

HYENGA LAKE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

TOWN OF CLARKSTOWN, ROCKLAND COUNTY, NEW YORK

Tax Map Numbers:

Section 57.14, Block 3, Lot 2

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1.0 Executive Summary

1.1 Action Overview

This Draft Environmental Impact Statement (DEIS) has been prepared to assist the Town of Clarkstown in assessing the potential environmental impacts associated with construction of a residential site plan application from Hyenga Lake Development, LLC, the "project sponsor" and property owner of the site located on Pipetown Hill Road in the unincorporated area of Town of Clarkstown, Rockland County, New York. The DEIS has been prepared in accordance with the State Environmental Quality Review Act (SEQRA) and Part 617 of the regulations implementing SEQRA.

The project site is identified on the Town of Clarkstown tax maps as Section 57.14, Block 3, Lot 2, and is approximately 12.4 acres in size. The project site is approximately one-half mile south of Interchange 14 of the New York State Thruway. The northern property line of the project site is coterminous with Clarkstown's boundary with the Village of Spring Valley.

A seasonal bungalow colony was formerly located on the project site. Many of the seasonal bungalows have been demolished, although several of the remaining bungalows had been upgraded and continued to be used. As a result of a recent fire which destroyed two units there are currently 28 bungalows remaining on site. The Project Sponsor, Hyenga Lake Development LLC., intends to remove all existing structures on the site, install the required infrastructure, and develop 80 units of multifamily housing in eleven, two story buildings in response to a continued demand for multifamily housing, in the Town of Clarkstown and Rockland County.

In an effort to maintain the relative affordability of these units, compared to the housing market in the Town of Clarkstown and Rockland County, a variance from the Zoning Board of Appeals shall be requested regarding enclosed parking per the zoning regulations. The zoning regulations, in Table 19, Column #6, Item #1, stipulate that one half of all parking shall be enclosed. The proposed project does not include garages, thus a variance from these regulations is required.

This project is expected to provide an area of multifamily housing recommended in conformity with the Town's Comprehensive Plan adopted in 1999, and Chapter 290 of the Town Code, Zoning of the Town of Clarkstown which intended that this area be developed for high density residential use. The proposed project would create a multifamily residential neighborhood for persons seeking to live in the unincorporated area of the Town of Clarkstown with convenient access to major transportation routes such as the New York State Thruway and Route 59. The proposed use, multifamily dwellings, would be consistent with the several developments of multifamily attached dwellings along Pipetown Hill Road in the vicinity of the project site.

The Project Sponsor proposes to develop approximately 12.4 acres of land into 80 multifamily dwellings accessed by two driveways. The proposed driveway to provide access to Pipetown Hill Road is approximately 200 feet in length as measured from the property line along Pipetown Hill Road to the parking area in front of Building "J". Access to NYS Route 59 will be provided via a driveway constructed over a deeded easement granted to the Hyenga Lake Development LLC by Wide World Realty, the adjacent property owner to the north. The Route 59 access driveway will be constructed, owned and maintained by Wide World Realty. A description of this easement is included in Appendix O, Title Insurance Report. The location of this access is shown on the full size preliminary Site Development Plan.

The site plan's design includes an infiltration basin to be located in the northeast portion of the site to handle any increase in the rate of stormwater runoff emanating from the post-development project site. An easement to allow the runoff from Pipetown Hill Road to drain into the Pascack Brook has been granted by the property owner to the Town of Clarkstown, to facilitate drainage from Pipetown Hill Road. An additional 75 foot wide drainage easement in the vicinity of the stream channel, has been granted by the property owner to the Rockland County Drainage Agency to allow access along the length of Pascack Brook for the purpose of maintaining drainage.

Approximately 5.2 acres of the 12.4 acre site would be graded to accommodate the 80 multi-family residences, proposed driveways and parking facilities and lawns and landscaped areas. The site has been previously disturbed, minimal new disturbance will occur as a result of this project. Less than one-tenth of an acre of Army Corps of Engineer (ACOE) regulated wetlands would be disturbed - the disturbance would be subject to a Nationwide Permit No. 39.

The Project Sponsor proposes to construct 80 units of multifamily housing in 11, two-story buildings. Nine of the buildings will be eight-unit structures with four, one bedroom units of approximately 588 square feet, on the first floor, and four, two bedroom units of approximately 947 square feet, on the second floor. The two remaining buildings will have two, one bedroom units on the first floor and two, two bedroom units on the second floor. The units will be connected to existing public water and public sewer service. The Project Sponsor estimates that the selling price would be \$250,000 for each one bedroom unit and \$285,000 for each two bedroom unit.

1.2 Summary of Significant Impacts and Proposed Mitigation Measures

1.2.1 Geologic Resources

The project site is located in the eastern section of the New England physiographic province, more specifically the Triassic Lowlands. The bedrock identified on and near the project site is the Brunswick formation composed of arkose, mudstone, sandstone and siltstone.

On-site soils have been mapped and described by the USDA Soil Conservation Service (SCS) in the Soil Survey of Rockland County, New York (Atlas Sheet 19), issued in 1990. Generally, the soils consist of Wethersfield soil types of different slope percentages, which are described as well-drained.

Of the 12.4 acre project site, 5.2 acres, or 41 percent of the site, would be disturbed. Approximately 7.3 acres, or 59 percent of the site, will remain undisturbed. Approximately 7.7 acres or 62 percent of the site, contains slopes in excess of 15 percent, of which 4.7 acres will be disturbed.

Potential Impacts

Grading is required to build the access road, install site utilities, prepare level areas for buildings, and to create an infiltration basin in the northeastern portion of the project site. Most of the disturbed area is planned on the northern to northeastern portion of the property, where the development of the residential structures is proposed. The majority of the grading is proposed to occur within the infiltration basin on the northeastern corner of the site where the deepest cuts are proposed, up to 18 feet deep. The project would result in the disturbance of 4.7 acres with slopes greater than 15 percent. Areas that would not be regraded include the

area south and west of the Pascack Brook, locations where wetland areas are present and development is not proposed.

A total of 0.03 acres of wetlands will be impacted. Minor wetland impact would result from the construction of the access road and parking areas in the central portion of the property. The project applicant will apply for a Nationwide Wetland Permit for the wetland disturbance of less than 0.1 acres. Approximately 1.61 acres of wetland will remain undisturbed.

Based upon engineering estimates, a total of approximately 43,200 cubic yards of material will be cut and approximately 4,200 cubic yards will be filled. The balance, or approximately 39,000 cubic yards, will be removed from the site. Excess material will be transported by approximately 1,810 trucks.

As a result of soil and slope disturbance and vegetation removal, there is an increased potential for siltation to occur in areas downgradient of the site. The control of stormwater runoff during construction will be important to minimize construction-related soil erosion and sediment impacts. With proper construction, installation and maintenance, soil erosion control measures will minimize potential off-site impacts.

Proposed Mitigation Measures

An Erosion Control Plan is provided in the set of submitted site plans. The primary objective of the plan is to reduce soil erosion from areas exposed during construction and prevent silt from reaching the on-site wetland and areas downstream. All soil erosion and sedimentation control practices would be installed in accordance with erosion and sediment control best management practices

The Town of Clarkstown will require a construction bond/fee to insure the proper installation and maintenance of sediment and erosion control measures, and for site restoration as necessary. The construction contractor will be required to install all sediment and erosion control measures and maintain them throughout the entire construction process.

The proposed plan minimizes the areal extent of soil exposure to the greatest extent practicable. In accordance with the Erosion and Sediment Control Guidelines of the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-02-01), no more than 5 acres of soil will be exposed at any one time. Erosion and sedimentation will be controlled during the construction period by temporary devices according to the Erosion Control Plan developed specifically for the project (see project engineer's full size drawing at the rear of this document). The plan addresses erosion control and slope stabilization. The details of the practices to be followed are described in Section 3.1 of the DEIS. The drainage and erosion control plan will be reviewed by the Town of Clarkstown Department of Environmental Control and approved by the Clarkstown Planning Board as part of final site plan approval.

It is not anticipated that the project will involve blasting. In the unlikely event that blasting is required, a formal blasting plan will be developed. The blasting plan will meet all New York State requirements and Chapter 220 of the Code of the Town of Clarkstown which regulates blasting activity. The use of proper blasting techniques minimizes the potential effects of blasting to nearby properties.

1.2.2 Water Resources

Groundwater

Depth to the water table is expected to vary across the Hyenga Lake site and is anticipated to rise during seasonally wet periods. Depth to water may be defined by shallow perched water tables from 1.5 to 2.5 feet below the ground surface from February to April. All units are to be built upon slabs, the basements will have standard footing drains with a positive outfall, no special measures are required. Groundwater is presumed to flow to the south, generally following the soils and bedrock topography of this site and the stream drainage across the property contained within Pascack Brook.

The project site and surrounding areas receive public water from a private utility, United Water New York, which is proposed as the source of drinking water for this project. The existing bungalow community is served by United Water New York. As public water serves the site and nearby properties, groundwater use is not expected to be a significant impact issue for this application.

In addition, the proposed homes will be connected to a municipal sewer system of the Rockland County Sewer District (RCSD). As a result of these sanitary connections to an off-site treatment system, the development is not projected to result in any adverse sewerage-related impacts to local groundwater.

Surface Water

The property lies within the upper watershed of the Pascack Brook and includes a 1,625-foot passage of the brook across the site. The brook is a protected water of the New York State Department of Environmental Conservation (NYS DEC) (DEC Water Index No. NJ-5; Class C(t)). This brook drains a larger area of approximately 51 square miles that exists primarily downstream of the project site. The brook transects a 1.64 acre wetland situated primarily within the former lake bottom sediments exposed by the 1999 collapse of the Hyenga Lake Dam. There are no NYS DEC regulated wetlands located on or near the project site.

Pascack Brook has been identified by the United States Army Corp. of Engineers (ACOE) as a navigable water of the United States. The wetland adjacent to the brook was also identified by the ACOE to be under their jurisdiction. The present filing (File Number: 2003-00668) with the New York District ACOE maintains this jurisdictional determination through August, 2008. There are no other natural or constructed surface water bodies, ponds, or basins on the project site.

The site wetland was field delineated in April, 2003, by Robert Torgersen, and a map of the wetland is shown in Figure 3.2-2 of the EAF. The wetland encompasses an area of 1.64 acres that lie primarily within the bounds of the former lake bottom sediments exposed after the 1999 collapse of the Hyenga Lake Dam.

The Pascack Brook crosses the site and the wetland within a 75' wide drainage easement of approximately 2.47 acres conveyed to Rockland County on September 27, 2005. A permit application has been made to the Rockland County Drainage Agency (RCDA) for the work that is to be conducted within the 100' boundary of the existing stream channel line (RCDA Permit Application No. 04-36). The project does not propose to change either the stream bed location, cross section, course or current of the brook.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Town of Clarkstown and the Village of Spring Valley, show that portions of the site were located within the 100-year flood plain of the Pascack Brook when the Hyenga Dam impounded the brook. The loss of the dam during Tropical Storm Floyd in September of 1999 has allowed the brook since then to run in the remnants of the natural stream channel that existed prior to the construction of the dam at elevations from 10 to 45 feet below the FEMA mapped base flood plain. Currents in the brook have increased and the watercourse has become a rocky stream with short pools and some riffle areas since the loss of the dam allowed the restoration of the original steep profile of the stream across the property. Due to this lowering of the water course across the property, the project would not result in any disturbances of the 100-year flood plain on the site as identified on existing FEMA flood maps pre-dating the loss of the dam.

Under contract to FEMA, the engineering firm of Leonard Jackson Associates, P.E., (LJA) has conducted the delineation of the floodplain and floodway that presently exists subsequent to the 1999 breaching of the Hyenga Lake dam as shown in Figure 3.2-4. The Project Sponsor does not propose to reconstruct a dam on this property and a filing with FEMA will be made for obtaining a Conditional Letter of Map Revision (CLOMR) for the existing conditions in the area, including the project site, affected by the removal of the dam and its replacement with the project's proposed box culvert access road. With the completion of the project developments, a request would be made for regulatory revisions of the affected FIRM and Floodway Maps by the issuance of a LOMR for the affected FEMA community maps, reflecting the future floodplain.

Potential Impacts

There are no current proposals for use of groundwater resources for either potable or irrigation water supply. All water will be provided by connection to United Water New York's water supply system. There are no plans to use groundwater at this site. There will be no taking from the local aquifer, other than the water supplied by United Water. Recharge will be slightly affected by the installation of road, driveways and other impervious surfaces on the site, which total 1.75 acres. However, stormwater runoff collected from these surfaces will be directed into the stormwater control basins, which are designed for limited infiltration. Therefore, the project is not anticipated to adversely impact groundwater conditions in the area.

The proposed multifamily units will be sewerred. Therefore, the development is not projected to result in adverse groundwater-related impacts.

Construction of the proposed road to give access to the project results in grading disturbance to approximately 0.03 acres of the existing wetland. This minor impact, which is less than one tenth of an acre, is authorized by the US Army Corps of Engineer under the Nationwide Permit #39.

Pursuant to Section 402 of the federal Clean Water Act, stormwater discharges from certain construction activities to waters of the United States are unlawful unless they are authorized by a national or state permit program. New York's State Pollutant Discharge Elimination System (SPDES) is a federally-approved program with permits issued in accordance with New York State Environmental Conservation Law. Discharges of pollutants to all other "Waters of New York State" such as groundwater are also unlawful unless they are authorized by a SPDES permit. Operators of construction activities that propose to disturb one acre or more require a SPDES permit. An Project Sponsor is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) which is a plan for controlling runoff and pollutants from a site during and after

construction. The SWPPP must be prepared in order to submit a Notice of Intent (NOI) and gain coverage under a SPDES general permit.

Design features have been incorporated into the site plan to minimize off-site water quality impacts from the project, as per the requirements of the NYS DEC General Permit for Stormwater Discharges from Construction Activity (GP-02-01).

The proposed project does include the construction of a culverted crossing in the approximate location of the removed dam for the purpose of providing a residential and service access road to the development. The arched, 3-sided precast concrete culvert will be 36 feet in width and 10 feet in height, exclusive of wingwalls, and be in conformance with NYS DEC standards for streambed road crossings. The use of a three sided box culvert unit will allow for the brook to be crossed while maintaining a semi-natural streambed passage underneath the access road. Apron areas on the streambed upstream and downstream of the culvert will be stabilized with rip-rap rock, as will the streambed through the culvert crossing.

The introduction of pavement and impervious surfaces to the project site has the potential to increase pollutant contributions to local water resources, such as sand, silt, salts, oil and grease and to increase the rate of stormwater flow from the site. These potential impacts are being avoided or mitigated by structural stormwater controls and best management practices. Upon completion, the total impervious area on site will be approximately 1.75 acres, approximately 14 percent of the project area. An infiltration basin will treat the stormwater runoff and will consist of a water quantity diversion structure, an infiltration basin, and an overflow spillway.

Proposed Mitigation

A single detention and water quality basin will be developed in the eastern portion of the site for treatment of stormwater runoff from the completed project. The design will include "pocket pond" features as presented in the NYS DEC Stormwater Management Design Manual. The system will include first flush treatment designed to capture and treat the initial stormwater runoff from the developed areas. First flush capture results in the settlement of most suspended solids and moderation of water temperature, thus improving the quality of stormwater exiting the site. Additional water quality treatment will be provided by a sand filter system. Outflow from the detention pond will be via culvert pipe and rip-rap apron which will provide further aeration and opportunity for biological activity prior to discharge into the Pascack watercourse. Discharges will occur at non-erosive rates into a rip-rap protected reach of the downstream portion of Pascack Brook (at an elevation ~270 feet' aMSL).

In addition, sumps will be provided on all stormwater catch basins and stormwater inlet traps throughout the development. These sumps are designed to trap sand, grit and a portion of suspended solids contained in stormwater. Stormwater catch basins are proposed along the internal roads and parking areas of the development.

Construction Stormwater Management

Stormwater drainage from the site during construction will be strictly managed to avoid off-site impacts (see full size Erosion Control Plan (ESC) provided at the end of this document). A key controlling aspect of the maintenance of stormwater quality and the reduction of soil erosion is to provide for the proper phasing of erosion controls in coordination with construction activities. No more than 5 acres will be exposed at any one time. All required structural sediment and erosion control features will be installed prior to grading and earthwork for each phase of the construction plan.

In general, the primary objectives of an ESC Plan are to:

- divert clean surface water before it reaches the construction area;
- control erosion at its source with temporary or permanent soil protection measures;
- capture sediment-laden runoff from areas of disturbance and settle or filter the runoff prior to discharge from the site; and,
- decelerate and distribute storm water runoff through natural vegetative buffers or structural means before discharge from the site.

The temporary erosion control measures are specified and located on the ESC Plan for the project. Structural sediment and erosion control features include: the erection of perimeter silt fence barriers, the construction of temporary swales, the application of mulches and the use of temporary sedimentation basins for the control of surface runoff water. At the conclusion of construction all temporary control measures will be removed and the stormwater detention basin to be used for the long-term SWPP Plan will be cleared of silt deposits and all sediments will be properly disposed of.

1.2.3 Biological Resources

The site includes both the residential bungalow community described above as well as the watercourse of the Pascack Brook and small portions of undeveloped land that border this watercourse. The bordering land about the brook include steep, forested lands to the south and west of the brook and portions of a riparian floodplain and elevated wetland to the north of the brook. The floodplain and the 1.64 acres of wetlands exist in an area of lakebed that became exposed after the historic Hyenga Lake became drained subsequent to the breaching of Hyenga Lake Dam, as a result of tropical storm Floyd in 1999.

Vegetation

An environmental analysis, conducted by the Rockland County Drainage Agency (RCDA) for the Pascack Brook, classified the ecological community through which the brook is flowing as "highly disturbed," both reflective of the medium density residential development of the area as well as the erodible and unstable banks that were created after the loss of the Hyenga Lake Dam.

The RCDA report assessed both the forested vegetation on the southwestern slopes of the property along Pipetown Hill Road, and the colonizing shrub and scrub forest that is developing on the exposed sediments that have remained behind after the draining of Hyenga Lake. The eastern slopes of the property have a well established northern hardwood forest that is

dominated by red maple, although no native habitat is present as the area has been disturbed by adjoining residential developments. Other trees and shrubs observed in this area during a site visit by Tim Miller Associates in February, 2006, included beech, red and white oaks, American elm, slippery elm, pignut hickory, tuliptree, catalpa, Japanese barberry, brambles, red-osier dogwood and spicebush, however none of these species were observed in large numbers.

There are no native habitats in the areas of the exposed lake bottom on the eastern side of the brook, and this area is being colonized largely by adventitious or undesirable invasive species such as tree-of-heaven, sycamore, sumacs, princess-tree (*Paulownia*), willows, poplars, autumn olive and Japanese knotweed.

Wildlife

A variety of small terrestrial animals would be expected to utilize the project site including rabbits, raccoons, squirrels, chipmunks, woodchucks and opossums. Deer might also infrequently utilize the property. The larger trees and dead tree trunks on this site may also offer cavity habitats for species such as owls, nesting songbirds and small mammals.

Pascack Brook as it crosses the site is approximately four feet wide with a predominantly rocky bottom. The stream flows onto the site from adjacent urban lands of the Village of Spring Valley. The stream does not support any fish species, but may support some small aquatic invertebrate species and amphibians.

According to the NYS DEC Natural Heritage Program, there are no rare or endangered wildlife species known to inhabit the site. On-site observations are consistent with this assessment.

Potential Impacts

The proposed development involves grading disturbance to approximately 5.2 acres of the project site. The majority of this area, has been previously disturbed as a result of the former bungalow colony. The disturbance also involves less than 0.1 acres of wetland.

In general, as a project is developed, some species will relocate to undisturbed portions of the site or to similar habitats on nearby property.

No protected plant species are known or expected to occur on the project site. Therefore, no impacts to rare or protected plant species are anticipated to result from the proposed action. The site is not known to provide habitat for any wildlife species listed as endangered or threatened by the New York State Department of Environmental Conservation. Therefore, no significant adverse impacts to protected wildlife species are anticipated. The project site may be acting as a wildlife corridor along the banks of the Pascack Brook

Proposed Mitigation Measures

The following mitigation measures are proposed:

- Erosion and sediment controls will be utilized throughout the construction phase of the project until all disturbed area are fully developed or soils have been stabilized through vegetation plantings or other means. This will protect the existing wetland and areas downstream of the site.

- A stormwater management system would provide first flush water quality treatment and would meet the criteria of the New York State general permit for stormwater discharge from a construction activity. This would limit water quality impacts to receiving streams.
- Although not as valuable as natural undisturbed habitat, a mixture of ornamental and native landscaping plants are proposed which would provide some benefits, especially for wildlife species that can adapt to suburban environments. Many of these plants provide a certain degree of wildlife value such as food and nesting opportunities.

1.2.4 Historic and Archaeological Resources

The Phase IA Literature Review and Sensitivity Analysis was conducted on the project parcel in February 2006, by CityScape: Cultural Resource Consultants, and is included as Appendix H of the DEIS.

A site walk was conducted and the remains of several structures were observed on the site. This includes the remains of a stone and mortar structure and both a cinderblock and fieldstone foundation. Bedrock was observed on site, although no rock outcrops large enough to be used as rock shelters nor veins of lithic resources, which might have been a resource used by prehistoric people, were observed.

Potential Impacts

The potential for the presence of prehistoric sites to be located on the Hyenga Lake property is indicated by the presence of the on-site stream and floral and fauna resources, which would have been utilized by early populations.

Historic maps maintained by the New York State Museum were researched and indicate that one historic National Register property, the Spring Valley Post Office, is located approximately one half mile from the project site. The post office does not have a view of the project site.

Several historic structures were documented as having been located within the boundaries of the project site and the remains of several foundations were identified during the site walk. Additionally, historic structures were located just outside the project area, and a potential for dump sites or middens on the property is considered to be extremely high.

Based on the presence of the on-site stream and existence of prehistoric sites identified in the project vicinity, there is a potential for prehistoric archaeological remains to be located in the flatter, better-drained areas of the project site. Additionally, the site has a high potential for containing middens associated with the structures that were located on and near the site. Thus, a Phase IB Archaeological Field Reconnaissance Survey was recommended for the Hyenga Lake site to determine if such resources are actually located on the site.

This Phase IB field investigation of the proposed development site was carried out in June and July of 2006, by Columbia Heritage, Ltd. Under good to excellent field conditions. A copy of the Phase 1B report, dated July 2006, is included in Appendix H.

Systematic archaeological sampling of the flatter, better drained portions of the study area encountered no cultural material pertaining to the Native American occupation of the region. A sparse scatter of twentieth century items was recovered in shovel testing, consisting largely of domestic refuse and iron objects associated with construction and machines. This material,

along with previously undocumented structural remains in the northwestern portion of the project area, appears to have been associated with the recreational use of the property during the middle decades of the twentieth century.

Mitigation Measures

Based upon the findings of the archaeological sampling as described, proposed development may be seen to have no effect on cultural resources and consequently no further cultural resource investigation is recommended.

1.2.5 Traffic and Transportation

A traffic study of the proposed Hyenga Lake Project, including the cumulative effects associated with this proposal and other development in the area was conducted by John Collins Engineers, P.C., dated April 25, 2007, and is included as Appendix I.

The traffic study investigated three existing and one proposed intersection in proximity to the proposed development. Previous traffic counts in the area were collected during August 2003, May 2004 and May 2006. These volume counts were updated with new counts on March 13 & 14 and April 11 & 12 of 2007. Weekday peak hours were identified as 7:45 a.m. to 8:45 a.m. and 4:45 p.m. to 5:45 p.m.. Figure 3.6-2 shows the location of the intersections examined, which are as follows:

- Pipetown Hill Road and Pascack Road - signalized
- Pipetown Hill Road and South Central Avenue - signalized
- Pascack Road and Forman Drive - signalized
- Pipetown Hill Road and the proposed site access - unsignalized

Potential Impacts

In order to assess the impacts of the proposed project, manual turning movement counts were taken during the morning and evening peak hour traffic periods.

Peak hour vehicle delays were calculated to establish the quality of operation (level of service) at intersection approach lanes under the existing conditions. Future conditions without the project and future conditions with the project were also analyzed. The project can be expected to generate approximately 43 vehicular trips in the weekday AM peak hour, and 62 vehicular trips in the PM peak hour. Upon completion of the project, all traffic movements will operate a level of service D or better. There is no change to the operating level of service at the intersections studied, as a result of the Hyenga Lake Development.

The proposed project will result in construction activity taking place. Upon completion of the box culvert bridge, it is anticipated that a stabilized rough grade of the proposed site access from Pipetown Hill Road will serve as access for the project during construction. All construction vehicles will use this access for ingress and egress. Prior to construction of the access road, the existing entrance from NYS Route 59 shall be used. Construction vehicles and employees will park on-site at all times. Materials and equipment storage will be located on site.

Based upon engineering estimates, a total of approximately 43,200 cubic yards of material will be cut and approximately 4,200 cubic yards will be filled. The balance, or approximately 39,000 cubic yards, will be removed from the site. Excess material will be transported off-site by

approximately 1,810 trucks. This represents an average of less than 7 trucks per day over the first 9 months of construction when the majority of grading will be done. No more than 5 acres will be exposed at any one time. It is anticipated that most construction trips would travel to and from the site via NYS Route 59 to South Central Avenue to Pipetown Hill Road.

Mitigation Measures

No significant adverse traffic impacts are anticipated, thus, no traffic mitigation is proposed.

1.2.6 Community Facilities and Services

Police Protection: The Clarkstown Police Department provides police protection services to properties within the 40 square miles that encompass the Town of Clarkstown, including the project site. The police department headquarters is located at 20 Maple Avenue, New City, approximately 7 miles northwest of the project site. Typical response time to the site would be approximately three to five minutes.

Fire Department: The proposed development is within East Spring Valley Fire District and is served by the East Spring Valley Fire Department which is a 100% volunteer fire department serving the Village of Spring Valley and points south generally to the New York State Thruway.

Ambulance and Health Services: The Nanuet Community Ambulance Corps provides emergency ambulance service to the project area. Average response time is between three and five minutes. The project site is located midway between Nyack Hospital located in Nyack, and good Samaritan Hospital located in Suffern.

Potential Impacts

As discussed in the DEIS, based upon multipliers published in the ULI's Development Assessment Handbook, the project would introduce 142 persons to the Town of Clarkstown's population. According to the 2000 US Census Bureau statistics, the average family household in the Town of Clarkstown had an average of 3.27 persons for all housing unit types. Since the ULI multipliers are specific to bedroom count and unit type, the ULI multipliers are the basis of demographic projections in this DEIS.

Police: Police Lieutenant Steven Morgan, of the Town of Clarkstown (letter dated February 17, 2006) indicated that the construction of the Hyenga Lake project would not hinder the ability to provide these new residents with the same professional standard of police service afforded to existing residents. The projected increase of 142 persons has the potential to increase police staffing needs less than one tenth of a staff person and has no impact on the police personnel ratio of 2.06 personnel per 1,000 residents.

Fire: The fire department is currently staffed with 130 volunteers serving a population of about 82,082 persons or 0.63 fire department members per 1,000 population. The proposed development will reduce the fire department personnel ratio to 0.62 per 1,000 population, a change of 0.01 members per 1,000 population. A letter requesting comments on the proposed project was sent to the East Spring Valley Fire Department on January 16, 2006. The fire department responded regarding manpower and volunteers. Their response is contained in Appendix A Correspondence.

Ambulance and Health Services: The projected 142 residents would increase EMS calls by less than 2 calls annually. The projected population would increase the demand for hospital beds by less than a quarter of 1 bed. Letters requesting comments on the proposed project were sent to the Nanuet Community Ambulance Corps on January 16, 2006, no response has been received. These letters are contained in Appendix A, Correspondence.

Schools: The project site is served by the East Ramapo Central School District. Twenty two (22) students are projected to live in the Hyenga Lake project. The project would generate \$326,515 annually in property tax revenues to the school district. As costs to the school district would be \$254,892, the effect on the school district budget is anticipated to be positive. A letter was received from Mitchell Schwartz, Superintendent of Schools, dated June 5, 2006, which states "Based upon the 23 school age children to be dispersed among these four buildings, we would have the capacity to accommodate this number of students." The letter is included in Appendix B, Correspondence.

Mitigation Measures

It is expected that the project will generate sufficient tax revenues to the applicable taxing jurisdictions to offset the demand placed upon community services.

1.2.7 Utilities

Potential Impacts

Water Supply: The project site is served by United Water of New York and is located in Spring Valley WD 011. Water supply for proposed Hyenga Lake project will be provided by United Water New York. Based upon projections provided by the project engineer, the 80 multi-family swelling units are projected to use a total of 13,200 gallons of water per day.

Electric, Gas and Oil: Electricity and gas is provided to the project area by Orange & Rockland Utilities. Local oil distribution services are provided by a variety of local oil companies. The 80 multi-family residences at Hyenga Lake are anticipated to be heated either with home heating oil, electricity, or natural gas. Based on telephone communication on December 15, 2004, the individual residences are projected to require up to 750 kilowatt hours of electricity per month in the summer and an average of 125 million cubic feet of gas per month.

Orange & Rockland Utilities does not anticipate any problems accommodating the projected electrical or gas demands created by the proposed development. The design and plans for the development will take into account the New York State Energy Code. All utility lines will be underground and any connections will meet the Town Code and industry specifications

Communications: Telephone service is provided by a variety of companies including Verizon, AT&T, Optimum Voice. Cellular telephone phone service is provided by Verizon, Cingular, and Sprint. Cable television service is provided by Cablevision. Satellite television services are provided by Direct TV or Omnivision TV. There are a significant number of competing providers for local and long distance telephone service, cellular telephone service, and cable and satellite television distribution such that sufficient service is anticipated to meet the needs of 80 multi-family units.

Solid Waste Management: Refuse pick up is provided by private carriers contracted by the Town of Clarkstown for multi-family developments. Town refuse fees of approximately \$135 per

unit per year are collected as part of the municipal taxes. The development is expected to generate approximately 5.6 tons per month of solid waste. This represents less than 3/10 of a percent increase in solid waste to the Town of Clarkstown.

Wastewater: The project site is located within the Rockland County Sewer District #11. The project will connect to an existing sewer main which runs along Route 59. The sewer system design reflects the required or recommended standards set forth in the "Ten States" standards. A total of 13,200 gallons per day of sewage is projected to be generated from the proposed development. This represents approximately 0.2 percent of the available capacity of the district's wastewater plant. Thus, no significant impact to wastewater facilities is anticipated.

Mitigation Measures

No mitigation measures are proposed.

1.2.8 Land Use and Zoning

The proposed project site is located in the southeastern portion of the Town of Clarkstown, Rockland County, New York and is approximately 0.5 mile north of Interchange 14 of the New York State Thruway. The project site shares its northern border with the boundary line of the Town of Clarkstown, which also runs concurrent with the boundary line of the Village of Spring Valley. The southwest portion of the project site is bordered by Pipetown Hill Road and nine parcels, containing predominately multi-family residences. Existing single family homes are located along South Central Avenue, which runs perpendicular to NYS Route 59 and Pipetown Hill Road. The Klint Court Condominiums are located directly southeast of the project site, along the north side of Pipetown Hill Road within the Town of Clarkstown. Omni Park Condominiums are located on the south side of Pipetown Hill Road, directly across from the project site.

The project site is located directly south of Wide World of Cars an automotive dealership, which is located along NYS Route 59. Wide World of Cars owns the existing access road into the proposed project site from NYS Route 59 and allows access via a deeded easement. The project site maintains approximately 830 feet of frontage on Pipetown Hill Road and lies in an area of existing residential, commercial, and light industrial development within the Town of Clarkstown and the Village of Spring Valley. The existing development in the vicinity of the project site within the Town of Clarkstown is mainly multi-family residential development including the Omni Parc and Hidden Ridge Condominiums, which are located along the south side of Pipetown Hill Road (See Figure 3.9-1). The Congregation Lizensk, Inc, is located south of the project site, on the corner of Pipetown Hill Road and South Central Avenue. The existing development of this portion of the Town of Clarkstown is generally medium density residential development with 9-18 units per acre or greater.

The existing development to the north and west of the project site, within the Village of Spring Valley, consists of mainly commercial and light industrial/warehouse development including lighting and electronic stores, bakeries, delicatessens, facilities of public storage and car dealerships. Figure 3.9-1 illustrates the existing land use of the site and its surrounding area.

Potential Impacts

The Hyenga Lake project proposes 80 multi-family dwellings within the MF-2 zoning district. The proposed use, multi-family dwellings, is a principal permitted use within the MF-2 zone. This zone allows 9-13 residential units per acre. The net density of the project as proposed is 10.2

units per acre. As demonstrated in Table 1-1, the proposed density of the Hyenga Lake development is less than the maximum permitted density for the zoning district. Therefore, no zoning amendments or use variances are proposed.

Table 1-1 summarizes the dimensional (bulk) requirements applicable to the site plan. The proposed project satisfies all of the applicable zoning dimensional requirements. A variance from the Zoning Board of Appeals will be requested. The Zoning regulations stipulate that one half of all parking shall be enclosed. The proposed project does not include garages, thus a variance will be required.

Table 1-1 Dimensional Requirements for Multi-Family Attached Dwellings in the MF-2 Zoning District		
Feature	Required	Provided
Minimum Lot Area	40,000 square feet	306,518 to 353,143* square feet
Density		
1 Bedroom Units	13 units per acre; 3,800 square feet of land area per unit; 152,000 square feet	<i>Total of Proposed Forty (40) units:</i> 152,000 square feet 10.2 units per acre
2 Bedroom Units	10 units per acre; 4,300 square feet of land area per unit; 172,000 square feet	<i>Total of Proposed Forty (40) units:</i> 172,000 square feet 10.0 units per acre
Total max. allowed square feet land/unit	324,000 square feet	341,868 square feet
Minimum Lot Width	150 feet	700 feet
Minimum space between Buildings	30 feet	45 feet +/-
Minimum Front Yard	100 feet	151.90 feet
Minimum Side Yard	30 feet	50 feet
Minimum Rear Yard	50 feet	54.3 feet
Maximum Floor Area Ratio	.50	0.18
Maximum Building Height	35 feet	25 +/- feet
Usable Open Space	15% of Total land area (341,868 square feet X 15% = 51,280 square feet)	183,173 +/- square feet

Source: Town of Clarkstown Zoning Local Law, Chapter 290 of the Code of the Town of Clarkstown, 2005.

* Total site square foot provided ranges from 306,518 square feet based upon FEMA 100 year flood plain map to 353,143 based upon existing condition of 100 year flood plain. Final determination of the distribution of one and two bedroom units will be made prior to final site plan approval, subsequent to the FEMA determination on the requested Letter of Map Revision of the 100 year flood plain.

Mitigation Measures

It is not anticipated the proposed project will have any significant impacts to Land Use and Zoning, thus no mitigation measures are proposed.

1.2.9 Construction-Related Impacts

Land use in the immediate vicinity of the project site is primarily, multifamily residential, single-family residential, or commercial. There are no major stationary sources of air pollutant

emissions in the immediate vicinity of the project site. No sensitive receptors such as nursing homes or health care facilities were observed in the vicinity of the project site.

Air contaminants which are of concern with respect to construction-related projects include ozone, carbon monoxide, nitrogen oxides, and lead generated by construction traffic, as well as fugitive dust, or particulate matter. Presently, Rockland County is in a severe nonattainment area for 1-hour ozone, and is in a moderate nonattainment area for 8-hour ozone.

Potential Impacts

Construction of the project is expected to last for a duration of approximately 12-18 months. Construction activities on the project site would have a potential impact on the local air quality through generation of fugitive, i.e., airborne dust. Fugitive dust is generated during ground clearing and excavation activities. Throughout the construction period, earth moving and the passage of vehicles over temporary dirt roads and other exposed soil surfaces also generates fugitive dust, particularly during dry and windy conditions. On-site mitigation measures are proposed as part of the project during construction to limit the dispersal of fugitive dust.

Temporary impacts on local air quality are expected to occur during the construction phase of the project from mobile source emissions of construction vehicles and equipment. These air emissions will occur in those portions of the project site where construction activity is proposed. Construction-related air emissions will result primarily from the use of diesel fuel as a source of energy for construction vehicles and equipment. Some of the construction equipment may utilize gasoline as a source of fuel, but use of this equipment will be relatively low in comparison to diesel fuel consuming equipment and vehicles. Well maintained diesel engines are more fuel efficient than gasoline engines, however, they are a source of some air pollutants.

In terms of noise, daytime noise levels would increase in the immediate vicinity of the site during construction activities. Construction activities and operation of construction equipment have been the subject of numerous noise studies completed for various projects in the region. The maximum sound levels for the operation of diesel-powered equipment and activities ranges between 65 dBA and 90 dBA depending on the receptor distances.

Noise levels due to construction activities will vary widely, depending on the phase of construction activities. Noise levels at the site property line are projected to temporarily range between 65 dBA and 90 dBA during construction, depending on the type and location of construction activity at a given time.

It is anticipated that nearby properties would experience temporary elevated noise levels at occasional periods during construction. This is a temporary, construction-related, unavoidable impact.

No odors are expected to be produced as a result of construction activities except for the paving of the site road and parking areas - pouring the macadam surface will result in short-term odors which cannot be avoided.

Construction traffic would access the site via a stabilized construction entrance on Pipetown Hill Road. Construction workers residing locally in the Clarkstown area would be expected to use local roads to access Route 59 and Pipetown Hill Road to access the site. Workers in the larger region, construction vehicles, and material deliveries would be expected to travel the New York State Thruway and/or Route 59 to access the project site.

Once construction machinery reaches the site, it is likely to remain on site until the completion of grading and excavation. The heaviest volume of construction traffic is expected to occur at the beginning of construction as site clearing and rough grading is conducted, and during the months that concrete and building materials are transported to the site. Construction material storage, equipment staging and soil stockpiling will occur on graded stabilized areas of the site. It may be expected that trucks will also be exporting excess cut from the construction site.

Proposed Mitigation Measures

The proposed mitigation measures described below are designed to meet NYS DEC guidelines for purposes of obtaining a SPDES general permit from this agency. The NYSDEC, the Planning Board and other regulatory agencies will review these mitigation measures to determine if they are appropriate as part of the SEQRA and site plan application review. In accordance with the NYS DEC SPDES General Permit No. 02-01, the construction activities would be phased so that no more than five acres would be unstabilized at any time during the construction period. Limiting the amount of disturbed soils on the site reduces the potential for fugitive dust generation at the site.

Methods to control dust also include the use of mulch or other temporary covers on exposed soil areas, limiting the movement of trucks and construction equipment over exposed soil surfaces and covering haul trucks. During dry weather conditions spraying water on unpaved areas subject to construction vehicle traffic would control dust. Paved areas should also be kept clear of loose dirt that can be re-entrained into the air during vehicle passage. The use of stone tracking pads at the entrance to the site would reduce the tracking of soil onto adjacent roads. Haul vehicles will be covered to prevent fugitive dust. The following mitigations would be employed:

- Minimize the area of grading at any one time and stabilize exposed areas with mulch and seed as soon as practicable;
- Minimize vehicle movement over areas of exposed soil, and cover haul trucks transporting soil; and
- Spray unpaved areas subject to traffic with water to reduce dust generation;
- Construct truck vehicle tracking pads at the construction entrance to avoid the tracking of soil onto paved surfaces.

Although exhaust emissions from construction equipment is not as significant as fugitive dust generation, particulates from diesel exhaust emission should also be controlled through proper tuning of the vehicles engine and maintenance of the air pollution controls. This would minimize additional contribution to site generated particulate emissions during construction.

In terms of mitigating potential construction-related noise impacts, the Project Sponsor would adhere to Chapter 205, Noise, of the Code of the Town of Clarkstown. Unnecessary sources of noise as they relate to construction activities would not be conducted during the time periods prohibited by the noise law. Generally, the time period during which noise from construction activities is prohibited are: during the week from Monday through Friday prior to 7:00 a.m. and after 8:00 p.m., on Saturdays prior to 8:00 a.m. and after 6:00 p.m., and on Sundays prior to 11:00 a.m. and after 5:00 p.m.

No mitigation measures are proposed to control potential odors associated with the paving internal roads and parking areas.

Demolition of the existing bungalows will require a demolition permit to be secured by a licensed contractor. In order to obtain the necessary permit, an asbestos inspection will be conducted. Buildings are inspected and building materials are sampled for asbestos. The samples are then sent to a lab to determine if asbestos is present in the building materials. If asbestos is found, all building materials which contain asbestos are required to be abated, meaning removed, before the building with asbestos is demolished. The process of removing asbestos-containing materials is conducted in accordance with OSHA guidelines that require that the contaminated material be disposed in an approved manner to specified locations separate from all other construction debris. This will leave the building or buildings free of asbestos-containing materials so that when demolition occurs, no hazardous material will be dispersed into the air or deposited into the soil.

The increase in construction-related vehicular traffic is a short-term, unavoidable impact, however, the amount of construction related traffic necessary for 80 multi-family dwellings is not anticipated to have a significant impact on the local road network. The Project Sponsor will be required to adhere to the provisions Chapter 278, Vehicles and Traffic, of the Code of the Town of Clarkstown. This chapter establishes restriction on vehicle weights, traveling speeds, and parking within the Town and would limit potential impacts to Town roads.

1.3 Listing of Permits and Approvals Required

Involved Agencies

The following agencies have been determined to have permitting authority over the proposed project and are therefore considered Involved Agencies.

Federal

US Army Corps of Engineers - Nationwide Permit #14-Road Crossing of the Pascack Brook
US Army Corps of Engineers - Nationwide Permit #39-Wetland Disturbance of less than 0.1 acres

New York State

NYS DEC SPDES Permit for General Construction Activities
NYS DEC Stream Bed Crossing Permit
NYS DOT Highway Permit

Rockland County

Rockland County Planning Board - 239 GML Referral
Rockland County Department of Health - Realty Site Plan Approval
Rockland County Drainage Agency - Drainage and Water Course Permit Number 04-36

Town of Clarkstown

Clarkstown Town Board - Stream Alteration Permit (Chapter 128 of the Town Code)
Clarkstown Planning Board - Site Plan Approval
Clarkstown Highway Superintendent - Road Opening Permit
Clarkstown Department of Environmental Control - Sewer Permit
Clarkstown Department of Environmental Control - Floodplain Permit

Interested Agencies

In addition to the involved agencies a Notice of Completion of the DGEIS and/or a copy of the DGEIS will be sent to the following interested agencies:

Clarkstown Town Clerk
Clarkstown Town Attorney
Legal Aid Society of Rockland County
Village of Spring Valley
Clarkstown Building Department
Clarkstown Police Department - Notice Only
Spring Valley Fire Department - Notice Only
Nanuet Community Ambulance Corp. - Notice Only
East Ramapo Central School District - Notice Only
Federal Emergency Management Agency - Notice Only
Rockland County Department of Highways - Notice Only
Rockland County Sewer District Number 1 - Notice Only

2.0 Project Description

2.1 Regional and Town Location

This Draft Environmental Impact Statement), has been prepared to provide the Town of Clarkstown Planning Board with the information necessary in order to properly evaluate the significance of potential impacts associated with a residential site plan application for Hyenga Lake Development, LLC, the "project sponsor" and property owner. The project site fronts on Pipetown Hill Road in the unincorporated area of Town of Clarkstown, Rockland County, New York.

Rockland County is located on the west side of the Hudson River in the lower Hudson Valley region (see Figure 2-1). The Town of Clarkstown is located in the central and easterly portion of the County. Clarkstown adjoins the Town of Haverstraw to the north and the Town of Orangetown to the south. The Town of Clarkstown shares its westerly border with the Town of Ramapo, the Village of Spring Valley and the Village of Chestnut Ridge. The New York State Thruway (I-87/I-287) traverses the southern portion of the Town in an east-west direction.

The project site is approximately one-half mile north of Interchange 14 of the New York State Thruway. The northern property line of the project site is coterminous with Clarkstown's boundary with the Village of Spring Valley.

2.2 Description of Proposed Action

The project site is identified on the Town of Clarkstown tax maps as Section 57.14, Block 3, Lot 2, and is approximately 12.4 acres in size. The project site is currently zoned MF-2, which is multi-family zoning designation of 9-13 units per acre, depending upon the number of bedrooms. A former seasonal bungalow colony was located on the project site. Many of the seasonal dwellings have been demolished, although several of the remaining bungalows had been upgraded and are occupied. There were 30 bungalows on site. A recent fire destroyed unit numbers 28 and 31, there are 28 units remaining on site. The Project Sponsor, Hyenga Lake Development LLC., intends to remove all existing structures on the site, install the required infrastructure, and develop 80 units of multifamily housing in eleven, two story buildings in response to a continued demand for multifamily housing in the Town of Clarkstown and Rockland County.

A variance from the Zoning Board of Appeals shall be requested regarding enclosed parking per the zoning regulations. The Clarkstown Zoning Regulations, in Table 19, Column #6, Item #1, stipulate that one half of all parking shall be enclosed. Based upon ground conditions and in an effort to provide housing units which are relatively affordable compared to the housing market in the Town of Clarkstown and Rockland County, the proposed project does not include garages, thus a variance from these regulations is required. This is consistent with the parking provided in the neighboring Hidden Ridge Condominium project, thus will not create a new precedent with regard to covered parking.

This project is expected to provide an area of multifamily housing recommended in conformity with the Town's Comprehensive Plan adopted in 1999, and Chapter 290 of the Town Code, Zoning of the Town of Clarkstown, which intended that this area be developed for high density residential use. The proposed project would create a multifamily residential neighborhood for persons seeking to live in the unincorporated area of the Town of Clarkstown with convenient

access to major transportation routes such as the New York State Thruway and Route 59. The proposed use, multifamily dwellings, would be consistent with the several developments of multifamily attached dwellings along Pipetown Hill Road in the vicinity of the project site.

The project sponsor proposes to develop approximately 12.4 acres of land into 80 multifamily dwellings accessed by two driveways. The project includes construction of a new access from Pipetown Hill Road to the project site via construction of a culvert over the Pascack Creek. The proposed driveway to provide access to Pipetown Hill Road is approximately 200 feet in length as measured from the property line along Pipetown Hill Road to the parking area in front of Building "J". A secondary access to provide emergency access will be available from NYS Route 59. This secondary access will be provided via a driveway constructed over a deeded easement granted to the Hyenga Lake Development LLC by Wide World Realty, the adjacent property owner to the north. Wide World of Cars is in the process of improving their facility including relocating and upgrading the access to NYS Route 59. This existing access from Route 59 will remain available until the new access has been completed. The location of the proposed access, as shown on the Wide World of Cars site plan has been included on the Hyenga Lake Site Plan Drawings. A reduced version of the preliminary Wide World Auto site plan is included for reference as Appendix Q. The Route 59 access driveway will be constructed, owned and maintained by Wide World Realty. A description of the easement is included in Appendix O, Title Insurance Report.

The Hyenga Lake site plan design includes an infiltration basin to be located in the northeast portion of the site to handle any increase in the rate of stormwater runoff emanating from the post-development project site. A drainage easement to allow the runoff from Pipetown Hill Road to drain into the Pascack Brook had previously been granted by the property owner to the Town of Clarkstown. An additional 75 foot wide drainage easement in the vicinity of the stream channel, has been granted by the property owner to the Rockland County Drainage Agency to allow access along the length of Pascack Brook for the purpose of maintaining drainage.

Approximately 5.2 acres of the 12.4 acre site would be graded to accommodate the 80 multi-family residences, proposed driveways and parking facilities and lawns and landscaped areas. Less than one-tenth of an acre of Army Corps of Engineer (ACOE) regulated wetlands would be disturbed - the disturbance would be subject to a Nationwide Permit No. 39.

The Project Sponsor proposes to construct 80 units of multifamily housing in 11, two-story buildings. The maximum impact proposed is 40 one bedroom units and 40 two bedroom units. Final distribution as to the number of one and two bedroom units is dependent upon the determination of the 100 year Flood Plain boundary. Nine of the buildings will be eight-unit structures with four, one bedroom units of approximately 588 square feet, on the first floor, and four, two bedroom units of approximately 947 square feet, on the second floor. The two remaining buildings will have two, one bedroom units on the first floor and two, two bedroom units on the second floor. Floor plans have been included in Appendix N. The units will be connected to existing public water and public sewer service. The Project Sponsor estimates that the selling price would be \$250,000 for each one bedroom unit and \$285,000 for each two bedroom unit.

2.3 Description of Existing Site Conditions

The proposed project is located in the southwestern portion of the Town of Clarkstown, Rockland County, New York. The property has approximately 830 feet of road frontage on Pipetown Hill Road, a Town-maintained road. An aerial view of the project vicinity is illustrated

in Figure 2-2, and the preliminary site development plan is shown in Figure 2-3. The project site is located approximately 500 feet from Clarkstown's boundary with the Town of Ramapo and the northern property line of the project site is coterminous with the Town's boundary with the Village of Spring Valley.

The site is currently occupied with formerly seasonal bungalows. Many substandard bungalows that occupied the site have been demolished. Existing access to the site is provided from NYS Route 59 via an entrance way from the rear of the Wide World of Cars facility. The project site is located adjacent to the Pascack Brook which flows in a southeasterly direction through the project site. A dam which had impounded water to form Hyenga Lake was washed out in Hurricane Floyd in September 1999. The remnants of the former dam will be completely removed and replaced with box culverts and a driveway to provide access to the site from Pipetown Hill Road. The site of the former Hyenga Lake is now an US Army Corps of Engineers (ACOE) regulated freshwater wetland which totals 2.64 acres. Construction of an access driveway would require disturbance to this wetland totaling approximately 0.03 acres. Approximately 5.2 acres of the site is already developed. With the exception of the new access driveway to Pipetown Hill Road, no new site disturbance will result from this project.

Two existing roads intersect with Pipetown Hill Road: Pascack Road is located approximately 1,000 feet to the east, and South Central Avenue is located approximately 750 feet to the west of the proposed site access drive.

The project site is irregular in shape and is located north of a deep ravine which drops approximately 50 feet below Pipetown Hill Road and provides a channel for the Pascack Brook in the vicinity of the project site.

Under contract to the Federal Emergency Management Agency (FEMA), the engineering firm of Leonard Jackson Associates (LJA) delineated the floodplain and floodway (see Figure 2-3) that exists presently subsequent to the 1999 breaching of the Hyenga Lake dam. The Project Sponsor does not propose to reconstruct the former dam. The Project Sponsor will request from FEMA a Conditional Letter of Map Revision (CLOMR) for the existing conditions in the area, including the project site, affected by the removal of the dam and its replacement with the project's proposed box culvert access road. Upon completion of the project, a request would be made for revisions to the affected Flood Insurance Rate Maps (FIRM) and Floodway Maps. If approved, FEMA would issue a Letter of Map Revision for the applicable FEMA community maps, reflecting the revised floodplain boundaries.

The entire site is zoned Multifamily Residential, MF-2. The project site lies in an area of existing residential, commercial, and light industrial uses. Existing development in the project vicinity and within the Town of Clarkstown is primarily multi-family residential development, whereas the existing development to the north and west of the project site within the Village of Spring Valley is mainly commercial and light industrial uses. This area of the Town of Clarkstown is generally developed at a density of approximately 9-18 dwelling units per acre.

2.4 Structures and Site Improvements

Figure 2-3 illustrates the layout of the proposed residential buildings, driveways, parking areas and access points. The site layout is also illustrated in the full size Preliminary Site Development Plan, Drawing Number 2, submitted with this DEIS.

United Water New York would provide potable water to the project via a line connection to the existing water main in NYS Route 59. The project site is located in Clarkstown Water District Number 11. A letter requesting United Water's willingness to serve the Hyenga Lake project, dated February 15, 2006, has been included in Appendix A, Correspondence. A subsequent letter dated October 26, 2006, also included in Appendix A, has been sent to United Water to initiate engineering review.

A sewer line serving the development is proposed to connect with an existing sewer line along NYS Route 59. The project is located within Clarkstown Sewer District No. 11 and wastewater would be treated at the wastewater plant operated by the Rockland County Sewer District.

All units would comply with the New York State Energy Code and will be constructed with energy saving features, such as energy efficient air conditioning systems, energy efficient lighting fixtures and state-of-the-art-heating equipment. Bathrooms will be constructed with water saving devices such as reduced flush toilet tanks and water restrictors in shower heads.

On-site recreation has been provided in the form of a community building. In addition, the Project Sponsor proposes to pay the applicable fee in lieu of recreation land as per the Town's site plan regulations. Recreation fees are currently \$7,200 per lot.

The proposed project satisfies all of the applicable zoning dimensional requirements. Multi-family attached dwellings are a permitted use in the MF-2 district. As stated previously, a variance, with respect to parking, shall be requested from the Zoning Board of Appeals.

The project would result in grading to approximately 5.2 acres of the project site that has been previously disturbed. Except for the proposed driveway connection to Pipetown Hill Road, there is no new disturbance as a result of this project. The limits of grading disturbance are shown in Figure 3.1-2 in Section 3.1, Geologic Resources, of this DEIS, and on the full-size preliminary site development plan accompanying this document. The areas of disturbance have been calculated by the site planners for this project, Atzl, Scatassa, and Zigler, P.C. Any areas not covered by buildings, driveways, or roads would be re-vegetated and landscaped.

The Preliminary Cut/Fill Plan (Figure 3.1-3) shows the extent of grading proposed to accomplish development of the road, driveways and residential buildings. The project would result in 43,200 cubic yards of cut and 4,200 cubic yards of fill, resulting in approximately 39,000 cubic yards of excess cut and would require that soil be transported off the project site.

The proposed stormwater management system for the completed project consists of vegetated swales, dry swales, collection piping, an infiltration basin and a streamside stabilized discharge apron. The storm water piping utilizes 15-inch diameter reinforced concrete pipe (RCP) in the storm drain collection system and 24-inch pipe for the outlet of the detention basin. The proposed detention basin is designed in accordance with SCS TR-55 methodology to maintain existing peak outflow rates for 1- to 100-year storm events. The proposed site storm drain features are shown on the full size plan maps included with this DEIS.

The project site will have two access points, the primary access will be from Pipetown Hill Road. A secondary access will remain from NYS Route 59. Access to Pipetown Hill Road will be provided via a new driveway to be constructed by the project sponsor and maintained by the Hyenga Lake Homeowners Association (HOA) that would be formed to maintain common areas and facilities. The secondary access to NYS Route 59 will be provided via a new driveway to be built and maintained by World Wide Realty, with a dedicated easement to the Hyenga Lake Homeowners Association. Proposed road profiles are illustrated on Drawing No. 9 of the site plan attached to this DEIS. A developer' bond will be posted for the purpose of road maintenance including the culvert.

Fire hydrants would be installed along the project's interior driveway system. The hydrants are generally spaced approximately 400 to 500 feet apart, as shown on Drawing No. 10 of the site plan attached to this DEIS.

The project is scheduled to be completed and occupied in 2008. The road and residences are expected to be built over a 12 to 18 month period after all approvals and permits are received. The following describes the general sequence of activities that would occur to construct the project. A more detailed description, including time frames, is provided in Section 3.10.

Construction Sequence

1. Protect areas designated on the plans by installing temporary snow fencing.
2. Construct stabilized construction entrances.
3. Perform clearing and grubbing activities.
4. Install erosion control measures appropriate to each phase of work, including silt fencing, inlet protection, temporary berms, swales, and temporary sediment traps.
5. Perform grading, excavation, and related operations, stockpile soil in approved areas.
6. Construct culvert to access Pipetown Hill Road.
7. Construct water quality basin.
8. Construct drainage system improvements, roadway improvements and street utilities.
9. Construct buildings and driveways.
10. During construction, all areas being disturbed will either be paved, seeded, sodded, or planted as specified in a timely manner to prevent unnecessary erosion.
11. Remove all temporary control measures
12. Remove all accumulated sediments from permanent storm water management facilities.

Steps 1 through 8 involve construction of the roads and stormwater management facilities and would be completed prior to construction of the individual buildings. Construction of the residential buildings and the community building would then follow a similar sequence of construction: install erosion controls, strip and store topsoil, grading, construction of utilities and buildings, and permanent stabilization. The project will be constructed in phases to limit

Project Description

June 4, 2007

disturbance on the site to no more than 5 acres at any one time. Phase one will consist of building the infrastructure for the roads and drainage facilities - these areas will be stabilized as per the erosion control measures in advance of constructing the dwellings. Phase two will consist of construction of the multi-family units plus the community building. A Construction Phasing Plan has been included as Appendix S.

The Erosion Control Plan, included as part of the Site Plan Drawings, depicts the various measures proposed to provide temporary and permanent stabilization of disturbed areas in accordance with New York State Department of Environmental Conservation best management practices ("BMPs").

As required by the Town's regulations, the Project Sponsor will be required to post a bond or other monetary guarantee to ensure the satisfactory completion of all required improvements.

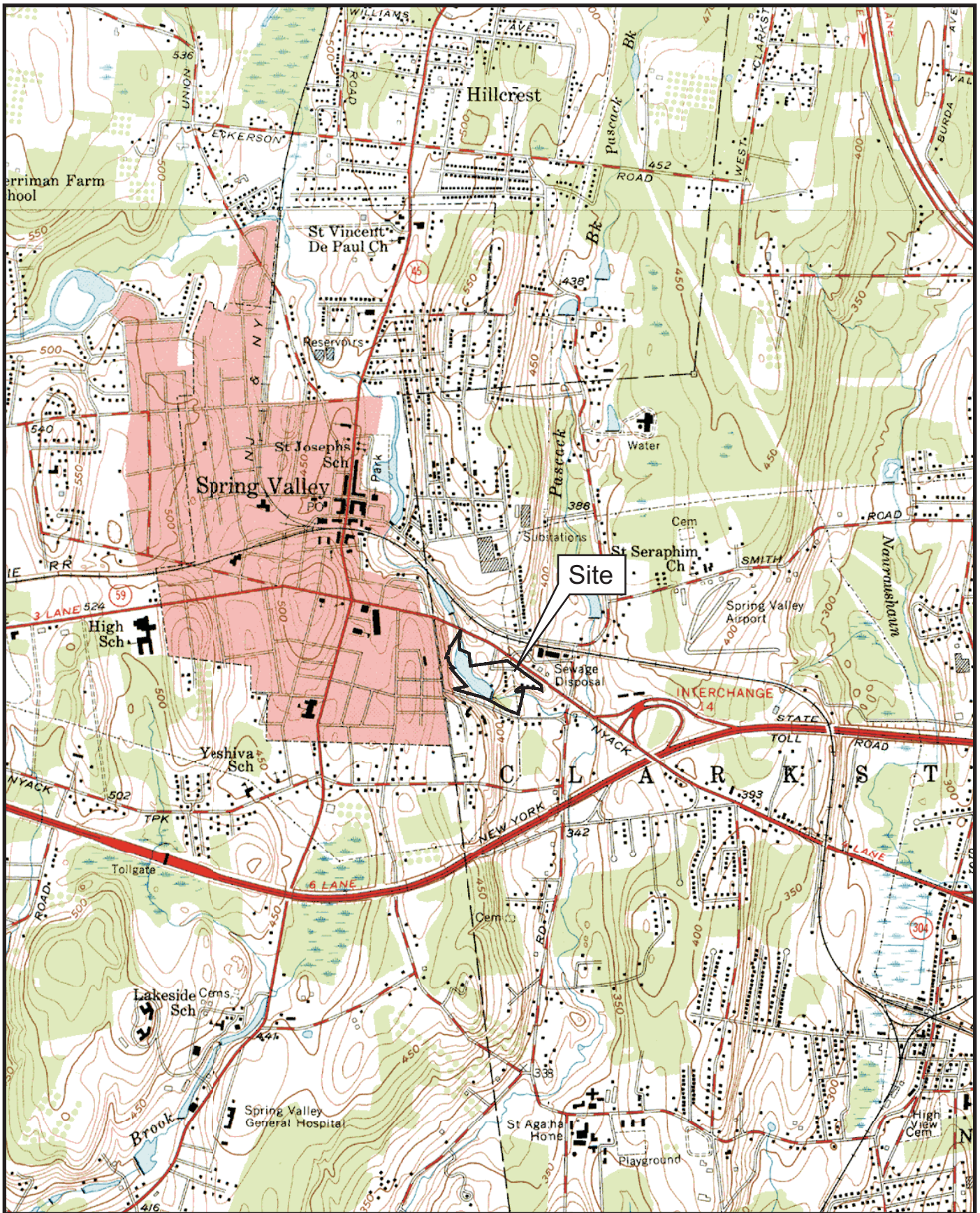


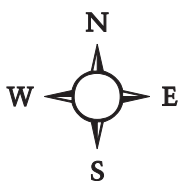
Figure 2-1: Site Location Map

Hyenga Lake

Town of Clarkstown, Rockland County, New York

Base: USGS 7.5-minute Topographic Map, Park Ridge Quad

Scale: 1 inch = 2,000 feet





Legend

 Project Site

 **Subject 2**

Figure 2-2: Aerial Map
Hyenga Lake

Town of Clarkstown, Rockland County, New York
Base: USGS 7.5-minute Topographic Map, Park Ridge Quad
Scale: 1 inch = 2,000 feet

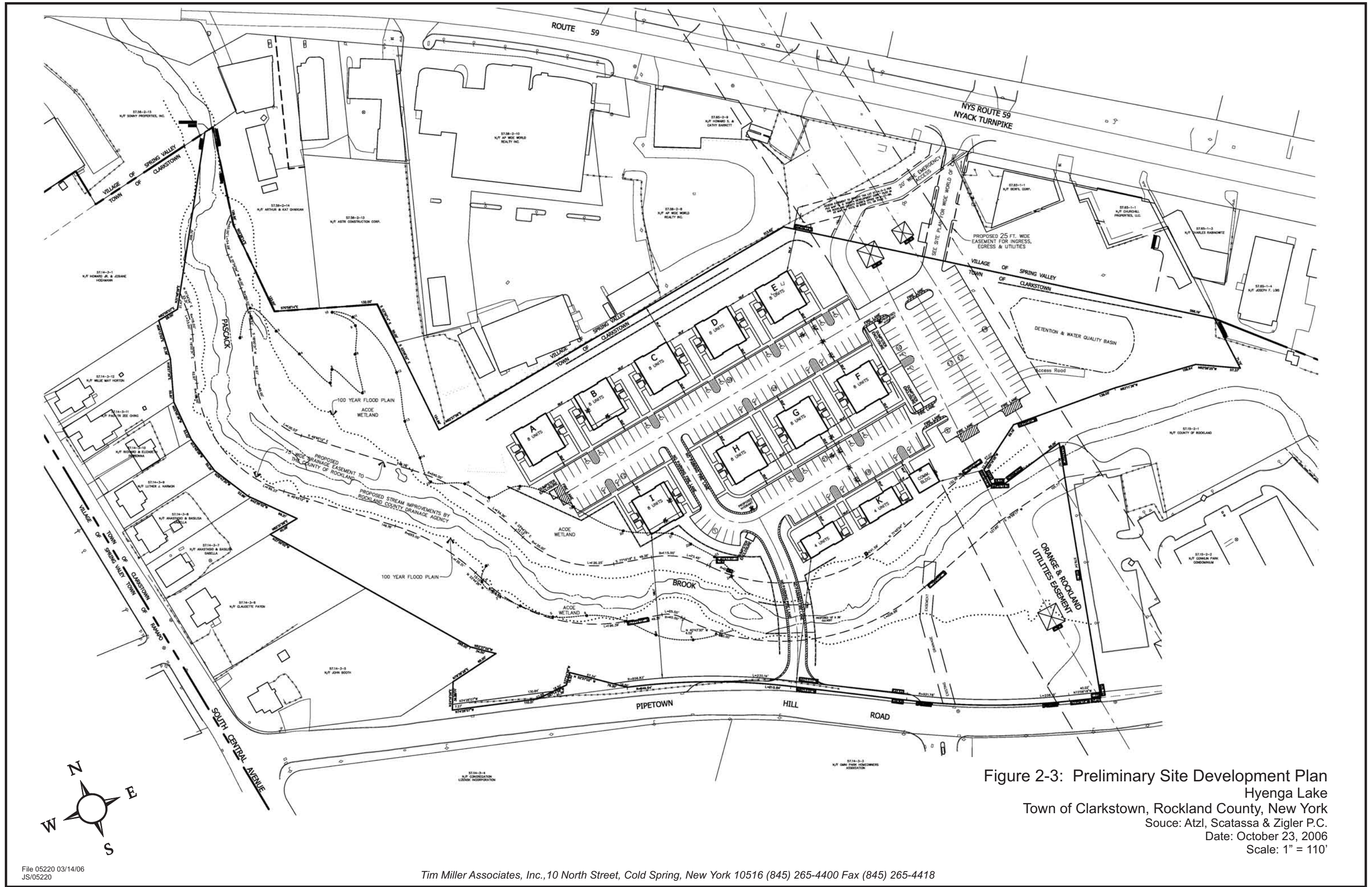


Figure 2-3: Preliminary Site Development Plan
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: October 23, 2006
 Scale: 1" = 110'

3.0 POTENTIAL IMPACTS AND PROJECT MITIGATION

3.1 Impact on Land

3.1.1 Soils and Geology - Existing Conditions

The project site is located in the south western portion of Rockland County. This part of the county is part of the New England physiographic province, more specifically the Triassic Lowlands, which is characterized topographically by broad gentle valleys and a moderately sloping ridges. Local and regional geology has been mapped by the State of New York and is depicted on the Geologic Map of New York Lower Hudson Sheet (reprinted 1995). The bedrock identified on and near the project site is the Brunswick formation composed of arkose, mudstone, sandstone and siltstone.

According to the Surficial Geologic Map of New York, Lower Hudson Sheet (1989), the surficial deposits in the area of the project site consist of glacial tills and outwash. Outwash of sand and gravel is characterized by coarse sand and gravel deposits, while tills are variable in texture (e.g. clay, silt-clay, boulder clay) and deposited adjacent to melting glaciers. The thickness of the till material, or depth to bedrock on the property is not known.

On-site soils have been mapped and described by the USDA Soil Conservation Service (SCS) in the Soil Survey of Rockland County, New York (Atlas Sheet 19), issued in 1990. Generally, the soils consist of Wethersfield soil types of different slope percentages. The soil mapping units found on the site, using the soil classifications and descriptions of the USDA SCS, are summarized below and depicted in Figure 3.1-1.

- Wethersfield gravelly silt loam (WeB) This soil unit is very deep, gently or strongly sloping, and well drained. Slope ranges for this soil type can range from 3 to 8 percent. Depth to bedrock can be found more than 60 inches below ground surface in this soil type. Permeability is moderate within the surface layer and subsoil and slow to very slow in the substratum. Depth to water may be found as a perched water table from 1.5 to 3.5 feet below the ground surface from February to April, with the water capacity being moderate. The surface runoff is medium with the erosion hazard characterized as slight. This soil type covers the majority of the site, as shown in Figure 3.1-1 - Soil Survey Map.
- Wethersfield gravelly silt loam (WeC) This soil unit is very deep, strongly sloping, and well drained. Slope ranges for this soil type can range from 8 to 15 percent. Depth to bedrock can be found more than 60 inches below the ground surface. Permeability is moderate in the surface layer and subsoil and is slow to very slow in the substratum. Depth to water may be found as a perched water table from 1.5 to 3.5 feet below the ground surface from February to April, with the water capacity being moderate. The surface runoff is medium with the erosion hazards characterized as moderate. This soil type covers a small section of the Property on the southwestern boundary of the site, as shown in Figure 3.1-1 - Soil Survey Map.

Suitability of the Soils for Construction

The Soil Survey of Rockland County describes the different soil units and features based on their suitability for development. A list of soil characteristics is provided in Table 3.1-1. Development "limitations" are defined as: *slight*, where soil properties are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate*, if soil properties are less favorable for the indicated use and special planning, design or maintenance may be needed to overcome or minimize the limitations; and *severe*, if soil properties result in the need to implement special design and construction measures.

Table 3.1-1 Soil Characteristics and Limitations							
Soil Series	Hydrologic Group ¹	Permeability (in./hr.)	Erosion Factor	Potential Limitations for:			
			K ²	Local Roads and Streets	Dwellings w/ basements	Dwellings w/o basements	Lawns and Landscaping
Wethersfield, gravelly silt loam (WeB)	C	0.6-2.0 (0-22") <0.2 (22-60")	0.24 (0-13") 0.32 (13-22") 0.24 (22-60")	Moderate: wetness, frost action.	Moderate: wetness.	Moderate: wetness.	Moderate: small stones.
Wethersfield, gravelly silt loam (WeC)	C	0.6-2.0 (0-22") <0.2 (22-60")	0.24 (0-13") 0.32 (13-22") 0.24 (22-60")	Moderate: wetness, slope, frost action.	Moderate: wetness, slope.	Moderate: wetness, slope.	Moderate: small stones, slope.

¹ Hydrologic groups are used to estimate runoff from precipitation; they range from high infiltration (A) to low infiltration (D).
² Erosion Factor K indicates susceptibility to sheet and rill erosion by water measured in tons/acre/year. K values range from 0.05 to 0.69. Higher values indicate greater susceptibility.
 Source: Soil Survey of Rockland County, New York, USDA SCS.

As noted in Table 3.1-1, the SCS identifies these soils as possessing potential limitations for development of roads, buildings, excavations, and lawns and landscaped areas due to wetness, slope, frost action, and sometimes small stones. The presence of these constraints does not mean the land is undevelopable nor are they a rating of construction potential. The ratings reflect the difficulty and relative costs of corrective measures that may be necessary (e.g. erosion controls, footing drains or other drainage improvements) for development. The limiting characteristics of these soils must be overcome by careful project planning, design and management. Measures to overcome any limitations are provided in Section 3.1.3, Project Mitigation.

3.1.2 Soils and Geology - Potential Impacts

The only soil type mapped on the project site is Wethersfield soils, thus, all of the proposed development will occur in areas of Wethersfield soils. The majority of the disturbance will be in the WeB soil type, which will result in less slope impact than development within WeC soils. A small area of the WeC soils are planned to be disturbed along the southern boundary of the property for the purpose of constructing the access road and culvert.

Of the 12.4 acre project site, approximately 5.2 acres or 41.9 percent of the site would be disturbed. These areas were disturbed previously to create the current use of the property. Except for the proposed access driveway to Pipetown Hill Road, there is no new disturbance

proposed as a result of this project. Approximately 7.2 acres, or 58.1 percent of the site, would remain undisturbed. These undisturbed areas are located along the southwestern portions of the property and adjacent to the wetlands and ponded area in the western portion of the site.

Grading is required to build the access drives, install utilities, prepare areas for the proposed residential buildings, and to create an infiltration basin in the northeastern portion of the project site. Most of the disturbed area is planned on the northern to northeastern portion of the property. Construction of the infiltration basin at the northeastern corner of the site would require the deepest cuts, up to 20 feet deep. Details of the proposed retaining walls will be included on the site plan prior to final site plan approval. Proposed grading is shown in Figure 3.1-2 - Preliminary Site Grading Plan.

Based upon engineering estimates, a total of approximately 43,200 cubic yards of material will be cut and approximately 4,200 cubic yards will be filled. The areas of cut and fill are shown in Figure 3.1-3. The balance, or approximately 39,000 cubic yards, will be removed from the site. This is a preliminary estimate based upon the preliminary grading plan and information provided by the project engineers. Excess material will be transported off-site by approximately 1,810 tri-axel trucks with a 28 ton capacity.

The existing residences will be demolished to build the proposed multifamily buildings. The existing bungalows may contain asbestos. Mitigation measures to address the potential presence of asbestos is discussed below.

Potential Soil Erosion

As a result of soil disturbance, there is an increased potential for siltation to occur in areas downgradient of the subject site. The control of stormwater runoff during construction will be important to minimize construction-related soil erosion and sediment impacts especially downstream of the project site. With proper construction, installation and maintenance, soil erosion control measures will minimize potential off-site impacts.

Areas most susceptible to erosion are areas of the site with slopes 15 percent and greater. Topography and slopes are described in Section 3.1.4 below.

The potential for soil erosion and sedimentation will be minimized by adhering to the Erosion Control Plan (Drawing No. 11), as described in Section 3.1.3 below.

3.1.3 Soils and Geology - Project Mitigation

A Preliminary Erosion Control Plan and Construction Phasing Plan have been prepared by Atzl, Scatassa and Zigler P.C. The primary objective of the plan is to reduce soil erosion from areas exposed during construction and prevent silt from reaching the on-site wetland, stream and ponded areas as well as areas downstream. All soil erosion and sediment control practices would be installed in accordance with erosion and sediment control "best management practices" recommended by the New York State Department of Environmental Conservation and described in the Storm Water Pollution Prevention Plan and Construction Phasing Plan.

Table 3.1-2 illustrates the approximate site coverage and shows the amount of buildable area, lawns and wooded area pre and post construction.

Table 3.1-2 Approximate Site Coverage: Existing and Proposed (in square feet)			
Land Cover	Existing	Proposed	Change
Building Area	21,755 sf	24,430 sf	2,675 sf
Impervious surfaces*	27,310 sf	96,800 sf	69,490 sf
Dirt Areas	221,000 sf	0 sf	221,000 sf
Upland/Woodlands	110,900 sf	106,900 sf	4,000 sf
Wetlands/Woodlands	50,900 sf	48,900 sf	2,000 sf
Lawn and Landscaping	55,500 sf	114,060 sf	58,560 sf
Pascack Creek	25,100 sf	25,100 sf	0 sf
Detention ponds	0 sf	10,800 sf	10,800 sf
Source: Atzl Sciazza and Zigler Engineering Consultants, PLLC 2007.			
* Macadam & Gravel only			
** Total Area to remain undisturbed, 7.2 acres			

Best Management Practices (BMPs)

The principle objectives of the Soil Erosion and Sediment Control Plan are the following:

- divert clean surface water before it reaches the construction area;
- control erosion at its source with temporary and permanent soil protection measures;
- capture sediment-laden runoff from areas of disturbance and filter the runoff prior to discharge; and,
- decelerate and distribute storm water runoff through use of natural vegetative buffers or structural means before discharge to off-site areas.

These objectives will be achieved by utilizing a collective approach to managing runoff, i.e. Best Management Practices (BMPs).

Divert clean runoff - Diversion of runoff from off-site or stabilized areas will be accomplished through surface swales and erosion control barriers in order to keep clean water clean.

Time grading and construction to minimize soil exposure - To the extent practical, the development will be phased to limit the area of disturbed soil exposed at any particular time. One phase of construction, for example, will remain undisturbed or temporarily stabilized until the preceding phase is substantially complete.

Retain existing vegetation wherever feasible - Construction fencing or silt fencing will be used to physically define the limits of work. Wooded and wetland areas not to be developed (regraded), will be retained in the existing condition until the developed areas are completed and stabilized. Substantial buffers of existing vegetation also will be provided along the perimeter of the site and near existing wetland areas.

Stabilize disturbed areas as soon as possible - In areas where work will not occur for periods longer than two weeks, soil stabilization by hydroseeding or mulching will be done

within 48 hours after the soil has been exposed. Following completion of grading operations, level areas will be immediately seeded and mulched. Sloped areas, such as fill slopes will be treated as exposed areas and will be seeded or stabilized using an appropriate approved method such as matting, depending upon weather conditions at the time of carrying out the work.

Minimize the length and steepness of slopes - The steepness and length of project associated slopes have been designed to minimize runoff velocities and to control concentrated flow. Where concentrated (swale) flow from exposed surfaces is expected to be greater than 3 feet per second, haybale or stone check dams will be installed in the swale. The check dams will be placed so that unchecked flow lengths will not be greater than 100 feet.

Maintain low runoff velocities - To protect disturbed areas from storm water runoff, haybale diversion berms and/or soil diversion berms and channels will be installed wherever runoff is likely to traverse newly exposed soil. Immediately following the clearing and stripping of topsoil, rough grading for the temporary and permanent swales and ponds will take place. The swales will direct runoff so that it can be checked or impounded.

Trap sediment on-site and prior to reaching critical downstream areas - Silt fences, hay bale check dams, filter strips, ponds, sediment traps (in areas where no ponds are proposed), and catch basin filters will be used to either impound sediment-carrying runoff and/or to filter the runoff as it flows through an area. A stabilized construction entrance will be installed to prevent construction vehicles from tracking soil onto public roadways. All temporary erosion control devices will be installed prior to the commencement of construction. The permanent storm water management systems will be installed in conjunction with the construction.

Establish a thorough maintenance and repair program - Erosion control measures will be inspected frequently weekly and following every rain event during which 0.5 inches of precipitation or greater falls in a 24 hour period, particularly prior to and following storms, and these features will be repaired as needed to ensure that they continue to function properly. In addition to inspections by Town representatives, the Project Sponsor will be responsible for monitoring and maintaining the soil erosion and sedimentation controls.

Assign responsibility for the maintenance program - The responsibility for the monitoring and maintenance of the Erosion Control Plan will be detailed in the project specifications or construction drawings.

Prior to any disturbance, erosion and sediment control measures would be installed in accordance with the specifications of the Erosion Control Plan. The construction contractor will be required to install all sediment and erosion control measures and maintain them throughout the entire construction process. The project will be constructed in phases to limit disturbance on site to no more than 5 acres at any time. Phase one will consist of building the infrastructure for the roads and drainage facilities - these areas will be stabilized as per the erosion control measures in advance of constructing the residential buildings. Phase two will consist of construction of the multi-family dwellings and the community building. A phasing plan has been included in the set of site plan drawings. Below is the general sequence of activities that would occur to construct the project. However, phasing can be refined based on the Town's review of the plans and as part of the SEQRA review process.

Sequence of Construction :

1. Protect areas designated on the plans by installing temporary snow fencing.
2. Construct stabilized construction entrances.
3. Perform clearing and grubbing activities.
4. Install erosion control measures appropriate to each phase of work, including silt fencing, inlet protection, temporary berms, swales, and temporary sediment traps.
5. Perform grading, excavation, and related operations, stockpile soil in approved areas.
6. Construct culvert to access Pipetown Hill Road.
7. Construct water quality basin.
8. Construct drainage system improvements, roadway improvements and street utilities.
9. Construct buildings and driveways.
10. During construction, all areas being disturbed will either be paved, seeded, sodded, or planted as specified in a timely manner to prevent unnecessary erosion.
11. Remove all temporary control measures
12. Remove all accumulated sediments from permanent storm water management facilities.

Construction of the roads and stormwater management facilities would be completed prior to construction of the residential buildings. Construction of the units and the community building would then follow a similar sequence of construction: install erosion controls, strip and store topsoil, grading, construction of utilities and buildings, and permanent stabilization.

The Erosion Control Measures shall be subject to review and approval of the Town of Clarkstown Planning Board and implementation shall be monitored by the Town's Department of Environmental Control. In accordance with of the Town regulations, the Town may also require a bond or other acceptable type of monetary guaranty to ensure the proper installation and maintenance of improvements, including sediment and erosion control measures.

The proposed plan minimizes the areal extent of soil exposure to the greatest extent practicable in accordance with the Erosion and Sediment Control Guidelines of the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-02-1). Erosion and sedimentation will be controlled during the construction period by temporary devices as indicated in the Preliminary Erosion and Sediment Control Plan (Drawing No. 11) and according to the Storm Water Pollution Prevention Plan and Construction Phasing Plan developed specifically for this project (see project engineer's full size drawing at the rear of this document, Drawing IV-2).

Following construction, erosion will be prevented by the establishment of vegetation and by the stormwater management facilities shown on the plan. Construction of the permanent infiltration basin system will commence as part of the earthwork for the installation of the internal road network so that these systems are functional as early as possible in the construction period.

The following lists the erosion control measures that will be followed:

1. The filter fabric fence will be installed along downhill sides of adjacent properties and along all disturbed areas.

3. Temporary seeding shall be applied to disturbed areas that are left bare for 14 days unless construction begins within 30 days of disturbance. If construction is suspended or completed, areas shall be seeded or mulched immediately.
3. Structural measures must be maintained to be effective. In general, these measures must be periodically inspected to insure structural integrity, detect vandalism damage, and for maintenance and repair whenever is necessary.
4. A stabilized construction entrance will be installed at the beginning of the proposed road. The use of 2" stone or reclaimed or recycled concrete equivalent to a length of not less than 50 feet and a thickness of not less than 6 inches will be maintained. The width of the construction entrance will be a minimum of 30 feet, but not less than the full width at points where ingress and egress occur. A filter cloth will be placed over the entire area prior to the placement of the stones. The surface water flowing towards the construction entrances will be piped across the entrance; if that is impractical, a mountable berm with 5:1 slope will be constructed. The entrance will be maintained as to prevent any tracking of construction material or debris onto public rights-of-way. If any material is tracked onto a public right-of-way it will be removed immediately. Washing of construction vehicles will be conducted on an area stabilized with stones that have drains leading to a stabilized sediment trap. Inspections of this entrance will be conducted periodically and maintenance provided after each rain event.
5. Macadam surfaces shall be swept "broom clean" at the end of each day during construction.
6. Construction equipment shall be limited to areas within the silt fence sediment protection area.

With the above measures in place, potential soil erosion will be minimized to the maximum extent.

Asbestos Abatement

Demolition of the existing bungalows will require a demolition permit to be secured by a licensed contractor. In order to obtain the necessary permit, an asbestos inspection will be conducted. Buildings are inspected and building materials are sampled for asbestos, and other toxic materials. The samples are then sent to a lab to determine if asbestos, or other toxic materials are present in the building materials. If any toxic materials is found, all building materials which contain asbestos, or other toxic materials are required to be abated, meaning removed, before the building is demolished. The process of removing asbestos-containing materials is conducted in accordance with OSHA guidelines that require that the contaminated material be disposed in an approved manner to specified locations separate from all other construction debris. This will leave the building or buildings free of asbestos, or other toxic materials so that when demolition occurs, no hazardous material will be dispersed into the air or deposited into the soil.

Two of the existing bungalows, # 28 and #31 were involved in a structural fire in September of 2006. Asbestos surveys of the fire damaged structures was conducted. In correspondence dated September 11, 2006 from Detail Associates, Inc. The following statement is made " This is to inform you that the asbestos survey of the fire damaged house referenced above has been completed. Non destructive sampling was conducted in all accessible areas. No asbestos was found in any of the samples." These letters are included in Appendix P, Asbestos Sampling.

3.1.4 Topography and Slopes - Existing Conditions

Topography in the vicinity of the site is varied and rolling, as can be seen in Figure 3.1-4 - Location Map. Local topography reflects the underlying bedrock of the Brunswick formation composed of arkose, mudstone, sandstone and siltstone. The terrain on the site is gently to moderately sloping as shown in Figure 3.1-5 - Existing Conditions and Existing Slopes Map. Elevations above mean sea level range from approximately 370 feet at a low point on the northeastern portion of the project site to a high point of approximately 420 feet in the southern boundary site, adjacent to Pipetown Hill Road. Topography varies by approximately 50 feet across the site.

In general, topography on the site rises gently from east to west. Based upon the surrounding topography and as shown in Figure 2-2 - Aerial Map the site has been disturbed previously.

Existing Slopes on the project site are shown in Figure 3.1-5 - Existing Conditions and Existing Slope Map. The map distinguishes areas of slopes between 0 to 10 percent, 10 to 15 percent, 15 to 30 percent, 30 to 50 percent, and slopes greater than 50 percent. Table 3.1-2 below is a breakdown of the site in each different slope category.

Table 3.1-3 Existing Slope Categories	
Slope Category	Existing Acreage
0 to 10%	5.06
10 to 15%	3.61
15 to 30%	3.53
30 to 50%	1.25
> 50%	0.92
Total Acres	12.37
Source: Atzl, Scatassa & Zigler, 2006.	

3.1.5 Topography and Slopes - Potential Impacts

Steep Slopes

Construction on slopes greater than 15 percent must be considered carefully during construction since grading these slopes increases the potential for soil erosion and may impact slope stability. Since the project site consists primarily of gently rolling topography, steep slope disturbance is not a large issue. The disturbance of steeper slopes is limited to the site entrance at Pipetown Hill Road and limited, scattered areas in the central portion of the site.

This site contains approximately 4.7 acres of slopes 15 percent and greater. Approximately 1.3 acres of 15 percent and greater slopes will be disturbed by the project. Impacts to areas of slopes are shown in Figure 3.1-6 - Preliminary Proposed Disturbed Slope Map. Table 3.1-3 below illustrates the acreage of disturbed slopes.

Table 3.1-4 Disturbed Slope Categories	
Slope Category	Disturbed Acreage
0 to 10%	3.47
10 to 15%	1.44
15 to 30%	0.95
30 to 50%	0.22
> 50%	0.11
Total Acres Disturbed	5.2
Source: Atzl, Scatassa & Zigler, 2006,	

3.1.6 Topography and Slopes - Project Mitigation

Potential impacts to slopes will be mitigated through implementation of the Preliminary Erosion Control Plan (Drawing No. 11) and in the Stormwater Pollution Prevention Plan (Drawing IV-2) developed for the project. The Hyenga Lake development will be constructed in phases to limit disturbance on site to no more than 5 acres at a time. Construction of the roads and stormwater management facilities would be completed prior to construction of the residential buildings. Construction of the residential buildings and the community building would then follow a similar sequence of construction: install erosion control measures, strip and store topsoil, grading, construction of utilities and buildings, and permanent stabilization. Erosion control measures will be reviewed by the Clarkstown Planning Board and Department of Environmental Control. The implementation and monitoring of erosion control measures will be overseen by the Town of Clarkstown Department of Environmental Control.

It is not anticipated that blasting will be required based on a review of the soil survey and the anticipated depth to bedrock. However, if required, blasting would be conducted in accordance with Chapter 220, Quarrying and Blasting, of the Code of the Town of Clarkstown.

As a result of implementation of the Erosion Control Plan and the Storm Water Pollution Prevention Plan, development of the Hyenga Lake Project is not anticipated to have adverse impacts to the soils and topography of the project site.

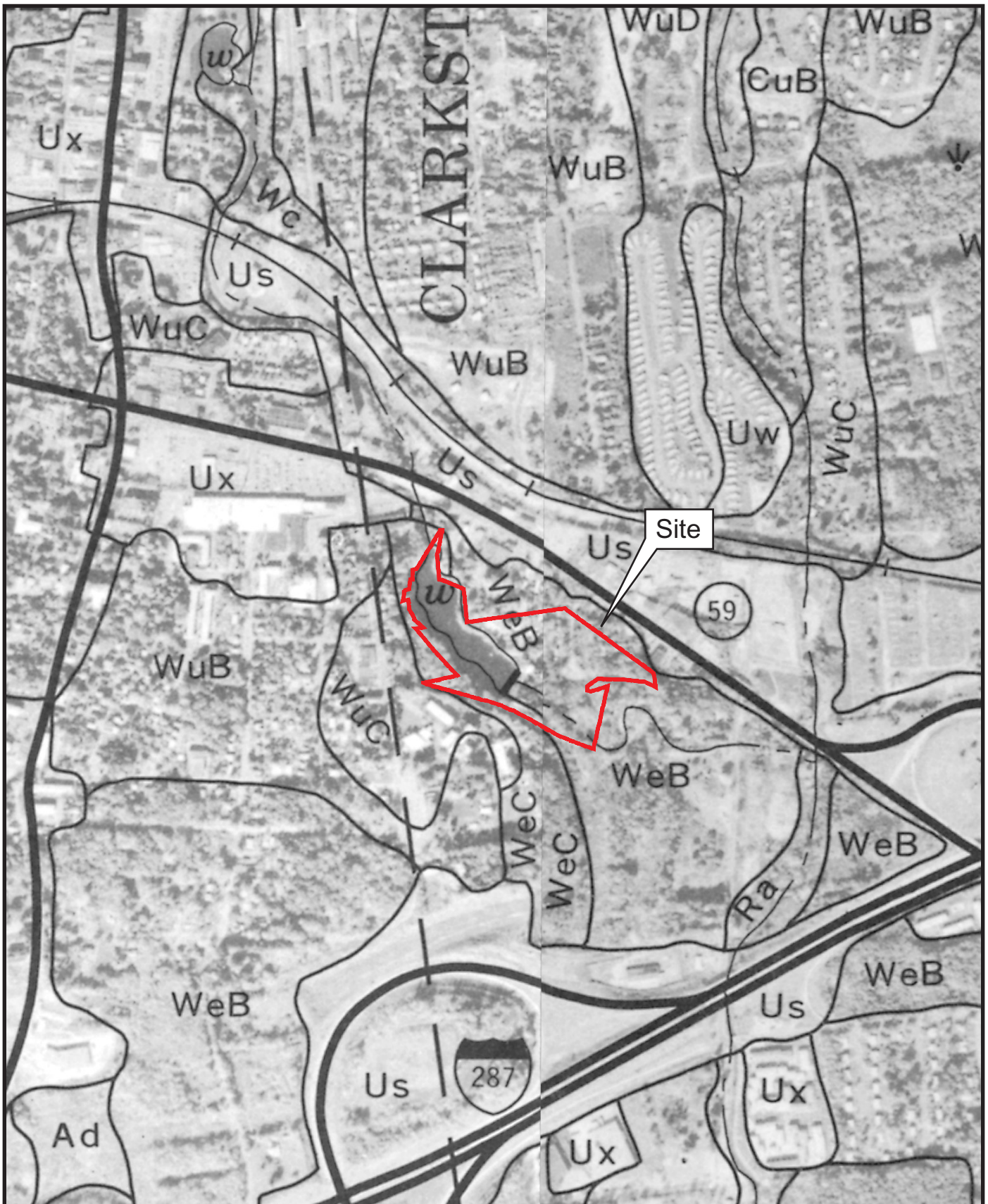


Figure 3.1-1: Soils Map

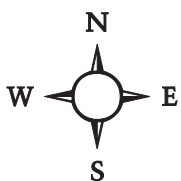
Hyenga Lake

Town of Clarkstown, Rockland County, New York

Source: Soil Survey of Rockland County, New York, October 1990

U.S. Dept. of Agriculture, Soil Conservation Service

Approx. Scale: 1 inch = 700 feet



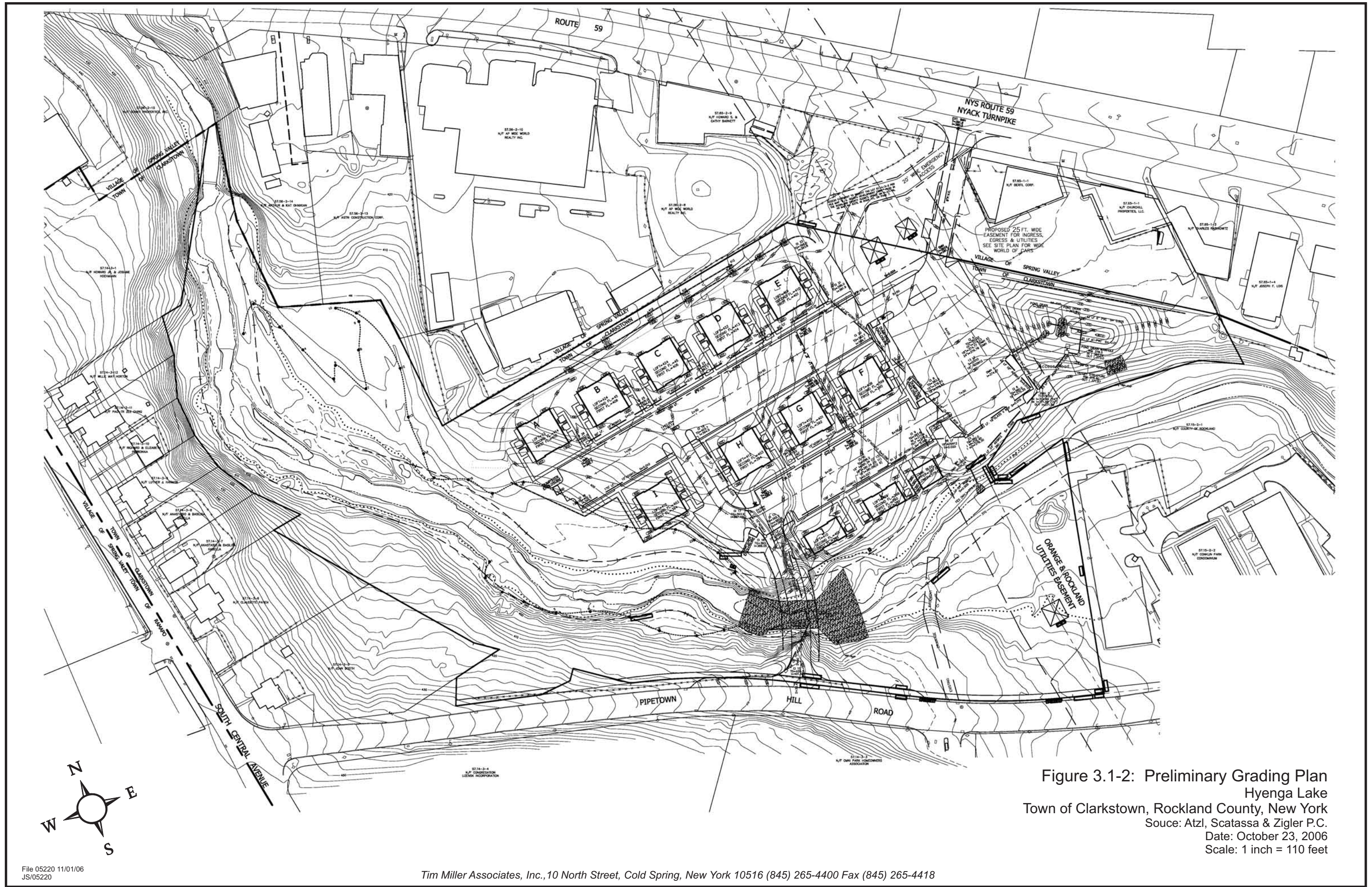
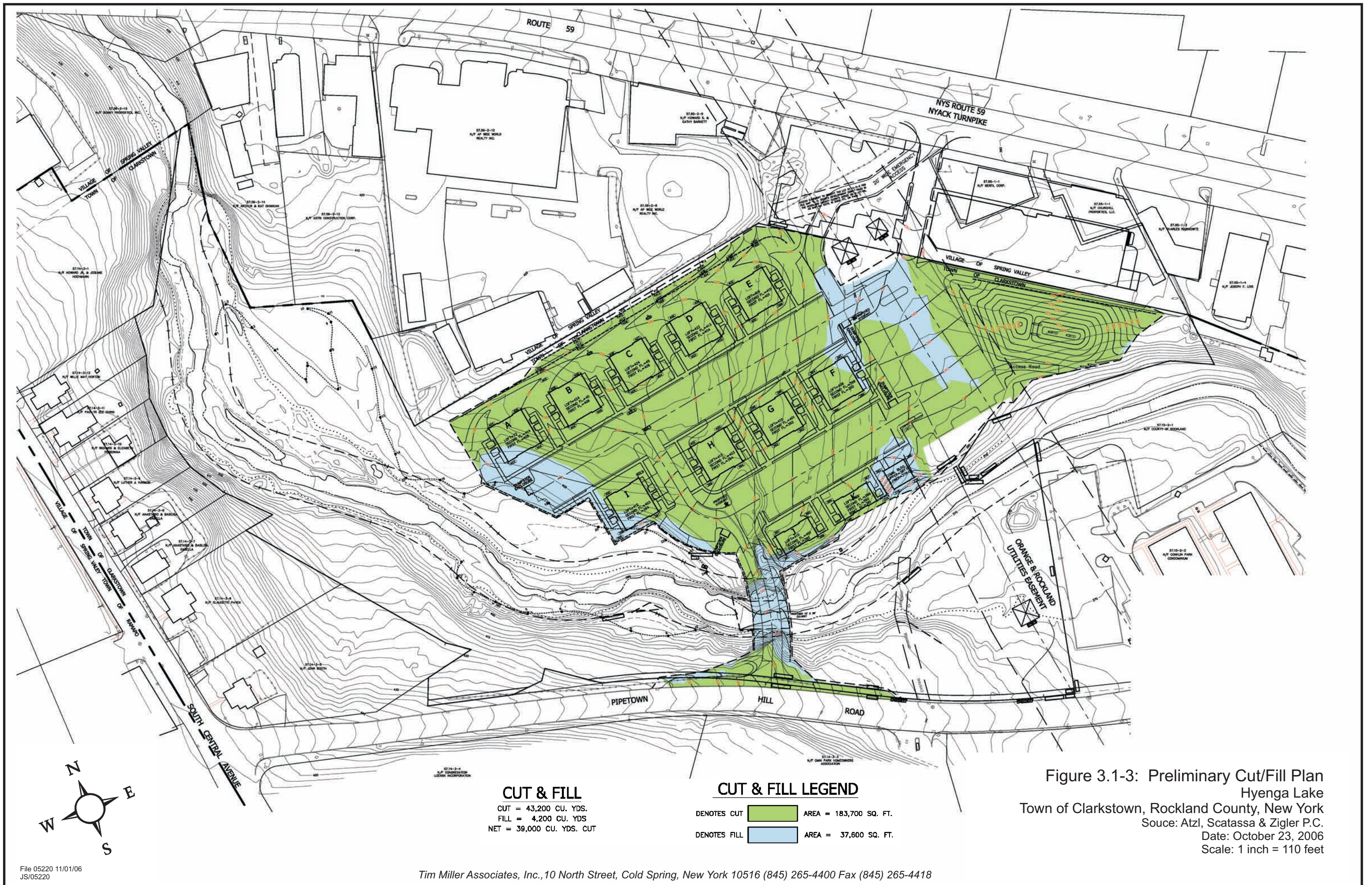


Figure 3.1-2: Preliminary Grading Plan
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: October 23, 2006
 Scale: 1 inch = 110 feet



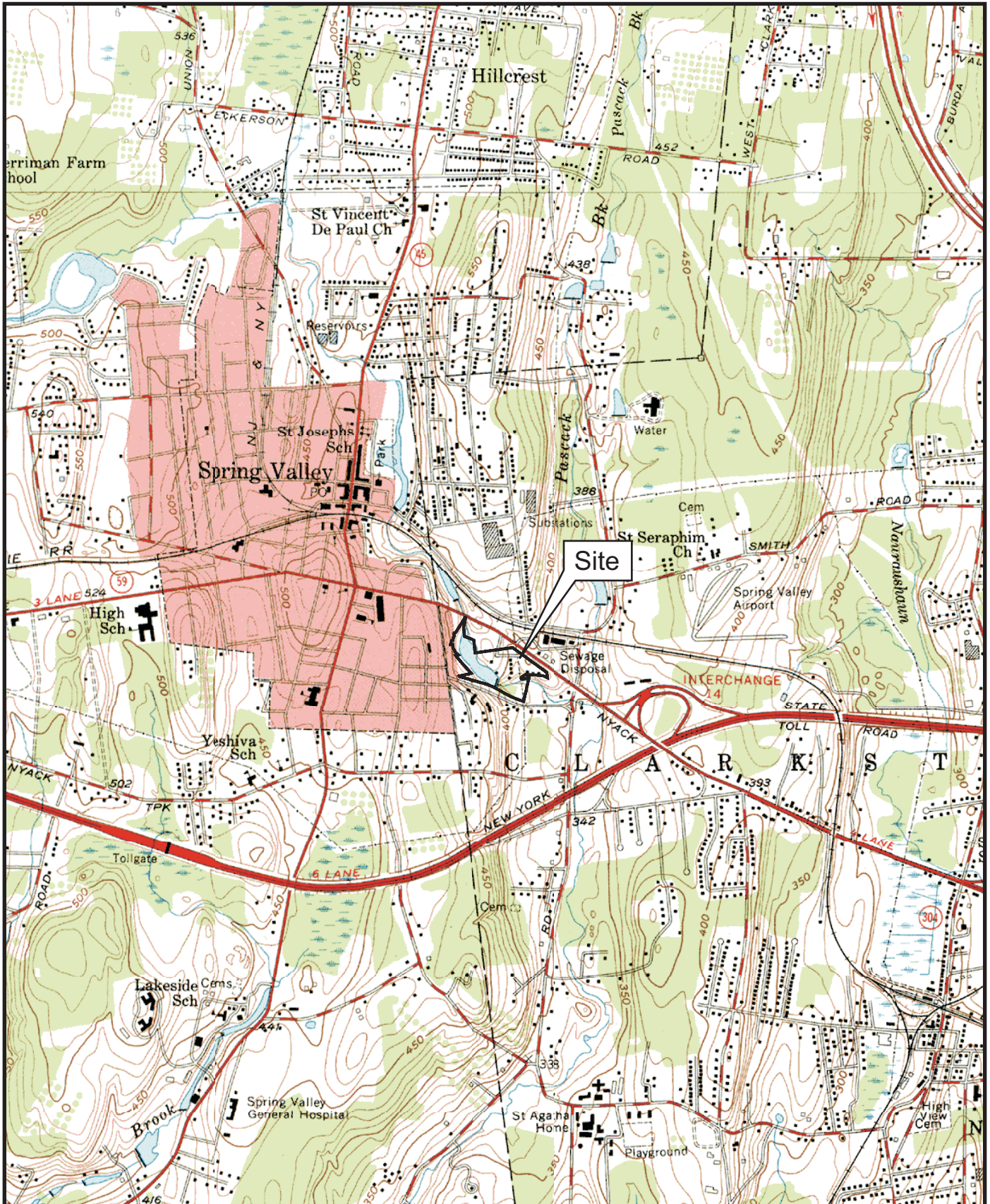


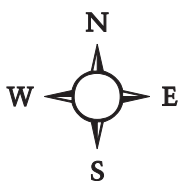
Figure 3.1-4: Site Location Map

Hyenga Lake

Town of Clarkstown, Rockland County, New York

Base: USGS 7.5-minute Topographic Map, Park Ridge Quad

Scale: 1 inch = 2,000 feet



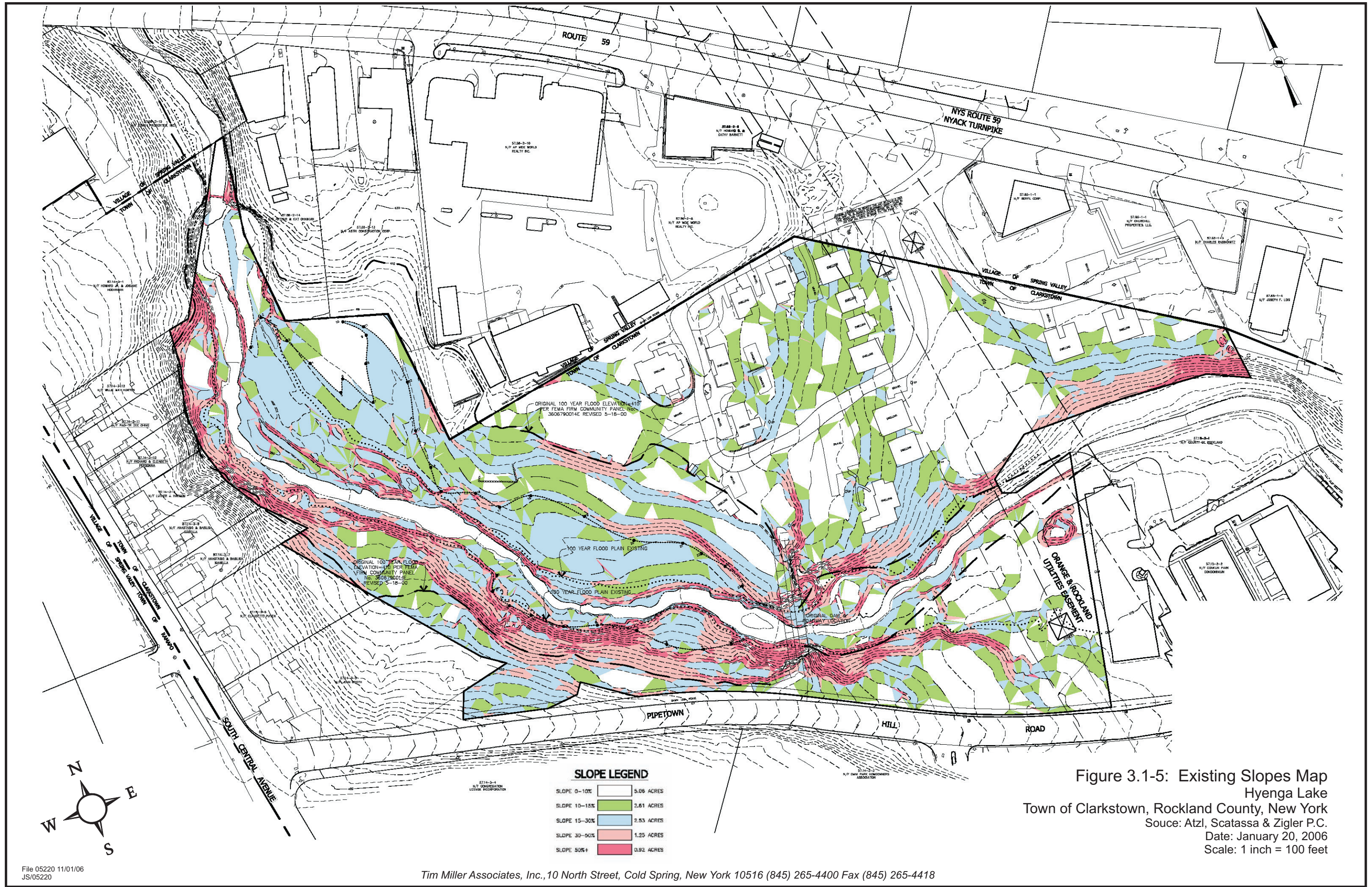
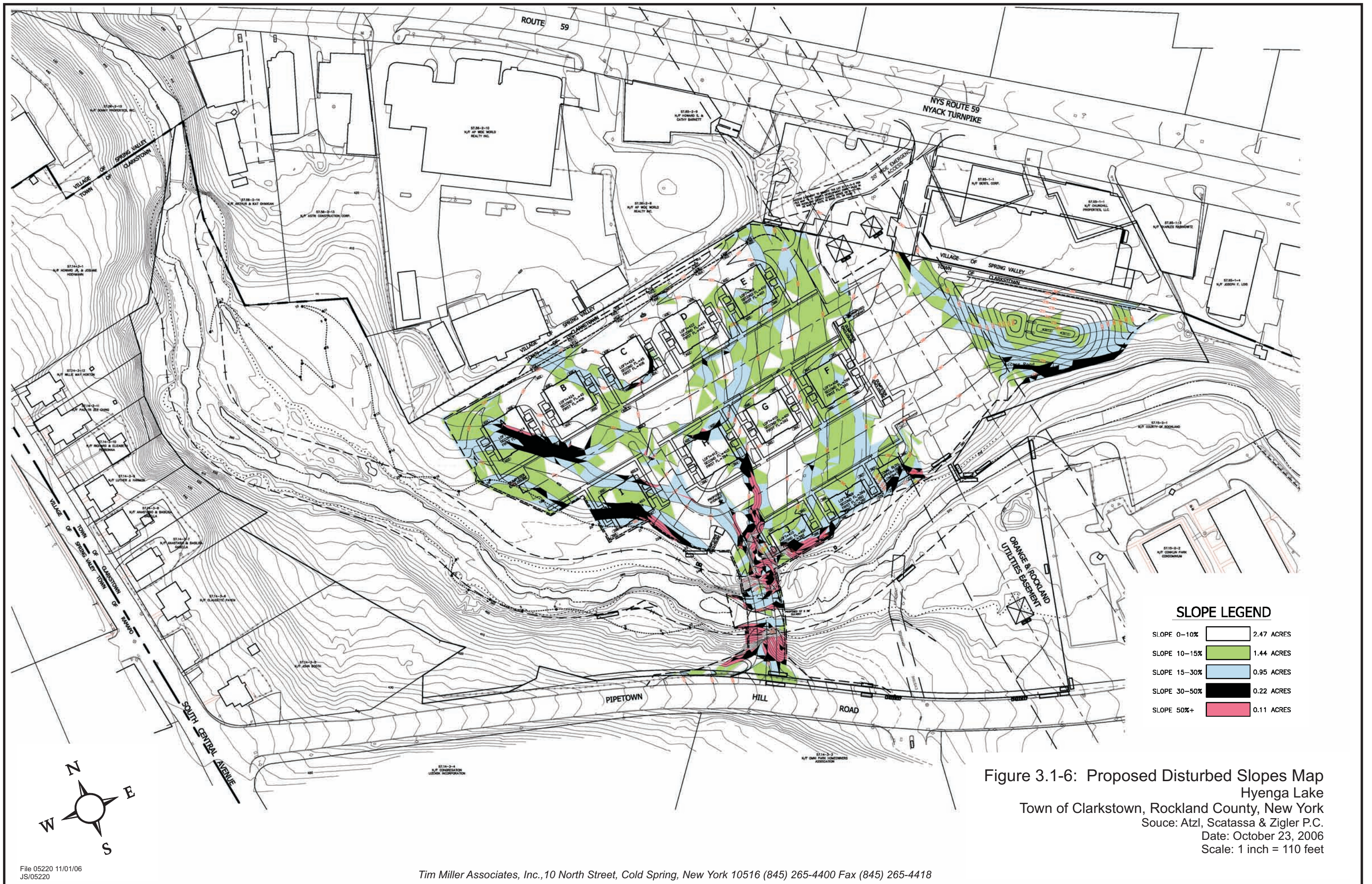


Figure 3.1-5: Existing Slopes Map
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: January 20, 2006
 Scale: 1 inch = 100 feet

SLOPE LEGEND

SLOPE 0-10%		5.06 ACRES
SLOPE 10-15%		2.61 ACRES
SLOPE 15-30%		2.53 ACRES
SLOPE 30-50%		1.25 ACRES
SLOPE 50%+		0.82 ACRES



SLOPE LEGEND

SLOPE 0-10%		2.47 ACRES
SLOPE 10-15%		1.44 ACRES
SLOPE 15-30%		0.95 ACRES
SLOPE 30-50%		0.22 ACRES
SLOPE 50%+		0.11 ACRES

Figure 3.1-6: Proposed Disturbed Slopes Map
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: October 23, 2006
 Scale: 1 inch = 110 feet

3.2 Impact on Water

3.2.1 Groundwater - Existing Conditions

In any area, groundwater primarily derives from precipitation that has infiltrated through surface soils and percolated into the water table. Before entering the water table, most precipitation is "lost" either as surface water runoff or by evapo-transpiration. Depending on the specific physical characteristics of a recharge area, only between 15 and 40 percent of the annual precipitation in any area ultimately percolates into the water tables of aquifers. Groundwater is the subsurface water that is found in the aquifers (saturated zones) within the soil and fractured rock mantle of the earth. Groundwater flows in aquifers generally follow the topography of the soils overlying the bedrock.

The bedrock identified on and near the project site is of a Brunswick geologic formation composed variously of mudstones, sandstones and siltstones. Based on data in the USDA's *Soil Survey for Rockland County* (Atlas Sheet 19), the on-site surficial soil deposits consist of glacial tills and outwash. Outwash includes coarse sand and gravel deposits while tills are described as soils with variable textures (e.g. clay, silt-clay, boulder clay) that had been deposited along the faces of melting glaciers. Soil types mapped on the project site are Wethersfield. The thickness of the soil materials, determining the depth to bedrock on the property, is not known, except as described in the Soil Survey.

Depth to the water table is expected to vary across the Hyenga Lake site and is anticipated to rise during seasonally wet periods. Depth to water may be defined by shallow perched water tables from 1.5 to 2.5 feet below the ground surface from February to April. All units are to be built upon slabs, the basements will have standard footing drains with a positive outfall, no special measures are required. Groundwater is presumed to flow to the south, generally following the soils and bedrock topography of this site and the stream drainage across the property contained within Pascack Brook.

The project site and surrounding areas receive public water from a private utility, United Water New York, which is proposed as the source of drinking water for this project.

3.2.2 Groundwater - Potential Impacts

The existing bungalow community is served by United Water New York. As public water serves the site and nearby properties, groundwater use is not a significant impact issue for this application. A request for willingness to serve letter was sent to United Water, and is included in Appendix A, Correspondence. A subsequent letter dated October 26, 2006, also included in Appendix A, has been sent to initiate the engineering review required by United Water to determine their ability and intent to provide water to the residents of Hyenga Lake.

There are no plans to extract groundwater at this site. For domestic water use, the project would be connected to available public water services and would not use or impact groundwater resources. Local recharge will decrease somewhat following an increase in roads, driveways and other impervious surfaces in comparison to existing coverage on the site. The current on-site impervious surface is 1.58 acres, compared to the 1.75 acres of impervious coverage anticipated upon completion of the project. However, all stormwater runoff collected from these impervious surfaces will be directed into a stormwater control basin and then into the Pascack Brook that would each allow for limited infiltration of runoff

into underlying soils. Overall, the project is not anticipated to adversely impact groundwater conditions in the area.

In addition, the proposed development will be connected to a regional sewer system, i.e., the Rockland County Sewer District (RCSD). As a result of these sanitary connections to an offsite treatment system, the development is not projected to result in any adverse sewerage-related impacts to local groundwater.

3.2.3 Groundwater - Project Mitigation

As discussed above, the project will utilize only public utility hookups for both water and waste water services, thus no impacts are anticipated with groundwater resources and no specific mitigation measures are proposed.

3.2.4 Surface Water (Wetlands and Waterbodies) - Existing Conditions

The property lies within the upper watershed of the Pascack Brook and includes a 1,625-foot passage of the brook across the site. The brook is a protected water of the New York State Department of Environmental Conservation (NYS DEC) (DEC Water Index No. NJ-5; Class C(t)). This brook drains a larger area of approximately 51 square miles that exists primarily downstream of the project site in drainage areas across southern New York and northern New Jersey. The brook transects a wetlands that encompasses an area of 1.64 acres situated primarily within the former lake bottom sediments exposed by the 1999 collapse of the Hyenga Lake Dam.

There are no NYS DEC regulated wetlands located on or near the project site (see Figure 3.2-1).

The RCSD was contacted to determine whether the site is included within any designated United States Environmental Protection Agency (EPA) Environmentally Sensitive Area (ESA). The e-mail response dated February 15, 2006, to Bruce Friedmann (Appendix A) from the RCSD office states that the property lot is not on the District's list or their mapping of ESAs for the Town of Clarkstown.

The brook has been identified by the United States Army Corp of Engineers (ACOE) during a visit to the site (Letter from ACOE dated August 29, 2003 contained in Appendix A) as a navigable water of the United States. The wetland adjacent to the brook was also identified by the ACOE during the August, 2003, visit to be under their jurisdiction. The present filing (File Number: 2003-00668) with the New York District ACOE maintains this jurisdictional determination through August, 2008. There are no other natural or constructed surface water bodies, ponds, or basins on the project site.

The site wetland was field delineated in April, 2003, by Robert Torgersen, LA, CPESC, and a map of the wetland is shown in Figure 3.2-2 and presented as Appendix B. The wetland encompasses an area of 1.64 acres that lie primarily within the bounds of the former lake bottom sediments exposed after the 1999 collapse of the Hyenga Lake Dam.

The brook crosses the site and the wetland within a 75-foot wide drainage easement of approximately 3.47 acres conveyed to Rockland County on September 27, 2005. A permit application has been made to the Rockland County Drainage Agency (RCDA) for the work that is to be conducted within the 100-foot boundary of the existing stream channel line (RCDA Permit Application No. 04-36). The Project Sponsor has granted an easement to the RCHD for the purpose of making improvements to the stream. The timing of the proposed improvements by the RCHD are beyond the control of the Project Sponsor.

The brook enters the property at an elevation of approximately 400 feet above mean sea level (aMSL) and descends approximately 35 feet in its 1,625 foot passage across the site (Figure 3.1-5). The relatively steep drop has created a natural pool and riffle streambed and a rocky brook within a steep-sided ravine that exists over the northern and southern undeveloped portions of the property. The project does not propose to change either the streambed location, cross section, course or current of the brook.

Existing streamflows in the Pascack Brook are relatively high and historically have caused local flooding concerns in New York and New Jersey communities both above and below the project site. The United States Geologic Service (USGS) recorded peak annual stream flow rates (gage datum for USGS Gaging Station No. 01377500) of several hundred to a thousand or more cubic feet per second (cfs) at Westwood, NJ, where the runoff from the upper 29.6 square miles of the watershed has been monitored from 1934 to the present. The peak flow rate over this 70+ year interval was recorded in 1999, during Tropical Storm Floyd, when the flow rate was an estimated 9,630 cfs.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Town of Clarkstown (Community Number 360679, Map 0014E) and the Village of Spring Valley (Community Number 365344, Map 0002C) show that portions of the site were located within the 100-year flood plain of the Pascack Brook when the Hyenga Dam impounded the brook. The 100-year floodplain on FEMA maps for the property existed along the 410-foot contour bordering the dam pool (Figure 3.2-3). The loss of the dam during Tropical Storm Floyd in September of 1999 has allowed the brook since then to flow in the remnants of the natural stream channel that existed prior to the construction of the dam in the 1880's, at elevations from 10 to 45 feet below the FEMA mapped base flood plain. Currents in the brook have increased and the watercourse has become a rocky stream with short pools and some riffle areas since the loss of the dam allowed the restoration of the original steep profile of the stream across the property. Due to this lowering of the water course across the property, the project would not result in any disturbances of the 100-year flood plain on the site as identified on existing FEMA flood maps pre-dating the loss of the dam.

Under contract to FEMA, the engineering firm of Leonard Jackson Associates, P.E., (LJA) has conducted the delineation of the floodplain and floodway that presently exists subsequent to the 1999 breaching of the Hyenga Lake dam as shown in Figure 3.2-4. The Project Sponsor does not propose to reconstruct a dam on this property and a filing with FEMA will be made for obtaining a Conditional Letter of Map Revision (CLOMR) for the existing conditions in the area, including the project site, affected by the removal of the dam and its replacement with the project's proposed box culvert access road. With the completion of the project, a request would be made for regulatory revisions of the affected FIRM and Floodway Maps by the issuance of a LOMR for the affected FEMA community maps, reflecting the current floodplain.

At present, the RCDA and the Village of Spring Valley are planning other flood abatement projects on other portions of the Pascack Brook that are upstream of the Hyenga Lake project site and are subject to flooding in those areas of the floodplain. The multi-million dollar project in the Village includes the reconstruction of existing bridges and stormwater systems, the installation of a box culvert, and physical improvements to approximately 1,850 linear feet of the brook to allow for improved water flows.

Existing Stormwater Runoff Conditions

Stormwater in the project area is currently controlled by natural topography, soils and vegetation and is not directed to any stormwater management structures that could control either the quantity or quality of the runoff waters. Stormwater from the project site drains directly to the on-site stream, and then flows off-site to the south.

The project engineers (LJA) have conducted a detailed analysis of pre- and post-development drainage conditions for the site. This stormwater management report by LJA is provided in Appendix C. The detailed methodology utilized to conduct the stormwater analysis is presented in the Hyenga Lake Drainage Report contained in Appendix D.

3.2.5 Surface Water - Potential Impacts

Wetlands and Waterbodies

A new stream crossing by a 3-sided box culvert, with roadway, is proposed for Pascack Brook in the area of the previous Hyenga Lake Dam. The new access would be created to provide residential and service access to the completed project from the adjacent Pipetown Hill Road. The crossing would be made in the area of a natural 30-foot escarpment through which the brook has cut its streambed.

The development would result in 0.03 acres of disturbance to the ACOE-regulated wetland in order to construct buildings and parking areas. The project applicant will apply for a Nationwide Wetland Permit for the wetland disturbance of less than 0.1 acres. Approximately 1.61 acres of wetland will remain undisturbed.

Pursuant to the Clarkstown Drainage and Water Course Law (Chapter 128) of the Clarkstown Code, it is unlawful for any person, firm or corporation to fill, obstruct, dam, divert or otherwise change or alter the natural flow of water through any stream, ditch, culvert, watercourse or other drainage system shown on the Official Map of the Town of Clarkstown except in accordance with the regulations set forth in Chapter 128. A drainage and watercourse permit will be required for alterations of the on-site stream corridor due to the proposed improvements to allow the brook to flow under the proposed access road and for the proposed stormwater management system to discharge to the brook.

The Project Sponsor must present plans and specifications prepared by a licensed professional engineer to the Town Clerk. The plans and specifications will be forwarded to, and reviewed by, the Director of Environmental Control. The Director of Environmental Control will prepare a report with recommendations, and will forward it to the Planning Board. The Planning Board will review the report and the proposed plans and specifications then make recommendations to the Town Board within forty-five (45) days of submittal. If the Town

Board approves the proposed changes, the Town Clerk shall issue a permit. The Project Sponsor must furnish a cash bond in an amount to be determined by the Director of Environmental Control for purpose of securing the performance of the terms and conditions of the permit. The cash bond will be held by the Town of Clarkstown for a period of one (1) year after expiration of said permit.

A NYS DEC permit application will be made for a stream bed crossing and an ACOE Nationwide Permit (NWP #14) application will be made for the access road crossing of the Pascack Brook. Disturbance to the ACOE wetlands on the site for regrading and installation of retention walls in the area of the residential buildings and parking lots will impact less than 0.1 of an acre and therefore can be permitted with the issuance of an ACOE Nationwide Permit #39 that would thereby satisfy compliance with all applicable provisions of Section 401 of the US EPA Clean Water Act and applicable New York State water quality standards.

Future Stormwater Runoff Conditions

Pursuant to Section 402 of the Federal Clean Water Act, stormwater discharges from certain construction activities to waters of the United States are unlawful unless they are authorized by a national or state permit program. New York's State Pollutant Discharge Elimination System (SPDES) is a federally-approved program that incorporates the United States EPA National Pollutant Discharge Elimination System (NPDES) Phase 2 stormwater requirements through permits issued by the NYS DEC in accordance with New York State Environmental Conservation Law. Operators of construction activities that propose to disturb one acre or more require a SPDES permit. Because the project would disturb more than five acres of land, a NYS DEC General Permit for Stormwater Runoff from Construction Activity (SPDES General Construction Permit GP-02-01) will be required. Submissions to obtain state stormwater discharge permits for areas greater than five acres of disturbance must also be accompanied by a Full Stormwater Pollution Prevention Plan (SWPPP) upon filing of a Notice of Intent (NOI) with the NYS DEC.

The SWPPP would be developed in accordance with guidelines provided in the NYS DEC Storm Water Management Design Manual (August 2003) that require provisions for erosion controls during the construction of the project, flow rate and water quality controls for stormwater runoff generated by the completed project, as well as a long term maintenance plan for the upkeep of any stormwater basin facilities to be constructed.

When the grading and site plan are finalized and approved by the Clarkstown Planning Board, and the SWPPP Plan is deemed acceptable by the Board and its consultants, the Project Sponsor will submit a NOI to the NYS DEC for a SPDES General Permit for Stormwater Discharges from Construction Activities (GP-02-01).

The project SWPPP will add storage and discharge provisions for stormwater runoff that may impact the existing stream and freshwater wetlands water resources on the site. The plan will be required to provide controls for both erosion and sedimentation during construction phases as well as facilities for the post-development control of the quantity and quality of stormwater discharges.

The proposed project does include the construction of a culverted crossing in the approximate location of the removed dam for the purpose of providing a residential and service access road to the development. The arched, 3-sided precast concrete culvert, as

shown in Appendix F, will be 36 feet wide and 10-feet high, exclusive of wingwalls, and be in conformance with NYS DEC standards for streambed road crossings. The use of a three sided box culvert unit will allow for the brook to be crossed while maintaining a semi-natural streambed passage underneath the access road. Apron areas on the streambed upstream and downstream of the culvert will be stabilized with rip-rap rock, as will the streambed through the culvert crossing.

A single detention and water quality basin will be developed in the eastern portion of the site for treatment of stormwater runoff from the completed project. The design will include "pocket pond" features as presented in the NYS DEC Stormwater Management Design Manual as detailed in the project Drainage Report (Appendix D). The system will include first flush treatment designed to capture and treat the initial stormwater runoff from the developed areas. First flush capture results in the settlement of most suspended solids and moderation of water temperature, thus improving the quality of stormwater exiting the site. Additional water quality treatment will be provided by a sand filter system. Outflow from the detention pond will be via culvert pipe and rip-rap apron which will provide further aeration and opportunity for biological activity prior to discharge into the Pascack watercourse. Discharges will occur at non-erosive rates into a rip-rap protected reach of the downstream portion of Pascack Brook (at an elevation ~270 feet aMSL).

In addition, sumps will be provided on all stormwater catch basins and stormwater inlet traps throughout the development. These sumps are designed to trap sand, grit and a portion of suspended solids contained in stormwater. Stormwater catch basins are proposed along the internal roads and parking areas of the development.

The study of the proposed stormwater drainage conditions for this project (Appendix D: Drawing IV-2) has been prepared by the project engineers (LJA). The stormwater management system documented in the SWPPP maintains all of the site within the same existing drainage basin, therefore there would be no drainage impacts that would result by changes to existing drainage basins.

Following construction, approximately 1.75 acres of the site would be covered with impervious surfaces. This increase of impervious surfaces related to the proposed development will increase the quantity of stormwater runoff from the project site. The addition of pavement and stormwater collection systems also has the potential to increase the peak flow rate of stormwater runoff from the site unless appropriately mitigated through the use of stormwater detention basins.

As shown on drawings provided in the Hyenga Lake Drainage Report (Appendix D), the proposed stormwater drainage system to be operational for the completed project consists of vegetated swales, dry swales, collection piping, an infiltration basin and a streamside stabilized discharge apron (Appendix D: Drawings Nos. II-1, II-2 and IV-1). The storm water piping utilizes 15-inch diameter reinforced concrete pipe (RCP) in the storm drain collection system and 24-inch pipe for the outlet of the detention basin. The proposed detention basin is designed in accordance with SCS TR-55 methodology to maintain existing peak outflow rates for 2- to 100-year storm event. The proposed site storm drain features are shown on the full size plan maps.

The SWPPP is required to demonstrate that the rate of runoff from the site would not exceed pre-existing runoff levels for any storm event, up to the 100-year storm. The site-specific

stormwater runoff Flood Control Capability conducted by Leonard Jackson Associates (Appendix E) demonstrates that the project will not yield an increase in the existing peak rates of runoff for Pascack Brook. The Hyenga Lake Drainage Report analysis will be used in an application to the NYS DEC for a waiver of peak rate of runoff detention requirements for the project in its SWPPP.

The SWPPP and its drainage calculations document that there will be no increase in the peak rate of stormwater runoff after the proposed developments and their stormwater improvements are in place. Thus, with the stormwater management system in place, no impacts to existing drainage basins are anticipated. The project's detention pond design incorporates various stormwater controls to allow no net increase in peak rates of stormwater runoff from the site. The SWPPP would limit peak stormwater flows, after the completion of developments, to rates at or below the peak flows occurring prior to the proposed developments.

A Flood Control Capability analysis has been conducted (Appendix E) to calculate storm event flows in Pascack Brook with and without the presence of the Hyenga Dam. The hydraulic model used for these analyses was the same as that used for the adopted FEMA Flood Insurance Study of the Town of Clarkstown. For 1- to 100-year storms, the Hyenga Lake Storage Analyses study demonstrates that the peak flow rates developed within the brook would be relatively unaffected by the presence or absence of the dam (Table 3.2-1). The resultant differences in flow rates effected by the dam would be only of the magnitude of 1 cubic foot per second (cfs).

The drainage report submitted by LJA to the Town of Clarkstown Department of Environmental Control further documents that the hydraulic profile for the developed condition of the site, with the culverted stream crossing, would always be at an elevation equal to or below the existing conditions profile in areas upstream, through, and downstream of the culvert and thus the installation of the culvert would have no adverse onsite or offsite hydraulic effects.

Table 3.2-1 Peak Flow Rates on the Pascack Brook in the Vicinity of the Hyenga Lake Dam			
Storm Interval	Flow Rate with Dam (cfs)	Flow Rate without Dam (cfs)	Change in Flow Rate (cfs)
1	403	404	+1
2	545	546	+1
5	773	774	+1
10	975	975	0
25	1,135	1,136	+1
100	1,598	1,598	0
Source: Hyenga Lake Storage Analysis. LJA. July, 2005.			

The additional impervious surfaces would potentially introduce additional pollutants. The addition of new pavement and other impervious surfaces to the project area has the potential to increase the amount of pollutants discharged to local water resources, including sand, silt, road salts, metals, oils and greases. Thus, it may be expected that the quality of stormwater

runoff would be altered subsequent to development. These potential impacts would be avoided or mitigated by structural stormwater controls and Best Management Practices (BMP). Appropriate BMP measures as outlined in Section 3.1.1.3 are incorporated into the design of the proposed development to ensure that changes in the quantity and quality of stormwater runoff do not impact the site or adjacent properties.

With the implementation of an Erosion and Sedimentation Control Plan (ESC) developed in accordance with SWPPP guidelines provided by the NYS DEC, no significant impacts are anticipated to result from site erosion during construction of the development. Specifics of the ESC plan are discussed below and fully documented in the SWPPP.

Additional stormwater controls will be provided through the use of rip-rap velocity dissipaters and level spreaders at points of discharge leading to stabilized and naturally wooded or vegetated areas. The proposed stormwater management infrastructure is shown on the full size site plan in the rear of the DEIS.

A legally binding and enforceable maintenance agreement shall be executed between the facility owner and the Town of Clarkstown to maintain the facilities in accordance with NYS DEC storm water management practices. The long-term maintenance of stormwater drainage structures on the site will include annual inspections to ensure the upkeep of all equipment and appropriate functioning of all facilities. Periodic removal of accumulated sediment in the drainage system will be necessary. This maintenance agreement with the Town for the stormwater facilities will be made part of the final site plan.

Several small, outer portions of the ACOE regulated wetland totaling 1,350 sq. ft., depicted in Figure 3.2-2, will be regraded and revegetated to accommodate the nearby construction of residences for the project. The filling of these small areas on the border of this wetland is necessitated in order to create usable yard and parking areas in and around two of the buildings (Buildings A and I). This total disturbance of less than 1/10 acre of wetlands would not be a significant adverse impact on the site's wetland resource and the Project Sponsor would not be required to obtain any individual permit from the ACOE for activities at this scale.

Construction Stormwater Management

Stormwater drainage from the site during construction will be strictly managed to avoid off-site impacts (see full size ESC Plan provided at the end of this document). A key controlling aspect of the maintenance of stormwater quality and the reduction of soil erosion is to provide for the proper phasing of erosion controls in coordination with construction activities. All required structural sediment and erosion control features will be installed prior to grading and earthwork for each phase of the construction plan.

In general, the primary objectives of an ESC Plan are to:

- divert clean surface water before it reaches the construction area;
- control erosion at its source with temporary or permanent soil protection measures;
- capture sediment-laden runoff from areas of disturbance and settle or filter the runoff prior to discharge from the site; and,
- decelerate and distribute storm water runoff through natural vegetative buffers or structural means before discharge from the site.

The temporary erosion control measures are specified and located on the ESC Plan for the project. Structural sediment and erosion control features include: the erection of perimeter silt fence barriers, the construction of temporary swales, the application of mulches and the use of temporary sedimentation basins for the control of surface runoff water. At the conclusion of construction all temporary control measures will be removed and the stormwater detention basin to be used for the long-term SWPP Plan will be cleared of silt deposits and all sediments will be properly disposed of.

3.2.6 Surface Water - Project Mitigation

Various measures have been incorporated into the project plans that are intended to avoid or mitigate potential impacts throughout the construction and occupation phases of the proposed development. These include the following:

1. Temporary erosion control measures appropriate to the proposed construction activities are specified so as to minimize erosion during the construction phase. Erosion control measures are shown on the ESC Plan at the rear of this document.
3. Long-term stormwater control measures that are designed to avoid stormwater related adverse impacts. Stormwater control measures are described in detail in the SWPP Plan at the rear of this document.

Specific temporary erosion control measures to be implemented during construction of the project will include:

- silt fences
- a stabilized construction entrance
- sediment traps
- slope stabilization
- temporary diversion swales
- swale channel stabilization
- permanent and temporary seeding mixtures
- wood chip or straw mulches
- dust control
- tree protection

Construction details for each of the proposed soil erosion control devices will be provided as part of the soil erosion controls to be included with the final site development plan. Establishment of erosion control measures will be sequenced throughout the construction phases in order to control potential impacts as they develop. Prior to any land clearing, perimeter silt fences will be erected and a stabilized construction entrance will be established. Temporary sediment traps will be created early after the onset of land grading activity.

The soil erosion control plan will include weekly and storm event (i.e. when rainfall is greater than 1/2" over 24 hours) monitoring measures and written documentation to ensure that the soil erosion control devices are effectively maintained throughout the project's construction. With these controls in place, no significant impacts from erosion on the site are anticipated.

As a result of the proposed erosion control measures and adherence to the Stormwater Management Plan, no adverse impacts to Surface Water are anticipated.

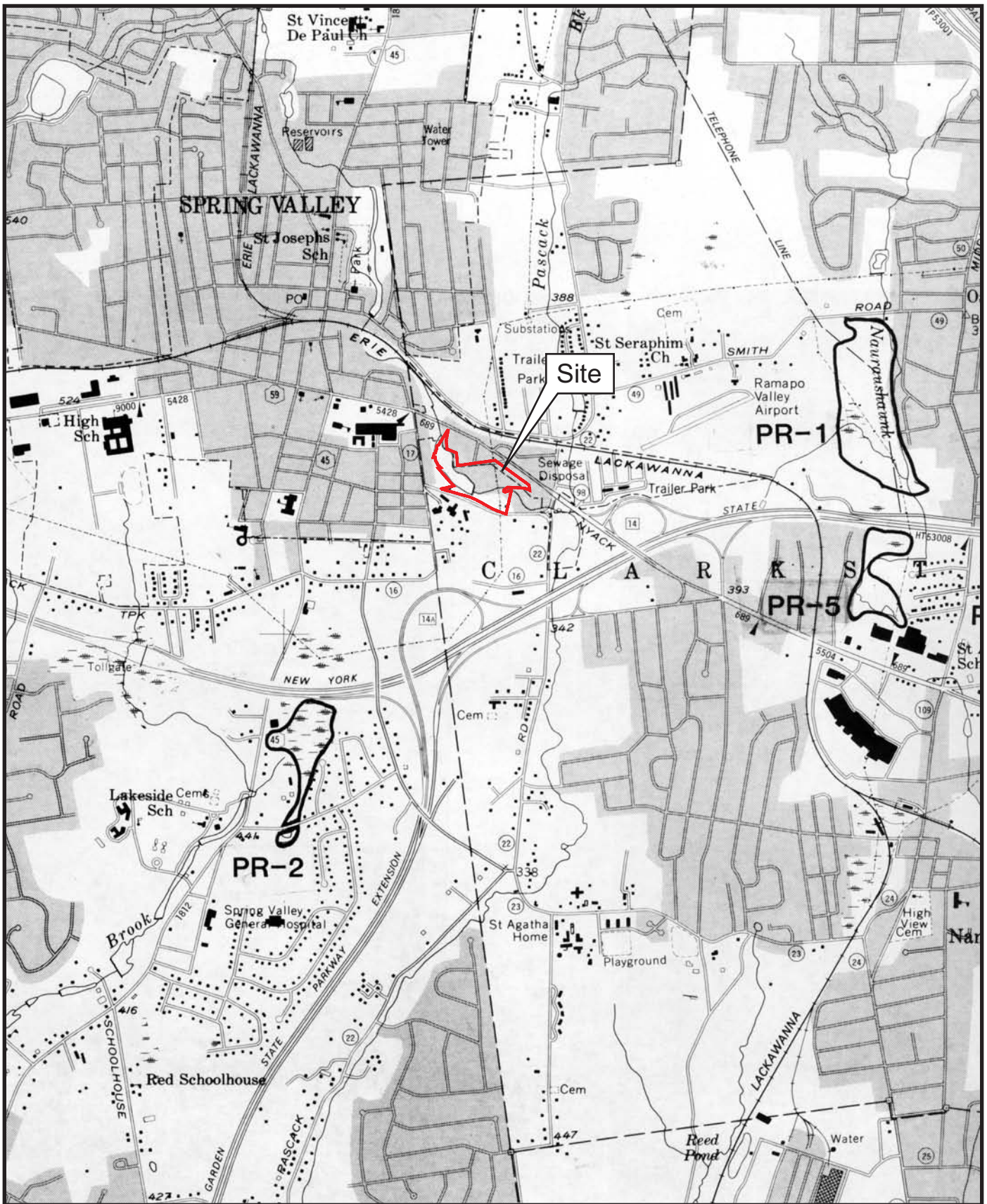
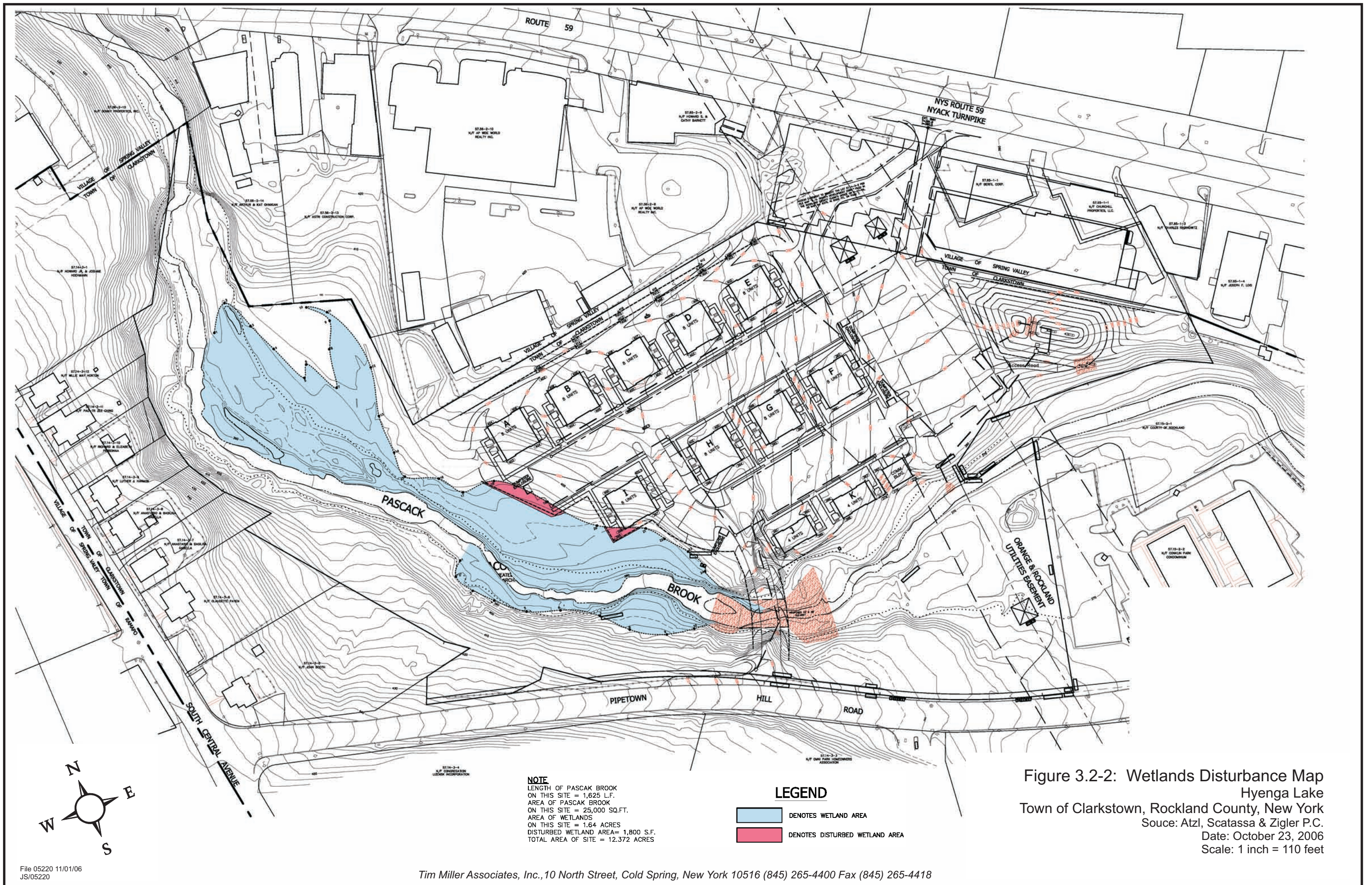


Figure 3.2-1: Site on NYSDEC Wetlands Map
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Base: NYSDEC Freshwater Wetlands Map (1987)
 Scale: 1 inch = 2,000 feet

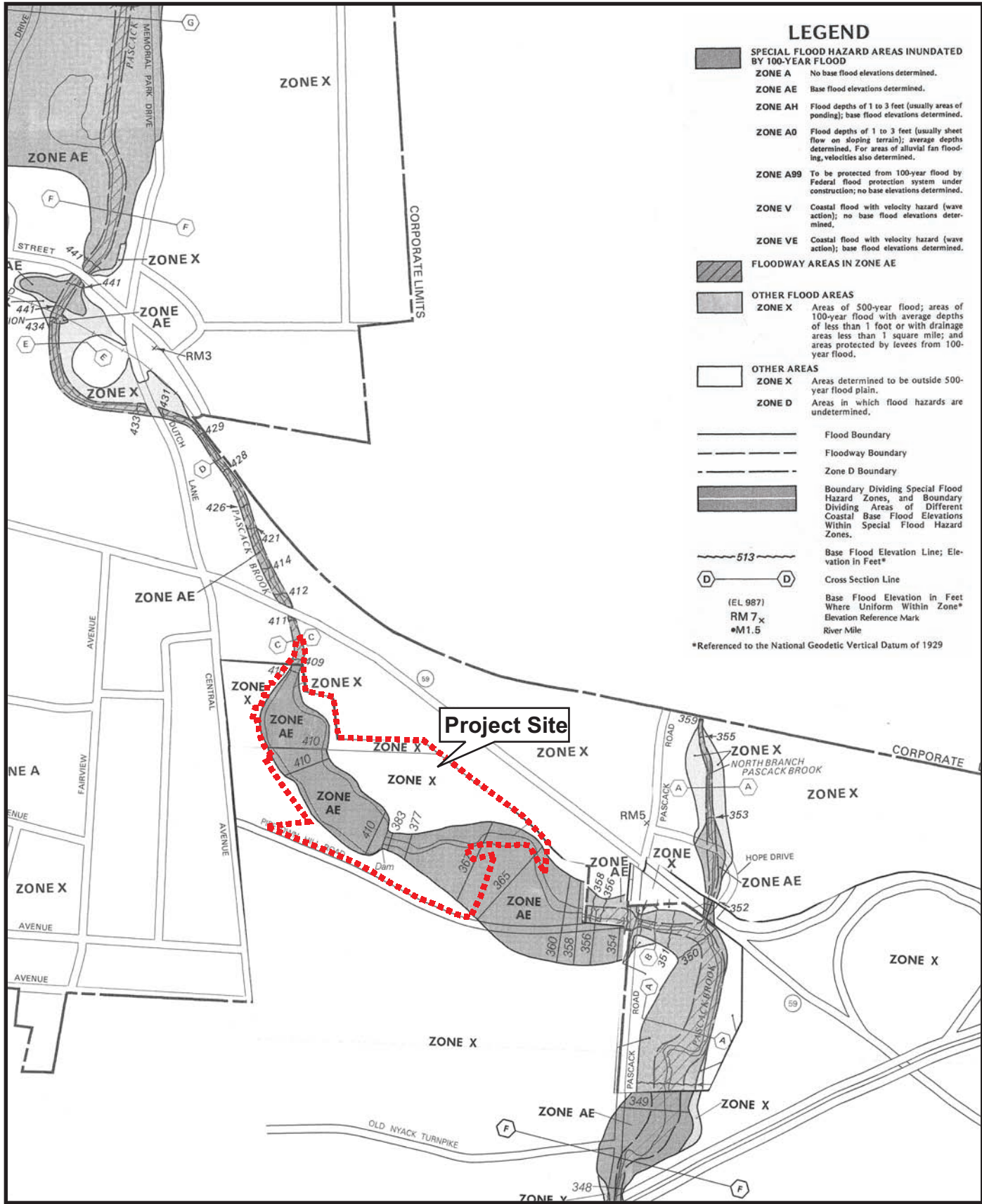


NOTE
 LENGTH OF PASCACK BROOK
 ON THIS SITE = 1,625 L.F.
 AREA OF PASCACK BROOK
 ON THIS SITE = 25,000 SQ.FT.
 AREA OF WETLANDS
 ON THIS SITE = 1.64 ACRES
 DISTURBED WETLAND AREA = 1,800 S.F.
 TOTAL AREA OF SITE = 12.372 ACRES

LEGEND

	DENOTES WETLAND AREA
	DENOTES DISTURBED WETLAND AREA

Figure 3.2-2: Wetlands Disturbance Map
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: October 23, 2006
 Scale: 1 inch = 110 feet



LEGEND

- SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
- ZONE A** No base flood elevations determined.
- ZONE AE** Base flood elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE A0** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.
- FLOODWAY AREAS IN ZONE AE
- OTHER FLOOD AREAS
- ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.
- OTHER AREAS
- ZONE X** Areas determined to be outside 500-year flood plain.
- ZONE D** Areas in which flood hazards are undetermined.
- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- Base Flood Elevation Line; Elevation in Feet*
- Cross Section Line
- Base Flood Elevation in Feet Where Uniform Within Zone*
RM 7_x
M1.5
- Elevation Reference Mark
- River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

Project Site

Figure 3.2-3: Flood Insurance Rate Map
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Base Map: Federal Emergency Management Agency
 Scale: NTS





KEY

100-Year Flood Plain Elevation

Figure 3.2-4: Existing Conditions 100-Year Flood Plain Elevation
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: October 23, 2006
 Scale: 1 inch = 110 feet

3.3 Impact on Air

3.3.1 Air Quality

Air quality is a relative measure of the amount of noxious substances that occur in the air and that are caused by natural and human processes. Certain airborne gases and particles can cause or contribute to the deterioration and/or destruction of biological life as well as damage to property and other physical components of the environment. Air contaminants or pollutants can be defined as solid particles, liquefied particles, and vapor or gases, which are discharged into, or form in, the outdoor atmosphere. Air quality in any particular location is influenced by contaminants discharged into the atmosphere and by regional and local climatic and weather conditions. Atmospheric conditions such as sunlight, rainfall and humidity, air turbulence, temperature differences, and wind speed and direction can disperse, intensify or chemically change or alter the compositions of air contaminants.

Air Quality Standards and Compliance

The United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) have promulgated Ambient Air Quality Standards (AAIS) intended to protect the public health and welfare. These standards are designed to protect the most vulnerable segment of the population such as children, the elderly and the infirm, which are more susceptible to respiratory infections and other air quality-related health problems. Locations or source-receptors that would be considered are schools, hospitals and convalescent homes as well as other related facilities.

Several air contaminants have been identified by the U.S. Environmental Protection Agency (EPA) as being of concern nationwide. These pollutants include carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃) (also termed photochemical oxidants), particulate matter, sulfur dioxide (SO₂), and lead (Pb). The sources of these contaminants, their effect on human health and the nation's welfare, and their final disposition in the atmosphere vary considerably. Particulate standards include only those particles with nominal diameters less than 10 microns which are inhalable.

National Ambient Air Quality Standards (NAAQS) are mandated by the Federal Clean Air Act (1990). Standards promulgated by the EPA include primary and secondary standards. National Primary Standards are levels of air quality necessary, with a margin of safety, to protect the public health. National Secondary Standards are levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant, such as an adverse effect on vegetation. For all contaminants except sulfur dioxide and suspended particulates, the primary and secondary standards are identical.

With the enactment of the Clean Air Act and subsequent amendments, each state was required to develop a State Implementation Plan (SIP) to provide a regulatory framework in which to implement requirements of the Act. The New York SIP adopted Ambient Air Quality Standards (AAIS) from a list of seven criteria pollutants established by the US Environmental Protection Agency (USEPA). These pollutants were selected by the USEPA based on a list of pollutants of primary concern nationwide. Attainment of the AAIS is required under the Act, and each State has a designated time period in which to bring nonconforming areas into compliance. The AAIS establish levels to protect the health (primary standard) and welfare (secondary standard) of the general public with an adequate margin of safety.

Table 3.3-1 provides federal and state air quality standards.

Table 3.3-1 State and Federal Air Quality Standards							
		New York State Standards			Corresponding Federal Standards (Primary Standards)		
Pollutant¹	Avg Period	Conc.	Units	Stat²	Conc.	Units³	Stat
Sulfur Dioxide	12 consecutive months	0.03	PPM	Arithmetic Mean (A.M)	80	µg/m ³	Arithmetic Mean (A.M)
	24-hour	0.14	PPM	Maximum	365	µg/m ³	Maximum
	3-hour	0.50	PPM	Maximum			
Carbon Monoxide	8-hour	9	PPM	Maximum	10	µg/m ³	Maximum
	1-hour	35	PPM	Maximum	40	µg/m ³	Maximum
Ozone	1-hour	0.12	PPM	Maximum	235	µg/m ³	Maximum
	8-hour	0.08	PPM	Maximum	157	µg/m ³	Maximum
Hydrocarbons (non-methane)	3-hour (6-9 am)	0.24	PPM	Maximum			
Nitrogen Dioxide	12 consecutive months	0.05	PPM	Maximum	100	µg/m ³	AM
Lead ⁵	3 consecutive months				1.5	µg/m ³	Maximum
Fine Particulate Matter (PM _{2.5})	12 consecutive months				15	µg/m ³	Geometric Mean (G.M.)
	24-hours				65	µg/m ³	Maximum
Inhalable Particulates (PM ₁₀) ⁶	12 consecutive months				50	µg/m ³	Geometric Mean (G.M.)
	24-hours				150	µg/m ³	Maximum
Total Suspended Particulates (TSP) ⁷	12 consecutive months	75	µg/m ³	Geometric Mean (G.M.)			
	24-hours	250	µg/m ³	Maximum	260	µg/m ³	Maximum

¹ New York State also has standards for beryllium, fluorides, hydrogen sulfide, and settleable particulates (dustfall). Ambient monitoring for these pollutants is not currently conducted.

² All maximum values are concentrations not to be exceeded more than once per calendar year. (Federal Ozone Standard not to be exceeded more than three days in three calendar years).

³ Gaseous concentrations for Federal standards are corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury.

⁴ Former NYS Standard for ozone of 0.08 PPM was not officially revised via regulatory process to coincide with the Federal standard of 0.12 PPM which is currently being applied by NYS to determine compliance status.

⁵ Federal standard for lead not yet officially adopted by NYS, but is currently being applied to determine compliance status.

⁶ Federal standard for PM₁₀ not yet officially adopted by NYS, but is currently being applied to determine compliance status.

⁷ New York State also has 30, 60, and 90-day standards as well as geometric mean standards of 45, 55, and 65 µg/m³ in Part 257 of NYCRR. While these TSP standards have been superseded by the above PM₁₀ standards, TSP measurements may still serve as surrogates to PM₁₀ measurements in the determination of compliance status.

Existing Air Pollution Sources

Vehicle Generated Air Quality Impacts – Existing Conditions

The primary pollutants associated with vehicular exhaust emissions are nitrogen dioxide (NO₂), hydrocarbons (HC), and carbon monoxide (CO). Since short-term exposure to elevated CO concentrations can have acute health impacts, state and federal standards have been developed for ambient CO concentrations to protect the health and welfare of the general public with an adequate margin of safety. There are no currently enforced short-term health standards for NO and HC. The primary concern with these pollutants is their role in the photochemical reactions that lead to the formation of secondary pollutants known as ozone (O₃) and “smog”, which are known lung and eye irritants. Ozone and smog formation is a slow process that occurs outside the primary impact area of the project, thus these pollutants are only reviewed on a regional (mesoscale) basis for “regionally significant” projects. Because the Hyenga Lake project is not regionally significant, it is “exempt” from the EPA’s conformity rules and thus it is not required to be part of the “regional emissions analysis or part of the TIP”; therefore, a mesoscale air quality analysis is not required and all air quality impact analyses focus on local (microscale) air quality impacts and documenting compliance with the CO standards.

Land in the vicinity of the project area generally supports a mixture of residential, commercial, and industrial uses. Existing sources of air pollution in the vicinity include vehicle and engine exhaust, and emissions from commercial, and residential heating and hot water systems.

Existing Air Pollution Receptors

Potential sensitive receptors within the project vicinity include residential dwellings located approximately 1/3-mile to the north, south and west of the site.

3.3.2 Potential Impacts

There are no proposed stationary air emission sources that would be introduced by this project. Air quality impacts from construction activities were assessed along with a determination of impacts from project induced traffic.

Short-Term Construction Air Impacts

Potential short-term adverse air quality impacts that may result from the proposed project include fugitive dust and particulate matter from the project sites, and emissions from construction equipment and vehicles.

The construction of the proposed Hyenga Lake development will involve grading activities that may result in the release of fugitive dust and particulate matter from the project site. During this period, dust and particulate matter from the project site may be released into the air and carried off-site by wind. Construction-related air emissions will result from the use of diesel fuel as a source of energy for construction vehicles and equipment. Mitigation measures are proposed as a part of the project during construction to limit dispersal of particulate matter. Such increases in construction-related dust will be temporary.

In Rockland County, prevailing winds are from the northwest between October through April, and from the southwest during other months of the year.¹ Thus, Wide World of Cars, which adjoins the project site, would be affected by fugitive dust, if not properly mitigated, by grading activities conducted during summer months.

Following project construction, unvegetated areas on the site currently exposed to wind would be either developed or landscaped, thereby reducing the potential for dust generation from the project area long-term.

Long-Term Air Quality Impacts

The primary generator of air emissions from any proposed residence is the operation of passenger vehicles. Given the proposed density of the project and the projected volume of traffic, no air quality impacts are expected to result from the proposed development.

The potential impact from the project-generated traffic was evaluated using the New York State Department of Transportation (NYSDOT) Environmental Procedures Manual (EPM) Chapter 1, Section 9, Projects Needing Air Quality Analysis (January, 2001). Carbon monoxide (CO) is the primary pollutant of concern for traffic generated air emissions and is used by the NYSDOT as a screening tool since CO generally has local impacts and higher concentrations of CO are limited within a short distance of heavily traveled roadways.

According to the NYSDOT Procedures Manual, intersections with level of service (LOS) C or better, do not require air quality analysis. The signalized intersection closest to the project site was examined site as part of the traffic analysis, as listed below:

- Pipetown Hill Road and Pascack Road

No signalized intersections in the project vicinity were identified as having a level of service D. Therefore, no further evaluation was necessary, according to the NYSDOT Procedures Manual, to determine the need for a microscale air quality analysis. The screening criteria are as follows:

- 10 percent or more reduction in the source-receptor distance;
- 10 percent or more increase in traffic volume on affected roadways between the No Build and Build scenarios;
- 10 percent or more increase in vehicle emissions;
- Any increase in the number of queued lanes; and,
- 20 percent reduction in speed.

Evaluation of the projected traffic and the criteria above indicates the proposed project will not exceed any of the criteria for further CO micro-scale air quality analysis. Therefore, a microscale air quality analysis is not required, as it is not anticipated that the ambient air quality standards would be exceeded based on the screening analysis.

All other intersections involved in the project area will be stop sign controlled. The NYSDOT EPM states: *"It is not expected that intersections in a build alternative controlled by stop signs will require an air quality analysis"*. Thus, while some nonsignalized intersections may have a Build level of service lower than "C", the screening analysis concludes that traffic volumes associated with stop sign controlled intersections are not sufficiently high to warrant

¹ US EPA Region 2 website, Ramapo Aquifer Systems, see <http://www.epa.gov/Region2/water/aquifer/ramapo/ramapo.htm>.

further CO microscale analysis. The level of CO at a stop sign controlled intersection would not exceed ambient air quality standards. This screening methodology was also confirmed in phone conversations with Jane Lao and Dr. John Zamurs, from the NYSDOT Environmental Analysis Bureau (EAB).

The primary generators of air emissions from the proposed residences include passenger vehicles, gas-powered equipment, and heating systems. Given the proposed density of the project, the projected volume of traffic, the installation of new and efficient heating systems, and proposed landscaping, no significant adverse long-term air quality impacts are expected to result from the proposed Hyenga Lake development.

3.3.3 Project Mitigation

Short-term Fugitive Dust Emissions

Construction activities on the project site may generate airborne or fugitive dust during ground clearing and excavation activities. Throughout the construction period, passage of delivery trucks and other vehicles over temporary dirt roads and other exposed soil surfaces could also generate fugitive dust. The anticipated duration of the construction period is approximately 12 to 18 months. Construction activity will be limited to the hours set forth in the Clarkstown laws. On-site mitigation measures are proposed as part of the project during construction to limit the dispersal of particular matter. No significant air quality impacts are expected to result. Specific air quality mitigation measures related to construction are discussed in Section 3.10 Construction Impacts.

3.4 Impact on Vegetation and Wildlife

3.4.1 Existing Conditions - Vegetation

Regional Context

The approximately 12.4 acre project site is located in the unincorporated southwestern portion of the Town of Clarkstown, Rockland County. There were formerly multiple bungalow residences on the project site and some of those bungalows still exist and remain in use. An aerial photograph of the project site and surrounding area is provided in Figure 3.4-1. As shown in the figure, the primary land uses abutting the property are medium density, urban residential (single family and multi-family properties) and commercial developments, including strip commercial malls.

The site includes both the residential bungalow community described above as well as the watercourse of the Pascack Brook and small portions of undeveloped land that border this watercourse. The bordering land about the brook include steep, forested lands to the south and west of the brook and portions of a riparian floodplain and elevated wetland to the north of the brook. The floodplain and the wetlands exist in an area of lakebed that became exposed after the historic Hyenga Lake became drained subsequent to the breaching of Hyenga Lake Dam, as a result of tropical storm Floyd in 1999.

Vegetation

An environmental analysis has been conducted by the Rockland County Drainage Agency (RCDA) for the Pascack Brook (Appendix G). The assessment classified the ecological community through which the brook is flowing as "highly disturbed," both reflective of the medium density residential development of the area as well as the erodible and unstable banks that were created after the loss of the Hyenga Lake Dam.

The RCDA report assessed both the forested vegetation on the southwestern slopes of the property along Pipetown Hill Road, and the colonizing shrub and scrub forest that is developing on the exposed sediments that have remained behind after the draining of Hyenga Lake. The eastern slopes of the property have a well established northern hardwood forest that is dominated by red maple, although no native habitat is present as the area has been disturbed by adjoining residential developments. Other trees and shrubs observed in this area during a site visit by Tim Miller Associates in February, 2006, included beech, red and white oaks, American elm, slippery elm, pignut hickory, tuliptree, catalpa, Japanese barberry, brambles, red-osier dogwood and spicebush, however none of these species were observed in large numbers.

There are no native habitats in the areas of the exposed lake bottom on the eastern side of the brook, and this area is being colonized largely by adventitious or undesirable invasive species such as tree-of-heaven, sycamore, sumacs, princess-tree (Paulownia), willows, poplars, autumn olive and Japanese knotweed.

Protected Plant Communities and Rare or Unusual Plant Species

Correspondence has been sent to the New York State Department of Environmental Conservation (NYS DEC) Natural Heritage Program (NHP) requesting a database search for known occurrences of rare or unusual species or habitats on this property. The NHP database identifies historical findings for protected plant communities and state-listed plant (and animal) species within the vicinity of a project site. Given the very lengthy period of time since many NHP recorded sightings (that often date to the 1800's) and the fact that many urban sites such as the Hyenga Lake site have been recently and repeatedly disturbed for residential or commercial uses, many historically recorded species are not likely to occur on urban sites. The existing environmental conditions of many modern day sites do not closely match the habitat preferences of many historically recorded species.

A reply correspondence from the NYS DEC NHP dated February 15, 2006 (in Appendix A), indicates the NHP has "no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of" the Hyenga Lake site.

The U.S. Fish and Wildlife Service (FWS) has also been requested to perform a database search to determine whether any known occurrence of federally-listed rare, threatened, endangered species or protected habitats are or could be located within the project vicinity and the data from their office is pending. A letter dated March 14, 2006 from the FWS in response to the database search request indicated that "Except for occasional transient individuals, no Federally-listed or proposed endangered or threatened species under our jurisdiction are known to exist within the project impact area. In addition no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act. Therefore, no further ESA coordination or consultation with the U.S. Fish and Wildlife Service is required." A copy of the March 14, 2006 letter is contained in Appendix A.

3.4.2 Existing Conditions - Wildlife

Known and Potential Wildlife Species

A variety of small terrestrial animals would be expected to utilize the project site including rabbits, raccoons, squirrels, chipmunks, woodchucks and opossums. Deer might also infrequently utilize the property. The larger trees and dead tree trunks on this site may also offer cavity habitats for species such as owls, nesting songbirds and small mammals.

Pascack Brook as it crosses the site is approximately four feet wide with a predominantly rocky bottom. The stream flows onto the site from adjacent urban lands of the Village of Spring Valley. The stream does not support any fish species, but may support some small aquatic invertebrate species .

Table 3.4-1 provides a list of wildlife species common to the area that could reasonably be expected to utilize the site. This list identifies common species that are likely to utilize the habitat types available at the project site. It is noted that this list is not limited to actual observations at the site, but is a compilation of observations that have occurred throughout Rockland County in similar habitat conditions.

Table 3.4-1 Potential Wildlife on the Hyenga Lake Site			
Common Name	Scientific Name	Common Name	Scientific Name
Mammals		Birds	
White-tail deer	<i>Odocoileus virginianus</i>	Wild turkey	<i>Meleagris gallopavo</i>
Cottontail rabbit	<i>Sylvilagus floridanus</i>	Ruffed grouse	<i>Bonasa umbellus</i>
Raccoon	<i>Procyon lotor</i>	Wood thrush	<i>Hylocichla mustelina</i>
Red fox	<i>Vulpes vulpes</i>	Wren	<i>Troglodytes</i> spp.
Coyote	<i>Canis latrans</i>	Hairy woodpecker	<i>Picoides villosus</i>
Opossum	<i>Didelphis virginiana</i>	Downy woodpecker	<i>Picoides pubescens</i>
Eastern chipmunk	<i>Eutamias striatus</i>	Yellow shafted flicker	<i>Colaptes auratus</i>
Gray squirrel	<i>Sciurus carolinensis</i>	Ovenbird	<i>Seiurus americanus</i>
Striped skunk	<i>Mephitis mephitis</i>	Yellow-billed cuckoo	<i>Coccyzus americanus</i>
White-footed mouse	<i>Peromyscus leucopus</i>	Red-tailed hawk	<i>Buteo jamaicensis</i>
Deer mouse	<i>Peromyscus maniculatus</i>	American robin	<i>Turdus migratorius</i>
Woodchuck	<i>Marmota monax</i>	Catbird	<i>Dumetella carolinensis</i>
Short-tailed shrew	<i>Blarina brevicauda</i>	Mockingbird	<i>Mimus polyglottos</i>
Common shrew	<i>Sorex cinereus</i>	Flycatchers	<i>Empidonax</i> spp.
Star-nosed mole	<i>Codylura cristata</i>	Eastern phoebe	<i>Sayornis phoebe</i>
Eastern mole	<i>Scalopus aquaticus</i>	American redstart	<i>Setophaga ruticella</i>
Little brown bat	<i>Myotis lucifugus</i>	Red-eyed vireo	<i>Vireo olivaceus</i>
Red bat	<i>Lasiurus borealis</i>	Crow	<i>Corvus brachyrhynchos</i>
		Blue jay	<i>Cyanocitta cristata</i>
		Scarlet tanager	<i>Piranga olivacea</i>
Reptiles		Cardinal	<i>Cardinalis cardinalis</i>
Garter snake	<i>Thamnophis sirtalis</i>	Chipping sparrow	<i>Spizella passerina</i>
Eastern racer	<i>Coluber constrictor</i>	Towhee	<i>Pipilo erythrophthalmus</i>
Ringneck snake	<i>Diadophis punctatus</i>	Junco	<i>Junco hyemalis</i>
Milk snake	<i>Lampropeltis triangulum</i>	Mourning dove	<i>Zenaida macroura</i>
Hognose snake	<i>Heterodon pletyrhinos</i>	Chickadee	<i>Parus</i> spp.
Brown snake	<i>Storeria dekayi</i>	Nuthatch	<i>Sitta</i> spp.
		Turkey vulture	<i>Cathartes aura</i>
Amphibians		Eastern screech owl	<i>Otus asio</i>
American toad	<i>Bufo americanus</i>	American goldfinch	<i>Carduelis tristis</i>
Gray treefrog	<i>Hyla versicolor</i>		
Spring peeper	<i>Pseudocris crucifer</i>		

This list represents many species that could potentially inhabit this site. It is not, however, an exhaustive list, particularly relative to migratory bird species.
Source: Tim Miller Associates, Inc., 2006.

3.4.3 Potential Impacts

The proposed project would result in limited impacts to existing ecological habitat on the project site as most of the disturbance would occur in areas already disturbed for the former bungalow colony.

The proposed project would temporarily or permanently displace species residing within the area of disturbance during construction. Approximately 7.2 acres, or 59 percent of the approximately 12.4 acre site, would be outside of the area of disturbance and would be retained as woodland, stream and freshwater wetland habitat in its existing condition.

After development, the lawns and landscaped areas would be used as urban habitat by some wildlife, and many species of trees and shrubs that may be chosen for the proposed landscaping will provide food, shelter and nesting sites for some songbirds and other small wildlife species.

The composition of the wildlife population on the project site may be altered immediately adjacent to developed areas, as species able to adapt to a suburban environment (such as raccoons, opossum, woodchucks, mice, songbirds, etc.) would have a greater ecological advantage to species that are less tolerant of human activity.

The proposed project would preclude future use of the developed portions of the property by some wildlife species. However the site is presently developed for residential use and is situated within a medium density urban environment, thus, any wildlife displaced during the construction of the project would be of species tolerant of the existing conditions and would be considered likely to repopulate the site after the site has been redeveloped.

Presently, the site is not known to provide habitat for any wildlife species listed as endangered or threatened by the NYS DEC (see February 15, 2006 letter in Appendix A). Therefore, no significant adverse impacts to protected wildlife species are anticipated and no sensitive species are expected to be impacted. All existing open spaces would be retained, thus impacts to wildlife resources are not considered significant in scale as a result of this project.

The proposed project would not impact existing parkland as it is not directly adjacent to any designated parkland nor would it impact or disturb the forested areas on the southwestern portion of the site that is to remain as "usable open space." This will remain as a limited narrow vegetative corridor of open space on the south side of the Hyenga Lake development.

The brook corridor may provide limited habitat for small fishes, frogs and invertebrates, however, the stream has been altered and channeled in areas both upstream and downstream of the project site, and thus does not represent a significant natural corridor for aquatic animals.

Downstream of the former dam, the brook is channelized through rip rap protected embankments that provide no native habitat for wildlife or plants. Upstream portions of the brook on the site had no visible vegetative habitat and no resident fish, amphibians or crayfish and only very few species of macroinvertebrates observed. It is expected that some small minnow species of fish as well as low numbers of amphibians and crayfish and higher densities of dipteran (midge and black fly) species may occupy the stream. But there were no significant areas observed that would provide habitat for larger aquatic life, and therefore the stream was assessed to be of low overall value to fish and wildlife.

The NYS DEC last conducted a fisheries survey in Pascack Brook in 1977 when lower portions of the brook as it approaches the New Jersey border were electrofished. During that survey, only white sucker and two dace species were collected and the brook was characterized for its entire length as a small, warmwater brook that probably goes dry on a seasonal basis in some reaches. At that time, the brook was not included in the trout stocking program of the NYS DEC. Presently, small numbers of both rainbow and brown trout yearlings are stocked into a lower 0.9 mile reach of the brook in Orangetown during annual statewide springtime trout stockings conducted by the DEC in March and April.

With the completion of the proposed stream improvements cited above, and the protections provided by the available open space and the preservation of the ACOE wetlands on the site, no significant adverse impacts to plants or animals are expected to result from the proposed project

Lawn and Landscaping Maintenance

The proposed project would introduce 80 multi-family dwellings to the project site. In order to maintain lawns and landscaping, owners may apply pesticides to these areas or contract for such services. Federal law requires that for any pesticide sold or distributed in the United States, a registration or a license from the US Environmental Protection Agency (EPA) must be obtained from the person or company distributing the product. To obtain a registration for a new pesticide or a new use for a registered pesticide, EPA requires that a project sponsor demonstrate that the pesticide, when used according to label directions, can be used with a reasonable certainty of no harm to human health and without posing unreasonable risks to the environment. Management of the project by a Homeowners Association or as an apartment complex would be expected to result in the contracting of a professional landscaping firm to conduct grounds keeping services. The use of such a firm would ensure that applications of fertilizers and pesticides were conducted by licensed individuals in accordance with state regulations.

When applied in accordance with label directions, as required for New York State licensed commercial pesticide applicators, many contemporary pesticides will either break down after application and otherwise will not enter runoff to surface waters to any great extent. Based upon the pre-treatment of stormwater flows provided by provisions of the project SWPPP, and the low usage levels anticipated for these substances, no impacts to waterbodies, watercourses or wetlands are anticipated.

3.4.4 Project Mitigation

To reduce potential impacts to the on-site wetland habitat that would remain undisturbed, as well as to protect off-site undisturbed natural areas, the following two state-mandated mitigation programs are proposed to reduce the potential for soil erosion and sedimentation to these areas. The stormwater management system is designed to ensure that the existing water quality of the stream that flows through the site is not degraded.

- Erosion and sediment controls would be utilized throughout the construction phase of the project until all disturbed area are fully developed or soils have been stabilized through vegetation plantings or other means. These measures are presented in greater detail Chapter 3.2 of this DEIS and illustrated in the full size Erosion and Sediment Control Plan in the rear of this document.
- Introduction of a stormwater management system that would provided first flush water quality treatment and would meet the criteria of the New York State general permit for stormwater discharge from a residential development.

Landscaped habitats to be created throughout the final development, although not as valuable as natural undisturbed habitat, would provide some benefit to those wildlife species that can adapt to suburban environments. Through the use of a mixture of ornamental and native landscaping plants, many of the landscaping selections would include plants that provide a certain degree of wildlife value such as food, shelter and nesting opportunities. Typical landscape plantings are likely to include those species included in Table 3.4-2 or similar selections.

Table 3.4-2 Regional Upland Condition Landscaping Plantings	
Trees	Shrubs
Deciduous Trees - Major	Deciduous Shrubs
Horse chestnut (<i>Aesculus hippocastanum</i>)	Bottlebrush buckeye (<i>Aesculus parviflora</i>)
Red maple (<i>Acer rubrum</i>)	Oak leaf hydrangea (<i>Hydrangea quercifolia</i>)
American beech (<i>Fagus grandifolia</i>)	Common witchhazel (<i>Hamamelis virginiana</i>)
White oak (<i>Quercus alba</i>)	Staghorn sumac (<i>Rhus typhina</i>)
Red oak (<i>Quercus rubra</i>)	Red-osier dogwood (<i>Cornus stolonifera</i>)
Little leaf linden (<i>Tilia cordata</i>)	Sweetfern (<i>Comptonia peregrina</i>)
American elm (<i>Ulmus americana</i>)	Winterberry (<i>Ilex verticillata</i>)
Deciduous Trees - Minor	Beautybush (<i>Kolkwitzia amabilis</i>)
Shadblow (<i>Amelanchier canadensis</i>)	Northern bayberry (<i>Myrica pennsylvanica</i>)
Paperbark birch (<i>Betula papyrifera</i>)	Viburnum (<i>Viburnum</i> spp.)
Flowering dogwood (<i>Cornus florida</i>)	Elderberry (<i>Sambucus</i> spp.)
Crabapple (<i>Malus</i> spp.)	Eastern wahoo (<i>Euonymus atropurpureus</i>)
Cherry (<i>Prunus</i> spp.)	Snowberry (<i>Symphoricarpos alba</i>)
Plum (<i>Prunus</i> spp.)	Cotoneaster (<i>Cotoneaster</i> spp.)
Coniferous Trees	Evergreen shrubs
White fir (<i>Abies concolor</i>)	Rosebay rhododendron (<i>Rhododendron maximum</i>)
Colorado spruce (<i>Picea pungens</i>)	White rhododendron (<i>Rhododendron album</i>)
Norway spruce (<i>Picea abies</i>)	Leatherleaf viburnum (<i>Viburnum rhytidophyllum</i>)
Douglas fir (<i>Pseudotsuga mensiesii</i>)	Inkberry (<i>Ilex glabra</i>)
White pine (<i>Pinus strobus</i>)	Virginia red cedar (<i>Juniperus virginiana</i>)
Red pine (<i>Pinus resinosa</i>)	Mountain laurel (<i>Kalmia latifolia</i>)
SOURCE: Tim Miller Associates, Inc., 2006.	

The RCDA bioassessment report (Appendix G) for the stream corridor makes the following recommendations in order to reduce the impact of soil erosion into the brook and to improve the existing brookside habitat for wildlife:

- remove existing invasive exotic plant species that are colonizing the disturbed areas of the former lake bed;
- re-grade remaining disturbed areas on the site and especially along the streambanks;
- use native varieties of grasses and shrubs to vegetate the re-graded areas in order to provide a more natural streambank habitat;
- stabilize other additional sections of the streambank with stone rip rap, similar to the stabilization provided in areas below the former dam.

Significant elements of the proposed project are within the review of Town departments, agencies, and commissions. The erosion control plan for the project will be filed with the Town for review by the Department of Environmental Control. All elements of landscaping and specimen tree preservation for the project will be reviewed by the Town's Architecture and Landscape Commission. For all landscape plantings, a written one-year guarantee will be provided to ensure that if any planting dies, or is likely to die, will be replaced within the guarantee period, as a condition of the issuance of certificate of occupancies by the building inspector.

The project also includes a conservation of 4.2 acres of open space that will encompass all woodlands on the property to the southwest of Pascack Brook and all of the streambank areas to the east of the brook that are not already within the protected area of the ACOE wetland. An estimated 7.2 acres, or 59 percent of the approximately 12.4 acre site, would be outside of the

area of disturbance and would be retained as woodland, stream and freshwater wetland habitat in its existing condition as shown on the Preliminary Site Development Plan (Figure 2-3).



Legend

 Project Site

Figure 3.4-1: Aerial Map
Hyenga Lake

Town of Clarkstown, Rockland County, New York
Base: USGS 7.5-minute Topographic Map, Park Ridge Quad
Scale: 1 inch = 2,000 feet

 **Subject 2**

FS EQ: 05220_HyengaLake/
GIS/Site_Location
JS/05220 11/01/06

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3.5 Impact on Historic and Archaeological Resources

3.5.1 Existing Conditions

Section 14.09 of the New York State Historic Preservation Act of 1980 act establishes a review process for State agency activities affecting historic or cultural properties, requiring State agencies to consult with the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP) prior to approving a project. If a project requires any permits or is receiving funding/grants or any other approvals from State agencies, review by OPRHP is required. This project is subject to New York State Department of Environmental Conservation review and approval thus it must follow the criteria determined by OPRHP for cultural resource management, as set forth in the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State". These standards were developed by the New York Archaeological Council and adopted by the Office of Parks, Recreation and Historical Preservation to ensure uniformity in the review of cultural material in New York State. Cultural Resource Management investigations are divided into three levels of assessment, called Phase I, II and III. A project may receive OPRHP approval after the completion of any of these phases by a qualified archaeologist, based on the determination that the project site has undergone sufficient investigation to eliminate the probability of significant artifacts being recovered within the area of potential effect. A Phase I investigation is subdivided into a Phase IA and Phase IB. The Phase IA consists of a Literature Review and Sensitivity Assessment, which entails the following:

- 1) a review of pertinent published historic material pertaining to this portion of the Town;
- 2) a search of the historical or archeological site files of the New York Museum and the New York Historic Preservation Office to identify documented cultural resources located on or adjacent to the property, and;
- 3) a reconnaissance of the parcel to identify areas of greater and lesser potential for containing buried cultural remains, and to note areas where serious prior disturbance to upper soils may have eliminated such potential, and to photodocument any potentially affected standing structures over 50 years of age.

For any sensitive area that will potentially be disturbed by the proposed action, a Phase IB Field Investigation is conducted, which involves a systematic, on-site field inspection to verify the presence or absence of archaeological or historic artifacts. The most common method for conducting a Phase IB is systematic subsurface testing, which requires the excavation of small test pits at fixed intervals throughout the project site. The soil from these pits is examined for buried cultural remains. Significant findings can trigger the requirement for more extensive investigation via a Phase II or Phase III investigation. However, mitigation or avoidance of that portion of the site where remains are known or suspected may be accepted by OPRHP and allow the modified project to continue.

OPRHP guidelines do not require testing in areas with previously disturbed soils, steep slopes of 12% or greater, or poorly drained soils, as they are not considered to likely produce intact cultural resources.

3.5.2 Potential Impacts

The Phase IA Literature Review and Sensitivity Analysis was conducted on the project parcel in February 2006, by CityScape: Cultural Resource Consultants, and is summarized below. This study is included in Appendix H.

Project Site

The Hyenga Lake project site is approximately 12.4 acres and located along South Central Avenue and Pipetown Hill Road in Clarkstown, Rockland County, New York. A cluster of small structures are located in the northern portion of the project site. A stream, the Pascack Brook, flows across the center of the property and feeds into a 1.64 acre U.S. Army Corps of Engineer (ACOE) wetland.

A site walk was conducted and the remains of several structures were observed on the site. This includes the remains of a stone and mortar structure and both a cinderblock and fieldstone foundation.

Bedrock was observed on site, although no rock outcrops large enough to be used as rock shelters nor veins of lithic resources, which might have been a resource used by prehistoric people, were observed.

Prehistoric Sensitivity

According to the New York State Museum files, professional surveys and excavations in the Town of Clarkstown and the surrounding area indicate the presence of prehistoric sites in the vicinity of the project area. One professionally excavated site located approximately one mile to the south of the project contained lithic debitage. Another site, located approximately one and a half mile to the south yielded a utilized chert flake. A third site, the Quarry Glen Rock shelter site, is located approximately two miles to the west and is reported to contain a rock shelter and quarry site.

The potential for the presence of prehistoric sites to be located on the Hyenga Lake property is further increased by the presence of the on-site stream and floral and fauna resources, which would have been utilized by early populations.

Historic Sensitivity

Historic maps maintained by the New York State Museum were researched and indicate that one historic National Register property, the Spring Valley Post Office, is located approximately one half mile from the project site. The post office does not have a view of the project site.

Several historic structures were documented as having been located within the boundaries of the project site and the remains of several foundations were identified during the site walk. Additionally, historic structures were located just outside the project area, and a potential for dump sites or middens on the property is considered to be extremely high.

Conclusions and Recommendations

Based on the presence of the on-site stream and existence of prehistoric sites identified in the project vicinity, there is a potential for prehistoric archaeological remains to be located in the flatter, better-drained areas of the project site. Additionally, the site has a high potential for containing middens associated with the structures that were located on and near the site. Thus, a Phase IB Archaeological Field Reconnaissance Survey was recommended for the Hyenga Lake site to determine if such resources are actually located on the site.

This Phase IB field investigation of the proposed development site was carried out in June and July of 2006, by Columbia Heritage, Ltd. Under good to excellent field conditions. A copy of the Phase 1B report, dated July 2006, is included in Appendix H.

Systematic archaeological sampling of the flatter, better drained portions of the study area encountered no cultural material pertaining to the Native American occupation of the region. A sparse scatter of twentieth century items was recovered in shovel testing, consisting largely of domestic refuse and iron objects associated with construction and machines. This material, along with previously undocumented structural remains in the northwestern portion of the project area, appears to have been associated with the recreational use of the property during the middle decades of the twentieth century.

3.5.3 Project Mitigation

Based upon the findings of the archaeological sampling as described, proposed development may be seen to have no effect on cultural resources and consequently no further cultural resource investigation is recommended.

3.6 Impact on Transportation

3.6.1 Introduction

The Hyenga Lake project proposes 80 multifamily residential dwellings. The project site is located on Pipetown Hill Road, south of NYS Route 59, between South Central Avenue and Pascack Road in the Town of Clarkstown, Rockland County, New York. The regional transportation network is shown in Figure 3.6-1. A traffic study of the proposed Hyenga Lake Project, including the cumulative effects associated with this proposal and other development in the area was conducted by John Collins Engineers, P.C., dated April 25, 2007, and is included as Appendix I. A summary of the John Collins Engineers Traffic Study is provided below.

The traffic study investigated three existing and one proposed intersection in proximity to the proposed development. Previous traffic counts in the area were collected during August 2003, May 2004 and May 2006. These volume counts were updated with new counts on March 13 & 14 and April 11 & 12 of 2007. Weekday peak hours were identified as 7:45 a.m. to 8:45 a.m. and 4:45 p.m. to 5:45 p.m.. Figure 3.6-2 shows the location of the intersections examined, which are as follows:

- Pipetown Hill Road and Pascack Road - signalized
- Pipetown Hill Road and South Central Avenue - signalized
- Pascack Road and Forman Drive - signalized
- Pipetown Hill Road and the proposed site access - unsignalized

In order to assess the impacts of the proposed project, manual turning movement counts were taken during the morning and evening peak hour traffic periods.

Peak hour vehicle delays were calculated to establish the quality of operation (level of service) at intersection approach lanes under the existing conditions. Future conditions without the project and future conditions with the project were also analyzed. The project can be expected to generate approximately 43 vehicular trips in the weekday AM peak hour, and 62 vehicular trips in the PM peak hour. Upon completion of the project, all traffic movements will operate a level of service D or better. There is no change to the level of service at the signalized intersection of Pipetown Hill Road and Pascack Road as a result of construction of the Hyenga Lake project. Upon completion of the project, Pipetown Hill Road at the location of the site access will continue to operate at the most efficient level of service A.

3.6.2 Existing Conditions

The Highway Capacity Manual (National Academy of Sciences, Transportation Research Board, National Research Council, Washington, DC, 2000) procedures document the methodologies used for modeling levels of service, and average vehicle delay at both signalized and unsignalized intersections. Level of service is a measure of the operational quality of an intersection; level of service A is the highest, most efficient level, and level of service F is the lowest level. The operational quality of an intersection is based on the average amount of time a vehicle is delayed. Levels of service are examined by lane group, the set of lanes allowing common movement(s) on an approach.

The New York State Department of Transportation policy (Highway Design Manual, NYS DOT, Section 5.2.3.3, Nov. 2003) requires capacity analysis methodologies consistent with Highway Capacity Manual. The Highway Capacity Manual serves as the basis for all level of service computations in the *Highway Capacity Software* (McTrans Center, University of Florida, Gainesville, Florida, 2005).

Table 3.6-1 presents the levels of service criteria for unsignalized intersections.

Table 3.6-1 Unsignalized Intersections Level of Service Criteria	
Level of Service	Average Control Delay (Seconds Per Vehicle)
A	less than or equal to 10
B	greater than 10 and less than or equal to 15
C	greater than 15 and less than or equal to 25
D	greater than 25 and less than or equal to 35
E	greater than 35 and less than or equal to 50
F	greater than 50

SOURCE: Highway Capacity Manual, National Academy of Sciences, Transportation Research Board, National Research Council, Washington, DC, 2000.

Table 3.6-2 presents the levels of service criteria for signalized intersections. The New York State Department of Transportation (NYS DOT) generally seeks a minimum level of service D (delay of 55 seconds or less for a signalized intersection) for all lane groups. The NYS DOT's Highway Design Manual notes, "In some cases, it may be necessary to accept LOS (levels of service) E or F on individual lane groups due to unreasonable costs or impacts associated with improving the level of service."

Table 3.6-2 Signalized Intersections Level of Service Criteria	
Level of Service	Average Control Delay (Seconds Per Vehicle)
A	less than or equal to 10
B	greater than 10 and less than or equal to 20
C	greater than 20 and less than or equal to 35
D	greater than 35 and less than or equal to 55
E	greater than 55 and less than or equal to 80
F	greater than 80

SOURCE: *Highway Capacity Manual*, National Academy of Sciences, Transportation Research Board, National Research Council, Washington, DC, 2000.

The *Highway Capacity Software* model results apply to peak hour periods only and do not represent every minute of traffic operations. During off peak periods, which is the majority of the time, drivers typically will find operations better than the modeled peak hour results. During peak periods the experience of individual drivers can vary, because the model calculates average vehicle delay.

Peak 15 minute traffic flows typically do not all occur in the same 15 minute period in the peak hour. The traffic model does not always account for the ability of the traffic signal to compensate for shifting traffic volumes and thus may overestimate delay. For unsignalized intersections, the model conservatively assumes peak approach volumes occur simultaneously.

Existing Roadway Network

As previously noted, the proposed residential development would be located south of the NYS Thruway in the vicinity of Exit 14, on Pipetown Hill Road between South Central Avenue and Pascack Road. A description of the local roadway system is provided below.

- **New York State Thruway I-87/I-287** is a roadway under the jurisdiction of the NYS DOT. In the vicinity of the site, the I-287/87 roadway traverses in a east-west direction. In this area Interstate 287/87 provides a six-lane limited access divided highway which crosses southern Rockland County from the Tappan Zee Bridge west to Suffern, where the roadway splits. I-87 is a six-lane divided interstate highway, travels north providing access in eastern New York through to Albany. From Suffern I-287 continues south into New Jersey. This roadway is operated and maintained by the New York State Thruway Authority. The speed limit on the New York State Thruway in this area is 55 miles per hour.
- **New York State Route 59** is a roadway under jurisdiction of the NYS DOT. In the site vicinity, the roadway traverses in a east-west direction. The roadway originates to the east at a New York State Route 9W. From this point, the roadway generally traverses in an westerly direction through the Town of Clarkstown toward Suffern where it connects to NYS Route 17. This roadway parallels the NYS Thruway providing local and commercial access to the area. The speed limit is 45 miles per hour.

- **Pipetown Hill Road** is a two way town maintained roadway with a single travel lane in each direction. Pipetown Hill Road connects South Central Avenue to Pascack Road providing residential access to the to the multifamily developments in the area. The posted speed limit is 30 mph.
- **Pascack Road** is County Road 35 south of Route 59 and with a single travel lane in each direction. Pascack Road runs north-south and provides residential access from Spring Valley to Nanuet. Direct access to NYS Route 59 is not available from the east end of Pipetown Hill Road via Pascack Road. The posted speed limit is 30 mph.
- **South Central Avenue**, is County Road 37 south of NYS Route 59 with a single travel lane in each direction. Access from NY Route 59 to Pipetown Hill Road is via a signalized intersection with South Central Avenue. The posted speed limit is 30 mph.

A summary of the capacity analysis for study intersections under Existing Conditions is provided in Table 3.6-3. All movements operate at Level of Service D or better under existing conditions, with the exception of the intersection of Pipetown Hill Road and South Central Avenue which is operating beyond capacity under Existing Conditions. Existing peak hour traffic volumes are shown in Figures 2 and 3 of the Traffic Impact Study included as Appendix I.

Table 3.6-3 Existing Conditions - Level of Service Summary							
Intersection Roads	Lane Group (Approach Direction -Movement)	AM Peak Hour			PM Peak Hour		
		Vehicle/ Capacity	Delay seconds/ vehicle	Level of Service	Vehicle/ Capacity	Delay seconds/ vehicle	Level of Service
Pipetown Hill Road & Pascack Road							
<i>Pascack Road</i>	<i>NB - L</i>	0.61	16.7	B	0.81	24.1	C
	<i>NB - T</i>	0.39	19.2	B	0.91	45.7	D
	<i>SB - T,R</i>	0.83	31.9	C	0.81	34.0	C
<i>Pipetown Hill Road</i>	<i>EB - L</i>	0.22	22.8	C	0.73	45.7	D
	<i>EB - R</i>	0.64	19.3	B	0.60	15.4	B
	<i>Overall</i>		23.8	C		31.5	C
Pipetown Hill Road & South Central Avenue							
<i>South Central Avenue</i>	<i>NB - T,R</i>	0.88	40.7	D	1.09	87.5	F
	<i>SB - L</i>	0.84	45.2	D	1.11	110.5	F
	<i>SB - T</i>	0.28	11.5	B	0.15	10.4	B
<i>Pipetown Hill Road</i>	<i>WB - L</i>	0.39	16.7	B	0.68	22.7	C
	<i>WB - R</i>	0.23	14.9	B	0.46	18.0	B
	<i>Overall</i>		28.9	C		57.1	E
Forman Drive & Pascack Road							
	<i>NB - T,R</i>	0.53	13.8	B	0.95	37.5	D
	<i>SB - L</i>	0.36	11.2	B	0.40	17.6	B
	<i>SB - T</i>	0.57	7.8	A	0.53	7.3	A
	<i>WB - L</i>	0.21	30.4	C	0.47	32.8	C
	<i>WB - R</i>	0.28	21.7	C	0.75	31.9	C
	<i>Overall</i>		12.3	B		26.0	C
Level of Service (see page 5 in the Traffic Report, Appendix I for level of service criteria).							
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound							
L = left, R = right, T = through, TR = through and right, (e.g. WB-L = Westbound left).							
<i>Italics indicates signalized intersection.</i>							

3.6.3 No-Build Conditions

The No-Build traffic volumes represent the traffic condition in the year the proposed multifamily residential development will be entirely occupied. Construction is anticipated to take 12-18 months. A regional growth rate of two percent per year for two years was added to the existing conditions to project future no-build conditions.

The Town of Clarkstown Planning Department and the Village of Spring Valley Building Department were contacted with regard to projects proposed in the immediate vicinity of Hyenga Lake. In the Town of Clarkstown the Rockland County Highway Department facility is to be located on Pascack Road, south of Pipetown Hill Road. A review of the location of the pending Rockland County Highway Department complex indicated distribution of the traffic from this facility would add only minimal traffic to Pipetown Hill Road and this traffic would be accounted for in the four percent regional growth factor. It is also anticipated that the peak hours of operation would occur outside the peak hour of traffic operation along Pipetown Hill Road. The level of service analysis for the intersection of Pascack Drive and Forman Drive indicate there is capacity available at this intersection.

The Village of Spring Valley Building Department personnel indicated the Wide World Auto Site Plan is pending before the Village. This project is an update of the existing facility and is not expected to generate additional traffic. Trips generated from this facility would likely use NYS Route 59 and would have little or no impact on Pipetown Hill Road. A new gas station is being constructed at the intersection of NYS Route 59 and Dutch Lane. Traffic from this use will be predominantly pass-by traffic already traveling along Route 59. There are no other projects in the Village which would affect the traffic in the project area.

A summary of the capacity analysis for study intersections under No-Build conditions is provided in Table 3.6-4. There is no change to the operating level of service under No-Build conditions. The intersection of Pipetown Hill Road and South Central Avenue continues to operating poorly. . No-Build peak hour traffic volumes are shown in Figures 4 and 5 of the Traffic Impact Study included as Appendix I.

Table 3.6-4 No-Build Conditions - Level of Service Summary							
Intersection Roads	Lane Group (Approach Direction -Movement)	AM Peak Hour			PM Peak Hour		
		Vehicle/ Capacity	Delay seconds/ vehicle	Level of Service	Vehicle/ Capacity	Delay seconds/ vehicle	Level of Service
Pipetown Hill Road & Pascack Road							
<i>Pascack Road</i>	NB - L	0.65	18.5	B	0.85	28.6	C
	NB - T	0.40	19.4	B	0.95	52.4	D
	SB - T,R	0.86	34.8	C	0.84	36.6	D*
<i>Pipetown Hill Road</i>	EB - L	0.23	22.9	C	0.76	48.1	D
	EB - R	0.67	20.1	C*	0.63	16.0	B
	Overall		25.3	C		35.1	D*
Pipetown Hill Road & South Central Avenue							
<i>South Central Avenue</i>	NB - T,R	0.92	45.5	D	1.13	102.6	F
	SB - L	0.91	56.8	E	1.16	125.7	F
	SB - T	0.29	11.6	B	0.16	10.4	B
<i>Pipetown Hill Road</i>	WB - L	0.41	17.0	B	0.70	23.7	C
	WB - R	0.24	15.0	B	0.48	18.3	B
	Overall		32.6	C		64.9	E
Pipetown Hill Road & South Central Avenue - With Signal Timing Changes							
<i>South Central Avenue</i>	NB - T,R	0.68	21.5	C	0.68	21.6	C
	SB - L	0.53	13.2	B	0.54	13.3	D
	SB - T	0.23	7.0	A	0.23	7.0	A
<i>Pipetown Hill Road</i>	WB - L	0.60	28.8	C	0.61	29.3	D
	WB - R	0.21	13.3	B	0.22	13.5	B
	Overall		18.0	B		18.2	C
Forman Drive & Pascack Road							
<i>Pascack Road</i>	NB - T,R	0.56	14.1	B	1.00	50.0	D
	SB - L	0.39	11.7	B	0.44	19.4	B
	SB - T	0.59	8.1	A	0.56	7.6	A
<i>Forman Drive</i>	WB - L	0.22	30.5	C	0.49	33.0	C
	WB - R	0.30	21.8	C	0.80	34.9	C
	Overall		12.7	B		31.8	C
Level of Service (see page 5 in the Traffic Report, Appendix I for level of service criteria).							
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound							
L = left, R = right, T = through, TR = through and right, (e.g. WB-L = Westbound left).							
<i>Italics indicates signalized intersection.</i>							
<i>*Denotes a decline in level of service from the Existing Condition</i>							

3.6.4 Potential Impacts - Build Condition

The traffic study was conducted based upon the proposed project consisting of 80 multifamily residential units. The project includes construction of a new access from Pipetown Hill Road to the project site via construction of a culvert over the Pascack Creek. The proposed driveway to Pipetown Hill Road is approximately 200 feet in length as measured from the property line along Pipetown Hill Road to the parking area in front of Building “J”. A secondary access to provide emergency access will be available from NYS Route 59. This secondary access will be provided via a driveway constructed over a deeded easement granted to the Hyenga Lake Development LLC by Wide World Realty, the adjacent property owner to the north. Wide World of Cars is in the process of improving their facility including relocating and upgrading the existing access to NYS Route 59. This existing access from Route 59 will remain available until the new access has been completed. The location of the proposed Route 59 access, as shown on the Wide World of Cars site plan, has been included on the Hyenga Lake Site Plan Drawings. A reduced version of the preliminary Wide World Auto site plan is included for reference as Appendix Q. The Route 59 access driveway will be constructed, owned and maintained by Wide World Realty. A description of the easement is included in Appendix O, Title Insurance Report.

The number of vehicular trips anticipated to be generated from the proposed development was calculated using Trip Generation Rates from the Institute of Transportation Engineer’s “Trip Generation Manual” 7th Edition (see Table 3.6-5). Table 3.6-6 summarizes the anticipated Trip Generation.

Table 3.6-5 Hyenga Lake - Trip Generation Rates				
Potential Land Use and Size {ITE Code}	Trips Rates ¹			
	AM Peak Hour		PM Peak Hour	
	IN (Trips/ Unit)	OUT (Trips/ Unit)	IN (Trips/ Unit)	OUT (Trips/ Unit)
Apartment Residential Unit - 80 Units {220}	0.11	0.43	0.50	0.27

¹ Trip Generation, Institute of Transportation Engineers, 7th edition, Washington DC, 2003.

Table 3.6-6 Hyenga Lake - Trip Generation						
Land Uses (size) {ITE Code} ¹	Trips					
	AM Peak Hour			PM Peak Hour		
	IN (Trips)	OUT (Trips)	Total	IN (Trips)	OUT (Trips)	Total
Apartment Residential Unit (80) {220}	9	34	43	40	22	62

¹Trip Generation, Institute of Transportation Engineers, 7th edition, Washington DC, 2003.

Note: See Table 3.6-5 for rates.

The proposed trips for both peak hours were distributed over the project network. Figures 6 and 7 of the Traffic Report, found in Appendix I of this DEIS, show the percentage of site generated traffic distributed over the street network. The trip distribution was based on existing traffic patterns. Percentages for turning movements were derived based on the existing traffic volumes at the key intersections.

The project traffic was then added to the No-Build traffic to assess the Build traffic condition. Figures 8 and 9 in Appendix I show the site generated traffic, and Figures 10 and 11 in Appendix I show projected traffic volumes under future Build conditions. A summary of the capacity analysis for study intersections under Build conditions is provided in Table 3.6-7. There is no change to the operating level of service as a result of construction of the Hyenga Lake project. The intersection of Pipetown Hill Road and South Central Avenue continues to operating poorly, and requires signal timing modifications with or without the proposed project. Upon implementation of signal timing changes, all movements are anticipated to continue to operate at level of service D or better.

Table 3.6-7 Build Conditions - Level of Service Summary							
Intersection Roads	Lane Group (Approach Direction -Movement)	AM Peak Hour			PM Peak Hour		
		Vehicle/Capacity	Delay seconds/vehicle	Level of Service	Vehicle/Capacity	Delay seconds/vehicle	Level of Service
Pipetown Hill Road & Pascack Road							
<i>Pascack Road</i>	NB - L	0.67	19.2	B	0.89	33.0	C
	NB - T	0.40	19.4	B	0.95	52.4	D
	SB - T,R	0.87	34.9	C	0.85	37.8	D
<i>Pipetown Hill Road</i>	EB - L	0.24	23.0	C	0.77	49.5	D
	EB - R	0.69	20.9	C	0.64	16.4	B
	Overall		25.6	C		36.5	D
Pipetown Hill Road & South Central Avenue							
<i>South Central Avenue</i>	NB - T,R	0.92	45.8	D	1.14	107.0	F
	SB - L	0.92	59.1	E	1.19	139.1	F
	SB - T	0.29	11.6	B	0.16	10.4	B
<i>Pipetown Hill Road</i>	WB - L	0.42	17.1	B	0.71	23.9	C
	WB - R	0.25	15.2	B	0.49	18.5	B
	Overall		33.0	C		68.9	E
Pipetown Hill Road & South Central Avenue - With Signal Timing Changes							
<i>South Central Avenue</i>	NB - T,R	0.68	21.6	C	0.85	30.2	C
	SB - L	0.54	13.3	B	0.88	46.4	D
	SB - T	0.23	7.0	A	0.13	7.2	A
<i>Pipetown Hill Road</i>	WB - L	0.61	29.3	C	0.94	52.5	D
	WB - R	0.22	13.5	B	0.43	16.1	B
	Overall		18.2	B		34.6	C
Forman Drive & Pascack Road							
<i>Pascack Road</i>	NB - T,R	0.56	14.2	B	1.00	50.0	D
	SB - L	0.40	11.9	B	0.44	19.4	B
	SB - T	0.60	8.2	A	0.56	7.6	A
<i>Forman Drive</i>	WB - L	0.22	30.5	C	0.49	33.0	C
	WB - R	0.30	21.9	C	0.80	34.9	C
	Overall		12.7	B		31.8	C
Pipetown Hill Road & Site Access Driveway							
<i>Site Access Driveway</i>	SB - L,R	0.11	17.2	C	0.14	29.8	D
<i>Pipetown Hill Road</i>	EB - L,T	0.00	8.2	A	0.02	9.3	A
Level of Service (see page 5 in the Traffic Report, Appendix I for level of service criteria).							
NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound							
L = left, R = right, T = through, TR = through and right, (e.g. WB-L = Westbound left).							
<i>Italics indicates signalized intersection.</i>							

Traffic from Construction Activity

The proposed project will result in construction activity taking place. It is anticipated that. Upon completion of the box culvert a stabilized rough grade of the proposed site access from Pipetown Hill Road will serve as the primary access for the project during construction. Until the box culvert is complete access will be provided from NYS Route 59. It is anticipated that construction of the box culvert will be one of the first tasks accomplished in the construction process. All construction vehicles will use this access for ingress and egress. Construction vehicles and employees will park on-site at all times . Materials and equipment storage will be located on site.

Construction traffic consists primarily of construction vehicles arriving at the beginning of the construction period, trucks carrying and delivering supplies, and daily trips of construction workers. Construction workers typically arrive and depart the site prior to standard commutation peak hours Trucks delivering construction supplies would generally arrive and leave during the day.

Due to the size of the site development, construction traffic to and from the site is not expected to be excessive, as building will generally be constructed in small clusters. The heaviest volume of construction traffic is expected to occur at the beginning of the construction as site clearing and rough grading is conducted, and when asphalt and building materials are transported to the site.

Based upon engineering estimates, a total of approximately 43,200 cubic yards of material will be cut and approximately 4,200 cubic yards will be filled. The balance, or approximately 39,000 cubic yards, will be removed from the site. Excess material will be transported off-site by approximately 1,810 trucks. This represents an average of approximately 9 trucks per day during the first nine months of construction, when the majority of the grading will occur. It is anticipated that most construction trips would travel to and from the site via NYS Route 59 to South Central Avenue to Pipetown Hill Road. If necessary, a flag man will be provided to insure a smooth traffic flow on Pipetown Hill Road during construction. Excess material will be transported off site during non-peak traffic hours when additional traffic capacity is available.

3.6.5 Project Mitigation

The intersection of Pipetown Hill Road and South Central Avenue is currently operating beyond capacity and requires signal timing modifications with or without the proposed project.

Given the parameters of the project and the proposed construction measures identified, no significant adverse traffic impacts are anticipated as a result of the Hyenga Lake project .



Figure 3.6-1: Regional Transportation Network
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Base: US DOT Planimetric Map, Park Ridge Quad
 Scale: 1 inch = 2,000 feet

Subject 2

FS EQ: 05220_HyengaLake/
 GIS/Site_Location
 JS/05220 11/01/06

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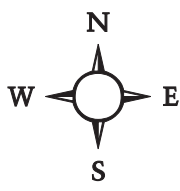
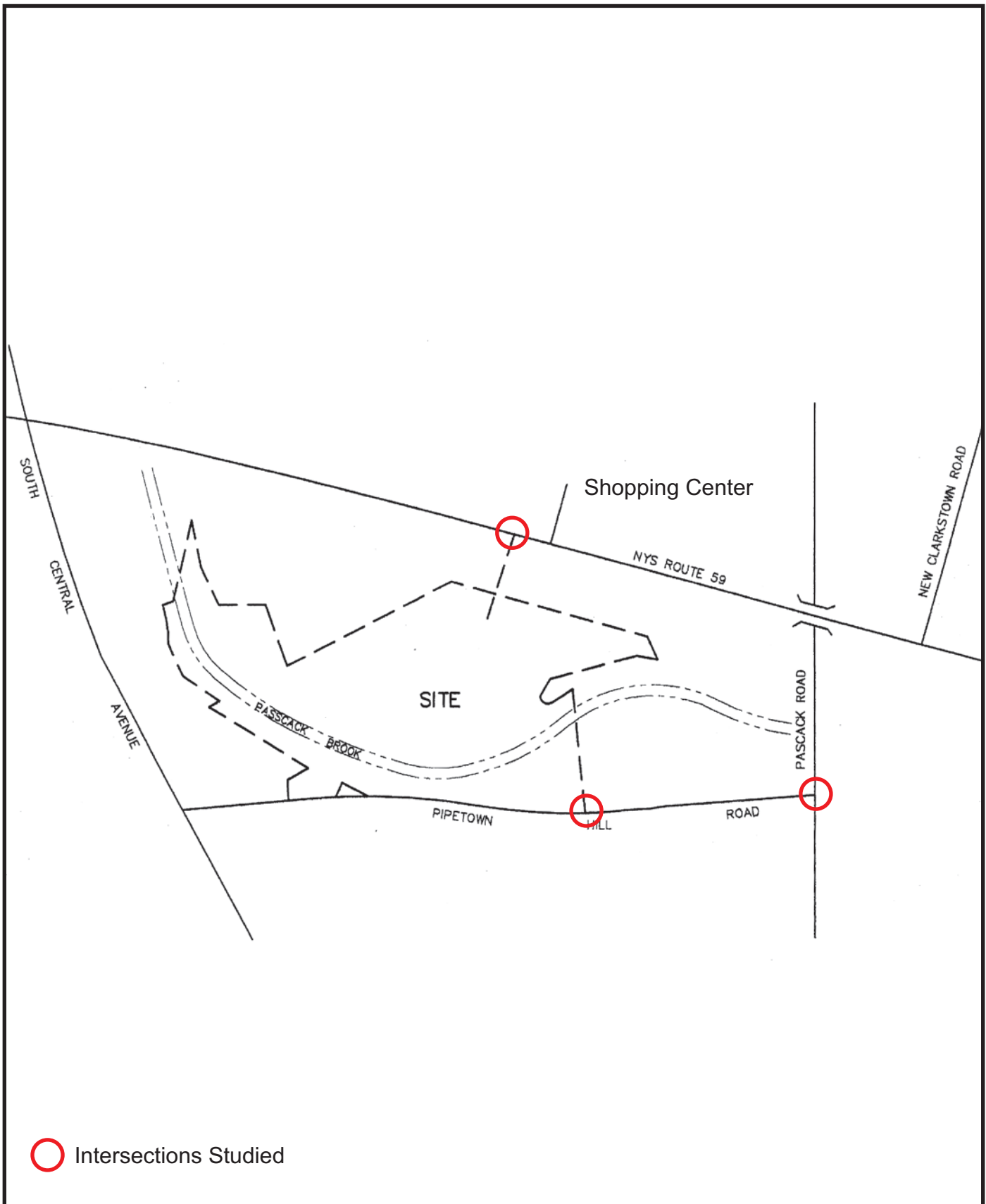


Figure 3.6-2: Intersections Studied
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: John Collins Engineers, P.C., Fig No. 1
 Scale: NTS

3.7 Impact on Energy and Utilities

3.7.1. Water Supply - Existing Conditions

The project site is currently served by United Water of New York and is located in the Central Nyack WD 011. United Water New York draws about 80 percent of its water supply from wells throughout Rockland County. The remaining 20 percent is supplied from Lake DeForest Reservoir in Clarkstown which has a capacity of 5.6 billion gallons. The treatment capacity of the water treatment plant for the reservoir is approximately 20 million gallons per day. In 2003, the average daily demand placed on the entire United Water New York system was 28.54 million gallons per day and maximum daily demand was 37.35 million gallons per day.

3.7.2 Water Supply - Potential Impacts & Mitigation

Water supply for the Hyenga Lake Development will be provided by United Water New York. Based upon projections provided by the project engineer, design estimates for a two bedroom dwelling are 110 gallons per day per bedroom. Forty (40) one-bedroom homes would consume 4,400 gallons of water per day. Forty (40) two-bedroom homes would consume 8,800 gallons of water per day. The total project is expected to consume 13,200 gallons of water per day. Sufficient water supply exists to serve the project. However, the capacity of the water treatment plant ultimately limits the ability to provide water supply. The water treatment plant for the Lake DeForest Reservoir has a 20 million gallon per day capacity. During periods of peak demand, the plant produces approximately 8 million gallons per day, leaving an excess capacity of approximately 12 million gallons per day. The 13,200 gallons per day represents less than one tenth of a percent of the excess capacity of the water treatment plant.

A copy of the site plan and a request for Willingness to Serve the Hyenga Lake project, including a commitment as to the availability of adequate water supply and water pressure, has been sent to United Water of New York, dated February 13, 2006. A copy of this request is included in Appendix A, correspondence. It is expected that adequate water supply will be available to the project. A subsequent letter dated October 26, 2006, also included in Appendix A, has been sent to the United Water to conduct an engineering review of the project and to specify their ability and intent to provide water to the residents of Hyenga Lake.

Per New York State requirements, new construction is required to utilize water saving toilets and fixtures. The proposed development will conform to these requirements. In the event of a drought situation, the residences would adhere to any water-saving measures required by Town of Clarkstown regulations.

Upon completion of the project, residents will pay a fee for water service to United Water New York. These funds will be used for the operation and maintenance of United Water New York distribution facilities.

3.7.3 Electric, Gas and Oil - Existing Conditions

Electricity and gas is provided to the project area by Orange & Rockland Utilities. Local oil distribution services are provided by a variety of local oil companies.

3.7.4 Electric, Gas and Oil - Potential Impacts & Mitigation

The 80 multi family residences are anticipated to be heated with home heating oil, electricity, or natural gas. Energy consumption will occur during construction and occupancy of the proposed residences. During construction, energy will be used for power equipment and various construction vehicles. Once construction is completed and the residences occupied, energy will be required for space heating, air conditioning, and the use of household appliances and electrical equipment. Electrical and gas service to the project site will be provided by Orange & Rockland Utilities.

Based on telephone communication on February 22, 2006, with Orange & Rockland Utilities¹, the individual residences are projected to demand an average of 750 kilowatt hours of electricity per month and an average of 125 million cubic feet (mcf) of gas per month.

Orange & Rockland Utilities does not anticipate any problems accommodating the projected electrical or gas demands created by the proposed development (conversation on February 22, 2006 with Orange & Rockland). The new residents would pay fees to the utility company for electric and gas service.

All units would comply with the New York State Energy Code and will be constructed with energy saving features, such as energy efficient air conditioning systems, energy efficient lighting fixtures and state-of-the-art-heating equipment. Bathrooms will be constructed with water saving devices such as reduced flush toilet tanks and water restrictors in shower heads. All utility lines will be underground and any connections will meet the Town Code and industry specifications.

No impact is anticipated to the supply of electricity, home heating oil or natural gas.

3.7.5 Communications - Existing Conditions

Telephone service is provided by a variety of companies including Verizon, AT&T, and Optimum Voice. Cellular telephone phone service is provided by Verizon, Cingular, and Sprint. Cable television service is provided by Cablevision including digital cable online services. Satellite television services are provided by Direct TV or Omnivision TV.

3.7.6 Communications - Potential Impacts & Mitigation

Potential impacts from the introduction of 80 additional multi family homes are expected to be minimal due to the number of competing providers for local and long distance telephone service, cellular telephone service, and cable and satellite television distribution available in the area.

No impact is anticipated to communication services.

¹ *Phone Conversation on 2/22/06 with Joe Nash of Orange & Rockland Utilities.*

3.7.7 Solid Waste Management - Existing Conditions

For multi-family dwellings, refuse is picked up by private companies contracted by the Town of Clarkstown. A Town refuse fee of approximately \$135 per unit per year is collected as part of the municipal taxes. Household garbage is picked up twice per week, recycling once per week and bulk trash is picked up once per month. Refuse is taken to a transfer station on Route 303 in West Nyack and then disposed of in approved landfills in upstate New York.

3.7.8 Solid Waste Management - Potential Impacts & Mitigation

Based on 0.00175 tons per person per day, the projected 142 persons would generate approximately 7.5 tons per month of solid waste. Of this total, the project will generate 5.6 tons per month of non-recyclable solid wastes and 1.9 tons per month of recyclables. This represents less than one tenth of a percent increase in solid waste to the Town of Clarkstown and is not expected to have a significant impact.

Based on current tax rates, an annual town refuse fee of \$135 will be collected from each multi family unit for solid waste services. The project is expected to generate \$10,800 annually in refuse taxes to offset the additional demand.

3.7.9 Wastewater - Existing Conditions

The project site is located within the Rockland County Sewer District #1. Wastewater is treated at the Rockland County Water Pollution Control Facility (WPCF) located in Orangetown, New York. The design capacity of the WPCF plant is approximately 29 million gallons per day. Demand on the WPCF is approximately 19 to 24 million gallons per day, thus available capacity is approximately 5 million gallons per day² during peak periods.

3.7.10 Wastewater - Potential Impacts & Mitigation

The project will be sewerred by an existing sewer main which runs along Route 59. The proposed project will be served by facilities owned and operated by Rockland County. The proposed wastewater collection system is shown on the enclosed engineering plans.

The project will be connected to the existing sewer main in Route 59. Manholes will be spaced at intervals where the sewer changes grade or direction. Each multi family unit will have a separate connection. All of the proposed connections will be either 4-inch polyvinyl chloride (PVC) or cast iron pipes with a minimum slope of two (2) percent that will extend just past the right-of way line. Clean out traps will be provided and 6-inch transition pipes will be provided and capped. The on-site sewer collection system will be maintained by the HOA, unless the Town desires the facilities to be dedicated to the Town, in which case the Project Sponsor is willing to dedicate the facilities to the Town.

The sewer system design for Hyenga Lake reflects the required or recommended standards set forth in the "Ten States" standards promulgated by the Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers and recommended by the NYS DEC.

² Phone conversation on 2/15/06 with Joseph La Fiandra of Rockland County Water Pollution Control Facility.

The sanitary sewage flow from the site is proposed to go to the Rockland County Water Pollution Control Facility (WPCF) via existing gravity sewer mains. Based on up to 440 gallons of sewage production per day per household, a total of 13,200 gallons per day of sewage is projected to be generated from the proposed development. This represents approximately 0.2 percent of the available capacity of the WPCF. The effluent undergoes a two stage treatment and is chlorinated before being ultimately discharged into the Hudson River at a location in the Village of Piermont. Based upon the analysis of the project engineer, it is expected that the dilution of the discharge would be of sufficient magnitude so as not to cause an adverse impact.

When the proposed project is developed, it is estimated that the projected taxes to the Rockland County Sewer District will be \$11,099. These funds will be used for the operation and maintenance of Rockland County Water Pollution Control Facility (WPCF).

As adequate capacity exists at the Rockland County WPCF to handle the increased sewer flow from the project, no additional mitigation is proposed beyond the payment of the necessary taxes by future residents.

3.8 Community Facilities and Services

3.8.1 Existing Conditions - Police, Fire and Ambulance & Health Services

Police Protection

The Clarkstown Police Department provides police protection services to properties within the 40 square mile area that comprises the Town of Clarkstown. The police department headquarters is located at 20 Maple Avenue, New City, approximately 10 miles northeast of the project site.

The Town of Clarkstown police force provides police protection for the Town of Clarkstown including the hamlets of Bardonia, Central Nyack, Congers, Nanuet, New City, Rockland Lake, Valley Cottage, West Nyack and portions of the Villages of Nyack, Spring Valley and Upper Nyack. The Clarkstown Police Department employs 172 police officers and 25 civilian employees who provide 24-hour per day coverage. A phone conversation with Lieutenant Steven Morgan on February 8, 2006 indicates that the department handles approximately 63,000 service calls per year. The population data from the 2000 census indicates there are 82,082 persons residing in the Town of Clarkstown. Based upon these figures, the police department receives 0.064 calls per month per capita. There are presently 3.1 police officers per 1,000 residents.

The police department provides 24 hour patrol coverage with an average of 11 manned vehicles on the road at all times.

Sworn personnel are also involved in various programs including Crime Prevention, Accident Investigation and Reconstruction, STOP DWI, Commercial Vehicle Enforcement, Intelligence, Youth Court, Explorers, Smart Sales, and Child Vehicle Restraint.

Typical response time to a residence at Hyenga Lake would be approximately three to five minutes.

Fire Protection

The proposed development is within the East Spring Valley Fire District and is served by the Spring Valley Fire Department which is a 100% volunteer fire department serving the Village of Spring Valley and points south generally to the New York State Thruway.

The East Spring Valley Fire District currently operates 3 fire stations and is staffed by 130 volunteers. The closest fire station to the project site is located on Forman Road, also known as New Clarkstown Road. Current response time is an average of five to seven minutes. The fire district is in the process of constructing a new fire house on Overlook Road, which will serve the Hyenga Lake project and reduce response time to an average of three to five minutes.

Based on information provided by the Fire Chief¹, the department is headed by a Chief, 1 deputy Chief, 3 Captains, and 9 Lieutenants who oversee firematic operations. The civil division of the department is headed by the President, Vice President, Secretary and a Treasurer who perform administrative operations.

¹ Phone Conversation with Fire Chief Scott Maia on March 2, 2006.

The East Spring Valley Department currently operates 4 engines, 2 tower ladder trucks, 1 heavy rescue vehicle, 1 light rescue vehicle, 1 patrol car and a Mask Service unit. The department is staffed by 127 volunteer members who respond from three fire stations. In 2005, the department responded to approximately 1,100 alarms. These alarms consisted of structural fires, motor vehicle accidents (MVA's), automatic alarms, vehicle fires, brush fires, underwater rescue, mutual aid, and various other calls for assistance. The Spring Valley Fire Department does not respond to medical emergency calls. This service is provided by Nanuet Community Ambulance Corps.

Although the Spring Valley Fire Department responds to a variety of emergencies, the majority of serious incidents are structural fires. These incidents have ranged from small one-room fires to large commercial fires requiring the response of over 20 fire departments from two counties. The Spring Valley Fire Department is assisted by many mutual aid departments. In addition to receiving mutual aid, the Spring Valley Fire Department has provided assistance to many Departments, located primarily in Rockland County.

Ambulance & Health Services

The Nanuet Community Ambulance Corps provides emergency ambulance service to the project area. Average response time is between three and five minutes. The Corps has approximately 50 active volunteers and responds to an average of 1,200 calls per year. The coverage area of the Nanuet Community Ambulance Corps serves an area of approximately 20 square miles within the Town of Clarkstown. The Nanuet Community Ambulance Corps is private and members are volunteers.

Volunteer staff have been augmented with paid EMTs to cover day tours from Monday through Friday when most volunteers are at their full time jobs. The Executive Board and members determined this was necessary in order to meet their mission to provide the highest quality of pre-hospital emergency medical care to the community.

The Hyenga Lake site is located midway between the two acute care facilities in Rockland County, Nyack Hospital located in Nyack, and Good Samaritan Hospital located in Suffern. Services offered by these hospitals include: alcohol & substance abuse, ambulatory surgery, Birthing Center, Cancer programs, Cardiac Services, diagnostic imaging, emergency services, mental health unit, MRI center, nutritional services, occupational therapy, pediatrics, physical therapy, prostate cancer treatment, a quicklab, speech & hearing, a wound care center, and weight loss facilities.

Nyack Hospital operates approximately 350 beds and Good Samaritan Hospital operates approximately 370 beds. These hospitals provide medical, surgical, intensive care, recovery, maternity, pediatrics, and behavioral health services.

According to Hospital representatives, its physicians represent all of the medical specialties and offer their patients the latest in medical care supported by nursing, clinical, and technical staff. These hospitals also offers various outreach programs that present preventive medicine and wellness subjects.

3.8.2 Potential Impacts - Police, Fire and Ambulance & Health Services

Demographic multipliers published in the Urban Land Institute's Development Impact Assessment Handbook, project that, in the northeast region, 1.0 population per household would be generated by a one-bedroom multifamily unit, 2.07 population would be generated by a two bedroom unit and 3.01 population would be generated by a three bedroom unit. Based upon these multipliers, approximately 142 persons are projected to reside in the Hyenga Lake multifamily development. In 2000, the Town of Clarkstown had an average family household size of 3.27 for all housing types, according to the U.S. Census Bureau. Since the ULI multipliers are specific to bedroom count, and unit type, these multipliers have been used for the demographic projections in this DEIS.

The proposed project would result in the re-location of tenants that currently reside in the bungalow community. As a result of a fire in September 2006, there are currently 14 bungalows which appear to consist of two housing units per bungalow. This is further confirmed by the 28 mailboxes located near the existing access point. The existing population is estimated at 58 persons using the aforementioned multiplier of 2.07 persons per two bedroom unit. .

Police Protection

Lieutenant Steven Morgan of the Town of Clarkstown indicates that the Town of Clarkstown was ranked as the fifth safest community in the nation and the second safest community of its size. The Police Department, the Police Commission, and the Town government officials are committed to providing the citizens of the Town of Clarkstown with professional service. The Lieutenant's letter of February 17, 2006 states: "Calls for service usually generated from the scope of this project would not severely impact the capabilities of this department to deliver police services at our current level."

Based on planning standards contained in the Development Impact Assessment Handbook published by the Urban Land Institute (1994), model factors for police protection recommend two (2) police personnel per 1,000 persons which further breaks down to 1.5 police personnel per 1,000 persons for residential uses and 0.5 police personnel per 1,000 persons for nonresidential uses. Based on this standard, 142 persons would increase police staffing needs by less than a quarter of a person which is not likely to have an impact on the Town's police personnel ratio of 3.06 personnel per 1,000 residents.

A letter received from Police Lieutenant, Steven Morgan, on February 17, 2006, indicates there would be no additional burden to police protection as a result of the proposed Hyenga Lake project.

Fire Protection

Based on planning standards published in the Development Impact Assessment Handbook, approximately 1.65 fire department personnel per 1,000 population is recommended to provide adequate fire protection service. Up to 142 new residents would generate demand for an additional 0.23 fire department personnel. The project would generate \$19,638 in annual property tax revenues to the fire district to offset the additional demand (see Section 3.8.7 below). The proposed drives will be designed in accordance with Town specifications and can

adequately accommodate emergency service vehicles. Fire hydrants will be installed according to Town standards.

A letter was sent to the Spring Valley Fire Department on January 17, 2006 (refer to Appendix A, Correspondence). No written response was received. Based on the foregoing analysis, it is assumed that the project would not have an adverse impact on fire protection services. This was confirmed verbally by Fire Chief Scott Maia.²

Ambulance & Health Services

Based on planning standards contained in the Development Impact Assessment Handbook, approximately 36.5 calls per 1,000 population are made annually. Based on this standard, the additional 142 residents would increase EMS calls by approximately 5 calls annually on average.

A letter was sent to the volunteer ambulance service providers on January 17, 2006 (refer to Appendix A, Correspondence). No response was received. Based on the foregoing analysis, it is assumed that there will not be a significant impact on emergency medical services.

Based on planning standards contained in the Development Impact Assessment Handbook, four (4.0) hospital beds should be provided per 1,000 persons. Based on this standard, the projected population increase associated with the Hyenga Lake project has the potential to increase the need for beds in hospitals serving the Rockland County area by approximately 0.57 beds. It is not anticipated this will be a significant impact.

3.8.3 Existing Conditions - Schools

The project site is served by the East Ramapo Central School District. The District includes five K-3 elementary schools, five 4-6 elementary schools, two middle schools (grades 7 and 8), and two high schools.

According to information provided by the School District, enrollments have been stable in the District since 2000. As of June 2006, approximately 9,350 students were enrolled in the District. Table 3.8-1 below summarizes the 2005-2006 grade distributions and enrollments of the various schools within the District which would be impacted by the Hyenga Lake development:

Table 3.8-1 East Ramapo Central School District Enrollment (2005/ 2006 School Year)				
School	Grades Served	June 2006 Enrollment	Capacity	Surplus/Deficit
Fleetwood Elementary School	K-3	523	539	16
El Dorado Intermediate School	4-6	410	479	69
Chestnut Ridge Middle School	7-8	530	1,014	484
Spring Valley High School	9-12	1,117	1,420	303
Source: Office of the Superintendent of Schools, East Ramapo Central School District				

² Phone conversation with Fire Chief Scott Maia on March 2, 2006.

All of the schools in this School District received a rating of “3” from the New York State Public School Report Card of Comprehensive Information with respect to the “district need to resource capacity”. This rating states that “this is a school district with high student needs in relation to district resources capacity”.

3.8.4 Potential Impacts and Project Mitigation - Schools

The Hyenga Lake development has been designed to include one- and two-bedroom dwellings. However, for purposes of estimating the total number of school age children that would be introduced by the development, a "worst-case analysis" was conducted using student multipliers for two- and three-bedroom dwellings, since the number of school age children generated by this scenario would be higher than if one and two bedroom unit multipliers were used. Demographic multipliers for common configurations of standard housing types for school-age children published in the Urban Land Institute's Development Impact Assessment Handbook project that, in the northeast region, 0.1393 school age children per household would be generated by a two-bedroom multifamily unit, and 0.4151 school age children would be generated by a three bedroom unit. Based upon these multipliers, approximately 22 students are projected to reside in the Hyenga Lake development.

As discussed in section 3.8.7 below, the project will generate additional revenues to the School District. Based on a cost of \$11,586 per student to be raised by property taxes, the increase of 22 students would result in an increase of \$254,892 annually in school district costs to be raised by property tax revenues.

The Hyenga Lake development would generate \$326,515 in property tax revenues to the school district, compared to the anticipated cost of \$254,892. Thus, the overall impact on the district's budget is projected to be positive . The projected tax revenues are estimated using 2005-2006 tax rates for the East Ramapo Central School District.

Construction is projected to take 12 to 18 months which is likely to be spread over two school years. The increased student population is also expected to be distributed throughout the grade levels, resulting in an average of less than two students per grade. The multi-year phasing and distribution of students will allow for an additional 22 students to be integrated into the local schools with minimal impact.

A letter was received from Mitchell Schwartz, Superintendent of Schools, dated June 5, 2006, which states “Based upon the 23 school age children to be dispersed among these four buildings, we would have the capacity to accommodate this number of students.” The letter is included in Appendix B, Correspondence.

The proposed Hyenga Lake site development plan will be sent to the East Ramapo Central School District for review and comment with regard to transportation safety, bus turning radius and bus stop location.

3.8.5 Fiscal Analysis

The proposed project is a residential development consisting of 80 multi family residential dwellings. The project will including a private road and appurtenances. The residences would be served by public sewer and water .

The Project Sponsor proposes to construct 80 units of multifamily housing in eleven two story buildings. Nine of the buildings will be 8 unit structures with four, one bedroom units on the first floor, and four, two bedroom units on the second floor. The two remaining buildings will each have two, one bedroom units on the first floor and two, two bedroom units on the second floor. The Project Sponsor has yet to determine if the units will be for sale or rent. For the purpose of this analysis, it is assumed the units will be market rate "for sale" condominiums. The units would likely sell for approximately \$250,000 for a one bedroom unit and \$285,000 for a two bedroom unit.

The Project Sponsor is willing to offer approximately ten percent of these units as affordable housing to continue to meet the housing needs of the current population. Details as to how this would impact the assessed value and the resulting tax levy would be determined by the Tax Assessor for the Town of Clarkstown.

Demographic multipliers published in the Urban Land Institute's Development Impact Assessment Handbook, project that, in the northeast region, 1.0 population per household would be generated by a one-bedroom multifamily unit, 2.07 population would be generated by a two bedroom unit and 3.01 population would be generated by a three bedroom unit.

For the purpose of this analysis, a multiplier of 1.0 population was utilized for the one-bedroom units. In order to provide a conservative analysis, an average of the two and three bedroom rates, a multiplier of 3.54 population per unit, was used to project population for the two bedroom units. Based upon these multipliers, approximately 142 persons are projected to reside in the Hyenga Lake development. By comparison, 2000 U.S. Census Data indicate that the average household size for all housing types in the Town of Clarkstown is 3.90 persons, and the average family size is 3.27 persons. Since the ULI multipliers are specific to multifamily unit type and bedroom count, these multipliers have been used for the demographic projections. As mentioned previously, of this total, it is projected that 22 schoolage children (grades K-12) could be expected to reside in the Hyenga Lake Development.

No credit has been taken for the relocation of the existing residents of the Hyenga Lake Bungalow community. The Project Sponsor is familiar with the local real estate market. Every effort will be made to assist the current residents of the Hyenga Lake Bungalows to find comparable alternative housing, in the same geographic area, at a similar price point. In addition, as stated above, the Project Sponsor proposes to offer ten percent of the new units as affordable housing. Current residents will have the opportunity to make application for the new units under the Town of Clarkstown affordable housing guidelines.

Current and Projected Assessed Value

The current assessed value of the project site is \$481,000. According to the Clarkstown Assessor's office, in 2005, the total annual property taxes including highway taxes, generated by the project site and paid to the Town of Clarkstown are \$19,059, while the annual property taxes paid to the school district are \$23,674.

The Town of Clarkstown has opted to establish two separate property tax rates: a lower tax rate for residential property owners (homestead tax), and a higher rate for all other property owners (non-homestead tax).

As described on the New York State Office of Real Property Services (NYSRPS) website, certain municipalities have assessed residential property at a lower percentage of market (full) value than other types of property, such as commercial and industrial property. When municipality decides to conduct a property revaluation to achieve fair assessments, the residential properties, as a class, would bear a much larger share of the tax burden. Thus, municipalities may be discouraged from conducting property reevaluations. As a result, New York State passed a law in 1981 establishing the Homestead Tax Option. This local option prevents a large shift of the property tax burden to the residential class of property owners after revaluation.

The project would be taxed at the homestead tax rate by the respective taxing jurisdictions. According to the New York State Real Property Service, one-, two-, and three-family residential units, farm homes; mobile homes that are owner-occupied and separately assessed, and condominiums that were built as condominiums and not converted from some other form, such as rental apartments, qualify as residential property subject to the homestead tax rates.

In New York State, condominium units are assessed generally at a lower value than fee simple units. According to the NYSRPS, Section 339-y of the Condominium Act requires that each condominium unit, together with its common interest, be assessed as one parcel, and provides that the sum of the assessments of all the units cannot exceed the valuation that the condominium as a whole would have if it were assessed as a single parcel. Thus, section 339-y places a ceiling on the aggregate value of the assessments of the units and requires assessors to value a condominium complex as a single entity to determine that ceiling. This ceiling provides a built-in assessment "cap" for all condominiums, which amounts to an "exemption" as a result of the condominium form of ownership.

However, in a community that has adopted a homestead option, Real Property Law allows a municipality to assess condominiums based on market value, and does not require that a ceiling be imposed on condominium dwellings. Article 19 of the Real Property Tax Law regulates that if an approved assessing unit adopts the homestead option, condominiums are included in the homestead class and the assessment limitations of Section 339-y do not apply.

Based upon the projected sales price, the total market value of the proposed project is estimated to be \$21,400,000. Using the Town's current 2006 equalization rate of 31.0 percent, the total Market Assessed Value of the proposed project used for this analysis is \$ 6,634,000.

Current and Projected Tax Revenues

Table 3.8-2 compares the taxes generated presently by the property to the taxes to be generated by the Hyenga Lake project. Tax revenues are based on 2005 tax rates (2005-2006 tax rate for the East Ramapo Central School District).

As presented in Table 3.8-2, annual tax revenues to the Town of Clarkstown would be approximately \$155,111. The total tax revenues generated by the site as a result of the increased assessed valuation and paid to the Town would be approximately \$137,972 annually. According to the Town of Clarkstown, Receiver of Taxes, the Town's tax rate includes town governmental services, highway maintenance, public parking, lighting and special assessments for water and sewer districts; the taxes to the Spring Valley Fire and Nanuet Community Ambulance Districts are also included.

Table 3.8-2 Current & Projected Taxes Generated by Project Site				
Taxing Authority	Tax Rate ⁽¹⁾	Current Taxes (\$)	Projected Taxes - Total (\$)	Difference Between Current & Projected Taxes (\$)
Rockland County	\$3.9916	\$1,920	\$26,480	\$24,560
Town of Clarkstown	\$16.0081	\$8,642	\$106,198	\$97,556
Open Space	\$0.1455	\$77	\$966	\$888
Nanuet Ambulance District	\$0.1625	\$78	\$1,078	\$1,000
Spring Valley Fire	\$3.9602	\$1,424	\$19,638	\$18,214
Consolidated Lighting District	\$0.2251	\$130	\$1,493	\$1,363
Rockland Sewer No. 1	\$1.6730	\$5,970	\$11,099	\$5,129
Refuse /Garbage District**	\$135.00	\$221	\$10,800	\$10,579
County Solid Waste**	\$48.00	\$597	\$3,840	\$3,243
Total Town of Clarkstown		\$17,139	\$155,111	\$137,972
Total Town & County		\$19,059		
East Ramapo School District	\$46.9280	\$22,572	\$311,320	\$288,748
East Ramapo Schools Library Tax	\$3.2904	\$1,102	\$15,195	\$14,093
East Ramapo School Tax Total		\$23,674	\$326,515	\$302,841
TOTAL		\$42,733	\$508,106	\$465,373

Notes:
⁽¹⁾ Tax Rate per \$1,000 of Assessed Valuation.
 ** Tax Rate is assessed per unit
 Municipal taxes are based upon Town of Clarkstown 2006 Homestead Tax Rates.
 East Ramapo Central School Tax Rates are for the 2005-2006 school year.

The project-generated annual tax revenues to Rockland County would be approximately \$26,480 annually.

Annual tax revenues to the East Ramapo Central School District would be approximately \$326,515. The net increase between the total current tax revenues generated by the site and paid to the School District and the total future project-generated revenues for the development are projected to be approximately \$302,841.

Costs Associated with the Proposed Project

An approximate estimate of costs to the Town of Clarkstown associated with the proposed residential development may be determined by obtaining a reasonable composite of current costs on a per capita basis and multiplying this amount by the anticipated population of the proposed project.

Through a review of the Town's operating budget, the amount of expenditures can be derived and, by dividing the population into the amount of expenditures, the per capita cost can be determined. To estimate the portion of the per capita cost which is paid for by property tax revenues (as opposed to other forms of income to the Town), the per capita cost is multiplied by the proportion that property tax revenue comprises of the overall income stream.

his instance, the adopted 2006 municipal budget for the Town of Clarkstown including the *General Town Fund, Highway Maintenance, Water, Sewer, Lighting, Public Parking and Fire Services* amounts to \$125,941,479⁴. The total amount to be raised by taxes is \$88,350,620⁵. The tax levy represents 70 percent of the total municipal budget. The 2000 estimated service area population for the Town is 82,082. Dividing the budget to be raised by taxes by the 2000 population results in a per capita municipal cost of \$1,075 per person for municipal services. This represents a "worst-case" estimate of per capita costs, as the commercial and other land uses in the Town also place demand on the various Town and other governmental services which are not considered in deriving the per capita cost.

As described earlier, the proposed project would generate 142 persons, including 22 schoolage children. Based on a per capita cost of \$1,075, the additional costs to the Town of Clarkstown are projected to be approximately \$152,650.

As presented in Table 3.8-2, the revenues to the Town from the proposed Hyenga Lake Development would amount to a total of \$155,111, compared to a cost of \$152,650. Thus, the impact to the Town of Clarkstown budget is anticipated to be positive. In addition to the tax revenues generated to the respective emergency service districts, a portion of this surplus would be used by the Nanuet Community Ambulance and the Spring Valley Fire District.

The budget for the 2005-2006 school year for the East Ramapo Central School District totaled approximately \$172,743,007. Current school district enrollment is approximately 9,350 students. According to the NY State Education Department's Mid-Hudson School Study Council estimates the district's per-student costs as \$16,551. The portion of the school budget to be raised through taxation is \$121,454,481 - approximately 70 percent of the budget is met through the property tax levy. The cost per student to be raised through property taxes is approximately \$11,586 per student. Projected costs to the school district would be \$254,892 annually based on an estimated 22 students that would be generated by the project.

The proposed Hyenga Lake development will generate a total of \$326,515 in annual property tax revenues to the school district. The increase in assessed valuation will generate \$302,841 above current taxes. After meeting the projected cost of \$254,892, the overall effect on the district's budget is projected to be positive . Table 3.8-3 presents a summary of the anticipated revenue and cost of the proposed Hyenga Lake project.

Table 3.8-3			
Revenue & Cost Summary: Hyenga Lake			
Jurisdiction	Projected Increased Taxes (\$)	Projected Increase-Costs (\$)	Effect on Budget
<i>Town of Clarkstown</i>	\$155,111	(\$152,650)	\$2,461
<i>East Ramapo Schools</i>	\$326,515	(\$254,892)	\$71,623
Source: Tim Miller Associates, Inc., 2006			

⁴ Phone Conversation with Supervisor's Office, March 8, 2006.

⁵ Phone Conversation with Tax Assessor, Cathy Conklin, March 3, 2006.

3.9 Land Use and Zoning

3.9.1 Existing Conditions - Land Use

The proposed project site is located in the southeastern portion of the Town of Clarkstown, Rockland County, New York, and is approximately 0.5 mile north of Interchange 14 of the New York State Thruway. The project site shares its northern border with the boundary line of the Town of Clarkstown, which is coterminous with the boundary line of the Village of Spring Valley. The southwest portion of the project site is bordered by Pipetown Hill Road and nine parcels, containing predominately multi-family residences.

Existing single family homes are located along South Central Avenue, which runs perpendicular to NYS Route 59 and Pipetown Hill Road. The Klint Court Condominiums are located directly southeast of the project site along the north side of Pipetown Hill Road within the Town of Clarkstown. Other condominium developments, including Omni Parc, Town Hill and Hidden Ridge, are located on the south side of Pipetown Hill Road, directly across from the project site. Tudor Hill Condominiums are located southeast of the project site at the intersection of Pascack Road and Old Nyack Turnpike.

The proposed site is located directly south of Wide World of Cars which is an automotive dealership located along NYS Route 59. Wide World of Cars currently owns the existing access road into the proposed project site from NYS Route 59. The project site maintains approximately 830 feet of frontage on Pipetown Hill Road and lies in an area of existing residential, commercial, and light industrial development within the Town of Clarkstown and the Village of Spring Valley. The existing development in the vicinity of the project site within the Town of Clarkstown is mainly multi-family residential development including the above-mentioned, Omni Parc and Hidden Ridge Condominiums (See Figure 3.9-1). However, the Congregation Noam E. Lizensk, a Jewish institution, is located south of the project site on the corner of Pipetown Hill Road and South Central Avenue.

The existing development to the north and west of the project site, within the Village of Spring Valley, consists of mainly commercial and light industrial/warehouse development including lighting and electronic stores, bakeries, delicatessens, facilities for public storage and car dealerships. Figure 3.9-1 illustrates the existing land use of the project site and its surrounding area.

Currently, the 12.4 acre project site consists of fifteen buildings that are located in the northern portion of the site. Thirteen of the buildings are occupied and house approximately twenty-six dwelling units. Two of the buildings located on the project site are vacant. The occupied dwellings are classified as substandard bungalows and are accessed from NYS Route 59 via the entrance way from the rear of the Wide World of Cars facility.

Originally, these bungalows were utilized as seasonal cottages for Hyenga Lake. In September 1999, the Hyenga Lake dam that impounded water to form the lake collapsed during Hurricane Floyd. The site of the former Hyenga Lake is now a 1.64 acre US Army Corps of Engineers (ACOE) regulated freshwater wetland. The southern portion of the site consists of sloping terrain as well as approximately 1,625 feet of the Pascack Brook, which runs west to east along the southern portion of the site.

Town of Clarkstown Comprehensive Plan Update

In 1999, the Town of Clarkstown Planning Board and Ad-Hoc Committee adopted an updated Comprehensive Plan. According to the 1999 Comprehensive Plan Update, approximately eighty percent of the Town is developed or committed. The Plan Update provides a general guideline to development and consists of the most recent comprehensive updates and studies conducted by the Town of Clarkstown. The overall suggestion of the Plan is that the current land uses and densities remain as such.

The areas of the Updated Plan that apply to the project site are as follows:

Source: Clarkstown Comprehensive Plan Update, June 30, 1999

Mission Statement, Goals and Objectives, Vision Statement

According to the Comprehensive Plan Update, the following guidelines were provided for residential development:

- Protect single family neighborhoods from conversion to multi-family and from the introduction of non-residential uses and nonresidential uses;
- Provide a range of housing types designed to serve the needs of Town residents and their families and people working in the Town;
- Evaluate the need for specialized residential facilities for the elderly and others.

Wetlands Protection

The following efforts have been set forth by the Comprehensive Plan Update to protect wetlands:

- Obtaining wetland properties that fall into public control through non-payment of taxes;
- Using average density through the process of subdivision review to avoid wetland disturbances;
- Using public acquisition, easements, or regulations to permanently protect wetlands;

Undeveloped, Underdeveloped, and Inappropriately Developed Areas

This subsection of the Comprehensive Plan Update acknowledges that within the Town of Clarkstown, there are many areas that are undeveloped, underdeveloped and inappropriately developed. The Plan defines inappropriately develop parcels as incompatible land uses, land uses or buildings that are outdated or inconsistent with current development practices.

As mentioned above, the project site contains occupied dwellings that are classified as substandard bungalows, which were previously utilized a seasonal cottages. The project site is not mentioned as a specific parcel of concern under this subcategory.

Walks, Ways, Corridors and Crest

The Comprehensive Plan includes an Open Space component. The project site is not specifically noted, however in general terms the Plan notes that the most effective way to increase awareness and usage of open space “is to bring it to every neighborhood...” The Plan also recommends providing connections between the various open space designations located within the Town.

Zoning

Figure 3.9-2 illustrates the existing zoning of the project site and vicinity. The project site is currently zoned MF-2, which is multi-family zoning designation that allows a residential density between 9-13 units per acre, depending upon the number of bedrooms. The above-mentioned nine parcels in the project vicinity are also zoned MF-2.

The principal permitted uses within a Multi-Family-2 Residential District include:

- *Dwelling units of all types of design and forms of ownership, including rental, cooperative, condominium, except single family detached residences;*
 - *Houses of worship, religious buildings, parish houses and rectories;*
 - *Public parks and playgrounds;*
 - *Fire, police, and similar public safety buildings*
- Lot Area Calculation*

Lot area calculations (approximate square footage, SF) for the project site have been prepared by Atzl, Scatassa & Zigler, P.C., in accordance with the Town Zoning Code. The calculations are summarized in Table 3.9-1:

Table 3.9-1 Lot Area Calculations		
	Acres	Square Feet
Gross Lot Area =	12.372 acres	538,932 SF
Less 50 % slopes 30% to 50% =	0.607 acres	26,400 SF 30% to 50% slopes
Less 100% slopes 100% or greater =	1.056 acres	46,000 SF excess of 50% slopes
Less 50% of road widening =	0.061 acres	2,659 SF
Less 50% of Orange and Rockland Utility Easement =	0.937 acres	40,805 SF
Less 50% of wetland	0.452 acres	19,700 SF
Less 50 % of 100 year flood plain	1.412 acres	61,500 SF
Final Net Lot Area for Zoning Purposes =	7.848 acres	341,868 SF
Source: Atzl, Scatassa & Zigler, P.C. (approximate square footage calculations), Tim Miller Associates (acreage calculations).		

Table 3.9-2 Dimensional Requirements for Multi-Family Attached Dwellings in the MF-2 Zoning District		
Feature	Required	Provided
Minimum Lot Area	40,000 square feet	306,518 to 353,143* 341,868 square feet
Density		
1 Bedroom Units	13 units per acre; 3,800 square feet of land area per unit; 152,000 square feet	<i>Total of Proposed Forty (40) units:</i> 152,000 square feet 10.2 units per acre
2 Bedroom Units	10 units per acre; 4,300 square feet of land area per unit; 172,000 square feet	<i>Total of Proposed Forty (40) units:</i> 172,000 square feet 10.0 units per acre
Total max. allowed square feet land/unit	324,000 square feet	341,868 square feet
Minimum Lot Width	150 feet	700 feet
Minimum space between Buildings	30 feet	45 feet +/-
Minimum Front Yard	100 feet	151.90 feet
Minimum Side Yard	30 feet	50 feet
Minimum Rear Yard	50 feet	54.3 feet
Maximum Floor Area Ratio	.50	0.18
Maximum Building Height	35 feet	25 +/- feet
Usable Open Space	15% of Total land area (341,868 square feet X 15% = 51,280 square feet)	183,173 +/- square feet
Source: Town of Clarkstown Zoning Local Law, Chapter 290 of the Code of the Town of Clarkstown, 2005. * Total site square foot provided ranges from 306,518 square feet based upon FEMA 100 year flood plain map to 353,143 based upon existing condition of 100 year flood plain. Final determination of the distribution of one and two bedroom units will be made prior to final site plan approval, subsequent to the FEMA determination on the requested Letter of Map Revision of the 100 year flood plain.		

The area surrounding the project site within the Town of Clarkstown is predominantly zoned for multi-family residential uses at varying densities. The Medium Density General Residence (RG-2) zoning district located southeast of the project site has been developed with the Klint Court Condominiums. Parcels located south of Pipetown Hill Road and the project site are zoned Multi-Family-2 (MF-2) and Multi-Family-3 (MF-3), which allow for 9-13 units per acre and 14-18 units per acre depending on bedroom count, respectively.

The area north of the project site along NYS Route 59 and within the Village of Spring Valley is zoned Highway Business (HB). Portions of the area located to the west of South Central Avenue, within the Village of Spring Valley, are zoned Planned Industrial District (PLI). Other areas located on the west of South Central Avenue are zoned General Business (GB). The GB

zones are located to the north, south and west of the PLI zone within the Village of Spring Valley. Medium Density (R-2) zones are located farther west within the Village of Spring Valley.

3.9.2 Potential Impacts - Land Use

As noted in Section 3.0, the Project Sponsor proposes to develop the approximately 12.4 acre project site into an 80 unit multi-family housing development. Access into the project site would be provided from two locations. The first access is from an existing driveway from NYS Route 59 through the adjacent property to the north, Wide World of Cars. The second access would be from a proposed new drive onto Pipetown Hill Road, which is located south of the project site. The proposed multi-family residential development would be consistent with other residential developments in the project vicinity in the Town of Clarkstown. As noted above, the project site is surrounded by predominately multi-family housing, including the Klint Court, Omni Parc, Town Hill, Hidden Ridge and Tutor Hill Condominiums which are located immediately south of the project site. The proposed development would be compatible with the project site's environs with regard to neighborhood character, density, and housing types.

Compatibility with Town of Clarkstown Comprehensive Plan Update

As noted above, the Town adopted a Comprehensive Plan Update, which is a general to specific development guideline, in June of 1999. The proposed plan and project site are not specifically mentioned in the Plan Update, however, elements of the proposal are referred to within the text of the Plan. The compatibility of the proposed plan with the Comprehensive Plan Update is discussed below:

Mission Statement, Goals and Objectives, Vision Statement

The Project Sponsor feels that the proposed plan would comply with the Goals, Objectives, Mission and Vision Statements set forth in the Town's adopted Comprehensive Plan and Chapter 290 of the Town Code, which intended for this portion of the Town of Clarkstown to be developed for high density residential use.

As noted in the Section 3.0, Project Description, the proposed project would create an 80 unit multifamily residential neighborhood for the population desiring to live within the unincorporated area of the Town of Clarkstown that also includes convenient access to major transportation routes. The proposed use would also be consistent with existing land uses, including the several multi-family developments located along Pipetown Hill Road and in the vicinity of the project site.

Wetlands Protection

No direct impacts are proposed to the ACOE wetland located on the southern portion of the site and therefore is in compliance with the Comprehensive Plan.

Undeveloped, Underdeveloped, and Inappropriately Developed Areas

As noted above, the current substandard bungalows located on the project site were initially used as seasonal cottages for Hyenga Lake. The lake was later destroyed when the dam forming the lake collapsed during hurricane Floyd in 1999. The current site use is not specifically identified as a site of concern in the Comprehensive Plan, however, the Project

Sponsor proposes to remove existing site structures, install the required infrastructure, and develop 80 units of multifamily housing, which is in response to a continued demand for multifamily housing. Therefore, the Project Sponsor believes the proposed action is in compliance with the above subsection of the Comprehensive Plan Update.

Walks, Ways, Corridors and Crest

As noted above in Table 3.9-2, the Zoning Code of the Town of Clarkstown requires 51,288 SF of open space for the project site. The project provides 183,173 square feet or 4.2 acres of usable open space for the proposed development. The provided open space not only complies with the Town Code but also with the intent of the Comprehensive Plan to incorporate open space into every neighborhood.

Zoning

Conformity with the Town of Clarkstown Zoning Local Law

The Hyenga Lake project proposes 80 multi-family dwellings within the MF-2 zoning district. The proposed use, multi-family dwellings, is a principal permitted use within the MF-2 zone. This zone allows 9-13 residential units per acre. The net density of the project as proposed is 10.2 units per acre. As demonstrated in Table 3.9-1, the proposed density of the Hyenga Lake development meets the maximum permitted density for the zoning district. Therefore, no zoning amendments or use variances are proposed.

As noted in Table 3.9-1, the gross lot area and net lot area of the project site are approximately 538,932 square feet and 341,868 square feet, respectively. According to the Town of Clarkstown Code Section §290-20, the approximate square footage required to construct the proposed 80-unit development would be 324,000 square feet. As noted below in Table 3.9-2, forty (40) one bedroom units would require a minimum lot area of 152,000 square feet (40 X 3,800 SF), and forty (40) two bedroom units would require a minimum lot area of 172,000 square feet (40 X 4,300 SF), requiring a total of 324,000 square feet. The project site provides a total of 341,868 square feet. In addition, as stipulated in the Additional Use Regulations of the Zoning Code, a minimum of 15 percent of the net lot area shall be set aside as usable open space; in this case, a minimum of 51,288 SF must be set aside. The project provides 183,173 square feet or 4.2 acres of usable open space as shown on the full size preliminary site plan included with this DEIS and as noted in Table 3.9-2. Therefore, the proposed development conforms with the zoning requirements of the Town of Clarkstown.

Table 3.9-2 summarizes the dimensional (bulk) requirements applicable to the site as well as what is provided by the proposed plan. The proposed project satisfies all of the applicable zoning dimensional requirements. As stated in Section 3.0, a variance from the Zoning Board of Appeals would be requested. The zoning regulations stipulate that one half of all parking shall be enclosed. The proposed project does not include garages, thus a variance will be required. This is consistent with the parking provided in the neighboring Hidden Ridge Condominium project, thus will not create a new precedent with regard to covered parking.

The Town of Clarkstown Zoning Code provides dimensional requirements for one and three bedroom units, not two bedroom units. However, for analysis purposes, we analyzed the proposed forty (40) two bedroom units to the dimensional requirements as required by the Town Code for three bedroom units.

3.9.3 Project Mitigation

The proposed development is not anticipated to have an impact on land use and zoning, therefore, no mitigation measures are proposed.

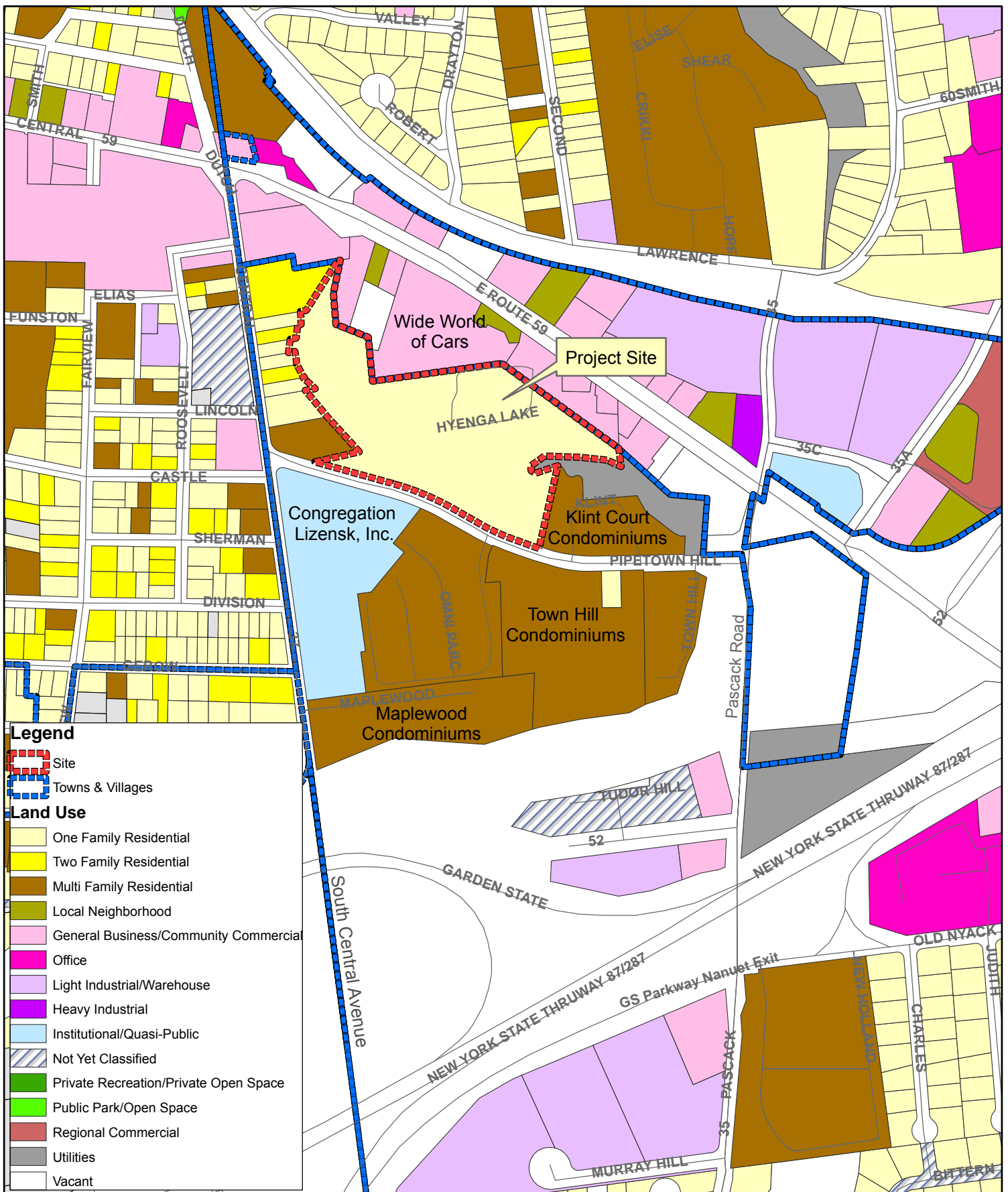
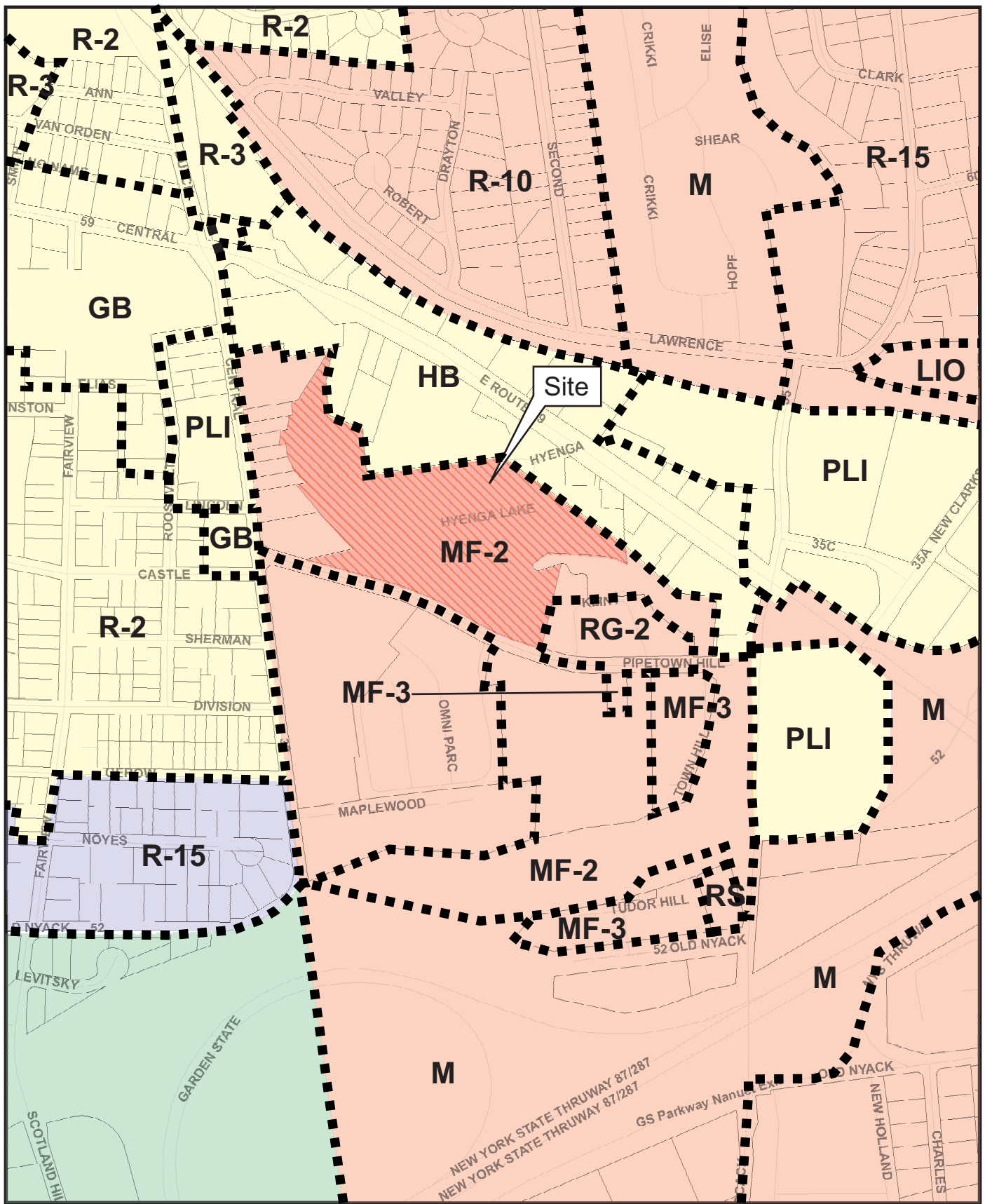


Fig 3.9-1: Existing Land Use Map
Hyenga Lake

Town of Clarkstown, Rockland County, New York
Source: Rockland County Department of Planning

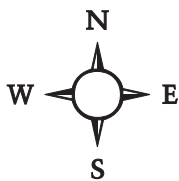
Scale: 1" = 500'

FS EQ: 05220_HyengaLake/
GIS/LandUse.mxd



Legend

- Village of Spring Valley
- Town of Clarkstown
- Town of Ramapo
- Village of Chestnut Ridge



**Figure 3.9-2: Existing Zoning
Hyenga Lake**

Town of Clarkstown, Rockland County, New York
 Base Map: Rockland County Department of Planning, P.C.
 Approx. Scale: 1 inch = 500 feet

3.10 Construction-Related Effects

This section relates specifically to the short term impacts related to construction. Construction is expected to last approximately 12 to 18 months. Mitigation measures are described below to mitigate short term construction impacts to the extent practicable.

3.10.1 Construction Schedule

The following construction sequence describes in general terms the process of project construction;

1. Protect areas designated on the plans by installing temporary snow fencing.
2. Construct stabilized construction entrances, including the box culvert. (15 days)
3. Perform clearing and grubbing activities. (30 days)
4. Install erosion control measures appropriate to each phase of work, including silt fencing, inlet protection, temporary berms, swales, and temporary sediment traps. (5 days)
5. Perform grading, excavation and related operations, stockpile soil in approved areas. (6 months)
6. Construct culvert to access Pipetown Hill Road. (30 days)
7. Construct water quality basin. (30 days)
8. Construct drainage system improvements, roadway improvements and street utilities. (60 days)
9. Construct buildings and driveways. (8 months)
10. During construction, all areas being disturbed will either be paved, seeded, sodded, or planted as specified in a timely manner to prevent unnecessary erosion. (on going)
11. Remove all temporary control measures (30 days)
12. Remove accumulated sediments from permanent storm water management facilities. (10 days)

Steps 1 through 8 involve construction of the roads and stormwater management facilities and would be completed prior to construction of the individual buildings. Construction of the residential buildings and the community building would then follow a similar sequence of construction: install erosion controls, strip and store topsoil, grading, construction of utilities and buildings, and permanent stabilization. The project will be constructed in phases to limit disturbance on the site to no more than 5 acres at any one time. Phase one will consist of building the infrastructure for the roads and drainage facilities - these areas will be stabilized as per the erosion control measures in advance of constructing the dwellings. Phase two will consist of construction of the multi-family units plus the community building . A Construction Phasing Plan has been included in Appendix S.

The Erosion Control Plan, included as part of the Site Plan Drawings, depicts the various measures proposed to provide temporary and permanent stabilization of disturbed areas in accordance with New York State Department of Environmental Conservation best management practices ("BMPs").

3.10.2 Air Quality

Air Quality - Existing Conditions

Existing air quality conditions are described in Section 3.3.

Air Quality - Construction Impacts

Potential short-term adverse air quality impacts that may result from the proposed project include fugitive dust and particulate matter from the project site, and emissions from construction equipment and vehicles.

The construction of the proposed Hyenga Lake development will involve grading activities that may result in the release of fugitive dust and particulate matter from the project site. During this period, dust and particulate matter from the project site may be released into the air and carried off-site by wind. Construction-related air emissions will result from the use of diesel fuel as a source of energy for construction vehicles and equipment. Mitigation measures are proposed to limit dispersal of particulate matter during construction. Such increases in construction-related dust will be temporary.

In Rockland County, prevailing winds are from the northwest between October through April, and from the southwest during other months of the year.¹ Thus, Wide World of Cars, which adjoins the project site, may be affected by fugitive dust, if not properly mitigated, by grading activities conducted during summer months. The multifamily family development located along Pipetown Hill Road may be similarly affected during the winter months.

Nearby residences west of South Central Avenue, are not expected to be impacted from the construction-related dust emissions due to distance, over 1/3-mile, from the nearest residence to the west.

Following project construction, unvegetated areas on the site currently exposed to wind would be either developed or landscaped, thereby reducing the potential for dust generation, compared to existing conditions, from the project area long-term.

Air Quality - Construction Mitigation Measures

In order to mitigate against potential fugitive dust emissions that could affect surrounding properties, including Wide World of Cars, Omni Parc Condominiums and Tudor Hill Condos, the following measures will be put into place.

¹US EPA Region 2 website, Ramapo Aquifer Systems, see
<http://www.epa.gov/Region2/water/aquifer/ramapo/ramapo.htm>.

Fugitive Dust Controls

The fugitive dust control and management measures include earth-moving operation controls, track-out controls, high wind condition controls, and stabilizing soil stored or stockpiled on the project site.

- **Earth-moving operation controls:**

- Apply water by means of truck, hoses, and/or sprinklers prior to and during earthwork and construction activity.
- Apply non-toxic soil stabilizers or dust suppressants.
- Install wind fences and barriers
- Cover trucks with a tightly secured cover (tarp).
- Implement traffic and speed restrictions.
- Compact disturbed soil daily.
- Phase the project to limit and minimize the area disturbed at any one time.

- **Track-out controls**

- A stabilized construction entrance will be provided with a lined stone and gravel pad of appropriate dimensions to reduce the transport of soil to adjacent roadways.
- Wash, vacuum, or sweep to remove materials from the exterior of the trucks over gravel pad before leaving the site to prevent track-out of bulk material onto public paved roadways.
- Limit load size and cover trucks with a tightly secured cover (tarp) and provide at least 6 inches of freeboard before leaving the site.
- Water or chemically stabilize the load being transported in the trucks.
- Sweep and keep clean public roadways to remove all visible dust tracked-out upon public roadways as a result of active operations.
- Sweep or vacuum public sidewalks and median strips at least once per day during active operations.

- **Soil stored or stockpiled**

- Any exposed soils that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 21 days or more, or not scheduled for permanent seeding within 21 days will be treated.
- Mulching (including gravel mulch) or hydroseeding will be applied to ground with low slopes that have been stripped of natural vegetation.
- Rip rapping or sodding will be applied to soils for permanent stabilization if conditions warrant.

The job supervisor would be responsible for ensuring the appropriate controls are implemented during day-to-day operations. Implementation of these controls would prevent dust from exiting the property, and prevent public nuisances.

With these controls in place, it is anticipated that there will be no significant impacts that result from site disturbances to geology, soils and topography.

Construction activities can generate a substantial amount of air pollution. In some cases, the emissions from construction represent the largest air quality impact associated with a project. While construction related emissions produce only temporary impacts, these short-term impacts can contribute to an exceedance of national and/or state ambient air quality standards. To minimize construction air quality impacts so that a project can be deemed not significant in terms of air quality, the emissions from construction should be assessed and if necessary the appropriate mitigation strategy implemented.

The emission generated from common construction activities include:

- ◆ Combustion emissions (ROG, Nox, CO, Sox, PM10) from mobile heavy-duty diesel-and-gasoline-powered equipment, portable auxiliary equipment and worker commute trips.
- ◆ Fugitive dust (PM10) from soil disturbance.
- ◆ Evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Based on conservative assumptions regarding emission and fuel use rates for Diesel-powered equipment used for construction, Table 3.10-1, below, sets forth the maximum daily fuel use for all construction equipment at a single site that would ensure that emissions remain below the combined 82 lbs/day significance thresholds for ROG and Nox (i.e., total ROG plus Nox emissions remain below 164 lbs/day). If fuel use is kept below the levels shown below on the peak equipment use day, ROG and Nox emissions from construction equipment may be deemed insignificant.

Table 3.10-1 Construction Equipment Fuel Use Screening Levels	
<u>Equipment Age Distribution</u>	<u>Maximum Daily Fuel Use on Site</u>
All equipment 1995 model year or earlier	337 Gallons per day
All equipment 1996 model year or later	402 Gallons per day
Assumptions: 12.5 g/hp-hr ROG+NOx for 1995 and earlier equipment (from EPA Nonroad Model); 10.5 g/hp-hr ROG+NOx fro 1996 and later equipment (Based on EPA Tier 1 standards).	
Notes: Determination of fuel use should be documented based on the equipment manufacturer's data. Use linear interpolation between 337 and 402 gal. per day in proportion to distribution of equipment into the two age categories; e.g.50/50 age distribution yields allowable fuel use of $(337 + ((402-337)/2))$ or 370 gal. per day.	

Mass emissions of fugitive dust need not be quantified, and may be assumed to be not significant, if the project includes mitigation measures, that will reduce visible dust to the extent practicable, in compliance with acceptable State and Federal Standards.

The manual calculation method includes predictive emission rates for 22 types of equipment, where multiplying the emission rate for a piece of equipment by the number of pieces of equipment would provide a reasonable calculation of daily emissions associated with a land development construction activity.

The following Table 3.10-2 provides an estimate of on site equipment during construction.

Table 3.10-2 Construction Activity Equipment Types and Number of Days Required for Hyenga Lake				
Construction Activity	Duration (in days)		Type of Equipment	Number of Pieces
	Project Site	Per Building		
Land Clearing/Grubbing	30	1	Loader	1
			Haul Truck	1
Backhoe Excavation	45	2	Excavate/Loader	1
			Haul Trucks	2
Rough Grading Site	30	2	Bulldozer	1
			Excavator /Haul Truck	2
Concrete Pouring	24	2	Cement Truck	2
Portable Equipment Operation	365	10	Generator	1
			Air Compressor	1
Paving	10	0	Paving Machine	1
			Roller	1

Sources: Richardson Engineering Services' Process Plan Construction Estimating Standards, 1996; National Construction Estimator, 1998; Dodge Unit Cost Book, 1998; SMAQMD.

In some cases, several operations may overlap or one operation may be different for improvements then during construction of a home. For example, Concrete Pouring for curbs during the improvements but for foundations during home construction.

To calculate emissions from construction equipment, an emission factor must also be used. Table 3.10-3 shows the predictive emission factors in pounds of pollutant per day recommended for use in estimating exhaust emissions from 22 different types of construction equipment in years 2005 through 2010. The emission factors in this table are derived from several sources

including default parameters from the Roadway Construction Emissions Model, rather than the U.S. EPA AP-42 publication, as the former are more current.

Although exhaust emissions from construction equipment is not as significant as fugitive dust generation, particulate matter from diesel exhaust emission will also be reduced through proper tuning of the engine and maintenance of the air pollution controls. This will minimize additional contribution to site generated particulate emissions during construction.

Based upon the number of pieces of diesel equipment anticipated to be utilized and the fugitive dust procedures and mitigation measures identified, no significant air quality impacts are anticipated to result from construction of the proposed project.

3.10.3 Noise

Noise - Existing Conditions

Noise can be defined as undesirable or “unwanted sound.” Even though noise is somewhat subjective, it affects the full range of human activities and must be considered in local and regional planning. Most of the sounds heard in the environment are not composed of a single frequency, but are a band of frequencies, each with a different intensity or level. Levels of noise are measured in units called decibels. Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

It should be noted that a one decibel change in noise is the smallest change detectable by the human ear under suitable laboratory conditions. However, under normal conditions, a change in noise levels of two or three decibels is required for the average person to notice a difference. Tables 3.10-4 and 3.10-5 show community perception of noise change and response to increased levels. The level of a noise is measured and expressed in decibels (dB). Commonly, a standardized A-weighting is applied to sound levels to correct for certain characteristics of human hearing. The A-weighted sound level (dBA) is useful for gauging and comparing the subjective loudness of sounds.

Table 3.10-3 Perception of Changes in Noise Levels	
Change (dBA)	Average Ability to Perceive Changes in Noise Levels Human Perception of Change
2-3	Barely perceptible
5	Readily Noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound
Source: Bolt Baranek and Neuman, Inc. Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.	

Table 3.10-4 Community Response to Increases in Noise Levels		
<i>Estimated Community Response</i>		
Change (dBA)	Category	Description
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action
Source: International Standard Organization, <i>Noise Assessment with Respect to Community Reactions</i>, 150/TC 43. (New York: United Nations, November 1969.)		

To the average person, a noise level increase of 2 to 3 dBA is barely perceptible, an increase of 5 dBA is noticeable, and an increase of 20 dBA is perceived as a dramatic change. Annoyance frequently results from increases of 10 dBA or more, depending on the frequency and duration of the noise events.

The level of impacts of these noise sources depends on the type and number of pieces of construction equipment being operated, as well as the distance from the construction site. The noisiest period of construction will occur during site clearing and rough grading activities.

Noise levels due to construction activities will vary widely, depending on the phase of construction activities. Noise levels at the site property line are projected to temporarily range between 65 dBA and 90 dBA during construction, depending on the type and location of construction activity at a given time, which may represent an increase of 10 to 20 dBA.

It is anticipated that nearby properties would experience temporary elevated noise levels at occasional periods during the 12 month to 18 month construction period. This is a temporary, construction-related, unavoidable impact.

Noise Impacts - Short Term Construction-related Noise

Local daytime ambient noise levels will increase both on and off of the project site during construction of the proposed Hyenga Lake project. Construction activities are an expected and required consequence of any new development and cannot be avoided. Noise resulting from construction activities is a temporary impact, and will cease upon completion of the project. The following table 3.8-3, shows representative maximum sound levels for diesel powered equipment and activities at a range of receptor distances.

Table 3.10-5 Typical Construction Noise Levels (dBA)				
Equipment/Activity	Maximum Sound Level			
	50 feet	200 feet	500 feet	1000 feet
Backhoe	82-84	70-72	62-64	56-58
Blasting	93-94	81-82	73-74	67-68
Concrete Pump	74-84	62-72	54-64	48-58
Generator	71-87	59-75	51-67	45-61
Hauler	83-86	71-74	63-66	57-60
Loader	86-90	74-78	66-70	60-64
Rock Drill	83-99	71-87	63-79	57-73
Trucks	81-87	69-75	61-67	55-61

SOURCE: Tim Miller Associates, Inc.

Noise - Construction Mitigation

Town of Clarkstown Noise Ordinance

Chapter 205, Noise, of the Clarkstown Town Code regulates noise. The purpose of the chapter is to prohibit any unnecessary noise, the following have been deemed to be unnecessary noise:

- Any sound of any bulldozer, back hoe or other excavation or earth moving equipment operated anywhere in the unincorporated portion of the Town of Clarkstown during the week from Monday to Friday prior to 7:00 a.m. and after 8:00 p.m., on Saturdays prior to 8:00 a.m. And after 6:00 p.m. And on Sundays prior to 11:00 a.m. And after 5:00 p.m.
- The sound of any power tool, machinery or equipment in use on any construction project or the repair of any building or in any commercial activity or manufacturing process not wholly contained within a closed structure, prior to 7:00 a.m. or after 8:00 p.m. In a non residential zone and from Monday to Friday prior to 7:00 a.m. And after 8:00 p.m., on Saturdays prior to 8:00 a.m. And after 6:00 p.m. And on Sundays prior to 11:00 a.m. And after 5:00 p.m. In any residential zone when such sound is of a level that constitutes unreasonable noise

Construction activities will be limited to Monday through Saturday from 8:00 a.m. to 6:00 p.m., thus remaining within the hours designated by the Town of Clarkstown Noise Ordinance for construction activities.

Blasting and rock removal are not anticipated for the project.

3.10.4 Odors

Existing Conditions

The existing property maintains no resources or depositions which would generate odors.

Potential Impacts

The project proposes construction of 80 multifamily dwelling units. No odors are expected to be produced as a result of construction activities except for the paving of the internal road - pouring the macadam surface will result in short-term odors which cannot be avoided.

Proposed Mitigation Measures

No mitigation measures are proposed.

3.10.5 Construction Traffic

Construction Traffic - Existing Conditions

There is currently no construction-related traffic associated with the undeveloped project site.

Construction Traffic - Potential Impacts

The proposed project will result in construction activity taking place. It is anticipated that a stabilized rough grade of the proposed site access from Pipetown Hill Road will serve as access for the project during construction. All construction vehicles will use this access for ingress and egress. Construction vehicles and employees will park on-site at all times possible. Materials and equipment storage will be located on site.

Construction traffic consists primarily of construction vehicles arriving at the beginning of the construction period, trucks carrying and delivering supplies, and daily trips of construction workers. Construction workers typically arrive and depart the site prior to standard commutation peak hours. Trucks delivering construction supplies would generally arrive and leave during the day.

Due to the size of the site development, construction traffic to and from the site is not expected to be excessive, as building will generally be constructed in small clusters. The heaviest volume of construction traffic is expected to occur at the beginning of the construction as site clearing and rough grading is conducted, and when asphalt and building materials are transported to the site.

Based upon engineering estimates, a total of approximately 43,200 cubic yards of material will be cut and approximately 4,200 cubic yards will be filled. The balance, or approximately 39,000 cubic yards, will be removed from the site. Excess material will be transported off-site by approximately 1,810 trucks. This represents an average of approximately 9 trucks per day during the first nine months of construction, when the majority of the grading will occur. It is anticipated that most construction trips would travel to and from the site via NYS Route 59 to South Central Avenue to Pipetown Hill Road. If necessary, a flag man will be provided to insure a smooth traffic flow on Pipetown Hill Road during construction. Excess material will be transported off site during non-peak traffic hours when additional traffic capacity is available.

Construction workers residing locally in the Clarkstown area would be expected to use local roads to access Pipetown Hill Road and the site. Workers in the larger region, construction vehicles, and material deliveries would be expected to travel the New York State Thruway and/or Route 59 to access the project site.

Once construction machinery reaches the site, it is likely to remain on site until the completion of grading and excavation. The heaviest volume of construction traffic is expected to occur at the beginning of construction as site clearing and rough grading is conducted, and during the months that concrete and building materials are transported to the site. Construction material storage, equipment staging and soil stockpiling will occur on graded stabilized areas of the site.

Construction Traffic - Mitigation Measures

The increase in construction-related vehicular traffic is a short-term, unavoidable impact, however, the construction of 80 multifamily dwelling units is not anticipated to have a significant impact on the local road network. The Project Sponsor will be required to adhere to the provisions Chapter 278, Vehicles and Traffic, of the Code of the Town of Clarkstown. This chapter establishes restriction on vehicle weights, traveling speeds, and parking within the Town and would limit potential impacts to Town roads from the operation and delivery of construction vehicles.

3.10.6 Public Health

Construction Near High Voltage Wires

An easement to the Orange and Rockland Utility company traverses the property. There are three towers which hold high voltage transmission wires which cross the property. Accidental contact with overhead electric lines can result in substantial damage, serious injury or death. It is important, therefore, to use extreme caution when near overhead power lines. Construction safety measures including those listed below will be utilized to insure the safety of workers during construction in the vicinity of the wires.

Orange & Rockland Utilities, Inc., is a wholly owned subsidiary of Consolidated Edison, Inc. and as such is guided by Chapter 5.3 of the Con Edison Safety Manual, General Protection Requirements, which specifies safety procedures to be followed to insure safety when working around electrical systems equipment. The following excerpts from Chapter 5.3, contained in Appendix L, dictate that no grading work shall be done within 25 feet of the transmission towers and no work shall be done without an approved Orange & Rockland Work Permit as outlined below:

- A Work Permit must be obtained before any surface penetration, structural alterations, excavations, renovations, or demolition work can be performed within the confines of station areas. Before a Work Permit is issued, a survey shall be made to determine if any hazards exist in the specific area in which the work is to be performed.
- The operator having jurisdiction shall be responsible for determining the protection required for dead work or for tests, shall order the protection applied, and shall ascertain that the protection has been applied before issuing or ordering the issuance of a Work Permit or a Test Permit.

- When it is practicable, the person who has received the Work Permit shall verify, by inspections, the protection at the work location in the presence of the operating employee who is responsible for applying the protection.

3.10.7 Asbestos Abatement

A Phase 1 Environmental Site Assessment Report was conducted as described in the March 21, 2006 Report, included in Appendix M. The report states “No significant and immediate environmental liability issues associated with the subject property were identified.” The report also states “ Due to the age of the site buildings, Asbestos Containing Materials (ACM) may be associated within the residential structures. No historic asbestos sampling or abatement documentation was available”.

Two of the existing bungalows, # 28 and #31 were involved in a structural fire in September of 2006. Asbestos surveys of the fire damaged structures was conducted. In correspondence dated September 11, 2006 from Detail Associates, Inc. The following statement is made “ This is to inform you that the asbestos survey of the fire damaged house referenced above has been completed. Non destructive sampling was conducted in all accessible areas. No asbestos was found in any of the samples.” These letters are included in Appendix A, Correspondence.

Demolition of the remaining existing bungalows will require a demolition permit to be secured by a licensed contractor. In order to obtain the necessary permit, similar an asbestos inspections will be conducted. As part of the necessary permitting, buildings are inspected and building materials are sampled for asbestos. The samples are laboratory tested to determine if asbestos is present in the building materials. If asbestos is found, all building materials which contain asbestos are required to be removed, before the building with asbestos is demolished. The process of removing asbestos-containing materials (Asbestos Abatement) is conducted in accordance with OSHA guidelines that require that the contaminated material be disposed in an approved manner to specified locations separate from all other construction debris. This will leave the building or buildings free of asbestos-containing materials so that when demolition occurs, no hazardous material will be dispersed into the air or deposited into the soil.

4.0 ALTERNATIVES

Section 617.9(b)(5) of the regulations implementing SEQRA requires that a draft environmental impact statement include a description and evaluation of the range of reasonable alternatives to the proposed action which are feasible, considering the objectives and capabilities of the project sponsor. The range of alternatives must include the "No Action" alternative.

In addition to the No Action alternative, SEQRA regulations require the evaluation of a reasonable alternative to the proposed project which is feasible, considering the objectives and capabilities of the project sponsor. In addition to the No Action alternative, this DEIS assesses an Alternative Access scenario.

The proposed project is being constructed as of right within the existing zoning. Access to the existing bungalow colony is via a deeded easement from Wide World Auto, located to the north in the adjoining municipality of the Village of Spring Valley, to NYS Route 59. The main access to the proposed Hyenga Lake multifamily residential project is via an new access from Pipetown Hill Road. An alternative to the proposed project which does not include construction of an access to Pipetown Hill Road is considered herein as part of the environmental analysis.

These two alternatives, No Action and Alternate Access are described and evaluated below. A summary matrix of the varying impacts associated with each alternative is provided as Table 4-1 at the end of this section.

4.1 No Action Alternative

In accordance with SEQRA regulations, the No Action alternative must evaluate the adverse or beneficial impacts that would occur in the reasonably foreseeable future in the absence of the proposed action. For purposes of this analysis, the No Action alternative assumes that the proposed project site would remain with 15 economy bungalow units.

The No Action alternative would be inconsistent with the objectives of the Project Sponsor, which is to develop up to date multifamily housing on this site.

Under the No-Action alternative, none of the impacts identified in this report, whether adverse or beneficial, would occur.

Geologic Resources: There would be no disturbance to geology, soils, or topography under the No Action alternative. The project site has been previously disturbed, minimal new disturbance is occurring as a result of the proposed project. The cut and fill operation expected to occur as part of the project proposal would not occur. The 43,200 cubic yards of cut and 4,200 cubic yards of fill would not take place.

Water Resources: Like the proposed action, the No Action alternative would not result in any impact to a flood plain. There would be no 0.03 acre disturbance to the federally-regulated wetland. The No Action alternative would not result in the alteration of drainage patterns on the project site nor the introduction of 1.75 acres of impervious surfaces which could cause an increase in stormwater runoff rates. No stormwater management facilities would be constructed to eliminate stormwater impacts. The No Action alternative would not result in any increase to nutrient loading beyond what currently results from overland flow

carrying nutrients from the existing land use. There would be no impact to groundwater resources.

Biological Resources: Like the proposed action no disturbance of woodland vegetation would occur under the No Action alternative. There would be no disturbance to 0.03 acres of wetland habitat.

Historic and Archaeological Resources: There are no historic or archaeological resources located on the project site.

Traffic and Transportation Resources: Under the No Action Alternative there would be no increase in the number of vehicular trips generated. The access drive from NYS Route 59 would remain the same.

Utilities: Under this alternative, there would be no increased demand placed on water supply, wastewater treatment facility capacity, electric or gas.

Construction-related Impacts: Under this alternative, the short term impacts associated with construction including noise and fugitive dust would not occur. There would be no temporary increase in vehicular traffic resulting from construction activities.

Community Facilities and Services: There would be no increased demand placed on community services and facilities as a result of the No Action alternative. The project site would not generate increased tax revenue to the Town of Clarkstown or the East Ramapo Central School District.

A comparison of impacts between the proposed action and this alternative is provided in Table 4-1.

4.2 Alternate Access

It is the objective of the project sponsor to provide multifamily residential housing which is relatively affordable compared to the housing market in Rockland County. The proposed project is being constructed as-of-right as per the MF-2 zoning district regulations. Access to and from to NYS Route 59 for the existing bungalow colony is via a deeded easement from Wide World of Cars, located to the north in the adjoining municipality of the Village of Spring Valley. As described in the DEIS, Wide World of Cars is in the process of improving their facility and upgrading the access to NYS Route 59. This alternative assesses the impacts of the Route 59 access being the only access to the Hyenga Lake development.

The Alternate Access alternative is similar in many respects to the project proposal, the primary difference is the traffic and circulation pattern and potential impacts on the local road network, in addition to the impacts of having only a single access. Construction of the box culvert to cross the stream incurs minimal disturbance. As a result elimination of the culvert does not significantly change the level of impacts.

Geologic Resources: There would be similar disturbance to geology, soils, and topography under the Alternate Access alternative. The grading disturbance would be slightly reduced since the Pipetown Hill Road access, requiring a culvert, will not be built. There is a

reduction of 322 cubic yards of cut and a reduction of 1,643 cubic yards of fill associated with the elimination of the site access to Pipetown Hill Road.

Water Resources: The Alternate Access plan does not include the proposed access to Pipetown Hill Road which utilizes a culvert over the Pascack Creek. Similar to the proposed action, the Alternate Access alternative would not result in any impact to a flood plain. The 0.03 acre disturbance to the federally-regulated wetland would remain the same as the project proposal. The Alternate Access alternative would result in a similar drainage pattern as the project proposal. The Alternate Access alternative would result in a reduction of 0.1 acres of impervious surfaces associated with the construction of the access road to Pipetown Hill Road. The Alternate Access alternative would result in similar nutrient loading as the proposed project. Similar to the proposed project, there would be no impact to groundwater resources.

Biological Resources: Like the proposed action no disturbance of woodland vegetation would occur under the Alternate Access alternative. There would be similar disturbance to 0.03 acres of wetland habitat.

Historic and Archaeological Resources: There are no historic or archaeological resources located on the project site .

Traffic and Transportation Resources: The traffic generated by the development, 43 vehicular trips in the a.m. peak hour and 62 vehicle trips in the p.m. peak hour, would directed entirely to NYS Route 59. No secondary access would be available to and from the project site, thus access for emergency vehicles would be reduced. No site related traffic would be generated onto Pipetown Hill Road.

A traffic analysis conducted by John Collins Engineering, for a prior submission of this application provided an analysis of the site access driveway onto Route 59, where sixty five percent of the traffic was anticipated to use this site access during peak hour periods. The traffic operating level of service for NYS Route 59 was project to be level of service A during the a.m. Peak hour and level of service B during the p.m. peak hour. The level of service for the site access drive through Wide World Auto is projected to be level of service C during the a.m. peak hour and level of service E during the p.m. peak hour, with delays of about 39 seconds. Based upon these findings and in light of the anticipated delay, distribution of the remaining thirty five percent of site generated traffic could be expected to result in operating conditions of level of service E.

Utilities: Under this alternative, demand placed on water supply, wastewater treatment facility capacity, electric or gas would be similar to the project proposal.

Construction-related Impacts: Under this alternative, the short term impacts associated with construction including noise and fugitive dust would be similar to the project proposal. However, construction related traffic would not utilize Pipetown Hill Road. All construction related trips would access the site via the Route 59 access for the duration of construction.

Community Facilities and Services: The increased demand placed on community services and facilities would be similar to the project proposal.

A comparison of impacts between the proposed action and this alternative is provided in Table 4-1.

4.3 Covered Parking Alternative

It is the objective of the project sponsor to provide multifamily residential housing which is relatively affordable compared to the housing market in Rockland County. The proposed project is being constructed as-of-right as per the MF-2 zoning district regulations. This alternative assesses the impacts of providing covered parking per the zoning regulations.

The Covered Parking alternative is similar in all respects to the project proposal, with the exception of providing covered parking areas. As a result installation of the carport structures does not significantly change the level of impacts.

Geologic Resources: There would be similar disturbance to geology, soils, and topography under the Covered Parking alternative.

Water Resources: The Covered Parking alternative would result in a similar drainage pattern as the project proposal. The Covered Parking alternative would result in similar nutrient loading as the proposed project. Similar to the proposed project, there would be no impact to groundwater resources.

Biological Resources: Like the proposed action no disturbance of woodland vegetation would occur under the Covered Parking alternative. There would be similar disturbance to 0.03 acres of wetland habitat.

Historic and Archaeological Resources: There are no historic or archaeological resources located on the project site .

Traffic and Transportation Resources: The traffic generated by the development, would be similar to the project proposal

Utilities: Under this alternative, demand placed on water supply, wastewater treatment facility capacity, electric or gas would be similar to the project proposal.

Construction-related Impacts: Under this alternative, the short term impacts associated with construction including noise and fugitive dust would be slightly increased as a result of construction of the carport structures. No additional construction related traffic is anticipated. All construction related trips would access the site via the stabilized construction entrance.

Community Facilities and Services: The increased demand placed on community services and facilities would be similar to the project proposal. *The car port structures would allow the project to meet the zoning code. However, the visual impact of the structures will eliminate the clean lines of the proposed structures and may result in a complexity of building elements. There will be increased on-site maintenance as a result of this alternative which may affect the relative affordability of the units. The installation of the car ports will result in increased difficulties with snow removal and emergency vehicle access.*

A comparison of impacts between the proposed action and this alternative is provided in Table 4-1.

4.4 Impact Comparisons

Table 4-1 below summarizes the quantitative impacts associated with the proposed project plan and the various alternatives.

Table 4-1 Alternative Impact Comparisons				
Area of Concern	Proposed Project	No Action	Alternate Access	Covered Parking Alternative
Land Use				
Impervious Surfaces (acres)	1.75	1.65	1.65	1.65
Total Project Cut (cubic yards)	43,200	0	42,878	42,878
Total Project Fill (cubic yards)	4,200	0	2,557	2,557
Net Cut to be exported (cubic yards)	39,000	0	40,321	40,321
Residential Units				
Residential Units (Total)	80	28	80	80
Type of Parking Provided	Uncovered	Uncovered	Uncovered	Covered
Natural Resources				
Total Site Area (acres)	12.4	12.4	12.4	12.4
Total Area of Disturbance (acres)	5.2	5.2	5.2	5.2
Woodland Disturbance (acres)	0	0	0	0
Wetland Disturbance (acres)	0.03	0	0.03	0.03
Lawn/Already Disturbed (acres)	3.9	0	3.9	3.9
Steep Slope Disturbance (>15%) (acres)	4.7	0	4.7	4.7
Community Resources				
Population	142	58	142	142
Residential Trips (p.m. peak hour) to Pipetown Hill Road	62	0	0	0
Residential Trips (p.m. peak hour) to NYS Route 59	0	13	62	62
Water Demand / Sewage Flow (based on 110 gallons per bedroom per day)	13,200	6,160	13,200	13,200
School-age Children	22	12	22	22
Notes: Estimates are approximate. Source: Atzl, Scatassa, & Zigler, P.C.; Tim Miller Associates, Inc., 2007.				

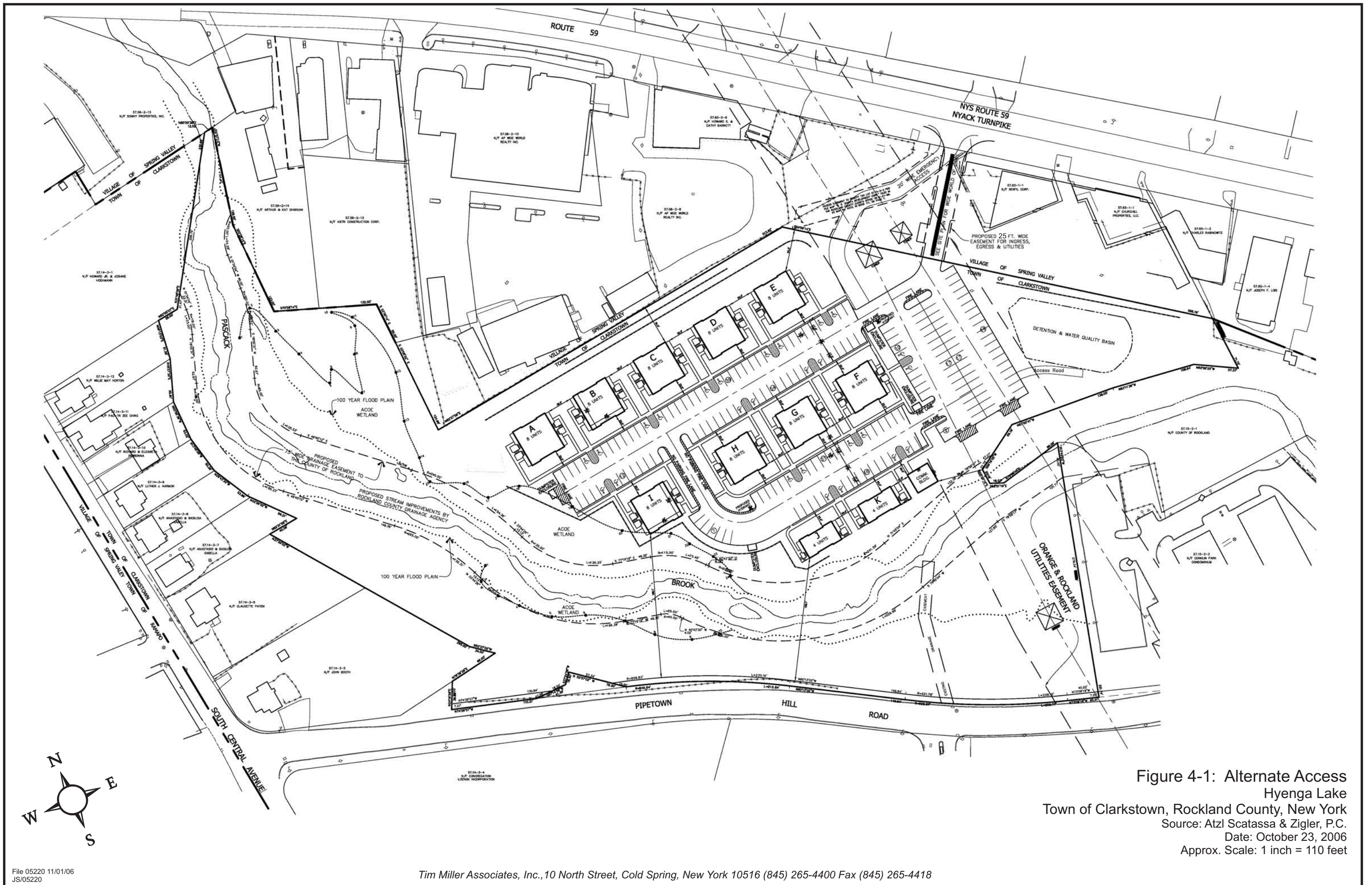


Figure 4-1: Alternate Access
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl Scatassa & Zigler, P.C.
 Date: October 23, 2006
 Approx. Scale: 1 inch = 110 feet

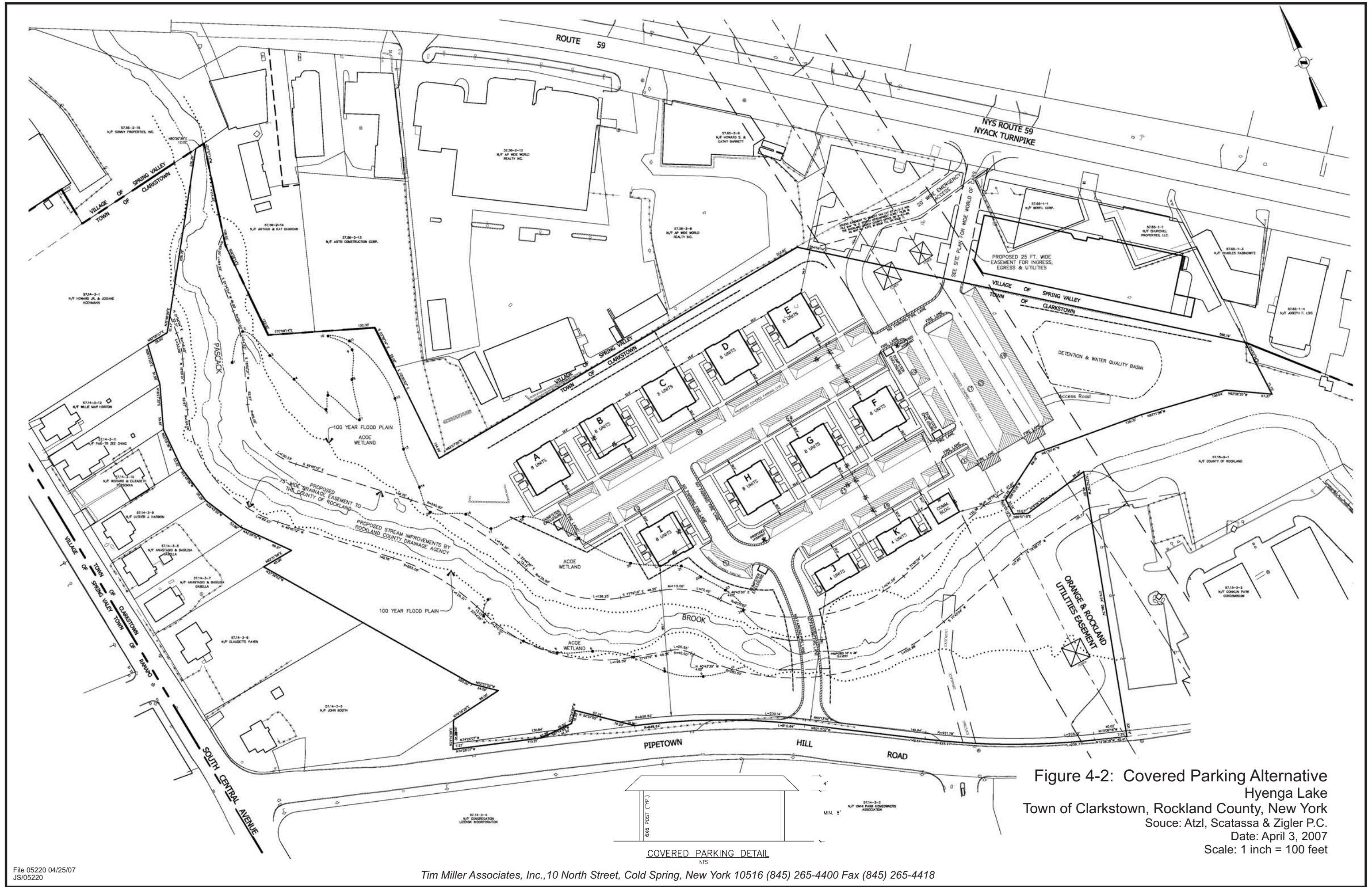
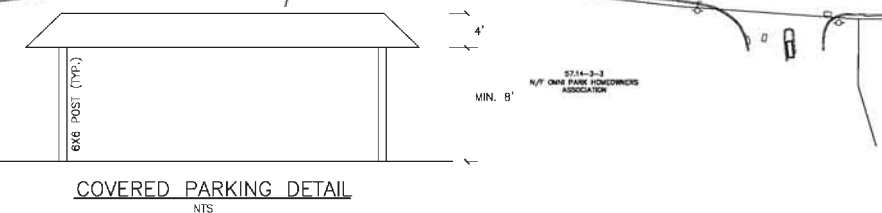


Figure 4-2: Covered Parking Alternative
 Hyenga Lake
 Town of Clarkstown, Rockland County, New York
 Source: Atzl, Scatassa & Zigler P.C.
 Date: April 3, 2007
 Scale: 1 inch = 100 feet



5.0 ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

The development of the proposed project will result in some adverse environmental impacts which cannot be avoided. Though these impacts cannot be avoided, many can, to some extent, be mitigated as noted in each of the preceding chapters. Some of these impacts will be temporary or short term impacts associated with the construction phase of the project, while others will be long term impacts associated with occupancy of the residences.

Short Term Impacts

- The presence of construction and delivery vehicles on the site and on surrounding roads;
- The localized increase in noise levels due to operation of construction vehicles and equipment; and
- The increased susceptibility to erosion. A description of the potential erosion and the proposed erosion control plan is provided in Section 3.1.

Long Term Impacts

- Disturbance to approximately 5.2 acres of the project site.
- The loss of approximately 0.03 acres of ACOE wetland.
- The increase in resident population of 142 people, including 22 students and concomitant increase in demand for community services and energy;
- The addition of 43 vehicular trips in the AM Peak Hour and 62 vehicular trips in the PM Peak Hour.
- The alteration to existing topography in areas of road building, parking and development areas and the concomitant loss of topsoil; and
- An addition of 5.6 tons per month of solid waste materials will be added to the waste stream.

6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed plan will commit approximately 12.4 acres of land to residential use for construction of 80 townhouses. Once committed to this use, the site will be unavailable for other uses for the foreseeable future.

Development of the project will result in disturbance to 5.2 acres. This area has been previously disturbed and has limited value as wildlife habitat. After completion of the proposed development, approximately 7.2 acres will remain undisturbed including 1.61 acres of wetland. As a result approximately 59 percent of the site will consist of wildlife habitat areas and open space.

The finite resources that will be irretrievably committed by implementation of the proposed action are the materials and energy required for construction and for maintenance of the development afterward. Construction will involve the commitment of a variety of natural resources. These include, but are not necessarily limited to, concrete, asphalt, steel, lumber, paint products, and other building materials.

However, it should be noted that many of the materials accumulated for construction may at some time be recycled or reused. The operation of construction equipment will result in consumption of fossil fuels and other finite energy sources. When completed, the new residences will require electricity and the use of fossil fuels either directly as heating fuel or indirectly as electricity.

There will also be solid waste disposal requirements associated with the project for a total of 1.7 tons of month of non-recyclables waste to be generated by future residents of the project.

7.0 GROWTH INDUCING IMPACTS OF THE PROPOSED ACTION

As indicated in previous sections of the document, the proposed project will add a projected 142 persons to the population of the Town of Clarkstown. This increase in population will have an increased long term demand for goods and services that will have a steady multiplier effect in the project area.

The project will be sewered by a proposed gravity sewer main running through the site to existing sewer lines in NYS Route 59. The proposed project will be served by facilities owned and operated by Rockland County. Since this is not an expansion of an existing sewer system and will tie into the sanitary facilities that exist in the surrounding roadway, no growth inducing impacts are anticipated as a result of providing sewers to the project site.

The project will promote increased construction employment and, on a cumulative basis, an increased long term demand for goods and services that will have a steady multiplier effect in the project area.

The proposed residences are projected to have a total market value of approximately 21,400,000. Construction of the project will require a commitment of person hours of labor, which can be viewed as beneficial to the community, the local economy, and the construction industry with respect to the generation of jobs. It is anticipated that a portion of the construction-related workers at the site will come from the Town of Clarkstown and the immediately surrounding area. The majority of construction workers are likely to come from areas throughout Rockland County and nearby counties. These workers are expected to have a positive impact on existing local businesses that provide such services as food convenience shopping, gasoline, etc. It is expected that approximately 23 construction jobs and 2 to 3 long term jobs will be created as a result of this project.

Future residents of the project site are anticipated to utilize a variety of local retail and commercial services. Nearby business are expected to provide many of the goods and services that future residents are likely to use in addition to using the services and retail opportunities provided in the proposed commercial parcel. The increased population from the project will help sustain these businesses. Typically about 30 percent of a typical household's income is spent on retail goods and services. The 2005 median family income in the Town of Clarkstown is about \$100,000 annually (109,884¹). In light of the market price of these units compared to the Rockland County housing market, a conservative 15 percent of the family income may be spent on retail goods and services. It could thus be expected that the 80 households proposed for the Hyenga Lake community would spend \$1.2 million annually. A substantial portion of this would be spent at area restaurants, local convenience stores and supermarkets including small businesses such as gas stations and hair salons.

¹ 2005 Median Family Income, Town of Clarkstown per the US Census.

8.0 EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES

Energy consumption will occur during construction and occupancy of the proposed residences, but this energy use will not be significant. During construction, energy will be used for power equipment and various construction vehicles. Once construction is completed and the residences occupied, energy will be required for space heating, air conditioning, and the use of household appliances and electrical equipment. Electrical and gas service to the project site will be provided by Orange & Rockland Utility Company. Based on telephone communication on April 10, 2007 the individual residences are projected to require 450 kilowatt hours of electricity per month in the summer and 175 therms of gas per month in the winter. This is worst case scenario for both forms of energy projected to be consumed by the proposed two bedroom units. Actual electrical and gas demands for individual homes may vary considerably based upon the lifestyles and habits of the occupants.

Orange & Rockland Utilities does not anticipate any problems accommodating the projected electrical or gas demands created by the proposed development (conversation on April 10, 2007 with Orange & Rockland).

The design and plans for the development will take into account the New York State Energy Code. All utility lines will be underground and any connections will meet the Town Code and industry specifications.

