection is projected to operate at LOS A during all peak periods. The northbound left-turn movement is also projected to operate at LOS A during all peak hours.

Makamah Road at Southwest Quadrant Site Access
In the Build Condition, the westbound stop-controlled approach (Site Access) of this unsignalized intersection is projected to operate at LOS A during all peak periods. The southbound left-turn movement is also projected to operate at LOS A during all peak hours.

The conclusions of the TIS are summarized as follows:

1. A sight distance analysis was performed on Makamah Road at the proposed access to the southwest quadrant, Lee's Court and was determined that upon the regrading required at this

location due to the existing topography the available sight distance will exceed AASHTO recommended values for the 85th percentile operating speeds of the main roadway.

2. All the intersections studied are projected to continue operating at No Build LOS during the weekday AM, PM and Saturday midday peak hours with the construction of the proposed senior housing development with minimal increase in delay with the exception of Fort Salonga Road (NYS 25A) at Makamah Road during the PM peak period where the southbound stop-controlled approach is anticipated to change from LOS C to LOS D with an increase in delay of only 3.2 seconds.

Based on the results of the Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Nelson & Pope that, constructing the proposed senior housing development on the Indian Hills Country Club property will not result in any adverse traffic impacts in the study area.

3.4.3 Proposed Mitigation

- Based on the results of the Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Nelson & Pope that no traffic mitigation is necessary.

A prior change of zone to R-OSC was proposed for the subject site. The R-OSC change of zone did contemplate certain improvements to this intersection that would occur as a result of the change of zone. The current application for use under existing zoning is evaluated in terms of potential traffic impacts, and there are no impacts to the intersection of Makamah Road and NYS Route 25A. No mitigation is proposed or necessary to the intersection of Makamah Road and NYS 25A. All study intersections meet operational thresholds. As a result, no off-site improvements are proposed.

3.5 Human Health

3.5.1 Existing Conditions

A Phase I Environmental Site Assessment (ESA) was completed for the property in February 2014 to determine whether any potential environmental or public health concerns are present on the site. The purpose of the assessment was to, in part, establish a basis of understanding of the past and present uses of the sites in order to identify any recognized environmental conditions which may exist in connection with the site and surrounding properties. The Phase I ESA report is provided in **Appendix I-1**. Reported and closed spills in the NYSDEC database are included in the Phase I ESA. Based on the recommendations of the Phase I ESA report, a Limited Phase II ESA (dated August 31, 2015; see **Appendix I-2**) and a Pesticide Report (dated November 6, 2015; see **Appendix I-3**) was conducted on the property to address specific issues raised in the Phase I ESA.

Additionally, a Supplemental Suffolk County Department of Health Services (SCDHS) Phase II ESA (dated December 30, 2016; see **Appendix I-4**) was completed to address issues raised by the SCDHS in order to determine if elevated concentrations were present in a small drywell located on the south side of the main club, the Pro Shop building sanitary system and the dirt-filled pit in the maintenance garage the structures sampled. A sampling and analysis program was designed to determine if these structures had been impacted by the prior and existing uses of the subject property.

3.5.2 Anticipated Impacts

Site remediation activities were performed to address the issues discovered during the Limited Phase II ESA (see **Appendix I-2**). All remediation activities were coordinated with the Suffolk County Department of Health Services (SCDHS) to ensure that appropriate methods and procedures are utilized to ensure that all impacted materials are removed in compliance with their requirements and standards. Remediation was completed on the clubhouse kitchen sanitary system in February and March of 2017. A 'no further action' letter was issued by SCDHS and is included in **Appendix I-6**. Removed soils were transported by a licensed waste hauler to an appropriate facility for disposal. Given this oversight, no significant adverse impacts are anticipated with respect to soils due to past site uses or existing contamination conditions.

The site is an active golf course operation that has been in existence since 1961. The proposed project will situate residential uses on parts of the golf course, while retaining the full 18-hole golf course as a permanent recreational open space resource. As part of this application, the applicant prepared a Golf Course Environmental Management Plan to improve evaluate and improve operations for environmental protection purposes. This document is included as **Appendix G** and is described and referenced in **Section 1.7** of this DEIS.

The Town has expressed human health concerns through the adoption of the Final Scope, that are addressed herein:

> In response to the Town of Huntington's concerns for adequate protection of the environment, and as a component to the Club's Golf Course Environmental Management Plan, turf management will continue to meet or exceed the Best Management Practices for New York State Golf Courses (NYSBMP). The BMP was developed with Cornell University, New York State's golf course superintendents, the NYSDEC and other stakeholders. It is a State standard for turf management practices, designed to protect natural resources, with an emphasis on water quality. The BMP is a decision-making tool with tools for post decision monitoring and record keeping, conducted to evaluate and adjust applied turf management strategies. The course operations and any modifications caused by the proposed residential development will meet the BMP principals and additional healthy turf management strategies. Indian Hills currently exemplifies environmental stewardship, and coexists with adjoining residential land uses without negative impacts to the environment.

- *Indian Hills Participation in Audubon International*

  For a holistic approach to turf management, coupled with its commitment to environmental stewardship Indian Hills is a member of Audubon International. The Club's goal is achieving full Audubon International Certification. The Audubon program is a recognized environmental stewardship program for golf courses. The program includes six individual certifications to achieve full certification: Environmental Planning, Water Conservation, Water Quality, Chemical Reduction, Wildlife & Habitat, and Public Outreach. The application process requires submission of descriptive maps, photographs, detailed statement of environmental goals, and documentation on how and when goals will be achieved, water quality sample analysis (TKN, BOD, COD, pH, etc.) wildlife inventory counts, and other similar requirements. The Club is currently developing its Environmental Planning initiatives.

- *Golf Course Environmental Management Plan (GCEMP)*

  The GCEMP approach uses plant health science-based technologies coupled with an Integrated Pest Management (IPM) program. The Plan is based on scientific methods for managing turf, with minimal inputs, known in the turf industry as an Integrated Turf Health Management Plan. These methods create a system of protocols to *manage healthy turf* by using science, technological resources and cultivation practices to grow healthy turfgrass. Healthy dense turf is the cornerstone of minimizing inputs. The applicants will implement the GCEMP program as an effective management tool to minimize inputs, thereby reducing potential impacts. The GCEMP program is implemented through the course operations and includes: soil amendments; irrigation system management; turf equipment; support technologies; selection of turfgrass cultivars; daily scouting for pests and turf conditions, monitoring pest thresholds; laboratory based disease/pest identification; recordkeeping and monitoring; timing and characteristics of selected and applied fertilizers and pesticides. All are factors and tools to be used by the professional golf course Superintendent to accomplish the goal of minimizing impacts. The turf managers will promote healthy turf with improved soil health (maintaining types and quantities of microbes; maintaining adequate oxygen; sustaining correct water retention and organic matter, etc.). Management will improve the surface conditions for turf health by managing shade, improving air circulation, controlling light exposure and minimizing wear. Decision making within the GCEMP approach gives priority to cultural practices and natural methods of turf care. The GCEM Plan is dynamic and responsive to environmental changes. The GCEMP includes the Integrated Pest Management Plan (IPM). IMP uses preventative pest and disease strategies of an integrated organic pest management approach, and offers a reduction in non-organic pest treatment technologies commonly used on Suffolk County golf courses. Pesticide use is limited to applications during extreme pest pressure conditions, when other treatments fail to prevent or cure the pest problems whereby turf loss would be catastrophic, and are typically restricted to spot treatments and primarily restricted to greens. Preventative and curative pest treatment technologies will be reviewed by the Superintendent to assess efficacy. The current nutrient inputs have been reduced to a not to exceed limit of 2.5-pounds of total nitrogen per 1000 SF per year throughout the golf course turf area, excluding the roughs. Suffolk County Fertilizer Law was enacted to reduce nitrogen impacts to ground and surface water. It exempts golf courses but recommendations are to apply 3-pounds of nitrogen per 1000 SF per year. Current industry and governmental goals are set to lower this to 2.1 pounds per 1000 SF. The Indian Hills fertilizer records indicate golf course annual nutrient applications are less than 2-pounds of total nitrogen per 1000 SF. This represents a 66% reduction in applied nitrogen compared to the allowable amount designed to protect ground and surface water. Applied nutrients to golf course roughs are minimized, with grass clippings from tees and greens dispersed in the roughs to provide nutrients stored in the grass clippings and accounted for in the overall nitrogen mass balance equation.

- *Utilize Bio-Filters to Reduce Sediment and Stormwater Generated Pollutants:*

  Where practicable (determined by topography, clearing limits, and peak flow analyses) stormwater from the golf course is pre-treated using bio-filters (grassed swales). The bio-filters collect and retain sediment and absorb nutrients from the stormwater before it reaches ponds and/or leaching pools. Bio-filters include the secondary roughs which are naturalized areas designed to treat stormwater runoff generated at the golf course as well as throughout the developed property.

- *Voluntary Participation in and Compliance with the Standards of The Peconic Estuary Nitrogen Management Challenge for Golf Courses:*

This voluntary program was developed with Cornell University, USEPA, Peconic Estuary Program stakeholders, SCDOH, USGA, and local east end golf course superintendents. The program limits the long-term average nitrate in groundwater to $\leq$ 2.0 ppm; well below the New York and Federal Standard for groundwater of 10 ppm.

- *Utilize State of the Art Irrigation Control Systems:*

  Golf course irrigation systems today use computer-controlled irrigation sprinklers and drip irrigation that are managed by in-ground soil moisture meters, hand held moisture meters and above ground weather stations. These technologies maintain soil moisture levels near field capacity. High efficiency electric variable frequency drive (VFD) pumps and individual sprinkler head controls allow water to be applied where and when it is required, without sequencing of entire zones. This reduces over and under watering which can decrease plant health, increase stress and disease pressure, and hold potential for pesticide and nutrient runoff and leaching concerns. Turf areas that comprise the bunker surrounds will be irrigated by subsurface "drip" irrigation to minimize water entering the sand bunker. The system reduces the watering time, minimizes and conserves water resources. When necessary, wetting agents will be used to reduce water inputs and improve water dispersion to the root zone.

- *Develop Cultural Practices for Promoting Turf Health*

  The selection of turfgrasses, and management practices includes implementing scheduled cultivation to promote healthy turf and improved soil conditions. The program includes aerification with topdressing soil (sand/soil/peat) as prescribed by physical soil tests; aerification to relieve compaction and to improve drainage and soil gas exchange; verti-cutting to remove excessive thatch (organic matter); drill and fill (deep soil coring to improve soil conditions); mowing height adjustments to relieve turfgrass wear and stress. Cultivation will be used to improve air circulation and provide proper soil moisture throughout the course. To date several trees and shrubs that restrict adequate air circulation have been pruned or removed.

- *Utilize State of the Art Equipment and Resources and Trained Personnel for Turf Management*

  The turf industry offers improved technologies for equipment and continuing education programs for its industry members. Hybrid (electric/fossil fuel) fairway mowers and battery powered hand green mowers, and greens rollers have significantly improved energy conservation goals and reduced the golf industry's fossil fuel use. The course managers use a powered turf boom sprayer with spray nozzle boom curtain with computerized application controls (designed to specifically apply inputs and direct nozzle spray downward with zero to minimal drift potential). The existing turf management facilities are equipped with emergency response and spill cleanup kits, trained personnel, concrete wash down pad; fuel and chemical storage and handling equipment that exceeds the minimum standards for SCDOH and NYSDEC. Continued education and personnel training minimizes unintentional turf chemical applicator error, (over and under sprays) and conserves inputs by treating only areas of specific need. The fertilizer spreaders and turf sprayer equipment are carefully calibrated to minimize drift, and potential for errors. Mowers and irrigation system controls are serviced by professionals as part of an overall turf management system. Turf and soil samples are routinely collected and analyzed by qualified laboratories to determine nutrient levels, plant physiological conditions, physical properties of soils and turf pathogen identification. Daily record keeping is performed using turf management specific software and hand held or desk top computers.

- *Operate and Maintain a Sustainable Golf Course Facility*

Today's professional golf facility management is based on sustainability. Clubhouse menus are designed around local food sources and season availability. Clubs often grow their own herbs and vegetables, install solar panels to recharge batteries in electric golf carts and turf equipment, and supply heated water for pools, showers and buildings. Several facilities recycle their kitchen and golf course organic waste for compost, compost teas, topdressing and landscape garden mulch. Integrated with these programs are ornamental gardens with selected plants to attract and maintain populations of butterflies, bees, and hummingbirds, bluebirds, bats, purple martins, and provide wood duck houses that are installed throughout the course and grounds. Sustainability reduces operating costs and provides users a connection to the local environment.

- *Provide Public Outreach Programs for Turf Management*

  Turf and ornamental plantings are mainstays of local residential properties. The Indian Hills staff will offer its professional and technical support to the local community. Using website communications and local presentations the Club will educate the community on how to improve turf health and its quality with minimal inputs to protect water quality. Local students will be invited to observe and participate in natural resource educational projects, birding and similar educational forums.

  The Indian Hills golf course turf management strategies include: annual soil and plant tissue testing as measures for assessing the nutrient status of turf; a weekly monitoring program of clipping yield to assess turfgrass growth and density; control of thatch and mat accumulation; water quality monitoring of groundwater and ponds, streams, or other water bodies for determining if runoff and leaching are occurring; moisture metering and irrigation system monitoring for improved water conservation with limits on course irrigated areas; use of cultural practices to reduce turf stress and disease pressure; and adverse impact potential from variations in the formulation of supplemental nutrients.

  Methods to estimate nitrogen loading were developed by the USEPA, USGA, Peconic Estuary Program stakeholders and Eastern Long Island golf course superintendents in a program called the "East End Nitrogen Reduction Program for Golf Courses." This program has been in place for more than a decade, has specifically targeted a reduction of golf course generated nitrogen limited to 2.0 mg/L, is still active and administered by Cornell Cooperative Extension. Cornell calculates the nitrogen loading from participating golf courses by using the quantity (expressed in pounds) of applied nitrogen to the area of fertilized as well as unfertilized land within the entire golf property boundaries (expressed in square feet or acres). Therefore, when nitrogen applications are measured as a mass per unit of area the potential of nitrogen loading from properly managed turf it is expected to be much less than managed turf in areas of Suffolk County.

Based on the Golf Course Environmental Management Plan, which will be implemented on an ongoing basis following subdivision approval, no adverse human health impacts are anticipated. In addition, the Indian Hills Country Club has completed Phase I and II Environmental Site Assessments, and all recognized environmental conditions that have been identified through this process have been fully addressed and a sign-off letter has been received from SCDHS. As a result, no adverse human health impacts are anticipated with respect to past operations.

3.5.3 Proposed Mitigation

- Indian Hills Golf Club has developed a formal Golf Course Environmental Management Plan provided in **Appendix G**). The Plan is helpful for identifying golf course management and

operational procedures coupled with environmental stewardship programs. The Plan minimizes or avoids potential adverse environmental impacts of concern regarding the Indian Hills residential development.

- *Continue Management of the Golf Course in Accordance with Best Management Practices for New York State Golf Courses, (BMPNYS) February, 2014.*

3.6 Cultural and Historic Resources

3.6.1 Existing Conditions

Phase I, Phase II, Phase IB Archaeological Addendum and Phase II Addendum Archaeological Investigations were conducted for the proposed improvements at the subject site by TRACKER Archaeology, Inc. of Monroe, New York, dated October 2015 (**Appendix R-1**), October 2018 (**Appendix R-2**), and March 2019 (**Appendix R-3**) respectively for the proposed Indian Hills Development to determine the prehistoric and historic potential of the property for the recovery of archaeological remains.

The purpose of the Phase I archaeological survey is to establish the presence or absence of archaeological sites. If the site is to be impacted by proposed construction or other activities, Phase II intensive testing of any archaeological site is them specified by the regulations of the New York State Historic Preservation Office and the National Advisory Council on Historic preservation. Phase II investigation methods should interpret the archaeological sites and determine if it is eligible for the nomination to State or National Registers of Historic Places. Phase II investigations would supply information needed to make this determination and would include:

1) Site integrity, including the depth and extent of undisturbed soil horizons and the presence or absence of cultural features, and the degree of natural and/or human disturbances to those features.
2) Cultural components/affiliations and time range present.
3) Vertical and horizontal distribution of archaeological remains (spatial boundaries and stratigraphic levels).
4) Site interpretation, including any uniqueness/significance, in a local or regional context, must be demonstrated.

This was accomplished by a review of the original and current environmental data, archaeological site files, other archival literature, maps, and documents. A prehistoric site file search was conducted utilizing the resources of the New York State Historic Preservation Office (OPRHP) - Field Services Bureau in Waterford, New York. Various historical and archaeological web sites were reviewed for any pertinent information. A Phase IB survey was conducted to recover physical evidence for the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing and ground surface reconnaissance. A prehistoric site was encountered in the NW area, consisting of 7 positive ST's with 1 artifact per ST. The Phase II study was conducted in September 2015. The October 2018 addendum (revised) was in response to a request by OPRHP for additional work (letter dated October 30, 2018, **Appendix R-2**) and additional project area. The Addendum recommended a Phase II in 3 areas, 2 in the northwest part and 1 on the southeast part of the site (Sites A, B & C). After further review, SHPO then

recommended that in addition to a Phase II at Sites A, B, and C that work be conducted into the 2015 area and this is included as part of Site A Phase II work (Lloyd: letters dated October 30 & November 2, 2018).

3.6.2 Anticipated Impacts

Based upon topographic characteristics, distance to other known prehistoric sites and an Indian trail, the property was assessed as having a higher than average potential for encountering prehistoric sites. Based upon topographic characteristics, distance to historic map documented structures, historic sites, historic roads, and an Indian trail, the property was assessed as having a higher than average potential for encountering historic sites. The field testing included the excavation of shovel tests at 15-meter intervals across the project area. No prehistoric or historic artifacts or features were encountered on the golf drive range (SW section) or the maintenance area (NE section). A Native American site was encountered on the northwest section consisting of 7 artifacts of quartz and black/olive green glass, flakes and small tools in 7 positive ST's.

No further work was recommended at the golf drive range (SW section) or the maintenance area (NE section). However, a Phase II intensive testing was recommended and implemented on the North-West Section of the project area (near the bluff overlooking the Long Island Sound) and 2 areas in the northwest part and 1 area on the southeast part of the site. Phase II addendum investigations at Sites A, B, and C included 134 close interval ST's and 14 TU's. The shovel testing started off with ST 398 because the Phase IB addendum ended in ST 397.

3.6.3 Proposed Mitigation

- Between 2015 and 2019, TRACKER Archaeology, Inc. conducted intensive survey work under the direction of New York State Historic Preservation Office (OPRHP) for the proposed improvements at The Preserve at Indian Hills as documented in **Appendices R-1, R-2, R-3 and R-4**.
- The Summary and Conclusions of the Phase I and II indicated the following: Based upon these results the project site has no research value that would make it eligible for the historic registers. Therefore, no further work is recommended and no mitigation required. New York State Historic Preservation Office had reviewed and accepted the revised Phase IB Addendum archaeological survey report for additional Phase II testing.
- OPRHP review of the March 2019 submission (**Appendix R-3**)entitled "Phase II Addendum Archaeological Investigation at Indian Hills Prehistoric Sites A, B, & C for proposed Additional Improvements at the Indian Hills Golf Course, Fort Salonga (Northport), Township of Huntington, Suffolk County, New York" concurred with the report recommendation that the three identified archaeological sites did not meet the eligibility requirements of the State and National Registers of Historic Places (S/NRHP). Therefore, OPRHP had no additional concerns regarding the project's potential impacts to archaeological resources.
- In concluding their review (see correspondence dated June 24, 2019 provided in **Appendix R-4**), OPRHP determined "*…that no properties, including archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project*".

SECTION 4.0

OTHER REQUIRED SECTIONS

4.0 OTHER REQUIRED SECTIONS

4.1 Construction-Related Impacts

Impacts related to construction may include: noise, erosion, dust and vehicle/truck activity. Construction impacts are short-term, intermittent in nature, and largely contained on site, and would cease when construction was completed. **Section 1.7** provides a full description of the control measures to be implemented during construction to control these potential impacts.

With respect to noise, construction activities are limited to Monday through Friday between the hours of 7:00 am and 6:00 pm to conform to Chapter 141-4, "Noise disturbances enumerated," of the Town Code. Erosion control will be managed by erosion and sedimentation control measures and adherence to the SWPPP as well as an erosion control plan incorporating the NYSDEC Technical Guidance manual, and use of erosion and sedimentation control measures such as silt fencing, storm drain inlet protection, turf reinforcement mat, and good housekeeping procedures will be utilized. It should be noted that the area of the property proposed for development is currently occupied by the existing golf course and amenities and has been previously graded and stabilized for this use. Any potential impacts that may occur with respect to steep slopes will be reduced by observation of sound grading principals and maintaining slopes with a suitable angle of repose. An extensive erosion control plan, including silt fences, hay bales and erosion control ground cover, would minimize erosion, dust and runoff during construction. The proposed erosion control measures are provided in **Section 2.13**. Dust control includes use of watering trucks, limited the areas of disturbance undergoing grading activities, and temporary seeding, mulching and stabilization practices will reduce the potential for fugitive dust generation at the site, as well as best management practices per the SWPPP, covering soil transport trucks, emission controls, drainage system stabilization and revegetation. Construction vehicle and truck activity will be intermittent and dispersed and hours of operation and dust control will assist in minimizing impacts (see **Section 1.7**).

Site remediation activities were performed to address the issues discovered during the Limited Phase II ESA (see **Appendix D-2**). All remediation activities were coordinated with the SCDHS to ensure that appropriate methods and procedures are utilized to ensure that all impacted materials are removed in compliance with their requirements and standards. Remediation was completed on the clubhouse kitchen sanitary system in February and March of 2017. A 'no further action' letter was issued by SCDHS and is included in **Appendix I-6**. Removed soils were transported by a licensed waste hauler to an appropriate facility for disposal. Given this oversight, no significant adverse impacts are anticipated with respect to soils due to past site uses or existing contamination conditions.

4.2 Cumulative Impacts

This subsection analyzes the impacts of other projects in the area whose impacts, in conjunction with those of the proposed project, may result in impacts that are greater than the individual impacts from each project. The Town of Huntington and the Town of Smithtown were contacted

to obtain information on any planned projects in the area. At the time this study was conducted, it was determined that there were no significant planned projects in the vicinity of the proposed project.

There has been a proposed subdivision on the Town Planning Board Agenda for many years known as Roberg Estates, located approximately one (1) mile southwest of the subject site on the north side Norwood Road, 215 feet east of Sound Court in Northport. At their February 6, 2019 meeting the Planning Board's approved an extension of filing time for the 17th time to April 17, 2019. This project was determined to be too distant from the subject site to have a significant combined effect in consideration of the proposed project.

A 3.75-acre tract at 1064 Fort Salonga Road, southeast of the intersection of Makamah Road, Fort Salonga, commonly referred to as the Tanenbaum property had been proposed for a subdivision. However, it was nominated by neighbors for open space acquisition and in August of 2016, the Town took title of the property to be maintained as a passive park with trails. According to the Town web site, the cost for acquisition was $897,500.

All the intersections studied are projected to continue operating at No Build LOS during the weekday AM, PM and Saturday midday peak hours with the construction of the proposed senior housing development with minimal increase in delay with the exception of Fort Salonga Road (NYS 25A) at Makamah Road. No other projects have been identified that would act in combination with the proposed project to increase traffic beyond the conditions studied in relation to the Preserve at Indian Hills project. Therefore, no cumulative impacts related to traffic or other resources are expected to occur.

4.3 Adverse Impacts That Cannot Be Avoided

Implementation of the proposed project may result in potential short and/or long-term impacts. Short term impacts may include minor erosion of exposed on-site soils and increased traffic, dust, and noise due to construction activities. These activities are discussed in **Section 4.1** above. Mitigation measures previously discussed in this DEIS would reduce many of these impacts to a point where they are not significant.

Long-term impacts that cannot be fully mitigated include modification of site topography and vegetation; altered drainage patterns and increased energy and water consumption. However, required erosion controls will stabilize soils; replanting will mitigate changes in habitat and visual resources; the collection, treatment and recharge systems will contain all storm and wastewater and water and energy capacity is available. Further, it is noted that these impacts would also occur, and likely to a greater extent, if the project site were developed under current zoning.

4.4 Irreversible and Irretrievable Commitment of Resources

The proposed 98-unit residential cluster-open space recreational development would preclude other uses of the property. Certain resources related to the construction aspects of the development (including the future build-out of the residential units) would be committed. These resources include, but are not limited to, concrete, asphalt, lumber, topsoil and related building materials. Mechanical equipment resources will be committed to assist personnel in the construction at the subject property. The operation of construction equipment will require electricity, water resources and fossil fuels. Furthermore, the construction phase of the proposed project will require the commitment of manpower resources, as well as time. Resources committed to this project are common resources that are available through the construction industry and do not involve rare or unobtainable materials, manpower or resources.

4.5 Growth-Inducing Aspects

Growth-inducing aspects are generally described as the long-term secondary effects of the proposed action. The creation of 98 single-family residential town homes is not expected to create a significant increase in the demand for additional commercial or institutional resources within the Town of Huntington or the surrounding area. Although a minor increase in local population would result, the project will significantly increase taxes generated by the site, resulting in a substantial rise in revenues distributed to each taxing jurisdiction. At full build-out, the project is projected to generate approximately $1.6 million in annual taxes. When combined with the existing taxes generated by the golf course, total tax revenue is projected to total over $1.7 million per year.

The proposed project will utilize individual on-site advanced sanitary systems to accommodate sanitary waste generated by the future residences, such that the proposed action would not require or result in the expansion of any existing, or creation of any new sewer district.

With regard to traffic growth, no off-site roadway expansion will be required. Thus, the proposed action will not create the need for any changes to the roadway infrastructure in the vicinity of the site. Since new roadway infrastructure will not be required, growth inducement is not expected to result. Since the proposed project is age-restricted to residents 55 years and older, no school-aged children will be generated. It is estimated that the school district will levy over $1.1 million in taxes from the proposed project, without the district incurring costs associated with an increased enrollment since there will be no school-age children. This net revenue could ease the district's need to tap into additional fund balances, reduce their financial burden, and could also help alleviate an increased burden on other taxpayers throughout the district. Therefore, no expansion of public educational facilities would be expected.

It is not anticipated that the proposed project would have a significant adverse impact on the patrol responsibilities of the SCPD for security/safety purposes. While the potential need for police services to the site would be increased by the addition of residences, this increase would not in itself be a significant added burden on patrol activities, as this use does not generate much potential need for response.

Similar to police protection, the proposed project would not have a significant adverse impact on the Northport Fire Department (NFD). The project would incrementally increase the potential need for fire protective services, though this increased potential need would not in itself be a significant added burden on the department. This is due to the projects adherence to the NYS Fire Code in construction, and the anticipated use of fire-resistant building materials and smoke/fire alarms and detectors.

Based upon the above analysis, the proposed action is not expected to result in significant growth- inducing impacts in the Town of Huntington.

4.6 Effects on the Use and Conservation of Energy

The proposed action would create 98 town homes, new clubhouse and small sanitary pumps that would represent a moderate incremental increase in demand for energy resources. It is expected that electric supplies would be provided by PSEG Long Island and home heating by natural gas supplies from National Grid, resulting in the consumption of energy resources. It is expected that the incorporation of energy-efficient elements into the construction of the individual residences would be as proposed in the future, and, at minimum, in accordance with the energy efficiency requirements set forth in New York State Building Code. It is expected that adequate energy supplies would be available to the subject property, and that no significant adverse energy-related impacts would result from implementation of the proposed action.

SECTION 5.0

ALTERNATIVES

5.0 ALTERNATIVES

SEQRA requires the consideration of alternatives to the proposed project. Alternatives should represent reasonable and feasible land use, technology and other options to the proposed project that would achieve the applicant's objectives and remain within the applicant's capabilities. The purpose of this analysis is to determine the merits (as reflected in the totality of impacts) of the proposed project as compared to those of other possible uses, sites and technologies that would also achieve the applicant's objectives and potentially reduce environmental impacts. The discussion and analysis of the alternatives should be conducted at a level of detail sufficient to allow for this informed comparison, to be conducted by the decision-making agencies.

Alternative 1 is the "No Action" alternative, which is required by SEQRA and is intended to set a baseline of the existing conditions that characterize the project site, against which the corresponding conditions of the other alternative scenarios can be compared to determine the impacts relative to those of the other potential uses of the site.

Generally, the alternatives evaluation is comprised of analyses of the potential impacts of each alternative scenario on the same range of environmental resources as was conducted for the proposed project (and detailed in **Sections 2.0 and 3.0**). Thus, the review of alternatives takes the form of an analysis of the anticipated impacts of each scenario, as compared to those of the site in its existing condition, which is Alternative 1.

For the subject application, the following alternatives were evaluated:

- **Alternative 1: No Action** - assumes that the site remains in its current conditions. This scenario shall reflect a site of 145.32 acres, without the acquisition of land to access the private road to Breeze Hill Road, or for the Makamah Road access.
- **Alternative 2: Detached Standard Subdivision without Golf Course -** assumes a standard subdivision involving development per existing zoning and the yield map for the proposed project, with removal of the golf course, and acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 152.20 acres.
- **Alternative 3**: **Detached Cluster Subdivision without Golf Course -** assumes an alternative cluster subdivision involving development of the number of lots according to existing zoning and the yield map, in a clustered subdivision with removal of the golf course and acquisition of land to access the private road to Breeze Hill Road, and acquisition of the private road, but no Makamah Road access. This scenario assumes a site of 152.77 acres.
- **Alternative 4**: **Attached Cluster Subdivision with Golf Course and without Makamah Road Access -** assumes an alternative cluster subdivision involving development of the number of lots according to existing zoning and the yield map, in a clustered subdivision that retains the golf course, and acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 151.08 acres.
- **Alternative 5**: **Attached Cluster Subdivision with Redesigned Golf Course, Layout A -** assumes an alternative cluster subdivision that retains the golf course but assumes a layout that provides greater setbacks for the proposed units from the surrounding residences, with acquisition of land to access the private road to Breeze Hill Road, and acquisition of the private road, but no Makamah Road access. This scenario assumes a site of 151.65 acres.

- **Alternative 6**: **Attached Cluster Subdivision with Redesigned Golf Course, Layout B -** assumes an alternative cluster subdivision that retains the golf course and provides greater preservation of slopes and natural areas, redistributes the units toward disturbed areas, and provides an increased separation from sensitive environmental areas per NYSDEC recommendations. His scenario includes acquisition of land to access the private road to Breeze Hill Road, but no Makamah Road access. This scenario assumes a site of 151.08 acres.
- **Alternative 7**: **Acquisition of Subject Property's Development Rights, Either in Total or Partially, by Town, County or State -** assumes that all or a portion of the property's development rights are obtained by the Town of Huntington, by Suffolk County, or by New York State. This scenario assumes a site of 145.32 acres.

Given the assumptions describing Alternatives 1 and 7 above, no conceptual plans for either of these two scenarios were prepared. Conceptual plans for Alternatives 2 through 6 were prepared, and are contained herein, in **Appendix B; Project Plans**. **Table 5-1** compares the site and development characteristics and impacts of the proposed project and those of the alternatives considered. **Sections 5.1** through **5.7** describe each of the alternatives analyzed per the Final Scope. **Section 5.8** provides a Discussion of Impacts which assesses each resource category and compares the relative impacts of each alternative and the proposed project.

5.1 Alternative 1: No Action

This alternative assumes that the proposed project is not implemented, so that the zoning of the site remains R-40, and the existing condition, use and activities on the property remain unchanged. As such, the existing nature and extent of impacts of this scenario, which are described in detail in **Sections 2.0** and **3.0** of this document, would likewise remain unchanged. It should be noted that, under this scenario, the subject site would retain the potential for re-development, in accordance with its R-40 zoning.

5.2 Alternative 2: Detached Standard Subdivision without Golf Course

This alternative assumes that the golf course is closed and the golf course maintenance building and irrigation well are removed, and that re-development occurs with a standard residential subdivision over the entire property under the existing R-40 zoning. Such an assumption yields a subdivision of 99 lots, of which 98 lots would be residential lots, and Lot 99 would encompass the existing golf course clubhouse, which would be retained and reused as a community center for the residents. The northernmost 20.72-acre part of the site would be provided for Parkland dedication. Except for the Parkland and the golf course clubhouse area, the existing golf course areas would be occupied by the subdivision. As a result, much if not all of this area would then be subject to clearing and grading operations to establish proper surface grades and building sites for construction. Areas within the 98 lots cleared for grading that would not be developed for the residences or paved surfaces are assumed to be landscaped, with an appropriate suite of native grasses and shrubs. Landscape maintenance would be conducted by or at the direction of the individual lot owner. As a result, the amount of maintained (i.e., regularly mowed, irrigated and fertilized) landscaped area on each lot may vary, and the amounts of irrigation and fertilizers applied would vary as well.

Table 5-1
SITE AND PROJECT CHARACTERISTICS
Proposed Project and Alternatives 1-7

Parameter	**Proposed Project**	**Alternative 1:** No Action	**Alternative 2:** Detached Standard Subdivision, No Golf Course	**Alternative 3:** Detached Cluster Subdivision, No Golf Course	**Alternative 4:** Attached Cluster Subdivision with Golf Course, No Makamah Road Access	**Alternative 5:** Attached Cluster Subdivision with Golf Course, Layout A	**Alternative 6:** Attached Cluster Subdivision with Golf Course, Layout B	**Alternative 7:** Town, County, or State Acquisition of Development Rights
Use	Residential & Recreational	Recreational	Residential	Residential	Residential & Recreational	Residential & Recreational	Residential & Recreational	Recreational
Yield	98 senior units & private golf course	Private golf course	98 units & clubhouse	98 units & clubhouse	98 units & private golf course	98 units & private golf course	98 units & private golf course	Private golf course
Wastewater Treatment System	Enhanced Septic	Septic	Septic	Septic	Septic	Septic	Septic	Septic
Cleared/Graded (acres; estimated)	51.94	0	115.15	58.50	34.96	53.75	34.03	0
Vegetated/Natural Surfaces (acres)	141.07	138.54	130.46	136.89	138.36	136.83	142.04	138.54
Total Landscaping (acres)	104.14	95.63	95.98	48.12	105.99	116.49	113.05	95.63
Fertilized & Irrigated Landscaping (acres)	32.52	28.11	22.83 [(1)]	22.92 [(1)]	44.75	35.58	46.17	28.11
Coverages (acres)**:**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Buildings	5.11	0.47	7.12	5.05	5.05	5.05	5.05	0.47
Paved/Impervious	8.38	6.31	14.62	10.84	7.67	9.77	3.99	6.31
Non-Golf Landscaping *(unfertilized)*	0.24	0.38	0	0.33	0.33	0.33	0.33	0.38
Golf Landscaping:	95.44	95.25	0	0	90.08	102.81	95.30	95.25
Fertilized	*24.06*	*28.11*	*0*	*0*	*29.17*	*22.23*	*28.75*	*28.11*
Non-Fertilized	*71.38*	*67.14*	*0*	*0*	*60.91*	*80.58*	*66.55*	*67.14*
Residential Landscaping	8.46	0	95.98	47.79	15.58	13.35	17.42	0
Unvegetated	1.09	1.77	0	0	3.20	1.04	1.28	1.77
Water Surfaces [(2)]	14.61	3.20	4.55	2.22	3.13	3.20	3.20	3.20
Wetland Vegetation	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Beach	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26
Coastal Oak Vegetation	6.29	10.65	5.65	13.05	10.65	1.53	8.72	10.65
Successional Southern Hardwoods	7.69	20.03	2.67	13.05	8.15	7.32	8.54	20.03
Maritime Bluff	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49
Left to Undergo Succession (grass)	0	0	14.37	53.19	0	0	0	0
Total Site Acreage	154.56	145.32	152.20	152.77	151.08	151.65	151.08	145.32
Trip Generation (vph)**:**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Weekday AM Peak Hour	51/37 [(3)]	37	74	47	47/37 [(3)]	47/37 [(3)]	47/37 [(3)]	37
Weekday PM Peak Hour	59/53 [(3)]	53	100	58	58/53 [(3)]	58/53 [(3)]	58/53 [(3)]	53
Saturday Midday Peak Hour	23/83 [(3)]	83	100	73	73/83 [(3)]	73/83 [(3)]	73/83 [(3)]	83
Water Resources:	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Residential Use (gpd)	29,400	0	29,400	29,400	29,400	29,400	29,400	0
Clubhouse & Maint. Bldg. Use (gpd)	3,950	3,950	3,750	3,750	3,950	3,950	3,950	3,950
Total Domestic Water Use (gpd)	33,350	3,950	33,150	33,150	33,350	33,350	33,350	3,950
Irrigation Use (mg/l)	94,186 [(4)]	63,848 [(5)]	114,245 [(4)]	56,884 [(4)]	92,359 [(4)]	73,433 [(4)]	95,290 [(4)]	63,848 [(5)]
Total Water Use (gpd)	127,536	67,798	147,395	90,034	125,509	106,583	128,440	67,798
Recharge Volume (MGY) [(6)]	140.63	121.63	113.13	118.61	130.40	130.17	129.00	121.63
Nitrate Concentration (mg/l) [(6)]	1.95	0.76	5.63	4.08	3.50	3.28	3.57	0.76
Nitrate Load (lbs) [(6)]	2,289.99	773.98	5,315.71	4,035.26	3,800.91	3,558.55	3,838.58	773.98

Miscellaneous:	---	---	---	---	---	---	---	---
Total Residents (capita) [7]	147	0	434	434	434	434	434	0
School-Age Children (capita) [7]	0	0	148	148	148	148	148	0
School Expenditures ($/year) [8]	0	0	2,712,692	2,712,692	2,716,075	2,716,075	2,716,075	0
Total Taxes ($/year) [9]	1,774,129	167,191	1,883,637	1,606,938	1,774,129	1,774,129	1,774,129	167,191
School Taxes ($/year) [9]	1,137,512	108,898	1,210,134	1,028,614	1,137,512	1,137,512	1,137,512	108,898
Net School Fiscal Impact ($/year)	+1,137,512	+108,898	-1,520,558	-1,684,078	-1,578,563	-1,578,563	-1,578,563	+108,898
Solid Waste (lbs/day) [10]	780	265	2,435	2,435	2,435	2,435	2,435	265

Notes:
(1) To protect groundwater and surface water quality, assumes that maximum of 15% of the site is fertilized landscaping; acreage to be limited by C&R filed for each lot.
(2) Reflects all surface water bodies, including the two natural freshwater ponds, the man-made golf course water hazards, the drainage ponds & recharge basins.
(3) Reflects trips generated by the residential component/by the golf course component.
(4) From SCWA; existing on-site golf course irrigation well would be closed and abandoned. Assumes irrigation rate of 16 inches/season on Fertilized Landscaping, 150-day irrigation season assumed.
(5) From existing on-site golf course irrigation well; reflects existing irrigation usage for golf course, as reported to NYSDEC
(6) SONIR computer model results; see **Appendices J-5 through J-9**.
(7) Assuming 1.5 capita/senior unit, 4.43 capita/unit for detached or attached units, and 1.51 school-age children/detached or attached unit.
(8) Assuming $18,329/student/year adjusted expenditures in the Northport-East Northport UFSD, for 2018-2019 school year
(9) Assuming tax data as provided by Town Tax Assessor's Office, for the 2018-2019 tax year.
(10) Assuming 3.5 lbs/day/capita/senior unit, 265 lbs/day for clubhouse, and 5 lbs/day/capita for detached or attached units.

The 98 residential lots would vary in size, from 1.00 acres to 1.96 acres in area; Lot 99, where the existing golf course clubhouse would be located, would be 5.84 acres in size. There would be two recharge basins to handle road runoff; one basin for the portion north of Breeze Hill Road, the other basin for the portion south of Breeze Hill Road. For calculation purposes, each of the residential lots is assumed to have a patio of 300 SF, a 15-foot wide driveway (50 feet in length, matching the building setback of the R-40 zone), and a 2-1/2 story, 5-bedroom house having a 3,000 SF footprint. Using multipliers established by Rutgers University's Center for Urban Policy Research (CUPR) for the type of homes assumed in this alternative, a total of 434 residents would result, of which 148 would be school-age children.

This alternative would remove the golf course, the area subject to clearing and grading is expected to be substantially larger than that of the proposed project (115.15 acres vs. 51.94 acres). Comparison of the conceptual plan for Alternative 2 and **Figure 2-2** (Slope Map) suggests that a significant amount of grading of steep slope areas would be necessary for this scenario. While no estimate of excavated soil volume is available for this alternative, it is expected that the volume of cut material would be greater than that of the proposed project, as a larger area would be disturbed. This could potentially involve off-site export of soil.

Similar to the proposed project and as required by the Town, the drainage system for Alternative 2 would be designed to capture all runoff from the site based on the design storm. The drainage system for Alternative 2 would retain stormwater from a 9-inch storm by use of catch basins, leaching pools, recharge basins and detention areas.

The two existing freshwater wetlands would be distributed within four of the residential lots, and would remain undisturbed. The existing golf course water hazards are artificial in nature, and would be altered as part of the re-development. Like the proposed project, freshwater wetland permits would be required from the NYSDEC for areas within 100 feet of designated freshwater wetlands.

In conformance with SCSC Article 6, all wastewater would be discharged on-site using conventional septic systems. Also, per Article 6, each home is expected to generate 300 gpd of sanitary wastewater, so consumption of water is also assumed to be 300 gpd, or a total of 29,400 gpd for the residences. The existing golf course clubhouse would be retained and re-used as a community center for the subdivision's residents. Like the proposed project, it would consume an estimated 3,750 gpd of water, and so is assumed to generate the same volume as sanitary wastewater. Thus, total wastewater generation would be 33,150 gpd. **Table 5-1** shows a total of 95.75 acres of fertilized landscaping which is assumed to be fertilized and irrigated. Assuming a typical irrigation rate of 16 inches applied over the irrigated acreage, the total irrigation demand is 114,245 gpd, for a total water consumption of 147,395 gpd. Note that this level of usage would be limited to only the summer landscape irrigation season, which is assumed to be mid-April to mid-September; outside of this period, total water usage would be 33,150 gpd. All water on the site would be supplied by the SCWA; the existing golf course irrigation well would be closed and abandoned.

There would be three vehicle access points to the portion of the site north of Breeze Hill Road (via Mystic Lane, Thornton Drive, and Breeze Hill Road), and one vehicle access into the portion of the site south of Breeze Hill Road (via Breeze Hill Road), this portion of the site would have an emergency access to Breeze Hill Road through an existing private ROW.

The residential lots would be individually owned, while, like the proposed project, Alternative 2 would include an HOA to maintain the community center, the common areas, the internal roadways and roadside lighting, and the drainage system, thereby relieving the Town of these responsibilities and expenses.

5.3 Alternative 3: Detached Cluster Subdivision without Golf Course

Alternative 3 assumes that the golf course is closed, and re-development occurs under a cluster subdivision plan that retains a substantial amount of the site as open space on the former golf course play area. The Makamah Road access would not be included in this scenario. This scenario assumes 98 units and one lot for the existing golf course clubhouse, which would be retained and reused as a community center for the project's residents. The portions of the former golf course that would be located in the open space area would remain undisturbed, to undergo natural succession. Only areas abutting the new residences and the retained clubhouse would be landscaped. There would also be a Parkland dedication of 20.72 acres in the northern portion of the property, encompassing the shoreline/beach/bluff area. Areas immediately surrounding the clusters of residences are assumed to be landscaped. Landscape maintenance would be conducted under the jurisdiction of the HOA.

For calculation purposes, each of the residential units is assumed to have a patio of 300 SF, a 10-foot wide driveway (50 feet in length, matching the building setback of the R-40 zone), and a 2-1/2 story, 5-bedroom house having a 3,000 SF footprint. These values imply a total of 434 residents, of which 148 would be school-age children.

As this alternative would close the golf course but would retain its area as the site's communal open space, the area subject to clearing and grading is expected to be similar to that of the proposed project (58.50 acres vs. 51.94 acres).

Figure 2-2 (Slope Map) suggests that some grading of steep slope areas would be necessary for this scenario. While no estimate of excavated soil volume is available for this alternative, it is expected that the volume of cut material would be comparable to the proposed project.

As required by the Town, the drainage system for Alternative 3 would be designed to capture all runoff from the site based on the Town's 9-inch design storm. The drainage system would use catch basins, leaching pools, and detention areas.

The two freshwater wetlands would undisturbed. The existing golf course water hazards are artificial and would be expected to be retained. Like the proposed project, freshwater wetland permits would be required from the NYSDEC for any activity within 100 feet of designated freshwater wetlands.

In conformance with SCSC Article 6, all wastewater would be treated and recharged on-site, in septic systems. Each unit would generate 300 gpd of sanitary wastewater, so consumption of water is also assumed to be 300 gpd, or a total of 29,400 gpd for the residences. The existing golf course clubhouse would consume an estimated 3,750 gpd of water, and so is assumed to generate the same volume as sanitary wastewater. Thus, total wastewater generation would be 33,150 gpd. **Table 5-1** shows a total of 47.79 acres of fertilized landscaping. Assuming a typical irrigation rate of 16 inches applied over the irrigated acreage, the total irrigation demand is 56,884 gpd, for a total water consumption of 90,034 gpd. Note that this level of usage would be limited to only the summer landscape irrigation season, which is assumed to be mid-April to mid-September; outside of this period, total water usage would be 33,150 gpd. All water on the site would be supplied by the SCWA; the existing golf course irrigation well would be closed and abandoned.

There would be two vehicle access points to the portion of the site north of Breeze Hill Road (via Mystic Lane and Thornton Drive), and one vehicle access into the portion of the site south of Breeze Hill Road (via Breeze Hill Road).

The residential units would be individually owned, while, like the proposed project, Alternative 3 would include an HOA to maintain the community center, the common areas, the internal roadways and roadside lighting, landscaping, and the drainage system, thereby relieving the Town of these responsibilities and expense.

5.4 Alternative 4: Attached Cluster Subdivision with Golf Course and without Makamah Road Access

This scenario would retain the golf course, with re-development with a cluster subdivision plan over the entire property (assumed to be 151.08 acres, as the Makamah Road access would not be included in this scenario), and under the existing R-40 zoning. Such an assumption produces 98 units, and would retain the existing golf course operations; the golf course tees, greens, fairways, rough and outbuildings would be retained, though minor adjustments to some of the tee box locations and fairway widths would be necessary to accommodate some of the new residences. There would be no need for Parkland dedication as the golf course would remain. Landscape maintenance would be conducted under the jurisdiction of the HOA, and so would be subject to restrictions.

For calculation purposes, each of the residential units is assumed to have a patio of 300 SF, a 10-foot wide driveway (50 feet in length, matching the building setback of the R-40 zone), and a 2-1/2 story, 5-bedroom house having a 3,000 SF footprint. These values imply a total of 434 residents, of which 148 would be school-age children.

This alternative would retain the golf course. The area subject to clearing and grading is expected to be slightly less that of the proposed project depending on regrading for drainage retention.

Figure 2-2 (Slope Map) suggests that some grading of steep slope areas would be necessary for this scenario. While no estimate of excavated soil volume is available for this alternative, it is expected that the volume of cut material would be comparable to the proposed project.

As required by the Town, the drainage system for Alternative 4 would be designed to capture all runoff from the site based on the Town's 9-inch design storm. The drainage system would use catch basins, leaching pools, and detention areas.

The two freshwater wetlands and the golf course water hazards would remain undisturbed or be expanded for drainage retention, similar to the proposed project. Like the proposed project, freshwater wetland permits would be required from the NYSDEC for any activity within 100 feet of designated freshwater wetlands.

As regulated by SCSC Article 6, all wastewater would be treated and recharged on-site, in septic systems. Each unit would generate 300 gpd of sanitary wastewater, so consumption of water is also assumed to be 300 gpd, or a total of 29,400 gpd for the residences. The existing golf course clubhouse and maintenance building would consume an estimated 3,950 gpd of water, and so is assumed to generate the same volume as sanitary wastewater. Thus, total wastewater generation would be 33,350 gpd. **Table 5-1** shows a total of 44.75 acres of fertilized landscaping. Based on the golf course irrigation rate of 27.74 inches/year (see **Appendix J-2**), the total irrigation demand is 92,359 gpd, for a total water consumption of 125,509 gpd. Note that this level of usage would be limited to only the summer landscape irrigation season, which is assumed to be mid-April to mid-September; outside of this period, total water usage would be 33,150 gpd. All domestic water consumed on the site would be supplied by the SCWA; the existing golf course irrigation well would continue to supply irrigation water to the site.

Vehicle accesses for the golf course and the residential component would be separated. The existing golf course access would be maintained, off Breeze Hill Road, into the clubhouse area. For the residences, there would be two vehicle access points to the portion of the site north of Breeze Hill Road (via Mystic Lane and Frost Pond Road), and one vehicle access into the portion of the site south of Breeze Hill Road (via Breeze Hill Road)

The residential units would be individually owned, while, like the proposed project, Alternative 4 would include a HOA to maintain the common areas, the internal roadways and roadside lighting, and the drainage system, thereby relieving the Town of these responsibilities and expense.

5.5 Alternative 5: Attached Cluster Subdivision with Redesigned Golf Course, Layout A

This alternative would keep the golf course, with re-development with a cluster subdivision plan over the entire property (assumed to be 151.65 acres, as the Makamah Road access would be included in this scenario), and under the existing R-40 zoning. Such an assumption produces 98 units, and would retain the existing golf course operations; the golf course tees, greens, fairways, rough and outbuildings would be retained, though minor adjustments to some of the tee box locations and fairway widths would be necessary to provide greater setbacks for the proposed

units from the surrounding residences. There would be no need for Parkland dedication as the golf course would remain. Landscape maintenance would be conducted under the jurisdiction of the HOA, and so would be subject to restrictions.

For calculation purposes, each of the residential units is assumed to have a patio of 300 SF, a 10-foot wide driveway (50 feet in length, matching the building setback of the R-40 zone), and a 2-1/2 story, 5-bedroom house having a 3,000 SF footprint. These values imply a total of 434 residents, of which 148 would be school-age children.

As this alternative would retain the golf course (with minor modifications) , the area subject to clearing and grading is expected to be similar to that of the proposed project (53.75 acres vs. 51.94 acres).

Figure 2-2 (Slope Map) suggests that some grading of steep slope areas would be necessary for this scenario. While no estimate of excavated soil volume is available for this alternative, it is expected that the volume of cut material would be comparable to the proposed project.

Similar to the proposed project and as required by the Town, the drainage system for Alternative 5 would be designed to capture all runoff from the site based on the Town's 9-inch design storm. The drainage system would likely use catch basins, leaching pools and detention areas.

The two freshwater wetlands and the golf course water hazards would remain undisturbed. Like the proposed project, freshwater wetland permits would be required from the NYSDEC for any activity within 100 feet of designated freshwater wetlands.

In conformance with SCSC Article 6, all wastewater would be treated and recharged on-site, in septic systems. Each unit would generate 300 gpd of sanitary wastewater, so consumption of water is also assumed to be 300 gpd, or a total of 29,400 gpd for the residences. The golf course clubhouse and maintenance building would consume an estimated 3,950 gpd of water, and so is assumed to generate the same volume as sanitary wastewater. Thus, total wastewater generation would be 33,350 gpd. **Table 5-1** shows a total of 35.58 acres of fertilized landscaping. Based on the golf course irrigation rate of 27.74 inches/year (see **Appendix J-2**), the total irrigation demand is 95,290 gpd, for a total water consumption of 128,840 gpd. Note that this level of usage would be limited to only the summer landscape irrigation season, which is assumed to be mid-April to mid-September; outside of this period, total water usage would be 33,150 gpd. All domestic water consumed on the site would be supplied by the SCWA; the existing golf course irrigation well would continue to supply irrigation water to the site.

Vehicle accesses for the golf course and the residential component would be separated. The existing golf course access would be maintained, off Breeze Hill Road, into the clubhouse area. For the residences, there would be two vehicle access points to the portion of the site north of Breeze Hill Road (via Mystic Lane and Frost Pond Road), and one vehicle access into the portion of the site south of Breeze Hill Road (via Breeze Hill Road).

The residential units would be individually owned, while, like the proposed project, Alternative 5 would include a HOA to maintain the golf course, the common areas, the internal roadways and roadside lighting, and the drainage system, thereby relieving the Town of these responsibilities and expense.

5.6 Alternative 6: Attached Cluster Subdivision with Redesigned Golf Course, Layout B

This alternative would retain the golf course, with re-development with a cluster subdivision plan over the entire property (assumed to be 151.08 acres, as the Makamah Road access would be included in this scenario), and under the existing R-40 zoning. Such an assumption produces a 98 units, and would retain the existing golf course operations; the golf course tees, greens, fairways, rough and outbuildings would be retained, though minor adjustments to some of the tee box locations and fairway widths would be necessary to provide greater preservation of existing slopes and natural areas, distribute the units toward previously-disturbed areas, and provide an increased separation from sensitive environmental areas per NYSDEC recommendations There would be no need for Parkland dedication as the golf course would remain. Landscape maintenance would be conducted under the jurisdiction of the HOA, and so would be subject to restrictions.

For calculation purposes, each of the residential units is assumed to have a patio of 300 SF, a 10-foot wide driveway (50 feet in length, matching the building setback of the R-40 zone), and a 2-1/2 story, 5-bedroom house having a 3,000 SF footprint. These values imply a total of 434 residents, of which 148 would be school-age children.

As this alternative would retain the golf course (with some minor modifications), the area subject to clearing and grading is expected to be less than that of the proposed project (34.03 acres vs. 51.94 acres).

Figure 2-2 (Slope Map) suggests that some grading of steep slope areas would be necessary for this scenario. While no estimate of excavated soil volume is available for this alternative, it is expected that the volume of cut material would be comparable to proposed project.

Similar to the proposed project and as required by the Town, the drainage system for Alternative 6 would be designed to capture all runoff from the site based on the ^Town's 9-inch design. The drainage system would likely use catch basins, leaching pools, and detention areas.

The two freshwater wetlands and the golf course water hazards would remain undisturbed. Like the proposed project, freshwater wetland permits would be required from the NYSDEC for any activity within 100 feet of designated freshwater wetlands.

In conformance with SCSC Article 6, all wastewater would be treated and recharged on-site, in septic systems. Each unit would generate 300 gpd of sanitary wastewater, so consumption of water is also assumed to be 300 gpd, or a total of 29,400 gpd for the residences. The golf course clubhouse and maintenance building would consume an estimated 3,950 gpd of water, and so is assumed to generate the same volume as sanitary wastewater. Thus, total wastewater generation would be 33,350 gpd. **Table 5-1** shows a total of 46.17 acres of fertilized landscaping. Based on the golf course irrigation rate of 27.74 inches/year (see **Appendix J-2**), the total irrigation demand is 73,433 gpd, for a total water consumption of 106,583 gpd. Note that this level of usage would be limited to only the summer landscape irrigation season, which is assumed to be mid-April to mid-September; outside of this period, total water usage would be 33,150 gpd. All domestic water consumed on the site would be supplied by the SCWA; the existing golf course irrigation well would continue to supply irrigation water to the site.

Vehicle accesses for the golf course and the residential component would be separated. The existing golf course access would be maintained, off Breeze Hill Road, into the clubhouse area. For the residences, there would be two vehicle access points to the portion of the site north of Breeze Hill Road (via Mystic Lane and Thornton Drive), and one vehicle access into the portion of the site south of Breeze Hill Road (via Breeze Hill Road)

The residential units would be individually owned, while, like the proposed project, Alternative 6 would include a HOA to maintain the golf course, the common areas, the internal roadways and roadside lighting, and the drainage system, thereby relieving the Town of these responsibilities and expense.

5.7 Alternative 7: Acquisition of Subject Property's Development Rights, Either in Total or Partially, by Town, County or State

This alternative assumes that all of the property's development rights are obtained by the Town of Huntington, by Suffolk County, or by New York State. This alternative cannot occur unless there is a willing buyer and a willing seller. In such a case, the site would remain unchanged from its current use and conditions; the site's zoning would remain R-40, the site would continue to operate as a private golf course, and land for the Makamah Road access would not be obtained. Like Alternative 1, the existing nature and extent of impacts of this scenario, which are described in detail in **Sections 2.0** and **3.0** of this document, would likewise remain unchanged. It is noteworthy that, unlike Alternative 1, in Alternative 7 the site would have no re-development potential, as all of its yield would have been purchased.

5.8 Discussion of Impacts

The following sub-sections assess the impacts of Alternatives 2 through 7 for each of the impact categories evaluated in **Sections 2.0 and 3.0**, and quantified in **Table 5-1**, by comparing the relative impacts of each alternative and the proposed project.

Alternative 7 is identical to Alternative 1 in that Alternative 7 would not change the use, operations, or physical condition of the project site; this scenario would merely remove the potential for the site to be re-developed in the future due to the hypothetical public purchase of the property's development rights assuming there is a willing buyer and a willing seller. As such, Alternatives 1 and 7 are fundamentally different from Alternatives 2 through 6; the former assume that no re-development occurs (so that no impacts would occur for these scenarios), while the latter represent changed site conditions and characteristics (so that impacts would occur).

<u>Topography</u>
In general, and like the proposed project, Alternatives 2 through 6 would result in physical alteration of the site's and ground surface, from clearing and grading operations conducted prior to re-development. However, the amount of land to be impacted would vary from a high of 115.15 acres (Alternative 2) to a low of 34.3 acres (Alternative 6). For comparison, the proposed project would disturb 51.94 acres. Alternatives 1 and 7would have the least impact.

The only significant geological feature that may be impacted by either the proposed project or the alternatives are the steep slopes found within and along the golf course, throughout the site. The golf course consists of modified conditions and rolling terrain that has been in use as a golf course since 1961. The site has been subject to extensive disturbance over time. As seen in **Appendix N-2**, nearly the entire site was subject to disturbance in 1978. As a result, the site is a product of anthropogenic disturbance and there are very few areas of natural steel slopes. The steep slopes of the bluff in the Coastal Erosion Hazard Area would remain as it currently exists in all scenarios. The area of steep slopes that would be subject to disturbance would vary, depending upon whether the golf course is retained or not. Alternative 2 would remove the course and subdivide this area into lots, and so would represent the greatest potential impact to steep slopes.

Soils

As noted, most of the site has been disturbed as a result of the golf course use. Surface and subsurface soils have also been subject to disturbance. Alternative 1 (No Action) and Alternative 7 (Acquisition of Development Rights) would not change is existing soils on the site as the site would remain in use as a golf course. Generally, the grading programs for the proposed project and Alternatives 3 through 6 would be similar in terms of location and depths of cut and fill activities, (as these scenarios would retain the golf course), and so the amount of excess soil generated would depend primarily on the acreage of grading. Alternative 2 would grade the most acreage, and so would generate the greatest potential volume of excess soil.

Water Resources

As the two northwest ponds are a designated freshwater wetlands, the conceptual plans have been prepared to avoid potential impacts to existing freshwater wetlands so that neither the proposed project nor any of Alternatives 2 through 6 would impact these features.

The proposed project and Alternatives 2 and 4 through 6 would substantially increase the consumption of groundwater to serve the site. Alternative 2 has extensive landscaping that would require irrigation water. Alternative 3 is a residential cluster with no golf course that would require potable water from residential use, with less irrigated area. Alternatives , 4, 5 and 6 have the added water use for the residential component, but assume that the existing irrigation well would be retained to continue to provide all landscape irrigation water for the site. For those scenarios that would retain the golf course (Alternatives 4 through 6), it is assumed that a Golf Course Environmental Management Plan would ensure that no operation or maintenance activities. would cause contamination of soil or groundwater resources.

Generally, the three largest factors contributing to recharge volume are acreage of impervious surfaces, on-site wastewater treatment, and irrigated acreage. The results of the SONIR computer model for recharge volume generated indicates that the most recharge would be associated with the proposed project, and the least by Alternative 2.

Alternatives 1 and 7 would not change existing conditions and therefore would have the least impact. Alternatives 2 through 6 assume conventional sanitary systems which have a higher nitrogen concentration in effluent than an I/A OWTS. This is supported by the results of the

SONIR computer model runs, which indicate a substantially lower nitrogen concentration in the site's recharge for the proposed project than for Alternatives 2 through 6. The proposed project has the lowest nitrogen concentration (1.95 mg/l) with the highest being Alternative 2 (5.63 mg/l). For comparison, the drinking water standard is 10 mg/l total nitrogen, and a stringent guideline for nitrogen in recharge is 2.5 mg/l, which applies to certain projects in the Central Pine Barrens **(CPBJPPC, 1995)**.

Nitrogen load is an important parameter related to water resources and groundwater protection in the Crab Meadow watershed. Under existing conditions (Alternative 1; No Action and Alternative 7) the nitrogen load is 773.98 pounds/year. The proposed project would increase this to 2,289.99 pounds/year. Alternative 2, use under current zoning, would nearly double this to 5,315.71 pounds/year. Alternatives 3 through 6 would range from 3,500 to 4,000 pounds per year. Reducing nitrogen load as compared to current zoning and other alternatives is an important factor.

Air Resources

Neither the proposed project nor any of the alternative development scenarios evaluated herein would include any source of air emission that would require state permitting. All development scenarios will generate fugitive dust during construction, and all would be subject to dust control measures to minimize impacts on-site and in the surrounding area.

Ecological Resources

The data in **Table 5-1** indicates that the most clearing (which indicates potential impact on habitat space and the flora and fauna that lies in or depends upon habitat space) would be associated with Alternative 2, followed by Alternative 3, Alternative 5, then the proposed project, followed by Alternative 4. Alternative 6 would clear the least acreage of the site. Alternative 2 would require the most clearing because it would be distributed over the entirety of the subject site, necessitating development of an extensive internal roadway network and on-lot development of patios and driveways. Additionally, Alternative 2 includes two new recharge basins (totaling 7.96 acres), which are not included in the drainage system design of the proposed project.

Conversely, Alternative 6 would provide the greatest acreage of vegetated surfaces (including landscaping, natural vegetation, the wetlands, beach, bluff, etc.; see **Table 5-1**), closely followed by the proposed project, then by Alternates, 4, 3, 5 and 2. Thus, Alternative 6 would provide the most acreage for potential future use by wildlife, closely followed by the proposed project., then in decreasing order by Alternatives 4, 3, 5 then 2. Alternatives 1 and 7 would retain the exiting golf course in its existing condition.

Land Use, Zoning and Plans

Both the proposed project and Alternatives 4, 5 and 6 would add a new land use category to the site; the proposed project would add "Senior Residence" to the existing "Recreation" category, whereas Alternatives 4, 5 and 6 would add the "Residence" category. Alternatives 2 and 3 would remove "Recreation" altogether, and change the land use of the site to entirely "Residence."

As the pattern of land uses in the vicinity is dominated by the "Residence" and "Open Space" categories, implementing the proposed project or Alternatives 4, 5 and 6 would not have an impact on this pattern from the standpoint of uses. Re-development under Alternatives 2 or 3 would eliminate the golf course, an open space resource, which would impact the pattern of land uses in the area.

Like the proposed project, Alternatives 2 through 6 would result in re-development of the project site. While the nature and density of that re-development would be similar to the proposed project for Alternatives 4, 5 and 6, Alternatives 2 and 3 would represent a different intensity of use as neither of these alternatives would retain the golf course. The general intensity of site uses and activities associated with the Alternatives may be summarized as follows:

1. Alternatives 2, 3 and 5 would physically impact a greater acreage of the site, than would be the case for the proposed project;
2. Alternatives 2 and 3 would remove an existing land use from the site entirely (the Indian Hills golf course, a recreational land use), rather than retaining and improving upon it, as in the proposed project and Alternatives 4, 5 and 6;
3. Alternatives 2 through 6 would provide a significantly greater number of site residents than the proposed project;
4. Alternatives 2 through 6 would produce a substantial number of school-age children (which would not occur under the proposed project); and
5. Alternatives 2 through 6 involve residences that would produce residents having a full range of ages, whereas the proposed project would produce only senior (55 years and above) residents.

In consideration of the above factors, it may be concluded that the impacts on the land use characteristics of the site and vicinity would be greater if Alternatives 2 through 6 were implemented, as compared to those expected for the propose project. Like the proposed project, there would be no change in the zoning of the project site in Alternatives 2 through 6, so that the zoning pattern in the area would not be impacted.

Unlike the proposed project and Alternatives 4, 5 and 6, Alternatives 2 and 3 would not conform to the Parks, Recreation & Conservation Land use of the site as recommended in the Town Comprehensive Plan Update. Alternatives 2 through 6 would not address the plan's action item agenda goals of providing for a range of housing types for underserved portions of the Town's residents (such as senior citizens). Finally, only Alternative 2 would not provide sustainable water resource infrastructure (e.g., the enhanced wastewater treatment systems of the proposed project and Alternatives 3 through 6). Alternatives 1 and 7 would retain the existing golf course and therefore would not change the existing land use condition of the site.

Community Character

With respect to land use, like the proposed project, none of the Alternatives would be inconsistent with the prevailing character of the surrounding community; each of the scenarios evaluated here would provide low-density residential development and (except for Alternatives 2 and 3) retain the existing golf course, a Recreational use. These two uses match the land use types that dominate the area. However, it should be noted that the existing golf course is an important aspect of the existing character of the community. If the golf course were removed as with Alternatives 2 and 3, there would be a significant change in community character.

Not including impacts that would occur during construction, none of the Alternatives considered would result in any increases in noise or odors to a degree greater than that of the proposed project. Potential sources of noise and/or odors would be expected from vehicle movements from either or both the residential component and the golf course, but each of these types of use are well-known to not cause significant noise and/or odor impacts. The similar or greater amounts of internal road length, driveways and patios would tend to result in similar or greater amounts of lighting (to be dispersed throughout the site) than the proposed project, again with similar or greater impacts on the character of the site and the neighborhood. However, each scenario would be subject to the review and approval of the Town, which would apply appropriate restrictions on light fixtures, pole height, illumination, use of shrouds, and setbacks, to ensure that the potential for fugitive lighting impacting the neighbors is minimized.

As defined by visual appearance, general level and intensity of activity on the site, and noise, implementing Alternatives 2 through 6 would impact the character of the site and neighborhood to a similar or greater degree than would be the case for the proposed project. Alternative 2 would have the most impact and each of the other alternatives would have varying degrees of visual change. There would be a substantially higher number of occupants on the site in all of these Alternatives than for the proposed project. In addition, these scenarios would generate a substantial number of school-age children. The Alternatives would generate similar or greater numbers of vehicle trips than the proposed project, so that there would be similar or greater impacts to community character from traffic-generation than the proposed project. It is noted that the proposed project groups development into three separate areas so as not to burden any one location, road or existing neighborhood. Other alternatives spread development across the site to a greater extent and therefore result in a greater change in visual character.

Community Services

Table 5-1 shows that, like the proposed project, Alternatives 2 through 6 would substantially increase the amount of taxes generated by the site as compared to its existing condition; each scenario would also substantially increase its allocation of taxes to the Northport-East Northport UFSD.

In comparison to the proposed project, Alternative 2 would generate more total and school district taxes, while Alternatives 4, 5 and 6 would generate the same amounts of these two figures, and Alternative 3 would generate less total and school district taxes.

Being a senior residential development, the 98 residences in the proposed project would generate no school-age children. In contrast, the 98 residences of Alternatives 2 through 6 would generate an estimated 148 school-age residents, who would attend local schools. These would represent an increased enrollment in the district with the potential for impacts.

Such an enrollment increase would have an adverse effect on district expenditures, by requiring the district to expend an additional $2.7 million annually. While district tax allocations would be increased by the project (see above), that increased allocation would not be large enough to fully offset the increased expenditures necessitated. Conservatively assuming that all such residents would attend the Northport-East Northport UFSD, district expenditures would be increased by roughly $2.7 million annually, but school taxes would be increased by $1.0 to $1.2 million per year.

Specifically, each of Alternatives 2 through 6 would result in a shortfall in school taxes versus school expenditures: Alternative 2 would result in the lowest shortfall ($1.52 million annually), with Alternatives 4, 5 and 6 causing a shortfall of $1.58 million per year, and Alternative 3 having the greatest shortfall,($1.68 million pe year). This shortfall in tax allocation could require the district to increase its tax rate, cut expenditures, or a combination of both.

Such adverse impacts on school district fiscal conditions would not occur for the proposed project, as this scenario would not generate potential school children, there would be no increased enrollment for the Northport-East Northport UFSD, no increased expenditures, and no shortfall in school district tax allocations. In fact, the proposed project represents a significant fiscal benefit to the district, as all school taxes allocated would be available to the Northport-East Northport UFSD.

For the proposed project and Alternatives 2 through 6, the site would continue to warrant oversight on the part of the SCPD and the Northport Fire Department. It should be noted that the nature of the oversight and the potential need of emergency response would be changed by these scenarios, as a result of the presence of residents. Each of these services would receive substantial increases in site-generated tax allocations, to offset at least portions of any increased expenditures necessitated; however, the proposed project is expected to result in well under half the residential population as compared with Alternatives 2 through 6.

As the golf course operation would continue for the proposed project and Alternatives 4, 5 and 6, use of the on-site well to provide irrigation water would not change (Alternatives 2 and 3 would close and abandon the irrigation well). As the acreages of irrigated landscaping are assumed to vary from 46± acres (Alternative 6) to 23± acres (Alternative 2), the volume of groundwater used would vary accordingly. In comparison, the proposed project would irrigate 32.52 acres.

The SCWA would provide all water for domestic consumption. The residences in the proposed project and Alternatives 2 through 6 would consume the same amount of water, 29,400 gpd. An additional consumer of domestic water is the golf course clubhouse and maintenance building, if retained (the proposed project and Alternatives 4, 5 and 6, at 3,950 gpd), or the golf course clubhouse retained for a community clubhouse (Alternatives 2 and 3, at 3,750 gpd).

The substantially larger number of site residents in Alternatives 2 through 6 would generate a substantially larger amount of solid waste than the proposed project, with a correspondingly greater impact on the solid waste removal and disposal services and facilities of the Town.

With regard to impacts associated with potential usage of public parks and local recreation facilities, the nature of Alternatives 2 and 3 are such that residents of these scenarios would be somewhat more likely to use such sites than those of the proposed project or Alternatives 4, 5 and 6 (which are designed around a golf course readily available to the site's residents).

Alternative 2 would include roads that would be offered for dedication to the Town for maintenance, whereas those of the proposed project and Alternatives 3, 4, 5 and 6 would remain in private ownership, to be maintained privately. As a result, Alternative 2 would result in a greater adverse impact on the road maintenance services of the Town, by incrementally increasing the amount of roadway that would be maintained.

The proposed project and Alternatives 2 through 6 will increase the demand for and consumption of energy, particularly electricity, on the site. In comparison to the increased usage of the proposed project, it is expected that the increases of Alternatives 2 through 6 would be similar to that of the proposed project, as each scenario includes 98 residences and either the golf course (Alternatives 4, 5 and 6), or the golf course clubhouse retained as a community clubhouse (Alternatives 2 and 3).

Upon consideration of the above-noted impacts, it is expected that Alternatives 2 through 6 would demand more community services than the proposed project, particularly in relation to school services.

Transportation

In comparison to the proposed project, Alternatives 4, 5 and 6 would generate fewer vehicle trips during the weekday AM peak hour, nearly the same number of trips during the weekday PM peak hour, and more trips during the Saturday midday peak hour.

Generally, each of these scenarios will increase the trip generation of the site. The sizes of increases would vary due to the difference in the type of residence assumed and whether the golf course is retained or not. The proposed project would generate the most trips during the weekday AM and PM peak hours, but Alternatives 4, 5 and 6 would generate the most trips in the Saturday Midday peak hour. Alternative 2 would generate fewer trips than for all peak hours evaluated, and Alternative 3 would generate the fewest numbers of peak hour trips. Additionally, the directional distributions of the trips generated by the scenarios would be similar to those of the proposed project because each of these scenarios assume new accesses onto Mystic Lane and either Thornton Drive or Frost Pond Road, and Breeze Hill Road. In consideration of these two factors, it would be expected that a similar potential for impacts on local roadways and intersections would occur.

The proposed project was analyzed in a TIS and its impacts were found to not be significant. Therefore, it is expected that the potential impacts of Alternatives 2 through 6 would not differ substantially from those of the proposed project.

Human Health

Evaluations of the site's soil and water resources indicate that there remain no issues of impact on the site. Further, neither the proposed project nor any of the alternative development scenarios would include any activities that could introduce such impact to the site. As a result, none of the development scenarios examined herein would impact human health from exposure to new or existing sources of contaminants.

Cultural Resources

Investigation for the proposed project has determined that the property has no known or suspected cultural resources (whether prehistoric or historic; see **Section 3.6**); as a result, no impacts to such resources could occur. Thus, there would be no difference in the potential impact on cultural resources between Alternatives 2 through 6 and the proposed project.

Construction

Generally, it is expected that the geographic and temporal extents of construction would be similar for the proposed project and Alternatives 3 through 6. As Alternative 2 would remove the golf course (for subdivision into residential lots), it is expected that the impacts of construction would be greatest for this scenario. All other impacts associated with construction, such as vehicle trips, duration of impacts, construction noise and dust generated, etc. would be similar for all scenarios evaluated.

5.9 Summary and Conclusion

The above general discussions indicate that some of the impacts (both adverse and beneficial) anticipated from the proposed project would be greater than those of the Alternatives, and other impacts would be less than those of the Alternatives. On balance, Alternatives 2 and 3 would produce greater adverse impacts on geology/soils (greater disturbance), water resources (higher nitrogen load), ecology (greater intensity and spatial use of land and domestic impacts), land use/zoning (removal of recreational use), land use plans (does not advance goals of the plan), community character (loss of the golf course), community services (greater burden and less net tax revenue to school district), and transportation (higher peak hour trip generation).

Alternatives 2 and 3 are not in keeping with the goals and objectives of the applicant, which is to provide a high-quality, year-round residential community centered on a revitalized private golf course/country club that minimizes impact on the site and surrounding community, particularly with regard to water quality, the Northport-East Northport UFSD, tax revenue, and conformance to the Town Comprehensive Plan Update. Alternatives 4, 5 and 6 would partially achieve the goals of the project sponsor with respect to a residential community with a private golf course/country club, but these scenarios would have greater adverse impacts on water resources (total usage, recharge volume, nitrogen recharged), community character (greater number of residents), and community services (greater burden and less net tax revenue to school district), than the proposed project. The applicant seeks to construct a senior housing community.

In consideration of the above analysis, it may be concluded that, on balance, the potential impacts of Alternatives 2 through 6 would be generally more adverse than those of the proposed project, and therefore there is no compelling reason to pursue these scenarios in preference to the proposed project.

SECTION 6.0

REFERENCES

6.0 REFERENCES

Behler, J.L. and F.W. King, 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred Knopf, N.Y.

Bent, A. C., 1946. Life Histories of North American Jays, Crows, and Titmice. Dover Publications, New York.

Bent, A. C., 1953. Life Histories of North American Wood Warblers, Part I. Dover Publications, New York.

Bent, A. C., 1953. Life Histories of North American Wood Warblers, Part II. Dover Publications, New York.

Bent, A. C., 1961. Life Histories of North American Birds of Prey, Part I. Dover Publications, New York.

Bent, A. C., 1963. Life Histories of North American Gallinaceous Birds. Dover Publications, New York.

Bent, A. C., 1964. Life Histories of North American Flycatchers Larks, Swallows, and their Allies. Dover Publications, New York.

Bent, A. C., 1964. Life Histories of North American Nuthatches, Wrens, Thrashers, and their Allies. Dover Publications, New York.

Bent, A. C., 1964. Life Histories of North American Woodpeckers. Dover Publications, New York.

Bent, A. C., 1964. Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds and their Allies, Part II. Dover Publications, New York.

Bent, A. C., 1965. Life Histories of North American Wagtails, Shrikes, Vireos, and their Allies. Dover Publications, New York.

Bent, A. C., 1964. Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds and their Allies, Part I. Dover Publications, New York.

Bent, A. C., 1965. Life Histories of North American Blackbirds, Orioles, Tanagers and Allies. Dover Publications, New York.

Bent, A. C., 1968. Life Histories of North American Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows and Allies, Part I. Dover Publications, New York.

Bent, A. C., 1968. Life Histories of North American Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows and Allies, Part II. Dover Publications, New York.

Bent, A. C., 1968. Life Histories of North American Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows, and Allies, Part III. Dover Publications, New York.

Bishop, S.C. 1943. Handbook of Salamanders. The Salamanders of the United States, Canada, and of Lower California. Comstock Publishing, Ithaca, New York.

Burt, William H. and Grossenheider, Richard P., 1976, A Field Guide to the Mammals of America North of Mexico, Boston: Houghton Mifflin Company.

Central Pine Barrens Joint Policy & Planning Commission (CPBJPPC), 1995. Central Pine Barrens Comprehensive Land Use Plan, Chapter 5: Standards and Guidelines for Land Use, Westhampton Beach, NY.

Chapman, J.A. and G.A. Feldhamer, 1982, Wild Mammals of North America: Biology, Management, Economics. John Hopkins University Press, Baltimore, Maryland.

Conant, R. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Peterson Field Guide Series, Number 12. Houghton Mifflin Company, Boston, Ma.

Connor, Paul F., 1971, The Mammals of Long Island, New York, Albany, New York: New York State Museum & Science Service.

New York State Department of Environmental Conservation/Division of Water, Bureau of Water Resource Management, January 2015 https://www.dec.ny.gov/docs/water_pdf/wiatllisnrsb.pdf. Accessed April 15, 2019.

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2014. *Ecological Communities of New York State.* Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY.

Environmental Laboratory, 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Environmental Protection Agency, Environmental Stewardship Action Plan, Beneficial Landscaping, http://www.epa.gov/greenkit/landscap.htm.

Farrand, John, 1997, National Audubon Society Field Guide to North American Birds, Eastern Region, Alfred A. Knopf, New York.

Farrand, J. ed. 1983. The Audubon Society Master Guide to Birding Vols. 1, 2 and 3. Alfred

A. Knopf, New York, N.Y. 447 pp.

Fernald, M. L, 1970. Gray's Manual of Botany. 8th edition. D. Van Nostrand, New York. 1632 pp.

Forbush, E.H. 1912, The History of the Game Birds, Wildfowl, and Shore Birds of Massachusetts and Adjacent States. Wright and Potter Printing, Massachusetts.

Fowler, Murray E., 1993, Zoo and Wild Animal Medicine, Saunders Company, Philadelphia, Pennsylvania.

Fuller, Myron L., 1914, The Geology of Long Island, New York, USGS, Professional Paper 82, Washington, D.C.

Gleason, Henry A. and A. Cronquist, 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden. 910 pp.

Godin, Alfred J., 1983, Wild Mammals of New England. The Globe Pequot Press, Chester, Connecticut.

Godin, Alfred J., 1977, Wild Mammals of New England. The Globe Pequot Press, Chester, Connecticut.

Hunter, M.L., A. Calhoun, and M. McCollough. 1999. Maine Amphibians and Reptiles. The University of Maine Press, Orono.

Institute of Transportation Engineers (ITE). 2017. Trip Generation, 10th Edition, Washington D.C. ITE Technical Council Committee 6A-32.

Leahy, C., 1982, The Birdwatcher's Companion, Gramercy Books, New York, New York.

Multiple Listing Service of Long Island, Inc. Website, http://www.mlsli.com/.

Natural Resources Conservation Service, 1975. Soil Survey of Suffolk County, New York. http://websoilsurvey.nrcs.usda.gov/app/

New York Natural Heritage Program. 2019. Online Conservation Guide for Myotis septentrionalis. Available from: https://guides.nynhp.org/northern-long-eared-bat/. Accessed March 6, 2019.

New York State Department of Labor's Occupational Employment Statistics Survey http://www.bls.gov/oes/

Newcomb, L. 1977. Newcomb's Wildflower Guide. Little, Brown and Co., Boston, Ma.

Northport-East Northport UFSD, Long Range Planning Study Update, Demographic, Enrollment

and Facilities Analysis, 2015

NYSDEC (New York State Department of Environmental Conservation), 2018. NYS Environmental Conservation Law, New York.

NYSDEC. 2015. List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State, NYS DEC Endangered Species Unit, Albany, N.Y.

NYSDEC. 2007. NYS Breeding Bird Atlas, 2000-2005. http://www.dec.ny.gov/cfmx/extapps/bba/. Accessed January 5, 2015.

NYSDOT. LITP2000, Study for the Town of Huntington.

Obst, F.J. 1988. Turtles, Tortoises, and Terrapins. St. Martin's Press, New York.

Salvato, Joseph, 1982, Environmental Engineering and Sanitation, 3rd Edition, A Wiley-Interscience Publication, New York.

Suffolk County, 2015, Suffolk County Comprehensive Water Resource Management Plan.

Sutton, Ann and Myron, 1925. Eastern Forests, New York: Alfred A. Knopf, Inc.

Town of Huntington, 2008. Horizons 2020: Huntington Comprehensive Plan Update.

Town of Huntington, 1988. Environmental Open Space and Park Fund Program (EOSPA).

Town of Huntington, 2009. Private Golf Course Moratorium Proposed Planning Options Report.

Town of Huntington, 2015. Crab Meadow Watershed Hydrology Study, GEI Consultants, Inc.

Town of Huntington, 2015. Climate Action Plan

Town of Huntington, undated. Crab Meadow Watershed Wildlife Environmental Education Manual. www.huntingtonny.gov/filestorage/13749/13847/16804/99881/41072/41080/Crab_Meadow_Watershed_Wildlife_Education_Manual_Final.pdf. Accessed April 15, 2019.

United States Environmental Protection Agency, 1994. LIS Comprehensive Conservation and Management Plan.

Whitaker, J.O. 1996. National Audubon Society Field Guide to North American Mammals. Alfred A. Knopf, N.Y., N.Y.

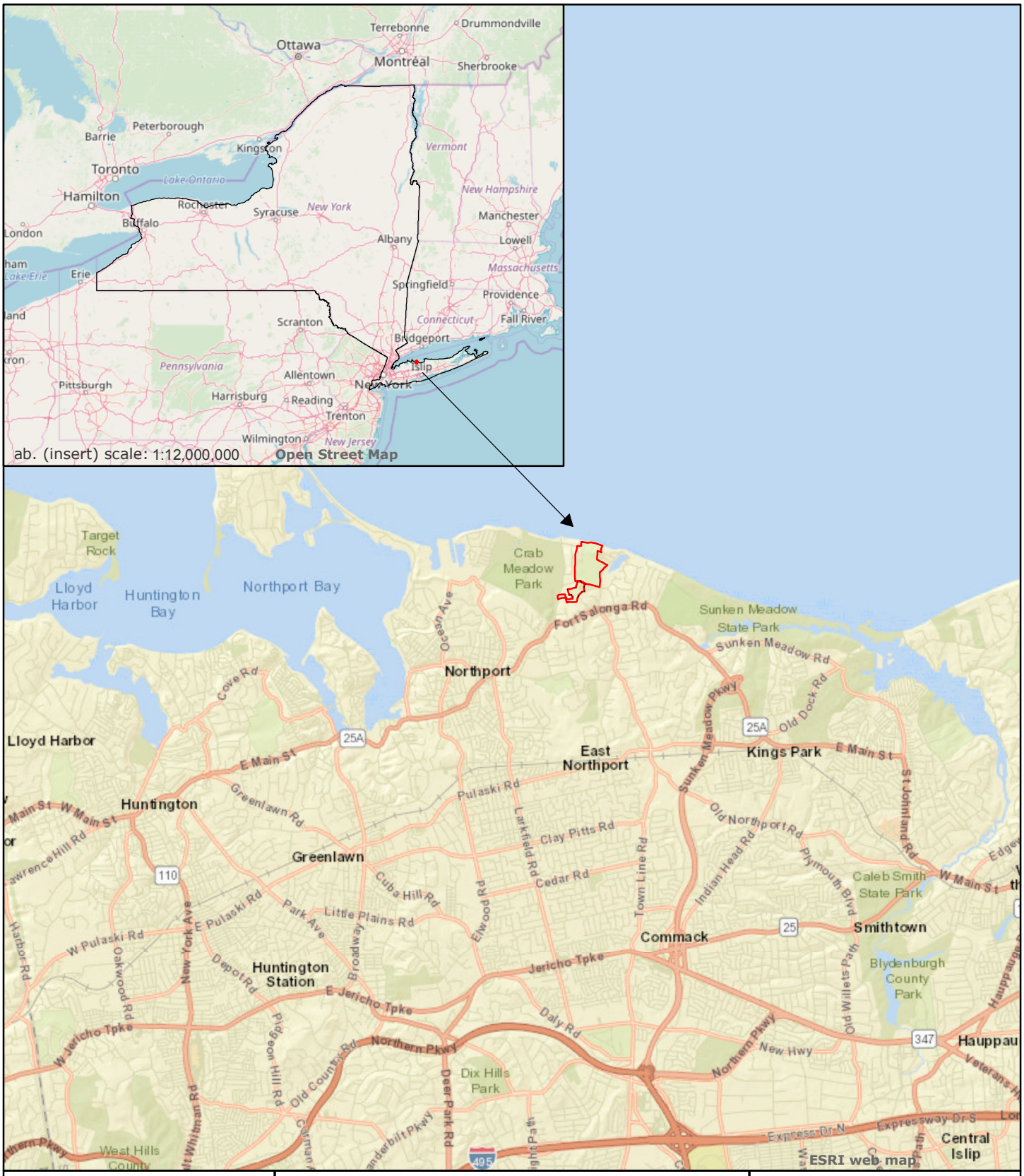
Wright, A.H. and A.A. Wright, 1949. Handbook of Frogs & Toads. Comstock Pub. Assoc., Ithaca, NY.

PS&S, January 14, 2019, revised April 15, 2019. Geotechnical Engineering Investigation and Slope Stability Analysis.

PS&S, 2008. Geotechnical Engineering Services Report, Phase I of the Bluff Area Stability Evaluation.

Wright, A.H., and A.A. Wright, 1957. Handbook of Snakes V1. Comstock Pub. Assoc., Ithaca, NY.

FIGURES



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

FIGURE 1-1
LOCATION MAP

Source: ESRI Web Mapping Service
Scale: 1 inch = 10,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS

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

FIGURE 1-2
AERIAL PHOTOGRAPH

Source: NYSGIS Orthoimagery Program, 2016

Scale: 1 inch = 600 feet

N

The Preserve at Indian Hills Northport

Draft EIS

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

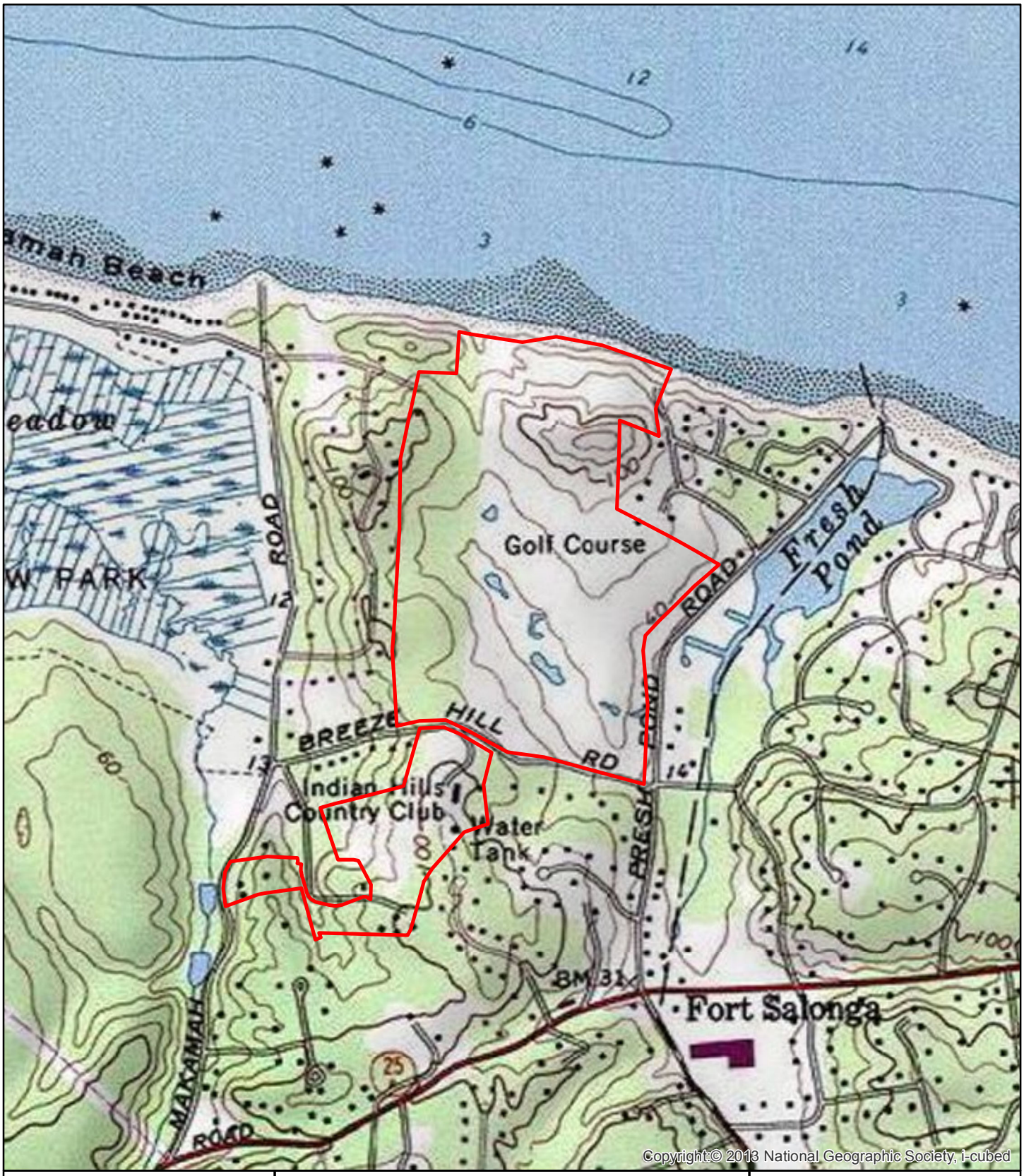
FIGURE 1-3
PARCEL ID

Source: ESRI Web Mapping Service
Scale: 1 inch = 571.261919 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

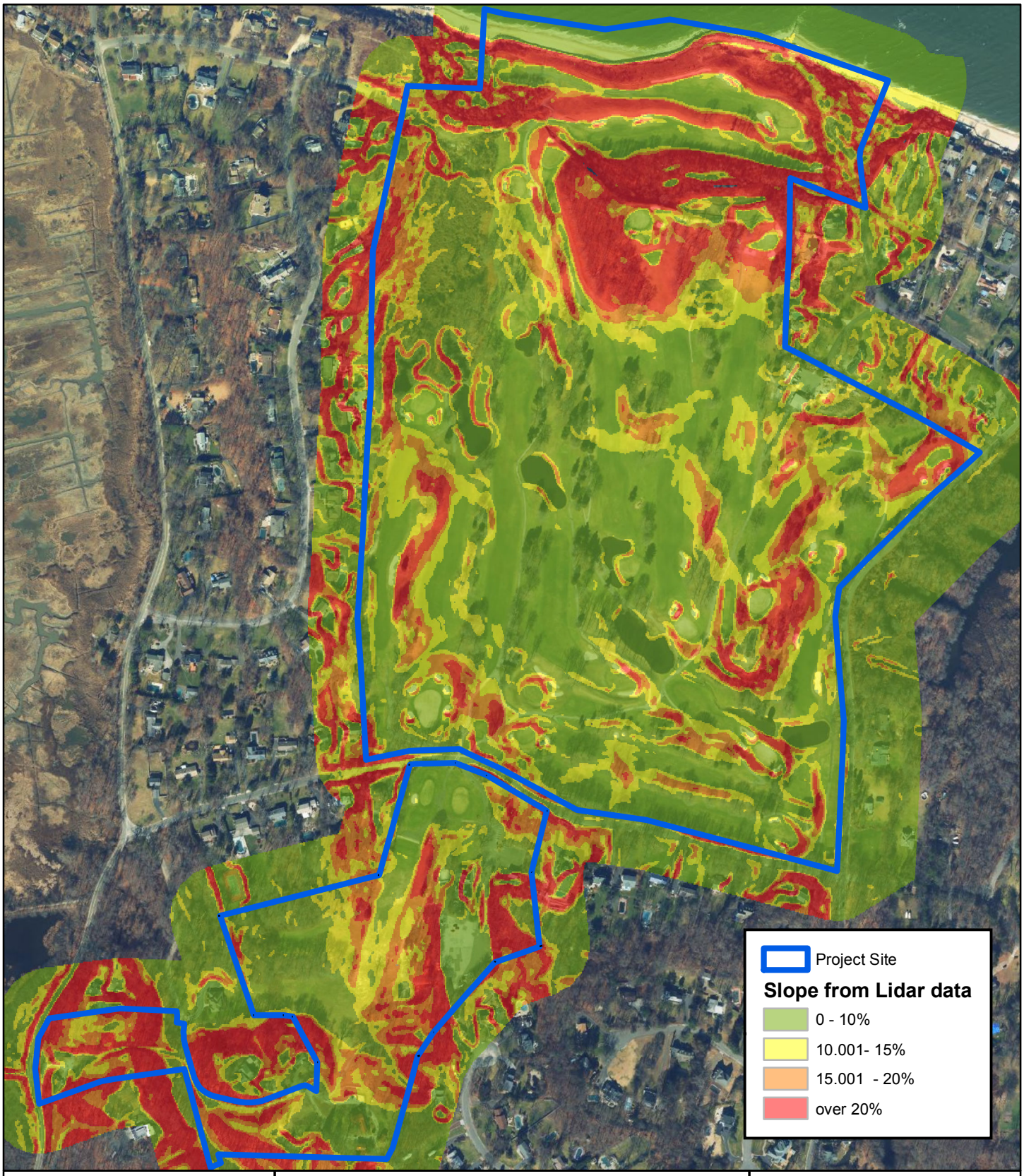
FIGURE 2-1
TOPOGRAPHIC MAP

Source: USGS Topographic Maps, USGS Northport Quadrangle
Scale: 1 inch = 1,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

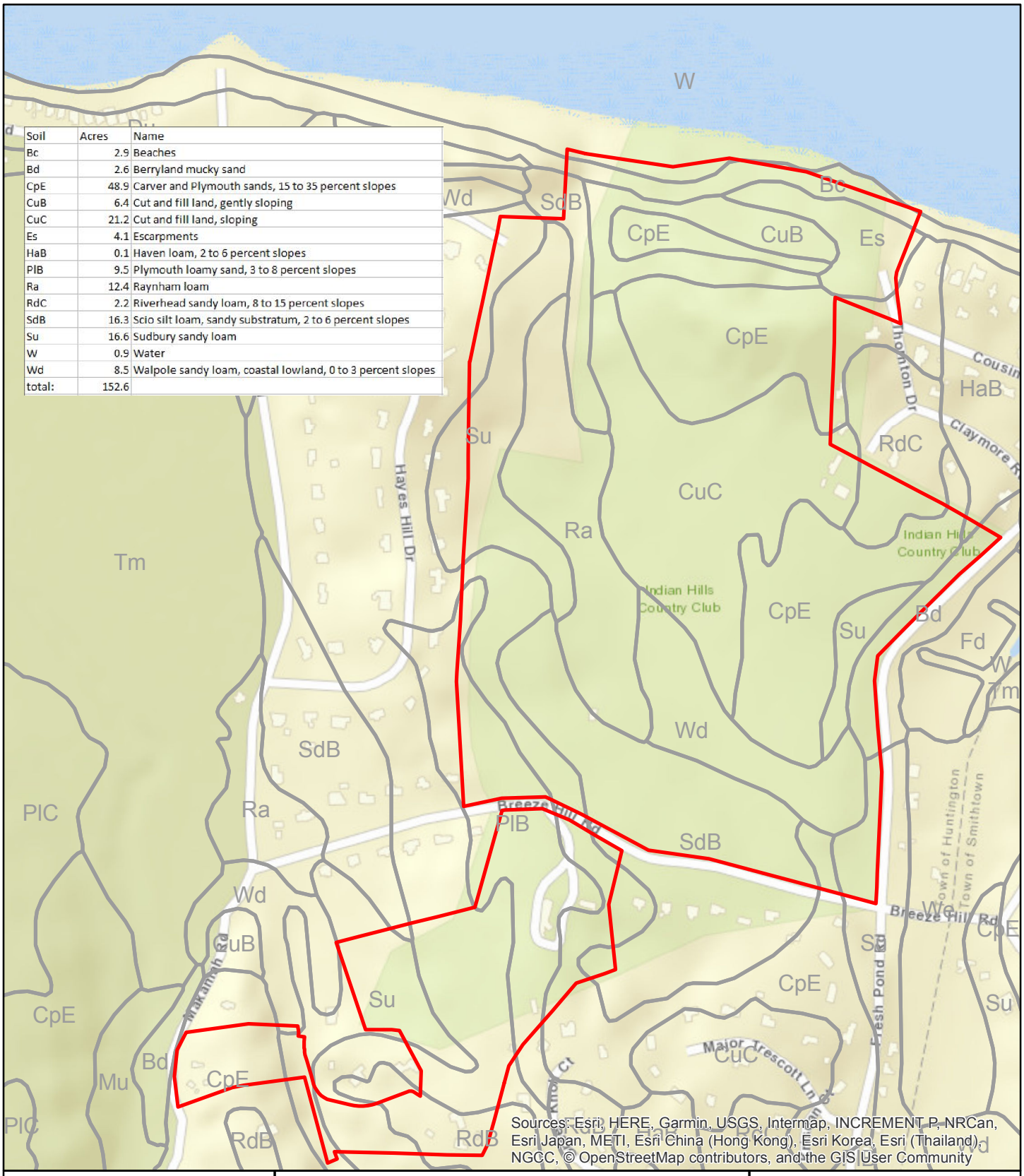
FIGURE 2-2
SLOPES

Source: NYS Orthophotography, 2016;
Slope calculated from FEMA Lidar, 2006
Scale: 1 inch = 525 feet

N

The Preserve at Indian Hills
Northport

Draft EIS



Soil	Acres	Name
Bc	2.9	Beaches
Bd	2.6	Berryland mucky sand
CpE	48.9	Carver and Plymouth sands, 15 to 35 percent slopes
CuB	6.4	Cut and fill land, gently sloping
CuC	21.2	Cut and fill land, sloping
Es	4.1	Escarpments
HaB	0.1	Haven loam, 2 to 6 percent slopes
PlB	9.5	Plymouth loamy sand, 3 to 8 percent slopes
Ra	12.4	Raynham loam
RdC	2.2	Riverhead sandy loam, 8 to 15 percent slopes
SdB	16.3	Scio silt loam, sandy substratum, 2 to 6 percent slopes
Su	16.6	Sudbury sandy loam
W	0.9	Water
Wd	8.5	Walpole sandy loam, coastal lowland, 0 to 3 percent slopes
total:	152.6	

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

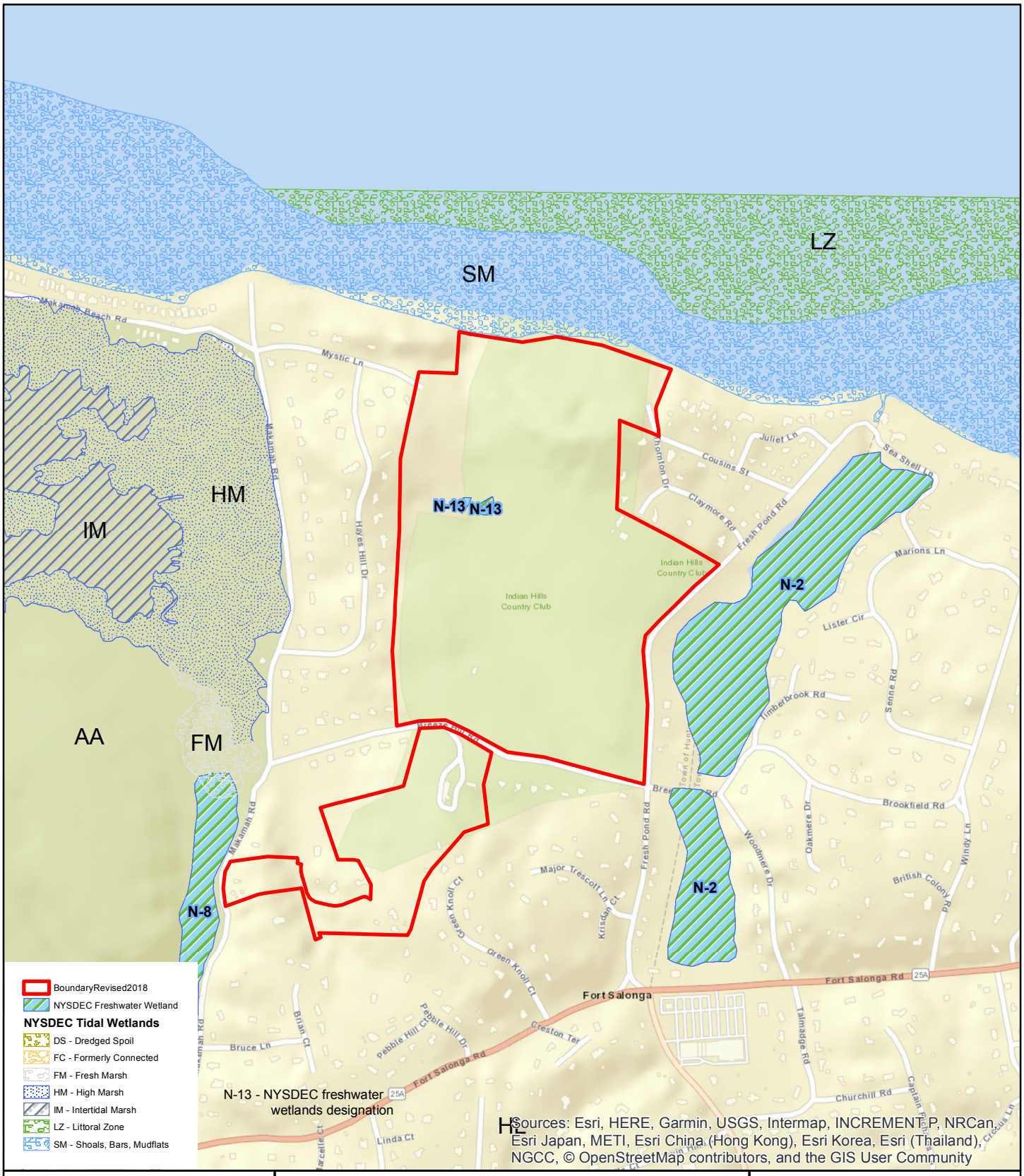
FIGURE 2-3
SOIL MAP

Source: ESRI Web Mapping Service, NRCS Soils Suffolk County, NY
Scale: 1 inch = 600 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

FIGURE 2-4
NYSDEC WETLANDS MAP

Source: ESRI Web Mapping Service, NYSDEC Freshwater & Tidal Wetlands Maps
Scale: 1 inch = 1,000 feet

N

The Preserve at Indian Hills
Northport

Draft EIS

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

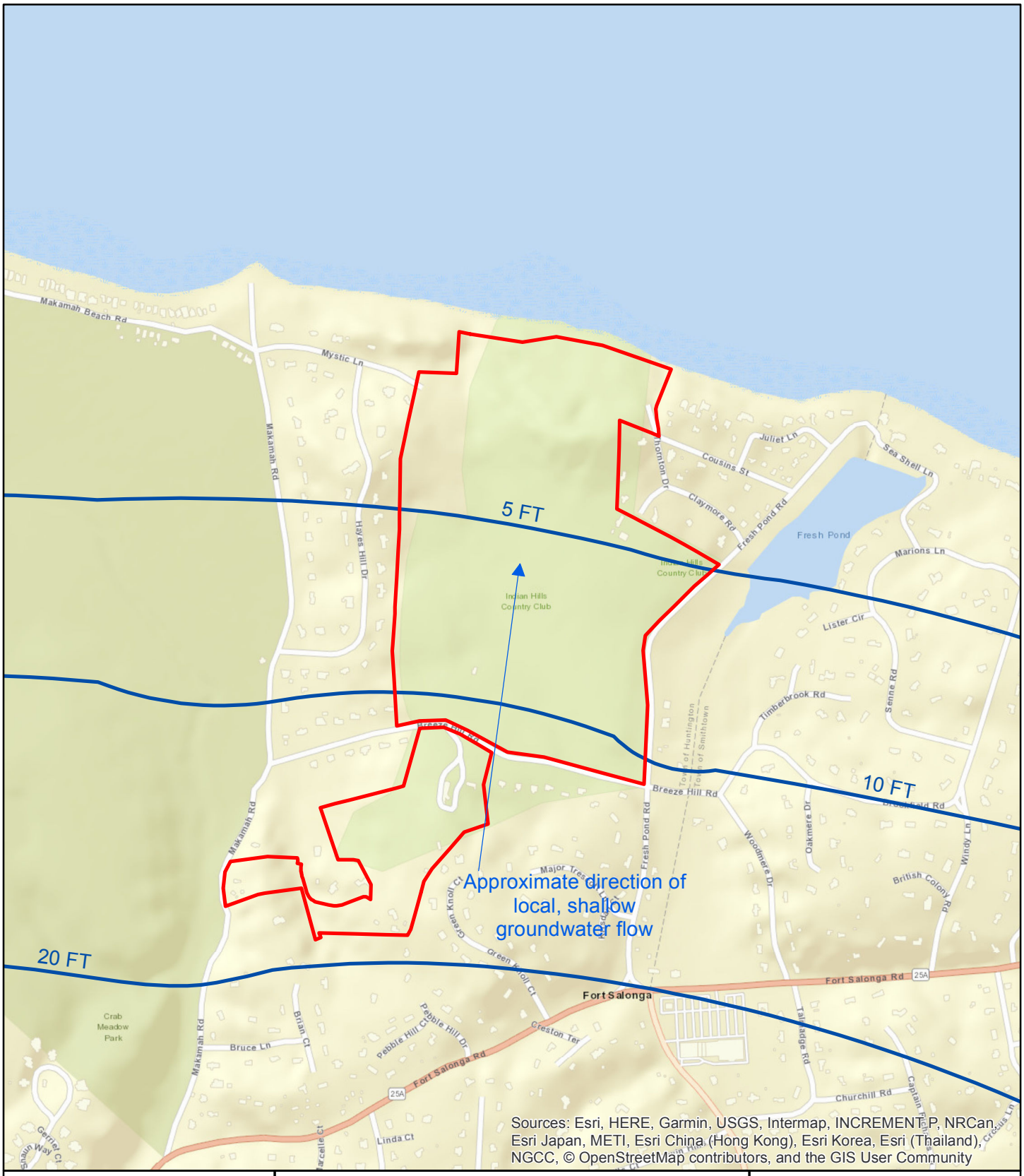
FIGURE 2-5
WATER AND SEDIMENT SAMPLE LOCATION MAP

Source: NYS Orthophotography, 2016
Scale: 1 inch = 600 feet

N

The Preserve at Indian Hills
Northport

Draft EIS



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

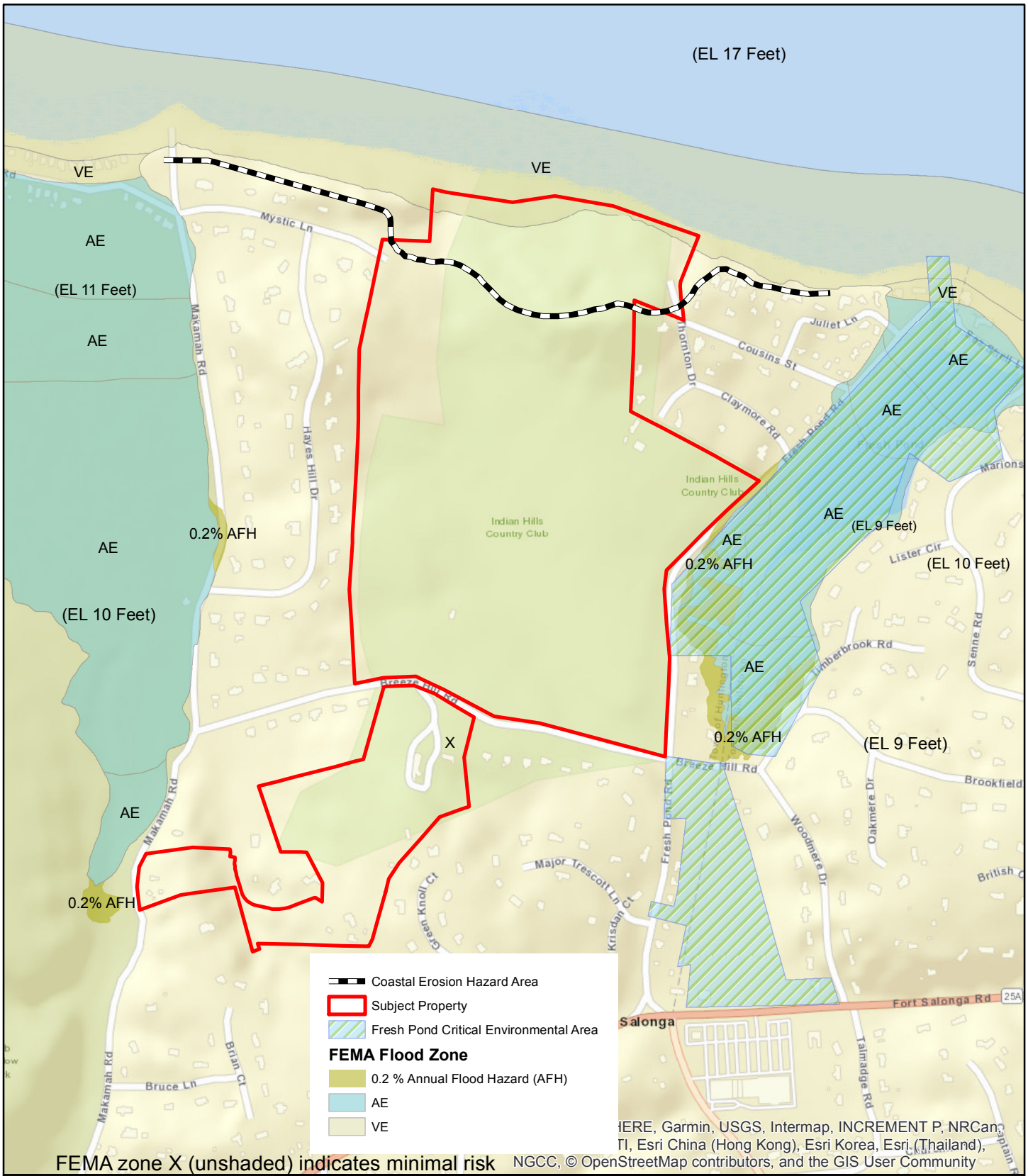
FIGURE 2-6
WATER TABLE CONTOUR MAP

Source: ESRI Web Mapping Service, USGS Scientific Investigations Map 3398, 2016 data
Scale: 1 inch = 1,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS



FEMA zone X (unshaded) indicates minimal risk

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

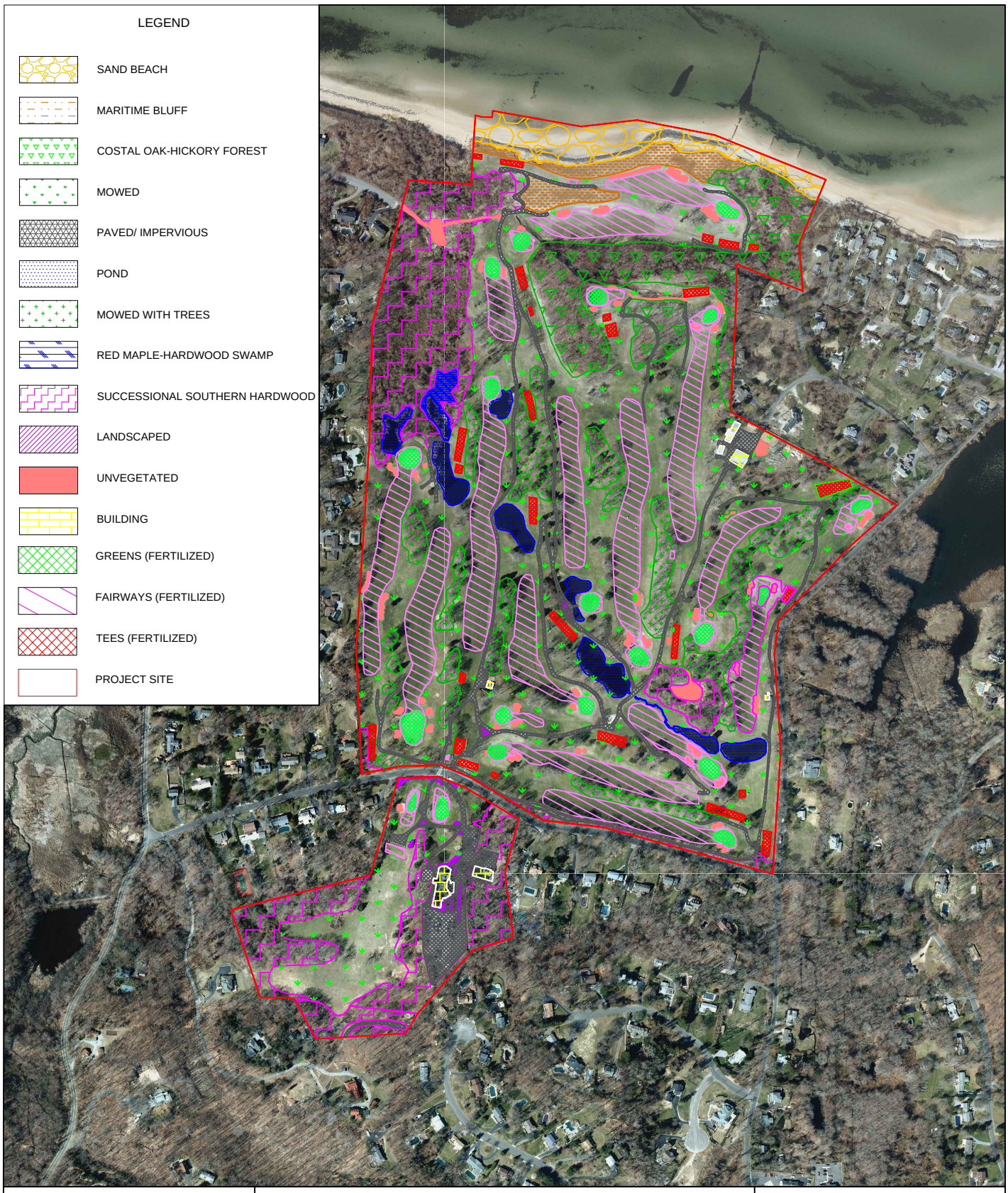
FIGURE 2-7
FEMA FLOOD MAP

Source: NYS Orthophotography, 2016, FEMA
Firm map 36103C03411H; NYS CEA Fresh Pond
Scale: 1 inch = 800 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

FIGURE 2-**8**
HABITAT MAP

Source: NYS Orthoimagery Program 2013
Scale: 1" = 600'

NORTH

The Preserve at
Indian Hills
Northport

D**raft** EIS

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

FIGURE 3-1
LAND USE MAP

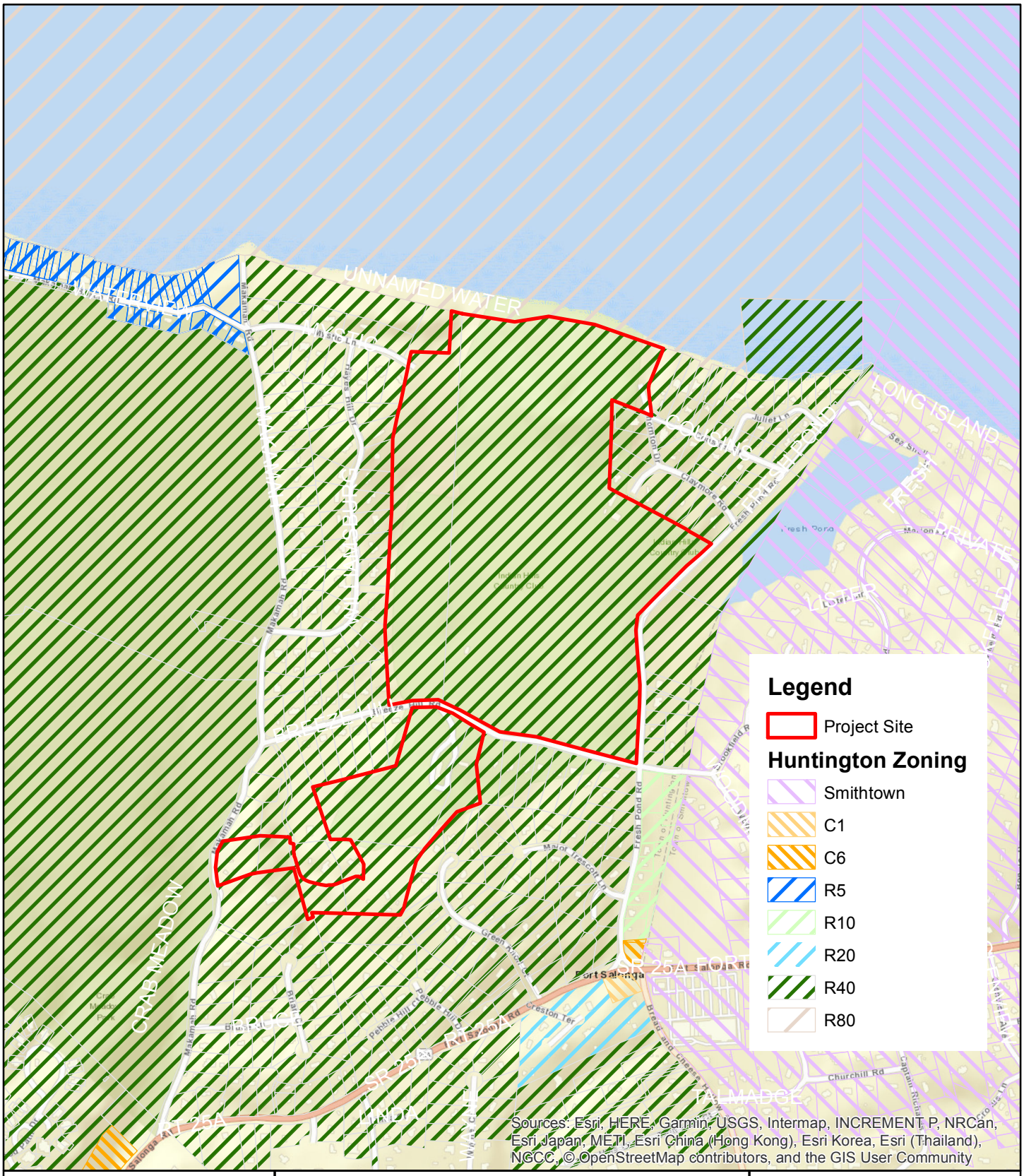
Source: NYS Orthophotos, 2016

Scale: 1 inch = 550 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

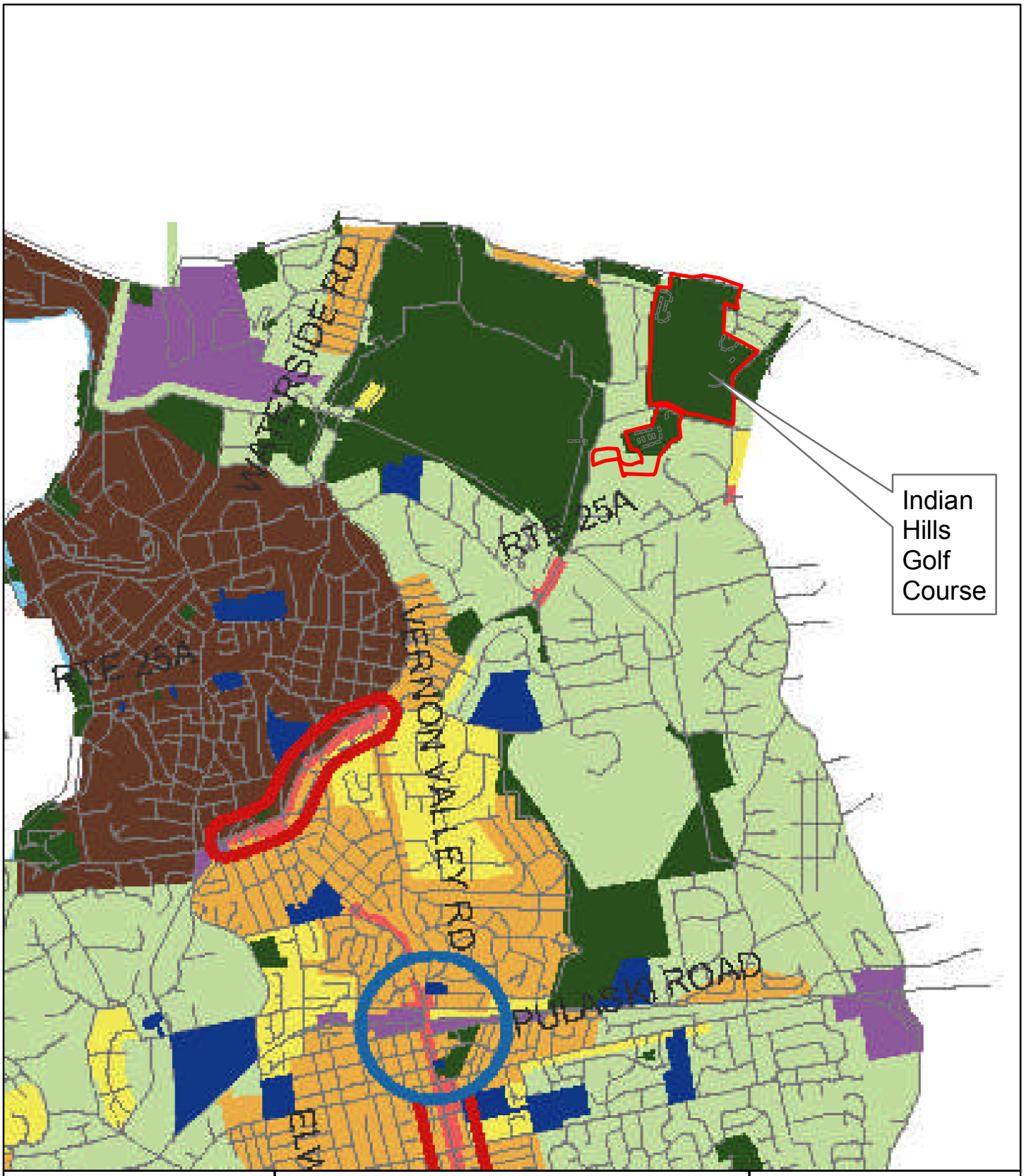
FIGURE 3-2
ZONING MAP

Source: Huntington Zoning, retrieved Oct 2016, http://geo.huntingtonny.gov/helix/
Scale: 1 inch = 1,000 feet

N

The Preserve at Indian Hills
Northport

Draft EIS



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

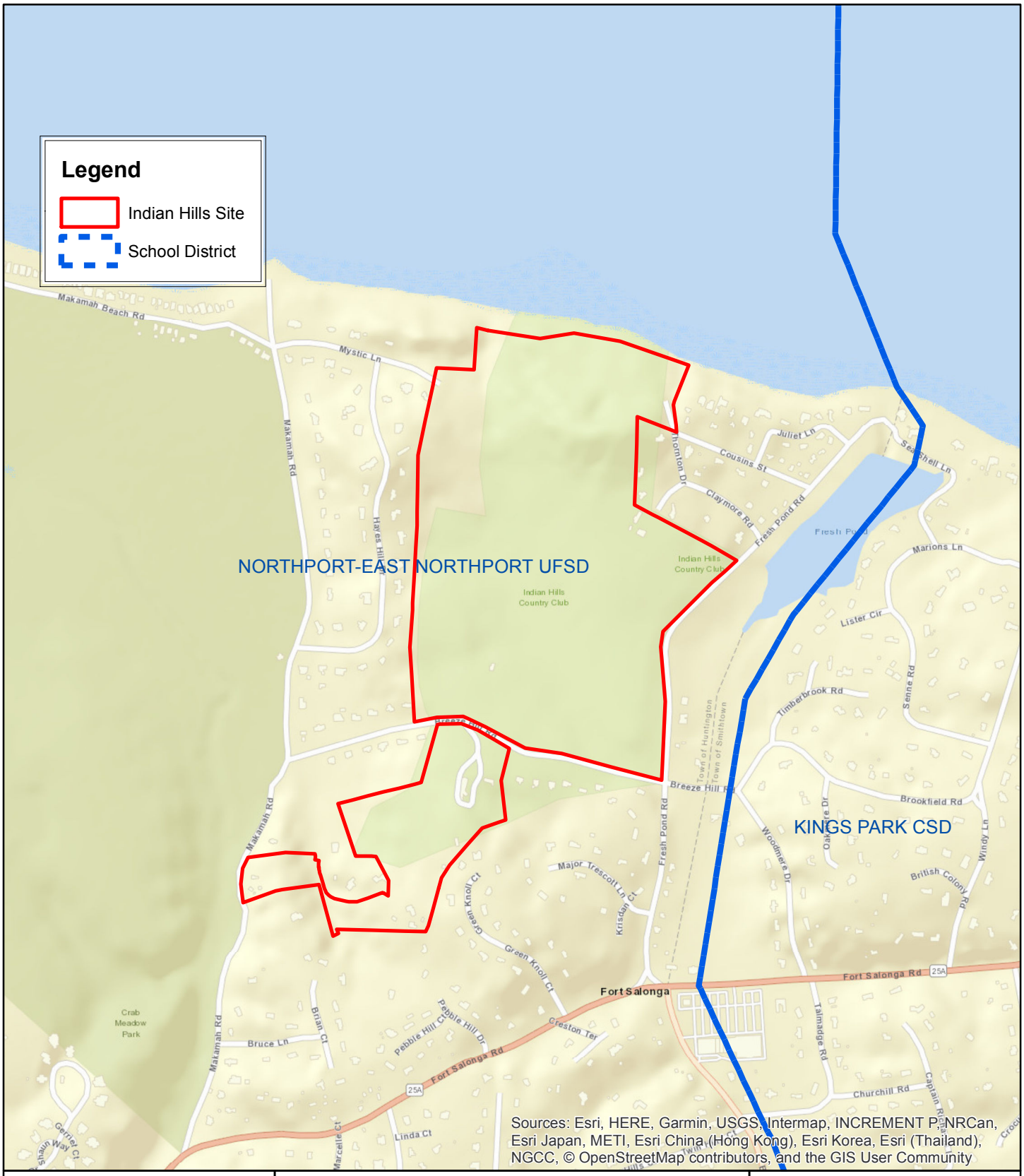
FIGURE 3-3
GENERALIZED FUTURE LAND USE MAP

Source: ESRI Web Mapping Service; Horizons 2020: Huntington Comprehensive Plan Update
Scale: 1 inch = 3,000 feet

N

The Preserve at Indian Hills
Northport

Draft EIS



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

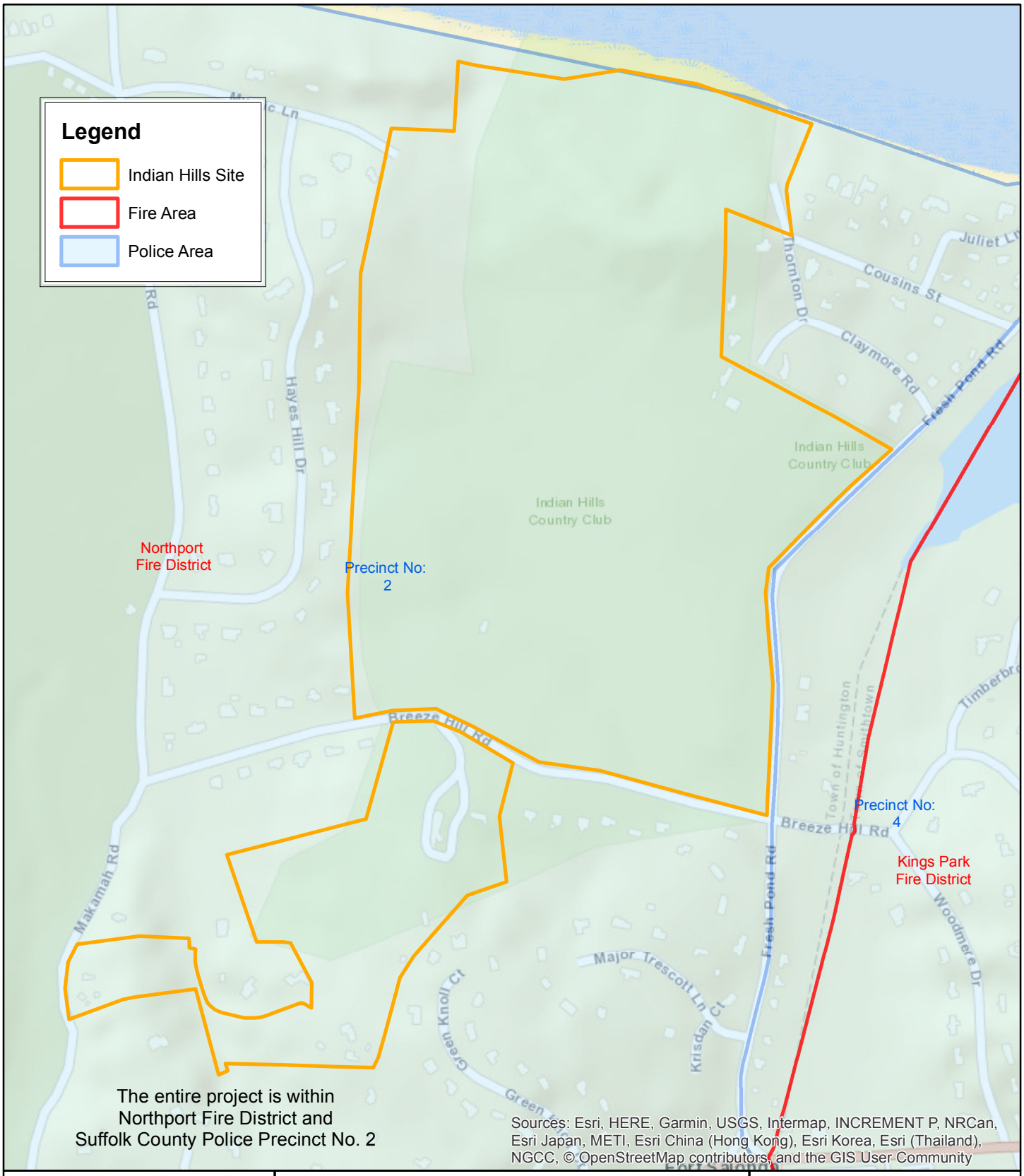
FIGURE 3-4
COMMUNITY SERVICES
SCHOOLS

Source: ESRI Web Mapping Service;
Suffolk County data
Scale: 1 inch = 1,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

FIGURE 3-5
COMMUNITY SERVICES SAFETY

Source: ESRI Web Mapping Service;
Suffolk County data
Scale: 1 inch = 600 feet

N

The Preserve at Indian Hills Northport

Draft EIS

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

FIGURE 3-6
WATER SUPPLY AND MONITORING WELL MAP

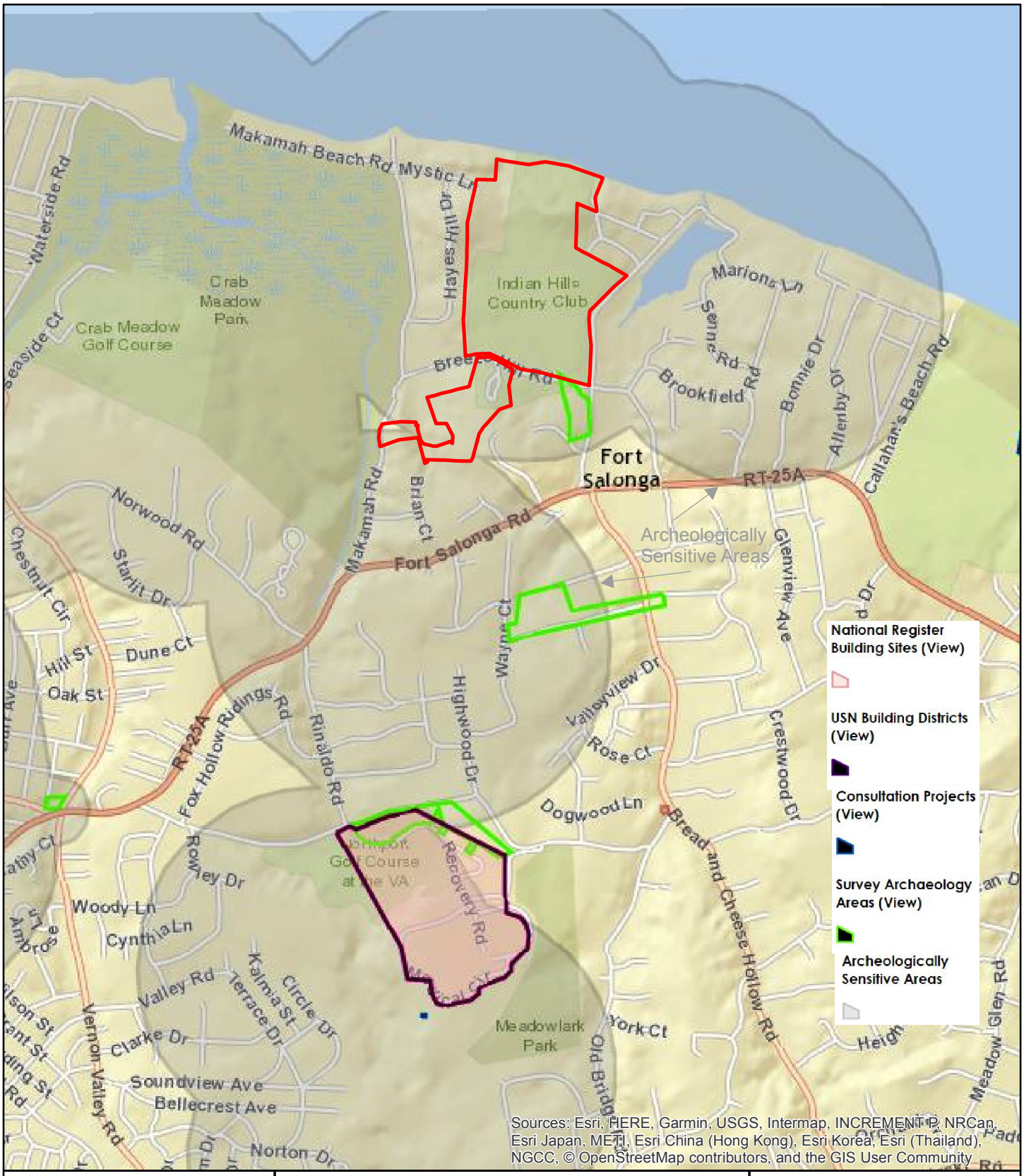
Source: ESRI Web Mapping Service,Suffolk SWAP dataset

Scale: 1 inch = 2,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS



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

FIGURE 3-7
CULTURAL RESOURCES

Source: ESRI Web Mapping Service, NYS DEC cris.parks.ny.gov
Scale: 1 inch = 2,000 feet

N

The Preserve at Indian Hills Northport

Draft EIS

APPENDICES