

# DRAFT ENVIRONMENTAL IMPACT STATEMENT

## VOLUME 1



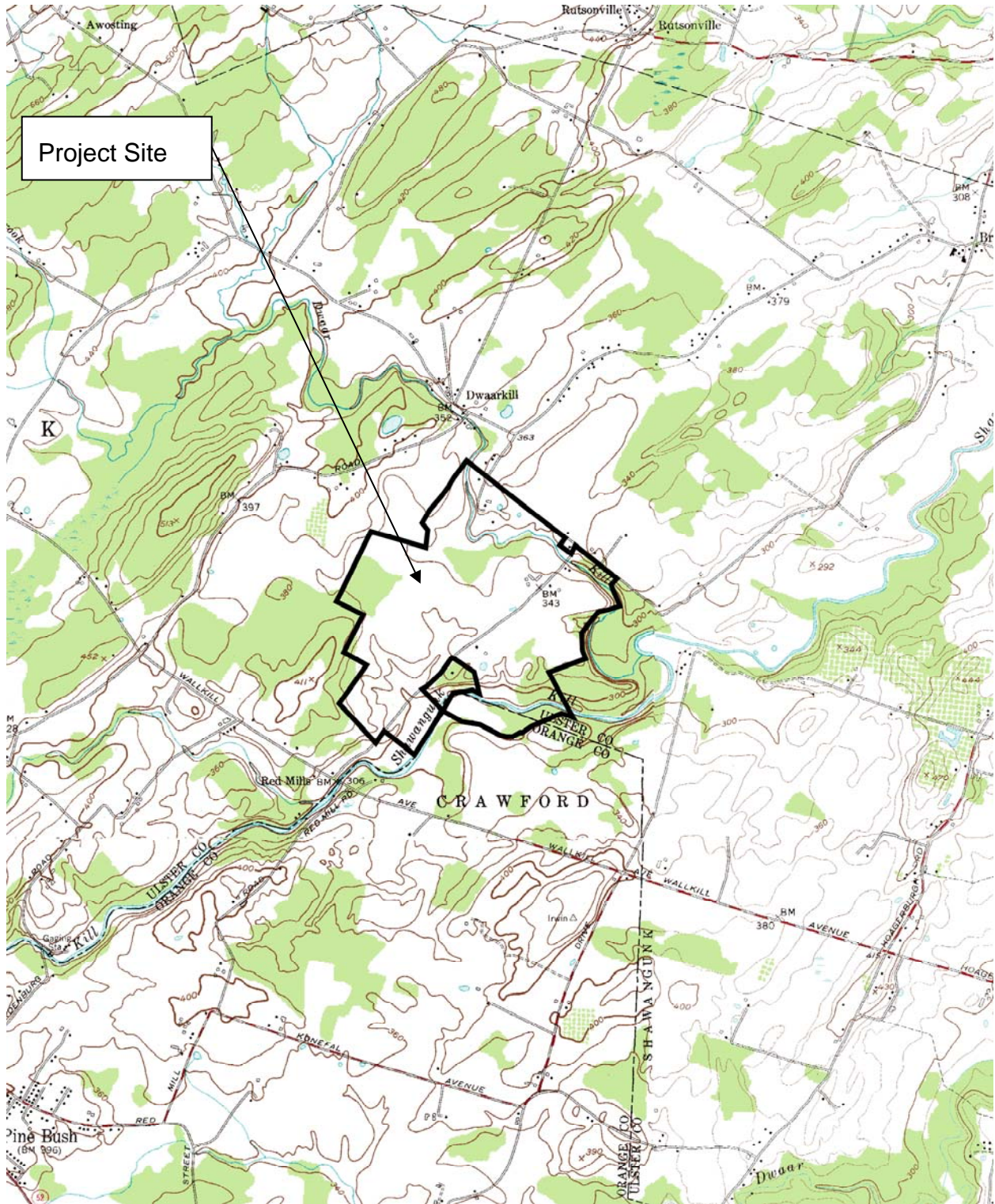
Town of Shawangunk  
Ulster County, New York

Prepared by:  
Kingdom Support Services, Inc.

October 2008







Project Site

**Location Map**  
**USGS Quad Map—Napanoch, New York**





# Watchtower Farms Improvements Draft Environmental Impact Statement (DEIS)

## APPLICANT INFORMATION

### **Project Description**

The applicant proposes to construct a three-story multiple dwelling with 300 dwelling units and ancillary uses including a two-story parking garage with 400 spaces, three-story accessory office building, recreation building, technical equipment building, and proposed additions to the existing dining room, dry cleaning, and laundry facilities.

### **Project Location**

The project site is in the Town of Shawangunk, Ulster County, and it is located at 900 Red Mills Road, Wallkill, NY 12589.

### **Tax Map Identification**

Section 99.004, Block 1, Lot 11 (99.4-1-11)

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Submittal Date: May 16, 2008  
Lead Agency Acceptance Date: October 7, 2008  
Public Hearing Date: November 5, 2008  
Deadline for Receipt of Public Comments: November 21, 2008 (or 10 days following the close of the hearing, whichever is later).

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**Watchtower Farms Improvements  
Draft Environmental Impact Statement (DEIS)**

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## **I EXECUTIVE SUMMARY**

### **I.A Brief Description of the Proposed Action**

The applicant, Watchtower Bible and Tract Society of New York, Inc., proposes the Watchtower Farms Improvements project to construct a three-story, 300-dwelling-unit residential building and ancillary uses, including a two-story parking garage with 400 spaces; a three-story accessory office building with basement, recreation building, and technical equipment building; and proposed additions to the existing dining room, dry cleaning, and laundry.

The proposed project is located in the Town of Shawangunk, Ulster County, and would occur on a portion of its property located on parcel 99.004, block 1, lot 11 (99.4-1-11). The property consists of approximately 1,141 acres, is commonly known in the community as Watchtower Farms, and has primary frontage on Red Mills Road. The property is wholly owned by the applicant, and all activities conducted thereon support the applicant's religious and charitable purposes. The project site refers to the southwest portion of the property bounded by Steen Road to the north.

This proposed project is based on a review conducted by the applicant in an effort to modernize the facility and identify long-term needs. It is intended to care for the applicant's organizational needs by improving the quality of life for residents, upgrading existing facilities, and providing for modest growth consistent with the zoning regulations and comprehensive plan of the Town of Shawangunk. It reflects the same stable pattern initiated in the early 1970s of integrating agricultural, office, residential, and printery activities, consistent with the property uses that have been in evidence for many decades.

Existing residential housing on the project site has been improved gradually over the years. However, small accommodations and centralized, dormitory-style bathrooms remain common. At the same time, demographics reveal that the average age of residents at Watchtower Farms Facility has increased over the years and people have become accustomed to dwelling units with individual, private bathrooms and more living space. The proposed project incorporates the removal of some modular housing, consolidation of some existing dwelling units, and the construction of a new residence building. The proposed project also includes a new recreation building with exercise/fitness facilities to maintain residents' physical health. These enhancements would improve the quality of life for residents, particularly caring for the needs of older residents while they continue active and productive lives on-site.

Utilization of modern technology requires upgrades to existing facilities. Computer servers and telecommunications equipment function best in a climate-controlled environment. Also, garment care must keep pace with industry and textile advances. The proposed technical equipment building and upgrading of the existing central laundry and dry cleaning facilities would improve infrastructure based upon proven technology.

Modest growth provides for flexibility to meet the applicant's organizational needs. The proposed adjustments in existing buildings and elimination of some modular structures would otherwise result in an estimated 25-percent loss in available dwelling units. The proposed new residential building would support a projected net increase of approximately 200 residents on the project site, an increase of approximately 15 percent. Accessory upgrades would include an addition to the central dining room, a new parking garage, utilities, and modernization of office workspace to include a new office building.

The proposed buildings would be clustered on lands already developed within the Watchtower Farms Facility, along with some disturbance of lands currently in agricultural or other use at the periphery of the proposed development area. It would be sited to avoid any disturbance of natural plant communities such as woodlands or wetlands. The proposed building locations and installation of a visual screening berm would be designed to preserve and enhance scenic views of the Shawangunk Mountains.

The area of disturbance for the proposed project would affect a total of 46 previously disturbed acres. This would include the disturbance of 27.1 acres of lawns, ornamentals, and other landscaping; 5.9 acres of roads, buildings, and other paved surfaces; and 13.0 acres of fenced pasture that has been in agricultural use as seeded pasture. By the conclusion of the proposed project, the disturbed area would contain 0.7 acres of water surface area; 9.4 acres of roads, building, and other paved surfaces; and 35.9 acres of lawns, planting, and landscaping. The applicant's landscaping includes protective vegetative cover of mowed lawn (which provides emergency access for emergency services equipment), ornamental trees, shrubs, and maintained flower gardens, all of which prevent any active soil erosion on these areas.

The proposed project would incorporate exterior architectural features and native vegetation that match existing design themes and blend in with the existing facility. Construction would be in accordance with the requirements of the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS. The entire project, including all utility services, would be undertaken and maintained at the applicant's expense.

This Draft Environmental Impact Statement is intended to identify all potentially adverse impacts that are pertinent to the proposed action and to identify appropriate mitigation measures. It is also intended to eliminate consideration of any impacts that are irrelevant or nonsignificant. It has been prepared in accordance with the *New York State Environmental Conservation Law*, Section 8-0101, *et seq.*, and the regulations promulgated by the New York State Department of Environmental Conservation under Part 617, Title 6 of the *Official Compilation of Codes, Rules and Regulations of the State of New York* (6 NYCRR 617).

## **I.B Listing of All Potential Environmental Impacts and Proposed Mitigation Measures**

### **I.B.1 Geology, Soils and Topography**

The proposed project would require the disturbance of 46 previously disturbed acres on the southwest portion of the property. There are no prominent or unique features such as rock outcroppings in the area of disturbance. No solid rock material is expected to be encountered during any excavation. A geotechnical engineering investigation was performed by Clough Harbour & Associates, LLP (See Appendix 5), indicating that solid rock lies at least 15 feet below the existing grade levels. No blasting or ripping of solid rock would be needed for the placements of the foundations for any proposed structure. The site has rolling topography with slopes generally 3 to 4 percent.

The project site contains wetlands, which are located in soils not listed as hydric, but meet established criteria for hydric (wetland) soils. However, these wetland soils are not present within the area of disturbance. The "Wetland Delineation and Assessment" report is included in Appendix 4 of this report.

#### **I.B.1.a Potential Impacts**

##### **Erosion and Loss of Slope Stability for Steep Slopes**

Disturbance of steep slopes has the potential to increase erosion and decrease slope stability if proper erosion control and construction techniques are not implemented.

##### **Soil Erosion Due to Land Disturbance**

Land disturbance due to construction activity has the potential to result in soil erosion and deposition of sediment to streams, rivers, and public roads. The removal of plant cover, changes in drainage patterns caused by grading, altering steep slopes, and prolonged exposure of soils during construction can lead to excessive soil erosion if unmitigated.

#### **I.B.1.b Mitigation Measures**

##### **Avoiding Disturbance of Steep Slopes**

The majority of the proposed site improvements are located in areas of 0 to 15 percent slopes. Areas where the existing slopes exceed 25 percent would be avoided.

##### **Implementation of Erosion and Sediment Control Plan**

Exposure of soils to erosive influences would be limited by complying with guidelines in the *New York State Standards and Specifications for Erosion and Sediment Control* (August 2005) and the *State Pollutant Discharge Elimination System* (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001, effective May 1, 2008).

The following construction erosion and sediment control measures would be implemented during construction: (1) preservation of existing landscaping vegetation by surrounding it with a temporary orange-colored plastic mesh fence and marking trees on the perimeter of the protected area with a brightly colored ribbon, (2) stockpiling topsoil, (3) installing silt fence around the perimeter of the entire disturbed area as well as the perimeter of each construction phase, (4) installing silt fence, (5) constructing temporary sediment basins, (6) installing a temporary earth dike to route storm water to the sediment basins, (7) establishing temporary vegetative cover by hydroseeding where construction will cease for more than 14 days, (8, 9) protecting exposed soil during short periods of construction by hydromulching or mulching with hay/straw, (10) applying water to disturbed areas that are susceptible to creating dust, (11) installing storm drain inlet protection, (12) building stabilized construction exits with stone anti-tracking pads to prevent the offsite transport of sediment by construction vehicles, (13) properly disposing of all waste materials, (14) combining equipment staging and materials storage, (15) installing a concrete washout areas, (16) providing a temporary sump pit to trap and filter water from any necessary dewatering operations, and (17) properly handling sanitary waste in portable toilets.

The following permanent erosion and sediment control measures would be implemented: (18) permanent seeding in accordance with the "Permanent Critical Area Planting Mixture Recommendations" in Guidelines for Urban Sediment and Erosion Control manual for appropriate seed mixtures, (19) installing riprap outfall protection at the outlet of pipe conduit to stormwater treatment ponds, (20) utilizing a flow-thru storm water planter, and (21) capturing stormwater runoff in micropool extended detention basins that will incorporate sediment forebays and provide water quality treatment, channel protection, and overbank and extreme flood protection

### **I.B.2 Surface Water Resources (Drainage)**

The portion of the existing watershed area that encompasses the project site consists of approximately 352 acres of wetlands, woods, developed agricultural lands, landscaped areas, buildings, roads, and parking lots. The northwest portion of the site drains into an unclassified intermittent stream and an existing wetland pond and eventually into the Dwaar Kill. The northeasterly portion of the site drains into an existing retention basin and into the Dwaar Kill. The southeastern portion of the site drains into two 48-inch culverts, which cross under Red Mills Road, and eventually drains into the Shawangunk Kill.

Stormwater entering the Watchtower Farms Improvements project site would discharge to the Class B(t) Dwaar Kill (DEC Water Index Number H-139-13-19-7) and the Class B Shawangunk Kill (DEC Water Index Number H-139-13-19). While the project site contains wetlands and protected streams, the New York State Department of Environmental Conservation stated in a letter dated January 25, 2008 (see Appendix 2): "the Department believes that new wetland impacts would be minimal . . . [and] the plans do not appear to propose any disturbances to these protected streams."



### I.B.2.a Potential Impacts

#### Increased Stormwater Runoff from Impervious Surfaces

An increase in impervious surfaces has the potential to increase stormwater runoff and pollutants by impeding water from soaking into the ground and allowing collected pollutants to be washed downstream into receiving waters.

Land disturbance due to construction activity also has the potential to cause increased soil movement and sediment accumulation; thus, polluting streams and public roads if runoff is uncontrolled.

### I.B.2.b Mitigation Measures

#### Location of Improvements within Previously Developed Areas

The proposed project would disturb approximately 46 acres of land. However, the proposed improvements are located in areas where existing impervious surfaces would be removed. Thus, the increase in impervious area is minimized. The proposed project also incorporates a multi-level parking garage, which reduces the impervious cover and stormwater runoff associated with surface parking lots. The total area of impervious surfaces within the existing 352 acre drainage area would increase from 51.0 acres to 54.5 acres. The total imperviousness would increase from 14.5 to 15.5 percent—a 1-percent increase. This drainage area is a portion of an 1,890-acre sub-watershed that drains onto the applicant's property and into the Shawangunk Kill. Therefore, the proposed improvements represent less than a 0.1-percent increase in the total area of impervious surface in this sub-watershed.

#### Implementation of a Stormwater Pollution Prevention Plan to Control Runoff

The proposed Erosion and Sediment Control Measures (ESCM) plan would implement standards for the use of vegetative, bio-technical, and structural measures to mitigate the impact on receiving waters during construction. This plan is presented in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS. The project would be divided into sixteen phases, which would limit the amount of disturbed land to a maximum of five acres at any given time, in compliance with DEC requirements. The phasing plan is described in Section III.B.4 of this report.

The goal of post-construction stormwater management is to reduce impacts on receiving waters due to increased runoff and pollutants from the new improvements. The SWPPP for the proposed project complies with the design criteria established in the *New York State Stormwater Management Design Manual* (August 2003) and the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001, May 2008).

### **I.B.3 Ground Water Resources/Water Supply System**

The applicant owns and operates an existing public water supply system that provides potable water to the site. It is fed from surface water reservoirs that are replenished by a 180-acre watershed entirely on the applicant's property. The existing design capacity for the water treatment plant is 360,000 gallons per day (gpd). In 2007, this system produced 40.5 million gallons of potable water, which corresponds to an average flow of 111,000 gallons per day (gpd). The peak daily usage for 2007 was 163,000 gpd. A conservative estimate would be that the proposed project would increase average daily demand to 153,000 gpd and the peak daily demand to 225,000 gpd. The existing capacities of the watershed, as well as the treatment facilities and distribution system, are sufficient to meet these increased demands.

The applicant does not presently operate any groundwater wells on the project site for domestic consumption, irrigation, or otherwise.

#### **I.B.3.a Potential Impacts**

##### **Water Flow for Fire Protection**

The distribution system features a number of 6-inch piping loops with fire hydrants throughout the site. Hydrant flow tests and calculations show that a fire flow of at least 725 gpm can be supplied to any point on the loops with either the water tower or the hydropneumatic tank online. The maximum fire flow needed for the proposed new buildings would not exceed 650 gpm at 20 psi at the highest floor elevation. Some of the proposed buildings would, however, extend beyond the existing 6-inch water main loops.

##### **Groundwater Recharge of Wetlands and Streams**

Increased water demand would cause no significant impacts to groundwater recharge of wetlands. Project site wetlands are not within the drainage area that contributes to the existing on-site reservoirs that supply water to the site. In addition, these areas are upstream of these reservoirs. It is expected that impacts downstream at the Dwaarkill and Shawangunk Kill would be minimal. Most of the potable and non-potable water used at the site is ultimately returned to the watershed and streams by means of surface runoff from irrigated crops and landscaping, as well as the treated discharge from the on-site wastewater treatment plant. In addition, by locating the proposed improvements in previously developed areas, the increase in overall imperviousness would be minimized. Thus, the amount of surface runoff available for groundwater recharge would not be significantly reduced. Also, water stored in the unlined stormwater treatment ponds would also be available for groundwater recharge.

### I.B.3.b Mitigation Measures

#### Extension of Water Distribution System to Provide Fire Protection

To provide sufficient fire flow to the proposed new buildings, one of the existing 6-inch water main loops would be extended. New hydrants would be installed on the new portion of the 6-inch water main. These distribution piping upgrades would meet domestic and fire flow requirements and would be performed at the expense of the applicant.

#### Water Conservation

Water conservation measures would be implemented to minimize water usage and further reduce impacts to groundwater recharge. The applicant is already implementing water conservation measures by retrofitting existing bathroom facilities with low flush toilets. In addition, the proposed new buildings and renovations would include low flush toilets. Water saving devices and water reuse would also be incorporated in the proposed renovation of the central laundry.

### I.B.4 Wastewater/Sewage Disposal

The applicant owns and operates an existing wastewater treatment plant (WWTP). It is a tertiary extended aeration plant using the activated sludge process. Effluent polishing is accomplished using sand filtration followed by chlorination. It is authorized to discharge treated wastewater to the Shawangunk Kill under the conditions of a State Pollution Discharge Elimination System (SPDES) permit no. NY-002-5295 (DEC ID NO.: 3-5152-00026/00004).

The proposed project would extend the wastewater collection system along existing driveways and Red Mills Road, including a new lift station and force main serving the new residence and some new gravity sewers.

#### I.B.4.a Potential Impacts

##### Optimization for Wastewater Treatment Plant

In 1994, the estimated plant biochemical oxygen demand (BOD) loading was 508 pounds per day. Over the years, adjustments in food processing have reduced the BOD loading on the WWTP. The estimated post-project BOD loading is calculated to be 362 pounds per day. While the WWTP has sufficient capacity to properly handle wastewater loading from the proposed project, some adjustments would be needed to optimize its operation.

##### Noise and Odor Impacts from Wastewater Treatment Plant

The WWTP is a stationary process operation involving open biological processes and comprising various motors, pumps, valves, and electrical equipment. It is in operation 24 hours per day / 365 days per year. There are also transport movements which

include personnel movement to and from the plant primarily during daylight hours, the receiving of raw materials, and the infrequent operation of a small bucket loader for biosolids handling. Sound readings<sup>1</sup> were taken 2,500 feet from the plant and 100 feet from Red Mills Road to establish a baseline ambient noise level for a typical residential land owner, as well as at various intervals and direction from the plant. The minimum recorded sound level of 54.5 dB(A) represents the existing plant generated noise with sound level increases recorded as vehicle traffic passed. Since sound levels are not expected to increase with the proposed improvements, the future “build” and “no-build” scenarios would be the same. This existing noise is commensurate with ambient sound levels found in typical community settings.<sup>2</sup> Also, given the location of the Wastewater Treatment Plant, noise generated by the plant itself would effectively dissipate over distance in dB(A).

Wastewater influent produces light odors directly at the headworks of the plant where it enters the pre-treatment area. Once aeration and aerobic digestion begins, odors are effectively reduced. Putrefaction or septic conditions effectively do not occur due to constant air agitation and digestion. Odors from the headworks of the plant readily dissipate beyond a distance of 200 feet. Light odors are also generated when digested sludge from the treatment process is allowed to flow into the drying beds. Digested sludge is allowed to flow into the beds only once or perhaps twice per month. This produces odors for a period of about three days until it becomes a biosolids that no longer has any active odor-producing bacteria. These temporary odors from the sludge drying beds readily dissipate beyond a distance of 200 feet. It is projected that the odor impact would not reach any sensitive outside property lines that are adjacent to the WWTP.

#### I.B.4.b Mitigation Measures

##### Improvements to Optimize Wastewater Treatment Plant

The applicant proposes minor adjustments to optimize operation of the WWTP, including converting the present “pretreatment” tank into a supplemental flow equalization tank and installing new headworks, variable speed tank pumps, controls, and aeration blowers.

The proposed project would also include water conservation features. For example, toilets in some existing structures that use 4.5 gallons per flush would be replaced with

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<sup>1</sup> Sound readings were taken by applicant’s staff on Monday, April 7, 2008, from 10:30 a.m. to 11:30 a.m. Sound meter: Class 2 acoustic analyzer consisting of NTI Acoustilyzer AL1 noise meter and NTI MiniSPL microphone. Weather conditions measured at Pine Bush , NY (3 miles from location), at 10:42 a.m. per *Weather Underground, Inc.*: Temperature: 41.4 °F; Dew Point: 34.1 °F; Humidity: 75%; Pressure: 30.33 in.; Wind: ENE 4.0 mph. The measured readings ranged from 54.5 db to 85.3 db (passing truck) with an average reading of 69.2 db.

<sup>2</sup> Cowan, James, *Handbook of Environmental Acoustics*, 1994. Egan, David, *Architectural Acoustics*, 1998.

water saving devices that use an average of 1.5 gallons of water per flush. The proposed renovations to the central laundry would also incorporate water saving equipment.

#### Building Siting to Avoid Potential Noise and Odor Impacts from the Wastewater Treatment Plant

The new residential building is not proposed to be located near the WWTP, and no significant expansion of the WWTP towards neighboring properties is proposed. The WWTP is located in a rural setting 900 feet south of Red Mills Road, and 300 feet from the Shawangunk Kill. The nearest adjacent property corner is located 700 feet from the WWTP, and there are no proximal receptors (inhabitants) beyond property lines that are visible from the plant. Sound pressure level readings taken near the WWTP were consistent with ambient sound levels found in the rural community setting. Odors would dissipate prior to any impact on sensitive receptors.

#### I.B.5 Terrestrial and Aquatic Ecology

The applicant contacted the New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources, New York Natural Heritage Program (DEC) and the United States Department of the Interior Fish and Wildlife Service (FWS) to request information regarding the possible presence of unique, rare and/or endangered, threatened or proposed for listing as either protected species, or species of special concern. A Wetland Delineation and Assessment was conducted by a wetland delineator on December 24-30, 2006, and June 4-16, 2007. This was reviewed and confirmed by the Planning Board's consultant on July 23, 2007. During these studies, no threatened or endangered species, such as the small whorled pogonia, northern monkshood, or any other species identified by the DEC, were encountered. The need for additional field studies is not anticipated because the applicant assumes that such species could exist in these protected natural areas and has incorporated design and operational measures to protect potential habitats as its commitment to the protection of these areas.

##### I.B.5.a Potential Impacts

##### Indiana Bat

The Indiana Bat (*Myotis sodalis*) is federally listed as endangered. The DEC provides a general description of the Indiana Bat<sup>3</sup>, summarized as follows. Females congregate in nursery colonies, typically located along the banks of streams or lakes in forested habitat, under the loose bark of dead trees, and contain from 50-100 females. In August or early September, Indiana bats swarm and mate at the entrance of selected caves or

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<sup>3</sup> New York State Department of Environmental Conservation Indiana Bat Fact Sheet, referenced at <http://www.dec.ny.gov/animals/6972.html>.

mines. Indiana bats spend the winter months in secluded caves or mines which average 37 to 43 degrees F.

Commenting on the Indiana Bat, the Wetland Delineation and Assessment Report, stated: "Forested wetlands and uplands within the study area do provide appropriate habitat. Any proposed impact to these potential habitats would need presence/absence surveys to determine any adverse impact."<sup>4</sup> The Hickory Creek Consulting LLC letter dated July 24, 2007, also noted, "Habitat for the Indiana bat is present, mainly within existing wooded wetland areas that are not scheduled for site disturbance."<sup>5</sup>

### Bog Turtle

The bog turtle (*Clemmys muhlenbergii*) is federally listed as threatened. The DEC provides a general description of the bog turtle<sup>6</sup>, summarized as follows. In New York, the bog turtle emerges from hibernation by mid-April. In early to mid-June, a clutch of two to four eggs is laid in a nest, which is generally located inside the upper part of an unshaded tussock. The eggs hatch around mid-September. Some young turtles spend the winter in the nest, emerging the following spring. The adults enter hibernation in late October. This is a semi-aquatic species, preferring habitat with cool, shallow, slow-moving water, deep soft muck soils, and tussock-forming herbaceous vegetation. In New York, the bog turtle is generally found in open, early successional types of habitats such as wet meadows or open calcareous boggy areas generally dominated by sedges (*Carex spp.*) or sphagnum moss. Like other cold-blooded or ectothermic species, it requires habitats with a good deal of solar penetration for basking and nesting.

The NYSDEC response dated January 30, 2007, also states that the turtle is "documented within 1 mile" of the general study area and "animals can move 1 mile or more from documented locations."

On July 23, 2007, Karen Schneller-McDonald of Hickory Creek Consulting LLC and John Chitty conducted a site visit to inspect the area covered in the Wetland Delineation and Assessment Report. As noted in correspondence from Hickory Creek Consulting LLC dated July 24, 2007, "Bog turtle habitat is present in and near wetland area #3 as noted in the Wetland Delineation and Assessment Report. . . . [o]n the assumption that bog turtles are present, mitigation measures can be developed and evaluated to fully protect the habitat without requiring an actual field survey."<sup>7</sup> This is in harmony with the Guidelines for Bog Turtle Surveys (revised April 2006).

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<sup>4</sup> See Appendix 4, Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V, Endangered Species Records Inquiry and Evaluation.

<sup>5</sup> See Appendix 2.

<sup>6</sup> New York State Department of Environmental Conservation Bog Turtle Fact Sheet, referenced at <http://www.dec.ny.gov/animals/7164.html>.

<sup>7</sup> See Appendix 2.

Commenting on the bog turtle, the Wetland Delineation and Assessment Report, stated: “Emergent and forested wetlands in the study area do provide appropriate habitat. The attached NYSDEC response mentions that the turtle is ‘documented within 1 mile’ of the general study area and ‘animals can move 1 mile or more from documented locations.’ Although there are no documented sightings or crossings of the existing perimeter road by turtles, any development area would need to have a perimeter silt fence reinforced with wire mesh to prevent turtles from entering the active construction area. The periodic inspection program would maintain and confirm the integrity of the fencing.”<sup>8</sup>

### Avian Species

Commenting on avian species, the Wetland Delineation and Assessment Report, stated: “The following avian species may utilize the open pasture, emergent wetland areas and forest lands for feeding and nesting. No individuals were encountered during the field investigations[:] Henslow’s sparrow, *Ammodramus henslowii* – natural grasslands; Short eared owl, *Asio flammeus* – open grasslands; Upland Sandpiper, *Bartramia longicauda* – open grasslands; Northern Harrier (*Circus cyaneus*) – open marsh and upland areas.”<sup>9</sup>

### Wetlands

Three wetland areas and one intermittent creek, likely waters of the United States, were delineated within the study area, totaling 26.44 acres (on-site). Area 1 is a 1.85-acre jurisdictional wetland located within the loop access driveway. It likely qualifies as an adjacent wetland under the jurisdiction of the United States Army Corps of Engineers (ACOE) and would be a moderate quality aquatic resource. Area 2 is a 2.56-acre (on-site) jurisdictional wetland located upstream of Area 1 and on the northwestern portion of the study area. It likely qualifies as an adjacent wetland under the jurisdiction of the ACOE and would be a low to moderate quality aquatic resource. Area 3 is a 22.03-acre (on-site) jurisdictional forested wetland upstream and west of Area 2. It likely qualifies as an adjacent wetland under the jurisdiction of the ACOE and would be a moderate to high quality aquatic resource. Passing through and connecting the wetland areas is an intermittent drainage tributary to the Dwaarkill; thus, it is likely that none of the delineated wetlands would be considered isolated.

In correspondence from the DEC dated January 25, 2008, the following comments were provided: “An examination of aerial photos and the National Wetlands Inventory suggest that wetlands on this parcel, as well as adjoining parcels, may be of size and quality to be eligible for inclusion on the state regulatory maps for Freshwater Wetlands. The Department anticipates re-mapping wetlands in the Wallkill River watershed in the near

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<sup>8</sup> See Appendix 4, Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V, Endangered Species Records Inquiry and Evaluation.

<sup>9</sup> See Appendix 4, Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V, Endangered Species Records Inquiry and Evaluation.

future. The DEC wetland biologist for Ulster County has reviewed the plans and believes they accurately depict the extent of state-eligible wetlands on the property. The current proposal shows the majority of the new disturbances to be more than 100 feet from the wetlands and to be within areas of previous disturbance. In addition, the existing modular units, many of which are within 100 feet of the wetlands, will be removed. Therefore the Department believes new wetland impacts will be minimal. Please submit full plan sets as requested above which include the location of the on-site wetlands. Once these are received and reviewed, the Department will likely be requesting some revegetation of the area of the modular removal and planting of buffering vegetation along the proposed access road.”<sup>10</sup>

### Waterbodies

As shown in Figure II.A-3 Area Map, the eastern property boundary borders the Shawangunk Kill (Waters Index No. H-139-13-19), a New York State Recreational River according to Title 6 of the *New York Code of Rules and Regulations*, Part 666 (6 NYCRR 666). This Act designates that certain portions of rivers of the state shall be preserved in a free-flowing condition and shall be protected. The river is also protected and rated as Class B. Within the property and running parallel to Steen Road is the Dwaarkill (Waters Index No. H-139-13-19-7), a protected Class B(t) stream that flows into the Shawangunk Kill. The Shawangunk Kill Recreational River Corridor boundary is discussed in more detail in Section II.A.3.

Potential impacts could include damage to bed and banks, siltation, loss of function; and in the case of Recreational Rivers, degradation of potential for recreational use.

### I.B.5.b Mitigation Measures

#### Site Design to Avoid Natural Plant Communities, Sensitive Habitat, and Wetlands

The Town of Shawangunk Comprehensive Plan (July 2003) includes several recommendations under “Section B. Natural Features.” The first recommendation is to “Establish Conservation Subdivision procedures in the Zoning Ordinance.” It explains: “Under conservation subdivision techniques, the density of development is not affected. Rather the approach is to configure the development so that it has minimal impact on the important resources associated with the land to be developed. Thus the first step in the subdivision process is not to lay out house lots, but rather to identify the physical location of environmental and cultural resources on the property that are worthy of protection. Once the resources to be protected have been defined and mapped, the next step is to map the areas where development can take place.” The second, closely related recommendation is to “Encourage Documentation of the Important Resources to be Protected by the Conservation Subdivision Process.” It explains: “Clearly, one of the most important elements in the conservation subdivision process i[s] to have a thorough grasp of the resources that should be conserved during the subdivision process. Some

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<sup>10</sup> See reference documents in Appendix 2.



of these resources include areas with steep slopes, stream and river corridors along with important historic and cultural resources worthy of preservation. All of these should be addressed in a conservation subdivision process.”

While the applicant does not propose a residential subdivision, which is specifically recommended for the conservation mapping described by the Town of Shawangunk Comprehensive Plan, the applicant has incorporated the concept presented of identifying important natural resources early in the planning process. This is in harmony with steps taken by the Town of Shawangunk Planning Board to incorporate the above recommendations by endorsing “Habitat Assessment Guidelines – Town of Shawangunk (November 28, 2006). As noted in the cover message from the Planning Board Chair, “Shawangunk’s approach uses Habitat Assessment early in the process to establish the environmental constraints and guide the plan before the applicant invests significant time and money in design and engineering.”

The proposed project has been sited specifically to avoid sensitive ecological habitat in the interests of low-impact development. As noted in this DEIS in Section V, Alternatives, the Far North Residence was considered, but it would have had an increased potential impact on existing wetlands. Instead, as observed by the DEC in correspondence dated January 25, 2008, page 2, “the project is generally restricted to redevelopment of areas previously disturbed[.]”

The proposed project has been sited to avoid disturbance of any natural plant communities, wetland areas, or wooded areas that contain or provide habitat for unique, rare and/or endangered, threatened or proposed for listing as either protected species, or species of special concern. The majority of the disturbed area is a previously developed portion of the site. There is also an existing perimeter driveway separating the developed areas from any adjacent natural areas.

The area of disturbance for the proposed project would be a total of 46 previously disturbed acres. This would include the disturbance of 27.1 acres of lawns, ornamentals, and other landscaping, 5.9 acres of roads, buildings and other paved surfaces, and 13.0 acres of fenced pasture that has been in agricultural use as pasture or cropland for decades. By the conclusion of the proposed project, the previously disturbed area would contain 0.7 acres of water surface area, 9.4 acres of roads, building and other paved surfaces, and 35.9 acres of lawns, planting, and landscaping. The applicant’s proposed landscaping includes protective vegetative cover of mowed lawn (which provides emergency access for emergency services equipment), ornamental trees, shrubs, and maintained flower gardens, all of which prevent any active soil erosion on these areas.

#### Avoidance of Indiana Bat Habitat

The area of disturbance for the proposed project does not include any natural woodland areas, such as those containing Shagbark hickory (*C. ovata*), which can provide seasonal habitat for the Indiana Bat.

## Avoidance of Bog Turtle Habitat and Short-Term Protective Measures

The proposed project does not disturb any wetlands, particularly those wetlands and surrounding areas that provide habitat for the bog turtle. Since the on-site emergent and forested wetlands in the study provide appropriate habitat for the bog turtle, a perimeter silt fence reinforced with wire mesh would be installed to separate the area of disturbance from the wetlands during construction. This would prevent a bog turtle from entering the active construction area. A periodic inspection program would be set in place to maintain and confirm the integrity of the fencing.

## Avoidance of Avian Species Habitat

A letter from the New York State Department of Environmental Conservation commenting on this subject stated that the “DEC has reviewed the Department’s Master Habitat Database and found this site is near known populations of the following: Short-eared Owl (*Asio flammeus*)—endangered, Northern Harrier (*Circus cyaneus*)—threatened, Upland Sandpiper (*Bartramia longicauda*)—threatened, Henslow’s Sparrow (*Ammodramus henslowii*)—threatened. Since these species are all open meadows and the project is generally restricted to redevelopment of areas previously disturbed, the Department does not believe this proposal is likely to impact these species.”<sup>11</sup>

## Construction of New Buildings Outside of the Recreational River Corridor

All proposed construction of new buildings would be outside of the Shawangunk Kill Recreational River Corridor Boundary.

## Protection of Waters

In correspondence from the DEC dated January 25, 2008, the following comments were provided: “In addition to the Shawangunk Kill, the site also contains the Dwaar Kill, NYS Waters Index H-139-13-19-7, Class B(t). A permit pursuant to Article 15 of the Environmental Conservation Law, Use and Protection of Waters, is required for any disturbance to the bed or banks of either stream. However, the plans do not appear to propose any disturbances to these protected streams.”<sup>12</sup>

No stream disturbances are proposed, and all surface water discharges would be conveyed to the Dwaarkill and Shawangunk Kill in accordance with the Stormwater Pollution Prevention Plan (SWPPP) complying with NYS DEC permit requirements in Section III.B.2 and Appendix 13, located in Volume 2 of this DEIS.

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<sup>11</sup> New York State Department of Environmental Conservation to Town of Shawangunk Planning Board, January 25, 2008.

<sup>12</sup> See reference documents in Appendix 2.

## Stormwater Pollution Prevention Plan

Erosion and Sedimentation Control Measures (ESCM) are described as part of the Stormwater Pollution Prevention Plan (SWPPP), complying with NYS DEC permit requirements in Section III.A.2 and Appendix 13, located in Volume 2 of this DEIS. Mitigation measures include preservation measures around existing vegetation, removal and stockpiling of topsoil, silt fence installations, construction of temporary sediment basins, construction of earth dikes, temporary stabilization techniques, dust control, and storm drain inlet protection.

## Site Design

The design of the proposed project incorporates a two-story parking garage, which reduces the impervious coverage and resultant stormwater runoff associated with surface parking lots. The proposed residence building and accessory office building are each three-story, thus covering less surface area and reducing impervious coverage.

## Revegetation

As recommended by the DEC in its letter of January 25, 2008, and Hickory Creek Consulting LLC in its letter of July 24, 2007, the proposed project would include revegetation of the area of the modular housing removal and planting of buffering vegetation along the relocated access driveway. Approximately 13 acres of wetland buffer would be revegetated.

### **I.B.6 Land Use and Zoning**

The proposed project has resulted from an effort to modernize the facility and identify long-term needs: (1) improve the quality of life for residents, which this project addresses by providing residential dwelling units with private bathrooms, increasing the size of individual dwelling units, and providing exercise/fitness facilities; (2) upgrade infrastructure based on proven technology, which this project addresses by adding a technical equipment room and upgrading central laundry and dry cleaning facilities based on industry and textile changes; (3) allow for modest population growth, which this project addresses by adding dwelling units, parking, office space, and central dining space.

The facility has clustered the more intensive uses and buildings in a campus-type environment that has helped to preserve the rural character of the community. A variety of activities support the religious use of the property, and these have been consistent with permits issued by the Town of Shawangunk. The applicant is requesting a special use permit with site plan approval for 300 multiple dwellings in a 3-story residential building with basement and ancillary uses included but not limited to 2-story parking garage with 400 spaces, 3-story accessory building with basement, recreation building, technical equipment building, additions to existing dining room and laundry/dry cleaning buildings. All of the activities associated with the proposed project currently exist on the property. These include the multiple dwelling use and ancillary uses, including office, essential services, dining, laundry, dry cleaning, recreation, and parking.

## I.B.6.a Potential Impacts

### Applicant's Long-Term Plans

The proposed project continues the applicant's long history of agriculture, printing, residential, and related activities in the Shawangunk Valley. These activities directly support the applicant's religious and charitable purposes as a domestic not-for-profit corporation in support of the body of Christians known as Jehovah's Witnesses.

The applicant does not propose relocating its ecclesiastical governing body and worldwide administrative functions to the project site. The applicant also has no long-term plans for expansion on lands in the Town of Shawangunk, whether they are held in ownership by the applicant or the Valley Farms Corporation, beyond those that are proposed with this project.

This project is based on an organizational assessment of long-term needs and reflects the same stable pattern initiated in the early 1970s of integrating agricultural, office, residential, and printery activities. The applicant is committed to the continued consistent use of the property that has been demonstrated for decades.

### Compatibility with Community Character

The project site is located in southern Ulster County, approximately six miles west of the hamlet of Wallkill, near the geographic center of the Town of Shawangunk. The hamlet of Dwaarkill is approximately one mile to the north at the intersection of New Prospect Road and Awosting Road. Establishments within the hamlet of Dwaarkill include Sangiovese at the 1776 Colonial Inn (a restaurant that was severely damaged by fire in March 2008), the Dwaarkill Country Store, and The Hoot Owl bar and restaurant. The hamlet of Bruynswick is approximately two miles to the northeast along Red Mills Road. Establishments in the hamlet of Bruynswick include Audrey's Farmhouse Bed and Breakfast, the Bruynswick Inn restaurant, the Kingdom Hall of Jehovah's Witnesses, New Horizons Resources Inc., Anna Mercurio Gardens, and the Shawangunk Valley Fire Company station house.

The property directly borders approximately 72 properties in the Town of Shawangunk and 3 properties in the Town of Crawford, Orange County (refer to Figure II.A-4 Deed Parcel Map). According to a review of the Ulster County Information Services Web site, land uses adjoining the project site include field crops, one family year-round residence, two family year-round residence, rural residence with acreage, residential—multi-purpose/multi-structure, residential vacant land, and private wild and forest lands.

The *Open Space Inventory and Analysis—Shawangunk, New York* (March 2004), page 14, summarizes that "Shawangunk has a long history of agriculture and industry, especially along its two main rivers [Shawangunk Kill and Wallkill River]." Historical uses in the hamlets of Dwaarkill and Bruynswick have included a pallet factory, restaurants, and resorts.

Large, institutional-type use of property is not unique in the wider context of the Town of Shawangunk. A similar large parcel of land in the same zoning district, R-Ag 4 Residential Agricultural, is used for two correctional facilities located north of the hamlet of Walkkill, in the eastern section of the Town of Shawangunk. In 2000, there were over 1,100 inmates incarcerated in the Shawangunk and Walkkill Correctional facilities. There are also over 600 employees staffing the facilities, including civilians and correctional officers. Activities conducted at the correctional facilities have been diverse. In 2002, this included a farm with approximately 300 cows to provide milk and meat products for the facility and neighboring correctional facilities, a horse program with approximately 40 retired thoroughbred horses, an optics program that manufactures eyeglasses, and a recycling facility.

The proposed project is expected to support, rather than change, the activities conducted on the property. This project removes approximately 13 acres of pasture from agricultural use but does not affect other ongoing agricultural activities. While printing, office, and agricultural activities have been refined over the years depending upon specific needs, the general activities in the proposed project are the same, and the modest population growth from this project is expected to be compatible in the context of adjoining neighbors and the overall Town of Shawangunk.

#### Compatibility with Town of Shawangunk Comprehensive Plan

In “Section I. Introduction” of the Town of Shawangunk Comprehensive Plan, eight visions are provided. The proposed project is reviewed in the light of several of those visions below.

- Vision: Protect and preserve important natural resources and views in the Town, particularly those associated with the Shawangunk Ridge and the Shawangunk Kill and Walkkill River corridors.

The proposed project would be clustered around previously developed portions of the project site. It would be visually screened in a manner that protects the view of the Shawangunk Ridge for northbound vehicles on Red Mills Road north of the intersection with Bruyn Turnpike. The project site is also outside of the Shawangunk Kill Recreational River Boundary and would not affect views to or from the Shawangunk Kill. The project site is not proximate to the Walkkill River.

- Vision: Promote an agriculture and forestry sector in the Town that is economically viable and that also protects the natural environment.

The proposed project would not remove significant areas of agriculture or forestry from production. The Watchtower Farms Facility has had an operating sawmill for many years, and the forested lands are subject to a woodland management program.

- Vision: Protect important areas of open space.

Because the proposed project is clustered on previously developed areas, it would not have an impact on potentially important areas of open space on the property.

- Vision: Ensure that all development blends in with the natural environment through high-quality, environmentally sensitive design and landscaping.

The project would blend with the natural environment in several different ways. The size, appearance, and lighting for new construction would match the existing structures. This would include shielded exterior lighting.

In addition, effort would be made to design the new residence building, office building, and recreation building to accepted sustainability standards. The goal is to achieve a 3 *Green Globes* award level (this corresponds to a “LEED® Green Building Rating System™ (Leadership in Energy and Environmental Design) *Gold* award level) in sustainable design through the Green Globes™ System. Green Globes emphasizes state-of-the-art strategies for sustainable site development, energy efficiency, water savings, resources and materials selection and waste management, emissions control and indoor environmental quality.

- Vision: Protect historic resources of the Town.

The nearest historic resource, which is located on the subject property north of the project site, is the Dill Farm, also listed as the Meredith House in “Open Space Inventory and Analysis – Shawangunk, New York,” page 43 (see Figure III.F-4). The Dill Farm was added to the National Historic Register in 1983 (Building #83001816) based on the significance of its Greek Revival architecture. The Dill Farm is separated from the project site by the Dwaarkill. It is located approximately 2,000 feet northwest of the proposed new residence building on the same property and would not be disturbed by the proposed project. The applicant purchased and restored the Dill Farm in 1999. The proposed project is also not anticipated to have a potential impact on the Johannes Decker Home or William Decker House, nearby historic structures that are visually screened from the project site.

In addition to the eight visions discussed above, the Town of Shawangunk Comprehensive Plan also makes several statements in “Section II. Key Issues Emerging from the Inventory.” One of these is that Shawangunk’s population is growing and that traditional sources of open space are in transition. It states that “[a]griculture, vacant lands and community services, particularly the Watchtower Farms complex in the center of the Town, are dominant uses.” It also notes “the data show that 41.4 percent of Shawangunk-area farmers spend at least 200 days working off the farm each year, compared to approximately 30 percent of farm operators countywide or at the State level. This suggests that farming in the area is indeed undergoing immense change.” In response to changing needs, the Watchtower Farms Facility has focused its agricultural activities in the past decade, increasing its planting of blueberries and sweet corn while eliminating its dairy herd. Although more efficient methods mean that less

time is spent by individual residents on direct agricultural activities, the applicant's cumulative agricultural activity is significant.

The Town of Shawangunk Comprehensive Plan also comments on preserving water resources. No groundwater sources directly supply the project site. The applicant operates private, state-regulated water and wastewater treatment systems. Potable water is supplied from two surface water reservoirs that, including their watersheds, are totally contained on the property. Non-potable water for irrigation is supplied primarily from a pump station located on the Shawangunk Kill. Treated wastewater is discharged under a New York State Pollutant Discharge Elimination System (SPDES) permit (NY #002 5925) to the Shawangunk Kill. Most of the potable and non-potable water used at the site is ultimately returned to the watershed and streams by means of surface runoff from irrigated crops and landscaping, as well as the treated discharge from the on-site wastewater treatment plant. Thus, in harmony with the Town of Shawangunk Comprehensive Plan, water resources would not be significantly impacted by the proposed project.

The Town of Shawangunk Comprehensive Plan notes that certain areas of the town may be subject to increasing traffic. The transportation study considered eleven intersections of interest. The applicant retained John Collins Engineers, P.C., from Hawthorne, NY, to study these intersections, including traffic counts.<sup>13</sup> The intersections studied include: (1) Bruyn Turnpike and Hoagerburgh Road, (2) Bruyn Turnpike and Red Mills Road, (3) Bruyn Turnpike and Hardenburgh Road, (4) Hardenburgh Road and North Street/Maple Road, (5) Bruyn Turnpike and New Prospect Road/Indian Springs Road, (6) Red Mills Road and Steen Road, (7) Red Mills Road/Hoagerburgh Road and Bruynswick Road, (8) Red Mills Road and Watchtower Farms Driveways, (9) Walkkill Avenue and Drexel Drive, (10) NYS Route 52 and County Route 7 (New Prospect Road), and (11) NYS Route 52 and Maple Avenue (Route 302).

The transportation study includes the following summary comments on page 20: "Based on the results of the field inspections of the roadways in the vicinity of the site together with the results of the capacity analysis for the individual intersections, the traffic generated by the expansion of the Watchtower Farms Facilities should not result in a significant negative impact on traffic operations in the area."

The Town of Shawangunk Comprehensive Plan states that "there is increasing demand for local/neighborhood parks." The applicant has supported various volunteer initiatives at Verkeerderkill Park, Garrison Park, Walkkill Rail Trail and the Galeville Recreation Area. The Town of Shawangunk Comprehensive Plan particularly focuses on local, neighborhood parks. In harmony with those comments, the applicant proposes providing private recreation facilities to mitigate possible demands on other town services, such as athletic fields, that may be at a premium.

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<sup>13</sup> See Appendix 6.

Another area of concern in the Town of Shawangunk Comprehensive Plan is that “in many areas, the town needs to improve and maintain the appearance and condition of the built environment.” The applicant has a reputation for maintaining its property and assisting, where possible, with community beautification efforts.

Concerning the mixture of various uses that Watchtower Farms Facility represents, the Town of Shawangunk Comprehensive Plan includes the recommendation, under “Section IV.E: Economic Development”, to “encourage farmers to maximize Return on Lands not in production in an environmentally responsible manner through improved tax planning, woodlot management, agri-tourism and allowing other income producing activities as accessory uses to farming. . . Part of this effort should consider ways of encouraging existing farms to create nonfarm uses on a portion of their land in order to generate additional sources of income so that the farm itself can stay in operation.” As a religious not-for-profit organization, the applicant does not intend to generate income; however, the applicant endeavors to make the best use of its human and physical resources. Having compatible non-farm uses improves the applicant’s flexibility and stability in the community.

### Zoning

According to “Zoning, Chapter 177 from the Code of the Town of Shawangunk,” the zoning map updated in 2004 shows the project site in zoning district R-Ag 4. In accordance with Sections 177-7.D(4), 177-22, and 177-23, the applicant is seeking a special use permit and site plan review approval for 300 multiple-family dwellings to be constructed in a three-story residential building attached to an existing residential building. The applicant also proposes to construct and expand various ancillary uses, including but not limited to a two-story parking garage with cellar accommodating 400 spaces; three-story accessory office building with basement, recreation building, technical equipment building, with proposed additions to the existing dining room and laundry and dry cleaning buildings.

The applicant proposes seeking two variances. First, the applicant intends to seek a variance from the NYS Department of State Division of Code Enforcement and Administration, requesting that the requirement of sprinklers in the existing central dining room be waived on the basis that the applicant maintains a private fire brigade, a continuous security watch, and a non-smoking policy on the premises, and that there would be a disproportionate, adverse potential impact from adding the sprinklers to the existing dining room. Second, the applicant intends to seek a variance from the Town of Shawangunk Zoning Board of Appeals (ZBA) to allow the basement windows at parts of one side and the rear of the proposed three-story accessory office building to be exposed. These sections of the building would reach a maximum height of 44 feet 6 inches, which would exceed the maximum allowed by regulation of 35 feet.

The following zoning requirements would be met by the proposed project:

Building Height and Bulk Table: For the proposed project, the minimum distance to the property line is approximately 300 feet from the relocated outdoor recreation fields to an



undeveloped parcel west of the project site. The impervious coverage on the property would increase by 0.3 percent of the entire parcel to reach a total of approximately 7.1 percent. The property is 1,141 acres and after deducting floodplains, wetlands, and waterbodies, the net acreage available for density calculations is 948± acres.

**Landscaping:** Any use in a residential district and which is not conducted within a completely enclosed building, such as junkyards, storage yards, lumber and building material yards, and parking lots and like uses, shall be entirely enclosed by a fence or landscaping to effectively shield such use (Town of Shawangunk Zoning Code, Section 177-12). The proposed parking garage is very similar to the two existing parking garages on the property. It would be screened by landscaping and an earthen berm. The building façade would be similar to those of the other parking garages.

**Density for Residential Uses—Multiple Dwelling:** The applicant proposes construction of 300 dwelling units in a multiple dwelling. These dwelling units would primarily rely on central services, including dining and laundry, which are provided by the applicant. Since none of the dwelling units would be larger than one bedroom, construction of the proposed multiple dwelling with 300 dwelling units would require 5,000 square feet of property per dwelling unit, or 34.4 acres on the project site. This is less than the 46-acre area that would be disturbed with this project, and the proposed project meets the density requirements.

**Outdoor Recreation:** The proposed recreation building and outdoor recreation fields would be for use by Watchtower Farms residents. The relocated outdoor recreation fields would be at least 300 feet from the nearest property line and would not include a public address system. The nearest adjacent dwelling within sight distance across agricultural fields is located at parcel 99.4-1-28 on Whitaker Lane, south of Red Mills Road. It is approximately 1,800 feet away. Another adjacent dwelling on parcel 99.4-1-48.1 on Bruyn Turnpike, to the southwest of the project site across fields and through forested land, is approximately 800 feet away. Lighting would be shielded from adjoining properties.

**Off-Street Parking:** The proposed parking garage and surface parking would provide approximately 400 parking spaces. The net number of parking spaces added after removal of existing parking spaces lost due to the proposed construction would care for the new demand.

**Environmental Considerations:** The *Town of Shawangunk Zoning Code*, Section 177-21 includes environmental considerations. There is no construction of buildings proposed in areas of special flood hazard. There are no freshwater wetlands mapped by the New York State Department of Conservation (DEC) on the project site. The Planning Board is performing the environmental quality review process in advance of any decision regarding issuance of building permits, site plan approval, or a special use permit.

**Site Plan Review:** The proposed project requires site plan approval in accordance with the *Town of Shawangunk Zoning Code*, Section 177-22.

Ulster County Planning Board Review: The proposed project must be referred to the Ulster County Planning Board.

Special permit use review: The proposed project requires special permit use review in accordance with the *Town of Shawangunk Zoning Code*, Section 177-23.

#### I.B.6.b Mitigation Measures

A number of mitigation measures would be implemented to mitigate impacts on neighboring properties in the vicinity.

- The proposed site plan has been designed to minimize visual impacts by clustering the proposed development within or adjacent to previously developed areas. The visual impact is further reduced by a proposed visual screening berm that would maintain the view of the Shawangunk Ridge for northbound drivers. The proposed accessory office building would be located between two existing buildings in the developed area. The proposed dining room and laundry additions would also be located in previously developed areas that have very limited visibility from Red Mills Road.
- The size, appearance, and lighting for new construction would match the existing structures.
- To mitigate nighttime visual impact, whether for residences near the project site or for more elevated residences approximately one or more miles to the east off of Hoagerburgh Road, exterior lighting would be directed downward and shielded. Clustering the proposed buildings in the previously developed portion of the property would similarly mitigate the nighttime “glow” effect.
- During the construction period, various sediment control measures would be implemented that are discussed in detail in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS.
- The new residence, office and recreation buildings would be designed to accepted sustainability standards. The goal is to achieve a *3 Green Globes* award level (this corresponds to a “LEED® Green Building Rating System™ (Leadership in Energy and Environmental Design) *Gold* award level) in sustainable design through the Green Globes™ System.
- In order to reduce off-site impacts, the applicant proposes providing on-site recreation facilities for residents. The applicant also has a history of partnering with the town and surrounding communities on recreation-related volunteer projects and anticipates that payment of a recreation fee established by the town board would be commensurate with the proposed project’s impact.
- Private surface water reservoirs, rather than groundwater-supplied wells, would continue to supply the facility.

- Appropriate distance buffers of 300 feet to the nearest property line and more than 1,300 feet to dwellings would mitigate impacts on adjacent properties.
- A parking garage with covered parking on three levels would reduce the amount of impervious coverage, visual impact of surface parking lots, and stormwater/drainage impacts.
- Appropriate plantings would be provided in portions of the area north of the modular residences that are to be removed. These would support the wetlands to the north of the existing modular units.
- The proposed development would be situated outside of the Shawangunk Kill Recreational River Corridor, thereby avoiding any impact to this corridor. Also, stormwater/drainage from the project site to the Shawangunk Kill would be via an existing outlet, not adding new outlets. The Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS, would meet the general permit issuance requirements.
- Concerning potential impacts on agricultural uses, the proposed population increase of approximately 200 residents, or 15 percent, would involve residents who are accustomed to the agricultural activities conducted on the property and offsite. As shown in the traffic study<sup>14</sup>, the corresponding increase in traffic would not negatively impact the level of service at the intersections that were studied. It is not anticipated that this would negatively impact farm-related traffic, such as tractors, from other area farmers.

### **I.B.7 Transportation**

A Traffic Impact Study was conducted in 2007 and updated in 2008 by John Collins Engineers, P.C., to evaluate both existing and future traffic conditions in the vicinity of the site and assesses the potential traffic impacts of the proposed action on the surrounding roadway network. The Traffic Impact Study specifically evaluates traffic conditions at eleven intersections identified by the SEQR Scoping Document.

#### **I.B.7.a Potential Impacts**

The 2007 Existing Traffic Volumes were projected to the design year of 2012 to evaluate the potential traffic impacts after the opening and operating of the completed buildings, including the new residence building. The Traffic Impact Study summary and conclusion were as follows: “Based on the results of the field inspections of the roadways in the vicinity of the site together with the results of the capacity analysis for the individual intersections, the traffic generated by the expansion of the Watchtower Farms facilities should not result in a significant negative impact on traffic operations in the area. Several recommendations have been identified which should be completed

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<sup>14</sup> See Appendix 6.

regardless of the proposed expansion. They will have to be coordinated with the Town of Shawangunk and Highway Superintendent as part of the approval process.”

The proposed project does not include production-type facilities for increased industry. Therefore, the applicant does not anticipate that implementing the proposed project will generate a significant increase in truck traffic.

#### I.B.7.b Mitigation Measures

Based on the results of the traffic analyses, a number of improvements to several intersections have been identified.

- Bruyn Turnpike and Hardenburgh Road

In addition to the “stop” sign on the Hardenburgh northbound approach to this intersection, it is recommended that additional pavement markings, including a painted “stop” bar be added on this approach.

- New Prospect Road and Bruyn Turnpike / Indian Springs Road

The sight distance looking north of the Bruyn Turnpike approach to this intersection is somewhat restricted due to excess vegetation and grading problems. Some clearing and grading should be completed to improve sightlines regardless of the proposed action. In addition, supplemental warning signs at the intersections should be considered.

- Red Mills Road and Steen Road

The installation of a painted “stop” bar should be added to this intersection and speed reduction warning signs should be added to Red Mills Road east of Steen Road.

- Bruynswick Road and Hoagerburgh Road / Red Mills Road

A painted “stop” bar should be added to the intersection along with the existing posted “stop” sign, regardless of the proposed action.

- Wallkill Avenue and Drexel Drive

A painted “stop” bar should be added to the intersection along with the existing posted “stop” sign, regardless of the proposed action.

- NYS Route 52 and County Route 7 / New Prospect Road / Pirog Road

The capacity analysis conducted at this four-way signalized intersection (Signal No. U-89) indicates that during peak periods modifications to the traffic signal timings would be required to provide improved operation, especially during the AM Peak Hour, to accommodate future traffic volumes, regardless of the proposed action.

- NYS Route 52 (Main Street) and NYS Route 302 / Maple Avenue

The capacity analysis conducted at this signalized four-way intersection (Signal No. O-23) indicates that during peak periods modifications to the traffic signal timings

would be required to provide improved operation, especially during the AM and PM Peak Hours, to accommodate future traffic volumes, regardless of the proposed action.

Since the proposed mitigation measures are maintenance-related or suggested regardless of the proposed action, the Town, County and State Transportation Departments would implement the measures that they determine to be feasible.

### **I.B.8 Aesthetic Resources**

A visual analysis was conducted based on DEC Program Policy DEP-00-2, "Assessing and Mitigating Visual Impacts," issued July 31, 2000. The general procedure involves preparing an inventory of aesthetic resources, performing a visual assessment, considering the potential significance of the impact, and determining what mitigation measures may be necessary.

An inventory of aesthetic resources identified the following visual resources within five miles of the proposed area of disturbance:

**Historic.** The Dill Farm on Steen Road is located on the property, approximately 2,000 feet northwest of the nearest proposed soil disturbance; the Johannes Decker House at 337 Red Mills Road is one mile northeast of the project site and completely screened by existing topography; the William Decker House in the hamlet of Dwaarkill is located approximately 2,000 feet from the nearest soil disturbance and is completely screened by existing vegetation; the Miller's House at Red Mills is located approximately 2,000 feet south of the project site and is completely screened by existing topography; and two structures possibly eligible for listing on Old Fort Road are completely screened by vegetation and topography.

**State Parks.** The Minnewaska State Park Preserve is approximately four miles northwest of the project site, and various carriageways, such as the Hamilton Point Carriageway, and overlooks, such as Hamilton Point and Gertrude's Nose have views of the Hudson Valley, including the project site.

**National Wildlife Refuges.** The Shawangunk Grasslands National Wildlife Refuge is located approximately two miles east of the project site and is completely screened by topography.

**Rivers Designated as Scenic.** The Shawangunk Kill is a Recreational River adjacent to the project site. The proposed project involves some adjustments at the existing wastewater treatment plant, 400 feet north of the Shawangunk Kill. This work location is completely screened by vegetation, topography, and existing buildings. The nearest proposed new buildings would be approximately 1,500 feet northwest of a bend in the Shawangunk Kill; however, this area is completely screened by existing topography. Approximately 1,000 feet south of the aforementioned bend, there is a possible seasonal view of disturbed area from a distance of approximately 2,000 feet. This view is through existing stream bank vegetation and trees, across a field used for cropland, over Red Mills Road, across existing pasture, and to existing buildings.

A Scenic Highway. *The Open Space Inventory and Analysis—Shawangunk, New York* (March 2004) on page 38, depicts Red Mills Road adjacent to the project site as a scenic road. The ridgeline of the Shawangunk Mountains is visible to north-bound drivers on Red Mills Road, north of its intersection with Bruyn Turnpike. This view includes fenced pasture in the foreground, existing buildings in the midground, and the Shawangunk Mountains in the background.

#### I.B.8.a Potential Impacts

##### Change in Visual Character

In the context of the region, the project site contains a clustered developed area surrounded by areas of open space generally in agricultural use. The proposed project adds to the clustered developed area but does not involve new development in more visible areas on the property.

Concerning the viewshed from historic buildings, the Dill Farm is located on the property and separated from the project site by the Dwaarkill. The applicant obtained and restored the Dill Farm approximately ten years ago. The visual character from the Dill Farm would not significantly change with the proposed project. Existing buildings on the project site of comparable size and appearance are already located closer to the Dill Farm than the structures proposed for construction. Existing topography and vegetation provides more screening between the Dill Farm and the proposed residence building than the existing buildings.

The applicant does not anticipate a change in the visual character of the view from the at the Shawangunk Kill Recreational River, 2,000 feet south of the clustered area of soil disturbance for the new residence building, parking garage, recreational building, and athletic fields. Both the screening vegetation at the river bank and the fact that there is no proposed change to the existing agricultural cropland, roadway, and immediate fenced pasture in the foreground of the view are expected to retain the integrity of the visual character at this location on the Shawangunk Kill.

The proposed construction, particularly the proposed parking garage and recreation building, would be clearly in view from Red Mills Road without mitigation measures.

For southbound drivers on Red Mills Road, south of its intersection with Steen Road, there would be brief views between existing buildings of the proposed laundry addition and accessory office building. The proposed dining room addition would be completely screened from views on all roads by existing buildings.

The *Town of Shawangunk Open Space Inventory and Analysis* dated March 2004 also includes County Route 7 (New Prospect Road / Bruynswick Road) and Steen Road as scenic roads. Views to the south from Steen Road and to the east from County Route 7 show obscured views of various existing larger buildings on the project site when there is no foliage. Because the proposed new construction would be clustered, a significant change in visual character is not anticipated.

## Direct Visual Impacts

Three proposed buildings would be located in the northwest vicinity of the project site in the location of an existing outdoor recreation area containing athletic fields, courts and picnic area. Pasture and wooded area are also within the area of disturbance. This area would have the most visual impact for drivers traveling north on Red Mills Road from the Bruyn Turnpike/Red Mills Road intersection if there were no mitigation measures taken. The applicant proposes additions to existing buildings by extending into existing surface parking lots and some landscaped areas that lie within the developed section. Some of these proposed ancillary spaces would be completely hidden by other existing buildings of equal or greater height while others would be partially visible from Red Mills Road.

Site lighting for public safety, security, and use of outdoor recreational areas would be provided.

### I.B.8.b Mitigation Measures

#### Appropriate Site Lighting

The lighting plan would be designed to provide nighttime illumination at intensity levels adequate for public safety and security. The pole-mounted driveway lights would be Illuminating Engineering Society (IES) designated "full cutoff" fixtures that do not provide any upright above horizontal, thus avoiding night trespass and night sky glow.

Lighting bollards would be located around the building entrances and sidewalks. These fixtures would match the lighting around the existing buildings in the vicinity and are designed as low-wattage, low-intensity fixtures providing minimal uniform illumination housed in an ornamental package.

The existing outdoor athletic fields would be relocated as a result of the new construction and the associated lighting would be relocated as well. These lights would be timer-controlled with a manual override "On" or "Off."

#### Siting and Design of Office Building, Dining Room Addition, and Laundry Addition

The proposed action includes a new office building, serving an ancillary function, in the location of an existing one-story structure fronted on Red Mills Road. The new three-story office building would be located between, but set back from, two existing buildings that are three and five stories, respectively. Special care would be taken to design the façade to follow the aesthetic precedent set by the adjacent existing buildings, thereby mitigating the visual impact of the new building. It would also be located behind an existing surface parking area accessed from Red Mills Road. The existing mature trees and shrubbery would help to reduce the scale of the building and significantly lessen the visual and aesthetic impact.

An addition to the existing dining room is included in the proposed action. This would be accomplished by extending the existing building into an enclosed courtyard, which would not be visible from Red Mills Road, thus mitigating the visual impact.

An addition onto the existing laundry building, set back from Red Mills Road, would house the proposed laundry addition. This would be located between existing buildings and landscaped to mitigate the visual impact from Red Mills Road.

#### Visual Screening Berm

To preserve the scenic views along the southerly part of Red Mills Road, an existing earth berm would be extended to the west and south. The berm would be landscaped with a mix of deciduous and evergreen trees of both fast and slow growth varieties. The heights at purchase would be on the average of 15 feet, with a maturity height of 50 to 85 feet. The varieties would have canopies that would provide a dense year round visual barrier. The proposed berm and vegetation would be designed to screen the view of the proposed new residence building, parking garage, and recreation building from northbound drivers on Red Mills Road. At the same time, the proposed berm and vegetation would be designed to avoid screening the view of the Shawangunk Mountains ridgeline approximately four miles behind the project site. Also, an existing, mature grove of trees located adjacent to Red Mills Road and in heights exceeding 40 feet would remain. These would adequately reduce the visibility of the proposed residence, garage and recreation buildings from any aesthetic resource to an insignificant level.

#### Low Profile Design

The proposed new residence building, parking garage, and recreation building incorporate the concept of low profile design to minimize their visibility.

### **I.B.9 Historic and Archaeological Resources**

At the request of New York State Office of Parks, Recreation and Historic Preservation (OPRHP) and according to *Title 36 Code of Federal Regulations Part 61*, a Phase IA and 1B cultural resource investigation has been completed for the proposed project and is included in Appendix 9 of this DEIS.

#### I.B.9.a Potential Impacts

In June 2008, the Phase 1A cultural resources assessment was completed by Dr. Eugene J. Boesch, Ph.D., R.P.A, archaeologist and historic preservationist. The Phase 1A report recommended, on page 27, that a Phase 1B-level archeological investigation be undertaken in the portions of Zone B and Zone C, which are the zones within the Area of Potential Effect (APE) that are considered potentially archaeologically sensitive. The Phase 1B investigation was completed in August 2008. The study was accomplished by conducting sub-surface investigation consisting of the excavation of three hundred and eighty-four (384) archaeological shovel tests following current NYS OPRHP standards.



### I.B.9.b Mitigation Measures

Based upon the results of the Phase 1B fieldwork completed by Dr. Eugene J. Boesch, Ph.D., R.P.A, the report concluded, on page 10, with the comments that no additional archaeological investigations are recommended for the proposed Watchtower Farms Improvement project Area of Potential Effect. Thus, no mitigation measures or alternatives are being pursued. A copy of the Phase 1B report has been forwarded to the NYS OPRHP in its entirety.

### I.B.10 Community Facilities and Services

The nature of the existing facility and the design of the proposed project is intended to minimize the potential impact on community facilities and services.

#### I.B.10.a Potential Impacts

##### Police

The Town of Shawangunk Police Department has responded to calls for assistance with petty mischief by outside parties, minor property damage, vehicle collisions, incomplete or abandoned 911 calls, and other miscellaneous matters. On average, they respond to calls relating to Watchtower Farms four times per year. The proposed project would generate a 15-percent increase in population with an anticipated corresponding increase in calls to approximately five per year.

##### Fire Protection

The proposed project would add several new buildings to the site. The additional construction would have the potential impact of increasing the demand on the community fire protection services. Additionally, since the site has an on-site fire protection and emergency response program, the new buildings could also increase demand on these existing services. Further details regarding the potential impacts can be found in the Mitigation Measures section, which addresses in detail the potential impacts identified by the Shawangunk Valley Fire District (SVFD).

##### Ambulance

The applicant estimates that the Shawangunk Valley Ambulance Corps averages approximately one ambulance transport per year related to Watchtower Farms. The applicant estimates that Mobile Life Support Services (MLSS) averages approximately four ambulance transports per year related to Watchtower Farms. The applicant anticipates that the proposed project would result in 15 percent more ambulance transports based on its projected 15 percent population growth. This would annually result in a total of two ambulance transports by the Shawangunk Valley Ambulance Corps and five ambulance transports by MLSS. Neither increase is anticipated to be significant.

Concerning the management of a mass casualty incident (MCI) the applicant contacted the Ulster County Office of Emergency Services. The director anticipated that the proposed action would have negligible impact on the ambulance and 911 services for the County since they have coordinated these services to ensure that no area is left without adequate coverage. The applicant also contacted Mr. Andrew La Marca, the Director of Business Development of Mobile Life Support Services, to review the proposed project. As he expressed in correspondence to the applicant dated April 22, 2008, a mass casualty incident could “necessitate assistance through the Ulster County Mutual Aid Plan. I think this is a reasonable expectation for any community or facility today that faces a large multiple patient incident, to plan on both using and participating in County-Administrated Mutual Aid Plans. While I would defer to the primary providers that serve your community, Mobile Life Support Services would not be in any way negatively affected by this expansion.”<sup>15</sup>

### Education

In correspondence received from the Pine Bush Central School District dated March 13, 2008, the Interim Director of Schools, Dr. William Bassett, expressed the following: “I have surveyed our administrative staff district-wide, and my report to you is that the Pine Bush Central School District has experienced no impact on the normal operation of our school district as a result of the existence of the Watchtower Farm. I would anticipate that the planned expansion will not impact the school district.”<sup>16</sup> Although modest residential growth is planned on the project site, the character of the residents would reflect that of current residents. The Watchtower Farms Facility is staffed by adult Jehovah’s Witnesses who are members of a special religious order. The residents perform their duties full-time, have taken a simple vow of obedience and poverty, and have chosen to live either unmarried or married without children. Therefore no significant impact is anticipated on the public educational system.

### Recreation and Open Space

In a telephone conversation on March 12, 2008, a representative of the applicant discussed the proposed project with Mr. Adrian M. DeWitt, a Town of Shawangunk Councilperson with (a) Primary Committee Oversight of Liaison To Highway Superintendent, Buildings/Parks & Grounds, Recreation and (b) Secondary Committee Oversight of Liaison to Recreation, Solid Waste & Recycling, Verkeerderkill - Greer Parks. Mr. DeWitt noted that the proposed project includes a recreation building and athletic fields to provide such services on-site, rather than increasing demands on local community services. He anticipated no significant impact on community recreation services and commented favorably on the applicant’s contributions to Garrison Park, Verkeerderkill Park, and the Wallkill Rail Trail.

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<sup>15</sup> See Appendix 2.

<sup>16</sup> See Appendix 2.

## Solid Waste Disposal

The applicant anticipates a corresponding 15-percent increase in waste generation based upon the proposed increase in population, with recyclables continuing to be diverted from the waste stream for recycling. The primary waste hauler for the facility, Waste Management, stated that their Kingston District can properly handle the construction-related and long-term waste generated by the proposed project.<sup>17</sup>

### I.B.10.b Mitigation Measures

#### Police

No additional mitigation measures are anticipated at this time. The applicant would continue to maintain its on-site private security arrangement that includes 24-hour physical and camera surveillance. All residents continue to go through a strict screening process in order to verify, to the extent possible, that they are law-abiding and honest. The applicant continues to maintain emergency response procedures for its residents, including the provision of back-up power generation in the event of an outage.

#### Fire Protection

As recommended by the SVFD, in April 2008, the applicant's fire brigade purchased and practiced with a 35-foot ground ladder that will be maintained on-site in case of a fire emergency. The applicant's fire brigade is equipped for high angle rope rescue if needed.

The proposed buildings and additions would be built with fire fighting systems and equipment as noted in the following descriptions, in addition to being connected to the existing fire alarm network:

- The residence building would be equipped with a wet automatic sprinkler system and Class II standpipe and hose system and a Siamese connection would be added to an accessible face of the building.
- The accessory office building would be equipped with a wet automatic sprinkler system and a Siamese connection would be added to an accessible face of the building.
- The parking garage cellar would have a dry-pipe sprinkler system and the entire garage would include a dry-pipe Class III standpipe and hose system, and a Siamese connection would be added to an accessible face of the building.

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<sup>17</sup> See Appendix 2 for correspondence from Jeff Budik, Waste Management Account Manager, dated February 15, 2008.

- Though not required by the *Fire Code of New York State*, the recreation building would have a Class II standpipe and hose station installed so that all portions of the building can be reached.
- Although not required by the *Building Code of New York State*, the technical equipment building would have a pre-action sprinkler system along with smoke and heat detectors. All of the fire protection components would be monitored remotely at a 24-hour manned reception desk.
- Adjustments to the dwelling units in the existing E residence, which is the tallest building in the site, would include the addition of a wet automatic sprinkler and a Class II standpipe and hose system.

The maximum height of the proposed buildings would be three stories, and the building height would be below the permitted height of 35 feet and a 4-foot or less roof parapet with the exception of the proposed accessory office building, for which a variance would be sought. The building would comply with the height requirements of The Town of Shawangunk Zoning Code at the street frontage and west side. The grade at the east side and rear of the building would be retained, allowing the basement windows to be exposed to light with a total height of 44 feet, 6 inches in these locations. The proposal includes the installation of a sprinkler system in the entire building, which is proposed to mitigate additional fire exposure caused by reduced accessibility.

The proposed project incorporates the recommendation from the SVFD to install and maintain landscaping that would avoid interfering with firefighting or rescue operations, such as trees adjacent to buildings and dense or uneven landscape features that would make firefighting and rescue operations difficult.

As recommended by the SVFD, the applicant has apprised Ulster County Emergency Services and Mobile Life Support Services of the proposed project. The applicant would continue to maintain appropriate on-site personnel for emergency response, which currently include two full-time licensed doctors, one part-time licensed doctor, 15 full-time registered nurses, eight emergency medical technicians, one paramedic, and a 16-member fire brigade.

The applicant has also reviewed its pre-plans for emergencies, including a mass-casualty incident (MCI). As an example of the typical response process, the applicant's on-site medical dispatch desk immediately informs the on-site responders, who include Emergency Medical Technicians, doctors, and registered nurses. If necessary, 911 is called for additional help. If needed in the event of a large scale MCI, the on-site medical responders are trained to set up an incident command center and start triage so that the most critically injured receive immediate attention. The most critically injured would receive transport on Advanced Life Support ambulance services as they become available from the community responders, or from Mobile Life Support Services. Those with lesser injuries would be transported on the applicant's Basic Life Support (BLS) ambulance and those BLS ambulances that respond from the community. Also the applicant's local shuttle vans could be used for hospital transport in the case of

emergency. The applicant is in the process of identifying a suitable location for MedEvac helicopter landing to serve the property if necessary.

The applicant's fire suppression systems are adequately supplied by (a) a potable water system with a typical on-hand capacity of approximately 300,000 gallons, designed to provide water to three fire hydrants and the sprinkler system for one building or (b) a non-potable system fed from two ponds with a typical capacity of 5,150,000 gallons. If necessary, mobile fire protection apparatus can also draft water from ponds that have been located near appropriate buildings around the property. A non-potable hydrant is presently used to fill community fire company tankers if they request water for local fire emergencies. All of the fire suppression system pumps are also on emergency backup power sources.

The applicant has a regular schedule of testing. All inspections and testing are done in accordance with NFPA 25 and NFPA 72.

The applicant maintains a facility operating permit with the Town of Shawangunk Building Department that identifies locations containing hazardous materials. The applicant has set aside specific locations with fire-resistant enclosures for the storage of hazardous materials and has equipped these locations with the required ventilation, fire suppression systems, and spill containment equipment. The applicant also maintains an inventory of the chemicals on site and their associated Material Safety Data Sheets (MSDS). The applicant is in the process of working with the SVFD to provide additional graphical information concerning the location, type, and quantities of any hazardous materials stored on the property. This would allow the applicant's fire brigade and all emergency responders to quickly identify the locations and respond safely and quickly.

The chemical storage rooms also contain personal protective equipment (PPE) that is suitable for the chemicals that are located in that room. The applicant's fire brigade has received Hazardous Waste Operations and Emergency Response (HAZWOPER) technician level training and has Hazmat gear for responding to Hazmat incidents.

The applicant has implemented standard operating procedures for responding to various types of emergencies. These include natural events, such as severe weather, and those that are malicious in nature, such as bomb threats. The applicant has evacuation plans that care for evacuating individual residence buildings and a mass evacuation plan for the entire facility. As discussed at a meeting involving the applicant and the SVFD on March 26, 2008, the SVFD will review this plan with the applicant. The applicant can make this plan available to other emergency services providers, including the Town of Shawangunk, on a basis that protects the safety of residents and the security of the facility.

The proposed buildings would be constructed according to the latest New York State fire codes. Additionally, in harmony with New York State fire codes, when improving existing buildings, such as the E Residence and Services Building, fire protective measures would be installed to meet or surpass the applicable requirements of the *Building Code of New York State*. The potential impact of the additional buildings would

be mitigated by the applicant's existing voluntary fire protection and emergency response measures, with a proportional increase in additional staff trained and added to emergency response teams. The applicant anticipates that the mitigation measures described above would be appropriate for the proposed project.

#### Ambulance

The proposed project designates major access to all the residence buildings as "no parking" – fire zones in order to allow access to these areas by emergency vehicles at all times. The applicant would continue to maintain its basic life support ambulance and supplement its operation as needed with additional personnel and equipment. Working with the SVFD, the applicant is searching for a suitable MedEvac landing site to serve the property.

#### Education

No impact is anticipated on educational facilities and no mitigation measures are anticipated.

#### Recreation and Open Space

The proposed project includes a recreation building and relocated athletic fields that would mitigate anticipated demand on community recreation and open space facilities.

#### Solid Waste Disposal

The proposed project incorporates waste reduction measures, including recycling and use of bulk containers during both the construction and post-construction phases. All wastes would be transported and disposed of by appropriately licensed vendors.

### **I.B.11 Noise and Air Resources**

A Noise Measurement and Analysis was conducted in 2008 by B. Laing Associates Environmental Consultants to examine the existing and future noise levels at and in the vicinity of the Watchtower Farms Facility. An Air Quality Analysis was also conducted in 2008 by B. Laing Associates Environmental Consultants to examine the existing and future air quality at and in the vicinity of the Watchtower Farms Facility.

#### I.B.11.a Potential Impacts

##### Noise

The proposed new residence building, parking garage, and recreation buildings would be located approximately 1,400 feet from the nearest neighbor's dwelling southwest across Red Mills Road, and no other receptors are in a direct line of sight. Since noise generated by the construction process would decrease as a function of distance from the work site, the noise generated by grading and heavy construction would decrease at Red Mills Road to an approximate level of 55.6 to 79.4 dB(A).

Any levels of sound that could potentially be created by increased traffic generated by the proposed action on local roadways would not be expected to have any significant impact on the area neighborhoods. The added traffic noise would generate a difference of less than 3 to 5 dB(A) and would be consistent with existing noise sources. Using the sensitivity of the human ear as a reference, any increase between 3 dB(A) and 5 dB(A) is audible only to those with average hearing.<sup>18</sup> Thus, given the distances to public receptors, any noise increases during the operational phase would be dissipated to a sufficient degree as not to create any noticeable increase in local noise levels. Also, it is expected that there would not be a significant increase to the percentage of time sound level increases would be experienced due to the limited number of passing vehicles or traffic delays anticipated in the future..

The majority of “noise” created in and around the facility is located at the Guest/Main entrance off Red Mills Road, a public roadway. The higher average noise levels were attributable primarily to the visitor vehicular traffic, which included buses entering the Main Lobby Entrance. Since visitor traffic was observed to be the most significant contributing factor to noise generation it was determined that mid-morning, when a realistic sampling of visitor traffic could be measured, would be the most appropriate time period for readings to ascertain the noise level in a “worst-case” scenario. The measurements of 40 dB(A) minimum and 75 dB(A) at this location averaged 42.5 dB(A). It is not anticipated that visitor vehicular traffic will increase as a result of the proposed action. Although Red Mills Road is a public road and any increase in traffic would potentially disturb adjacent areas, the applicant owns and operates all the land within a 2,500 feet radius of the main facility entrance.

#### Air Resources

The Federal Clean Air Act (1990) establishes National Ambient Air Quality Standards (NAAQS) that are monitored by the United States Environmental Protection Agency (EPA). The NAAQS monitor air contaminants using six pollutants as criteria contaminants: Sulfur Dioxide (SO<sub>2</sub>), Particulates (PM<sub>10</sub>), Particulates (PM<sub>2.5</sub>), Carbon Monoxide (CO), Ozone (O<sub>3</sub>), and Nitrogen Oxide (NO<sub>2</sub>). In addition to the general protection of human health, these standards are intended to protect the health and well-being of particularly sensitive sectors of the general population. These especially sensitive population sectors include children, the elderly and individuals suffering from respiratory disease. There are no especially sensitive receptors within close proximity of the project site such as health care facilities, nursing homes or schools.

The EPA designates those regions where the air exceeds the NAAQS for at least one of the six criteria contaminants as a nonattainment area. Each State is required to adopt a State Implementation Plan (SIP) with the goal of identifying the specific measures and control strategies to reduce air pollution in nonattainment areas. At the present, New York State is under mandate to develop SIPs to address ozone and fine particulates

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<sup>18</sup> Bruel & Kjaer, Acoustic Noise Measurements, June 1998, Table 2.1.

less than 2.5 microns in size. The Town of Shawangunk, located in Air Quality Control Region (AQCR) 3, is within attainment for all the major pollutants except for ozone (O<sub>3</sub>). The O<sub>3</sub> standard requires that no more than three 8-hour periods shall exceed 0.08 ppm within a three year length of time. In year 2005, all three Region 3 stations (Millbrook, Mount Ninham and Belleayre Mountain) exceeded this standard for one day with a high of 0.096 ppm. In year 2006, all three stations met the ozone standard. In year 2007, the Mount Ninham station exceeded this standard for one day with a high of 0.086 ppm.

The short term use of heavy equipment during construction at the site would result in a temporary minor increase in pollutant emissions. However, the major concern would be the control of fugitive dust during site clearing, excavation, demolition, grading, and general construction vehicle movement. All construction related air quality impacts would be of relatively short duration and generally not in proximity to public receptors.

The long term use is divided into two categories of emissions, direct source and indirect source. The only potential direct source emissions would relate to the anticipated use of boilers for the residential heating system. These boilers would burn No. 2 or No. 4, low-sulfur fuel oil and would not exceed heat output of 250 million BTU per hour, the level at which NYS air quality regulations and permitting procedures are applied. The facility maintains an air facility registration certificate in accordance with 6 NYCRR Part 201-4<sup>19</sup> and any proposed modernization would be reflected in an application for an amended certificate to the New York State Department of Environmental Conservation. Thus, significant direct source atmospheric contaminant emissions related to the operation of residential heating would not occur. The additional traffic generated by the site would potentially create indirect source emissions, causing the local carbon monoxide concentrations to rise. Such increase is usually anticipated at very high traffic volumes and when Levels of Service (LOS) are classified at the poorest three ratings of D, E, and F<sup>20</sup>. Since only minor increases in the traffic volume on local roadways in the vicinity of the project site are anticipated, the best two ratings of LOS of A and B should be maintained at the relevant intersections, and no significant atmospheric contaminant emissions are anticipated. One intersection was rated as LOS C, the same as the No-Build 2012 scenario.

#### I.B.11.b Mitigation Measures

##### Noise

Given the particular circumstances of the Watchtower Farms Facility, its existing condition as a quiet rural neighborhood, the ownership of the surrounding parcels and structures, and the private driveway network within the facility minimizing public road use, it is not likely that any possible increases in sound levels would be detected by

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<sup>19</sup> See Appendix 3 for the applicant's current air facility registration certificate effective October 30, 2006.

<sup>20</sup> *New York State Department of Transportation Environmental Procedures Manual*, Chapter 1.1, Section 9.



others. No other private landowners or outside receptors are considered close enough to be directly or significantly affected by any short term increase in construction noise or any long term increase in vehicle noise. Thus, no mitigation measures are proposed to be incorporated into the project.

### Air Resources

The existing site location is rural and subject to the air quality threats usually caused by space heating equipment emissions and automobile traffic emissions, specifically ambient concentrations of Carbon Monoxide and Total Suspended Particulates. Neither of these pollutants is anticipated to have a significantly increased emission level due to long term use following the proposed project.

During construction, control of the fugitive dust (particulate matter) would be established as part of the Erosion and Sediment Control Measures (ESCM) described in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS. Dust from the site would be controlled by means of spraying water from a mobile water truck (stationed on-site) to disturbed areas that are dry and susceptible to creating dust. Dust control would be implemented as needed once site grading has been initiated and during windy conditions while site grading is occurring. As maintenance, spraying would be performed at least once per day during dry months or as needed to control dust.

### I.B.12 Agricultural Resources

While the Watchtower Farms Facility is not a typical farm, based either on its size or purpose, its agricultural activity in the Town of Shawangunk is shown in Table I.B-1.

**Table I.B-1 2007 Applicant's Agricultural Production in the Town of Shawangunk**

<b>Agricultural Product</b>	<b>Quantity</b>
Apples	1,600 bushels
Apple Cider	1,000 gallons
Apple Juice	5,600 gallons
Blueberries	7,000 quarts
Grapes	62,000 pounds
Grape Juice	2,400 gallons
Sweet Corn	87,000 pounds
Beef Cattle	320,000 pounds
Corn Silage	267 tons
Round Grass Bales	400 bales

Watchtower Farms' history in the Shawangunk Valley began in 1963 when the Watchtower Bible and Tract Society of New York, Inc., took over operation of the small Goebel farm on Red Mills Road. Having greatly expanded its agricultural operations

since then, the Watchtower Farms Facility supplies food to the approximately 4,000 Watchtower staff at the Jehovah's Witnesses' United States Branch Office facilities in Brooklyn, Patterson, and at Watchtower Farms itself.

#### I.B.12.a Potential Impacts

Approximately 13 acres of pasture would be removed from agricultural use, and the remaining balance of disturbed acreage is already developed or landscaped. No land currently in crop production would be lost. The project site would remain in the Ulster County Agricultural District No. 2—Wallkill Valley.

The pasture to be lost primarily consists of approximately 5 acres of Volusia gravelly silt loam (VoA), a deep, nearly level, somewhat poorly drained soil located on foot slopes, broad hilltops and drainage ways, and approximately 8 acres of Castile gravelly silt loam (CgA), a deep, nearly level, moderately well-drained soil formed in glacial outwash. VoA is designated as farmland of statewide importance, and CgA is designated as prime farmland.

In the context of the overall agricultural activities on the project site, the development of approximately 13 acres of pasture is not expected to have a significant impact on the operation.

#### I.B.12.b Mitigation Measures

No land in crop production would be lost as a result of this project. However, the project design incorporates a number of mitigation measures that are sensitive to agricultural activities:

- The project design is clustered with the development area generally inside already developed areas and centralized to reduce the impact on surrounding agricultural lands.
- The residence building would not be located adjacent to areas in intensive agricultural use. It would also be buffered from agricultural pasture lands by activities that are less sensitive to typical agricultural activities, including early morning work, animal noise, and odors.

### I.C Summary of Approvals and Permits Required

The following approvals and permits are required to implement the proposed action:

Town of Shawangunk Planning Board

- Special Use Permit Approval.
- Site Plan Approval.

Town of Shawangunk Building Department

- Separate Building Permits will be required for each building following Site Plan Approval.

Town of Shawangunk Highway Department

- Driveway Connection Permit to Red Mills Road, if required. Traffic Study will be reviewed.

Town of Shawangunk Zoning Board of Appeals

- Possible building height variance for accessory office building.

Ulster County Health Department

- Approval of Plans to connect proposed buildings to the on-site sewage collection system and water distribution system.

New York State Department of Environmental Conservation

- New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater (GP-0-08-001).
- Review of the boundary of a Wild, Scenic, and Recreational River (WSRR) per DEC request of February 21, 2008.
- Modification to applicant's existing Petroleum Bulk Storage (PBS) Certificate for additional fuel oil tank.

New York State Department of State

- Possible variance to not install sprinklers in the existing portion of the dining room.

A complete list of interested and involved agencies is located in Section II.D.1 and II.D.2.

## **I.D Summary of Alternatives**

Three alternatives to the proposed action are evaluated in this DEIS.

### No Action Alternative

The No Action alternative is the scenario that would occur if no development were to take place at the site. Under this alternative, the proposed areas of disturbance would remain in their current state used for athletic fields, parking, pasture, landscaped area, and an outdoor recreation area. The desired quality of life improvements would be unattainable since there would not be the means to accomplish the desired improvements. The necessary office centralization and upgrades would also be

unattainable without the renovation of existing offices and construction of a new, energy efficient and environmentally sensitive office building. Similarly, the modernization of existing laundry and dry cleaning equipment to more environmentally sensitive equipment would not be achievable due to the larger spatial requirement for the newer equipment.

#### South Residence Alternative

The South Residence alternative presents a layout that would locate the proposed residence building on the south side of Red Mills Road. Other aspects of the layout, including the proposed office building, TER building, dining room and laundry expansion would be the same as the proposed plan. This alternative was considered for several reasons, including land availability, more convenient access to utilities without conflicting with the location of the existing site infrastructure, and centrally locating the proposed residence in close proximity to the services provided on site, particularly the dining room. Its main potential impacts would involve land use and zoning, aesthetic resources, and agricultural resources.

#### Far North Residence Alternative

This alternative presents a layout that would locate the proposed residence building on the northwest side of Red Mills Road, adjacent to the existing residence buildings. Other aspects of the layout, including the proposed office building, TER building, dining room and laundry expansion would be the same as the proposed plan. This alternative was considered for several reasons. It would provide access to utilities without conflicting with the location of the existing site infrastructure. It would more centrally locate the proposed residence to the services provided on site, particularly locating it in closer proximity to the dining room, and the proposed residence building and parking garage would be completely screened from Red Mills Road. Its potential impacts would involve terrestrial and aquatic ecology, aesthetic resources, and historic and archaeological resources.

#### Summary Table for Alternatives

The following table compares the proposed action to the no action alternative, south residence alternative, and far north residence alternative.

**Table I.D-1 Summary of Alternatives**

<b>Area</b>	<b>No Action Alternative</b>	<b>South Residence Alternative</b>	<b>North Residence Alternative</b>
Geology, Soils and Topography	No change	Less soil movement than proposed action	Area of disturbance is closer to existing wetlands than proposed action
Surface Water Resources	No change	Same as proposed action	Area of disturbance is closer to existing surface water resources than proposed action
Ground Water Resources / Water Supply System	No change	Same as proposed action with rerouting of distribution lines	Same as proposed action
Wastewater / Sewage Disposal	No change	Same as proposed action with rerouting of distribution lines	Same as proposed action
Terrestrial and Aquatic Ecology	No change	Same as proposed action	Constructs walkways across existing wetlands
Land Use and Zoning	No change	Possible Recreational River Corridor Permit	Same as proposed action
Transportation	No change	Same as proposed action	Same as proposed action
Aesthetic Resources	No improvement due to visual screening berm	Less temporary construction-related impact on ridge view from Red Mills Road than proposed action but develops agricultural field adjacent to Red Mills Rd.	Less visibility from Red Mills Road than the proposed action but increased visibility from County Route 7 and Steen Rd.
Historic and Archaeological Resources	No change	Located further from Dill Farm	Located closer to Dill Farm
Community Facilities and Services	No change	Same as proposed action	Same as proposed action
Noise and Air Resources	No change	Same as proposed action	Same as proposed action
Agricultural Resources	No change	Develops approximately 20 acres of land currently in agricultural production for sweet corn instead of 13 acres of pasture in proposed action	Similar to proposed action, this would also involve the development of approximately 15 acres of pasture.

## **II DESCRIPTION OF PROPOSED ACTION**

### **II.A Site Location and Description**

#### **II.A.1 Written and Graphic Site Location**

The applicant, Watchtower Bible and Tract Society of New York, Inc., proposes a development on a portion of its property, located on parcel 99.004, block 1, lot 11 (99.4-1-11) according to Town of Shawangunk tax maps. As shown in Figure II.A-1 Regional Map, the Town of Shawangunk is located in southern Ulster County. Nearby environmental features are depicted on Figure II.A-2 Local Map. The property consists of approximately 1,141 acres, is commonly known in the community as Watchtower Farms and has primary frontage on Red Mills Road (refer to Figure II.A-3 Area Map). The project site refers to the southwest portion of the property, which contains 437 acres bounded by Steen Road to the north. The application involves land already developed within the Watchtower Farms Facility, along with some disturbance of lands currently in agricultural or other use at the periphery of the proposed development area.

The project site is located in southern Ulster County, approximately six miles west of the hamlet of Wallkill, near the geographic center of the Town of Shawangunk. The hamlet of Dwaarkill is approximately one mile to the north at the intersection of New Prospect Road and Awosting Road. Establishments within the hamlet of Dwaarkill include Sangiovese at the 1776 Colonial Inn (a restaurant that was severely damaged by fire in March 2008), the Dwaarkill Country Store, and The Hoot Owl bar and restaurant. The hamlet of Bruynswick is approximately two miles to the northeast along Red Mills Road. Establishments in the hamlet of Bruynswick include Audrey's Farmhouse Bed and Breakfast, the Bruynswick Inn restaurant, the Kingdom Hall of Jehovah's Witnesses, New Horizons Resources, Inc., Anna Mercurio Gardens, and the Shawangunk Valley Fire Company station house. The hamlet of Pine Bush in the Town of Crawford, Orange County (situated along State Highway 52) is approximately four miles to the southwest along County Route 7, also known as New Prospect Road.

The property directly borders approximately 72 properties in the Town of Shawangunk and 3 properties in the Town of Crawford, Orange County (refer to Figure II.A-4 Deed Parcel Map). According to a review of the Ulster County Information Services website, land uses adjoining the project site include: Field Crops, One-family Year-round Residence, Two-family Year-round Residence, Rural Residence With Acreage, Residential—Multi-purpose/Multi-structure, Residential Vacant Land, and Private Wild and Forest Lands.

As shown in Figure II.A-3 Area Map, parcel 99.4-1-11 is bisected on a northwest-southeast axis by Steen Road and on a northeast-southwest axis by Red Mills Road. The western property boundary reaches County Route 7, also known near this general location as Bruynswick Road or New Prospect Road.

As shown in, Figures II.A-3 Area Map and II.A-4 Deed Parcel Map the eastern property boundary borders the Shawangunk Kill (Waters Index No. H-139-13-19), a New York

State Recreational River according to Title 6 of the *New York Code of Rules and Regulations Part 666* (6 NYCRR 666). The river is also protected and rated as Class B, designating its best usage as for swimming and other contact recreation, but not for drinking water. Within the property and running parallel to Steen Road is the Dwaarkill (Waters Index No. H-139-13-19-7), a protected Class B(t) stream that flows into the Shawangunk Kill. In addition to having a best usage of swimming and other contact recreation, but not for drinking water, it may support a trout population.

As shown in Figure II.A-2 Local Map, approximately 0.5 miles to the west of the project site is a New York State wetland designated as N-13. It is a 39.6-acre Class 1 wetland, where Class 1 is the highest quality classification and Class 4 is the lowest. Approximately 0.75 miles to the north of the project site is New York State wetland designated as N-17. It is a 31.1-acre Class 3 wetland.

As shown in Figure II.A-2 Local Map, the Shawangunk Mountains ridgeline is a prominent natural feature located approximately 4 miles northwest of the project site. Approximately two miles east of the project site, the Shawangunk Grasslands National Wildlife Refuge was established in 1999 on the site of the former Galeville Airport to protect the habitat of grassland-dependent migratory birds.

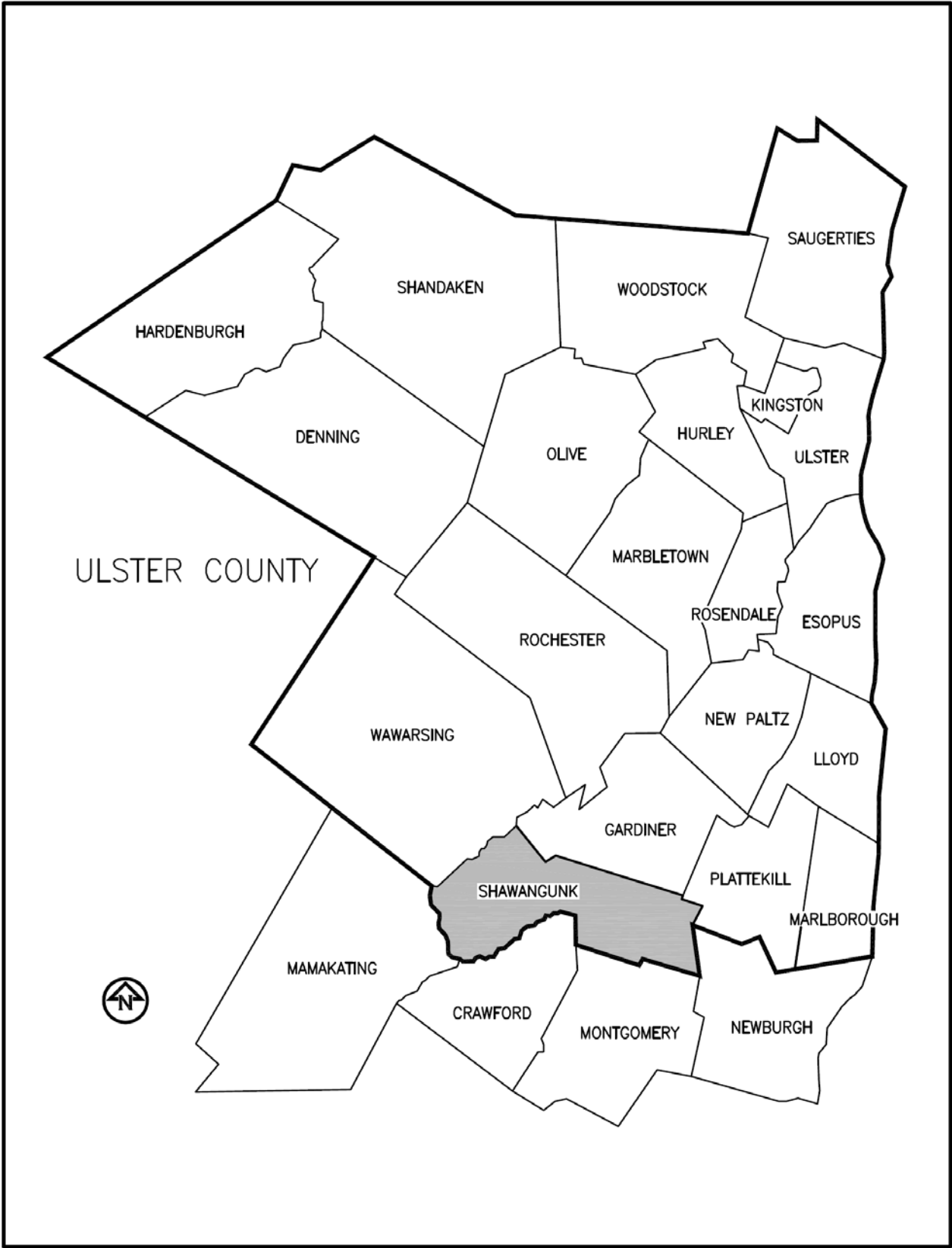


Figure II.A-1 Regional Map



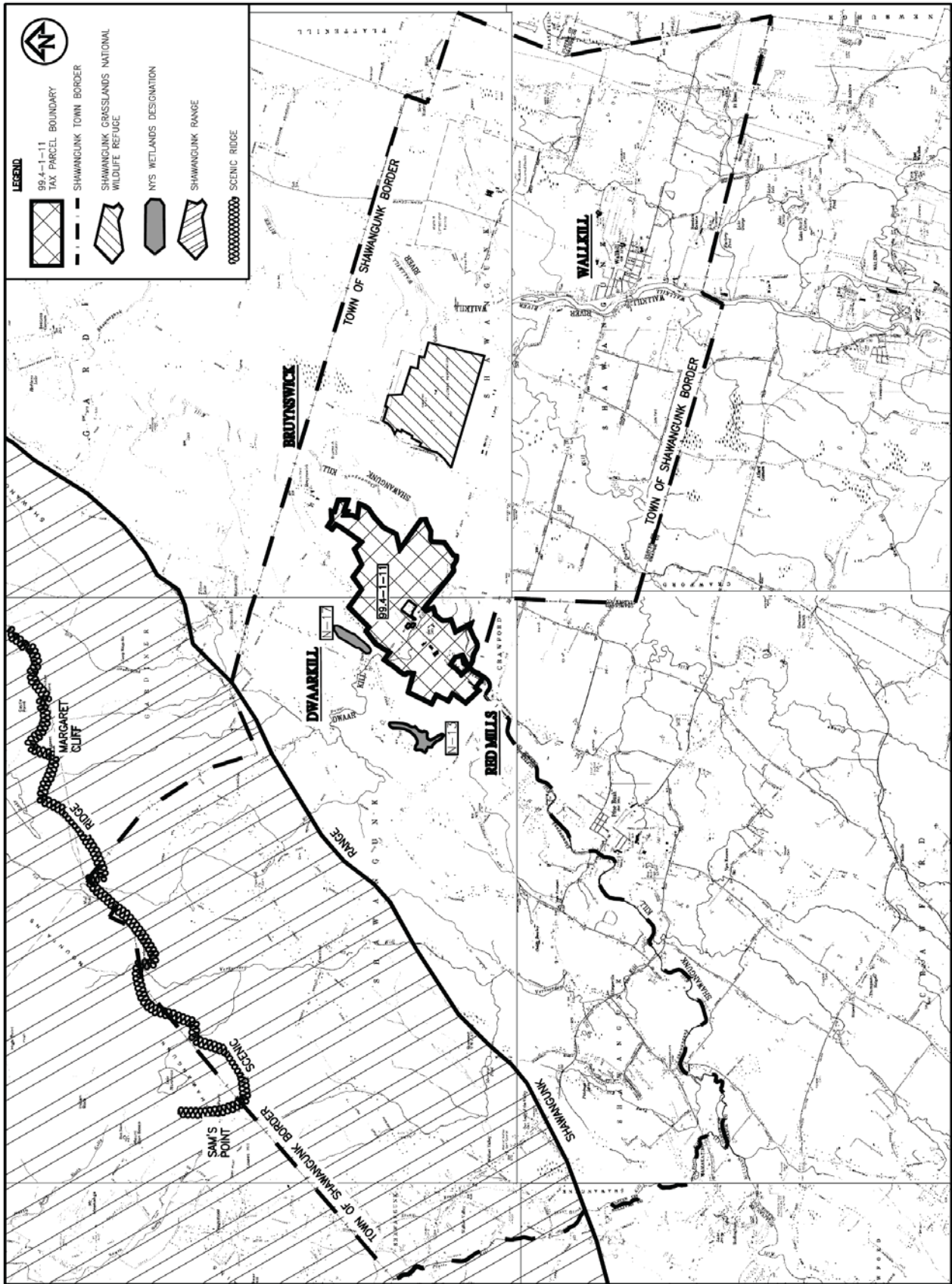


Figure II.A-2 Local Map

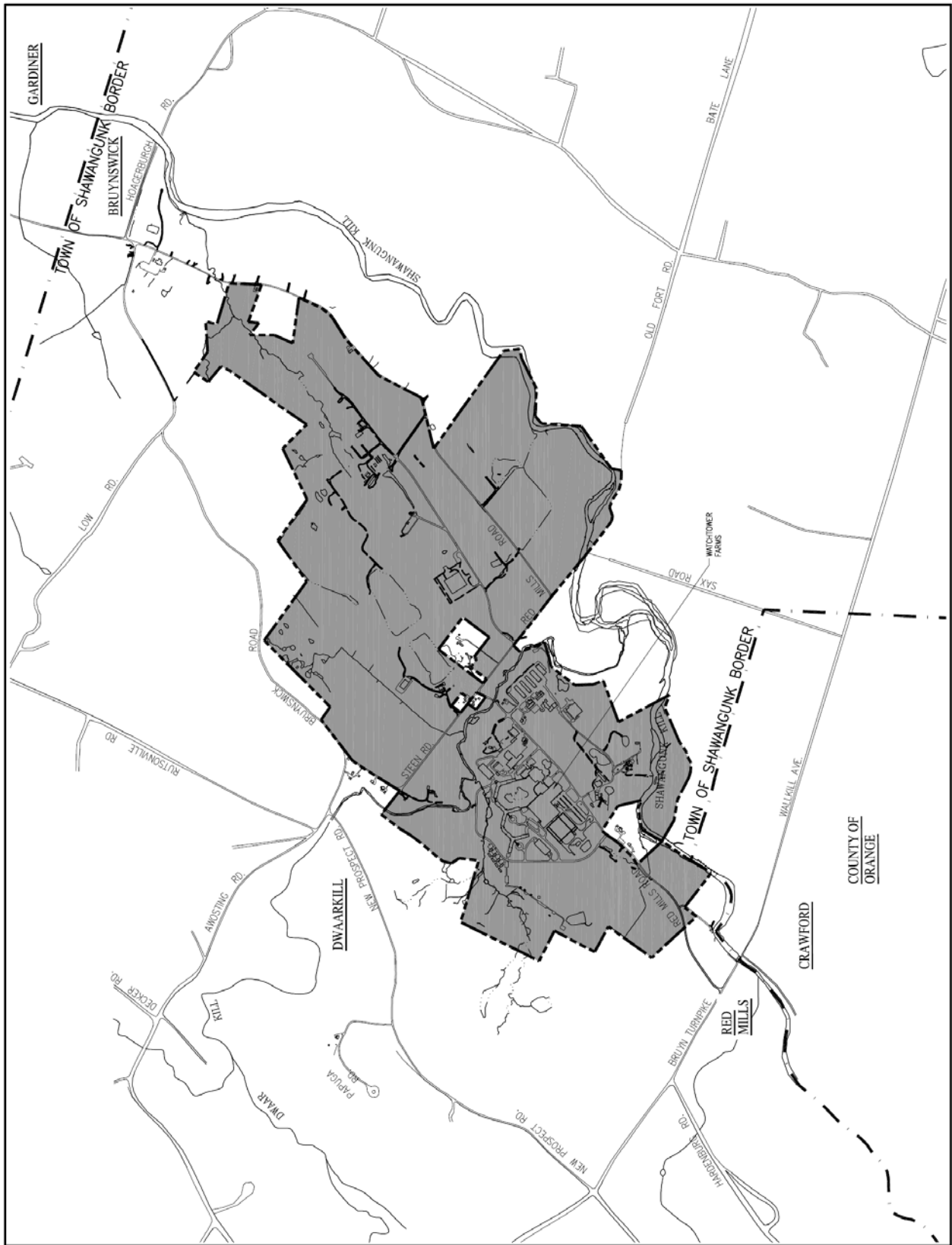


Figure II.A-3 Area Map







## **II.A.2 Environmental Site Setting/History**

The property is divided into northeast and southwest sections by the Dwaarkill.

The northeast section contains a woodland watershed, two reservoirs, and a water treatment plant that supplies the facility with potable water. These areas and a barn are accessed from a gated driveway on Steen Road, west of its intersection with Red Mills Road. Grouped together towards the east, an apple orchard, vineyard, crop lands, pasture, woodlands, and a small cemetery are also located in this northeast section. A gated driveway on Red Mills Road, east of its intersection with Steen Road, provides access to these areas, as well as to an equipment and materials storage building, sawmill, compost shed, recycling building, and minor accessory structures.

Three small properties in this area and adjacent to Steen Road are surrounded by Parcel 99.4-1-11 and are owned and operated by Valley Farms Corporation, a corporation that is related to the Watchtower Bible and Tract Society of New York, Inc. These include Parcel 99.4-1-33 at 148 Steen Road parcel, Parcel 99.4-1-7 at 147 Steen Road, and Parcel 99.4-1-10 at 10 Paradise Lane.

The southwest section of the property, south of the Dwaarkill, also has two distinct parts. Southeast of Red Mills Road, a variety of structures border a large field that is in agricultural use, primarily for sweet corn. Blueberries are also grown in this area. Structures include storage and equipment sheds, small farm labor housing residences, a larger brick residence building, a food and materials storage and processing building, and a meat processing building. Additionally, one small parcel owned and operated by Valley Farms Corporation is surrounded in this vicinity by Parcel 99.4-1-11. It is Parcel 99.4-1-27 at 102 Red Mills Road. Northwest of Red Mills Road is the most developed portion of the property. Bordered by pasture, woodland, and blueberries are modular housing units, parking garages, vehicle repair garages, a concrete batch plant, silos, barns, larger residence buildings, a printery, and other accessory buildings.

The project site is in the southwest portion of the property. The applicant proposes additions to existing buildings by extending into existing surface parking lots, some landscaped areas, and an existing outdoor recreation area that lies within the developed area. The applicant also proposes construction on the western periphery, approximately 800+ feet northwest of Red Mills Road. This peripheral area is currently used for athletic fields, parking, and pasture. It is bounded on the east by buildings and private paved roads. To the north is an unnamed tributary of the Dwaarkill that flows from west to east into the Dwaarkill. The 100-year floodplain boundary reaches up this unnamed tributary but is outside of the disturbed area on the project site. On the northern boundary of the project site, a wetland delineation identified a 1.9-acre riverine, forested wetland that is a moderate-quality aquatic resource and a 2.6-acre emergent marsh with patches of forest cover that is a low-to-moderate-quality aquatic resource. The western boundary is a paved perimeter road that provides access to a farm pond and pasture. On the west side of this road is a 22.0-acre forested wetland area that is a moderate-to-high-quality

aquatic resource. To the south is a large area of pasture that slopes down to Red Mills Road.

A letter, dated January 30, 2007, from the New York Natural Heritage Program<sup>1</sup> provided information concerning various plant and animal species in the vicinity of the property. These were considered in a study of the project site and adjoining areas. In addition to the existing database records, field surveys were conducted in 2003, December 2006, and June 2007, to delineate natural plant communities and wildlife habitat within the general study area and document any observed species that are threatened, endangered, or of special concern. Although the field studies delineated and evaluated wetland and upland natural plant communities within the study area, no threatened or endangered species were encountered.

Although no threatened or endangered species were found to exist on the project site, the field surveys did encounter potential habitat for the species listed by the above agencies. The developed portion of the study area provides little or no wildlife habitat, as it is a residential environment without natural plant communities and is presently landscaped or seeded pastureland. There is also an existing Loop Driveway separating the developed areas from any adjacent natural areas. Existing natural areas provide potential habitat for the bald eagle, bog turtle, Indiana bat, Henslow's sparrow, short-eared owl, upland sandpiper, northern harrier, northern monkshood, small whorled pogonia, and brook floater.

A letter commenting on this subject from the New York State Department of Environmental Conservation stated that the "DEC has reviewed the Department's Master Habitat Database and found this site is near known populations of the following: Short-eared Owl (*Asio flammeus*)—endangered, Northern Harrier (*Circus cyaneus*)—threatened, Upland Sandpiper (*Bartramia longicauda*)—threatened, Henslow's Sparrow (*Ammodramus henslowii*)—threatened. Since these species are all open meadows and the project is generally restricted to redevelopment of areas previously disturbed, the Department does not believe this proposal is likely to impact these species."<sup>2</sup>

The soils in this area are primarily poorly-to-moderately-drained Volusia/Cambridge with slopes of under 10 percent. More specifically, The Natural Resources Conservation Service (NRCS) mapped soils within the study area in 1968 to 1973. Five soil series would be disturbed on the project site: The disturbed soils consist of Cambridge (CaB), Castille (CgA), Churchill (Cva), Hoosic (HgC), and Volusia (VoA). None of these soil series are listed on the Hydric Soils of Ulster County list (USDA, NRCS, Soil and Water Conservation District of Ulster County). Soils information is depicted on Figure III.A-4 Soils Map.

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<sup>1</sup> See Appendix 2.

<sup>2</sup> New York State Department of Environmental Conservation to Town of Shawangunk Planning Board, January 25, 2008.



Concerning visual resources, the *Town of Shawangunk Open Space Inventory and Analysis (March 2004)* noted that Red Mills Road and Steen Road are scenic roads in the vicinity of the project site. In particular, drivers traveling north on Red Mills Road north of its intersection with Bruyn Turnpike/Wallkill Avenue, have a view with pasture and blueberries in the foreground, buildings at mid-distance, and the Shawangunk Ridge in the background.

Concerning cultural resources, the Dill Farm was added to the National Historic Register in 1983 (Building #83001816) based on the significance of its Greek Revival architecture. The historical structures were built in the late 18th century. The Dill Farm is separated from the project site by the Dwaarkill. It is located on the property, approximately 2,000 feet northwest of the nearest soil disturbance. The applicant obtained and restored the Dill Farm approximately ten years ago.

As a brief history of the property use, the applicant has a long history of agriculture, printing, residential, and related activities in the Shawangunk Valley. These activities directly support the applicant's religious and charitable purposes as a domestic not-for-profit corporation in support of the body of Christians known as Jehovah's Witnesses. The Watchtower Farms Facility is staffed by adult Jehovah's Witnesses who are members of a special religious order. The residents perform their duties full-time, have chosen to live either unmarried or married without children, and have taken a simple vow of obedience and poverty. The facility has clustered the more intensive uses and buildings in a campus-type environment that has helped to preserve the rural character of the community. This has been noted on recent documents such as the *Shawangunk Mountains Scenic Byway Corridor Management Plan* (October 2005, pp. G58-59), and *Open Space Inventory and Analysis—Shawangunk, New York* in (March 2004, pages 24-25).

In 1963, the Goebel farm on Red Mills Road began to operate as Watchtower Farms, supplying agricultural products to the primary Watchtower facility in Brooklyn, New York. Today, various foods such as blueberries, grapes, apples, and sweet corn are grown, as are field corn, wheat, alfalfa, soybeans, and hay for maintaining a beef herd. The number of personnel focused exclusively on agricultural activity has varied over the years, particularly due to technological advances, trends affecting New York State agricultural in general, and the applicant's needs. In 1970, a printery was built to complement the agricultural activity. Over the years, the operation has been maintained and frequently updated in order to keep pace with improvements in printing and environmental technology. This modern printery has been a fixture of the Watchtower Farms operation for nearly 40 years.

A variety of accessory activities support the religious use of the property. All of the activities proposed with this project currently exist on the property. These include the multiple-dwelling use and various ancillary activities previously approved for the property including office, essential services, dining, laundry, dry cleaning, recreation, and parking. In summary, the activities on the property have been consistent with permits issued by the Town of Shawangunk.



The following list illustrates the variety of activities on the property for which approvals/permits have been issued. These include:

Vehicle repair shop garage, printery and accessory areas, multi-residence, dining room, kitchen, laundry, dry cleaning, residence, housekeeping units, infirmary, modular farm housing, locker rooms, house for guests, photography, recording, storage, meat processing plant, offices, tennis courts, fuel-oil tank enclosure, fuel tank bases—essential services, upholstery shop, recreation area in existing factory building, security gate, garden equipment shed, root cellar, factory tour station, truck dock, computer room, maintenance storage building, maintenance shops building, farm watchman's station, water pumping station for irrigation and fire safety, concrete pad to sit transformer on, driveway, multiple dwelling, farm labor housing, dental addition, lumber rack, multiple-use dwelling, multiple dwelling—farm labor housing, administrative office, machine shop, weld shop, silo, farm equipment machine addition, garden and crate storage, field crops equipment shed, farm combine and trailer shed, farm truck storage shed, motel-type accommodations for transient farm workers, open manure pit, herbicide/pesticide shed, nutrition mill, grain mill, calf barn, concrete slab, water tanks, produce processing, concrete batch plant for on-site use, parking garage, visitor reception area, sewage disposal system, chemical storage, communication antennae, water storage tank, private-use car wash, modular farm housing units, and changing room—recreation area. Other permits have been granted for activities such as a cemetery and mining. The applicant's activities on the property have been consistent with the issued permits.

Representative historical approvals that relate to the activities associated with the proposed project, including the principal and ancillary permitted uses, are included in Appendix 3. The context for describing the proposed residence building as a multiple residence corresponds with past permitting history involving other residences and buildings as described below.

During the 1960s, prior to the enactment of zoning, the A Residence was built, and the latest certificate of occupancy for this building, following renovation work, describes it as a Multi-residence.

Also prior to the enactment of zoning, the Town of Shawangunk issued a building permit to the applicant on May 1, 1970, "to build a building of masonry construction on their property said building to be 201' x 328' printing – office – residential building." The applicant identifies this as the Services Building and Administrative Building (Office Building 1).

On January 22, 1971, the Town of Shawangunk issued a building permit to "Build on their property (Goeble [sic] Road) a building for residence. Said building being built as to architect's plans signed by him." This is the E Residence. On January 16, 1984, the Town of Shawangunk issued a certificate of occupancy to the applicant for the five-story "E' Building – Multiple Residence – Farm Labor Housing." Certificates of occupancy were generally not issued by the town at the time of original construction, hence the difference in time between the issuance of the building permit and the issuance of the

certificate of occupancy. The Town of Shawangunk enacted a zoning ordinance, dated October 20, 1971.

Prior to the applicant's construction of the B Residence, the Town of Shawangunk Zoning Board of Appeals took the following action on May 19, 1982:

Reason for building permit denial: Request special use permit for construction of a three-story residence building . . . . This building will be placed on a parcel containing approximately 1200 acres having road frontage in excess of 6600'. Classification Multiple Dwelling (dormitory). Zoning Board of Appeals Decision: May 19, 1982. Motion made to grant the special use permit as continuation of the present non-conforming use.

On April 5, 1994, the Town of Shawangunk Planning Board granted site-plan approval that included "two dormitory buildings providing . . . rooms for farm-labor housing." These buildings are known as the C and D residences.

In summary, the A, B, C, D, and E residence buildings are the larger residence buildings on the property. While the activities conducted in them are very similar, the A Residence received a certificate of occupancy as a Multi-residence; the B Residence received a special use permit for a Multiple Dwelling (dormitory); the C and D residences received site-plan approval as dormitory buildings providing rooms for farm-labor housing; and the E Residence received a certificate of occupancy describing it as a Multiple Residence—Farm Labor Housing. Therefore, the applicant is requesting a special use permit<sup>3</sup> and site-plan approval<sup>4</sup> for a three-story residential building.

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<sup>3</sup> *Town of Shawangunk Zoning Code*, effective April 10, 1999, Chapter 177-7.D(4)

<sup>4</sup> *Town of Shawangunk Zoning Code*, effective April 10, 1999, Chapter 177-22.

### **II.A.3 Easements, Rights-of-Way, Restrictions, and District Boundaries**

This section identifies any easements, rights-of-way, restrictions, special district boundaries or other legal devices affecting the subject property's development potential. Records in the Ulster County Clerk's office were referenced to research any potential encumbrances to the project area. These records included deed books, grantor and grantee indexes. Portions of the property, Parcel 99.4-1-11, are within the Shawangunk Kill Recreational River Corridor. The Shawangunk Kill Recreational River Corridor map and management program are available for inspection at the New York State Department of Environmental Conservation (NYSDEC) Region 3 office in New Paltz. The map with the title, "Shawangunk Kill Final Corridor Boundary," dated August 1994, was used to determine the boundary of the corridor. The property is located within Ulster County Agricultural District No. 2—Walkkill River Valley. This was determined with staff assistance from the Ulster County Soil and Water Conservation District office in Highland and the Ulster County Planning Board in Kingston.

#### **Easements, Rights-of-way, Restrictions:**

Easements, rights-of-way, and restrictions are encumbrances that affect how land may be used. These are typically reviewed by considering the relevant deeds. Easements of record are based on the following title searches and insurance policies: (1) The Title Guarantee Company, Policy # 9003326, Parcel known as "NY-5," January 14, 1963; (2) Commonwealth Land Title Insurance Company, Policy # 207-622013, Parcel known as "NY-6," May 8, 1996; (3) Commonwealth Land Title Insurance Company of New York, Policy # NY U-60001-CC, Parcel known as "NY-7," July 1, 1968; (4) The Title Guarantee Company & Pioneer National Title Insurance Company, Policy # 9006728, Parcel known as "Seaman," July 9, 1971. Appendix 2 includes all deeds for the property, Parcel 99.4-1-11, and Appendix 12 contains a detailed report<sup>1</sup> concerning any encumbrances.

The majority of the easements and rights-of-way are granted to utility companies for installation and maintenance of poles, lines and guy wires in, upon, over, under and across lands. Existing installations show these easements to be established where the property meets the road bed. The applicant is in the process of extinguishing most of these easements and consolidating them into a comprehensive description encompassing new poles and guy wires. In any case, these easements do not conflict with any of the actions proposed in the Watchtower Farms Improvements Project, nor do they inhibit the use of the property for purposes of cultivation, pasture or maintenance. Please refer to Drawings C-107A and C-108A in Appendix 12 for locations of easements in the vicinity of the applicant's property.

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<sup>1</sup> See report in Appendix 12: Discussion of Easements of Record and the Shawangunk Kill Recreational River Corridor Adjacent to Watchtower Farms Improvements prepared by Richard Eldred, P.E., May 16, 2008.

Concerning additional privileges granted, rights and privilege to build a dam on the Shawangunk Kill were granted to Edward and Amelia Edwards and heirs and assigns. These rights apply to the property currently owned by Bienstock. Construction of any dam is not to impact any upstream property and will therefore not impact any of the proposed installations. The right-of-way granted to Florence Reis does not apply to any of the lands of Watchtower.<sup>2</sup> The right-of-way granted to Bert and Violet Lockwood applies to the access road currently know as “Paradise Lane.” Rights to this lane were also granted to Valley Farms Corporation<sup>3</sup>. This right-of-way does not impact any of the proposed installations. The right-of-way granted to Arthur and Marguerite Penny was extinguished upon conveyance of the property or death of the grantees.<sup>4</sup>

#### District Boundaries—Shawangunk River Recreational River Corridor:

The NYSDEC, in its letter of January 25, 2008<sup>5</sup>, noted that portions of the property are part of the Shawangunk Kill (New York State Waters Index # H-139-13-19) Wild, Scenic and Recreational River (WSRR) corridor. In its letter of February 21, 2008<sup>6</sup>, the NYSDEC requested that a discussion and plan be included in the DEIS to identify the corridor boundaries on the property, and address any impacts proposed within those boundaries in order to determine the need for a NYSDEC Part 666 permit.

Per Article 15, Title 27 of the Environmental Conservation Law and implementing regulations at Title 6 of the *Official Compilation of Codes, Rules and Regulations of the State of New York* (NYCRR) Part 666, also known as the Wild, Scenic and Recreational Rivers System Act, the Shawangunk Kill River is designated a Recreational River from the border of Ulster and Orange Counties to its confluence with the Walkkill River.<sup>7</sup> This Act designates that certain portions of rivers of the state shall be preserved in a free-flowing condition and shall be protected. It designates three classes of rivers: (a) Wild rivers are generally five or more miles in length, free of diversions and impoundments, and accessible only by water, foot or horse trail; their river areas are primitive and undeveloped in nature, and their management is directed to perpetuate their wild condition; (b) Scenic rivers are generally free of diversions or impoundments with limited road access. Their river areas are essentially primitive and undeveloped or used for agriculture, forest management and other dispersed human activities, and their

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<sup>2</sup> *Ulster County Clerk’s Office Land Records* book 574, page 556.

<sup>3</sup> *Ulster County Clerk’s Office Land Records* book 1693, page 34.

<sup>4</sup> *Ulster County Clerk’s Office Land Records* book 876, page 276.

<sup>5</sup> See Appendix 3.

<sup>6</sup> See Appendix 3.

<sup>7</sup> See New York State Department of Environmental Conservation Website—“Wild, Scenic and Recreational Rivers” at <http://www.dec.ny.gov/lands/32739.html>.

management is directed to preserve and restore their natural scenic qualities; (c) Recreational rivers are generally readily accessible, and may have a significant amount of development in their river areas and may have been impounded or diverted in the past; their management is directed to preserve and restore their natural, cultural, scenic and recreational qualities.”<sup>8</sup>

The recreational river corridor boundary is established by the commissioner of the Department of Environmental Conservation. Mr. Douglas Sheppard, Albany office of the NYSDEC, and Mr. Alex Ciesluk, NYSDEC Region 3 office in New Paltz, were contacted on June 6, 2007, regarding the DEC Recreational Rivers Program. Mr. Sheppard explained that the Final Corridor Boundary was adopted in August 1994. A map and management program is available for inspection at the NYSDEC Region 3 office in New Paltz. Mr. Ciesluk provided a copy of the map with the title, “Shawangunk Kill Final Corridor Boundary,” dated August 1994. As noted in the report found in Appendix 12, a metes and bounds description of the portion of the corridor on the applicant’s property is as follows:

The northwesterly Shawangunk Kill River corridor boundary begins at the southwesterly corner of Clark Tax ID 99.4-1-30 at Bruyn Turnpike; thence along the westerly line of said parcel and Watchtower Tax ID 99.4-1-11 for a total of 2270 feet more or less to a corner; thence across said Watchtower Lot 11 to the center of Red Mills Road at the southwesterly corner of the former Wallace lot [part of Tax ID 99.4-1-27] being a distance of 1524 feet more or less; thence northeasterly along the center of Red Mills road 1375 feet more or less to a point; thence leaving Red Mills Road southeasterly 400 feet more or less to a point; thence northeasterly 1440 feet more or less parallel to Red Mills Road to a point; thence northwesterly 400 feet more or less to the center of Red Mills Road to a point; thence continuing northwesterly 560 feet to a point; thence northeasterly 750 feet more or less to the centerline of Steen Road; thence southeasterly along Steen Road to the intersecting centerline of Red Mills Road.

The proposed development does not fall within the recreational river corridor. Drawings C-107A and C-108A in Appendix 12<sup>9</sup> show the recreational river corridor boundary. The proposed activities are outside of the river corridor boundary with the possible exception of a visual screening earthen berm with plantings that is set back approximately 1,100 feet from the stream bank. For the development area, in order to mitigate the increase in impervious surfaces, the proposed project includes both an erosion and sediment control plan and a stormwater pollution prevention plan. The design is to contain sediment at the site and to have the rate of post-construction runoff be no greater than pre-construction runoff. Also, no new point sources of discharge will be added within the corridor boundary. This is in accordance with Title 6 of the *NYCRR*, Part 666.12:

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<sup>8</sup> See *New York Code of Rules and Regulations* (NYCRR) 666.4,

<sup>9</sup> See report in Appendix 12: Discussion of Easements of Record and the Shawangunk Kill Recreational River Corridor adjacent to Watchtower Farms Improvements prepared by Richard Eldred, P.E., May 16, 2008.

Preservation of water quality . . . (b) In scenic and recreational river areas: (1) new discharges from point sources are not allowed unless the applicant shows that such discharge will not have a detrimental impact on river areas resources.”

Also, the amount of land disturbed during construction will be subject to the erosion and sediment control measures outlined in the plan kept on site.

#### District Boundaries—Ulster County Agricultural District 2, Wallkill Valley:

The project site is part of Parcel 99.4-1-11 and is within Ulster County Agricultural District 2, Wallkill River Valley. As of March 2008, this agricultural district has 614 parcels and 26,435 acres. Of these, 262 parcels and 11,081 acres are in the Town of Shawangunk<sup>10</sup>. According to the Ulster County Agricultural and Farmland Protection Plan (July 1997, Page 6), in 1991 the district included 27,221 acres.

Article 25-AA of the Agriculture and Markets Law authorizes the creation of local agricultural districts with the stated purpose of encouraging the continued use of farmland for agricultural production. Benefits include preferential real property tax treatment, and protections against overly restrictive local laws, government funded acquisition or construction projects, and private nuisance suits involving agricultural practices. Application can be made to include a property in an agricultural district annually, and districts are typically reviewed every eight years. According to the Ulster County Planning Board, the last review was conducted in 2005. Simply being included in an agricultural district does not mean that a property is involved in agriculture.

According to New York State Town Law § 283a(2):

Any application for a special use permit, site plan approval, use variance, or subdivision approval requiring municipal review and approval by the town board, planning board, or zoning board of appeals pursuant to this article, that would occur on property within an agricultural district containing a farm operation or on property with boundaries within five hundred feet of a farm operation located in an agricultural district, shall include an agricultural data statement. The town board, planning board, or zoning board of appeals shall evaluate and consider the agricultural data statement in its review of the possible impacts of the proposed project upon the functioning of farm operations within such agricultural district. The information required by an Agricultural Data Statement may be included as part of any other application form required by local law, ordinance or regulation.

As part of its application, the applicant submitted an Agricultural Data Statement with its application, and all neighbors within 500 feet of the property were notified of the project by mail.<sup>11</sup>

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<sup>10</sup> Per telephone call to Ulster County Planning Board on March 28, 2008.

<sup>11</sup> See Appendix 1 for list of notification list of surrounding property owners within 500 feet of the property.

According to the revised Agricultural Data Statement<sup>12</sup>, 46 acres on the project site will be involved with this project, of which 13 acres of the project site are currently in agricultural use as pasture. With the exception of realigning some fence line, this project is not anticipated to have a significant impact on Watchtower Farms' agricultural activities. Based on the amount of agricultural activity occurring on the property, it is expected to remain in the agricultural district.

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<sup>12</sup> See Appendix 1.

## **II.A.4 Description of Existing Infrastructure**

The road network in the vicinity of the project site consists of Red Mills Road, Steen Road, New Prospect Road, and Bruyn Turnpike with Bruynswick Road, Albany Post Road, Indian Springs Road and Hoagerburgh Road in the close vicinity. Red Mills road, which provides access to the project site, is a two-lane road that runs from Bruyn Turnpike to Steen Road. In order to encourage walking, the applicant has constructed sidewalks along Red Mills Road on its property outside of the road right-of-way. Red Mills Road continues further on from the intersection with Steen Road in a northeasterly direction intersecting and terminating at Bruynswick Road and Hoagerburgh Road. Bruyn Turnpike is an east/west roadway and intersects with other roadways including Albany Post Road, Hoagerburgh Road, Red Mills Road, and terminates at an intersection with New Prospect Road and Indian Springs Road. New Prospect Road originates at a "T" intersection with Awosting Road / Bruynswick Road and continues in a southerly direction serving primarily a residential area. New Prospect Road then continues into Orange County and terminates at an intersection with North Street in Pine Bush. Bruynswick Road extends from New Prospect Road in a northeasterly direction and also intersects with Red Mills Road and Hoagerburgh Road. Hardenburgh Road originates at a "T" intersection with Bruyn Turnpike and continues in a southerly direction serving primarily a residential area, then continues into Orange County.

Access to the project site is provided by existing paved driveways located on Red Mills Road, with no changes proposed to the entryways to the public road. In addition, the applicant does not propose any new entryways into the project site from Red Mills Road.

The applicant owns and operates the existing water supply system, identified by the New York Department of Health as Public Water System No. 5510805. This water supply system is fed by a watershed that encompasses approximately 180 acres of protected land owned by the applicant. This watershed receives around 230-million gallons due to surface water flow from rainfall in an average year. The rainwater is stored in two reservoirs with a combined capacity of about 90-million gallons. The New York State Department of Health has approved the water treatment plant for a design capacity of 250 gallons per minute (gpm) or 360,000 gallons per day (gpd). The water plant operators meet New York State Department of Health licensing requirements, and the treated water quality meets all applicable criteria established by the New York State Department of Health. The treated water is stored in two finished water storage tanks with a combined capacity of 250,000 gallons. Two pumps with a combined capacity of 1,400 gpm feed the distribution system, which includes a 40,000-gallon water tower.

The existing project is served by a sewage and wastewater collection system that consists of gravity collection lines, manholes, lift stations, force mains, grease traps and other ancillary structures. These are used to convey the sewage and wastewater generated in the various buildings and other sources to the existing wastewater treatment plant that is on the project site. Due to the topography of the project site, the majority of the sewage and wastewater must be pumped at one or more locations by lift



stations discharging through force mains before reaching the wastewater treatment plant. There are approximately 20 lift stations currently on the property, varying in size from small units serving houses to large stations handling sewage and wastewater from the larger residential buildings.

The property receives electrical power via overhead electric lines from the nearby Galeville substation on Burnt Meadows Road operated by Central Hudson Gas and Electric Corp. The current peak electrical load is about 6,000 kW for the entire facility. In addition, there are two new 2,000-kW Tier II Caterpillar generators which are configured to supply power during a power outage. The generators are also capable of parallel operation with Central Hudson in order to perform soft transfers when power is restored.

The existing telecommunications infrastructure consists of several small rooms and closets distributed throughout the project site that house computer servers and telephone equipment. The underground telecommunications wiring distribution is routed through two communications duct banks, a north loop and a south loop.

## **II.A.5 Short- and Long-term Property Use**

The proposed Watchtower Farms Improvements Project is expected to meet significant facility needs over at least a five-year time period after the completion of construction. It is the full and complete project resulting from a recent review conducted in an effort to modernize the facility and identify long-term needs. The review identified the need to improve the quality of life for residents, which this project addresses by providing residential dwelling units with private bathrooms, increasing the size of individual dwelling units, and providing exercise/fitness facilities.

A second need is upgrading infrastructure based on proven technology, which this project addresses by adding a technical equipment room and upgrading central laundry and dry cleaning facilities based on industry and textile changes.

A third need is allowing for modest population growth, which this project addresses by adding dwelling units, parking, office space, and central dining space. The population growth is categorized as modest in the context of comparative growth in the surrounding community. The applicant's population is growing at a slower rate than the overall Town of Shawangunk. The applicant's most recent request for residential growth was 14 years ago, in 1994. From 1994 to 2007, the central population of Watchtower Farms has increased from 1,094 to 1,350 persons, an average rate of increase of 1.6 percent per year. This is lower than the Town of Shawangunk's average rate of annual increase of 1.8 percent over a similar ten-year period. According to United States Census data, the town's population increased from 10,081 to 12,022 from 1990 to 2000.

In summary, this project is based on an organizational assessment of long-term needs and reflects the same stable pattern initiated in the early 1970s of integrating agricultural, office, residential, and printery activities. The applicant is committed to the continued consistent use of the property that has been demonstrated for decades.

## **II.B Description of the Proposed Action**

### **II.B.1 Detailed Description of Proposed Action**

The applicant, Watchtower Bible and Tract Society of New York, Inc., seeks special use permit and site-plan approval for 300 multiple dwellings to be constructed in a three-story residential building attached to an existing residential building. The Applicant also proposes to construct and expand various ancillary uses including, but not limited to, a two-story parking garage with 400 spaces, three-story accessory office building with basement, recreation building, technical equipment building, and proposed additions to the existing dining room, dry cleaning, and laundry. The proposed development is situated on a portion of the Applicant's 1,141± acre landholding. The application involves already developed land; except some disturbance of lands in agricultural or other use can be anticipated at the periphery of the proposed development area. As per the Town of Shawangunk zoning law, the property is zoned Residential Agricultural (R-Ag 4).

The proposed Watchtower Farms Improvements Project is intended to meet the applicant's purpose of caring for organizational needs by improving the quality of life for residents, upgrading existing facilities, and providing for modest growth consistent with the zoning regulations and comprehensive plan of the Town of Shawangunk.

Existing residential housing on the project site has been gradually improved over the years; however, small accommodations and centralized, dormitory-style bathrooms remain common. At the same time, demographics reveal that the average age of residents at Watchtower Farms has increased over the years and more people are accustomed to dwelling units with individual, private bathrooms, and more living space. The proposed project incorporates the removal of some modular housing, consolidation of some existing dwelling units, and the construction of a new residence building. The proposed project also includes a new recreation building with exercise/fitness facilities for maintenance of physical health. Improved accommodations would improve the quality of life for residents, particularly caring for the needs of older residents while they continue actively and productively living on-site.

Utilization of modern technology requires upgrades to existing facilities. Computer servers and telecommunications equipment function best in a climate-controlled environment. Also, garment care must consider industry and textile adjustments. The proposed project upgrades infrastructure based upon proven technology with a technical equipment building and upgrading of the existing central laundry and dry cleaning facilities.

Modest growth provides for flexibility to meet the applicant's organizational needs. The proposed adjustments in existing buildings and loss of some modular structures would otherwise result in an estimated 25-percent loss in available dwelling units. The proposed project includes a new residential building. The proposed new residential building would support a projected net increase of approximately 200 residents on the

project site. Adding this net increase to the currently permitted population of approximately 1,350 residents would result in a projected final population of approximately 1,550 residents. Accessory upgrades would include an addition to the central dining room, a new parking garage, utilities, and modernization of office workspace including a new office building.

The proposed project would incorporate exterior architectural features that match existing design themes and blend in with the existing facility. Native vegetation and trees would be planted in harmony with the existing landscaping to complement the flora found in the local area.

#### Design and Proposed Phasing:

The following contain descriptions of each of the proposed buildings and the proposed construction phasing sequence. For an overall site plan showing the general configuration and locations of the buildings, see Drawing C-002—Overall Site Plan.

1. The proposed new technical equipment building covers a lot area of 5,500 square feet and would be designed to house computer equipment and communication connections. This building would contain the applicant's primary computer server and telecommunications equipment. It would be the hub of the communication lines.—For the building elevation, see Figure II.B-2.
2. The proposed new three-story multiple dwelling (residence building) with basement and cellar covers a lot area of 59,000 square feet and would provide 300 dwelling units for residents. Each dwelling unit is designed for two occupants to have a small kitchenette and individual bathroom. Seventy-five percent of the units would have a separate bedroom. The basement level would be garden-type dwelling units. The cellar area would be used for residential support uses, such as storage, mechanical and electrical rooms, and recreational use. A core module would tie the three wings of the new residence building together in keeping with the design theme of the existing residence buildings. This core module would provide space for public and administrative uses. The new construction is also planned to include a connector, which would tie the new residence to an existing residence building.—For the building elevation, see Figure II.B-1.
3. The proposed underground tunnel connecting pedestrian traffic covers a lot area of 1,500 square feet and would join an existing residence building to the new residence building. This tunnel would also be used to make the necessary mechanical connections to supply cooling and heating from the existing main mechanical equipment rooms to the new residence building.
4. The proposed new accessory office building covers a lot area of 19,700 square feet and would be an accessory three-story building with a basement. It would also allow the upgrading and consolidation of existing offices. The new three-story office building would be located between two

existing buildings and incorporate a new pedestrian walkway that replaces an existing in the same location.—For the building elevation, see Figure II.B-3.

5. The proposed new parking garage covers a lot area of 35,000 square feet and would be sized to accommodate 400 cars. The proposed concrete structure would be a two-floor building with four levels of parking—one cellar level below grade, one floor at grade, one floor above grade, and parking on the open-roof level. The design would be similar to the existing parking garages on-site. The parking garage would reduce the need for surface parking lots, thus helping mitigate stormwater runoff and reduce the environmental impact.—For the building elevation, see Figure II.B-2.
6. The proposed addition to existing dining room covers a lot area of 8,200 square feet and would accommodate the modest residential growth. The existing dining room currently has a seating capacity of approximately 1,600 and would be expanded to a maximum capacity of 1,980 seats. A walkway would also be incorporated on the north end of the dining room to provide a link from the dining room to an existing pedestrian walkway that connects to the existing residences.
7. The proposed addition to the existing laundry/dry cleaning area covers a lot area of 5,800 square feet and would accommodate an equipment upgrade. The proposed upgrade of equipment would allow the laundry to upgrade its garment care equipment, and it would allow dry cleaning to shift from a solvent-based process to increased usage of water-based cleaning.—For the building elevation, see Figure II.B-2.
8. The proposed new recreation building covers a lot area of 24,000 square feet and would include various indoor athletic courts, an indoor swimming pool, and screened patio area. The swimming pool would replace an existing outdoor swimming pool that would be demolished to allow for the proposed office building. The recreation building would facilitate year-round use by residents for maintenance of physical health. Also, existing athletic courts and fields would be relocated adjacent to the recreation building.—For the building elevation, see Figure -3.

## **II.B.2 Proposed Utilities, Recreation, Open Space, Parking, and Driveways**

The proposed project includes new and relocated utilities, recreational amenities, open-space areas for common use by residents, parking, and driveways.

The property recently upgraded its electrical service from Central Hudson Gas and Electric Corporation (Central Hudson) via pole-mounted overhead electric lines from the nearby Galeville substation on Burnt Meadows Road. The peak electrical load is about 6,000 kilowatts (kW) for the entire facility. In addition, the applicant has two new 2,000-kW Tier II Caterpillar generators that are configured to supply power during an outage or periods of high demand when curtailment is requested. These generators are capable of parallel operation with Central Hudson in order to perform soft transfers when power is restored. Power is supplied to printing equipment in the printery by distributing 13.2 kV from a pad-mounted main switch underground to step-down transformers that supply power at 480 volts. Other loads are powered by distributing 4,160 volts using two underground power loops to supply the other buildings on the property. There are also 4,160-volt radial feeders delivering power to larger mechanical equipment such as chillers that operate at 480 volts through step-down transformers. Electrical distribution would be extended to the proposed buildings along previously developed routes and no major changes to the electrical infrastructure would be required. An effort would also be made to design the new residence, office, and recreation building to accepted sustainability standards. The goal is to achieve a 3 Green Globes award level (this corresponds to a "LEED® Green Building Rating System™ [Leadership in Energy and Environmental Design] Gold award level) in sustainable design through the Green Globes™ System.

Three liquefied petroleum gas (LPG) tanks protected by an automatic water deluge system supply certain activities in various existing buildings. The capacity of this system is 90,000 gallons. LPG is used for the laundry gas dryers, printery press dryers, kitchen gas ovens, and some small, miscellaneous heating. The steam plant boilers can also operate on LPG but usually operate with Number 4 (No. 4) fuel oil. The existing LPG supply capacity is adequately sized to handle the proposed project and the LPG delivery schedule is not expected to be significantly affected. Thus no new LPG tanks would be added.

There are two existing No. 4 fuel-oil tanks located inside a covered concrete secondary containment area located north of the Printery. The tanks each have a 20,000-gallon storage capacity and supply fuel oil to the on-site boilers. An additional 20,000-gallon tank is proposed to be added to increase the No. 4 fuel-oil storage capacity. A modification will be submitted to the NY State Department of Environmental Conservation (DEC) requesting a revision to the applicant's existing Petroleum Bulk Storage (PBS) Certificate for listing the additional tank. The secondary containment area that houses the existing tanks would be enlarged to accommodate the new tank. There is one existing No. 2 fuel-oil tank located in the same secondary containment described above, next to the No. 4 fuel-oil tanks. The tank's capacity is 20,000 gallons, and it supplies fuel oil to the applicant's two Caterpillar generators. The existing capacity

would still provide approximately one week's worth of emergency power following completion of the proposed project.

The existing central steam plant provides high-pressure steam (100 psig) for building heating, domestic hot-water heating, laundry washing and pressing equipment, and kitchen food-service equipment. The majority of the buildings are heated through heating hot water produced from steam-to-hot-water exchangers. Domestic hot water for the buildings is also produced from steam-to-hot-water exchangers at various locations. The central steam plant consists of five dual-fuel (No. 4 oil and LPG) steam boilers with a total plant size of 1,750 boiler-horsepower (BHP) (two 500 BHP, a 350 BHP, and two 200 BHP). All boilers are of the low-NO<sub>x</sub> (reduces the formation of oxides of nitrogen) and low-CO (reduces the formation of carbon monoxide) emissions type. Present plant operation has a sustained winter steam peak load of 470 BHP. The proposed steam peak loads, based upon increased use of steam, are expected to be a maximum of 900 BHP. There would be an upgrading and modernizing of some of the steam plant equipment.

A central chilled water plant provides cooling and dehumidification for some residences, offices, dining room, and spot cooling in the printery and laundry throughout the site. The sustained peak demand is 1,350 cooling tower tons (tons). The plant consists of five electric chillers with a total capacity of 2,020 tons. Six outdoor cooling towers provide condenser water cooling for the chillers. Two chillers (1,200 tons) have zero ozone depletion ratings. Free-cooling heat exchangers (using cooling tower evaporative cooling effect in cold, dry outdoor conditions to cool the chilled water loop without operating a chiller) handle the winter comfort cooling load of the site. The proposed project would include increasing the cooling plant capacity for the proposed project. All new chillers would meet the operating efficiency requirements of the *Energy Conservation Construction Code of New York State*. Future plant peak load, based upon increased use of central cooling, is expected to be a maximum of 2,150 tons. The existing R-22 refrigerant chillers would be replaced with new chillers and the existing cooling towers serving these chillers would be replaced with new high-efficiency cooling towers meeting the standards of the *Energy Conservation Construction Code of New York State*. All chillers in their final plant condition would have a zero ozone depletion rating.

The applicant does not presently operate or propose the installation of groundwater wells on the project site for domestic consumption, irrigation, or otherwise. Domestic water is supplied from surface water reservoirs that are also supplied by a watershed on the property. Therefore, no groundwater impacts are anticipated. The New York State Department of Health (NYSDOH) has approved the water treatment plant for a design capacity of 250 gallons per minute (gpm) (360,000 gpd). The proposed project would generate an average usage increase to 153,000 gpd and the peak daily usage increase to 225,000 gpd. To provide sufficient fire flow to the area of the proposed new buildings, one of the existing six-inch water main loops would be extended. New hydrants would be installed on the new portion of the six-inch water main.

The wastewater treatment plant (WWTP) on the property is solely owned, operated, and maintained by applicant, and it is authorized to discharge wastewater under the conditions of a State Pollution Discharge Elimination System (SPDES) Permit No. NY-002-5295 (DEC ID NO.: 3-5152-00026/00004) to an outfall on the Shawangunk Kill. The applicant proposes minor adjustments to the WWTP, including converting the present “pretreatment” tank into a supplemental flow equalization tank and installing new headworks, variable-speed tank pumps, controls, and aeration blowers. The proposed project would extend the wastewater collection system along existing driveways and Red Mills Road, including a new lift station and force main serving the new residence and some new gravity sewers. While there would be an increase in the sewage flow, with the improvements to the wastewater treatment plant and conservation plans to reduce the existing sewage flows, there is no anticipated impact to the environment. Water conservation measures would also be implemented. For example, toilets in some existing structures would be replaced with water saving devices that use an average of 1.5 gallons of water per flush compared to 4.5 gallons per flush. Other water saving improvements are proposed in the existing buildings, and the proposed renovations to the central laundry would incorporate water saving equipment.

The existing recreational facilities include outdoor athletic fields, courts, and an outdoor swimming pool. These areas would need to be relocated to accommodate space for the proposed construction. The proposed recreation area would include a new building to house indoor athletic courts, an indoor swimming pool, and a patio area. The recreation building would facilitate year-round use by residents.

Existing open space around the residence buildings is landscaped for common use by residents. The same pattern is proposed for open-space common areas around proposed buildings.

To reduce land coverage by impervious surfaces a new parking garage is proposed. It would be sized to accommodate 400 cars. The proposed parking garage would be a two-floor building with four levels of parking—one cellar level below grade, one floor at grade, one floor above grade, and parking on the open roof level. The parking garage would reduce the need for surface parking lots, thus mitigating impacts from stormwater runoff.

Access to the project site is provided by existing paved driveways connected to Red Mills Road. There are no changes proposed to the existing entryways at the public road, nor does the applicant propose any new entryways into the project site from Red Mills Road. The buildings currently on the site are served by a North Loop Driveway which would be extended to circle the proposed buildings.

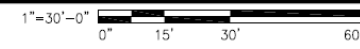


### **II.B.3 Building Elevations of Proposed Development**

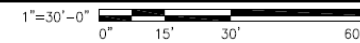
The proposed new buildings are designed to harmonize with the adjacent structures by maintaining the established architectural theme and elements. This is primarily achieved through techniques such as repetition of roof lines, the use of similar proportions in building mass and outdoor spaces, similar window and door patterns, and the use of building materials and warm palette color shades and textures that tie all components together and complement surrounding buildings. The façade of each building is a brick veneer interspersed with stucco-like finished panels, also known as Exterior Insulation Finishing System (EIFS), and molded accents that are arranged to create horizontal and vertical elements. These finishes are already used extensively throughout the property. The overall effects of these elements give character and establish presence. Complementary architectural features, such as soffits, sunshades, and stormwater planters enhance the overall appearance as well as provide environmental benefits by shading fenestration and improving the quality of stormwater through containing and filtering. The preliminary design drawings for each proposed building are shown in Figures II.B-1, II.B-2 and II.B-3.



1 SOUTH ELEVATION – RESIDENCE BUILDING



2 WEST ELEVATION – RESIDENCE BUILDING



**KINGDOM  
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ISSUE DATE:  
26 MAR 08  
DRAWN BY:  
SDG

PROJECT TITLE:  
**WATCHTOWER FARMS IMPROVEMENTS  
EXTERIOR ELEVATIONS**  
900 RED MILLS ROAD, WALLKILL, NEW YORK

PROJECT No.  
**DEIS**  
SHEET No.  
**A1**

Figure II.B-1 Exterior Elevations—Residence Building



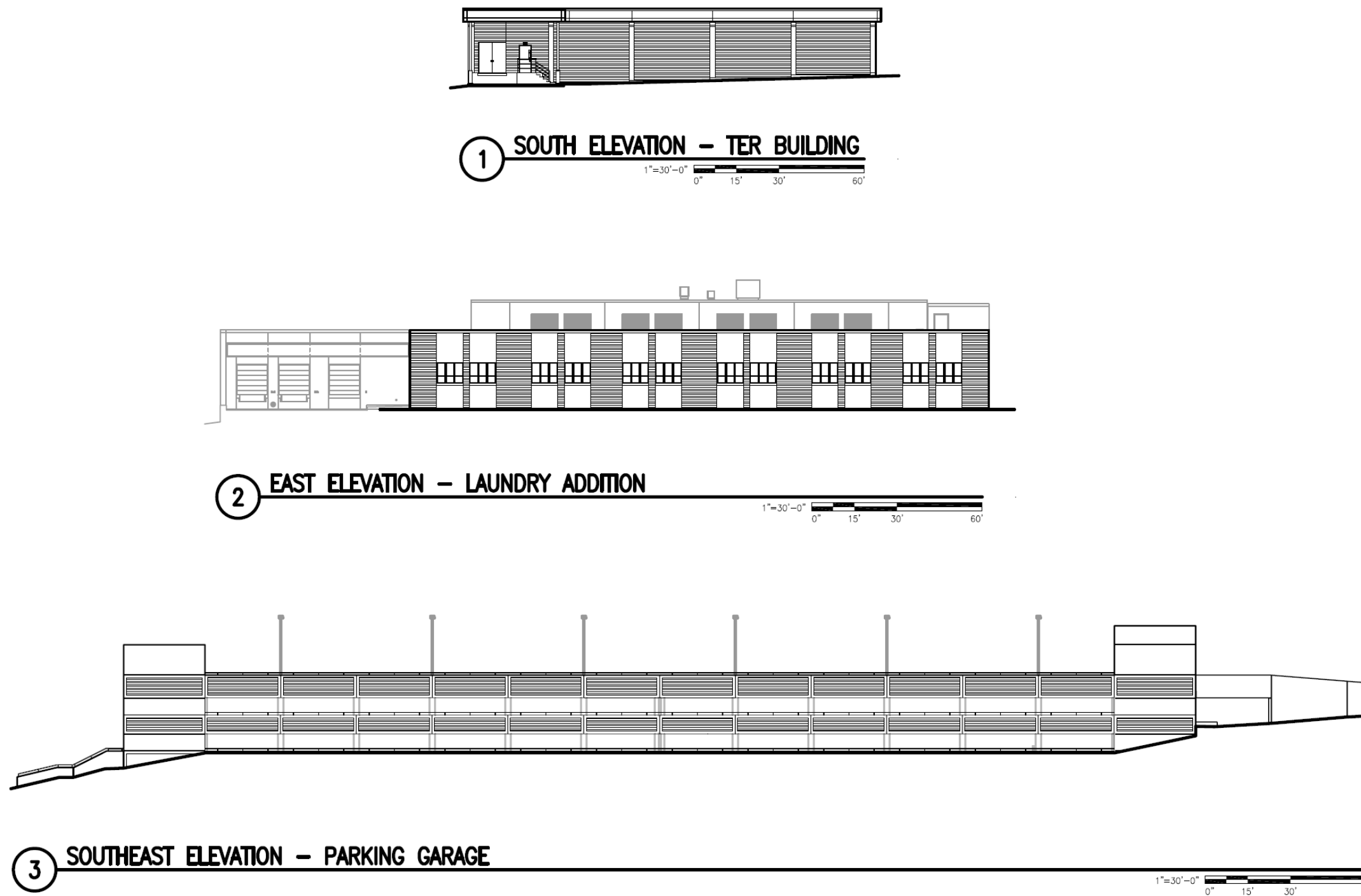
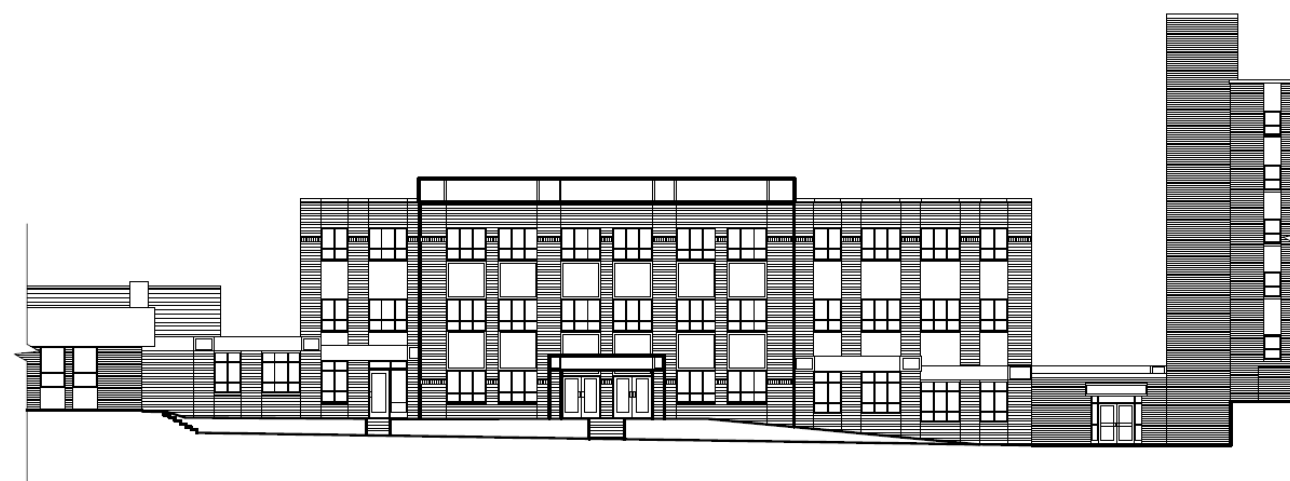
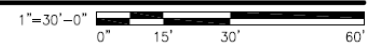


Figure II.B-2 Exterior Elevations—TER Building, Laundry Addition, and Parking Garage

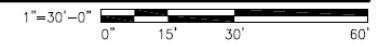




1 SOUTH ELEVATION – OFFICE BUILDING



2 NORTH ELEVATION – RECREATION BUILDING



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PROJECT No.

**DEIS**

SHEET No.

**A3**

Figure II.B-3 Exterior Elevations—Office and Recreation Building



## **II.B.4 Zoning and Existing Land Uses**

### Description of Zoning and Existing Land Uses for Project Site:

The entire Parcel 99.4-1-11 (“property”) containing the project site is in Zoning District R-Ag 4 Residential-Agricultural District. According to the *Town of Shawangunk Code*, Chapter 177, Zoning, Article II, 177-7 D(1):

The purpose of this district is to encourage the continuation of agriculture and low-density uses compatible with the soil, topography and location of this district; to control activities not compatible with agriculture and related low-density development; and otherwise to create conditions conducive to carrying out the broad purposes of this chapter.

The project site is located on a portion of Parcel 99.4-1-11 according to Town of Shawangunk tax maps. The property consists of approximately 1,141 acres, and according to the *New York State Office of Real Property Services Assessor’s Manual* “Property Type Classification and Ownership Codes” (September 1, 2006), the property use is listed under “Community Services, Property used for the well being of the community.” Its specific classification is No. 620—Religious. The property is wholly owned by the applicant, and all activities conducted thereon support the applicant’s religious and charitable purposes as a domestic not-for-profit corporation. In coordination with similar facilities at Patterson and Brooklyn, New York, Watchtower Farms serves as a component of the United States Branch Office of Jehovah’s Witnesses. It is one of more than 100 branch offices worldwide that help organize the international activities of Jehovah’s Witnesses.

Buildings cover approximately 26 acres of the 1,141 acre property, which is 2.3 percent lot coverage. Approximately 36 acres of public and private roads are on the property. Other impervious cover, such as sidewalks and parking lots, covers 16 acres. Approximately 714 acres are cultivated in agriculture. This includes pasture, alfalfa, hay, woodland, vineyard, apple orchard, sweet corn, and blueberries. Another 62 acres is landscaped and maintained as native grasses, ornamentals, and lawns around the buildings. The remaining balance of 350 acres includes waterbodies (reservoirs, ponds) of 33 acres, 100-year flood plains for streams such as the Dwaarkill and Shawangunk Kill of 133 acres, open-space buffer areas (such as between public roads and the fenceline to agricultural fields), and miscellaneous uses including a small cemetery, small personal garden plots, aggregate storage (for road, driveway, and building maintenance and construction), restricted-access fuel station, fuel tanks (liquefied petroleum gas [LPG]), gasoline, diesel, No. 2 fuel oil, No. 4 fuel oil), temporary outdoor materials storage, athletic fields, and unpaved farm roads.

### Description of Zoning and Existing Land Uses for Adjoining Properties:

All parcels adjoining the property, with the exception of two (Parcels 99.4-1-2 and 99.2-4-29) are located in the same R-Ag 4 zoning district. The R-Ag 4 zoning district’s general geographic boundary, approximately four miles east of the project site, is the Wallkill River.



The property primarily fronts onto Red Mills Road, which is to the east. Ulster County Route 7, also known in the area as Bruynswick Road and New Prospect Road, is west of the project site, and the property also has limited road frontage on County Route 7 north of its intersection with Steen Road. This is north of the project site.

County Route 7 marks the eastern boundary of District R-Ag 2 Residential-Agricultural District. Thus two adjacent properties across County Route 7 are in this district. Regarding the R-Ag 2 zoning district, according to the *Town of Shawangunk Code*, Chapter 177, Zoning, Article II, 177-7 B(1):

The purpose of this district is to provide reasonable standards for the development of residential areas in the vicinity of established residential centers; to encourage a greater variety of lot sizes and housing types; to control activities not compatible with moderate-density residential development; and otherwise to create conditions conducive to carrying out the purposes of this chapter.

The project site is located in southern Ulster County, approximately six miles west of the hamlet of Walkkill, near the geographic center of the Town of Shawangunk. The hamlet of Dwaarkill is approximately one mile to the north at the intersection of New Prospect Road and Awosting Road. Establishments include Sangiovese at the 1776 Colonial Inn—a restaurant which was severely damaged by fire in March 2008, the Dwaarkill Country Store, and The Hoot Owl, also a dining establishment. The hamlet of Bruynswick is approximately two miles to the northeast along Red Mills Road. Establishments have included Audrey's Farmhouse Bed and Breakfast, the Bruynswick Inn restaurant, the Kingdom Hall of Jehovah's Witnesses, New Horizons Resources Inc., Anna Mercurio Gardens, and the Shawangunk Valley Fire Company station house. The hamlet of Pine Bush in the Town of Crawford, Orange County (situated along State Highway 52) is approximately four miles to the southwest along County Route 7, also known as New Prospect Road.

According to a review of the Ulster County Information Services Web site, land uses adjoining the project site include: Field Crops, One-Family Year-Round Residence, Two-Family Year-Round Residence, Rural Residence with Acreage, Residential—Multi-purpose/Multi-structure, Residential Vacant Land, and Private Wild and Forest Lands.

## II.B.5 Zoning Compliance

According to “Zoning,” Chapter 177, from the *Code of the Town of Shawangunk*, the zoning map updated in 2004 shows the project site in an R-Ag 4 Residential-Agricultural zoning district. In accordance with Sections 177-7.D(4), 177-22, and 177-23, the applicant is seeking a special use permit and site-plan review approval for 300 multiple-family dwellings to be constructed in a three-story residential building attached to an existing residential building. The applicant also proposes to construct and expand various ancillary uses including, but not limited to, a two-story parking garage with cellar accommodating 400 spaces, three-story accessory office building with basement, recreation building, technical equipment building, with proposed additions to existing dining room and laundry and dry cleaning buildings.

The applicant proposes no variances, modifications, or waivers of the *Town of Shawangunk Zoning Code* or other town codes or laws except for the following two variances. The applicant intends to seek a variance from providing sprinklers in the existing E Residence Dining Room on the basis of several unique circumstances. First, the applicant maintains a private fire brigade, a continuous security watch, and a non-smoking policy on the premises. Also, there would be a disproportionate adverse potential impact from adding the sprinklers to the existing dining room. This variance would be requested in accordance with the procedure of the *Building Code of New York State*. The applicant also intends to seek a variance allowing the basement windows at parts of one side and the rear of the proposed three-story accessory office building to be exposed. The building height on these sides would reach a maximum of 44 feet, 6 inches, exceeding the maximum height limit of 35 feet.

### R-Ag 4 Bulk Regulations—Overlay Districts

The project site is not located in either of the Town of Shawangunk’s zoning overlay districts—the Borden Home Farm Historic Overlay District (*Town of Shawangunk Zoning Code*, Section 177-7.H) or the Aquifer Protection Overlay District.—*Town of Shawangunk Zoning Code*, Section 177-7.I.

### Building Height and Bulk Table

The project site is not located in an airport district (*Town of Shawangunk Zoning Code*, Section 177-9). The permitted exceptions in Section 177-9.C allow a parapet of four feet or less above the limiting height of the building. The maximum building height in the R-Ag 4 zoning district is 35 feet. According to the definitions in Section 177-41, Building Height is “the vertical distance measured from the mean level of the ground surrounding the building to a point midway between the highest and lowest point of the roof, but not including chimneys spires, towers, tanks and similar projections.” Also according to The *Town of Shawangunk Zoning Code*, Schedule II, the following are minimum lot and maximum height requirements in the R-Ag 4 zoning district: Front yard—75 feet; Rear yard—100 feet; Side yard, one—50 feet, both—100 feet; Minimum lot width—250 feet;

Minimum lot depth—200 feet; Maximum impervious coverage—15 percent; Maximum building height—3 stories.

For the proposed project, the minimum distance to the property line would be approximately 300 feet. This would be from some of the relocated outdoor recreation fields to an undeveloped parcel west of the project site, Parcel 99.4-1-40.31. The impervious coverage on the property, including public roads, driveways, sidewalks, parking areas, and buildings would increase by 3.5 acres, or 0.3 percent of the property. Total impervious surface coverage on the property would be approximately 7.1 percent.

The maximum height of the proposed buildings would be three stories or less, and the building height would be below the permitted height of 35 feet and a 4 foot or less roof parapet with the exception of the proposed accessory office building, where a variance is being sought. This building would comply with the height requirements of *The Town of Shawangunk Zoning Code* at the street frontage and east side. The grade at the west side and rear of the building would be retained, allowing the basement windows to be exposed to light, resulting in a total height of 44 feet, 6 inches, in these locations. Without this exposure, the basement floor would be limited to non-office uses, not allowing the full capacity of the building to be realized. The building would be located between two existing structures, a 52-foot-high residence building and a 30-foot-high office building. The exposed basement would be obscured at the sides and rear by the existing structures and a one-story enclosed walkway. The proposal includes the installation of a sprinkler system in the entire building, which is proposed to mitigate additional fire exposure caused by reduced accessibility. The proposed height is less than that of the existing adjacent five-story structure, and the applicant proposes that it would be in harmony with Zoning District objectives and absent of any objectionable characteristics as described in *Town of Shawangunk Zoning Code*, Section 177-23 (C) "General Standards for Special Permit Use Review."

According to the Town of Shawangunk Local Law No. 8 of the Year 2004, a local law entitled "Calculation of minimum lot sizes in all zoning districts and grandfather clause," net acreage rather than gross acreage is used for density calculations. The property of 1,141 acres contains 133± acres of land inside the Federal Emergency Management Agency 100-year floodplain for the Dwaarkill and Shawangunk Kill streams, 27± acres of delineated wetlands outside the 100-year floodplain, and 33± acres of natural or constructed waterbodies, including retention and detention basins. Therefore, the net acreage used for density calculations on the property is 948± acres.

#### Accessory Structures in Yards

An accessory structure which is not attached to a principal structure can be located no closer to a principal structure than 10 feet (*Town of Shawangunk Zoning Code*, Section 177-11.C[2]). Any proposed accessory structure(s) that are not attached to a principal structure would be separated by at least ten feet. For the proposed project, accessory structures are attached to existing principal structures or separated by at least 10 feet.

## Landscaping

Any use in a residential district and which is not conducted within a completely enclosed building, such as junkyards, storage yards, lumber and building-material yards, and parking lots, and like uses, shall be entirely enclosed by a fence or landscaping to effectively shield such use (*Town of Shawangunk Zoning Code*, Section 177-12). The proposed parking garage is very similar to the two existing parking garages on the property. It would be screened by landscaping and an earthen berm. The building façade would be similar to those of the other parking garages.

## Density for Residential Uses—Multiple Dwelling

Residential districts allow one dwelling unit per minimum lot area. Commercial districts allow one retail use or service per five thousand (5,000) square feet of lot area. Industrial districts allow one use or service per 40,000 square feet of lot area (*Town of Shawangunk Zoning Code*, Section 177-13). The proposed project is located in a residential-agricultural district. Apartments within multiple dwellings shall conform to minimum size limitations: 1 bedroom—550 square feet, 2 bedroom—700 square feet, and 3 bedroom—850 square feet. The minimum lot area required for each dwelling unit in a multiple dwelling in the R-Ag 4 zoning district where central water and sewer is provided is one bedroom—5,000 square feet, two bedroom—10,000 square feet, and three bedroom—10,000 square feet.—*Town of Shawangunk Zoning Code*, Section 177-18.A[7].

The applicant proposes construction of 300 dwelling units in a multiple dwelling. These non-apartment dwelling units primarily rely on central services, including dining and laundry, which are provided by the applicant. Area sizes for the multiple dwelling units are generally 350 square feet for studio dwelling units and 450 to 550 square feet for one-bedroom dwelling units. Construction of the proposed multiple dwelling with 300 dwelling units therefore requires 5,000 square feet per dwelling unit, or 34.4 acres on the project site. This is less than the 46-acre area that is to be disturbed with the multiple dwelling, ancillary recreation building, parking garage, outdoor recreation fields, and landscaped areas associated with this project. Therefore, the proposed project meets the density requirements.

## Supplementary Regulations

Because the facility is private, not open to the public, and is non-commercial, the requirements of the *Town of Shawangunk Zoning Code*, Section 177-15.C, “Commercial recreation, indoor,” are not applicable. However, the proposed project would comply with all applicable regulations, such as those regulating building, fire, and safety. Also, the proposed accessory office building is not a commercial activity; however, the proposed project would meet the requirements (*Town of Shawangunk Zoning Code* Section 177-15.B) for commercial group buildings of a minimum 60-foot setback from the front lot line, paved and marked parking areas, placement and screening of dumpsters in rear yards, single exit, and appropriate landscaping.

The project site does not include an “eating and drinking place” as defined by the *Town of Shawangunk Zoning Code*, Section 177-15.D, “Eating and Drinking Places.” The property contains on site dining room(s) that are non-commercial and provided without charge for service of residents and their guests. Thus, it is not subject to site plan and architectural review by the Zoning Board of Appeals.

Automotive service stations and repair garages cannot be located within 200 feet of playground and churches. Cars stored outside must be in an orderly fashion and at least twenty (20) feet from any rights of way. (*Town of Shawangunk Zoning Code*, Section 177-15.F) There are no automotive service stations or repair garages located within 200 feet of any areas used for recreation or churches.

None of the activities associated with this project constitute a “light industrial use” according to the *Town of Shawangunk Zoning Code*, Section 177-17.J. However, this section is considered in managing various activities conducted on the project site including noise, vibration, smoke, odor, particulate matter, wastes, water resources, lights, landscaping, and access.

#### Agricultural Uses

Farm buildings and structures shall be no closer than two-hundred feet to any property line, and accessory farm buildings not housing animals shall be no closer than fifty feet to any property line. (*Town of Shawangunk Zoning Code*, Section 177-16.A[1]). The proposed project complies with this requirement.

#### Outdoor Recreation

No outdoor recreation building shall be located within one-hundred feet of any property line. Unenclosed recreational facilities shall be located not less than 150 feet from any property line, except where greater distances are otherwise required and shall be effectively screened from adjoining uses. Illuminated signs and other lights shall be directed away or shielded from adjoining properties. No public address system is permitted except where it would not be audible at the property line.—*Town of Shawangunk Zoning Code*, Section 177-16.E.

The proposed recreation building and outdoor recreation fields would be for use by Watchtower Farms residents. The relocated outdoor recreation fields would be at least 300 feet from the nearest property line and would not include a public address system. The nearest adjacent dwelling within approximate sight distance across agricultural fields is located at Parcel 99.4-1-28 on Whitaker Lane, south of Red Mills Road. It is approximately 1,800 feet away. Another adjacent dwelling on Parcel 99.4-1-48.1 on Bruyn Turnpike, to the southwest of the project site across fields and through forested land, is approximately 800 feet away. Lighting would be shielded from adjoining properties.

## Essential Services

Essential services include electric substations, transformers, switches, sewage treatment plants, auxiliary apparatus serving a distribution area and water-pumping stations. Such facilities shall be located to draw a minimum of vehicular traffic through residential streets, shall not adversely affect the character of surrounding residential area, and shall have adequate fences, barriers, safety devices, and landscaping (*Town of Shawangunk Zoning Code*, Section 177-17.C). The proposed technical equipment room is considered an ancillary use rather than essential services as the use does not fall within the definition for "essential services" (*Town of Shawangunk Zoning Code*, Section 177-41). It is located in a previously developed area and would be visually shielded from Red Mills Road by other buildings and landscaping.

## Signs

Directional signs are permitted. For buildings other than dwellings, one identification sign not exceeding 32 square feet in area may be displayed for each 250 feet of road frontage. Signs must be constructed of durable materials, maintained in good condition and not allowed to become dilapidated. No sign shall be higher than 15 feet above the ground. No exterior neon signs shall be permitted and no flashing signs or those causing objectionable glare at the lot line of the property in question (*Town of Shawangunk Zoning Code*, Section 177-19). Exterior signs on the project site would be directional in nature and for building identification purposes. The applicant does not maintain any "billboard"-type signs on the property and none are proposed to be added as part of this project. Signage would be coordinated with other existing signs on the facility and maintained in good condition.

## Off-Street Parking

Each off-street parking space must have an area of not less than 200 square feet, minimum dimensions of 10-feet wide by 20-feet long, exclusive of access drives or aisles. Parking areas shall be suitably drained and paved. Access shall be limited to several well-defined locations. All permitted and required off-street parking spaces shall be located on the same lot as the use to which such spaces are accessory. The *Town of Shawangunk Zoning Code*, Section 177-20 Table 1 requires one parking space per dwelling unit.

The proposed parking garage's parking spaces would have an area of at least two-hundred square feet per space, exclusive of access drives or aisles. Both the parking garage and any outdoor parking spaces, such as in short-term loading areas or near the recreation areas, would be suitably drained and paved. The parking garage has discreet entrances on each level and access to surface parking lots would be at well-defined locations. All proposed parking is located on the same lot as the use to which such spaces are accessory, Parcel 99.4-1-11. The proposed parking garage and surface parking would provide approximately 400 parking spaces. The net number of parking spaces added after removal of existing surface parking spaces lost due to the proposed construction would be approximately 250. This would care for the new

demand. Current records maintained on the project site show that there are 0.66 cars per resident. For the estimated population increase of 208 residents, the corresponding parking demand would be 137 spaces. An additional number of spaces are provided for guests and short-term parking. This conservatively provides for the off-street parking demand of the proposed project.

#### Environmental Considerations

The *Town of Shawangunk Zoning Code*, Section 177-21, includes environmental considerations. There is no construction of buildings proposed in areas of special flood hazard. There are no freshwater wetlands mapped by the New York State Department of Conservation (DEC) on the project site, as stated in the letter of January 25, 2008, from the DEC to the Town of Shawangunk Planning Board<sup>1</sup>. The same letter states that state-eligible wetlands appear to be accurately mapped and requests revegetation in a portion of the area formerly occupied by modular trailers and buffer vegetation between the wetlands and driveway. The Planning Board is performing the environmental quality review process in advance of any decision regarding issuance of building permits, site-plan approval, or a special use permit. According to a meeting between the applicant's engineer, Richard Eldred, and a DEC Environmental Analyst, Rebecca Crist, on February 28, 2008, it appears that the project site is outside of the Wild, Scenic and Recreational River Corridor for the Shawangunk Kill.

#### Site-plan Review

The proposed project requires site-plan approval in accordance with the *Town of Shawangunk Zoning Code*, Section 177-22. In reviewing the site plan, the Planning Board shall consider the site plan's conformity with the Master Plan, as it may be amended, the Physical Limitations Maps and relevant town codes and ordinances. A full and complete site plan is being submitted to the Town Planning Board concurrently with the submission of this DEIS.

#### Ulster County Planning Board Review

The proposed project must be referred to the Ulster County Planning Board.

#### Special permit use review

The proposed project requires special permit use review in accordance with the *Town of Shawangunk Zoning Code*, Section 177-23. In its review of this application, the Planning Board may consider the public health, safety, morals, and general welfare of the community, the comfort and convenience of the public and the residents of the immediate neighborhood and conformity with any Master Plan or portion thereof which may have been adopted by the Town Board.

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<sup>1</sup> See Appendix 2.

The proposed project is in an R-Ag 4 "Residence" District. It serves a community need or convenience as described in Section II.C.2 of this DEIS. It is in harmony with the zoning district in which it is located as described in Section III.F.1 of this DEIS. As shown in Section II.B of this DEIS, the location, nature and height of buildings, walls, and plantings would not hinder or discourage the appropriate use and development of adjacent land and buildings. There are no characteristics such as noise, fumes, or vibrations as described in Section III.J of this DEIS that would be objectionable to nearby properties. Adequate off-street parking would be provided. It would not cause undue traffic or congestion, as described in Section III.G of this DEIS, and it would generally be accessible to fire, police, and other emergency vehicles via a Loop Driveway that provides access from two separate directions. The proposed project would not overload any public water, drainage, or sewer system, or any other municipal facility, or degrade any aquifer, natural resource, or ecosystem as described in this DEIS in Sections III.B, III.C, III.D, and III.E. The nature of the existing development and the layout of structures and buffer areas are proposed to ensure compatibility with surrounding property uses. The development is clustered to reduce the visual impact. As described in III.F.1 of this DEIS, the proposed use would be consistent with the goals of the Town of Shawangunk Comprehensive Plan.



## **II.B.6 Ownership and Maintenance Responsibilities**

The project site is owned and operated by the applicant, the Watchtower Bible and Tract Society of New York, Inc. It would continue to be owned and operated by the applicant. The applicant is responsible to arrange for the maintenance of existing grounds and structures as well as new structures associated with the proposed project. Describing property operated by the applicant, the *Shawangunk Mountains Scenic Byway Corridor Management Plan* (October 2005, page G-59) says:

In addition, the agricultural operations of Watchtower Farms provides some of the most beautiful views of the countryside and the Shawangunk Mountains. Land is farmed in the towns of Shawangunk, Gardiner, [and] New Paltz . . . . Located here since 1963, Watchtower Farms has a long-standing commitment to the community and to the principles of sustainability. This has resulted in a well-planned operation with a balance of publishing and farming that has helped to preserve the rural character of the community as well as many wonderful views of the Shawangunk Mountains.

A letter submitted to the Town of Shawangunk Planning Board concerning this project by a neighbor, dated January 17, 2008, commented that “[i]t is a pleasure to drive through their property, which they maintain beautifully.”

The applicant would also maintain all permanent stormwater control installations as described in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13 located in Volume 2 of this DEIS.

## II.B.7 Construction-related Activities and Environmental Safeguards

The proposed project would require the disturbance of approximately 46 acres. However, the impact would be limited by complying with New York State Department of Environmental Conservation (NYS DEC) permit requirements and following the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13 located in Volume 2 of this DEIS. The SWPPP includes temporary and permanent sediment and erosion-control measures that are in compliance with guidelines in the *New York State Standards and Specifications for Erosion and Sediment Control* (August 2005), and the *State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities* (#GP-0-08-001, May 1, 2008). During construction, unstabilized disturbed soils would not exceed five acres at any given time. To the extent feasible, all temporary sediment and erosion control measures would be installed before associated project areas are disturbed with construction activities to follow. The redevelopment project would be divided into a pre-construction and sixteen (16) construction phases and would proceed in compliance with the NYS DEC limits.

The pre-construction and sixteen (16) construction phases are described in detail in Section III.A.2.

Erosion and sediment control is included in the sixteen (16) construction phases, as described in detail in Section III.A.2, which limit the disturbance to five acres or less per phase. For a layout of applicable erosion and sediment control measures and details, see the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13 located in Volume 2 of this DEIS.

Temporary stabilization techniques would be set in place for the duration of the construction process. Disturbed pervious portions, topsoil stockpiles, and staging areas of the project area would be stabilized with temporary seed and mulch where construction activity temporarily ceases for 21 days. Seed and mulch would be stabilized no later than 14 days from the last construction activity in the project area.

Silt fencing would be used for erosion control, along with stabilization of slopes with straw mulch and jute mesh. Mulch would be applied in conjunction with seeding and re-applied as necessary. Areas of the project site which are to be paved would be temporarily stabilized by applying temporary gravel sub-base until pavement can be applied.

Topsoil would be stripped and stockpiled on-site for later landscaping use. Satisfactory soil suitable for fill under roads and other designated areas would be stockpiled on a nearby location on Watchtower property. Stockpiles would be protected from erosion by temporary silt fences, and mulch in the case of topsoil.

All proposed cut and fill slopes steeper than 3:1 would be stabilized with rolled erosion control fabric. All permanent slopes have been designed to be 3:1 or flatter to avoid instability due to wetness, and slopes in grass would not be greater than 4:1 to allow vegetated slopes to be mowed.

The area adjacent to roads and parking areas would be graded to conduct runoff to the road culverts or drainage structures which would have inlet protection. Roof water from the new residence building and garage would be piped to the storm drainage system. The proposed detention ponds would serve as temporary sediment basins where indicated on the attached plans. The basin would collect runoff from disturbed areas resulting from construction. Riprap outlet protection would be installed at all stormwater outlets, including the temporary sediment basin. Riprap outlet protection would be hard, durable field or quarry stone which is angular and resists breaking down when exposed to water and/or weathering. Temporary diversion swales would be installed on-site where required. The diversion swales are designed to divert runoff around active construction areas to the point of discharge.

Three temporary gravel construction entrances would be installed for the relocation of the Loop Driveway and access to the existing adjacent residence building. During wet weather it may be necessary to wash vehicle tires at this location to keep excessive mud off of Red Mills Road. The entrances would be graded so that runoff water would be directed to the sediment/detention pond basins.

Temporary silt fence or hay bales would be installed at the new drainage structures located in the proposed parking areas around the recreation area to intercept silt before it enters the structure.

Sediment control fencing would be installed around the project site where indicated on the attached plan sheets. These locations may change and additional fences may be needed based on actual construction conditions as they progress and as weather dictates. Should excessive dust be generated, it would be controlled by sprinkling.

Permanent stabilization measures would be set in place at the end of construction activities. Disturbed portions of the project site where construction activities permanently cease would be stabilized with permanent seed no later than 14 days after the last construction activity. The permanent seed mix would be in accordance with the project specifications and plans. Construction and maintenance of erosion and sediment control measures are in accordance with the *New York Standards and Specifications for Erosion and Sediment Control* (August 2005).

Where construction activity is complete and areas are to be permanently vegetated, the soil would be stabilized with permanent seeding, where seeding dates would be verified with the engineer. If the engineer determines that seed cannot be applied due to unfavorable climate conditions, topsoil would not be spread, rather mulching would be applied to the exposed surface to stabilize soils until the next recommended seeding period. Non-vegetated areas of the project site would be permanently stabilized with pavement, concrete, gravel, or building structures.

Regarding other controls, no new significant point sources of pollution are anticipated as a result of the proposed construction or future use of these improvements.

Domestic wastewater from the bathrooms and other domestic wastewater sources of the new residence building and accessory buildings would be conveyed by gravity

sewers to an existing lifting station, which would pump the wastewater to the existing on-site wastewater treatment plant.

Construction wastes may be disposed of in a variety of ways, depending on the type of waste. Concrete removed from existing roads, parking areas, or structures may be crushed and used for fill or road base. Trash and building trade's construction wastes would be stored in covered dumpsters or containers for conveyance off the property to properly licensed disposal sites. All personnel would be instructed regarding the correct procedure for waste disposal.

All hazardous waste materials would be disposed of in a manner specified by local or state regulations or by the manufacturer. Project personnel would be instructed in these practices and project operations committee would be responsible for seeing that these practices are followed. The applicant primarily uses Ashland Distribution Company (DEC Permit No. 7-0302-00068/00011); Facility/Program No. NYD049253719) in Binghamton, New York, for proper disposal of any hazardous wastes.

To help reduce vehicular tracking of sediment, three stabilized construction entrances would be installed and maintained as necessary. The entrance would be cleaned of sediment and redressed when voids in the crushed stone become filled and vehicular tracking of sediment is occurring. Dump trucks hauling materials to and from the construction project area would be covered to reduce dust. Any sediment and debris tracked from work area along project adjacent roadways would be immediately removed.

Other non-stormwater discharges are not expected to exit the site during construction.

The erosion and sediment control measures would be constructed prior to the clearing or grading of any portion of the project. Where construction activity temporarily ceases for more than 21 days, areas to be vegetated would be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Where construction activity temporarily ceases for more than 21 days, areas to be paved would be stabilized with crushed stone within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area would be stabilized with permanent measures. After the entire project area is stabilized, the accumulated sediment would be removed from the project area. Erosion control devices would remain in place until disturbed areas are permanently stabilized.

To insure compliance, the Stormwater Pollution Prevention Plan (SWPPP), shown in its entirety in Appendix 13 located in Volume 2 of this DEIS, was prepared in accordance with the guidelines of the *New York State Standards and Specifications for Erosion and Sediment Control* (August 2005) and the *State Pollutant Discharge Elimination System (SPDES)* General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001 May 1, 2008) for stormwater management and erosion and sediment control. There are no other applicable state or federal requirements for sediment and erosion control plans (or permits), or stormwater management plans (or permits).

## **II.C Project Purpose and Need**

### **II.C.1 Purpose or Objective of the Applicant**

The Watchtower Farms Improvements Project would meet the applicant's purpose of caring for organizational needs by improving the quality of life for residents, upgrading existing facilities, and providing for modest growth consistent with the Town of Shawangunk's zoning regulations and comprehensive plan.

In conjunction with similar facilities in Brooklyn and Patterson, New York, the existing facility at the project site is a component of more than one-hundred branch offices of Jehovah's Witnesses worldwide. It supports individual congregations throughout the United States and in some foreign lands. The applicant's purposes are religious and charitable. The residents at the project site devote their efforts to supporting these activities, which are non-commercial, non-political, and not for financial gain.

The proposed project is intended to improve the quality of life for residents by improving accommodations. It would upgrade existing services such as laundry, dry cleaning, dining, parking and utilities, and provide additional workspace. It would also allow for modest growth of approximately 200 residents. Making these improvements reflects current trends.

As noted in the Town of Shawangunk Comprehensive Plan (July 2003), "[local census data] suggests that as the population is growing, it is becoming better educated and more affluent." This is a trend that is reflected on a county level as well. A regional planning document, Ulster Tomorrow: A Sustainable Economic Development Plan for Ulster County (March 2007), noted several "macro trends" on page 10. For example, on page 9, "Macro Trend #3," describes "the widespread adoption of information technology (e.g., the Internet, sophisticated telecommunications, the widespread use of personal computers and other electronic devices for communications, and information-knowledge sharing, etc.)." As part of this trend, the proposed accessory office building and technical equipment building would help the applicant address telecommunications and computer needs. Another was "Macro Trend #4: The population of Ulster County is aging faster than the state and national averages, as our population growth has slowed," and following this was "Macro Trend #5: The aging Baby-Boom population is expanding and more demanding of a higher quality of life."

A report was recently prepared by the United States Census Bureau entitled "Supplemental Measures of Material Well-Being: Basic Needs, Consumer Durables, Energy, and Poverty, 1981 to 2002" (December 2005). It stated in part:

In 1981, 47.6-million households, or 57.3 percent, used electricity for air conditioning their homes. In 2001 this number increased to 80.8 million or 75.5 percent.

This shows a significant increase in the availability of home air conditioning. The same report shows that well over 90 percent of households owned a stove and refrigerator in the late 1990s. Thus, most people are accustomed to access to these appliances.

Similarly, according to the report prepared by the United States Census Bureau entitled, "Annual 2006 Characteristics of New Housing," in 1978 only 20 percent of newly constructed multi-family dwellings had two or more bathrooms. In 2006, 62 percent of newly constructed multi-family dwellings had two or more bathrooms. This shows that the general population has more access to individual bathrooms. Computers and various telecommunications services are also much more prevalent. All of this demonstrates that the general population is more accustomed to certain features in their places of residence.

The applicant anticipates that current and future residents would be accustomed to features such as access to air conditioning, telecommunications, small appliances, and individual, private bathrooms. Demographic studies also indicate that the current Watchtower Farms population is becoming older, with the average age increasing from approximately 32 years in 1987 to 37 years in 2007. Improved accommodations would similarly provide a quality way of life for older residents while living on site. Therefore, the applicant's objective is to continue transitioning to improve the quality of life for residents, particularly those living in existing, dormitory-style housing without access to small kitchenettes, with community-type bathroom facilities, or a combination of both. Included in this is replacing existing modular-type housing.

The location of the proposed construction would displace existing recreational facilities, including a swimming pool and athletic fields. In order to provide for the physical health and well-being of residents and in order to mitigate the potential impact on recreational facilities in the surrounding local community, a recreation building and outdoor facilities would be provided. The applicant also proposes upgrading the existing central laundry, dry cleaning, dining room, and applicable utilities. There is also a need to provide additional better-quality office workspace. Constructing additional covered parking would reduce the potential environmental impact of runoff from paved surfaces and extend vehicle life.

## II.C.2 Public Need for Proposed Action

The general public has an interest in the free exercise of religious beliefs. The applicant endeavors to satisfy this interest by providing appropriate organization and religious publications, such as the Bible, in sufficient quantities and languages to meet public demand. This project would allow the applicant to continue to meet the demand and organize its activities in an efficient manner.

The Watchtower Farms Improvements Project also meets local public needs described in the Town of Shawangunk Comprehensive Plan (July 2003). In Section I, "Introduction," it states:

The Town of Shawangunk is committed to being 'farm-friendly' and strongly believes that agriculture should continue to be encouraged as an important land use and economically viable industry within the Town. Contemporary agriculture provides the town with more than the sum total of the products produced on agricultural lands: it preserves and protects important environmental resources, wildlife habitat, and aesthetics that contribute to quality of life, as well as representing a living testament to our town's heritage. Agriculture contributes to the economy of the Town through sales of products and employment of workers, and indirectly, by enhancing tourism.

While Watchtower Farms may not be a conventional farm, based either on its size or purpose, its agricultural activities in the Town of Shawangunk are substantial. Watchtower Farms supplies food to approximately 4,000 Watchtower residents at the applicant's offices in Brooklyn and Patterson, New York, and at its facility in the Town of Shawangunk. It actively farms the majority of its property, with well over 2,000 acres in the Shawangunk Valley maintained in agricultural production. This is centered on the project site. The main agricultural products are beef cattle, field crops, garden crops, and an orchard. In addition, because the products are consumed by the on-site population and not offered for sale, it is not in competition with other local agricultural operations. In 2007, Watchtower Farms' agricultural activities in the Town of Shawangunk produced 1,600 bushels of apples, 1,000 gallons of apple cider, 5,600 gallons of apple juice, 7,000 quarts of blueberries, 62,000 pounds of grapes, 2,400 gallons of grape juice, 87,000 pounds of sweet corn, 320,000 pounds of beef, 267 tons of corn silage, and 400 round grass bales. By production, it is one of the largest farms in Ulster County.

Another heading in Section I of the comprehensive plan states that "Traditional Sources of Open Space are in Transition." It explains that "farming in the area is indeed undergoing immense change." This is confirmed in the Ulster County Agricultural and Farmland Protection Plan (July 1997). On page 1, it reports: "During the last forty-five years, Ulster County has lost significant amounts of agricultural farmland. From 1950 to 1995, farmland acreage declined from 227,497 acres to 71,900 acres. The number of farms also declined from 2,552 in 1950 to 485 farms in 1995. During the last ten years, the county has lost 130 farms." While the *National Agriculture Statistics Service 2002 Census of Agriculture* identified an upswing in the number and acreage of farms between 1997 and 2002, the production value was substantially lower. According to the 2002 data, in Ulster County there are only nine farms of more than 1,000 acres. While

forces of change are affecting the county, the proposed project supports and continues the applicant's historical use of the land. It blends various uses, and the comprehensive plan under Section E, "Economic Development," on page 9 includes the recommendation to:

...encourage farmers to maximize Return on Lands not in production in environmentally responsible manner through improved tax planning, woodlot management, agri-tourism and allowing other income producing activities as accessory uses to farming. . . . Part of this effort should consider ways of encouraging existing farms to create nonfarm uses on a portion of their land in order to generate additional sources of income so that the farm itself can stay in operation.

As a religious not-for-profit organization, the applicant's purpose is not to generate income; however, the applicant endeavors to make the best use of its human and physical resources. Having compatible non-farm uses improves the applicant's flexibility and stability in the community, and the uses that are included in the proposed project represent a decades-long pattern on the project site. This is anticipated to support the applicant's overall activities, which have a resultant stabilizing effect on the town.

A publication of the Ulster County Planning Board, Concepts for the Future, Land Use Plan 1985, explained on page 4:

In the past, there was a strong tendency to develop hamlets and centers. Today with the automobile opening nearly all of the county we see houses and subdivisions spreading over the countryside, a pattern we call sprawl.

The term, "sprawl," is typically viewed with a negative connotation, and it typically places heavy demands on community services. Sprawl seems to be at odds with the concept presented in the Ulster County Open Space Plan (December 2007), which explains on pages 1–5:

There are environmental, social and economic benefits from the protection of open space. The most obvious environmental benefit is the preservation of the beautiful landscapes that sustain our health and quality of life. But there are other important benefits, such as protecting the water supply from polluted run-off, sustaining local agriculture, reducing the use of fossil fuels by curbing sprawl, and maintaining the biodiversity of natural habitats.

The applicant's project supports a facility where the residents are efficiently housed and fed within a clustered building footprint that leaves much of the land in open space, such as agriculture. The residents are productive and walk from their places of residence to work. While the nature and objectives of the facility are unique, it incorporates various features that reflect values highlighted in Ulster County planning documents. This shows that the diverse activities of a facility can fit into the overall regional vision.

Ulster Tomorrow—A Sustainable Economic Development Plan for Ulster County, Strategic Implementation Report (March 2007) is a strategy document that involved the collaboration of numerous Ulster County organizations. The "Executive Summary" on page 1 explains:



[W]e have struggled to revitalize our manufacturing base, maintain our legacy in production agriculture, and encourage a vibrant tourism-visitor industry without compromising our unique natural resource endowment.

This statement reflects the prior comprehensive plan for the Town of Shawangunk (May 1971, page 38), which expressed that:

Shawangunk's principal economic activities are manufacturing, tourism, and agriculture. Although Watchtower Farms is a not-for-profit organization and not an employer, its activities reflect favorably in all three of the areas noted above. It includes a state-of-the-art printery, is one of the largest agricultural operations in Ulster County, and generates tourism with approximately 50,000 to 100,000 visitors touring the facility each year. Many of the visitors carpool or arrive by bus from out of state during the summer months and holiday periods, which reduces traffic impacts. These visitors often stay in area hotels, eat in area restaurants, and visit local stores. The annual number of visitors is modest in comparison with other locations in the Hudson Valley, such as the nearly 3 million visitors to the United States Military Academy at West Point<sup>1</sup> or approximately 500,000 visitors to the Shawangunk Mountains<sup>2</sup>.

The printing, agriculture, and tourism components tie into the concept presented on page 6 of the Ulster Tomorrow Report, which explains:

In communities, counties, and regions where economic development plans have been successful, the term 'economic development' has a more encompassing meaning. To those regions/communities, the term is more than just creating businesses, jobs, housing, roads, and/or airports. They employ a broader definition that describes economic development as the process of 'building a community's or regions capacity for shared and sustainable improvements in the economic well-being of residents.' Under this definition, all of the above actions contribute to the accomplishment of positive economic development—including those that improve an area's quality of life even if they are not based on an area's export industries.

While this statement focuses on the impact of community and downtown development that serve local populations, its umbrella extends to Watchtower Farms' diverse activities, which in this sense serve a public need.

The proposed project supports Watchtower Farms as it positions itself to be flexible in the face of various "Macro Trends" also identified in the Ulster Tomorrow Report. For example, on page 9, "Macro Trend #3," describes:

...the widespread adoption of information technology (e.g. the Internet, sophisticated telecommunications, the widespread use of personal computers and other electronic devices for communications, and information-knowledge sharing, etc.).[.]

The proposed accessory office building and technical equipment building would help address this trend. On page 10, "Macro Trend #4" says that [t]he population of Ulster

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<sup>1</sup> Source: United States Military Academy Web site, <http://www.usma.edu/publicaffairs/vic.htm>.

<sup>2</sup> Source: Shapley, Dan; Poughkeepsie Journal, November 13, 2005, *Working to Save the Ridge*.

County is aging faster than the state and national averages, as our population growth has slowed.

The proposed project should provide the applicant with sufficient space to care for aging members of its population and house workers. Also on page 10, "Macro Trend #5" notes the demand for a "higher quality of life." This is also reflected in the modernization of residential facilities afforded by this project.

In summary, the applicant's current activities support public needs on a local and regional level. In changing and progressive times, the proposed project is expected to help the applicant position itself to support these and similar public needs in the future.

## **II.D Approvals, Reviews, and Permits**

### **II.D.1 Required Approvals**

The SEQRA regulations define an “involved agency” as an agency that has jurisdiction by law to fund, approve, or directly undertake an action. While many of these agencies have been contacted for preliminary discussions, no formal permitting process has begun outside of these approvals required from the lead agency. The following lists the involved and interested agencies, and approvals required to commence the project.

The following approvals and permits are required to implement the proposed action:

#### Town of Shawangunk Planning Board

- Special-use permit approval.
- Site-plan approval.

#### Town of Shawangunk Building Department

- Separate building permits will be required for each building following site-plan approval.

#### Town of Shawangunk Highway Department

- Driveway-connection permit to Red Mills Road, if required. Traffic study will be reviewed.

#### Town of Shawangunk Zoning Board of Appeals

- Possible building height variance for accessory office building.

#### Ulster County Health Department

- Approval of plans to connect proposed buildings to the on-site sewage collection system and water distribution system.

#### New York State Department of Environmental Conservation

- New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater (GP-0-08-001).
- Review of the presence of a Wild, Scenic, and Recreational River (WSRR) per DEC request of February 21, 2008; Scoping Document E.3.e; and discussion by the applicant’s engineer, Richard Eldred, with Town Planner, Bonnie Franson, on February, 26, 2008.

- Modification to applicant's existing Petroleum Bulk Storage (PBS) Certificate for additional fuel oil tank

New York State Department of State

- Possible variance to not install sprinklers in the existing portion of the dining room.

## **II.D.2 Involved and Interested Agencies**

### **Involved Agencies:**

- Town of Shawangunk Planning Board, P.O. Box 247, Central Avenue, Wallkill, New York 12589.
- NYS Department of Environmental Conservation, Division of Regulatory Affairs, Region 3, 21 South Putt Corners Road, New Paltz, NY 12561.
  - Notices and pertinent information sent by Town Planning Board to Environmental Notice Bulletin, 625 Broadway, Albany, NY 12233-1750.
- NYS Office of Parks, Recreation and Historic Preservation, Pebbles Island Resource Center, P.O. Box 189, Waterford, NY 12188-0189.
- NYS Department of State, Division of Code Enforcement and Administration. One Commerce Plaza, 99 Washington Ave., Albany, NY 12231.
- Ulster County Health Department, P.O. Box 1800, 300 Flatbush Ave., Kingston, NY 12401-2740.
- Ulster County Department of Highways and Bridges, 317 Shamrock Lane, Kingston, NY 12401.
  - No known permits required. Traffic Study to include Ulster County Route 7 Intersection with NYS Route 52. Copy of study will be reviewed.
- Town of Shawangunk Town Board, P.O. Box 247, Central Avenue, Wallkill, NY 12589.
- Town of Shawangunk Highway Department, P.O. Box 247, 16 Kings Lane, Wallkill, NY 12589.
  - No known permits. Traffic Study will be reviewed by the Town.
- Town of Shawangunk Building Department, P.O. Box 247, Central Avenue, Wallkill, NY 12589.

- Separate building permits will be required for each building following Site Plan Approval.
- Town of Shawangunk Zoning Board of Appeals, P.O. Box 247, Central Avenue, Wallkill, NY 12589.

**Interested Agencies:**

- Ulster County Planning Board, 244 Fair Street, P.O. Box 1800, Kingston, NY 12402.
- Ulster County Soil Conservation Service, Times Square Office Park, 652 Route 299, Suite 103, Highland, NY 12528.
- Shawangunk Police Department, P.O. Box 247, Wallkill, NY 12589.
- Shawangunk Town Historian, 93 Red Barn Road, Pine Bush, NY 12566.
- Town of Shawangunk Tax Assessor, 14 Central Avenue, P.O. Box 247, Wallkill, NY 12589.
- Shawangunk Valley Fire District, P.O. Box 440, Wallkill, NY 12589.
- Pine Bush School District, Administration Office, P.O. Box 700, Pine Bush, NY 12566; Attn: Ms. RoseMarie Stark, Superintendent.
- Historical Society of Shawangunk and Gardiner, Suzanne Isaksen, President, P.O. Box 570, Wallkill, NY 12589.
- U.S. Army Corps of Engineers, New York District, Regulatory Branch, J. Javits Federal Building, 26 Federal Plaza, New York, New York 10278-00090.
- CH Energy Group, Inc., James P. Lovette, VP EEA, 284 South Avenue, Poughkeepsie, NY 12601.
- Environmental Management Council, Ms. Liana Hoodes, 3540 Route 52, Pine Bush, NY 12566.
- Town of Crawford, P.O. Box 109, Pine Bush, NY 12566.
- NYS Department of Health, Corning Tower, Empire State Plaza, Albany, NY 12237.

**Applicant:**

Watchtower Bible & Tract Society of New York, Inc., 900 Red Mills Road, Wallkill, NY 12589-3223, c/o Enrique Ford.

## SEQRA ACTIONS

Table II-D-1: SEQRA Actions, shows the current progress through the SEQRA process. The Environmental Assessment Form, Positive Declaration of Significant Environmental Impact, Scoping Document, and letters in response to coordination review are all included in Appendix 1.

**Table II.D-1: SEQRA Actions**

Action	Date
Type 1 EAF submitted	April 04, 2007  Amended —October 30, 2007 and May 16, 2008
Town of Shawangunk assumes Lead Agency Status	December 4, 2007
Project receives positive declaration of Environmental Impact	December 4, 2007
Draft Scoping Document circulated for review	December 4, 2007
Draft Scoping Document public hearing	January 2, 2008
Scoping Document approved	February 6, 2008
DEIS submitted for completeness determination	May 16, 2008
DEIS acceptance date	October 7, 2008
DEIS filing date	October 15, 2008
Public hearing date	November 5, 2008
Public comment deadline	November 21, 2008 (or ten days following the close of the hearing, whichever is later)
Town of Shawangunk Findings Statement adopted	

### **III ENVIRONMENTAL SETTING, IMPACT, AND MITIGATION**

#### **III.A Geology, Soils, and Topography**

##### **III.A.1 Geology and Topography**

###### ***ENVIRONMENTAL SETTING***

According to the Surficial Geologic Map of New York, Hudson Sheet (Caldwell, D.H., [1989]) the site deposition consists of lacustrine silt and clay, which is generally a laminated silt and clay deposited in proglacial lakes and kame deposits, which is coarse-to-fine gravel and/or sand deposition adjacent to ice.

According to the Geologic Map of New York, Lower Hudson Sheet (Fisher, D.W., Isachsen, Y.W. and Rickard, L.V.; [1970]), the bedrock within the project area is classified as Normanskill Formation consisting of shale, argillite, and silt stone.—See Figure III.A-2, “Geologic Map on New York, Excerpt from Lower Hudson Sheet.”

There are no prominent or unique features such as rock outcroppings at the site. No solid-rock material is expected to be encountered during any excavation. A geotechnical engineering investigation was performed by Clough Harbour & Associates, LLP (see Appendix 5), indicating that solid rock lies at least 15 feet below the existing grade levels. No blasting or ripping of solid rock will be needed for the placements of the foundations for each proposed structure.

The elevations (above mean sea level) on the site vary from approximately 275 feet near the banks of the Shawangunk Kill to 400 feet on the west side of the site. The proposed improvements are located on the southwest portion of the applicant’s property on Red Mills Road. The site has rolling topography with slopes generally 3 to 4 percent. Topography of the project site and surrounding area is shown in Figure III.A-1.





Project Site

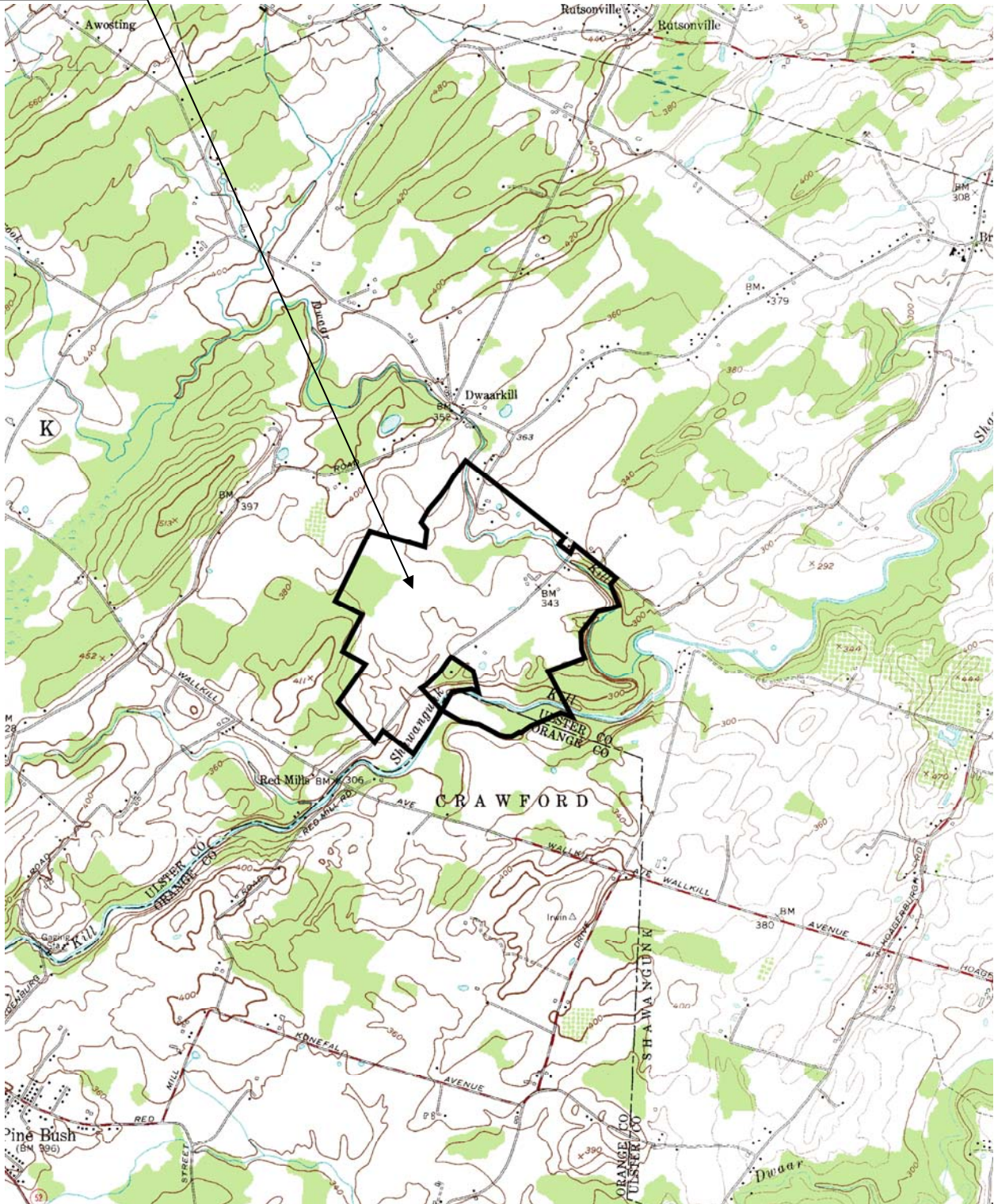


Figure III.A-1 Area Topography











## **POTENTIAL IMPACTS**

Disturbance of steep slopes has the potential to increase erosion and decrease slope stability if proper erosion control and construction techniques are not implemented.

## **MITIGATION MEASURES**

An analysis of existing topography was performed to identify areas where steep slopes occur. The analysis was based on a survey map of existing topography which was prepared showing two-foot contours within the Watchtower Farms property boundary and west of Steen Road. The slopes were mapped according to the following categories: 0 to 10 percent, 10 to 15 percent, 15 to 25 percent, and 25 percent and greater. In general, the existing site has rolling topography with the majority of slopes between 0 to 15 percent. Steeper slopes (25 percent or greater) occur near the banks of the Dwaar Kill and the Shawangunk Kill, and just west of the Loop Driveway. The results of the slope analysis are presented in Figures III.A-3 and III.A-4. The majority of the site improvements would be located in areas of 0- to 15-percent slopes. Areas where the existing slopes exceed 25 percent have been avoided to mitigate the potential increased erosion. The proposed slopes do not exceed 25 percent.





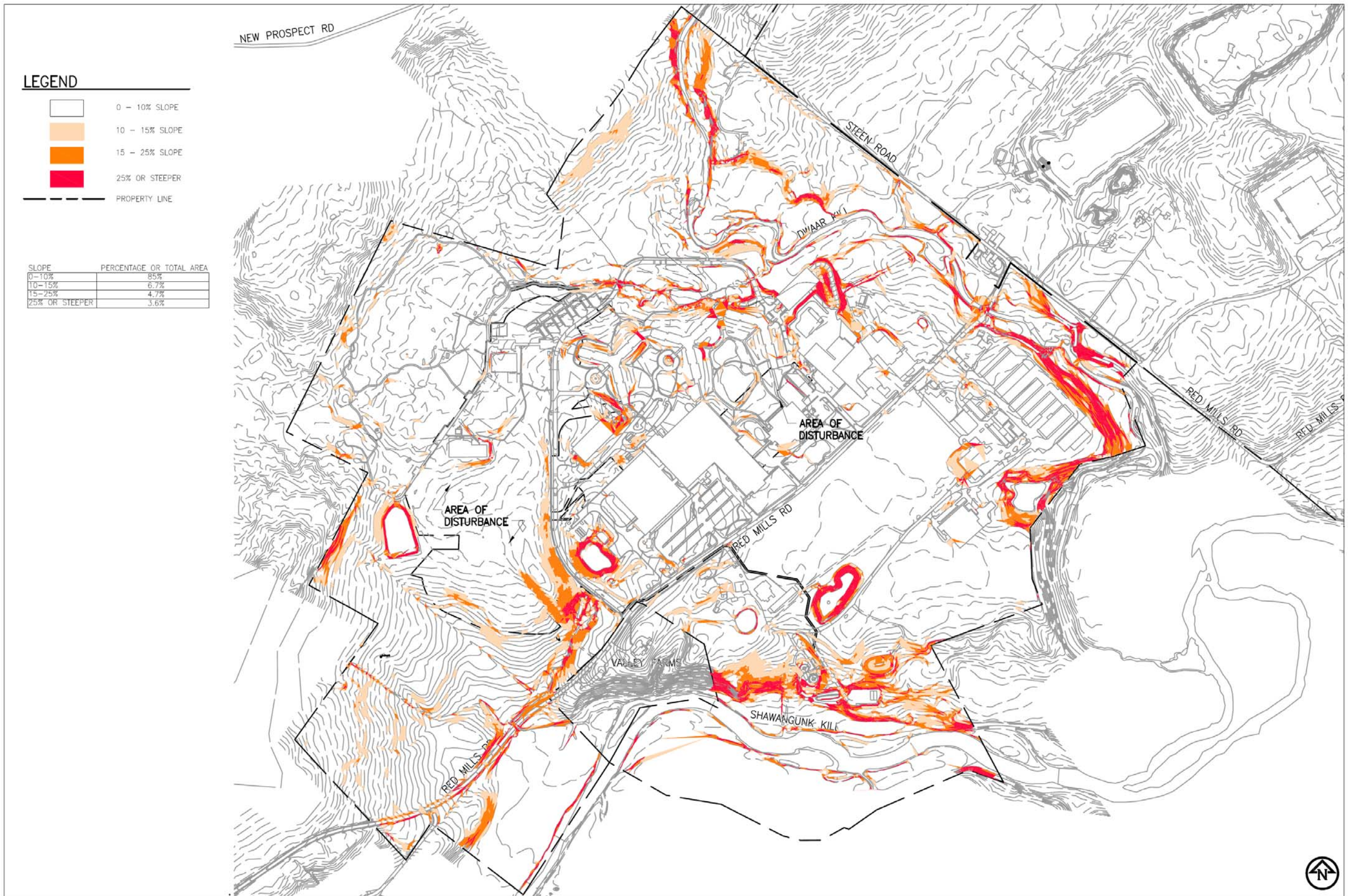


Figure III.A-3 Existing Condition Slope Analysis







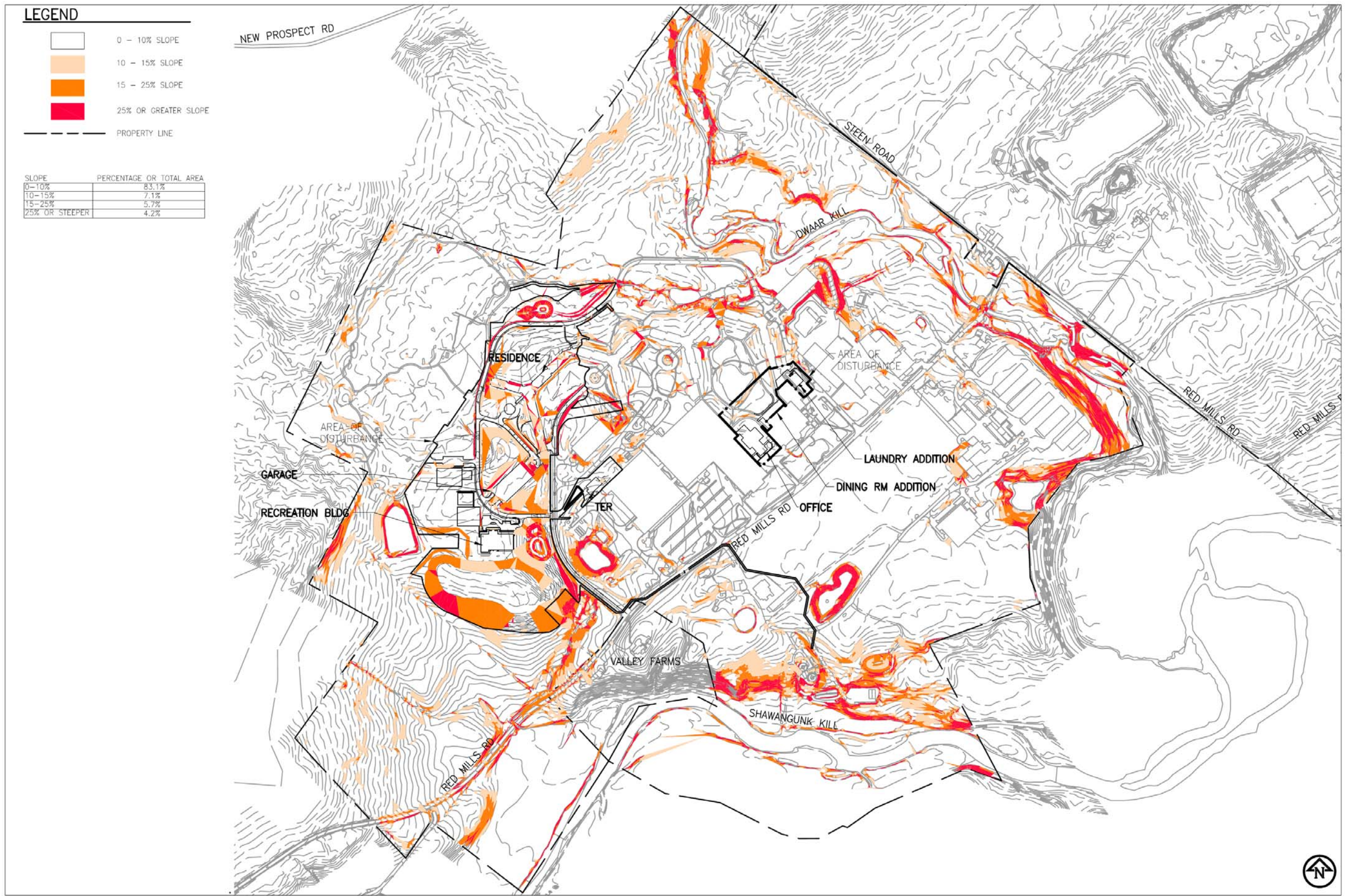


Figure III.A-4 Proposed Condition Slope Analysis





### **III.A.2 Soils**

#### ***ENVIRONMENTAL SETTING***

Based on a review of the USDA (United States Department of Agriculture) Soil Survey of Ulster County, New York (June 1979), soils on the project site consist primarily of silt loams and gravelly silt loams. The USDA Natural Resource Conservation Service (NRCS), as part of their soil classification system, assigns each soil series to a hydrologic soil group (HSG). The HSG is a four-letter index (A-D) to show the relative potential for a particular soil to generate runoff. In HSG A, soils have a low potential for runoff and have high infiltration rates, even when thoroughly saturated. In HSG B, soils have moderate infiltration rates. HSG C soils have low infiltration rates and a moderate potential for runoff. HSG D soils have the highest potential for runoff and the lowest infiltration rates.

A summary of the soil composition of the site is shown in Table III.A-1, and a Soils Survey Map is presented in Figure III.A-5.

**Table III.A-1 Soil Analysis Summary**

<b>SOIL SYMBOL</b>	<b>SOIL NAME</b>	<b>HYDROLOGIC SOIL GROUP</b>
HgA	Hoosic gravelly loam, 0-3% slopes	<b>A</b>
HgB	Hoosic gravelly loam, 3-8% slopes	<b>A</b>
HgC	Hoosic gravelly loam, 8-15% slopes	<b>A</b>
Su	Suncook loamy fine sand, 0-3%	<b>A</b>
CgA	Castile gravelly silt loam	<b>B</b>
Te	Teel silt loam	<b>B</b>
Re	Red Hook gravelly silt loam	<b>C</b>
BRC	Bath And Nardin very stony soils	<b>C</b>
CaB	Cambridge gravelly silt loam	<b>C</b>
CkB	Cayuga silt loam, 3-8% slopes	<b>C</b>
CkC	Cayuga silt loam, 8-5% slopes	<b>C</b>
VoA	Volusia gravelly silt loam, 0-3% slopes	<b>C</b>
VoB	Volusia gravelly silt loam, 3-8%	<b>C</b>
VSB	Volusia very stony soils, gently sloping	<b>C</b>
CvA	Churchville silt loam, 0-3% slopes	<b>D</b>
CvB	Churchville silt loam, 3-8% slopes	<b>D</b>
Ma	Madalin silty clay loam, 0-2% slopes	<b>D</b>
Wb	Wayland silt loam, less than 1% slopes	<b>D</b>



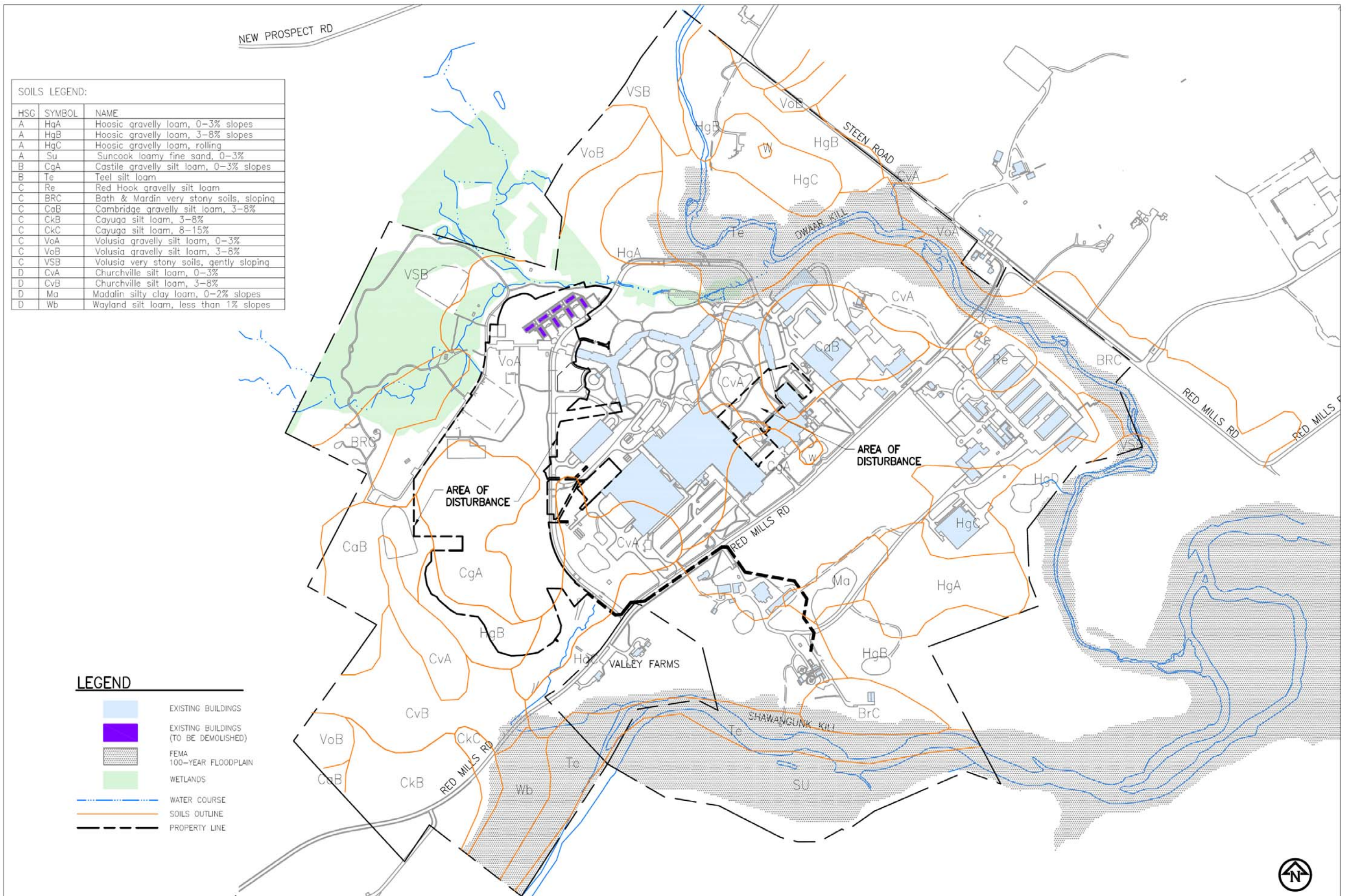


Figure III.A-5 Soils Survey Map





## Soil Characteristics:

The disturbed soils consist of Cambridge (CaB), Castille (CgA), Churchill (Cva), Hoosic (HgC), and Volusia (VoA). The Soil Survey of Ulster County, New York provides descriptions of characteristics, texture, depth-to-water table, depth to groundwater, depth to bedrock, erodibility factors, and soil limitations. The USDA measures the erodibility of a soil by means of an erosion factor K. The factor K ranges in value from 0.10 to 0.64—high values indicate higher susceptibility to erosion. The limitations of the soil are rated as slight, moderate, and severe according to the proposed use. A slight limitation indicates that a soil is generally suitable for a specified use. A moderate limitation signifies that soil properties may be unfavorable for a specified use, but limitations may be overcome by special design and planning. A severe limitation means that soil conditions are very unfavorable and will require extra construction effort, special design, and increased maintenance. The soils within the area of improvement have limitations that involve moderate-to-severe wetness and frost. These limitations will require extra planning, design, construction technique, and maintenance. A description of the disturbed soils is as follows:

*Cambridge* gravelly silt loam (CaB) is a deep, gently sloping, and moderately well-drained soil located on hilltops and foot slopes. Permeability is slow to moderate. Runoff is medium. This soil has a seasonally high water table that is perched at a depth of one to three feet in winter, spring, and other excessively wet periods. Depth to bedrock is found at more than 60 inches below the ground surface. The USDA erosion factor K is a measure of the susceptibility of the soil to erosion by water. Based on the published K-values (0.20–0.28), this soil exhibits a moderate-to-low potential for erosion. The texture for this soil consists of: (0–6 inches) gravelly silt loam; (6–64 inches) silt loam, gravelly loam, silty clay loam, and gravelly clay loam. The soil limitations are described as slight for lawns and landscaping, moderate wetness for shallow excavations and dwellings without basements, severe wetness for dwellings with basements, severe frost action for local roads. Foundation drains and waterproofing are required for proposed buildings with basements located in these soils.

*Castile* gravelly silt loam (CgA) is a deep, nearly level, moderately well-drained soil formed in glacial outwash. Permeability is moderate to rapid. Runoff is slow. This soil exhibits a seasonally high water table at a depth of 18 to 24 inches during the spring and other excessively wet seasons. Bedrock is found at more than 60 inches below the ground surface. Based on the K-values published for this soil type (0.17–0.24), this soil exhibits a moderately low potential for erosion. The texture for this soil consists of: (0–8 inches) gravelly silt loam; (8–28 inches) very gravelly loam, very gravelly sandy loam, and gravelly silt loam; (28–50 inches) stratified sand and gravel to very gravelly loamy sand. The soil limitations are described as moderate wetness and frost action for dwellings without basements, moderate frost action for local roads, moderate small stones for lawns and landscaping, severe wetness for dwellings with basements. Foundation drains and waterproofing are required for proposed buildings with basements located in these soils. In addition, extra precautions will be required to prevent sloughing of excavations.

*Churchville* silt loam (CvA) is a deep, nearly level, somewhat poorly drained soil that was formed in 20 to 40 inches of lake-laid silt and clay deposits. Permeability is slow to very slow. This soil has a seasonally high water table that is perched at a depth of 6 to 18 inches during

the winter, spring, and other excessively wet periods. Depth to bedrock is found at more than 60 inches below the ground surface. Based on the published K-values (0.28–0.49), this soil exhibits a high potential for erosion. The texture for this soil consists of: (0–10 inches) silt loam; (10–34 inches) silty clay loam, silty clay, and clay loams; (34–54) gravelly loam, silt loam, and silty clay loams. The soil limitations are described as moderate for lawns and landscaping, severe wetness and frost action for dwellings with basements, severe wetness for dwellings with basements, and severe frost action for local roads. Foundation drains and waterproofing are required for proposed buildings with basements located in these soils.

*Hoosic* Gravelly Loam (HgC) is a deep, gently sloping, somewhat excessively drained soil located on outwash terraces, stream terraces, and fans. Permeability is rapid to very rapid. Runoff is medium to rapid. This soil has a depth-to-the-water table of greater than 60 inches. Depth to bedrock is greater than 60 inches from the ground surface. Based on the published K-values (0.17), this soil exhibits a moderate-to-low potential for erosion. The texture for this soil consists of: (0–8 inches) gravelly loam and cobbly loams; (8–20 inches) gravelly sandy loam, very gravelly sandy loam, and cobbly loams; (20–80 inches) very cobbly sand, very gravelly loam, silt loam, and silty clay loams. The soil limitations are described as moderate slope for dwellings with or without basements and local roads, and severe small stones for lawns and landscaping. Extra precautions may be required to prevent sloughing of proposed excavations in these soils.

*Volusia* gravelly silt loam (VoA) consists of a deep, nearly level, somewhat poorly drained soil located on foot slopes, broad hilltops, and drainage ways. Permeability is slow to moderate. Runoff is slow. This soil has a seasonally high water table that is perched at 0.5 to 1.5 feet below the surface during the winter, spring, and other excessively wet periods. Depth to bedrock is greater than 60 inches. Based on the published K-values (0.24–0.28), this soil exhibits a moderate potential for erosion. The texture for this soil consists of: (0–8 inches) gravelly silt loam; (8–19 inches) channery silt loam, channery loam, and silt loams; (19–70 inches) channery silt loam, channery loam, and silty clay loams. The soils limitations are described as moderate small stones and wetness for lawns and landscaping, severe wetness and frost action for buildings without basements, severe wetness for buildings with basements, and severe frost action for local roads. Foundation drains and waterproofing are required for proposed buildings with basements located in these soils.

#### Hydric Soils:

Hydric soils, according to the NRCS, are soils that developed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions. This soil condition supports the growth of hydrophytic vegetation. Two soils within our project site are listed as hydric soils—Madalin silty clay loam (Ma) and Wayland silt loam (Wb). However, neither of these soils is within the area of disturbance.

The project site does contain wetlands, which are located in soils not listed as hydric, but meet established criteria for hydric (wetland) soils. However, these wetland soils are not present within the area of disturbance. The “Wetland Delineation and Assessment” report is included in Appendix 4 of this report.



## **POTENTIAL IMPACTS**

Land disturbance due to construction activity has the potential to result in soil erosion and deposition of sediment to streams, rivers, and public roads. The removal of plant cover, changes in drainage patterns caused by grading, altering steep slopes, and prolonged exposure of soils during construction can lead to excessive soil erosion if unmitigated. Also, excavation of excess materials could create problems of improper disposal in sensitive areas and erosion of stockpiled materials.

## **MITIGATION MEASURES**

### Construction Phasing:

The Watchtower Farms improvements will require the disturbance of approximately 46 acres. However, exposure of soils will be limited by complying with NYS DEC permit requirements. No more than five acres of land will be disturbed at one time. The following construction phasing plan describes how this will be accomplished and an overall phasing plan is shown in Figure III.A-6.

## Construction Phasing

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
15 days	Pre-construction	<p>Mobilization</p> <p>Before any major grading activities begin, the following steps will be completed:</p> <ol style="list-style-type: none"> <li>1. Install orange-colored plastic mesh fencing around trees to be preserved.</li> <li>2. Install storm drain inlet protection at existing.</li> <li>3. Construct stabilized construction entrances for Phase 1.</li> <li>4. Construct temporary swales and earth dikes to control runoff as needed for Phase 1.</li> </ol>
180 days	Phase 1 —2.4 acres	<p>Technical Equipment Building, Pedestrian Tunnel at New Residence, Utility Tunnel &amp; Electrical Duct Bank at New Office Building, Fuel Oil Tank, Steam Plant Driveway</p> <ol style="list-style-type: none"> <li>1. Demolish any existing structures, pavement or utilities as needed.</li> <li>2. Initiate excavation for underground utilities and rough grading of technical equipment building pad. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>3. Install temporary silt fence at Berm "B."</li> <li>4. Stockpile excess cut in Berm "B" area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>5. Install utilities and stormwater infrastructure.</li> <li>6. Initiate excavation for tunnels, fuel tank, and electrical duct bank. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>7. Install storm drain inlet protection.</li> <li>8. Stabilize pavement and building slab subgrade with base course.</li> <li>9. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
60 days	Phase 2 —4.3 acres	<p>Loop Driveway (central), Sediment Trap, Berm “B” Utility Infrastructure, and Materials Handling &amp; Staging Area</p> <ol style="list-style-type: none"> <li>1. Install wetland/wildlife barrier along wetland boundary as shown on Drawing CE102.</li> <li>2. Construct temporary swales and earth dikes.</li> <li>3. Install construction entrance.</li> <li>4. Construct temporary concrete washout.</li> <li>5. Construct combined staging and materials storage area, Drawing CE102 for location.</li> <li>6. Install dumpsters for use during construction.</li> <li>7. Demolish any existing structures, pavement or utilities as needed.</li> <li>8. Construct sediment trap.</li> <li>9. Install temporary silt fence at Berm “B.”</li> <li>10. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>11. Install utilities and stormwater infrastructure.</li> <li>12. Prepare Loop Driveway pavement subgrade.</li> <li>13. Install storm drain inlet protection at all inlets on Loop Driveway.</li> <li>14. Stabilize pavement subgrade with base course.</li> <li>15. Stabilize all exposed soils with seed and mulch and/or hydromulch.</li> </ol>
30 days	Phase 3 —5.0 acres	<p>Pond 1 and Berm “B”</p> <ol style="list-style-type: none"> <li>1. Construct temporary swales and earth dikes.</li> <li>2. Install construction entrance.</li> <li>3. Construct sediment basin. Basin will be converted to a permanent detention basin following completion of construction activities.</li> <li>4. Install temporary silt fence at Berm “B.”</li> <li>5. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>6. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
60 days	Phase 4 —3.4 acres	<p>Loop Driveway (south) and Berm “B”</p> <ol style="list-style-type: none"> <li>1. Demolish any existing structures, pavement, or utilities as needed.</li> <li>2. Install utilities and stormwater infrastructure.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
		<ol style="list-style-type: none"> <li>3. Prepare Loop Driveway pavement subgrade.</li> <li>4. Install temporary silt fence at Berm "B."</li> <li>5. Stockpile excess cut in Berm "B" area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>6. Install storm drain inlet protection at all inlets on Loop Driveway.</li> <li>7. Stabilize pavement subgrade with base course.</li> <li>8. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
120 days	Phase 5 —5.0 acres	<p>Residence, Underground Utilities, Retaining Wall, and Berm "B"</p> <ol style="list-style-type: none"> <li>1. Demolish any existing structures, pavement or utilities as needed.</li> <li>2. Rough-grade residence building pad. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>3. Excavate for underground utilities.</li> <li>4. Construct retaining wall.</li> <li>5. Install temporary silt fence at Berm "B."</li> <li>6. Stockpile excess cut in Berm "B" area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>7. Stabilize building pad subgrade with base course.</li> <li>8. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
90 days	Phase 6 —4.8 acres	<p>Area Surrounding New Residence and Existing Residence Driveway</p> <ol style="list-style-type: none"> <li>1. Construct temporary swales and earth dikes.</li> <li>2. Install construction entrance.</li> <li>3. Demolish any existing structures, pavement or utilities as needed.</li> <li>4. Install utilities and stormwater infrastructure.</li> <li>5. Install storm drain inlet protection.</li> <li>6. Stabilize pavement subgrade with base course.</li> <li>7. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
90 days	Phase 7 —3.5 acres	<p>Office Building, Dining Room Expansion, Berm “B”</p> <ol style="list-style-type: none"> <li>1. Install silt fence.</li> <li>2. Install temporary sediment trap as location shown on Drawing CE103.</li> <li>3. Demolish any existing structures, pavement, or utilities as needed.</li> <li>4. Rough grade for building pad.</li> <li>5. Install retaining wall.</li> <li>6. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>7. Install temporary silt fence at Berm “B.”</li> <li>8. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>9. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
120 days	Phase 8 —4.3 acres	<p>Parking Garage, Tunnel</p> <ol style="list-style-type: none"> <li>1. Rough-grade Parking Garage pad.</li> <li>2. Excavate for tunnel and utilities.</li> <li>3. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>4. Install temporary silt fence at Berm “B.”</li> <li>5. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>6. Install utilities and stormwater infrastructure.</li> <li>7. Stabilize building pad subgrade with base course.</li> <li>8. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
30 days	Phase 9 —1.9 acres	<p>Parking Garage Driveway, Berm “A”, Berm “B”</p> <ol style="list-style-type: none"> <li>1. Prepare driveway pavement subgrade.</li> <li>2. Install temporary silt fence at Berm “B.”</li> <li>3. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>4. Install storm drain inlet protection.</li> <li>5. Stabilize pavement subgrade with base course.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
60 days	Phase 10 —4.8 acres	<p>Recreation Building and Adjacent Parking Area, Sanitary Force Main</p> <ol style="list-style-type: none"> <li>1. Demolish any existing structures, pavement or utilities as needed.</li> <li>2. Initiate excavation for underground utilities and rough grading of recreation building pad. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>3. Install temporary silt fence at Berm "B."</li> <li>4. Stockpile excess cut in Berm "B" area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>5. Install utilities and stormwater infrastructure.</li> <li>6. Install storm drain inlet.</li> <li>7. Stabilize pavement and building slab subgrade with base course.</li> <li>8. Stabilize all exposed soils with seed and mulch or hydromulch.</li> <li>9. Install sanitary force main.</li> </ol>
30 days	Phase 11 —0.9 acres	<p>Laundry Area Addition, Berm "B"</p> <ol style="list-style-type: none"> <li>1. Install silt fence.</li> <li>2. Demolish pavement or utilities as needed.</li> <li>3. Rough grade for building pad.</li> <li>4. Dewatering, if needed, shall use a dewatering sump pit.</li> <li>5. Install temporary silt fence at Berm "B."</li> <li>6. Stockpile excess cut in Berm "B" area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>7. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
60 days	Phase 12 —5.0 acres	Recreation Facilities (Athletic Fields and Courts), Berm “B” <ol style="list-style-type: none"> <li>1. Install silt fence.</li> <li>2. Demolish any existing structures, pavement or utilities as needed.</li> <li>3. Rough-grade recreation areas.</li> <li>4. Install temporary silt fence at Berm “B.”</li> <li>5. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>6. Stabilize pavement subgrade with base course.</li> <li>7. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
30 days	Phase 13 —5.0 acres	Athletic Fields and Parking, Berm “B” <ol style="list-style-type: none"> <li>1. Rough-grade recreation areas.</li> <li>2. Install temporary silt fence at Berm “B.”</li> <li>3. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>4. Stabilize pavement subgrade with base course.</li> <li>5. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
30 days	Phase 14 —3.9 acres	Loop Driveway, Demolition of Modular Housing <ol style="list-style-type: none"> <li>1. Remove existing modular housing.</li> <li>2. Stockpile excess cut in Berm “B.”</li> <li>3. Pave Loop Driveway and other access driveways.</li> <li>4. Remove ESCMs from storm drain inlets and finalize pavement activities.</li> <li>5. Remove temporary concrete washout areas and restore to final grade.</li> <li>6. Remove all temporary control ESCMs and stabilize any areas disturbed by their removal with erosion controls.</li> <li>7. Prepare final seeding and landscaping.</li> <li>8. Monitor stabilized areas until final stabilization is reached.</li> </ol>

Estimated Duration of Activity	Phase and Area of Disturbance	Construction Activity and ESCM Descriptions
20 days	Phase 15 —2.2 acres	Pond 2, Fill Sediment Trap, and Berm “B” <ol style="list-style-type: none"> <li>1. Excavate permanent detention basins used as sediment basins and construct forebays, berms, and rip-rap weir and associated piping.</li> <li>2. Fill in temporary sediment trap.</li> <li>3. Install temporary silt fence at Berm “B.”</li> <li>4. Stockpile excess cut in Berm “B” area. If stockpile operations cease for more than 14 days, then stockpile shall be stabilized with hydromulch.</li> <li>5. Stabilize all exposed soils with seed and mulch or hydromulch.</li> </ol>
10 days	Phase 16 —5.0 acres	Landscaped Berm “B” <ol style="list-style-type: none"> <li>1. Shape top of Berm “B” to final grade.</li> <li>2. Stabilize all exposed soils with permanent seeding and hydromulch.</li> <li>3. Complete final landscaping.</li> </ol>



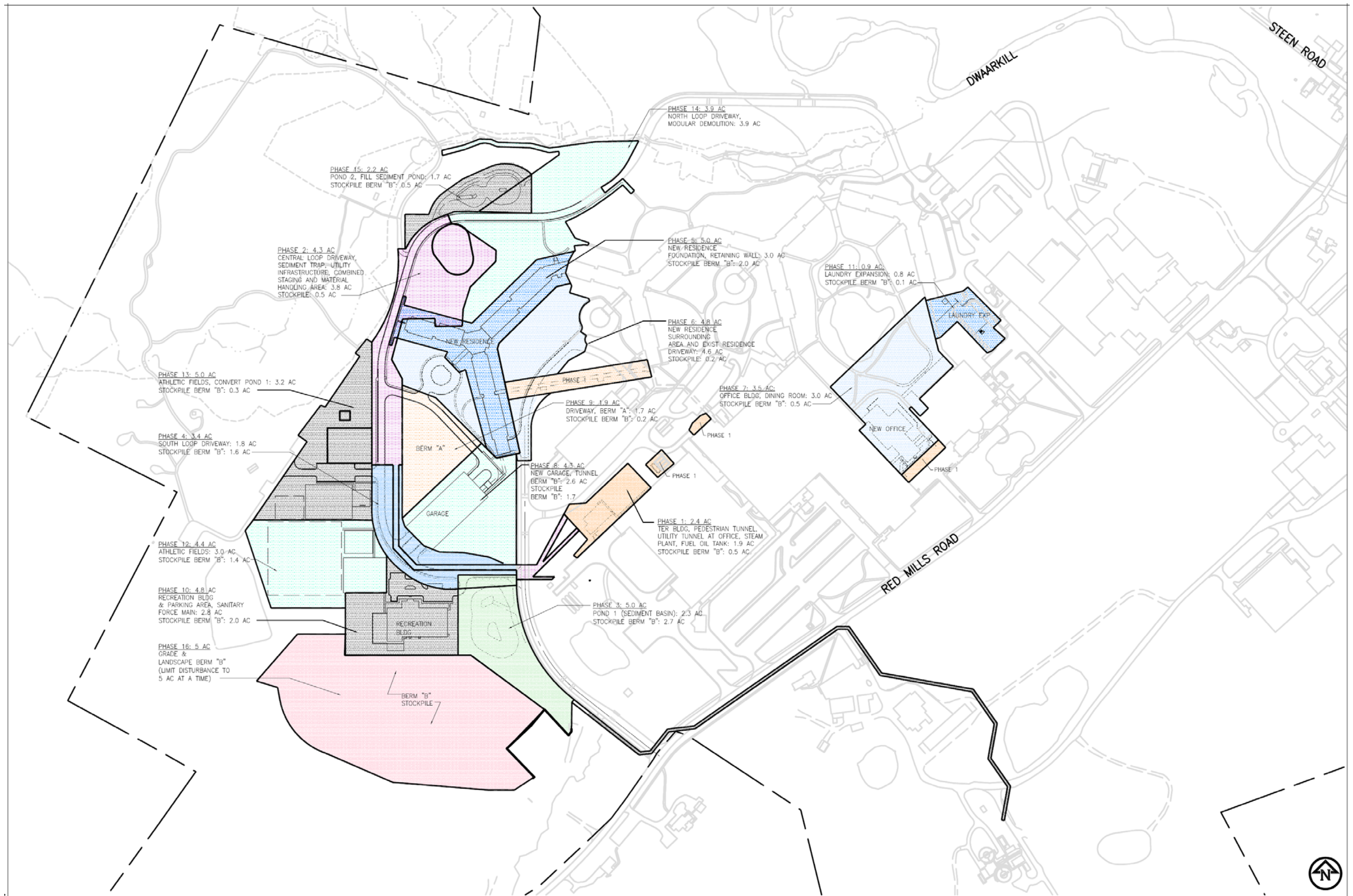


Figure III.A-6 Construction Phasing



### ***Erosion and Sediment Control***

An Erosion and Sediment Control Measures (ESCM) plan has been prepared to mitigate construction site erosion and to prevent sediment from polluting downstream water bodies and public roads. This plan addresses the need to control stormwater runoff and sediment and to stabilize the soils. A description of erosion and sediment control measures is included in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS. A summary is as follows:

<b>ESCM #1:</b>	<b>Phased Construction Activity</b>
<b>Description:</b> In order to minimize the overall amount of disturbed soil that will be subject to potential erosion at one time, the project will be phased. Each phase will disturb a maximum of five acres at one time. Additional phases will begin only when the prior phase is near completion and, preferably, exposed soil has been stabilized—refer to Drawing C-002 for overall phasing plan.	
<b>Installation Schedule</b>	See sequence of construction detailed in prior section of report.
<b>Maintenance and Inspection</b>	Each construction phase area will be inspected on a weekly basis to ensure that all erosion control measures are in place and well maintained. Once a phase is completed, an additional inspection should occur to ensure that permanent stabilization is in place.

<b>ESCM #2:</b>	<b>Existing Vegetation</b>
<b>Description:</b> The preserved area of existing vegetation will be surrounded by a temporary orange-colored plastic mesh fence, and all trees on the perimeter of the protected area will be marked with a brightly colored ribbon. The fencing will be at least three feet tall and have openings not larger than two inches by two inches. Posts will be spaced a maximum of six feet apart. The temporary fencing will be installed at the drip/spread line of the trees and undergrowth vegetation to be protected. Vehicles and equipment will not be able to enter the protected area—refer to Detail 1, Drawing CG504.	
<b>Installation Schedule</b>	Before construction begins.
<b>Maintenance and Inspection</b>	The area will be inspected weekly to ensure the temporary fence is intact and the trees are marked.

<b>ESCM #3:</b>	<b>Topsoil</b>
<p><b>Description:</b> Topsoil removed from the proposed construction areas will be stockpiled to create a visual barrier berm at the locations identified on the site plan as Berms A, B, C and D. The stockpiles are in an area that will not interfere with construction phases and will be at least 15 feet from areas of concentrated flows or pavement. The slope of the stockpile will be roughened by equipment tracking and will not exceed 2:1 to prevent erosion. A silt fence will be installed around the perimeter of each stockpile. The area of each stockpile is included in the total area of disturbance for each construction phase (included in five-acre limit).</p>	
<b>Installation Schedule</b>	Topsoil stockpiles will be created during grading activities. The silt fence will be installed immediately after the stockpile has been established.
<b>Maintenance and Inspection</b>	The stockpile will be inspected weekly for erosion and immediately after rain events. Areas on or around the stockpile that have eroded will be stabilized immediately with erosion controls.

<b>ESCM #4:</b>	<b>Silt Fence</b>
<p><b>Description:</b> Silt fence will be installed around the perimeter of the entire site other than the construction entrances as well as the perimeter of each construction phase—refer to Detail 2, Drawing CG503.</p>	
<b>Installation Schedule</b>	Silt fence will be installed before construction begins and around the visual barrier berm once it is started.
<b>Maintenance and Inspection</b>	Silt fence will be inspected weekly and immediately after rain events to ensure the fence is intact and no gaps exist where stormwater can pass. Sediment should be removed once it reaches one-third the height of the fence.

<b>ESCM #5:</b>	<b>Sediment Basin (Temporary)</b>
<p><b>Description:</b> Temporary sediment basins will be constructed for use during construction. The sediment basin will drain through a riser pipe open at the top. The slopes of the basin will be stabilized using appropriate erosion control methods. A silt fence will surround the basin to protect from erosion of the embankments. Sizing of the basin will be according to the “Guidelines for Urban Erosion and Sediment Control” —refer to Detail 3, Drawing CG503. The basin will be converted to a permanent detention basin following completion of construction activities at the site.</p>	
<b>Installation Schedule</b>	Basin will be created before site grading begins.
<b>Maintenance and Inspection</b>	Basin will be inspected weekly and immediately after rain events. The banks will be checked for erosion, seepage, and structural damage. Any damage will be repaired immediately. Accumulated sediments will be removed when one-half of the volume of sediment capacity storage is reached.

<b>ESCM #6:</b>	<b>Earth Dike</b>
<p><b>Description:</b> A temporary earth dike will be constructed to route stormwater runoff to each of the sediment basins. The dike will be constructed of compacted soil and have a top width of 2 feet, a height of 18 inches and 2:1 side slopes. The dike will be stabilized by hydro seeding and mulching to prevent erosion within seven days of being constructed—refer to Detail 3, Drawing CG503.</p>	
<b>Installation Schedule</b>	Construction will occur during each phase of construction.
<b>Maintenance and Inspection</b>	The dike will be inspected on a weekly basis and after rain events. Dike will be maintained to its original height. Any erosion damage will be repaired.

<b>ESCM #7:</b>	<b>Temporary Stabilization (Seeding)</b>
<p><b>Description:</b> Temporary vegetative cover will be established using hydro seeding for areas of exposed soil where construction will cease for more the 14 days. Hydro seeding will consist of wood fibers, seed, fertilizer, and stabilizing emulsion. If spring, summer, or early fall, then seed with Rye grass at 30 lbs per acre. If late fall or early winter, then seed Certified ‘Aroostook’ winter rye at 100 lbs per acre—refer to Drawing CG505.</p>	
<b>Installation Schedule</b>	Temporary stabilization measures will be applied to portions of the site where construction activities will temporarily cease for more than 14 days.
<b>Maintenance and Inspection</b>	Areas will be inspected weekly and after rain events until a dense cover of vegetation has become established. If failure is noticed at the seeded area, the area will be reseeded, fertilized, and mulched immediately.

<b>ESCM #8:</b>	<b>Mulching (Hydro)</b>
<p><b>Description:</b> Wood-fiber hydromulching will provide protection to exposed soils during short periods of construction. Hydromulch will be applied in areas that have been seeded for temporary or permanent stabilization. Straw mulch and wood fibers will be mixed with a tackifier and applied uniformly by machine.</p>	
<b>Installation Schedule</b>	Hydromulch will be applied to exposed soils during short periods of construction and seeded areas.
<b>Maintenance and Inspection</b>	Areas will be inspected weekly and after rain events to check for movement of mulch or erosion. If any damage exists, surface will be repaired and mulch reapplied.

<b>ESCM #9:</b>	<b>Mulching (Hay/Straw)</b>
<b>Description:</b> Hay/straw mulch will provide protection to exposed soils while waiting for permanent seeding or shrub planting to be established. Hay/straw mulch will be applied in areas that have been seeded for temporary or permanent stabilization. Mulch to be installed at two tons per acre. Where wind or areas of concentrated water are a concern, mulch anchoring should be used.	
<b>Installation Schedule</b>	Hydromulch will be applied to exposed soils during short periods of construction and seeded areas.
<b>Maintenance and Inspection</b>	Areas will be inspected weekly and after rain events to check for movement of mulch or erosion. Any damaged surface will be repaired and mulch reapplied.

<b>ESCM #10:</b>	<b>Dust Control (Sprinkling)</b>
<b>Description:</b> Dust from the site will be controlled by using a mobile water truck to apply water to disturbed areas that are dry and susceptible to creating dust.	
<b>Installation Schedule</b>	Dust control will be implemented as needed once site grading has been initiated and during windy conditions while site grading is occurring.
<b>Maintenance and Inspection</b>	Spraying of disturbed areas will start after grading activities commence. Spraying will be performed at least once per day during dry months or as needed to control dust.

<b>ESCM #11:</b>	<b>Storm Drain Inlet Protection (before Paving)</b>
<b>Description:</b> Existing and newly constructed drain inlets will be protected using various methods, including silt fence, stone and block and hay bales—refer to Details 5 and 6, Drawing CG503 and Detail 5, Drawing CG504.	
<b>Installation Schedule</b>	Once the storm drain inlets have been installed on-site, the protection methods will be installed around the inlets.
<b>Maintenance and Inspection</b>	Protections will be checked on a weekly basis and after rain events. Any damage will be corrected or replaced immediately. Excess sedimentation will also be removed in a timely manner.



<b>ESCM #12:</b>	<b>Stabilized Construction Exits (before paving)</b>
<p><b>Description:</b> Stone anti-tracking pads will be installed at all exits to prevent the off-site transport of sediment by construction vehicles. The stabilized exits will be at least 50 feet long, a minimum of 12 feet wide, flared at the end closest to the paved road and will consist of a 6-inch-thick layer of crushed stone. The crushed stone will be placed over a layer of geotextile filter fabric. Orange-mesh fence will be installed along the length of the construction exit to keep construction vehicles from circumventing the tracking pads—refer to Detail 1, Drawing CG503.</p>	
<b>Installation Schedule</b>	Installation will occur before construction begins and will remain in place until subgrade is installed.
<b>Maintenance and Inspection</b>	The stabilized exit will be inspected weekly and after rain events or heavy use. All sediment tracked, spilled, dropped, or washed onto the road will be swept up immediately.

<b>ESCM #13:</b>	<b>Waste Materials (including Recyclable and Hazardous)</b>
<p><b>Description:</b> All waste materials will be collected and disposed of into trash dumpsters in the combined staging area. Dumpsters will have secure watertight lids and be placed away from stormwater conveyance and drains.</p> <p>Wood pallets, cardboard boxes, and other recyclable construction scraps will be disposed of in a designated dumpster for recycling.</p> <p>All hazardous waste materials such as oil filters, petroleum products, paint, and equipment maintenance fluids will be stored in structurally sound and sealed shipping containers. A hazardous-materials storage area will be designated in the materials storage area. Secondary containment will be provided by spill pallets. No hazardous material will be disposed of into the on-site dumpsters.</p>	
<b>Installation Schedule</b>	Dumpsters will be installed once the staging area is established.
<b>Maintenance and Inspection</b>	Dumpsters will be emptied weekly or as needed. Material safety data sheets (MSDS) and emergency contact numbers will be maintained in the office trailer.



<b>ESCM #14:</b>	<b>Combined Staging and Materials Storage Area</b>
<b>Description:</b> Construction equipment and maintenance materials will be stored at the combined staging area and material storage areas. Silt fence will be installed around the perimeter to designate the staging and materials storage area—refer to Detail 3, Drawing CG504.	
<b>Installation Schedule</b>	Installation will occur after grading and before any infrastructure is constructed.
<b>Maintenance and Inspection</b>	Storage areas will be inspected weekly and after rain events. Area will be kept clean.

<b>ESCM #15:</b>	<b>Concrete Washout</b>
<b>Description:</b> Construction washout areas will be installed at the exits. Refer to Detail 2, Drawing CG504 for dimensions and specifications. Signs will be posted marking the location of the washout areas.	
<b>Installation Schedule</b>	Installation will occur before the use of concrete trucks for roadway or buildings.
<b>Maintenance and Inspection</b>	Washout areas will be inspected daily to insure that all concrete is being discharged into the washout area. Area will be cleaned out once 75 percent of the capacity is reached.

<b>ESCM #16:</b>	<b>Temporary Sump Pit</b>
<b>Description:</b> The water table may be encountered during the construction of the building foundation, and dewatering measures may need to be implemented to provide a dry base for construction. A temporary pit will be constructed to trap and filter water for pumping to a temporary sediment basin. The sump pit will consist of a 24- or 36-inch-perforated vertical standpipe (corrugated plastic or PVC) in the center with a 12-inch base of NYS DOT #2 aggregate—refer to Detail 7, Drawing CG504.	
<b>Installation Schedule</b>	Sump pits will be installed prior to the use of dewatering pumps.
<b>Maintenance and Inspection</b>	Sump pits will be inspected on a daily basis during dewatering operations to ensure no clogging of gravel has occurred. If so, sump pit should be excavated and new gravel deposited.

<b>ESCM #17:</b>	<b>Sanitary Waste</b>
<b>Description:</b> Six portable toilets will be provided at the site near each phase of construction. The toilets will be located away from concentrated flow paths and traffic flow.	
<b>Installation Schedule</b>	Portable toilets will be brought to the site during mobilization activities.
<b>Maintenance and Inspection</b>	Sanitary waste will be collected from the portable toilets a minimum of three times per week. Holding tanks will be inspected weekly for evidence of leaking. Any tanks with leaks will be removed and replaced.

The following permanent stabilization practices will be in effect after construction of the project:

<b>ESCM #18:</b>	<b>Permanent Seeding</b>
<b>Description:</b> All disturbed areas not stabilized with pavement or buildings will be seeded to provide perennial vegetative cover.	
<b>Installation Schedule</b>	Permanent seeding will occur, at the most, 14 days after final grading of each phase. Optimum timing for a general seed mixture is early spring. Permanent seeding may be made at other times of year if properly mulched and sufficient moisture is provided. See Table 3.1, "Permanent Critical Area Planting Mixture Recommendations," in <i>Guidelines for Urban Sediment and Erosion Control Manual</i> for appropriate seed mixtures. Hydromulch will be applied immediately following seeding.
<b>Maintenance and Inspection</b>	Areas will be inspected weekly and after rain events until a dense cover of vegetation has become established. If failure is noticed at the seeded area, the area will be reseeded, fertilized and mulched immediately. After construction is completed at the site, permanently stabilized areas will be monitored until final stabilization is reached.

<b>ESCM #19:</b>	<b>Outfall Protection (Riprap)</b>
<b>Description:</b> All pipe-conduit outlets to stormwater treatment ponds will utilize riprap protection to reduce the depth, velocity, and energy of water. Filter fabric shall be placed between riprap and the underlying soil—refer to Detail 4, Drawing CG502.	
<b>Installation Schedule</b>	Installation will occur after outlet conduit to pond is installed.
<b>Maintenance and Inspection</b>	Area will be inspected after high flows for evidence of scour beneath the riprap or for dislodged stones. Repairs will be made immediately.

<b>ESCM #20:</b>	<b>Flow-thru Stormwater Planter</b>
<b>Description:</b> Stormwater runoff from the new office building and dining and laundry room addition is routed through a series of planters. The planters provide water quality treatment in areas where standard methods are not feasible. Each planter can receive runoff from a maximum of 15,000 square feet—refer to Detail 7, Drawing CG502.	
<b>Installation Schedule</b>	Planters will be installed during the construction of the building and will be put online after final stabilization of the surrounding disturbed areas.
<b>Maintenance and Inspection</b>	Planters will be inspected after major rain events to verify that proper drainage is occurring. If infiltration rate is extended, then additional compost and gravelly sand should be added and the area re-tilled.

<b>ESCM #21:</b>	<b>Micropool Extended Detention Basin</b>
<b>Description:</b> Stormwater runoff from the proposed project is to be routed to detention basins that will provide water quality treatment and channel protection, as well as overbank and extreme flood protection. Basins will also incorporate upstream sediment forebays to provide additional pretreatment. Contractor shall excavate the bottom of the sediment basin to remove accumulated sediments. Basins are sized as per requirements in the <i>New York State Storm Water Management Design Manual</i> —refer to Details 1 and 2, Drawing CG502.	
<b>Installation Schedule</b>	Sediment basin will be converted to a permanent basin after all major grading activities have been terminated and disturbed areas stabilized.
<b>Maintenance and Inspection</b>	The basin area will be inspected weekly and after storm events during the construction process. The area will be checked for signs of erosion, seepage, and structural damage. Any damage will be repaired immediately. The outlet and trash rack will be checked for any damage or obstructions and repaired. The area will be monitored until final stabilization is reached.

The significant reduction in impact due to the implementation of the proposed erosion and sediment control measures is quantified by soils loss and sediment yield calculations. These calculations were performed based on the Revised Universal Soils Loss Equation (RUSLE) and Modified Universal Soils Loss Equation (MUSLE) from Appendix A of the *New York State Standards and Specifications for Erosion and Sediment Control*. RUSLE may be used for site evaluation and planning of erosion control measures and to estimate the severity of erosion. The MUSLE equation is used to estimate the amount of sediment that will be deposited at a specific location for a selected storm event. A comparison of the unmitigated condition (no erosion control) and the mitigated condition (with proposed erosion control measures) is presented in Table III.A-2. The table illustrates that a significant amount of soils would be lost and deposited in the Dwaar Kill and Shawangunk Kill if no erosion controls were proposed. However, with the proposed measures, soils losses will be significantly reduced and sediment from construction activities will be collected in sediment basins and silt fences. The detailed calculations are shown in Appendix 8 of this report.

**Table III.A-2 Comparison of Unmitigated and Mitigated Conditions**

	<b>No Erosion Control</b>	<b>Erosion Control Implemented</b>
Soils losses (cubic yards)	3,436	185
Sediment yield for the 10-year storm (cubic yards)	2,280	125

**Balance of Excavation and Fill Material:**

Excavation of soils would be required to construct proposed building pads, stormwater treatment ponds, and the Loop Driveway. It is estimated that approximately 150,000 cubic yards of material would be excavated for the proposed improvements. Excavated materials would be used in areas of fill where suitable. The balance of excess material would be used to create a berm north of Red Mills Road which would be landscaped to serve as a visual barrier.

## **III.B Surface Water Resources**

### ***ENVIRONMENTAL SETTING***

#### **III.B.1 Description of Surface Water Features:**

The portion of the existing watershed area that contains the project site consists of approximately 352 acres of wetlands, woods, developed agricultural lands, landscaped areas, buildings, roads, and parking lots. The northwest portion of the site drains into an unclassified intermittent stream and an existing wetland pond and eventually into the Dwaar Kill. The northeasterly portion of the site drains into an existing retention basin and into the Dwaar Kill. The southeastern portion of the site drains into two 48-inch culverts, which cross under Red Mills Road, and eventually drains into the Shawangunk Kill. The Dwaar Kill is tributary to the Shawangunk Kill, which flows in a northeasterly direction until it converges with the Walkill River, which eventually merges into the Rondout Creek.

Three wetland areas (Area 1, 2, and 3) and an intermittent creek were delineated within the proposed project site by ecologist and wetland delineator John Chitty on December 24-30, 2006, and June 4-16, 2007. On-site wetland areas provide flood storage and water quality functions within the existing watershed. A detailed description and delineation of these wetlands is included in Section III.E.3 and Appendix 4 of this DEIS.

The existing vegetative buffers along these wetland areas preserve wetland habitat and provide additional stormwater treatment. The buffer for wetland Area 1 varies in width from 0 feet at the northeast Loop Driveway bridge crossing to an average of 140 feet and consists mainly of lawn. The buffer along the intermittent stream in Area 2 consists mainly of lawn and varies in width from 0 feet at the northwest Loop Driveway bridge crossing to an average of 163 feet, measured from the wetland boundary to the modular housing. The existing vegetative buffer along wetland Area 3 varies in width from 5 feet between the wetland boundary and the existing recreation area to an average of 400 feet. It consists of woods on the southwest and lawn on the eastern boundary. The buffer for the portion of the Dwaarkill in the vicinity of the project site varies in width from 0 feet at the Red Mills Road bridge crossing to over 100 feet at the northeast corner of the property and consists of lawn, natural vegetation, and pasture.

According to the Flood Insurance Rate Map (FIRM) for the Town of Shawangunk, New York (Panel 360865 0025B), dated September 30, 1982, a portion of the watershed is located within Zone A4 of the Dwaar Kill River. Zone A4 is classified as an area subject to inundation by the 1 percent annual-chance flood (or 100-year flood event). However, none of the proposed improvements are located within the floodplain.

See Figure III.B-1, "Existing Conditions Analysis," for locations of existing surface water features.

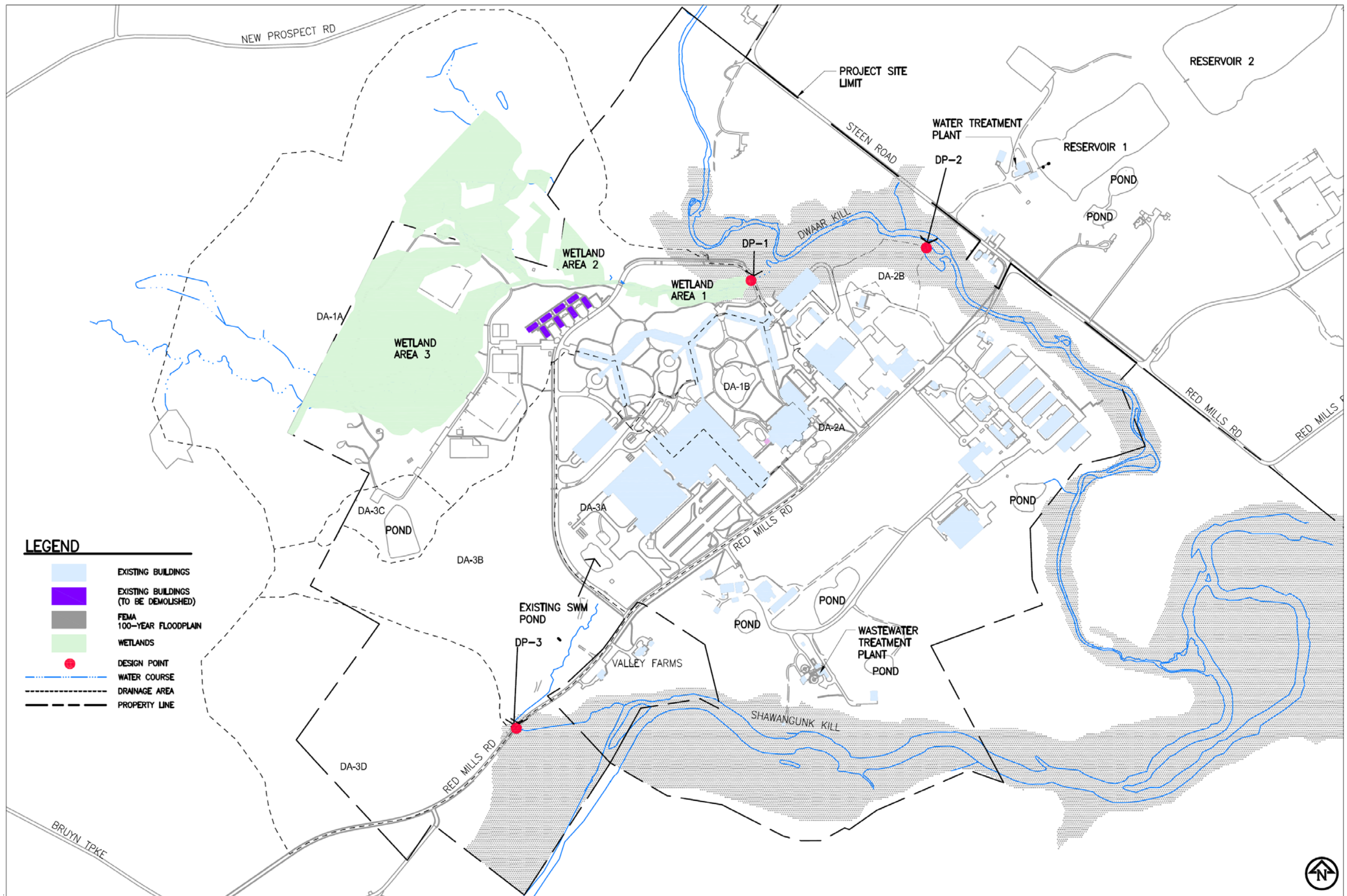


Figure III.B-1 Existing Conditions Analysis





### **III.B.2 Pre-Development Stormwater Quantity and Quality:**

#### **III.B.2.a Stormwater Quantity**

An existing-conditions analysis was performed to estimate the 24-hour rainfall amounts for the 1-year, 10-year, and 100-year design storm events.

Runoff curve numbers (CN) and times of concentration (Tc) were computed using the Natural Resources Conservation Service (NRCS) *Technical Release (TR) 55* methodology. Additionally, peak stormwater flows for the existing and proposed conditions were computed using *HydroCAD's Stormwater Modeling Systems*, Version 8 (which is based on NRCS *TR-20* methodology). This analysis is described in detail in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS.

For the purpose of the existing-conditions analysis, three design points (DP-1, DP-2, and DP-3) were defined to characterize the natural drainage patterns of the watershed. Existing-conditions peak flows were generated using a Type II rainfall distribution. Rainfall amounts were referenced from Chapter 4 of the *New York State Stormwater Management Design Manual* (August 2003), and Appendix B of the *TR-55 Manual*. The 24-hour rainfall amounts for the 1-, 10-, and 100-year design storms in Ulster County are 3.2, 5.5, and 8.0 inches. Pre-development peak flow rates are shown in Table III.B-1.—See Figure III.B-1, “Existing Conditions Analysis.”

**Table III.B-1 Existing-Condition Analysis Summary**

Drainage Area	Area (Acres)	T <sub>c</sub> (hours)	Curve Number	Peak Flow Rates (cfs)		
				1-year	10-year	100-year
DA-1A	170.1	1.66	67	34.1	127.8	254.5
DA-1B	14.9	0.23	89	41.3	81.8	125.4
<b>DP-1:</b>	<b>185.0</b>	<b>-</b>	<b>-</b>	<b>44.5</b>	<b>133.6</b>	<b>255.7</b>
DA-2A	8.8	0.50	87	14.7	30.4	47.6
DA-2B	4.6	0.39	82	7.2	16.5	27.0
<b>DP-2:</b>	<b>13.4</b>	<b>-</b>	<b>-</b>	<b>3.03</b>	<b>26.09</b>	<b>52.17</b>
DA-3A	32.4	0.34	86	65.2	137.8	217.1
DA-3B	42.5	0.50	65	16.8	69.9	142.0
DA-3C	6.6	0.37	77	8.1	21.0	36.1
DA-3D	51.9	0.52	73	39.5	116.6	211.2
<b>DP-3:</b>	<b>133.4</b>	<b>-</b>	<b>-</b>	<b>56.7</b>	<b>229.2</b>	<b>481.9</b>

III.B.2.b Surface Water Quality

The New York State Department of Environmental Conservation (NYS DEC) classifies surface waters according to their best use. Best-use classifications include drinking water, bathing, fishing, fish propagation, and non-contact recreational activity. Discharges to any classified waterbody must not cause impairment of its designated best use.

NYS DEC has assigned letter classes such as A, B, C, and D to most inland surface waters of the state. The highest values are assigned to Class A waters and the lowest to Class D waters. Surface water classifications are outlined in Title 6 Chapter X of the New York State Conservation Law, Parts 800-941.

Stormwater entering the Watchtower Farms Improvements project site would discharge to either the Class B(t) Dwaar Kill (DEC Water Index Number H-139-13-19-7) and/or discharge into the Class B Shawangunk Kill (DEC Water Index Number H-139-13-19). The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival. Based upon a review by the NYS DEC Division of Environmental Permits, Region 3, both rivers are classified as protected waters.

The Dwaar Kill and Shawangunk Kill are relatively unpolluted with low nutrient levels and relatively cool temperatures. The banks of the Shawangunk Kill are generally vegetated with deciduous trees and shrubs with minimum development in the riparian corridor resulting in relatively clean runoff in the vicinity of the project site.

## **POTENTIAL IMPACTS**

### **III.B.3 Increased Impervious Surfaces and Stormwater Runoff**

An increase in impervious surfaces has the potential to increase stormwater runoff and pollutants, if runoff is uncontrolled. This is due to the fact that rooftops, roads, sidewalks, and other impervious surfaces impede water from soaking into the ground. Impervious surfaces also collect pollutants from the wind, atmosphere, and from vehicles. During a storm, pollutants may be washed downstream into receiving waters.

Land disturbance due to construction activity also has the potential to cause increased soil movement and sediment accumulation, thus polluting streams and public roads, if runoff is uncontrolled.

The applicant recognizes the high quality and the importance of the on-site wetlands and streams. Thus, the proposed improvements were planned and designed to avoid impact to these valuable resources. One area of concern is the potential for significant increase in impervious cover within the watershed. The proposed project is located in an area where existing impervious surfaces would be removed. This minimizes the increase in overall imperviousness. The total area of impervious surfaces within the existing 352 acre drainage area would increase from 51.0 acres to 54.5 acres. The total imperviousness would increase from 14.5 percent to 15.5 percent of the drainage area—a 1-percent increase. This drainage area is a portion of a 1,890-acre sub-watershed that drains onto the Watchtower Farms property and into the Shawangunk Kill. Therefore, the proposed improvements represent less than a 0.1-percent increase in the total area of impervious surface in this sub-watershed.

Another potential impact to wetlands could be the disruption of wetland hydrology by affecting the flow pattern or connectivity of the on-site wetlands or streams. The proposed improvements would be located outside the majority of the catchment area for the wetlands and would not disrupt the flow pattern. In addition, the stormwater treatment ponds would be unlined; therefore, stored water would be available for wetland and stream recharge. Hence, the project is not expected to result in significant direct or indirect impacts to the hydrology of on-site wetlands and streams, or the overall 147 square mile (94,080 acre) watershed<sup>1</sup> for the Shawangunk Kill.

### **III.B.4 Increased Water Demand**

Potable water is provided by an existing on-site water treatment plant that is supplied by two surface reservoirs which collect runoff from a 180-acre watershed. The watershed is located entirely within the applicant's property. The existing capacity of the watershed, treatment plant, and reservoirs is sufficient to meet the increased water demands for the

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<sup>1</sup> Source: U.S. Fish and Wildlife Service Web-site  
[Training.fws.gov/library/pubs5/web\\_link/text/sha\\_kill.htm](http://Training.fws.gov/library/pubs5/web_link/text/sha_kill.htm)

proposed project. Water for irrigation of crops and landscaping is currently pumped from the Shawangunk Kill into a reservoir. This is currently authorized by NYS DEC permit that allows the use of up to 5.8 million gallons per month. The proposed project would not require modification to this permit. (See Section III.C.1.) Hence, there would only be minimal loss through evapotranspiration.

Neither the intermittent stream, nor wetland areas 1, 2, and 3 are within the drainage area that contributes to the existing reservoirs that supply water to the site. In addition, these areas are upstream of these reservoirs. Therefore, there are no direct or indirect impacts to the wetlands due to the proposed increase in water demand.

It is expected that impacts downstream at the Dwaarkill and Shawangunk Kill would be minimal. Most of the potable and non-potable water used at the site is ultimately returned to the watershed and streams by means of surface runoff from irrigated crops and landscaping, as well as the treated discharge from the on-site wastewater treatment plant. This would be true even during times of drought. Also, water conservation measures would be implemented to minimize water usage.

### **III.B.5 Increased Deicing and Snow Removal**

Deicing chemicals, especially salt, could potentially impact water quality of wetlands and streams. Snow stockpiles contain high concentrations of chemicals that could potentially contaminate receiving waters. The impact of deicing chemicals would be minimal since the net increase in roads, walks, and parking lots would only be 0.5 acres. This is due to the proposed project involving additions in areas where there is existing pavement.

The New York State Department of Environmental Conservation stated in a letter regarding the proposed improvements, dated January 25, 2008: “the Department believes that new wetland impacts would be minimal . . . [and] the plans do not appear to propose any disturbances to these protected streams.”<sup>2</sup>

## ***MITIGATION MEASURES***

### **III.B.6 Control of Stormwater Runoff**

#### **III.B.6.a Location of Improvements within Previously Developed Areas**

The proposed project would disturb approximately 46 acres of land. However, the proposed improvements are located in areas where existing impervious surfaces would be removed. Thus, the increase in impervious area is minimized. The proposed project also incorporates a multi-level parking garage, which reduces the impervious cover and stormwater runoff associated with surface parking lots.

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<sup>2</sup> See Appendix 2.

### III.B.6.b Stormwater Management During Construction

The objective of the Erosion and Sediment Control Measures (ESCM) plan for the Watchtower Farms Improvements is to minimize erosion due to exposure of soils to rainfall and surface runoff. This would be accomplished by complying with guidelines in the *New York State Standards and Specifications for Erosion and Sediment Control* (August 2005) and the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001, effective May 1, 2008).

The proposed ESCM plan would implement the above-mentioned standards for the use of vegetative, bio-technical, and structural measures to mitigate the impact on receiving waters. This plan is presented in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS.

The ESCM and phasing plan also shows that the construction of the project would be divided into sixteen phases. The phasing plan limits the amount of disturbed land to a maximum of five acres at any given time in compliance with DEC requirements. The phasing plan is described in Section III.A.2 of this report.

### III.B.6.c Post-construction Stormwater Management

The goal of post-construction stormwater management is to reduce impacts on receiving waters due to increase runoff and pollutants and increased runoff from the new improvements. The SWPPP for the Watchtower Farms Improvements complies with the design criteria established in the *New York State Stormwater Management Design Manual* (August 2003) and the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001, May 2008).

These guidelines would be implemented in order to meet pollutant removal goals, reduce channel erosion, prevent overbank flooding, and to help control extreme floods.

The design criteria are as follows:

- The Water Quality Volume (WQv) shall be sized to capture and treat 90 percent of the annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at the site. Impervious cover includes: paved and gravel road surfaces, parking lots and sidewalks, as well as rooftops and other impermeable surfaces. This criteria ensures the removal of pollutants—80 percent of total suspended solids and 40 percent of total phosphorus.
- Stream Protection Volume Requirements (Cpv) shall be designed to protect stream channels from erosion and sedimentation. This goal is accomplished by providing 24-hour extended detention of the 1-year, 24-hour event.
- Overbank Flood Control (Qp) shall be designed to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban

development. Overbank control requires adequate storage to attenuate the post-development 10-year, 24-hour peak discharge rate to existing conditions levels.

- Extreme Flood Control (Qf) is to (1) prevent the increased risk of flood damage from large storm events, (2) maintain the boundaries of the pre-development 100-year floodplain, and (3) protect the physical integrity of stormwater management practices. Extreme flood control requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to pre-development rates.
- Stormwater management areas shall provide safe overflow of the 100-year flood, as discussed in the New York State Department of Environmental Conservation publication *Guidelines for the Design of Dams*.

Redevelopment of previously developed sites is encouraged from a watershed protection standpoint because it often provides an opportunity to conserve natural resources in less impacted areas by targeting development to areas with existing services and infrastructure. Impacts to the environment were minimized by locating a significant portion of the proposed improvements in areas that have already been developed. For project areas that meet the criteria of redevelopment standards as established in Chapter 9 of the *New York State Stormwater Management Design Manual* (August 2003), 100 percent of the stormwater quality and quantity controls would be provided.

To meet the design criteria described above, the following stormwater management practices would be implemented:

- Two Micropool Extended Detention Basins (P-1) were selected for construction in areas on the west side of the project site, which includes the new residence, garage, and recreation building.
- Stormwater planters were selected to provide water quality treatment for the new office building and dining room addition, and the laundry addition.
- The existing West Pond (P-2) located just east of the North Loop Driveway and north of Red Mills road, satisfies stormwater management requirements for the proposed TER building and roadway adjustments.

The proposed stormwater management practices for the Watchtower Farms Improvements project meet or exceed the criteria for pollutant removal, reduced channel erosion, prevention of overbank flooding, and control of extreme floods.

A summary of the water quality volumes is presented in Table III.B-2. And a comparison of pre- and post-development mitigated peak storm flow rates is presented in Table III.B-3. Detailed calculations are presented in the SWPPP.—See Figure III.B-2, “Proposed Mitigated Condition Analysis.”

**Table III.B-2 Water Quality Volumes**

Design Point	Drainage Area	Area (Acres)	Percent Impervious	WQv (acre-feet)		Basin Description
				Req'd	Provided	
DP-1	DA-1B	14.9	100	0.062	0.086	Flow-through Planter
	DA-1C	7.0	29.7	0.26	0.27	Pond —Micropool Extended Detention Basin (P-1)
DP-2	DA-2A	8.8	100	0.027	0.028	Flow-through Planter
DP-3	DA-3E	19.5	28.8	0.56	0.77	Pond 1 —Micropool Extended Detention Basin (P-1)



**Table III.B-3 Comparison of Existing and Proposed Mitigated Peak Flow Rates**

Drainage Area	Peak Flow Rates								
	1-Year Storm			10-Year Storm			100-Year Storm		
	Exist	Prop Mit	Δ	Exist	Prop Mit	Δ	Exist	Prop Mit	Δ
DA-1A	34.1	28.9	-5.2	127.8	112.9	-14.9	254.5	228.2	-26.3
DA-1B	41.3	41.0	-0.3	81.8	81.2	-0.6	124.5	124.5	0.0
DA-1C	-	13.4	13.4	-	30.4	30.4	-	49.7	49.7
<b>DP-1:</b>	<b>44.5</b>	<b>39.8</b>	<b>-4.7</b>	<b>133.6</b>	<b>121.8</b>	<b>-11.8</b>	<b>255.7</b>	<b>235.0</b>	<b>-20.7</b>
DA-2A	14.6	14.6	0.0	30.4	30.4	0.0	47.6	47.6	0.0
DA-2B	7.2	7.2	0.0	16.5	16.5	0.0	27.0	27.0	0.0
<b>DP-2:</b>	<b>3.03</b>	<b>3.03</b>	<b>0.0</b>	<b>26.09</b>	<b>25.97</b>	<b>-0.1</b>	<b>52.17</b>	<b>51.81</b>	<b>-0.4</b>
DA-3A	65.2	56.5	-8.7	137.8	122.0	-15.8	217.1	194.3	-22.8
DA-3B	16.8	10.3	-6.5	69.9	45.6	-24.3	142.0	94.3	-47.7
DA-3C	8.1	7.5	-0.6	21.0	18.1	-2.9	36.1	30.2	-5.9
DA-3D	39.5	39.5	0.0	116.6	116.6	0.0	211.2	211.2	0.0
DA-3E	-	22.1	22.1	-	59.0	59.0	-	102.7	102.7
<b>DP-3:</b>	<b>56.7</b>	<b>50.2</b>	<b>-6.5</b>	<b>229.2</b>	<b>200.1</b>	<b>-29.1</b>	<b>481.9</b>	<b>481.6</b>	<b>-0.3</b>







Additional stormwater control measures would be implemented at the proposed pond adjacent to the wetland areas and intermittent stream. Potential runoff of chemicals utilized in landscaped areas in the vicinity of wetlands would be filtered through vegetated areas and directed to the stormwater ponds for treatment. The pond would discharge to a rip-rap energy dissipater to reduce flow velocity and then into a vegetated swale. The swale would be approximately 150 feet in length, with a five-foot bottom width, and an average top width of 40 feet, and sloped at 0.5 percent. The swale would be vegetated with grass and wetland plants to provide additional stormwater treatment before discharging to sensitive wetland areas. The United States Environmental Protection Agency estimates that vegetated swales “may achieve a 25 to 50 percent reduction in particulate pollutants, including sediment and sediment-attached phosphorus, metals, and bacteria.”<sup>3</sup> This would be in addition to the removal of 80 percent of total suspended solids and 40 percent of total phosphorus provided by the pond.

Also, the proposed Loop Driveway would be curbed in areas adjacent to wetlands, so that all runoff from proposed paved areas would be directed to the stormwater treatment pond.

### **III.B.7 Water Conservation**

Water conservation measures would be implemented to minimize water usage and further reduce impacts to the watershed. The applicant is already implementing water conservation measures by retrofitting existing bathroom facilities with low flush toilets. In addition, the proposed new buildings and renovations will include low-flush toilets. Water saving devices and water reuse would also be incorporated in the proposed renovation of the central laundry.

### **III.B.8 Responsible Use of Deicing Chemicals and Snow Management**

In weather conditions warranting the use of deicing chemicals, care would be taken to prevent contamination of sensitive wetlands and streams. Snow stockpiles would not be located adjacent to these areas or near stormwater detention ponds. The Loop Driveway would be curbed in areas adjacent to wetlands to direct runoff with deicing chemicals away from these sensitive areas.

### **III.B.9 Ownership and Responsibility**

Stabilized access roads for maintenance would be provided for each of the Micropool Extended Detention ponds, according to guidelines in the *New York State Stormwater Management Design Manual* (August 2003). The stormwater planters would be accessible to grounds maintenance personnel and small maintenance vehicles.

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<sup>3</sup> Source: United States Environmental Protection Agency, Office of Water, Washington, D.C., Technology Fact Sheet, “Vegetated Swales”

The applicant, Watchtower Bible and Tract Society of New York, Inc., would retain ownership and responsibility for the maintenance of all stormwater management facilities.

The stormwater management facilities would be maintained according to guidelines in the *New York State Stormwater Management Design Manual* (August 2003). Sediment would be removed from each forebay every five to six years or when 50-percent full. The access roads, side slopes, and berms would be mowed annually to prevent establishment of woody plants. Following completion, the stormwater planters would be inspected after each rainfall greater than 0.5 inches, and at least twice in the first six months. Subsequently, inspections would be conducted annually and after storm events equal to or greater than the one-year storm event. Routine maintenance would include the pruning and replacement of dead and dying vegetation and the repair or replacement of soils and gravel due to erosion.



### **III.C Groundwater Resources—Water Supply System**

#### ***ENVIRONMENTAL SETTING***

##### **III.C.1 Water Supply System**

###### **III.C.1.a Ownership and Existing Usage**

The applicant does not presently operate any groundwater wells on the project site for domestic consumption, irrigation, or otherwise. The existing water supply system that provides potable water to the site is a water treatment plant, Public Water Supply No. 5510805. It is owned by the applicant.

In 2007, this system produced 40.5-million gallons of potable water, which corresponds to a daily average flow of 111,000 gallons per day (gpd) or 98 gallons per person per day. Peak day usage for 2007 was 163,000 gpd, or 144 gallons per person per day. This water supply system is fed by a watershed that encompasses approximately 180 acres of protected land owned by the applicant.

In addition to the potable water usage, approximately 10-million gallons per year of non-potable water is typically pumped from the Shawangunk Kill in the months of May through October for irrigation of crops and landscaping.

###### **III.C.1.b Existing Permit Requirements for Reservoir Systems**

The New York State Department of Health (NYSDOH) has approved the water treatment plant for a design capacity of 250 gallons per minute (gpm) (360,000 gpd). The water plant operators are licensed, and the treated water quality meets all applicable criteria established by the Department of Health. The treated water is stored in two finished water storage tanks with a combined capacity of 250,000 gallons. Two pumps with a combined capacity of 1,400 gpm feed the distribution system, which includes a 40,000-gallon water tower. Operational records demonstrate that with the water tower on-line, a flow of 300 gpm from a distribution system feed pump is more than sufficient to meet the water demand from the existing population. When the water tower is off-line for maintenance, a 5,000-gallon hydropneumatic tank is used in connection with the pumps. Operational records show that during these times, a flow of up to 650 gpm from a distribution feed pump is needed to maintain pressure at all times for the domestic-water peak usage with the current population. The distribution system features a number of six-inch piping loops with fire hydrants throughout the site. Hydrant flow tests and calculations show that a fire flow of at least 725 gpm can be supplied to any point on the loops with either the water tower or the hydropneumatic tank online. (This fire-flow figure is based on providing a pressure of at least 20 psi at the highest floor elevation of 373 feet.)

The non-potable irrigation supply pumped from the Shawangunk Kill is authorized by NYSDEC Permit #3-5152-71/1-0. This permit authorizes the use of up to 5.8-million gallons per month of this water for irrigation.

### III.C.1.c Existing Water Supply System and Distribution

The water supply system is fed by a watershed that encompasses approximately 180 acres of protected land owned by the applicant. This area receives approximately 230-million gallons of rainfall in an average year. Surface-water runoff is stored in two surface-water reservoirs on the property with a combined capacity of approximately 90-million gallons. Safe yield charts for New England show that a watershed and reservoirs of this size can be counted on to provide 82.1-million gallons per year (225,000 gpd), even through the worst drought expected in a century. The water is treated at the NYSDOH-approved water treatment plant, and then distributed to the existing water tower on the project site or directly to the water distribution system.

### III.C.1.d Estimate of Proposed Demand

On the basis of the current per capita potable water use, the average usage, with the proposed project, would increase to 153,000 gpd and the peak daily usage would increase to 225,000 gpd. The existing capacities of the water shed, as well as the treatment facilities and distribution system, are sufficient to meet these increased demands.

## **POTENTIAL IMPACTS**

### III.C.2 Groundwater Impacts

The applicant does not presently operate or propose the installation of any groundwater wells on the project site for domestic consumption, irrigation, or otherwise. Therefore, no groundwater impacts are anticipated.

The design population of the site after the proposed project is approximately 1,600. On the basis of the current per capita potable water use, the average usage would increase to 153,000 gpd and the peak daily usage would increase to 225,000 gpd. The distribution feed pumps would need to provide about 900 gpm to keep up with domestic-water peak usage when the water tower is offline. These flows are all well within the existing capacity of the potable water system, which is 360,000 gpd.

The proposed project would not affect the current irrigation water needs nor are any groundwater withdrawal measures, such as wells, proposed as part of this project.

The maximum fire flow needed for the proposed new buildings would be no more than 650 gpm at 20 psi at the highest floor elevation. These proposed buildings would, however, extend beyond the current six-inch water main loops.

Potential impacts to groundwater recharge of wetlands and streams were evaluated. Neither the intermittent stream, nor wetland areas are within the drainage area that contributes to the existing on-site reservoirs that supply potable water to the site. In addition, these areas are upstream of these reservoirs. There would be no direct or indirect impact to groundwater recharge of the wetlands or intermittent stream. Thus, there would be no impacts to the existing wetland hydroperiod.



It is expected that impacts downstream at the Dwaarkill and Shawangunk Kill would be minimal. Due to the increase in water demand, there would be a decrease in the amount of water that would overflow from the reservoirs during the rainy season. However, most of the potable and non-potable water used at the site is ultimately returned to the watershed and streams by means of surface runoff from irrigated crops and landscaping, as well as the treated discharge from the on-site wastewater treatment plant. Minimal losses would occur only due to evapotranspiration. This would be true even during times of drought. A peak daily use of 225,000 gpd would need to be stored. This represents 0.3 percent of the storage of the existing reservoirs. Therefore, the impact of the water stored for project use would have minimal impact on the existing watershed for the Dwaarkill and the Shawangunk. As noted above, the water stored for the project would have no impact on existing wetland and stream recharge.

## **MITIGATION MEASURES**

### **III.C.3 Water Supply Upgrades**

As summarized below, no upgrades to the existing water supply system are required to mitigate the domestic water and irrigation needs of the proposed project:

- Water Storage Tank: None.
- Delivery: None.
- Pressure Zones: None.
- Site Distribution: Six-inch water main to be extended.

To provide sufficient fire flow to the area of the proposed new buildings, one of the existing six-inch water-main loops would be extended. New hydrants would be installed on the new portion of the six-inch water main. These distribution piping upgrades would meet domestic and fire-flow requirements and would be performed at the expense of the applicant.

### **III.C.4 Water Conservation**

Water conservation measures would be implemented to minimize water usage and further reduce impacts to groundwater recharge. The applicant has been and will continue implementing water conservation measures by retrofitting existing bathroom facilities with low-flush toilets. In addition, the proposed new buildings and renovations would include low-flush toilets. Water saving devices and water reuse would also be incorporated in the proposed renovation of the central laundry.

### III.D Wastewater/Sewage Disposal

#### ENVIRONMENTAL SETTING

##### III.D.1 Existing and Increased Wastewater Generation

The Watchtower Farms Wastewater Treatment Plant (WWTP) is solely owned, operated, and maintained by the applicant, and it is operated by full-time, licensed staff. The plant consists of two rings for the needed treatment process, one main ring and one ring for back up, a filter building, six sludge drying beds, a blower building, two flow-equalization tanks in series, and the necessary headworks.

At the time of the last major improvements to the Watchtower Farms Wastewater Treatment Plant, the approved residential population was 1,350 and extensive food processing operations were being carried out. These included a dairy and associated cheese and butter production, a cannery for fruits and vegetables, layer hen egg production, and livestock production involving slaughtering of chickens, pigs, and beef cattle. These specific food processing operations have shifted to beef cattle production and seasonal juicing of apples and grapes. The number of cattle slaughtered is approximately 10 head per week. Table III.D-1 shows the estimated flows and loads calculated for the approved population and food processing operation in September 1994.

**Table III.D-1 Combined Calculated Wastewater Flows and Loads**

Source	Flow (gpd)	BOD Loading (lb/day)
Residential Population	94,500	246.7
Dairy, Cheese, Butter, Canning	25,000	73.8
Slaughterhouse	26,000	187.5
Total	145,500	508.0

The above biochemical oxygen demand (BOD) loading for the residential population was based on 0.17 pound BOD-per-capita-per-day value as given in paragraph 11.253 of the GLUMRB *Recommended Standards for Wastewater Facilities (Ten States Standards)*. An extensive study was conducted in 1994 at Watchtower Farms to provide data on wastewater flows and characteristic loads from all non-agricultural sources. The study confirmed the 0.17-pound-BOD-per-capita-per-day value for typical applications.

The estimated increase in demand for the wastewater treatment plant with the proposed project takes into consideration several points. The slaughter schedule now consists of about 10 head of beef cattle per week, of which most are slaughtered on Thursday, and the remainder on Friday. The estimated water usage for Thursday is about 3,000 gallons with a biochemical oxygen demand (BOD) load of about 25 pounds.

Juicing of apples or grapes is seasonal and is not done on slaughter days. Flows and loads for juicing are estimated due to the variability inherent in this operation. A conservative maximum daily value for food processing waste streams, whether from slaughtering or juicing, is assumed at 6,000 gallons for flow and 50 pounds for loading.

In summary, there has been an adjustment in food processing operations and a proposed increase in office, printery, and support functions that do not contribute a significant increase in wastewater flows and loads other than for the increased residential population. Approval from the Town of Shawangunk is currently being sought for a population increase to 1,558 residents with this proposal. The combined flows and loads for the proposed improved facility, including the new design population of 1,558 persons, are shown in Table III.D-2. A conservative value of 0.20-pound-BOD-per-capita-per-day value is assumed in this report.

**Table III.D-2 Combined Flows and Loads for Proposed Improved Facility**

<b>Source (pound/day)</b>	<b>Flow (gpd)</b>	<b>BOD Loading</b>
Residential Population (1,558 persons)	118,400	312 (0.20 x 1558)
Food Processing (slaughter or juicing)	6,000	50
<b>Total</b>	<b>124,400</b>	<b>362</b>

### **III.D.2 Wastewater Treatment Plant—Ownership and Maintenance**

The Watchtower Farms Wastewater Treatment Plant (WWTP) is responsible for effectively removing the waste from the sanitary collection system, thereby eliminating a health threat to the public and environment. The WWTP is solely owned, operated, and maintained by the applicant; and it is operated by full-time, licensed staff.

The WWTP complies with effluent limitations set by the New York State Department of Environmental Conservation (DEC). Process control test, monitoring, recording, and reporting are carried out daily by certified technicians in a laboratory at the WWTP under the New York State Department of Health Environmental Laboratory Approval Program (No. 10549—Watchtower Farms Sewage Plant). This includes the testing of organics, nutrients, bacteria, and solids contaminants to ensure compliance with the required standards.

An Allen-Bradley controls system handles the operational functions of the facility and is integrated with a computer information system that collects data from the facility. These systems are easily accessible to operators for timely, accurate monitoring and regulatory reporting.

The Watchtower Farms Wastewater Treatment Plant (WWTP) is a tertiary extended aeration plant using the activated sludge process. Effluent polishing is accomplished using sand filtration followed by chlorination. Provision for redundancy of equipment allows for routing cleaning, increased flow and maintenance without hindering the

treatment process. See Figure III.D-1 for a plan of the wastewater treatment plant. The treatment process is described in detail as follows:

#### III.D.2.a Collection System

Lift stations pump wastewater from low areas up to the gravity collection system.

#### III.D.2.b Preliminary Treatment

The preliminary treatment allows for the removal of inorganic solids as well as the physical breakdown of larger organic solids. This is done through screening, comminution, and grit removal. Influent flow measurement is also accomplished at this point.

#### III.D.2.c Flow Equalization Tanks

Two flow equalization tanks are designed to balance the fluctuating incoming flow and organic loadings will eliminate shock loads. The wastewater is pumped from the flow equalization tanks at a fixed rate to load the treatment process evenly.

#### III.D.2.d Aeration Tanks

Wastewater is treated using the activated sludge process. This allows the removal of oxygen-consuming organic compounds along with ammonia nitrogen without the use of chemicals. The backbone of the treatment process is the aeration tanks. These tanks are aerated 24 hours a day, providing a suitable environment for the growth of the aerobic (or oxygen-dependent) microorganisms that convert the organic matter to insoluble solids.

#### III.D.2.e Secondary Clarifiers

Circular settling tanks that provide a quiescent environment for the gravity separation of the suspended solids. "Mixed liquor" from the aeration tanks flows into the secondary clarifiers. The settled solids are constantly removed from the bottom and either returned to the head of the aeration tank or removed by flow to the digesters.

#### III.D.2.f Tertiary Sand Filter

This is accomplished using a two-celled gravity sand filter. This unit removes suspended solids from the treated wastewater by passing the flow through a sand media. This not only further removes the residual suspended solids but also makes disinfection more effective. Flow from these units goes directly to the chlorination contact tank.

#### III.D.2.g Chlorination / Dechlorination

A chlorine contact tank with sodium hypochlorite injection is provided as a disinfection system. A dechlorination manhole is located immediately after the chlorine contact tank,

where sodium metabisulfite can be added if needed. This removes the unused residual chlorine from the treated effluent so that it can be safely discharged to the receiving stream.

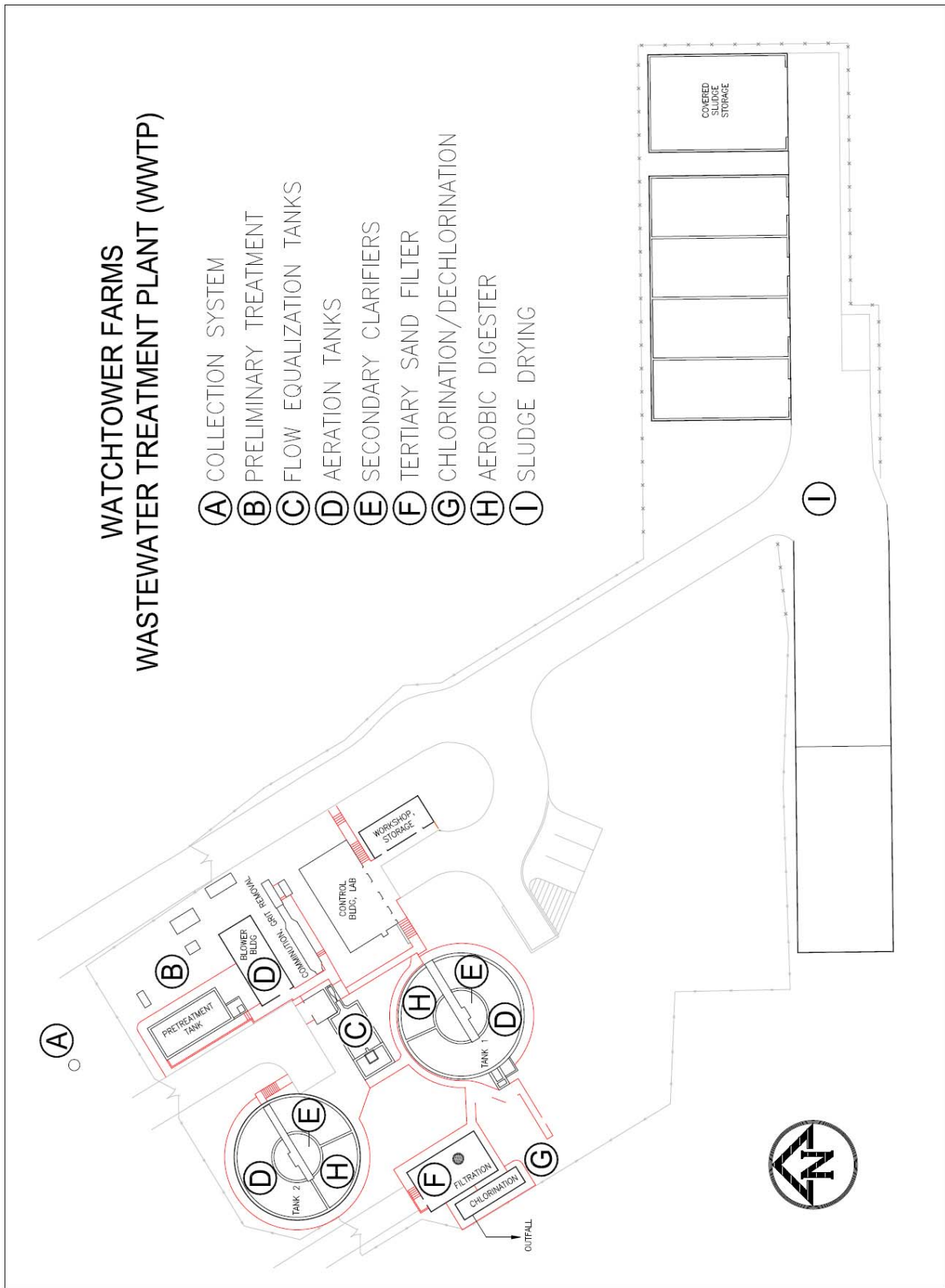
#### III.D.2.h Aerobic Digester

The thickened solids are stabilized through constant air agitation in the aerobic digesters. These complete-mix steady-state reactors provide ideal conditions for the reduction of pathogenic organism concentration, putrefaction, and odors.

#### III.D.2.i Sludge Drying Beds

Sludge drying beds are used to dewater and dry sludge to 60–70 percent solids. The water seeps through the sand levels 12-inches to lift stations and back to the head of the plant. The dewatered solids are moved to available storage sheds until disposed of off-site via an environmentally approved method.

The Watchtower Farms Wastewater Treatment Plant (WWTP) is authorized to discharge wastewater under the conditions of a State Pollution Discharge Elimination System (SPDES) Permit No. NY-002-5295 (DEC ID NO.: 3-5152-00026/00004). Wastewater is discharged to the Shawangunk Kill. The outfall is located about 1/2 mile below the bridge that carries Bruyn Turnpike (Shawangunk) / Wallkill Avenue (Crawford) over the Shawangunk Kill. The following effluent contaminants are regulated and reported monthly to the DEC: biological oxygen demand (BOD), total suspended solids, total settleable solids, coliform, and chlorine residual.



**Figure III.D-1 Wastewater Treatment Plant Plan**

## **POTENTIAL IMPACTS**

### **III.D.3 Wastewater Treatment Plant—Noise and Odor**

The Watchtower Farms Wastewater Treatment Plant (WWTP) has been in operation since 1972. It is a stationary process operation comprising various motors, pumps, valves, and electrical equipment, and is in operation 24-hours per day and 365 days per year. There are also transport movements which include a few personnel commuting to and from the plant primarily during daylight hours, the receiving of raw materials, and the infrequent operation of a small bucket loader for biosolids handling.

The plant is located in a rural setting 900 feet south of Red Mills Road, and 300 feet from the Shawangunk Kill. Watchtower properties include both sides of the stream and extend up to 1,000 feet from the plant. The nearest adjacent property corner is located 700 feet from the plant. There are no proximal receptors (inhabitants) beyond property lines that are visible from the plant.

Sound readings<sup>1</sup> were taken 2,500 feet from the plant and 100 feet from Red Mills Road to establish a baseline ambient noise level for a typical residential land owner. During the base recording, a maximum sound pressure level of 91 dB(A) was reached as car and truck traffic passed the location. The minimum sound level was 54.5 dB(A). Sound readings were then taken at various intervals and directions from the plant. The results are shown in Figure III.D-2. The readings ranged from a minimum of 54.5 dB(A), plant generated noise, to a maximum of 85.3 dB(A) when vehicle traffic was recorded in the vicinity of the recording location.

This existing noise is commensurate with ambient sound levels found in typical community settings as shown in Table III.D-3. Since the sound levels are not expected to change as a result of any of the proposed improvements, the future “build” and “no-build” scenarios would be the same. Also, given the location of the Wastewater Treatment Plant, noise generated by the plant itself would effectively dissipate over distance in dB(A).

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<sup>1</sup> Sound readings were taken by applicant’s staff on Monday April 7, 2008, from 10:30 AM to 11:30 AM. Sound meter: Class 2 acoustic analyzer consisting of NTI Acoustilyzer AL1 noise meter and NTI MiniSPL microphone. Weather conditions measured at Pine Bush, NY (3 miles from location), at 10:42 AM per *Weather Underground, Inc.*: Temp.: 41.4 °F, Dew Point: 34.1 °F, Humidity: 75%, Pressure: 30.33 in., Wind: ENE 4 mph.

**Table III.D-3 Noise Levels of Common Activities<sup>2</sup>**

<b>Activity</b>	<b>Noise Levels in dB(A)</b>
Rock Concerts	110
Subway Platform	100
Sidewalk, Passing Truck	90
Sidewalk, Typical Highway	80
Typical Urban Area	60 - 70
Typical Suburban Area	50 - 60
Quiet Suburban Area at Night	40 - 50
Typical Rural Area at Night	30- 40
Isolated Broadcast Studio	20
Audiometric Booth	10
Threshold of Hearing	0

Wastewater influent produces light odors directly at the headworks of the plant where it enters the pre-treatment area. Once aeration and aerobic digestion begins, odors are effectively reduced. Putrefaction or septic conditions effectively do not occur due to constant air agitation and digestion. Odors from the headworks of the plant readily dissipate beyond a distance of 200 feet.

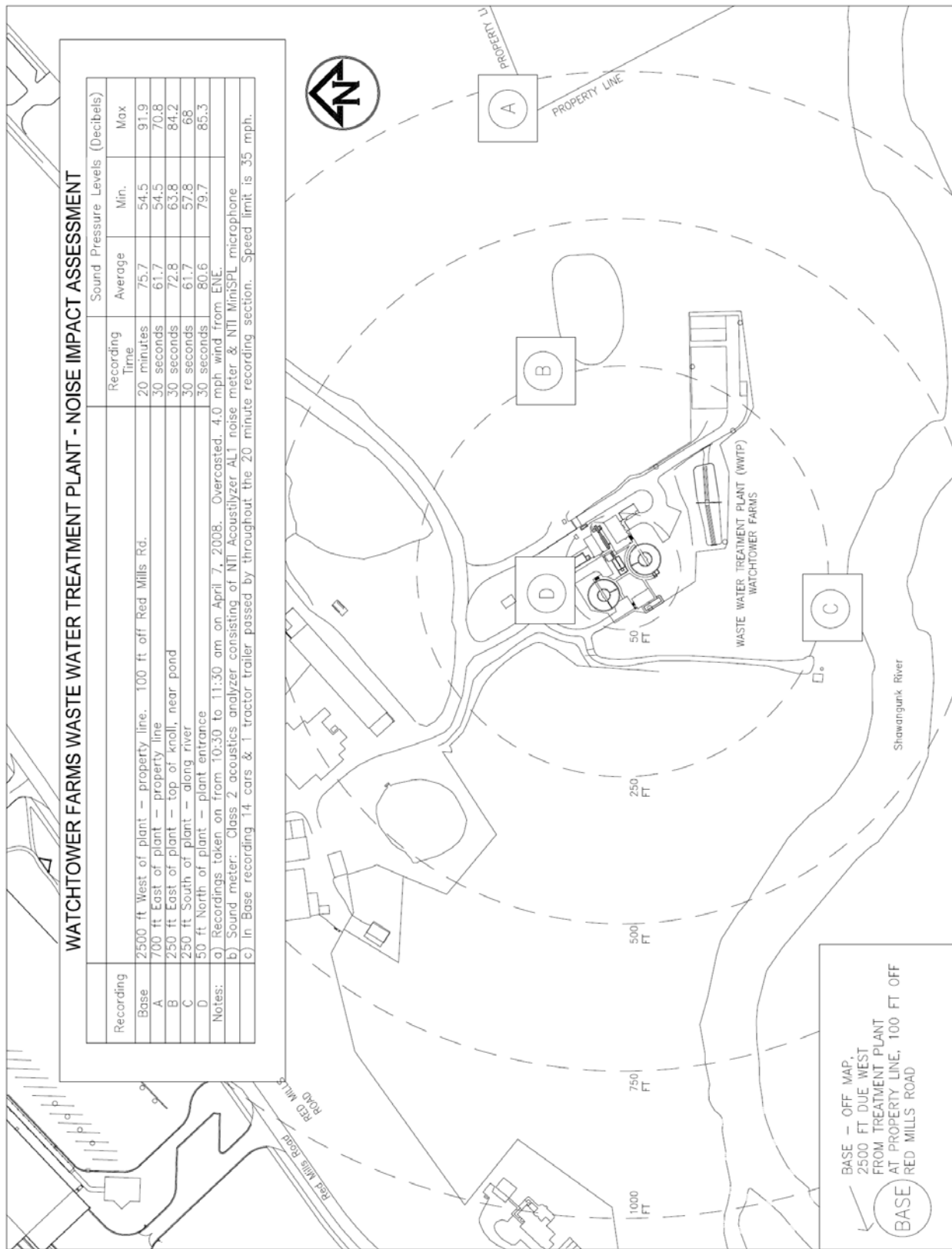
Light odors are also generated when digested sludge from the treatment process is allowed to flow into the drying beds. Digested sludge is allowed to flow into the beds only once or perhaps twice per month. This produces odors for a period of about three days until it becomes a biosolid that no longer has any active odor-producing bacteria. These temporary odors from the sludge drying beds readily dissipate beyond a distance of 200 feet.

Odor impact would match the rural community setting, and no sensitive receptors would be outside property lines that are visible from the plant.

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<sup>2</sup> Cowan, James, *Handbook of Environmental Acoustics*, 1994. Egan, David, *Architectural Acoustics*, 1998.





**Figure III.D-2 Wastewater Treatment Plant Noise Impact Assessment**

### III.D.4 Wastewater Treatment Plant—Improvements

The existing sewerage system consists of gravity collection lines, manholes, lift stations, force mains, grease traps and other ancillary structures, used to convey the sewage wastewater generated in the various buildings and other sources to the wastewater treatment plant on site. Due to the topography, virtually all of the wastewater must be pumped at one or more locations by lift stations discharging through force mains before reaching the wastewater treatment plant. There are lift stations, varying in size from small units serving single family residences, to large stations handling wastewater from the larger residential buildings. Polyvinylchloride (PVC) pipes with resilient joints are used in most cases, although ductile iron is used in a few cases for severe duty, and some of the oldest lines use cast iron.

The most significant change proposed with the wastewater treatment plant improvements is the conversion of the present “pretreatment” tank, which was used for spreading out high-strength food processing loads, to a supplemental flow equalization tank for all wastewater. This is appropriate due to the change in food processing flows and loading. To allow gravity flow of the entire stream to the pretreatment tank with this change, a new headworks is required. This includes a bar screen, rock trap, comminutor, grit channel, and Parshall flume, prior to discharging to the pretreatment tank. The existing headworks is being retained with valving provisions for diverting flow in case of an emergency or required maintenance on the new headworks. The pretreatment tank pumps would be replaced with larger variable speed drive pumps discharging directly to the existing flow equalization tank. Controls would be provided to optimize the use of the new flow equalization volume.

Changes to the collection system would include a new lift station and force main serving the new residence and nearby smaller buildings, along with new gravity sewers serving the new buildings.

A further improvement is the addition of another 20 hp blower in the space allowed in the present blower building for a future blower. This blower would be capable of supplying air to either of the treatment units, but its primary function would be to supply supplemental air to the downstream portion of the aeration tank in the main unit. While this blower is not required to meet the overall air requirements based on *Ten States Standards*, it would provide greater flexibility and control over air delivery to assure a dissolved oxygen level of at least 2 mg/l over all portions of the aeration tank at varying times of day. It should also improve energy efficiency as a result of the reduced velocity with two air mains feeding the ring main.

While there would be an increase in the residential population (1,558), there is no anticipated increase to the sewage flow since there has been a decrease in the amount of food processing operations producing wastewater flow when the 1994 facility design figures are used as a baseline. Also, with the improvements to the wastewater treatment plant and conservation plans to reduce the existing sewage flows, there is no anticipated impact to the environment.

## **MITIGATION MEASURES**

### **III.D.5 Wastewater Treatment Plant—Mitigation Measures**

The SPDES permit No. 002 5925 for the treatment facility (3-5152-00026/0004) was renewed for five years effective beginning April 1, 2008. A copy of the new permit is attached in Appendix 3 of this report. The Shawangunk Kill is presently a Class B stream. At the present time no regulatory agencies have stated that they anticipate any changes in the applicant's discharge requirements.

Water conservation measures would also be implemented to minimize water usage and reduce sewage. For example, toilets in some existing structures would be replaced with water saving devices that use an average of 1.5 gallons of water per flush compared to 4.5 gallons per flush. This would result in an estimated savings of approximately one million gallons of water per year. Other water saving improvements are proposed in the existing buildings, and the proposed renovations to the central laundry would use water saving equipment.

### III.E Terrestrial and Aquatic Ecology

#### III.E.1 Vegetation

##### **ENVIRONMENTAL SETTING**

###### III.E.1.a Contact NYSDEC and Federal Fish and Wildlife Service

The applicant contacted the New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources, New York Natural Heritage Program (DEC) and the United States Department of the Interior Fish and Wildlife Service (FWS) to request information regarding the possible presence of unique, rare and/or endangered, threatened or proposed for listing as either protected species, or species of special concern.

The FWS response of January 17, 2007<sup>1</sup> noted the presence of two species on the *Federally Listed Endangered and Threatened Species and Candidate Species in New York (By County, Revised September 28, 2006)*: small whorled pogonia (threatened, Historic, *Isotria medeoloides*) and northern monkshood (threatened, *Aconitum noveboracense*). The same document, updated October 1, 2007, includes the same species.

The small whorled pogonia is an herbaceous perennial that propagates either from seed or from rootstock buds that overwinter and develop the next year's growth. It occurs on upland sites in mixed-deciduous or mixed-deciduous/coniferous forests that are generally in second- or third-growth successional stages. Characteristics common to most sites include sparse to moderate ground cover in the species' microhabitat, a relatively open understory canopy, and proximity to features that create long-persisting breaks in the forest canopy. Soils at most sites are highly acidic and nutrient poor, with moderately high soil moisture values. Light availability could be a limiting factor for this species.<sup>2</sup>

Figure III.E-1 depicts a sample of this species, not observed on the project site.

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<sup>1</sup> See Appendix 4 Wetland Delineation Report, and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>2</sup> Small Whorled Pogonia Habitat Model, March 2001 as referenced at [http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/small\\_whorled\\_pogonia\\_model.htm](http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/small_whorled_pogonia_model.htm)



**Figure III.E-1 Small Whorled Pogonia (*Isotria medeoloides*).<sup>3</sup>**

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<sup>3</sup> This is a sample photo; it is not on the project site. Credit: Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA NRCS. 1995. Northeast wetland flora: Field office guide to plant species. Northeast National Technical Center, Chester.



The northern monkshood is noted for its very distinctive, blue hood-shaped flowers. The flowers are about 1 inch in length, and a single stem may have many flowers. Stems range from about 1 to 4 feet in length. The leaves are broad with coarse, toothed lobes. Its range includes Iowa, Wisconsin, Ohio, and New York. It is typically found on shaded to partially shaded cliffs, algalic talus slopes, or on cool, streamside sites. These areas have cool soil conditions, cold air drainage, or cold groundwater flowage. On algalic talus slopes, these conditions are caused by the outflow of cool air and water from ice contained in underground fissures. These fissures are connected to sinkholes and are a conduit for the air flows. Northern monkshood is a perennial and reproduces from both seed and small tubers. The flowers bloom between June and September and are pollinated when bumblebees pry open the blossom to collect nectar and pollen.<sup>4</sup>

Figure III.E-2 depicts a sample of this species, not observed on the project site.



**Figure III.E-2 Northern Monkshood—(Aconitum noveboracense)<sup>5</sup>**

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<sup>4</sup> Source: U.S. Fish and Wildlife Service, Northern Wild Monkshood (*Aconitum noveboracense*) Fact Sheet, <http://www.fws.gov/Midwest/endangered/plants/monkshoo.html>

<sup>5</sup> This is a sample photo; it is not on the project site. Credit: U.S. Fish and Wildlife Service, Northern Wild Monkshood (*Aconitum noveboracense*) Fact Sheet, <http://www.fws.gov/Midwest/endangered/plants/monkshoo.html>





The DEC response of January 30, 2007<sup>6</sup>, explained: “Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicated occur, or may occur on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.” This report was available for subsequent field surveys. Follow-up correspondence from the DEC dated January 25, 2008<sup>7</sup> commented on “NYS Threatened or Endangered Species” and did not specify threatened or endangered vegetation.

### III.E.1.b Species in Surrounding Habitats

The vegetated areas of the project site and the surrounding area consist of deciduous forest, pasture/hay, water, wooded wetlands, emergent wetlands, and landscaped areas.

A list of species that could reasonably be expected to exist on the site or in the surrounding area is included in Table III.E-1. This list is derived from the Federally Protected Plants List of New York State provided by the United States Fish and Wildlife Service, as well as, the State Protected Plants list from the New York State Department of Environmental Conservation.

**Table III.E-1 Federally- and State-Protected Plants Expected on Project Site and Surrounding Habitat**

<b>ENDANGERED SPECIES Common Name (Scientific name)</b>	<b>ENDANGERED SPECIES Common Name (Scientific name)</b>
Virginia three-seeded ( <i>Acalypha virginica</i> var. <i>virginica</i> )	Toothed rock-cress ( <i>A. shortii</i> )
Moschatel ( <i>Adoxa moschatellina</i> )	Virginia snakeroot ( <i>Aristolochia serpentaria</i> )
Sandplain gerardia ( <i>Agalinis acuta</i> )	Arnica ( <i>Arnica lanceolata</i> )
Wild leek ( <i>Allium burdickii</i> )	Wild sage ( <i>Artemisia campestris</i> var. <i>borealis</i> )
Seabeach amaranth ( <i>Amaranthus pumilus</i> )	White milkweed ( <i>Asclepias variegata</i> )
Nantucket juneberry ( <i>Amelanchier nantucketensis</i> )	Bradley's spleenwort ( <i>Asplenium bradleyi</i> )
Champlain beachgrass ( <i>Ammophila champlainensis</i> )	Green spleenwort ( <i>A. trichomanes-ramosum</i> )
Peanut grass ( <i>Amphicarpum purshii</i> )	Lindley's aster ( <i>Aster ciliolatus</i> )
Angelica ( <i>Angelica lucida</i> )	Silvery aster ( <i>A. concolor</i> )
Alpine sweetgrass ( <i>Anthoxanthum monticolum</i> ssp.)	Smooth blue aster ( <i>A. laevis</i> var. <i>concinus</i> )
Puttyroot ( <i>Aplectrum hyemale</i> )	Tall white aster ( <i>A. lanceolatus</i> var. <i>interior</i> )
Drummond's rock cress ( <i>Arabis drummondii</i> )	Calico aster ( <i>A. lateriflorus</i> var. <i>hirsuticaulis</i> )
	Sky-blue aster ( <i>A. oolentangiensis</i> )
	Cornel-leaved aster ( <i>Aster puniceus</i> var. <i>firmus</i> )
	Swamp aster ( <i>Aster radula</i> )

<sup>6</sup> See Appendix 4 Wetland Delineation Report, and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>7</sup> See Appendix 2.

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
Cooper's milkvetch ( <i>Astragalus neglectus</i> )
Seaside orach ( <i>Atriplex glabriuscula</i> )
Orache ( <i>A. subspicata</i> )
Screw-stem ( <i>Bartonia paniculata</i> )
Tundra dwarf birch ( <i>Betula glandulosa</i> )
Dwarf white birch ( <i>B. minor</i> )
Estuary beggar-ticks ( <i>Bidens hyperborean</i> )
Downy wood-mint ( <i>Blephilia ciliate</i> )
Prairie dunewort ( <i>Botrychium campestre</i> )
Moonwort ( <i>B. lunaria</i> )
Mingan moonwort ( <i>B. minganense</i> )
Blunt-lobed grape fern ( <i>B. oneidense</i> )
Rugulose grape fern ( <i>B. rugulosum</i> )
Side-oats grama ( <i>Bouteloua curtipendula</i> )
Blue-hearts ( <i>Buchnera Americana</i> )
Sweet-scented Indian-plantain ( <i>Cacalia suaveolens</i> )
Wood reedgrass ( <i>Calamagrostis perplexa</i> )
Porter's reedgrass ( <i>C. porteri</i> ssp. <i>Porteri</i> )
Northern reedgrass ( <i>C. stricta</i> ssp. <i>Stricta</i> )
Autumnal water-starwort ( <i>Callitriche hermaphrodita</i> )
Calypso ( <i>Calypso bulbosa</i> )
Mountain watercress ( <i>Cardamine rotundifolia</i> )
Glomerate sedge ( <i>Carex aggregate</i> )
Narrow-leaved sedge ( <i>C. amphibola</i> var. <i>amphibola</i> )
Northern clustered sedge ( <i>C. arcta</i> )
Awned sedge ( <i>C. atherodes</i> )
Black sedge ( <i>C. atratiformis</i> )
Barratt's sedge ( <i>C. barrattii</i> )
Button sedge ( <i>C. bullata</i> )
Hair-like sedge ( <i>C. capillaries</i> )
Carolina sedge ( <i>C. caroliniana</i> )
Collins' sedge ( <i>C. collinsii</i> )
Soft fox sedge ( <i>C. conjuncta</i> )
Cypress-knee sedge ( <i>C. decomposita</i> )
Emory's sedge ( <i>C. emoryi</i> )
Glaucous sedge ( <i>C. flaccosperma</i> var. <i>glaucodea</i> )
Frank's sedge ( <i>C. frankii</i> )
Elk sedge ( <i>C. garberi</i> )
Northern bog sedge ( <i>C. gynocrates</i> )
Cloud sedge ( <i>C. haydenii</i> )
Loose-flowered sedge ( <i>C. laxiflora</i> var. <i>serrulata</i> )
Livid sedge ( <i>C. livida</i> var. <i>radicalis</i> )
Mead's sedge ( <i>C. meadii</i> )
Midland sedge ( <i>C. mesochorea</i> )
Black sedge ( <i>C. nigra</i> )
Black-edge sedge ( <i>C. nigromarginata</i> )

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
Reflexed sedge ( <i>C. retroflexa</i> )
Canadian single-spike sedge ( <i>C. scirpoidea</i> )
Short's sedge ( <i>C. shortiana</i> )
Straw sedge ( <i>C. straminea</i> )
Lined sedge ( <i>C. striatula</i> )
Bent sedge ( <i>C. styloflexa</i> )
Many-head sedge ( <i>C. sychnocephala</i> )
Sparse-flowered sedge ( <i>C. tenuiflora</i> )
Tinged sedge ( <i>C. tincta</i> )
Sheathed sedge ( <i>C. vaginata</i> )
Graceful sedge ( <i>C. venusta</i> var. <i>minor</i> )
Wiegand's sedge ( <i>C. wiegandii</i> )
Scarlet Indian-paintbrush ( <i>Castilleja coccinea</i> )
Prairie redroot ( <i>Ceanothus herbaceous</i> )
Spreading chervil ( <i>Chaerophyllum procumbens</i> )
Slender spikegrass ( <i>Chasmanthium laxum</i> )
Woolly lip-fern ( <i>Cheilanthes lanosa</i> )
Missouri goosefoot ( <i>Chenopodium album</i> var. <i>missouriense</i> )
Large calyx goosefoot ( <i>C. berlandieri</i> var. <i>macrocalycium</i> )
Blue-eyed-Mary ( <i>Collinsia verna</i> )
Striped coralroot ( <i>Corallorhiza striata</i> )
Broom crowberry ( <i>Corema conradii</i> )
Rough-leaf dogwood ( <i>Cornus drummondii</i> )
Pigmyweed ( <i>Crassula aquatica</i> )
Hawthorn ( <i>Crataegus berberifolia</i> )
Compact hawthorn ( <i>C. compacta</i> )
Downy hawthorn ( <i>C. mollis</i> )
Dwarf hawthorn ( <i>C. uniflora</i> )
Rattlebox ( <i>Crotalaria sagittalis</i> )
Button-bush dodder ( <i>Cuscuta cephalanthi</i> )
Southern dodder ( <i>C. obtusiflora</i> var. <i>glandulosa</i> )
Smartweed dodder ( <i>C. polygonorum</i> )
Northern wild comfrey ( <i>Cynoglossum virginianum</i> var. <i>boreale</i> )
Wild comfrey ( <i>C. virginianum</i> var. <i>virginianum</i> )
Globose flatsedge ( <i>Cyperus echinatus</i> )
Yellow flatsedge ( <i>C. flavescens</i> var. <i>flavescens</i> )
Coast flatsedge ( <i>C. polystachyos</i> var. <i>texensis</i> )
Retorse flatsedge ( <i>C. retrorsus</i> )
Small white lady's slipper ( <i>Cypripedium candidum</i> )
Small yellow lady's slipper ( <i>C. parviflorum</i> var. <i>parviflorum</i> )
Lowland fragile fern ( <i>Cystopteris protrusa</i> )
Northern tansy-mustard ( <i>Descurainia pinnata</i> ssp. <i>Brachycarpa</i> )
Spreading tick-clover ( <i>Desmodium humifusum</i> )
Smooth tick-clover ( <i>D. laevigatum</i> )
Nuttall's tick-clover ( <i>Desmodium nuttallii</i> )

<b>ENDANGERED SPECIES</b> <b>Common Name (Scientific name)</b>
Beggar-lice ( <i>D. obtusum</i> )
Small-flowered tick-clover ( <i>D. pauciflorum</i> )
Beakgrass ( <i>Diarrhena obovata</i> )
Salt-meadow grass ( <i>Diplachne maritime</i> )
Rock-cress ( <i>Draba glabella</i> )
American dragonhead ( <i>Dracocephalum parviflorum</i> )
Log fern ( <i>Dryopteris celsa</i> )
Fragrant cliff fern ( <i>Dryopteris fragrans</i> )
Yerba-de-tago ( <i>Eclipta prostrate</i> )
American waterwort ( <i>Elatine Americana</i> )
Slender spikerush ( <i>Eleocharis elliptica</i> var. <i>pseudoptera</i> )
Engelmann's spikerush ( <i>E. engelmannii</i> )
Creeping spikerush ( <i>E. fallax</i> )
Blunt spikerush ( <i>E. obtusa</i> var. <i>ovata</i> )
Angled spikerush ( <i>E. quadrangulata</i> )
Three-ribbed spikerush ( <i>E. tricostata</i> )
Purple crowberry ( <i>Empetrum eamesii</i> ssp. <i>atropurpureum</i> )
Willow-herb ( <i>Epilobium ciliatum</i> ssp. <i>glandulosum</i> )
Alpine willow-herb ( <i>Epilobium hornemannii</i> )
Smooth scouring rush ( <i>Equisetum laevigatum</i> )
Fireweed ( <i>Erechtites hieraciifolia</i> var. <i>megalocarpa</i> )
Harbinger-of-spring ( <i>Erigeron bulbosa</i> )
Daisy fleabane ( <i>Erigeron hyssopifolius</i> )
Narrow-leaf cottongrass ( <i>Eriophorum angustifolium</i> ssp. <i>scabriusculum</i> )
American strawberry-bush ( <i>Euonymus americana</i> )
Small white snakeroot ( <i>Eupatorium aromaticum</i> )
White boneset ( <i>E. leucolepis</i> var. <i>leucolepis</i> )
Round-leaf boneset ( <i>E. rotundifolium</i> var. <i>ovatum</i> )
Round-leaf boneset ( <i>E. rotundifolium</i> var. <i>rotundifolium</i> )
Late boneset ( <i>Eupatorium serotinum</i> )
Ipecac spurge ( <i>Euphorbia ipecacuanhae</i> )
Sheep fescue ( <i>Festuca saximontana</i> )
Shining bedstraw ( <i>Galium concinnum</i> )
Northern wild-licorice ( <i>G. Kamtschaticum</i> )
Dwarf huckleberry ( <i>Gaylussacia dumosa</i> var. <i>Bigeloviana</i> )
Soapwort gentian ( <i>Gentiana saponaria</i> )
Lesser fringed gentian ( <i>Gentianopsis procera</i> )
Purple comandra ( <i>Geocaulon lividum</i> )
Spring avens ( <i>Geum vernum</i> )
Rough avens ( <i>G. Virginianum</i> )
Catfoot ( <i>Gnaphalium helleri</i> var. <i>Micradenium</i> )
Purple everlasting ( <i>G. Purpureum</i> )
Woodland cudweed ( <i>G. Sylvaticum</i> )

<b>ENDANGERED SPECIES</b> <b>Common Name (Scientific name)</b>
Kentucky coffee tree ( <i>Gymnocladus dioica</i> )
Northern stickseed ( <i>Hackelia deflexa</i> var. <i>Americana</i> )
Spurred gentian ( <i>Halenia deflexa</i> )
Mare's-tail ( <i>Hippuris vulgaris</i> )
Purple bluets ( <i>Houstonia purpurea</i> var. <i>Calycosa</i> )
Purple bluets ( <i>H. purpurea</i> var. <i>Purpurea</i> )
Fir clubmoss ( <i>Huperzia selago</i> )
Wild hydrangea ( <i>Hydrangea arborescens</i> )
Floating pennywort ( <i>Hydrocotyle ranunculoides</i> )
Water-pennywort ( <i>H. Verticillata</i> )
Creeping St. John's-wort ( <i>Hypericum adpressum</i> )
Bushy St. John's-wort ( <i>H. Densiflorum</i> )
Coppery St. John's-wort ( <i>H. Denticulatum</i> )
St. Andrew's cross ( <i>H. hypercoides</i> ssp. <i>Multicaule</i> )
Wild potato-vine ( <i>Ipomoea pandurata</i> )
Southern blueflag ( <i>Iris virginica</i> var. <i>Schrevei</i> )
Quillwort ( <i>Isoetes riparia</i> )
Small whorled pogonia ( <i>Isotria medeoloides</i> )
Doubtful toad-rush ( <i>Juncus ambiguous</i> )
Short-fruit rush ( <i>J. Brachycarpus</i> )
Weak rush ( <i>J. Debilis</i> )
Ensiform rush ( <i>J. Ensifolius</i> )
Large grass-leaved rush ( <i>J. marginatus</i> var. <i>biflorus</i> )
Scirpus-like rush ( <i>J. scirpoides</i> )
Moor-rush ( <i>Juncus stygius</i> ssp. <i>Americanus</i> )
Woods-rush ( <i>Juncus subcaudatus</i> )
Prostrate juniper ( <i>Juniperus horizontalis</i> )
Carolina redroot ( <i>Lachnanthes caroliniana</i> )
False lettuce ( <i>Lactuca floridana</i> )
Downy lettuce ( <i>Lactuca hirsute</i> )
Rough veiny vetchling ( <i>Lathyrus venosus</i> )
Bead pinweed ( <i>Lechea pulchella</i> var. <i>moniliformis</i> )
Minute duckweed ( <i>Lemna perpusilla</i> )
Pale duckweed ( <i>L. valdiviana</i> )
Leucospora ( <i>Leucospora multifida</i> )
Slender blazing-star ( <i>Liatris cylindracea</i> )
Scotch lovage ( <i>Ligusticum scothicum</i> )
Michigan lily ( <i>Lilium michiganense</i> )
Wild flax ( <i>Linum medium</i> var. <i>medium</i> )
Large twayblade ( <i>Liparis lilifolia</i> )
Dwarf bulrush ( <i>Lipocarpha micrantha</i> )
Auricled twayblade ( <i>Listera auriculata</i> )
Southern twayblade ( <i>L. australis</i> )
Broad-lipped twayblade ( <i>L. convallarioides</i> )
Golden puccoon ( <i>Lithospermum caroliniense</i> ssp. <i>Croceum</i> )

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
American shore-grass ( <i>Littorella uniflora</i> )
Alpine azalea ( <i>Loiseleuria procumbens</i> )
Spiked woodthrush ( <i>Luzula spicata</i> )
Carolina clubmoss ( <i>Lycopodiella caroliniana</i> )
Northern running-pine ( <i>Lycopodium complanatum</i> )
Sitka clubmoss ( <i>Lycopodium sitchense</i> )
Gypsy-wort ( <i>Lycopus rubellus</i> )
Climbing fern ( <i>Lygodium palmatum</i> )
Lance-leaved loosestrife ( <i>Lysimachia hybrida</i> )
Four-flowered loosestrife ( <i>Lysimachia quadriflora</i> )
Saltmarsh loosestrife ( <i>Lythrum lineare</i> )
Sweetbay magnolia ( <i>Magnolia virginiana</i> )
Bayard's malaxis ( <i>Malaxis bayardii</i> )
American crab ( <i>Malus glaucescens</i> )
Virginia bunchflower ( <i>Melanthium virginicum</i> )
Basil-balm ( <i>Monarda clinopodia</i> )
Green parrot's-feather ( <i>Myriophyllum pinnatum</i> )
Muenschler's naiad ( <i>Najas guadalupensis</i> var. <i>muenschleri</i> )
Southern naiad ( <i>Najas guadalupensis</i> var. <i>olivacea</i> )
Holly-leaved naiad ( <i>Najas marina</i> )
Cut-leaved evening-primrose ( <i>Oenothera laciniata</i> )
Clustered bluets ( <i>Oldenlandia uniflora</i> )
Virginia false gromwell ( <i>Onosmodium virginianum</i> )
Canada ricegrass ( <i>Oryzopsis Canadensis</i> )
Stiff cowbane ( <i>Oxypolis rigidior</i> )
Leiberg's panic grass ( <i>Panicum leibergii</i> )
Few-flowered panic grass ( <i>Panicum oligosanthos</i> var. <i>oligosanthos</i> )
Panic grass ( <i>P. scabriusculum</i> )
Velvet panic grass ( <i>P. scoparium</i> )
Tall flat panic grass ( <i>P. stipitatum</i> )
Wright's panic grass ( <i>P. wrightianum</i> )
Round field beadgrass ( <i>Paspalum laeve</i> var. <i>circulare</i> )
Hairy field beadgrass ( <i>P. laeve</i> var. <i>pilosum</i> )
Slender beadgrass ( <i>P. setaceum</i> var. <i>psammophilum</i> )
Sweet coltsfoot ( <i>Petasites frigidus</i> var. <i>palmatus</i> )
Wild sweet-William ( <i>Phlox maculate</i> )
Downy phlox ( <i>P. pilosa</i> )
Ground-cherry ( <i>Physalis pubescens</i> var. <i>integrifolia</i> )
Virginia ground-cherry ( <i>P. virginiana</i> )
Ninebark ( <i>Physocarpus opulifolius</i> var. <i>intermedius</i> )

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
Virginia pine ( <i>Pinus virginiana</i> )
Orange fringed orchid ( <i>Platanthera ciliaris</i> )
Crested fringed orchid ( <i>P. cristata</i> )
Hooker's orchid ( <i>P. hookeri</i> )
Prairie fringed orchid ( <i>P. leucophaea</i> )
Bluegrass ( <i>Poa cuspidate</i> )
Fernald bluegrass ( <i>P. fernaldiana</i> )
White bluegrass ( <i>P. glauca</i> )
Inland bluegrass ( <i>P. interior</i> )
Slender marsh bluegrass ( <i>Poa paludigena</i> )
Woodland bluegrass ( <i>Poa sylvestris</i> )
Yellow milkwort ( <i>Polygala lutea</i> )
Small's knotweed ( <i>Polygonum buxiforme</i> )
Erect knotweed ( <i>P. Erectum</i> )
Swamp smartweed ( <i>P. setaceum</i> var. <i>Interjectum</i> )
Bear's-foot ( <i>Polymnia uvedalia</i> )
Northern holly-fern ( <i>Polystichum lonchitis</i> )
Water-thread pondweed ( <i>Potamogeton diversifolius</i> )
Slender pondweed ( <i>P. filiformis</i> var. <i>Alpinus</i> )
Sheathed pondweed ( <i>P. filiformis</i> var. <i>Occidentalis</i> )
Ogden's pondweed ( <i>P. Ogdenii</i> )
Straight-leaf pondweed ( <i>P. Strictifolius</i> )
Bushy cinquefoil ( <i>Potentilla paradoxa</i> )
Boott's rattlesnake-root ( <i>Prenanthes boottii</i> )
Nodding rattlesnake-root ( <i>P. Crepidinea</i> )
Dwarf rattlesnake-root ( <i>P. Nana</i> )
Low sand-cherry ( <i>Prunus pumila</i> var. <i>pumila</i> )
Wafer-ash ( <i>Ptelea trifoliata</i> )
Giant pine-drops ( <i>Pterospora andromedea</i> )
Mountain-mint ( <i>Pycnanthemum clinopodioides</i> )
Torrey's mountain-mint ( <i>P. torrei</i> )
Whorled mountain-mint ( <i>P. verticillatum</i> var. <i>pilosum</i> )
Mountain pyrola ( <i>Pyrola minor</i> )
Pixies ( <i>Pyxidantha barbulate</i> )
Willow oak ( <i>Quercus phellos</i> )
Seaside crowfoot ( <i>Ranunculus cymbalaria</i> )
Swamp buttercup ( <i>R. hispidus</i> var. <i>nitidus</i> )
Lapland rosebay ( <i>Rhododendron lapponicum</i> )
Torrey's beakrush ( <i>Rhynchospora torreyana</i> )
Prickly rose ( <i>Rosa acicularis</i> ssp. <i>Sayi</i> )
Shining rose ( <i>R. nitida</i> )
Sand blackberry ( <i>Rubus cuneifolius</i> )
Black-eyed-susan ( <i>Rudbeckia hirta</i> var. <i>hirta</i> )
Heart sorrel ( <i>Rumex hastatulus</i> )
Golden dock ( <i>R. maritimus</i> var. <i>fueginus</i> )
Rose-pink ( <i>Sabatia angularis</i> )

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
Slender marsh-pink ( <i>S. campanulata</i> )
Small-flowered pearlwort ( <i>Sagina decumbens</i> )
Quill-leaf arrowhead ( <i>Sagittaria teres</i> )
Sand dune willow ( <i>Salix cordata</i> )
Dwarf willow ( <i>S. herbacea</i> )
Lyre-leaf sage ( <i>Salvia lyrata</i> )
Purple mountain-saxifrage ( <i>Saxifraga oppositifolia</i> )
White mountain-saxifrage ( <i>S. paniculata</i> )
Curlygrass ( <i>Schizaea pusilla</i> )
Clinton's clubrush ( <i>Scirpus clintonii</i> )
Georgia bulrush ( <i>S. georgianus</i> )
Slender bulrush ( <i>S. heterochaetus</i> )
Seaside bulrush ( <i>S. maritimus</i> )
Saltmarsh bulrush ( <i>S. novae-angliae</i> )
Slender nutrush ( <i>Scleria minor</i> )
Fewflower nutrush ( <i>S. pauciflora</i> var. <i>caroliniana</i> )
Reticulate nutrush ( <i>S. reticularis</i> var. <i>pubescens</i> )
Low nutrush ( <i>S. verticillata</i> )
Hoary skullcap ( <i>Scutellaria incana</i> )
Hyssop-skullcap ( <i>S. integrifolia</i> )
Leedy's roseroot ( <i>Sedum integrifolium</i> ssp. <i>Leedyi</i> )
Roseroot ( <i>Sedum rosea</i> )
Live-forever ( <i>S. telephioides</i> )
Sea purslane ( <i>Sesuvium maritimum</i> )
Michaux's blue-eyed-grass ( <i>Sisyrinchium mucronatum</i> )
False china-root ( <i>Smilax pseudo-china</i> )
Jacob's-ladder ( <i>S. pulverulenta</i> )
Coastal goldenrod ( <i>Solidago elliotii</i> )
Houghton's goldenrod ( <i>S. houghtonii</i> )
Rough goldenrod ( <i>S. rugosa</i> ssp. <i>Aspera</i> )
Tall hairy goldenrod ( <i>S. rugosa</i> var. <i>sphagnophila</i> )
Seaside goldenrod ( <i>S. sempervirens</i> var. <i>Mexicana</i> )
Mountain goldenrod ( <i>Solidago simplex</i> var. <i>racemosa</i> )
Prairie wedgegrass ( <i>Sphenopholis obtusata</i> var. <i>obtusata</i> )
Swamp oats ( <i>S. pensylvanica</i> )
Mountain meadowsweet ( <i>Spiraea septentrionalis</i> )
Spring ladies'-tresses ( <i>Spiranthes vernalis</i> )
Rough rush-grass ( <i>Sporobolus clandestinus</i> )
Pink wild bean ( <i>Strophostyles umbellate</i> )
Narrow-leaf sea-blite ( <i>Suaeda linearis</i> )
Roland's sea-blite ( <i>S. rolandii</i> )
Water awlwort ( <i>Subularia aquatica</i> var. <i>Americana</i> )

<b>ENDANGERED SPECIES</b>
<b>Common Name (Scientific name)</b>
Veiny meadow-rue ( <i>Thalictrum venulosum</i> )
Crane-fly orchid ( <i>Tipularia discolor</i> )
Sticky false asphodel ( <i>Tofieldia glutinosa</i> )
Filmy fern ( <i>Trichomanes intricatum</i> )
Tiny blue-curls ( <i>Trichostema setaceum</i> )
Nodding trillium ( <i>Trillium flexipes</i> )
Toad-shade ( <i>T. sessile</i> )
Nodding pogonia ( <i>Triphora trianthophora</i> )
Melic-oats ( <i>Trisetum melicoides</i> )
Large floating bladderwort ( <i>Utricularia inflata</i> )
Mountain bellwort ( <i>Uvularia puberula</i> var. <i>nitida</i> )
Dwarf blueberry ( <i>Vaccinium cespitosum</i> )
Marsh valerian ( <i>Valeriana uliginosa</i> )
Goosefoot corn-salad ( <i>Valerianella chenopodiifolia</i> )
Corn-salad ( <i>V. umbilicata</i> )
Tall ironweed ( <i>Vernonia gigantea</i> )
Possum-haw ( <i>Viburnum nudum</i> var. <i>nudum</i> )
Coastal violet ( <i>Viola brittoniana</i> var. <i>brittoniana</i> )
Southern wood violet ( <i>V. hirsutula</i> )
Northern bog violet ( <i>V. nephrophylla</i> )
New England violet ( <i>V. novae-angliae</i> )
Winter grape ( <i>Vitis vulpina</i> )
Appalachian vittaria ( <i>Vittaria appalachiana</i> )
Alpine woodsia ( <i>Woodsia alpina</i> )
Smooth woodsia ( <i>W. glabella</i> )

<b>THREATENED NATIVE PLANTS Common Name (Scientific name)</b>
Northern monk's-hood ( <i>Aconitum noveboracense</i> )
Northern gerardia ( <i>Agalinis paupercula</i> var. <i>borealis</i> )
Yellow giant-hyssop ( <i>Agastache nepetoides</i> )
Woodland agrimony, ( <i>Agrimonia rostellata</i> )
Northern bentgrass ( <i>Agrostis mertensii</i> )
Stargrass ( <i>Aletris farinose</i> )
Wild onion ( <i>Allium cernuum</i> )
Green rock-cress ( <i>Arabis missouriensis</i> )
Swamp pink ( <i>Arethusa bulbosa</i> )
Green milkweed ( <i>Asclepias viridiflora</i> )
Pawpaw ( <i>Asimina triloba</i> )
Mountain spleenwort ( <i>Asplenium montanum</i> )
Hart's-tongue fern ( <i>A. scolopendrium</i> var. <i>americanum</i> )
Rush aster ( <i>Aster borealis</i> )
Heath aster ( <i>A. pilosus</i> var. <i>pringlei</i> )
Flax-leaf whitetop ( <i>A. solidagineus</i> )
Showy aster ( <i>A. spectabilis</i> )
Saltmarsh aster ( <i>A. subulatus</i> )
Swamp birch ( <i>Betula pumila</i> )
Smooth bur-marigold ( <i>Bidens laevis</i> )
Northern reedgrass ( <i>Calamagrostis stricta</i> ssp. <i>Inexpansa</i> )
Terrestrial starwort ( <i>Callitriche terrestris</i> )
Long's bittercress ( <i>Cardamine longii</i> )
Thicket sedge ( <i>Carex abscondita</i> )
Rocky mountain sedge ( <i>C. backii</i> )
Bicknell's sedge ( <i>C. bicknellii</i> )
Bigelow's sedge ( <i>C. bigelowii</i> )
Brown bog sedge ( <i>C. buxbaumii</i> )
Creeping sedge ( <i>C. chordorrhiza</i> )
Crawe's sedge ( <i>C. crawei</i> )
Clustered sedge ( <i>C. cumulate</i> )
Davis' sedge ( <i>C. davisii</i> )
Handsome sedge ( <i>C. Formosa</i> )
Hitchcock's sedge ( <i>C. hitchcockiana</i> )
Marsh straw sedge ( <i>C. hormathodes</i> )
Houghton's sedge ( <i>C. houghtoniana</i> )
Nebraska sedge ( <i>C. jamesii</i> )
Fernald's sedge ( <i>C. merritt-fernaldii</i> )
Mitchell's sedge ( <i>C. mitchelliana</i> )
Troublesome sedge ( <i>C. molesta</i> )
Sartwell's sedge ( <i>C. sartwellii</i> )
Schweinitz' sedge ( <i>C. schweinitzii</i> )
Weak stellate sedge ( <i>C. seorsa</i> )
Cat-tail sedge ( <i>C. typhina</i> )
Willdenow's sedge ( <i>C. willdenowii</i> )
Big shellbark hickory ( <i>Carya laciniosa</i> )

<b>THREATENED NATIVE PLANTS Common Name (Scientific name)</b>
Dune sandspur ( <i>Cenchrus tribuloides</i> )
Prickly hornwort ( <i>Ceratophyllum echinatum</i> )
Blazing-star ( <i>Chamaelirium luteum</i> )
Red pigweed ( <i>Chenopodium rubrum</i> )
Golden corydalis ( <i>Corydalis aurea</i> )
Hop sedge ( <i>Cyperus lupulinus</i> ssp. <i>Lupulinus</i> )
Ram's-head ladyslipper ( <i>Cypripedium arietinum</i> )
Little-leaf tick-trefoil ( <i>Desmodium ciliare</i> )
Diapensia ( <i>Diapensia lapponica</i> )
Slender crabgrass ( <i>Digitaria filiformis</i> )
Persimmon ( <i>Diospyros virginiana</i> )
Rock-cress ( <i>Draba arabisans</i> )
Carolina whitlow-grass ( <i>D. reptans</i> )
Knotted spikerush ( <i>Eleocharis equisetoides</i> )
Salt-marsh spikerush ( <i>E. halophila</i> )
Long-tubercled spikerush ( <i>Ei. tuberculosa</i> )
Meadow horsetail ( <i>Equisetum pretense</i> )
Marsh horsetail ( <i>E. palustre</i> )
White boneset ( <i>Eupatorium album</i> var. <i>subvenosum</i> )
Fringed boneset ( <i>E. hyssopifolium</i> var. <i>laciniatum</i> )
Marsh fimbry ( <i>Fimbristylis castanea</i> )
Green gentian ( <i>Frasera caroliniensis</i> )
Carolina cranesbill ( <i>Geranium carolinianum</i> var. <i>sphaerospermum</i> )
Prairie-smoke ( <i>Geum triflorum</i> )
Mock-pennyroyal ( <i>Hedeoma hispidum</i> )
Bushy rockrose ( <i>Helianthemum dumosum</i> )
Swamp sunflower ( <i>Helianthus angustifolius</i> )
Featherfoil ( <i>Hottonia inflata</i> )
Appalachian firmoss ( <i>Huperzia appalachiana</i> )
Golden-seal ( <i>Hydrastis Canadensis</i> )
Shrubby St. John's-wort ( <i>Hypericum prolificum</i> )
Slender blue flag ( <i>Iris prismatica</i> )
Twin-leaf ( <i>Jeffersonia diphylla</i> )
Arctic rush ( <i>Juncus trifidus</i> )
Slender pinweed ( <i>Lechea tenuifolia</i> )
Velvety lespedeza ( <i>Lespedeza stuevei</i> )
Northern blazing-star ( <i>Liatris borealis</i> )
Lilaeopsis ( <i>Lilaeopsis chinensis</i> )
Sandplain wild flax ( <i>Linum intercursum</i> )
Southern yellow flax ( <i>L. Medium</i> var. <i>Texanum</i> )
Yellow wild flax ( <i>Li. Sulcatum</i> )
Globe-fruited ludwigia ( <i>Ludwigia sphaerocarpa</i> )
Water-marigold ( <i>Megalodonta beckii</i> var. <i>Beckii</i> )
Appalachian sandwort ( <i>Minuartia glabra</i> )
Water milfoil ( <i>Myriophyllum alterniflorum</i> )
Farwell's water milfoil ( <i>M. Farwellii</i> )

<b>THREATENED NATIVE PLANTS Common Name (Scientific name)</b>
Evening primrose ( <i>Oenothera parviflora</i> var. <i>Oakesiana</i> )
Golden club ( <i>Orontium aquaticum</i> )
Violet wood-sorrel ( <i>Oxalis violacea</i> )
Wiry panic grass ( <i>Panicum flexile</i> )
Slender beadgrass ( <i>Paspalum setaceum</i> var. <i>Setaceum</i> )
Swamp lousewort ( <i>Pedicularis lanceolata</i> )
Smooth cliff brake ( <i>Pellaea glabella</i> )
Butterwort ( <i>Pinguicula vulgaris</i> )
Heartleaf plantain ( <i>Plantago cordata</i> )
Seaside plantain ( <i>Plantago maritima</i> ssp. <i>Juncooides</i> )
Riverweed ( <i>Podostemum ceratophyllum</i> )
Carey's smartweed ( <i>Polygonum careyi</i> )
Douglas knotweed ( <i>P. Douglassii</i> )
Opelousa smartweed ( <i>P. Hydropiperoides</i> var. <i>Opelousanum</i> )
Swamp cottonwood ( <i>Populus heterophylla</i> )
Northern pondweed ( <i>Potamogeton alpinus</i> )
Algae-like pondweed ( <i>P. Confervoides</i> )
Hill's pondweed ( <i>P. Hillii</i> )
Spotted pondweed ( <i>P. Pulcher</i> )
Silverweed ( <i>Potentilla anserina</i> ssp. <i>Egedii</i> )
Bird's-eye primrose ( <i>Primula mistassinica</i> )
Comb-leaved mermaid-weed ( <i>Proserpinaca pectinata</i> )
Dwarf sand-cherry ( <i>Prunus pumila</i> var. <i>Depressa</i> )
Blunt mountain-mint ( <i>Pycnanthemum muticum</i> )
Whorled mountain-mint ( <i>P. Verticillatum</i> var. <i>Verticillatum</i> )
Pink wintergreen ( <i>Pyrola asarifolia</i> )
Small-flowered crowfoot ( <i>Ranunculus micranthus</i> )
Rhodora ( <i>Rhododendron canadense</i> )
Drowned horned bush ( <i>Rhynchospora inundata</i> )
Short-beaked bald-rush ( <i>Rhynchospora nitens</i> )
Lake-cress ( <i>Rorippa aquatica</i> )
Tooth-cup ( <i>Rotala ramosior</i> )
Sea-pink ( <i>Sabatia stellaris</i> )
Spongy arrowhead ( <i>Sagittaria calycina</i> var. <i>Spongiosa</i> )
Dwarf glasswort ( <i>Salicornia bigelovii</i> )
Balsam willow ( <i>Salix pyrifolia</i> )
Bearberry willow ( <i>Salix uva-ursi</i> )
Yellow mountain-saxifrage ( <i>Saxifraga aizoides</i> )
Deer's hair sedge ( <i>Scirpus cespitosus</i> )
Whip nutrush ( <i>Scleria triglomerata</i> )
Alpine goldenrod ( <i>Solidago multiradiata</i> var.

<b>THREATENED NATIVE PLANTS Common Name (Scientific name)</b>
<i>Arctica</i> )
Ohio goldenrod ( <i>S. Ohioensis</i> )
Stiff-leaf goldenrod ( <i>S. Rigida</i> )
Mountain goldenrod ( <i>S. Simplex</i> var. <i>Randii</i> )
Small bur-reed ( <i>Sparganium nutans</i> )
Northern dropseed ( <i>Sporobolus heterolepis</i> )
Rough hedge-nettle ( <i>Stachys hyssopifolia</i> )
Starwort ( <i>Stellaria longipes</i> )
Marsh arrow-grass ( <i>Triglochin palustre</i> )
Northern gamma grass ( <i>Tripsacum dactyloides</i> )
Cork elm ( <i>Ulmus thomasi</i> )
Rush bladderwort ( <i>Utricularia juncea</i> )
Lesser bladderwort ( <i>U. Minor</i> )
Small floating bladderwort ( <i>U. Radiate</i> )
Bladderwort ( <i>U. Striata</i> )
High-mountain blueberry ( <i>Vaccinium boreale</i> )
Wingstem ( <i>Verbesina alternifolia</i> )
Culver's root ( <i>Veronicastrum virginicum</i> )
Southern arrowwood ( <i>Viburnum dentatum</i> var. <i>Venosum</i> )
Squashberry ( <i>Viburnum edule</i> )
Primrose violet ( <i>Viola primulifolia</i> )
White camas ( <i>Zigadenus elegans</i> ssp. <i>Glaucus</i> )

<b>RARE SPECIES</b>
<b>Common Name (Scientific name)</b>
Fascicled gerardia ( <i>Agalinis fasciculata</i> )
Estuary beggar-ticks ( <i>Bidens bidentoides</i> )
False hop sedge ( <i>Carex lupuliformis</i> )
Atlantic white-cedar ( <i>Chamaecyparis thyoides</i> )
Rose coreopsis ( <i>Coreopsis rosea</i> )
Schweinitz's flatsedge ( <i>Cyperus schweinitzii</i> )
Dewthread ( <i>Drosera filiformis</i> )
Black crowberry ( <i>Empetrum nigrum</i> ssp. <i>Hermaphroditicum</i> )
Dwarf umbrella-sedge ( <i>Fuirena pumila</i> )
Large-spored quillwort ( <i>Isoetes lacustris</i> )
Illinois pinweed ( <i>Lechea racemulosa</i> )
Bush clover ( <i>Lespedeza angustifolia</i> )
Trailing lespedeza ( <i>L. Repens</i> )
Violet lespedeza ( <i>L. Violacea</i> )
Mudwort ( <i>Limosella australis</i> )
Stiff yellow flax ( <i>Linum striatum</i> )
Nuttall's lobelia ( <i>Lobelia nuttallii</i> )
Winged monkeyflower ( <i>Mimulus alatus</i> )
Pine-barren sandwort ( <i>Minuartia caroliniana</i> )
Jack pine ( <i>Pinus banksiana</i> )
Jacob's-ladder ( <i>Polemonium vanbruntiae</i> )
Seabeach knotweed ( <i>Polygonum glaucum</i> )
Slender knotweed ( <i>P. Tenue</i> )
Long-beaked bald-rush ( <i>Rhynchospora scirpoides</i> )
Pod grass ( <i>Scheuchzeria palustris</i> )
Spreading globeflower ( <i>Trollius laxus</i> ssp. <i>Laxus</i> )
Bog bilberry ( <i>Vaccinium uliginosum</i> )



<b>EXPLOITABLY VULNERABLE NATIVE PLANTS</b>
<b>Common Name (Scientific name)</b>
White baneberry ( <i>Actaea pachypoda</i> )
Red baneberry ( <i>Actaea spicata</i> ssp. <i>Rubra</i> )
Green dragon ( <i>Arisaema dracontium</i> )
Butterfly-weed ( <i>Asclepias anadens</i> )
Harebell ( <i>Campanula rotundifolia</i> )
American bittersweet ( <i>Celastrus scandens</i> )
Turtle-heads ( <i>Chelone glabra</i> )
Spotted wintergreen ( <i>Chimaphila anadens</i> )
Pipsissewa ( <i>Chimaphila anadensi</i> )
Speckled woodlily ( <i>Clintonia umbellulata</i> )
Squawroot ( <i>Conopholis anadensi</i> )
Flowering dogwood ( <i>Cornus florida</i> )
Sundew ( <i>Drosera intermedia</i> )
Sundew ( <i>D. Rotundifolia</i> )
Trailing arbutus ( <i>Epigaea repens</i> )
Running strawberry-bush ( <i>Euonymus obovata</i> )
Closed gentian ( <i>Gentiana andrewsii</i> )
Blind gentian ( <i>Gentiana clausa</i> )
Closed gentian ( <i>G. Linearis</i> )
Stiff gentian ( <i>Gentianella quinquefolia</i> )
Fringed gentian ( <i>Gentianopsis crinita</i> )
Gallberry ( <i>Ilex glabra</i> )
Smooth winterberry ( <i>I. Laevigata</i> )
Mountain winterberry ( <i>I. Montana</i> )
American holly ( <i>I. Opaca</i> )
Black alder ( <i>I. Verticillata</i> )
Butternut ( <i>Juglans cinerea</i> )
Sheep laurel ( <i>Kalmia angustifolia</i> )
Mountain laurel ( <i>K. Latifolia</i> )
Bog laurel ( <i>K. Polifolia</i> )
Canada lily ( <i>L. Canadense</i> )
Woodlily ( <i>L. Philadelphicum</i> )
Turk's-cap lily ( <i>L. Superbum</i> )
Sea lavender ( <i>Limonium carolinianum</i> )
Cardinal-flower ( <i>L. Cardinalis</i> )
Water lobelia ( <i>L. Dortmanna</i> )
Great lobelia ( <i>L. Siphilitica</i> )
Virginia bluebells ( <i>Mertensia virginica</i> )
Bee-balm ( <i>Monarda didyma</i> )
Bayberry ( <i>Myrica pensylvanica</i> )
Eastern prickly pear ( <i>Opuntia humifusa</i> )
Ginseng ( <i>Panax quinquefolius</i> )
Grass-of-Parnassus ( <i>Parnassia glauca</i> )
Smooth azalea ( <i>Rhododendron arborescens</i> )
Great laurel ( <i>R. Maximum</i> )
Pinkster ( <i>R. Periclymenoides</i> )
Early azalea ( <i>R. Prinophyllum</i> )
Swamp azalea ( <i>R. Viscosum</i> )

<b>EXPLOITABLY VULNERABLE NATIVE PLANTS</b>
<b>Common Name (Scientific name)</b>
Bloodroot ( <i>Sanguinaria anadensis</i> )
Pitcher-plant ( <i>Sarracenia purpurea</i> )
Wild pink ( <i>Silene caroliniana</i> )
Nodding trillium ( <i>Trillium cernuum</i> )
Purple trillium ( <i>Trillium erectum</i> )
White trillium ( <i>Trillium grandiflorum</i> )
Painted trillium ( <i>Trillium undulatum</i> )
Bird's-foot violet ( <i>Viola pedata</i> )
<b>All native clubmosses, including:</b>
Shining firmoss ( <i>Huperzia lucidula</i> )
Foxtail clubmoss ( <i>Lycopodiella alopecuroides</i> )
Swamp clubmoss ( <i>L. Appressa</i> )
Northern bog clubmoss ( <i>L. Inundata</i> )
Bristly clubmoss ( <i>L. Annotinum</i> )
Running cedar ( <i>L. Clavatum</i> )
Northern tree clubmoss ( <i>L. Dendroideum</i> )
Running-pine ( <i>L. Digitatum</i> )
Ground pine ( <i>L. Obscurum</i> )
Ground cedar ( <i>L. Tristachyum</i> )
<b>All native ferns, (except Bracken, <i>Pteridium aquilinum</i>, Hay-scented, <i>Dennstaedtia punctilobula</i>, and Sensitive fern, <i>Onoclea sensibilis</i>), including:</b>
Maidenhair fern ( <i>Adiantum pedatum</i> )
Ebony spleenwort ( <i>Asplenium platyneuron</i> )
Walking fern ( <i>A. Rhizophyllum</i> )
Wall-rue spleenwort ( <i>A. Ruta-muraria</i> )
Maidenhair spleenwort ( <i>A. Trichomanes</i> )
Lady fern ( <i>Athyrium filix-femina</i> )
Mosquito-fern ( <i>Azolla caroliniana</i> )
Cut-leaf grape fern ( <i>Botrychium dissectum</i> )
Lance-leaf grape fern ( <i>B. Lanceolatum</i> )
Matricary grape fern ( <i>B. Matricariifolium</i> )
Leathery grape fern ( <i>B. Multifidum</i> )
Least moonwort ( <i>B. Simplex</i> )
Rattlesnake fern ( <i>B. Virginianum</i> )
Slender cliff brake ( <i>Cryptogramma stelleri</i> )
Bulblet fern ( <i>Cystopteris bulbifera</i> )
Common fragile fern ( <i>C. fragilis</i> )
Fragile fern ( <i>Cystopteris tenuis</i> )
Silvery spleenwort ( <i>Deparia acrostichoides</i> )
Glade fern ( <i>Diplazium pycnocarpon</i> )
Mountain wood fern ( <i>Dryopteris campyloptera</i> )
Spinulose wood fern ( <i>D. carthusiana</i> )
Clinton's shield fern ( <i>D. clintoniana</i> )

<b>EXPLOITABLY VULNERABLE NATIVE PLANTS</b>
<b>Common Name (Scientific name)</b>
Crested wood fern ( <i>D. cristata</i> )
Giant wood fern ( <i>D. goldiana</i> )
Common wood fern ( <i>D. intermedia</i> )
Marginal wood fern ( <i>D. marginalis</i> )
Oak fern ( <i>Gymnocarpium dryopteris</i> )
Ostrich fern ( <i>Matteuccia struthiopteris</i> )
Adder's-tongue ( <i>Ophioglossum pusillum</i> )
Cinnamon fern ( <i>Osmunda cinnamomea</i> )
Interrupted fern ( <i>O. claytoniana</i> )
Royal fern ( <i>O. regalis</i> )
Purple cliff brake ( <i>Pellaea atropurpurea</i> )
Northern beech fern ( <i>Phegopteris connectilis</i> )
Broad beech fern ( <i>P. hexagonoptera</i> )
Rock polypody ( <i>Polypodium virginianum</i> )
Christmas fern ( <i>Polystichum acrostichoides</i> )
Braun's holly fern ( <i>P. braunii</i> )
Water-fern ( <i>Salvinia minima</i> )
New York fern ( <i>Thelypteris noveboracensis</i> )
Marsh fern ( <i>T. palustris</i> )
Massachusetts fern ( <i>T. simulata</i> )
Rusty woodsia ( <i>Woodsia ilvensis</i> )
Blunt-lobed woodsia ( <i>W. obtusa</i> )
Netted chain fern ( <i>Woodwardia areolata</i> )
Virginia chain fern ( <i>W. virginica</i> )
<b>All native orchids, including:</b>
Grass pink ( <i>Calopogon tuberosus</i> )
Long-bracted orchid ( <i>Coeloglossum viride</i> )
Spotted coralroot ( <i>Corallorhiza maculata</i> )
Autumn coralroot ( <i>C. odontorhiza</i> )
Pink ladyslipper ( <i>Cypripedium acaule</i> )
Small yellow ladyslipper ( <i>C. parviflorum</i> var. <i>makasin</i> )

<b>EXPLOITABLY VULNERABLE NATIVE PLANTS</b>
<b>Common Name (Scientific name)</b>
Yellow ladyslipper ( <i>C. parviflorum</i> var. <i>pubescens</i> )
Showy ladyslipper ( <i>C. reginae</i> )
Showy orchis ( <i>Galearis spectabilis</i> )
Downy rattlesnake-plantain ( <i>Goodyera pubescens</i> )
Dwarf rattlesnake-plantain ( <i>G. repens</i> )
Rattlesnake-plantain ( <i>G. tessellata</i> )
Large whorled pogonia ( <i>Isotria verticillata</i> )
Bog twayblade ( <i>Liparis loeselii</i> )
Heartleaf twayblade ( <i>Listera cordata</i> )
White adder's-mouth ( <i>Malaxis monophyllos</i> )
Green adder's-mouth ( <i>M. unifolia</i> )
Northern green orchid ( <i>Platanthera aquilonis</i> )
White fringed orchid ( <i>P. blephariglottis</i> )
Green woodland orchid ( <i>P. clavellata</i> )
Bog-candle ( <i>P. dilatata</i> )
Tuberclad orchid ( <i>P. flava</i> )
Large purple fringed orchid ( <i>P. grandiflora</i> )
Tall Northern green orchid ( <i>P. huronensis</i> )
Ragged fringed orchid ( <i>P. lacera</i> )
Blunt-leaved orchid ( <i>P. obtusata</i> )
Large round-leaved orchid ( <i>P. orbiculata</i> )
Small purple fringed orchid ( <i>P. psycodes</i> )
Rose pogonia ( <i>Pogonia ophioglossoides</i> )
Lady's-tresses ( <i>Spiranthes casei</i> )
Nodding lady's-tresses ( <i>S. cernua</i> )
Slender lady's-tresses ( <i>S. lacera</i> )
Wide-leaved lady's-tresses ( <i>S. lucida</i> )
Creamy lady's-tresses ( <i>S. ochroleuca</i> )
Hooded lady's-tresses ( <i>S. romanzoffiana</i> )
Little lady's-tresses ( <i>S. tuberosa</i> )

### III.E.1.c Field Survey

John Chitty, an ecologist/wetlands specialist, conducted field surveys in December 2006, outside the growing season, and in June 2007, during the growing season. These surveys are documented in the Wetland Delineation and Assessment Report, included in its entirety in Appendix 4 of this DEIS. The purpose was to delineate natural plant communities and wildlife habitat and document any observed species that are threatened, endangered, or of special concern.

The attention of the field study is focused on the north portion of the project site where it is bounded by an unnamed tributary of the Dwaarkill that flows from west to east into the Dwaarkill. The 100-year floodplain boundary reaches up this unnamed tributary but is outside of the disturbed area on the project site. Included also in the field study is the

forested wetland area in the western portion of the project site. These areas are divided into three wetland areas. Area 1 consists of 1.85 acre riverine forested wetland that is a moderate quality aquatic resource; Area 2 encompasses 2.56 acres of emergent marsh with patches of forest cover that is a low to moderate quality aquatic resource, and Area 3, on the western boundary, is a 22.03 acre forested wetland area that is a moderate to high quality aquatic resource. The study delineation areas are shown in plan in Figure III.E-3. Figure III.E-4 presents an aerial view of the project site showing existing vegetative cover. In addition to the wetlands delineation, a study of upland area in the vicinity of Areas 1 to 3 was conducted and documented.

Commenting on the Small Whorled Pogonia, the Wetland Delineation and Assessment Report, stated: "Natural vegetated wetland and upland areas within the study area may be appropriate habitat. Landscaped residential areas, seeded pasture and marsh areas impacted by dense invasive species, such as multiflora rose and purple loosestrife, which force out native plants, are not appropriate habitat for these species. These plant species were not encountered during the indicated field studies."<sup>8</sup>

During these studies, no threatened or endangered species such as the small whorled pogonia, northern monkshood, or any other species confidentially designated by the DEC were encountered. The need for additional field studies is not anticipated because the applicant assumes that such species could exist in these protected natural areas and is committed to the protection of these areas.

A list of plant species observed on the project site, including common and botanical names of woody and non-woody plants, is presented in Tables III.E-2 and III.E-3.

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<sup>8</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.





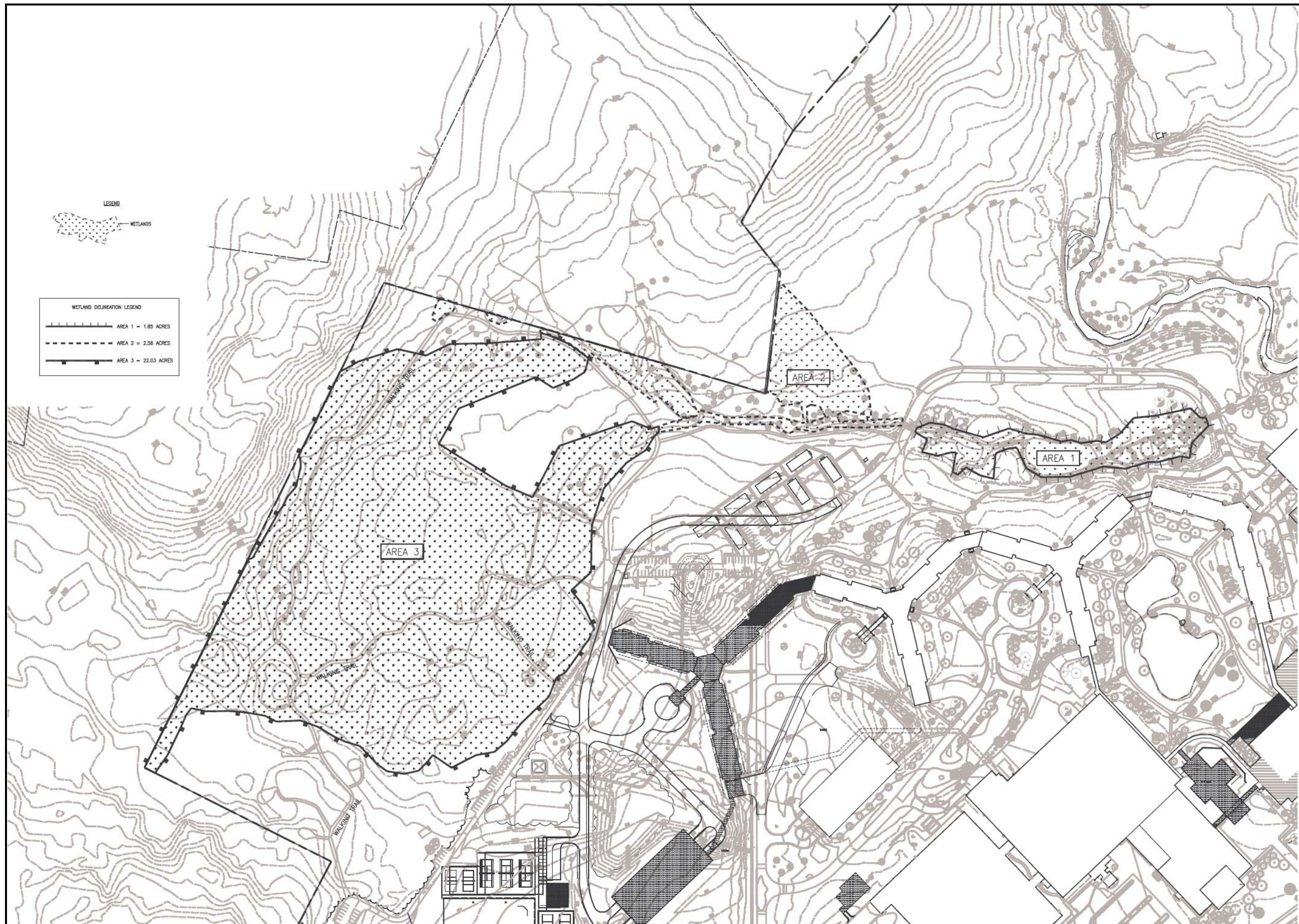


Figure III.E-3 Wetlands Delineation Map









Figure III.E-4 Aerial View from North of Project Site







**Table III.E-2 Vegetation Observed on the Project Site—Wetlands and Emergent Marsh**

<b>Common Name (Scientific name)</b>	
<b>TREES</b>	<b>HERBACEOUS PLANTS</b>
Red maple ( <i>Acer rubrum</i> )	Royal fern ( <i>Osmunda regalis</i> )
Silver maple ( <i>A. saccharinum</i> )	Sensitive fern ( <i>Onoclea sensibilis</i> )
Box-elder ( <i>A. negundo</i> )	Garlic mustard ( <i>Alliaria petiolata</i> )
Green ash ( <i>Fraxinus pennsylvanica</i> )	Arrow-leaved tearthumb ( <i>Polygonum sagittatum</i> )
American elm ( <i>Ulmus Americana</i> )	White snakeroot ( <i>Eupatorium rugosum</i> )
Pin oak ( <i>Quercus palustris</i> )	Spotted jewelweed ( <i>Impatiens capensis</i> )
Sycamore ( <i>Platanus occidentalis</i> )	Cardinal-flower ( <i>Lobelia cardinalis</i> )
River birch ( <i>Betula nigra</i> )	Skunk-cabbage ( <i>Symplocarpus foetidus</i> )
Black willow ( <i>Salix nigra</i> )	Tussock sedge ( <i>Carex stricta</i> )
	Purple loosestrife
<b>SHRUBS</b>	<b>MARSH SPECIES</b>
Spicebush ( <i>Lindera benzoin</i> )	Cattails ( <i>Typhya spp.</i> )
Highbush blueberry ( <i>Vaccinium corymbosum</i> )	Spikerushes ( <i>Eleocharis spp.</i> )
Winterberry ( <i>Ilex verticellata</i> )	Sedges ( <i>Carex and Cyperus spp.</i> )
Silky dogwood ( <i>cornus amomum</i> )	Smartweeds ( <i>Polygonum spp.</i> )
Multiflora rose ( <i>Rosa multiflora</i> )	Arrow-aram ( <i>Peltandra virginica</i> )
Blackberry brambles ( <i>Rubus pensylvanicum</i> ).	Pondweeds ( <i>Potamogeton spp.</i> )
	Swamp loosestrife ( <i>Decondon verticillatus</i> )
	Common reed ( <i>Phragmites australis</i> )
	Spatterdocks ( <i>Nuphar spp.</i> )
	Duckweeds ( <i>Lemna spp.</i> )
	Red canary grass ( <i>Phalaris arundinacea</i> )
	Swamp milkweed ( <i>Asclepias incarnata</i> )
	Joe-pye-weeds ( <i>Eupatorium spp.</i> )

**Table III.E-3 Vegetation Observed on the Project Site—Upland Forests and Grasslands**

<b>Common Name (Scientific name)</b>	
<b>TREES</b>	<b>HERBACEOUS PLANTS</b>
White oak ( <i>Quercus alba</i> )	Mayapple ( <i>Podophyllum peltatum</i> )
Chestnut oak ( <i>Q. prinus</i> )	Wild ginger ( <i>asarum canadense</i> )
Red oak ( <i>Q. rubra</i> )	Garlic mustard ( <i>Alliaria petiolata</i> )
Black oak ( <i>Q. velutina</i> )	New York fern ( <i>Thelypteris noveboracensis</i> )
Pignut hickory ( <i>Carya glabra</i> )	Christmas fern ( <i>Polystichum acrostichoides</i> )
Shagbark hickory ( <i>C. ovata</i> )	Marginal wood fern ( <i>Dryopteris marginalis</i> )
Red and sugar maple ( <i>Acer saccharum</i> )	Bracken ( <i>Pteridium aquilinum</i> )
White ash ( <i>Fraxinus Americana</i> )	
Tulip tree ( <i>Liriodendron tulipifera</i> )	<b>GRASSES</b>
Black Cherry ( <i>Prunus serotina</i> )	Orchard grass ( <i>Dactylis glomerata</i> )
Yellow birch ( <i>Betula alleghaniensis</i> )	Timothy ( <i>Phleum pratense</i> )
Black birch ( <i>B. lenta</i> )	Kentucky bluegrass ( <i>Poa pratensis</i> )
Flowering dogwood ( <i>cornus florida</i> )	Smooth brome ( <i>Bromus inermis</i> )
Sassafras ( <i>Sassafras albidum</i> )	Reed canary-grass
Hemlock ( <i>tsuga Canadensis</i> )	Big bluestem ( <i>Andropogon gerardii</i> )
Eastern red cedar ( <i>Juniperus virginiana</i> )	Little bluestem ( <i>Schizachyruim scoparium</i> )
	Indian grass ( <i>Sorghastrum nutans</i> )
<b>SHRUBS</b>	Switchgrass ( <i>Panicum virgatum</i> )
Maple-leaf viburnum ( <i>Viburnum acerifolium</i> )	
Japanese barberry ( <i>Berberis thunbergii</i> )	<b>BROADLEAF PLANTS</b>
Witchhazel ( <i>Hamamelis virginiana</i> )	Goldenrods ( <i>Solidago spp.</i> )
Black-haw ( <i>Viburnum prunifolium</i> )	Asters ( <i>Aster spp.</i> )
Spicebush ( <i>Lindera benzoin</i> )	Common milkweed ( <i>asclepias syriaca</i> )
	Canada thistle ( <i>Cirsium arvense</i> )
	Wild bergamont ( <i>Monarda fistulosa</i> )
	Ox-eye daisy ( <i>Chrysanthemum leucanthemum</i> )
	Common mullein ( <i>Verbascum thapsus</i> )

**POTENTIAL IMPACTS**

III.E.1.d Evaluation of Potential Impacts on Resources

The area of disturbance for the proposed project would affect a total of 46 acres. This would include the disturbance of 27.1 acres of lawns, ornamentals, and other landscaping, 5.9 acres of roads, buildings and other paved surfaces, and 13.0 acres of fenced pasture that has been in agricultural use as pasture or cropland for decades. The proposed project has been sited to avoid the removal of any natural plant

communities. Therefore, the proposed project should result in no potential loss and/or reduction of function for natural plant communities. By the conclusion of the proposed project the previously disturbed area will contain 0.7 acres of water surface area, 9.4 acres of roads, building and other paved surfaces, and 35.9 acres of lawns, planting, and landscaping. The applicant's landscaping includes protective vegetative cover of mowed lawn (which provides emergency access for emergency services equipment), ornamental trees, shrubs, and maintained flower gardens, all of which prevent any active soil erosion on these areas.

During construction, erosion and sediment could cause potential direct and indirect impacts to native plant communities—if unmitigated. An erosion and sediment control plan has been prepared to minimize these impacts and measures would be implemented before the beginning of construction. Therefore, construction-related impacts would be minimal.—See Section III.A.

Potential impacts to wetland vegetation associated with the effect of increased water demand on groundwater recharge were also assessed. The wetland areas are not within the drainage area that contributes to the existing reservoirs that supply water to the site. In addition, these areas are upstream of these reservoirs. Therefore, there are no direct or indirect impacts to the wetland vegetation due to the proposed increase in water demand.

Another potential impact to wetland vegetation could be caused by the disruption of wetland hydrology by affecting the flow pattern or connectivity of the on-site wetlands or streams. The proposed improvements would be located outside the majority of the catchment area for the wetlands and would not disrupt the flow pattern. Upland areas would remain undisturbed.

Impacts on native plant communities also occur where the protective buffers are disturbed. The proposed improvements would involve disturbance adjacent to these protected areas. However, the existing areas adjacent to wetlands do not consist of natural vegetation. They are paved or landscaped with turf-grassed lawn. After the proposed buffer restoration described below, only minimal impacts due to disturbance within the buffers are expected. In fact, the quality of natural plant communities would be enhanced as these restored buffers would provide increased protection for threatened and endangered species that are expected to exist on the site.

## ***MITIGATION MEASURES***

### **III.E.1.e Avoidance of Sensitive Ecological Habitat and Site Design**

The Town of Shawangunk Comprehensive Plan (July 2003) includes several recommendations under Section B. Natural Features. The first recommendation is to “Establish Conservation Subdivision procedures in the Zoning Ordinance.” It explains:

Under conservation subdivision techniques, the density of development is not affected. Rather the approach is to configure the development so that it has minimal impact on the important resources associated with the land to be developed. Thus the first step in the subdivision process

is not to lay out house lots, but rather to identify the physical location of environmental and cultural resources on the property that are worthy of protection. Once the resources to be protected have been defined and mapped, the next step is to map the areas where development can take place.

The second, closely related recommendation is to “Encourage Documentation of the Important Resources to be Protected by the Conservation Subdivision Process.” It explains:

“Clearly, one of the most important elements in the conservation subdivision process i[s] to have a thorough grasp of the resources that should be conserved during the subdivision process. Some of these resources include areas with steep slopes, stream and river corridors along with important historic and cultural resources worthy of preservation. All of these should be addressed in a conservation subdivision process.”

While the applicant does not propose a residential subdivision, which is specifically recommended for the conservation mapping described by the Town of Shawangunk Comprehensive Plan, the applicant has incorporated the concept presented of identifying important natural resources early in the planning process. This is in harmony with steps taken by the Town of Shawangunk Planning Board to incorporate the above recommendations by endorsing Habitat Assessment Guidelines—Town of Shawangunk (November 28, 2006). As noted in the cover message from the Planning Board Chair, “Shawangunk’s approach uses Habitat Assessment early in the process to establish the environmental constraints and guide the plan before the applicant invests significant time and money in design and engineering.”

The proposed project has been sited specifically to avoid sensitive ecological habitat in the interests of low impact development. As noted in this DEIS in Section V Alternatives, an option was considered that would have had an increased potential impact on existing wetlands; however, as observed by the DEC in correspondence dated January 25, 2008, page 2, “the project is generally restricted to redevelopment of areas previously disturbed[.]” The design of the proposed project also incorporates a two-story parking garage, which reduces the impervious coverage and resultant stormwater runoff associated with surface parking lots.

Erosion and Sedimentation Control Measures (ESCM) are described as part of the Stormwater Pollution Prevention Plan (SWPPP) complying with NYS DEC permit requirements in Section III.A.2 and Appendix 13, located in Volume 2 of this DEIS. Mitigation measures include preservation measures around existing vegetation, removal and stockpiling of topsoil, silt fence installations, construction of temporary sediment basins, construction of earth dikes, temporary stabilization techniques, dust control, and storm drain inlet protection. Also, potential runoff of chemicals utilized in landscape activities is contained in detention areas or filtered through vegetated areas before release to surrounding drainages.

#### III.E.1.f Restoration of Buffers

The proposed improvements would include the restoration of approximately 13 acres of wetland buffer. (See Figure III.E-7) The restored buffers protect native wetland

vegetation from invasive plant species, filter runoff from adjacent areas, and moderate water fluctuations. The buffers would also impede runoff and allow for percolation into the ground.

### III.E.2 Fish and Wildlife

#### **ENVIRONMENTAL SETTING**

##### III.E.2.a Contact NYSDEC and Federal Fish and Wildlife Service

The applicant contacted the New York State Department of Environmental Conservation Division of Fish, Wildlife and Marine Resources, New York Natural Heritage Program (DEC) and the United States Department of the Interior Fish and Wildlife Service (FWS) to request information regarding the possible presence of unique, rare and/or endangered, threatened or proposed for listing as either protected species, or species of special concern.

The FWS response of January 17, 2007,<sup>9</sup> noted the presence of four species on the *Federally Listed Endangered and Threatened Species and Candidate Species in New York* (By County, Revised September 28, 2006). The same document, updated as of October 1, 2007, includes the same species: Bald Eagle (delisted, *Haliaeetus leucocephalus*), Bog Turtle (threatened, *Clemmys muhlenbergii*), Indiana Bat (endangered, winter/summer, *Myotis sodalis*), and Shortnose sturgeon (endangered, primarily Hudson River, *Acipenser brevirostrum*).

The DEC response of January 30, 2007<sup>10</sup> explained: “Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicated occur, or may occur on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.” This report was available for subsequent field surveys.

Follow-up correspondence from the DEC says:

DEC has reviewed the Department’s Master Habitat Database and found this site is near known populations of the following: Short-eared Owl (*Asio flammeus*)—endangered, Northern Harrier (*Circus cyaneus*)—threatened, Upland Sandpiper (*Bartramia longicauda*)—threatened, Henslow’s Sparrow (*Ammodramus henslowii*)—threatened. Since these species are all open meadows and

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<sup>9</sup> See Appendix 4 Wetland Delineation Report, and refer to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>10</sup> See Appendix 4 Wetland Delineation Report, and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

the project is generally restricted to redevelopment of areas previously disturbed, the Department does not believe this proposal is likely to impact these species.<sup>11</sup>

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<sup>11</sup> New York State Department of Environmental Conservation to Town of Shawangunk Planning Board, January 25, 2008.

The DEC provides a general description of the Indiana Bat<sup>12</sup>, summarized as follows. Females congregate in nursery colonies, typically located along the banks of streams or lakes in forested habitat, under the loose bark of dead trees, and contain from 50-100 females. In August or early September, Indiana bats swarm and mate at the entrance of selected caves or mines. Indiana bats spend the winter months in secluded caves or mines which average 37 to 43° F. Criteria for selecting hibernacula are not clearly understood; many apparently suitable sites are not occupied. Year after year, bats often return to exactly the same spots within individual caves or mines. Hibernation can begin as early as September and extend nearly to June.

Figure III.E-5 depicts a sample of this species, not observed on the project site.



**Figure III.E-5 Indiana Bat (*Myotis sodalists*)<sup>13</sup>**

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<sup>12</sup> New York State Department of Environmental Conservation Indiana Bat Fact Sheet, referenced at <http://www.dec.ny.gov/animals/6972.html>.

<sup>13</sup> This is a sample photo; it is not on the project site. Credit: U.S. Fish and Wildlife Service, reference at [http://www.fws.gov/athens/images/Bats/Indiana\\_Bat.jpg](http://www.fws.gov/athens/images/Bats/Indiana_Bat.jpg)





The DEC provides a general description of the Bog Turtle<sup>14</sup>, summarized as follows. The bog turtle reaches a maximum length of 4.5 inches, and a bright yellow or orange blotch on each side of its head and neck are a distinctive feature of this species. In New York, the bog turtle emerges from hibernation by mid-April. In early to mid-June, a clutch of two to four eggs is laid in a nest which is generally located inside the upper part of an unshaded tussock. The eggs hatch around mid-September. Some young turtles spend the winter in the nest, emerging the following spring. The adults enter hibernation in late October. This is a semi-aquatic species, preferring habitat with cool, shallow, slow-moving water, deep soft muck soils, and tussock-forming herbaceous vegetation. In New York, the bog turtle is generally found in open, early successional types of habitats such as wet meadows or open calcareous boggy areas generally dominated by sedges (*Carex spp.*) or sphagnum moss. Like other cold-blooded or ectothermic species, it requires habitats with a good deal of solar penetration for basking and nesting. Plants such as purple loosestrife (*Lythrum salicaria*) and reed (*Phragmites australis*) can quickly invade such areas resulting in the loss of basking and nesting habitat.

Figure III.E-6 depicts a sample of this species, not observed on the project site.



**Figure III.E-6 Bog Turtle (*Clemmys muhlenbergii*)<sup>15</sup>**

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<sup>14</sup> New York State Department of Environmental Conservation Bog Turtle Fact Sheet, referenced at <http://www.dec.ny.gov/animals/7164.html>.

<sup>15</sup> This is a sample photo; it is not on the project site. Credit: U.S. Fish and Wildlife Service at [http://www.fws.gov/northeast/newenglandfieldoffice/outreachnhenvirothon\\_reptiles.htm](http://www.fws.gov/northeast/newenglandfieldoffice/outreachnhenvirothon_reptiles.htm).



### III.E.2.b Species in Surrounding Habitats

The land classifications within the project site and the surrounding area consist of deciduous forest, pasture/hay, water, wooded wetlands, emergent wetlands, and landscaped areas. A variety of wildlife could be expected to be found in these habitats at some time in their life cycle (migratory passage, hunting, feeding, nesting, or post nesting dispersal).

A list of species that could reasonably be expected to exist on the site or in the surrounding area is included in Table III.E-4. It is derived from the list of Species of Greatest Conservation Need, Upper Hudson Table 2, prepared by the NYS DEC.

**Table III.E-4 Expected Wildlife on Project Site and Surrounding Habitat<sup>16</sup>**

**Upper Hudson Table 2.** Species of Greatest Conservation Need currently occurring in the Upper Hudson River Basin (n=158) Species are sorted alphabetically by taxonomic group and species common name. The Species Group designation is included, indicating which Species Group Report in the appendix will contain the full information about the species. The Stability of this basin's population is also indicated for each species.

TaxaGroup	Species	SpeciesGroup	Stability
Bird	Bald eagle	Bald eagle	Increasing
Bird	Barn owl	Barn owl	Unknown
Bird	Cape May warbler	Boreal forest birds	Unknown
Bird	Olive-sided flycatcher	Boreal forest birds	Decreasing
Bird	Rusty blackbird	Boreal forest birds	Unknown
Bird	Spruce grouse	Boreal forest birds	Decreasing
Bird	Tennessee warbler	Boreal forest birds	Unknown
Bird	Three-toed woodpecker	Boreal forest birds	Unknown
Bird	American black duck	Breeding waterfowl	Decreasing
Bird	Blue-winged teal	Breeding waterfowl	Decreasing
Bird	Common loon	Common loon	Increasing
Bird	Common nighthawk	Common nighthawk	Decreasing
Bird	Black-throated blue warbler	Deciduous/mixed forest breeding birds	Stable
Bird	Cerulean warbler	Deciduous/mixed forest breeding birds	Increasing
Bird	Louisiana waterthrush	Deciduous/mixed forest breeding birds	Unknown
Bird	Red-headed woodpecker	Deciduous/mixed forest breeding birds	Decreasing
Bird	Scarlet tanager	Deciduous/mixed forest breeding birds	Decreasing
Bird	Wood thrush	Deciduous/mixed forest breeding birds	Decreasing
Bird	Worm-eating warbler	Deciduous/mixed forest breeding birds	Decreasing
Bird	American woodcock	Early successional forest shrubland birds	Decreasing
Bird	Black-billed cuckoo	Early successional forest shrubland birds	Decreasing
Bird	Blue-winged warbler	Early successional forest shrubland birds	Decreasing
Bird	Brown thrasher	Early successional forest shrubland birds	Decreasing
Bird	Canada warbler	Early successional forest shrubland birds	Decreasing
Bird	Golden-winged warbler	Early successional forest shrubland birds	Decreasing
Bird	Prairie warbler	Early successional forest shrubland birds	Increasing
Bird	Ruffed grouse	Early successional forest shrubland birds	Decreasing
Bird	Whip-poor-will	Early successional forest shrubland birds	Decreasing
Bird	Willow flycatcher	Early successional forest shrubland birds	Decreasing
Bird	Coopers hawk	Forest breeding raptors	Increasing
Bird	Golden eagle	Forest breeding raptors	Decreasing
Bird	Long-eared owl	Forest breeding raptors	Unknown
Bird	Northern goshawk	Forest breeding raptors	Increasing
Bird	Red-shouldered hawk	Forest breeding raptors	Increasing
Bird	Sharp-shinned hawk	Forest breeding raptors	Increasing
Bird	American bittern	Freshwater marsh nesting birds	Decreasing
Bird	King rail	Freshwater marsh nesting birds	Decreasing
Bird	Least bittern	Freshwater marsh nesting birds	Stable
Bird	Pied-billed grebe	Freshwater marsh nesting birds	Decreasing
Bird	Yellow rail	Freshwater marsh nesting birds	Unknown
Bird	Bobolink	Grassland birds	Decreasing
Bird	Eastern meadowlark	Grassland birds	Decreasing
Bird	Grasshopper sparrow	Grassland birds	Decreasing
Bird	Horned lark	Grassland birds	Decreasing
Bird	Northern harrier	Grassland birds	Unknown
Bird	Sedge wren	Grassland birds	Unknown
Bird	Upland sandpiper	Grassland birds	Decreasing
Bird	Vesper sparrow	Grassland birds	Decreasing
Bird	Bicknells thrush	High Altitude Conifer Forest Birds	Unknown
Bird	Osprey	Osprey	Stable
Bird	Peregrine falcon	Peregrine falcon	Increasing
Bird	Buff-breasted sandpiper	Transient shorebirds	Unknown
Crustacea/Meristomata	Blue crab	Blue crab	Unknown
Freshwater fish	Blackchin shiner	Blackchin shiner	Unknown
Freshwater fish	Brook trout, Heritage strains	Brook trout, Heritage strains	Stable
Freshwater fish	Comely shiner	Comely shiner	Stable
Freshwater fish	Round whitefish	Round whitefish	Decreasing
Herpetofauna	Eastern box turtle	Box Turtle	Decreasing
Herpetofauna	Eastern spadefoot	Eastern Spadefoot Toad	Unknown
Herpetofauna	Four-toed salamander	Freshwater wetland amphibians	Unknown
Herpetofauna	Fowlers toed	Freshwater wetland amphibians	Decreasing
Herpetofauna	Northern cricket frog	Freshwater wetland amphibians	Decreasing
Herpetofauna	Eastern ribbonsnake	Lake/river reptiles	Unknown

<sup>16</sup> List of Species of Greatest Conservation Need, Upper Hudson Table 2, prepared by the NYS DEC.

TaxaGroup	Species	SpeciesGroup	Stability
Herpetofauna	Northern map turtle	Lake/river reptiles	Unknown
Herpetofauna	Spiny sottshell	Lake/river reptiles	Unknown
Herpetofauna	Wood turtle	Lake/river reptiles	Unknown
Herpetofauna	Common five-lined skink	Lizards	Unknown
Herpetofauna	Snapping turtle	Snapping Turtle	Unknown
Herpetofauna	Longtail salamander	Stream salamanders	Decreasing
Herpetofauna	Northern red salamander	Stream salamanders	Unknown
Herpetofauna	Blanding's turtle	Uncommon turtles of wetlands	Decreasing
Herpetofauna	Bog turtle	Uncommon turtles of wetlands	Decreasing
Herpetofauna	Spotted turtle	Uncommon turtles of wetlands	Unknown
Herpetofauna	Stinkpot	Uncommon turtles of wetlands	Unknown
Herpetofauna	Blue-spotted salamander	Vernal pool salamanders	Unknown
Herpetofauna	Jefferson salamander	Vernal pool salamanders	Unknown
Herpetofauna	Marbled salamander	Vernal pool salamanders	Decreasing
Herpetofauna	Black ratsnake	Woodland/grassland snakes	Decreasing
Herpetofauna	Eastern hognose snake	Woodland/grassland snakes	Decreasing
Herpetofauna	Northern black racer	Woodland/grassland snakes	Decreasing
Herpetofauna	Northern copperhead	Woodland/grassland snakes	Unknown
Herpetofauna	Smooth greensnake	Woodland/grassland snakes	Decreasing
Herpetofauna	Timber rattlesnake	Woodland/grassland snakes	Decreasing
Herpetofauna	Worm snake	Woodland/grassland snakes	Decreasing
Insect	Barrens buck moth	Barrens buck math	Unknown
Insect	Karner blue	Karner blue butterfly	Decreasing
Insect	Black meadowhawk	Odonates of bogs/fens/ponds	Unknown
Insect	Ebony boghaunter	Odonates of bogs/fens/ponds	Unknown
Insect	Forcipate emerald	Odonates of bogs/fens/ponds	Unknown
Insect	Incurvate emerald	Odonates of bogs/fens/ponds	Unknown
Insect	Taper-tailed darner	Odonates of bogs/fens/ponds	Unknown
Insect	Comet darner	Odonates of lakes/ponds	Unknown
Insect	Lake emerald	Odonates of lakes/ponds	Unknown
Insect	New England bluet	Odonates of lakes/ponds	Unknown
Insect	Spatterdock darner	Odonates of lakes/ponds	Unknown
Insect	American rubyspot	Odonates of rivers/streams	Unknown
Insect	Blue-tipped dancer	Odonates of rivers/streams	Unknown
Insect	Brook snaketail	Odonates of rivers/streams	Unknown
Insect	Common sanddragon	Odonates of rivers/streams	Unknown
Insect	Extra-striped snaketail	Odonates of rivers/streams	Unknown
Insect	Midland clubtail	Odonates of rivers/streams	Unknown
Insect	Pygmy snaketail	Odonates of rivers/streams	Unknown
Insect	Rapids clubtail	Odonates of rivers/streams	Unknown
Insect	Russet-tipped clubtail	Odonates of rivers/streams	Unknown
Insect	Septima's clubtail	Odonates of rivers/streams	Unknown
Insect	Arrowhead spiketail	Odonates of seeps/rivulets	Unknown
Insect	Tiger spiketail	Odonates of seeps/rivulets	Unknown
Insect	Mocha emerald	Odonates of small forest streams	Unknown
Insect	Ocellated emerald	Odonates of small forest streams	Unknown
Insect	Brazilian skipper	Other butterflies	Unknown
Insect	Checkered white	Other butterflies	Decreasing
Insect	Frosted elfin	Other butterflies	Decreasing
Insect	Henry's elfin	Other butterflies	Unknown
Insect	Mottled duskywing	Other butterflies	Decreasing
Insect	Northern metalmark	Other butterflies	Decreasing
Insect	Northern oak hairstreak	Other butterflies	Stable
Insect	Persius duskywing	Other butterflies	Unknown
Insect	Regal fritillary	Other butterflies	Unknown
Insect	Silvery blue	Other butterflies	Decreasing
Insect	Tawny crescent	Other butterflies	Decreasing
Insect	<i>Semiothisa banksianae</i>	Other moths	Unknown
Insect	<i>Apamea inordinata</i>	Other moths	Unknown
Insect	<i>Phoberia orthosoides</i>	Other moths	Unknown
Insect	Acadian swordgrass moth	Other moths	Unknown
Insect	Coastal barrens buckmoth	Other moths	Unknown
Insect	Golden aster flower moth	Other moths	Unknown
Insect	Pine barrens zanclognatha	Other moths	Unknown
Insect	Pine devil	Other moths	Unknown
Insect	<i>Cicindela patruela</i>	Pine barrens tiger beetles	Decreasing
Insect	<i>Cicindela ancocisconensis</i>	Riparian tiger beetles	Unknown
Insect	<i>Eurylophella bicoloroides</i>	Stoneflies/Mayflies of lotic waters	Unknown
Insect	<i>Epeorus suffusus</i>	Stoneflies/Mayflies of lotic waters	Unknown
Insect	<i>Heptagenia culacantha</i>	Stoneflies/Mayflies of lotic waters	Unknown
Insect	<i>Brachycercus maculatus</i>	Stoneflies/Mayflies of lotic waters	Unknown
Insect	Tomah mayfly	Tomah mayfly	Unknown
Mammals	American marten	Furbearers	Unknown
Mammal	River otter	Furbearers	Stable

TaxaGroup	Species	SpeciesGroup	Stability
Mammal	New England cottontail	Game species of concern	Decreasing
Mammal	Indiana bat	Indiana Bat	Increasing
Mammal	Eastern red bat	Tree bats	Unknown
Mammal	Hoary bat	Tree bats	Unknown
Mammal	Silver-haired bat	Tree bats	Unknown
Marine fish	American eel	American eel	Unknown
Marine fish	American shad	American shad	Decreasing
Marine fish	Atlantic sturgeon	Atlantic sturgeon	Unknown
Marine fish	Alewife	Alewife	Decreasing
Marine fish	Blueback herring	Blueback herring	Unknown
Marine fish	Common pipefish	Estuarine associates of SAV	Unknown
Marine fish	Threespine stickleback	Estuarine associates of SAV	Unknown
Marine fish	Fourspine stickleback	Estuarine associates of SAV	Unknown
Marine fish	Rainbow smelt	Rainbow smelt	Decreasing
Marine fish	Shortnose sturgeon	Shortnose sturgeon	Stable
Marine fish	Atlantic tomcod	Tomcod	Unknown
Mollusk	Alewife floater	Freshwater bivalves	Decreasing
Mollusk	Eastern pearlshell	Freshwater bivalves	Unknown
Mollusk	Eastern pondmussel	Freshwater bivalves	Unknown
Mollusk	Elktoe	Freshwater bivalves	Unknown
Mollusk	Yellow lamp mussel	Freshwater bivalves	Unknown

### III.E.2.c Field Survey

John Chitty, an ecologist/wetlands specialist, conducted field surveys in December 2006, outside the growing season, and in June 2007, during the growing season. These surveys are documented in the Wetland Delineation and Assessment Report, included in its entirety in Appendix 4 of this DEIS. The purpose was to delineate natural plant communities and wildlife habitat and document any observed species that are threatened, endangered, or of special concern.

The attention of the field study is focused on the north portion of the project site where it is bounded by an unnamed tributary of the Dwaarkill that flows from west to east into the Dwaarkill. The 100-year floodplain boundary reaches up this unnamed tributary but is outside of the disturbed area on the project site. Included also in the field study is the forested wetland area in the western portion of the project site. These areas are divided into three wetland areas. Area 1 consists of 1.85 acre riverine forested wetland that is a moderate quality aquatic resource; Area 2 encompasses 2.56 acres of emergent marsh with patches of forest cover that is a low to moderate quality aquatic resource, and Area 3, on the western boundary is a 22.03 acre forested wetland area that is a moderate to high quality aquatic resource. The study delineation areas are shown in plan in Figure III.E-3. Figure III.E-4 presents an aerial view of the project site showing existing vegetative cover. In addition to the wetlands delineation, a study of upland area in the vicinity of Areas 1 to 3 was conducted and documented. During these studies, no threatened or endangered species, including those confidentially supplied designated by the DEC, were encountered. Although no threatened or endangered species were found to exist on the site, the field surveys did encounter potential habitat for species listed by the above agencies. The need for additional field studies is not anticipated because the applicant assumes that such species could exist in these protected natural areas and is committed to the protection of these areas.

A list of wildlife species that are provided with potential on-site habitat, including common and proper names, is presented in Table III.E-5.

**Table III.E-5 Wildlife With Potential On-Site Habitat**

<b>Common Name (Scientific name)</b>
Indiana Bat ( <i>Myotis sodalist</i> )
Bog Turtle ( <i>Clemmys muhlenbergii</i> )
Henslow's sparrow ( <i>Ammodramus henslowii</i> )
Short-eared owl ( <i>Asio flammeus</i> )
Upland Sandpiper ( <i>Bartramia longicauda</i> )
Northern harrier ( <i>Circus cyaneus</i> )
Brook floater ( <i>Alasmidonta varicosa</i> )

Commenting on the Indiana Bat, the Wetland Delineation and Assessment Report, stated: "Forested wetlands and uplands within the study area do provide appropriate habitat. Any proposed impact to these potential habitats would need presence/absence surveys to determine any adverse impact."<sup>17</sup>

Commenting on the Bog Turtle, the Wetland Delineation and Assessment Report, stated: "Emergent and forested wetlands in the study area do provide appropriate habitat. The attached NYSDEC response mentions that the turtle is 'documented within 1 mile' of the general study area and 'animals can move 1 mile or more from documented locations.' Although there are no documented sightings or crossings of the existing perimeter road by turtles, any development area would need to have a perimeter silt fence reinforced with wire mesh to prevent turtles from entering the active construction area. The periodic inspection program would maintain and confirm the integrity of the fencing."<sup>18</sup>

On July 23, 2007, Karen Schneller McDonald of Hickory Creek Consulting LLC and John Chitty conducted a site visit to inspect the area covered in the Wetland Delineation and Assessment Report. As noted in correspondence from Hickory Creek Consulting LLC dated July 24, 2007, "Bog turtle habitat is present in and near wetland area #3 as noted in the Wetland Delineation and Assessment Report. . . . [o]n the assumption that bog turtles are present, mitigation measures can be developed and evaluated to fully protect the habitat without requiring an actual field survey."<sup>19</sup> This is in harmony with the *Guidelines for Bog Turtle Surveys* (revised April 2006),

If these criteria (suitable soils, vegetation and hydrology) are present in the *wetland*, then the *wetland* is considered to be potential bog turtle habitat, regardless of whether or not that portion of the wetland occurring within the project boundaries contains all three criteria. If the *wetland* is determined to be potential habitat and the project will directly or indirectly impact *any portion* of the wetland . . . , then, either: Completely avoid all direct and indirect effects to the wetland, in

<sup>17</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>18</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>19</sup> See Appendix 2.

consultation with the Service and appropriate State wildlife agency, OR Conduct a Phase 2 survey to determine the presence of bog turtles.<sup>20</sup>

The Hickory Creek Consulting LLC letter dated July 24, 2007 also noted, "Habitat for the Indiana bat is present, mainly within existing wooded wetland areas that are not scheduled for site disturbance."<sup>21</sup>

The location of the proposed project site on fenced pasture and previously landscaped and developed areas makes it very unlikely that it will affect any wildlife movement patterns, potential wildlife corridors (known as dispersal corridors), or other potentially critical connections to open spaces beyond the project site. The project site is located approximately four miles from the Shawangunk Mountains ridgeline and is approximately two miles from its slopes. The distance from the Shawangunk Mountains, combined with the presence of paved roads surrounding the project site, including County Route 7, Steen Road, Red Mills Road, and Bruyn Turnpike, makes it very unlikely that there will be any habitat fragmentation or impact on wildlife dispersal corridors along the Shawangunk Ridge due to development fragmentation under the proposed project.

Commenting on the avian species, the Wetland Delineation and Assessment Report, stated:

The following avian species may utilize the open pasture, emergent wetland areas and forest lands for feeding and nesting. No individuals were encountered during the field investigations[.] Henslow's sparrow, *Ammodramus henslowii* – natural grasslands; Short eared owl, *Asio flammeus* – open grasslands; Upland Sandpiper, *Bartramia longicauda* – open grasslands; Northern Harrier (*Circus cyaneus*) – open marsh and upland areas.<sup>22</sup>

Commenting on the Brook Floater, the Wetland Delineation and Assessment Report, stated: "This bivalve mollusk species is found along the Shawangunk Kill, outside of the study area. The intermittent creek tributary within the study area likely does not provide appropriate habitat."<sup>23</sup>

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<sup>20</sup> U.S. Fish and Wildlife Service, Reference: <http://www.fws.gov/northeast/nyfo/es/btsurvey.pdf>

<sup>21</sup> See Appendix 2.

<sup>22</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>23</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), and refer within to Appendix V Endangered Species Records Inquiry and Evaluation.



## POTENTIAL IMPACTS

### III.E.2.d Evaluation of Potential Impacts on Resources

The proposed project has been sited to avoid disturbance of any natural plant communities, wetland areas, or wooded areas that provide habitat for wildlife. The majority of the disturbed area is a previously developed portion of the site that provides little or no wildlife habitat, so there is anticipated to be little or no impact to fish and wildlife. There is also an existing perimeter driveway separating the developed areas from any adjacent natural areas.

The area of disturbance for the proposed project would affect a total of 46 acres. This would include the disturbance of 27.1 acres of lawns, ornamentals, and other landscaping, 5.9 acres of roads, buildings and other paved surfaces, and 13.0 acres of fenced pasture that has been in agricultural use as pasture or cropland for decades.

By the conclusion of the proposed project the previously disturbed area will contain 0.7 acres of water surface area, 9.4 acres of roads, building and other paved surfaces, and 35.9 acres of lawns, planting, and landscaping. The applicant's landscaping includes protective vegetative cover of mowed lawn (which provides emergency access for emergency services equipment), ornamental trees, shrubs, and maintained flower gardens, all of which prevent any active soil erosion on these areas.

Specifically, the proposed project does not disturb any forested areas, particularly those containing Shagbark hickory (*C. ovata*), which can provide seasonal habitat for the Indiana Bat. The proposed project does not disturb any wetlands, particularly those wetlands and surrounding areas that provide habitat for the bog turtle. As described in the correspondence of January 25, 2008, the DEC does not believe that the proposed project is likely to impact threatened or endangered avian species.<sup>24</sup> The proposed project does not disturb the Shawangunk Kill, which provides habitat for the Brook Floater, nor does the intermittent watercourse north of the project site provide likely habitat.<sup>25</sup>

Although no threatened or endangered species were found to exist on the project site, the field surveys did encounter potential habitat for the species listed by the above agencies. A letter from the New York State Department of Environmental Conservation commenting on this subject stated that the "DEC has reviewed the Department's Master Habitat Database and found this site is near known populations of the following: Short-eared Owl (*Asio flammeus*)—endangered, Northern Harrier (*Circus cyaneus*)—threatened, Upland Sandpiper (*Bartramia longicauda*)—threatened, Henslow's Sparrow (*Ammodramus henslowii*)—threatened. Since these species are all open meadows and the project is generally restricted to redevelopment of areas previously disturbed, the Department does not believe this proposal is likely to impact these species."<sup>26</sup>

The emergent and forested wetlands in the study do provide appropriate habitat for the Bog Turtle, *Clemmys muhlenbergii*. The NYSDEC response dated January 30, 2007

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<sup>24</sup> See Appendix 2.

<sup>25</sup> See Appendix 4 Wetland Delineation and Assessment Report (June 2007), reference Appendix V Endangered Species Records Inquiry and Evaluation.

<sup>26</sup> New York State Department of Environmental Conservation to Town of Shawangunk Planning Board, January 25, 2008.

mentions that the turtle is “documented within 1 mile” of the general study area and “animals can move 1 mile or more from documented locations.” However, there are no documented sightings or crossings of the existing perimeter road by Bog Turtles.

Although, none of the species mentioned above were observed on-site, the applicant assumes and would hope that they do exist in the adjacent protected natural areas.

The proposed project’s area of disturbance consists entirely of lawns, ornamentals and other landscaping, buildings, roads, other paved surfaces, and actively farmed, fenced pasture that has been in agricultural use as pasture or cropland for decades. It is bounded on the north towards existing wetlands by an existing perimeter driveway, and no land disturbance is proposed north of this perimeter driveway. The applicant is not aware of ongoing harmful or nuisance interactions with wildlife on the project site, and the proposed project is not anticipated to have the potential to significantly increase the potential for such interactions.

Potential impacts caused by changes in water volume and flow to wetland habitat were also assessed. The proposed improvements would not cause a substantial diversion of surface flow or reduction in groundwater recharge and thus pose no significant impact to water-dependent wildlife.—See Section III.B.

Impacts on wildlife could occur where the wetland buffers are disturbed which provide habitat for wetland-associated species. The proposed improvements would involve disturbance of areas adjacent to wetlands. However, the existing areas adjacent to wetlands do not consist of natural vegetation suitable for wildlife habitat. They are paved or landscaped with turf-grassed lawn. After the proposed buffer restoration, only minimal impacts due to disturbance within the buffers are expected. In fact, more potential wildlife habitat would be provided than exists on the current site.

## **MITIGATION MEASURES**

### III.E.2.e Avoidance of Sensitive Ecological Habitat and Site Design

The Town of Shawangunk Comprehensive Plan (July 2003) includes several recommendations under Section B. Natural Features. The first recommendation is to “Establish Conservation Subdivision procedures in the Zoning Ordinance.” It explains:

Under conservation subdivision techniques, the density of development is not affected. Rather the approach is to configure the development so that it has minimal impact on the important resources associated with the land to be developed. Thus the first step in the subdivision process is not to lay out house lots, but rather to identify the physical location of environmental and cultural resources on the property that are worthy of protection. Once the resources to be protected have been defined and mapped, the next step is to map the areas where development can take place.

The second, closely related recommendation is to “Encourage Documentation of the Important Resources to be Protected by the Conservation Subdivision Process.” It explains:

Clearly, one of the most important elements in the conservation subdivision process i[s] to have a thorough grasp of the resources that should be conserved during the subdivision process. Some of these resources include areas with steep slopes, stream and river corridors along with important historic and cultural resources worthy of preservation. All of these should be addressed in a conservation subdivision process.

While the applicant does not propose a residential subdivision, which is specifically recommended for the conservation mapping described by the Town of Shawangunk

Comprehensive Plan, the applicant has incorporated the concept presented of identifying important natural resources early in the planning process. This is in harmony with steps taken by the Town of Shawangunk Planning Board to incorporate the above recommendations by endorsing “Habitat Assessment Guidelines—Town of Shawangunk (November 28, 2006). As noted in the cover message from the Planning Board Chair, “Shawangunk’s approach uses Habitat Assessment early in the process to establish the environmental constraints and guide the plan before the applicant invests significant time and money in design and engineering.”

The proposed project has been sited specifically to avoid sensitive ecological habitat. As noted in this DEIS in Section V Alternatives, an option was considered that would have had an impact on existing natural plant communities; however, as observed by the DEC in the correspondence dated January 25, 2008 page 2, “. . . the project is generally restricted to redevelopment of areas previously disturbed[.]”<sup>27</sup> The design of the proposed project also incorporates a two-story parking garage, which reduces the impervious coverage and resultant stormwater runoff associated with surface parking lots.

#### III.E.2.f Control of Stormwater Runoff

Control of water quality and peak flow is ensured by the adherence to the proposed Erosion and Sedimentation Control Measures (ESCM) are described as part of the Stormwater Pollution Prevention Plan (SWPPP), complying with NYS DEC permit requirements in Section III.A.2 and Appendix 13, located in Volume 2 of this DEIS. Mitigation measures include preservation measures around existing vegetation, removal and stockpiling of topsoil, silt fence installations, construction of temporary sediment basins, construction of earth dikes, temporary stabilization techniques, dust control, and storm drain inlet protection. Also, potential runoff of chemicals utilized in landscape activities is contained in detention areas or filtered through vegetated areas before release to surrounding drainages.—See Section III.B.

#### III.E.2.g Prevention of Accidental Take

Since the on-site emergent and forested wetlands in the study provide appropriate habitat for the Bog Turtle, two perimeter silt fences reinforced with wire mesh and spaced at approximately 20 feet apart would be installed to separate the area of disturbance from the wetlands during construction. This would prevent a bog turtle from entering the active construction area. A periodic inspection program would be set in place to maintain and confirm the integrity of the fencing.

#### III.E.2.h Restoration of Buffers

Approximately 13 acres of wetland buffer would be restored and would provide additional habitat for wetland-associated wildlife. These protective buffers would also visually separate wetlands from developed areas of the site, shielding wildlife from human activity and glare from sight lighting.—See Figure III.E-7.

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<sup>27</sup> See Appendix 2.

### III.E.3 Wetlands and Waterbodies

#### **ENVIRONMENTAL SETTING**

##### III.E.3.a Wetland Delineation

The boundaries of the on-site wetlands in accordance with New York State criteria and the methodology provided in the *1987 Army Corps of Engineers Wetlands Delineation Manual* is shown in Figure III.E-3<sup>28</sup>. An aerial view of the area is shown in Figure III.E-4. The study area was investigated by ecologist and wetland delineator John Chitty on December 24-30, 2006, and June 4-16, 2007.

Three wetland areas and one intermittent creek, likely waters of the United States, were delineated within the study area, totaling 26.44 acres (on-site). Area 1 is a 1.85 acre jurisdictional wetland located within (south side) of the Loop Driveway. It likely qualifies as an adjacent wetland under the jurisdiction of the United States Army Corps of Engineers (ACOE) and would be a moderate quality aquatic resource. Area 2 is a 2.56 acre (on-site) jurisdictional wetland located upstream of Area 1 and on the northwestern portion of the study area. It likely qualifies as an adjacent wetland under the jurisdiction of the ACOE and would be a low to moderate quality aquatic resource. Area 3 is a 22.03 acre (on-site) jurisdictional forested wetland upstream and west of Area 2. It likely qualifies as an adjacent wetland under the jurisdiction of the ACOE and would be a moderate to high quality aquatic resource. Passing through and connecting the wetland areas is an intermittent drainage tributary to the Dwaarkill, thus it is likely that none of the delineated wetlands would be considered isolated.

On July 23, 2007, Karen Schneller-McDonald of Hickory Creek Consulting, LLC and John Chitty conducted a site visit to inspect the area covered in the Wetland Delineation and Assessment Report. In correspondence dated July 24, 2007, Hickory Creek Consulting LLC commented that “[w]etland boundaries are verified as delineated on the site map.”<sup>29</sup>

As shown in Figure II.A-2 Local Map, approximately 0.5 miles to the west of the project site is a New York State wetland designated as N-13. It is a 39.6 acre Class 1 wetland, where Class 1 is the highest quality classification and Class 4 is the lowest. Approximately 0.75 miles to the north of the project site is New York State wetland designated as N-17. It is a 31.1 acre Class 3 wetland.

In correspondence from the DEC dated January 25, 2008, the following comments were provided:

An examination of aerial photos and the National Wetlands Inventory suggest that wetlands on this parcel, as well as adjoining parcels, may be of size and quality to be eligible for inclusion on the state regulatory maps for Freshwater Wetlands. The Department anticipates re-mapping wetlands in the Walkkill River watershed in the near future. The DEC wetland biologist for Ulster County has reviewed the plans and believes they accurately depict the extent of state-eligible wetlands on the property. The current proposal shows the majority of the new disturbances to be more than 100 feet from the wetlands and to be within areas of previous disturbance. In addition,

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<sup>28</sup> See also Appendix 4—Wetland Delineation and Assessment Report.

<sup>29</sup> See Appendix 2.

the existing modular units, many of which are within 100 feet of the wetlands, will be removed. Therefore the Department believes new wetland impacts will be minimal. Please submit full plan sets as requested above which include the location of the on-site wetlands. Once these are received and reviewed, the Department will likely be requesting some revegetation of the area of the modular removal and planting of buffering vegetation along the proposed access road.<sup>30</sup>

As shown in Figure II.A-3 Area Map, the eastern property boundary borders the Shawangunk Kill (Waters Index No. H-139-13-19), a New York State Recreational River according to Title 6 of the *New York Code of Rules and Regulations*, Part 666 (6 NYCRR 666). The river is also protected and rated as Class B, designating its best usage as for swimming and other contact recreation, but not for drinking water. Within the property and running parallel to Steen Road is the Dwaarkill (Waters Index No. H-139-13-19-7), a protected Class B(t) stream that flows into the Shawangunk Kill. In addition to having a best usage of swimming and other contact recreation, but not for drinking water, it may support a trout population. The Shawangunk Kill Recreational River Corridor boundary is discussed in more detail in Section II.A.3. As noted therein, all areas of proposed building construction are outside of the corridor boundary. In correspondence from the DEC dated January 25, 2008, the following comments were provided:

In addition to the Shawangunk Kill, the site also contains the Dwaar Kill, NYS Waters Index H-139-13-19-7, Class B(t). A permit pursuant to Article 15 of the Environmental Conservation Law, Use and Protection of Waters, is required for any disturbance to the bed or banks of either stream. However, the plans do not appear to propose any disturbances to these protected streams.<sup>31</sup>

The proposed project would be in accordance with the Stormwater Pollution Prevention Plan (SWPPP) complying with NYS DEC permit requirements in Section III.B.2 and Appendix 13 located in Volume 2 of this DEIS.

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<sup>30</sup> See Appendix 2.

<sup>31</sup> See Appendix 2.

## **POTENTIAL IMPACTS**

### **III.E.3.b Wetland/Stream Disturbances and Surface Water Discharges**

The applicant recognizes the good condition and the important functions of the wetlands on site and has designed a proposed plan that is entirely outside of these protected areas. There would be no direct impact to wetlands or associated upland habitat. There would be limited impact to wetland buffers. Minimal temporary disturbance to wetland buffers would occur in areas where regrading is required for the proposed improvements. One area of permanent disturbance would occur where the proposed Loop Driveway would be constructed over existing pavement that is within the buffer adjacent to wetland Area 3. The other small area of permanent disturbance would occur at the outlet of the proposed stormwater pond near the intermittent creek. The outlet of the pond would consist of a 36-inch culvert with a concrete headwall. Disturbances within wetland buffers could result in impacts to wetland function. However, these impacts would be minimal based on the mitigation described in Section III.E.3.f.

The New York State Department of Environmental Conservation stated in a letter, dated January 25, 2008: “the Department believes that new wetland impacts would be minimal . . . . [and] the plans do not appear to propose any disturbances to these protected streams.”<sup>32</sup>

### **III.E.3.c Assessment of Wetland Functions and Impacts**

Wetland Area 1 provides moderate wetland function, in part due to its potential flood storage and water quality improvement. It provides stormwater storage along the drainage channel and pond area, sediment retention, flood attenuation, and nutrient conversion and other water quality functions. It also has a moderate diversity of plant species with few invasive species, primarily upland garlic mustard (*Alliaria petiolata*) and blackberry brambles (*Rubus pensylvanicum*). In addition, the riverine character, forest cover and pond area provide moderate diversity of microhabitats for both terrestrial and aquatic wildlife.

Wetland Area 2 provides moderate wetland function, in part due to its potential flood storage and water quality improvement. It provides stormwater storage along the drainage channel, sediment retention in the marsh area, flood attenuation, and nutrient conversion and other water quality functions. It also has a moderate diversity of plant species, although the emergent marsh portion of the wetland area is dominated by invasive purple loosestrife (*Lythrum salicaria*). The riverine forest area is less affected by purple loosestrife, but has other invasive species, primarily upland garlic mustard (*Alliaria petiolata*) and blackberry brambles (*Rubus pensylvanicum*). In addition, the riverine portion with its woodlot-like forest cover provides moderate diversity of microhabitats for both terrestrial and aquatic wildlife.

Wetland Area 3 provides moderate to high wetland function, in part due to its potential flood storage and water quality improvement. It provides stormwater storage along the drainage channel, sediment retention in the flat forested areas, flood attenuation, and nutrient conversion and other water quality functions. It also has a moderate to high

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<sup>32</sup> See Appendix 2.

diversity of plant species. There is an “edge effect” next to the existing access road where invasive species such as Multiflora rose (*Rosa multiflora*) and turf grasses (*Festuca*, *Lolium*, *Bromus*) have gained a foothold. However, most of the interior forested areas are relatively free of invasive species and may meet the criteria as a High Quality Aquatic Resource.

Erosion and sedimentation from construction activities is a potential construction-related impact that could occur to adjacent wetland areas and downstream water resources if grading activities are left uncontrolled. Long-term impacts to water quality are possible if not considered in the stormwater management plan, which would include future monitoring of basins and maintenance of healthy vegetation.

Another potential impact to wetland function could involve disruption of wetland hydrology by affecting the flow pattern or connectivity of the on-site wetlands or streams. However, the proposed improvements would be located outside the majority of the contributing drainage area for the wetlands and would not disrupt the flow pattern. In addition, the stormwater treatment ponds will be unlined; therefore, stored water will be available for wetland and stream recharge.

The existing contributing drainage area to the wetland areas 1, 2, and 3 is approximately 185 acres with 9.8-percent impervious cover. The proposed improvements would result in a slight reduction of total contributing drainage area to 180 acres with 9.6-percent impervious cover. The percentage of impervious cover within the contributing drainage area would be slightly reduced. Hence, the project is not expected to result in significant direct or indirect impacts to the water level or hydroperiod of on-site wetlands and streams.

Neither the intermittent stream, nor wetland areas 1, 2, and 3 are within the drainage area which contributes to the existing reservoirs that supply water to the site. In addition, these areas are upstream of these reservoirs. Therefore, there are no direct or indirect impacts to the wetlands due to the proposed increase in water demand.

## **MITIGATION MEASURES**

### III.E.3.d Special Mitigation Measures

The Town of Shawangunk Comprehensive Plan (July 2003) includes several recommendations under Section B. Natural Features. The first recommendation is to “Establish Conservation Subdivision procedures in the Zoning Ordinance.” It explains:

Under conservation subdivision techniques, the density of development is not affected. Rather the approach is to configure the development so that it has minimal impact on the important resources associated with the land to be developed. Thus the first step in the subdivision process is not to lay out house lots, but rather to identify the physical location of environmental and cultural resources on the property that are worthy of protection. Once the resources to be protected have been defined and mapped, the next step is to map the areas where development can take place.

The second, closely related recommendation is to “Encourage Documentation of the Important Resources to be Protected by the Conservation Subdivision Process.” It explains:

Clearly, one of the most important elements in the conservation subdivision process is to have a thorough grasp of the resources that should be conserved during the subdivision process. Some

of these resources include areas with steep slopes, stream and river corridors along with important historic and cultural resources worthy of preservation. All of these should be addressed in a conservation subdivision process.

While the applicant does not propose a residential subdivision, which is specifically recommended for the conservation mapping described by the Town of Shawangunk Comprehensive Plan, the applicant has incorporated the concept presented of identifying important natural resources early in the planning process. This is in harmony with steps taken by the Town of Shawangunk Planning Board to incorporate the above recommendations by endorsing Habitat Assessment Guidelines—Town of Shawangunk (November 28, 2006). As noted in the cover message from the Planning Board Chair, “Shawangunk’s approach uses Habitat Assessment early in the process to establish the environmental constraints and guide the plan before the applicant invests significant time and money in design and engineering.”

The proposed project has been sited specifically to avoid sensitive ecological habitat in the interests of low impact development. As noted in this DEIS in Section V Alternatives, an option was considered that would have had an increased potential impact on existing wetlands; however, as observed by the DEC in correspondence dated January 25, 2008, page 2, “the project is generally restricted to redevelopment of areas previously disturbed[.]”<sup>33</sup>

The design of the proposed project also incorporates a two-story parking garage, which reduces the impervious coverage and resultant stormwater runoff associated with surface parking lots. The proposed residence building and accessory office building are three-story, thus covering less surface area and reducing impervious coverage.

As recommended by the DEC in its letter of January 25, 2008, and Hickory Creek Consulting LLC in its letter of July 24, 2007<sup>34</sup>, the proposed project would include revegetation of the area of the modular housing removal and planting of buffering vegetation along the relocated access driveway.

Erosion and Sedimentation Control Measures (ESCM) are described as part of the Stormwater Pollution Prevention Plan (SWPPP) complying with NYS DEC permit requirements in Section III.B.2. Mitigation measures include preservation measures around existing vegetation, removal and stockpiling of topsoil, silt fence installations, construction of temporary sediment basins, construction of earth dikes, temporary stabilization techniques, dust control, and storm drain inlet protection. The ESCM also contain maintenance and inspection schedules for all mitigation measures.

In addition, the proposed stormwater treatment pond located in this area would be vegetated with wetland plants. This would provide additional wetland habitat and enhance pollutant removal. The outlet from the pond would be stabilized to prevent erosion and would discharge into a vegetated swale, thus providing additional filtration before discharging to the existing intermittent stream.

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<sup>33</sup> See Appendix 2.

<sup>34</sup> See Appendix 2.



### III.E.3.e NYSDEC and ACOE Permits

The proposed project design specifically locates areas of disturbance to avoid sensitive ecological habitat. The proposed project does not disturb or wetlands or protected streams, nor is construction of new buildings proposed in the Shawangunk Kill Recreational River Corridor. Therefore the proposed project would not require these types of DEC or ACOE permits.

### III.E.3.f Restoration of Buffers

Naturally vegetated buffers serve to “protect and physically separate a stream...or wetland...from future disturbance or encroachment...and can sustain the integrity of water-resource ecosystems and habitat.”<sup>35</sup> The applicant recognizes the high quality of these natural protected areas and would restore vegetated buffers where feasible. This would be accomplished by replanting buffers in areas to be disturbed by construction—such as near the modular housing that will be removed. These areas would be reseeded/planted with cool-season prairie grasses and forbs. The applicant would provide a planting list or plant according to a list provided by Hickory Creek Consulting LLC or by the NYS DEC.

The applicant would also modify landscaping management on existing turf-grassed lawn within areas outside of the proposed disturbance and within the designated buffer, where feasible. Rather than mow these areas to the typical two or three-inch height weekly, these areas would be mowed or burned during the non-growing season only, once in late fall or early spring. This would renew the grass and prevent the establishment of non-native invasive species. In addition, non-native ornamental shrubs and trees would be removed and transplanted to more appropriate landscaped areas outside of the buffers.

Restoration of these buffers would restore a natural grassland look. It would also provide more filtering and infiltration for any pesticides, herbicides, and fertilizers that might be applied to lawn and landscaped areas. Approximately 13 acres of wetland buffer would be restored as shown in Figure III.E-7. Pesticides and fertilizers would not be applied within these restored buffers. In addition, snow stockpiles would not be located adjacent to these buffer areas or near stormwater detention ponds.

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<sup>35</sup> Source: New York State Department of Environmental Conservation, Division of Water, “Better Site Design”





Figure III.E-7 Wetland Buffer Restoration



### **III.F Land Use and Zoning**

#### **III.F.1 Land Use**

#### ***ENVIRONMENTAL SETTING***

##### **III.F.1.a Existing Land Uses of the Subject Property and Adjoining Properties**

###### **Project Site Land Uses**

The project site is located on the southern part of Parcel 99.4-1-11, according to Town of Shawangunk tax maps. Figure III.F-1 shows the property land use in relation to surrounding land uses. The property consists of approximately 1,141 acres, and according to the *New York State Office of Real Property Services Assessor's Manual* "Property Type Classification and Ownership Codes" (September 1, 2006), the property use is listed under "Community Services, Property used for the well being of the community." Its specific classification is No. 620—Religious. The property is wholly owned by the applicant, and all activities conducted thereon support the applicant's religious and charitable purposes as a domestic not-for-profit corporation. In coordination with similar facilities at Patterson and Brooklyn, New York, Watchtower Farms is a component of the United States Branch Office of Jehovah's Witnesses. It is 1 of more than 100 branch offices worldwide that help organize the international activities of Jehovah's Witnesses.

Buildings cover approximately 26 acres of the 1,141 acre property, which is 2.3 percent lot coverage. Approximately 36 acres of public and private roads are on the property. Other impervious cover such as sidewalks and parking lots covers 16 acres. Approximately 714 acres are cultivated in agriculture. This includes pasture, alfalfa, hay, woodland, vineyard, apple orchard, sweet corn, and blueberries. Another 62 acres is landscaped and maintained as native grasses, ornamentals, and lawns around the buildings. The remaining balance of 350 acres includes water bodies (reservoirs, ponds) of 33 acres, 100-year flood plains for streams such as the Dwaarkill and Shawangunk Kill of 133 acres, open-space buffer areas (such as between public roads and the fence line to agricultural fields), and miscellaneous uses including a small cemetery, small personal garden plots, aggregate storage (for road, driveway, and building maintenance and construction), restricted access fuel station, fuel tanks (LP-gas, gasoline, diesel, No. 2 fuel oil, No. 4 fuel oil), temporary outdoor materials storage, athletic fields, and unpaved farm roads.

Current uses within structures on the property are described in Table III.F-1.—See Figure III.F-2 for building locations.





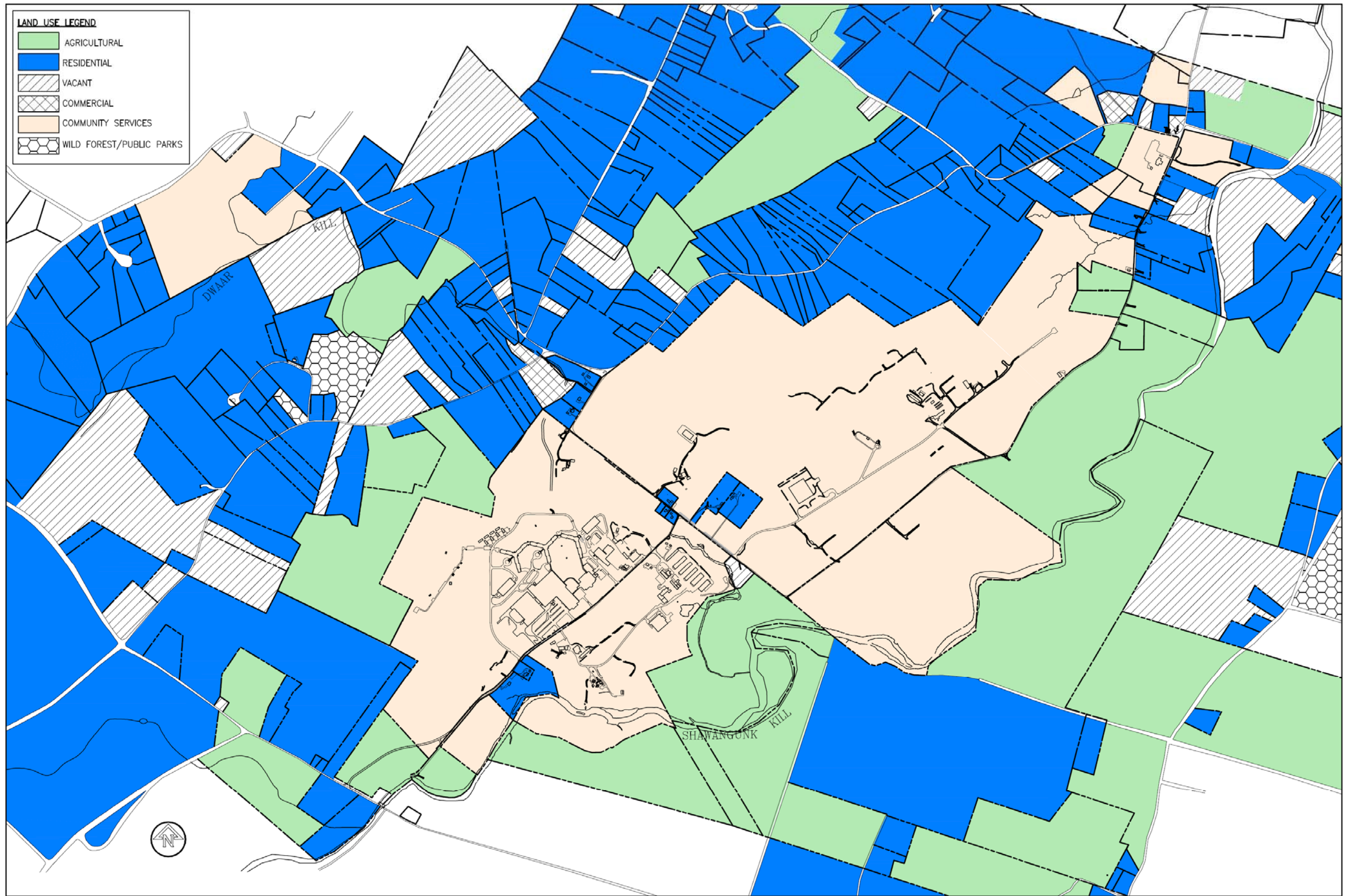
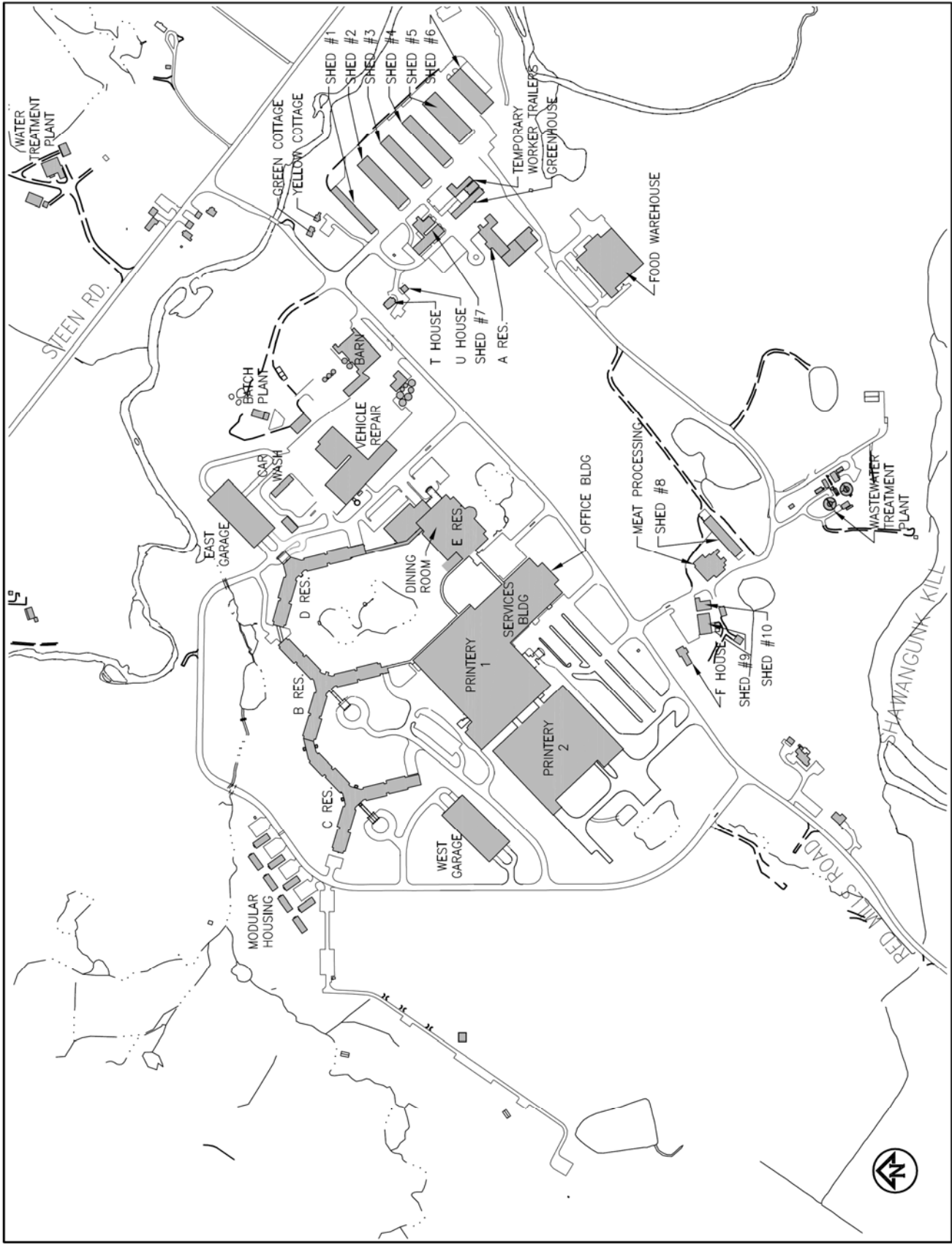


Figure III.F-1 Land Use Map







**Figure III.F-2 Watchtower Farms Building Locations**

**Table III.F-1 Building Uses On Applicant Property**

<b>Building</b>	<b>Activity conducted and/or possible corresponding use according to the Town of Shawangunk Zoning Code</b>	<b>Building Footprint (acres)</b>
A Residence	Multiple dwelling  Refrigerated storage  Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, a library, self-serve garment cleaning, storage of occupant personal effects, guest and temporary worker accommodations, and maintenance workspace.	0.5
B Residence	Multiple dwelling—farm labor housing  Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, a library, storage of occupant personal effects, self-serve garment cleaning, personal services (hair care, sewing), guest and temporary worker accommodations, conference rooms, offices and maintenance workspace.	0.9
Barns and Silos	Agricultural structures	1.0
Car Wash (self-serve)	Other accessory use customarily appurtenant to a principal permitted use.	0.07
Compost Building	Agricultural use and structures	0.2
Concrete Batch Plant	Essential services	0.03
C Residence	Farm labor housing  Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, a library, storage of occupant personal effects, self-serve garment cleaning, occupant recreation (e.g., table tennis), guest and temporary worker accommodations, conference rooms, offices, and maintenance workspace.	1.1

<b>Building</b>	<b>Activity conducted and/or possible corresponding use according to the Town of Shawangunk Zoning Code</b>	<b>Building Footprint (acres)</b>
D Residence	<p>Farm labor housing</p> <p>Infirmary</p> <p>Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, a library, storage of occupant personal effects, self-serve garment cleaning, occupant recreation (e.g., fitness facilities) locker rooms, guest and temporary worker accommodations, conference rooms, offices, and maintenance workspace.</p>	0.7
E Residence	<p>Multiple dwelling—farm labor housing</p> <p>Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, a kitchen, dining room (for meals, fellowship, and worship), garment care (including laundry and dry cleaning), commissary, library, storage of occupant personal effects, self-serve garment cleaning, locker rooms, guest and temporary worker accommodations, conference rooms, offices, and maintenance workspace.</p>	1.6
East Garage	<p>Private garage</p> <p>Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, bicycle storage.</p>	0.8
Materials Warehouse	<p>Agricultural uses and structures</p> <p>Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, vehicle maintenance, car wash (self-serve), offices, locker rooms, and maintenance workspace.</p>	1.9
Food Warehouse	<p>Agricultural uses and structures</p> <p>Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, offices, locker rooms, and maintenance workspace.</p>	1.0

<b>Building</b>	<b>Activity conducted and/or possible corresponding use according to the Town of Shawangunk Zoning Code</b>	<b>Building Footprint (acres)</b>
F House	Multiple dwelling—farm labor housing	0.2
Green Cottage	Multiple-use dwelling	0.04
Greenhouse	Nurseries and greenhouses  Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, offices, and maintenance workspace.	0.1
H House (H-1, H-2)	Multiple dwelling—farm labor housing	0.1
Meat Processing	Agricultural uses and structures	0.25
Miscellaneous Buildings	Essential Services (e.g., Fire Suppression system pump house, irrigation pump house, etc.)	0.2
Modular Housing / Office	Temporary farm labor housing  Accessory use and structure customarily appurtenant to a principal permitted use.	0.6
Office Building	Offices	0.05
Printery 1	Printing  Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, maintenance and production workspace (including carpentry, interior/exterior finishing/refinishing, mechanical, electronics), offices, conference rooms, locker rooms, fitness, dining, and training center.	3.9
Printery 2	Printing  Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, maintenance and production workspace, offices, and tour facilities.	3.3

<b>Building</b>	<b>Activity conducted and/or possible corresponding use according to the Town of Shawangunk Zoning Code</b>	<b>Building Footprint (acres)</b>
Recycling	Essential Services. Provides source separation for waste recycling in accordance with the Ulster County Mandatory Source Separation and Recycling Law of 1991.	0.1
Sawmill	Agricultural uses and structures	0.6
Services Building	Office House of worship Essential services Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, conference rooms, and maintenance workspace.	1.5
Shed 1	Storage Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, maintenance workspace.	0.2
Shed 2	Farm combine and trailer storage building	0.3
Shed 3	Field crops equipment shed	0.3
Shed 4	Garden and crate storage Indoor fitness	0.3
Shed 5	Farm maintenance shop building Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, office, and maintenance workspace.	0.5
Shed 6	Maintenance storage building	0.3
Shed 7	Farm storage	0.2

<b>Building</b>	<b>Activity conducted and/or possible corresponding use according to the Town of Shawangunk Zoning Code</b>	<b>Building Footprint (acres)</b>
Shed 8	Maintenance storage and workspace	0.2
Shed 9	Storage—equipment	0.1
Shed 10	Storage—bicycles, equipment	0.06
T House	Multiple dwelling—farm labor housing	0.03
U House	Multiple dwelling—farm labor housing	0.03
Vehicle Maintenance	Vehicle maintenance  Other accessory uses customarily appurtenant to a principal permitted use including, but not limited to, materials storage, office, lockers, and maintenance workspace.	1.1
Wastewater Treatment Plant	Essential Services	0.1
Water Treatment Plant	Essential Services	0.2
West Garage	Private garage  Accessory uses customarily appurtenant to a principal permitted use including, but not limited to, bicycle storage.	0.8
X House	Two-family dwelling	0.02
Yellow Cottage	Multiple-use dwelling	0.01
Z-1 House	Single-family dwelling	0.03
Z-2 House	Single-family dwelling	0.02

Since the 1960s and 1970s, the general activities conducted on the property have remained fairly consistent. For example, on May 5, 1970, before the Town of Shawangunk had adopted zoning regulations, a building permit was issued for a “printing – office – residential building.” Numerous permits have also been issued for various agricultural structures. Most of the significant residential buildings, printery buildings, and parking garages are clustered together southwest of the intersection of Steen Road and Red Mills Road.

### Adjoining Property Land Uses

The project site is located in southern Ulster County, approximately six miles west of the hamlet of Wallkill, near the geographic center of the Town of Shawangunk. The hamlet of Dwaarkill is approximately one mile to the north at the intersection of New Prospect Road and Awosting Road. Establishments include Sangiovese at the 1776 Colonial Inn—a restaurant which was severely damaged by fire in March 2008, the Dwaarkill Country Store, and The Hoot Owl bar and restaurant. The hamlet of Bruynswick is approximately two miles to the northeast along Red Mills Road. Establishments in the area include Audrey’s Farmhouse Bed and Breakfast, the Bruynswick Inn restaurant, the Kingdom Hall of Jehovah’s Witnesses, New Horizons Resources, Inc., Anna Mercurio Gardens, and the Shawangunk Valley Fire Company station house. The hamlet of Pine Bush in the Town of Crawford, Orange County (situated along State Highway 52) is approximately four miles to the southwest along County Route 7, also known as New Prospect Road.

According to a review of the Ulster County Information Services Web site, land uses adjoining the project site include Field Crops, One-family Year-Round Residence, Two-family Year-Round Residence, Rural Residence with Acreage, Residential—Multi-purpose/Multi-structure, Residential Vacant Land, and Private Wild and Forest Lands.

### III.F.1.b Proposed Operation of Facility—Long-term Plans

The proposed Watchtower Farms Improvements Project is expected to meet significant facility needs over at least a five-year time period after the completion of construction. It is the full and complete project resulting from a recent review conducted in an effort to modernize the facility and identify long-term needs. The review identified the need to improve the quality of life for residents, which this project addresses by providing residential dwelling units with private bathrooms, increasing the size of individual dwelling units, and providing exercise/fitness facilities. A second need is upgrading infrastructure based on proven technology, which this project addresses by adding a technical equipment room and upgrading central laundry and dry cleaning facilities based on industry and textile changes. A third need is allowing for modest population growth, which this project addresses by adding dwelling units, parking, office space, and central dining space. The population growth is categorized as modest in the context of comparative growth in the surrounding community. The applicant’s population is growing at a slower rate than the overall Town of Shawangunk. The applicant’s most recent request for residential growth was fourteen years ago, in 1994. From 1994 to

2007, the central population of Watchtower Farms increased from 1,094 to 1,350 persons, an average rate of increase of 1.6 percent per year. This is lower than the Town of Shawangunk's average rate of annual increase of 1.8 percent over a similar ten-year period. According to United States Census data, the town's population increased from 10,081 to 12,022 from 1990 to 2000. In summary, this project is based on an organizational assessment of long-term needs and reflects the same stable pattern initiated in the early 1970s of integrating agricultural, office, residential, and printery activities. The applicant is committed to the continued consistent use of the property that has been demonstrated for decades.

The applicant does not propose relocating its ecclesiastical governing body and worldwide administrative functions to the project site. A significant consideration for a worldwide organization where more than 80 percent of fellow believers live outside of the United States is access to major international airports. While Stewart Airport in Newburgh has some international flights, these are limited in scope, particularly in comparison to the New York City area airports, such as John F. Kennedy International Airport, LaGuardia International Airport, and Newark Liberty International Airport.

The applicant is a domestic, not-for-profit corporation recognized as exempt from federal taxes under the *Internal Revenue Code*, Section 501(c)(3). The *Internal Revenue Code*, Section 501(c)(3) describes charitable organizations, including churches and religious organizations, which qualify for exemption from federal income tax and generally are eligible to receive tax-deductible contributions. This section provides that: an organization must be organized and operated exclusively for religious or other charitable purposes, net earnings may not inure to the benefit of any private individual or shareholder, no substantial part of its activity may be attempting to influence legislation, the organization may not intervene in political campaigns, and the organization's purposes and activities may not be illegal or violate fundamental public policy. Valley Farms Corporation is a domestic not-for-profit corporation recognized as exempt from federal taxes under *Internal Revenue Code*, Section 501(c)(25) as a title-holding corporation for the exclusive purpose of acquiring, holding title to, and collecting income from real property, and turning over the entire amount less expenses to member organizations exempt from income tax, in this case, the applicant.

As indicated in Appendix 1 in the Parcel List of properties within 500 feet of Parcel 99.4-1-11, Valley Farms Corporation holds ownership to eleven parcels adjacent to the project site: five parcels are each less than five acres in size and contain a total of six houses; three parcels are each between ten and fifteen acres in size and contain a total of five houses; and the remaining three parcels of 3, 24, and 99 acres, respectively, are maintained in agricultural use. The Valley Farms Corporation owns two other properties in the Town of Shawangunk that are not adjacent to the project site: the first is approximately 174 acres in agricultural use on the south side of Birch Road, approximately 0.3 miles west of Route 208; the second is two acres with a house on Papuga Road.

Lands owned by Valley Farms Corporation, whether agricultural fields, dwellings, or otherwise, are maintained in the same religious use as land owned by the applicant.



Valley Farms Corporation does not conduct for-profit activity on any of its lands. When Valley Farms Corporation was created, the applicant decided that land placed in this corporation would not be removed from the property tax roll. In the two decades since its creation in 1987, Valley Farms Corporation has not transferred ownership of properties back to the applicant. It has acquired some properties for the applicant's use and then sold these at a later date. In summary, the applicant uses Valley Farms Corporation to support its activities, particularly those that are agricultural, and the applicant has no long-term plans for expansion or construction on lands in the Town of Shawangunk beyond those that are proposed with this project, whether they are held in ownership by the applicant or the Valley Farms Corporation.

### **POTENTIAL IMPACTS**

#### III.F.1.c Proposed Project—Compatibility with character of adjoining area

In addition to the variety of current uses described under adjoining property uses, the *Open Space Inventory and Analysis—Shawangunk, New York* (March 2004), page 14, summarizes that “Shawangunk has a long history of agriculture and industry, especially along its two main rivers [Shawangunk Kill and Walkill River].” Industry and other use are reflected in two existing hamlets, Dwaarskill and Bruynswick, and to a lesser degree in a former hamlet, Red Mills, near the project site.

Industry is reflected in the history of two hamlets within 2000 feet of the property, the hamlet of Dwaarskill to the northwest and the hamlet of Bruynswick to the north. As described in *The History of the Town of Shawangunk, 1788 Bicentennial 1988* (1988) on page 102:

[Edmund Bruyn] opened his own carriage manufacturing in Dwaarskill in 1832. In 1836, he moved the business to Bruynswick and operated there until 1868 when he built a sawmill at Dwaarskill and made carriage rims. The business was later taken over by his son, Wilson Bruyn, and Robert Russell. Afterwards, it was owned by Thomas Wilson and he continued in the manufacture of wagon rims.

On page 110, it describes another past use, “One local industry in Dwaarskill, the pallet factory run for many years by Whitey Jerman, has closed.”

Regarding non-residential uses near the project site, on page 104, *The History of the Town of Shawangunk, 1788 Bicentennial 1988* (1988) describes information from an 1880 directory, stating “John D. Decker built a hotel at Dwaarskill 35 years ago.” The Building Structure Inventory Form for the William Decker House (May 1, 1983, page 3) describes some more recent property uses at Dwaarskill. The William Decker House includes a 1939 addition that was severely damaged by fire at the Sangiovese at the 1776 Colonial Inn in March 2008. Concerning the addition, it states:

In 1939 an addition was built from the north side of the building. This one story, gabled roof wing contains a kitchen, bath and storage area. Part of the bar from the Schaefer Beer pavilion, the back bar from a pub, and a trophy pavilion from the 1939 New York World's Fair have been assembled in the frame and masonry addition that is joined to the north side of the north wing. A handball court, picnic area, swimming pool, bowling alley and bar and restaurant were added as the property was developed as a resort.

Similar non-residential uses have also historically been located in the hamlet of Bruynswick, such as the former Sunnycroft Ranch, also known as “The Ponderosa,” according to *The History of the Town of Shawangunk, 1788 Bicentennial 1988* (1988), it was a guest ranch that “does a brisk business on weekends when busloads of guests arrive from the city.”

Regarding the former hamlet of Red Mills, located where Bruyn Turnpike/Walkkill Avenue cross the Shawangunk Kill approximately 1,200 feet south of the project site, *The History of the Town of Shawangunk, 1788 Bicentennial 1988* (1988), page 105, describes it.

There were a grist mill and saw mill . . . . In the early days, it was known as ‘Dog Town’. . . . It was never an area of development and was always sparsely populated.

Large, institutional-type use of property is not unique in the wider context of the Town of Shawangunk. A similar large parcel of land is used for two correctional facilities located north of the hamlet of Walkkill, in the eastern section of the Town of Shawangunk. The Walkkill Correctional facility began operating in 1932, and the Shawangunk Correctional Facility began operating in 1986. According to the “Census Of State And Federal Adult Correctional Facilities, 2000 [Computer file],” conducted by United States Department of Commerce, Bureau of the Census, there were over 1,100 inmates incarcerated in the Shawangunk and Walkkill Correctional facilities. There are also over 600 employees staffing the facilities, including civilians and correctional officers. Activities conducted at the correctional facilities have been diverse, as indicated in a 2002 letter describing an audit by the State of New York Office of the State Comptroller:

The Facility administers several vocational programs for its inmates: a Farm with 325 cows that provide milk and meat products for the Facility and neighboring correctional facilities; a horse program with 38 retired thoroughbred horses, funded primarily by the Thoroughbred Retirement Foundation; and an optics program, which manufactures over 100,000 pairs of eyeglasses each year for upstate Medicaid recipients, DOCS inmates, youth in facilities run by the Office of Children and Family Services and residents of State mental health facilities. The Facility also maintains a recycling facility that is used by local area businesses and municipalities.

The proposed project is expected to support, rather than significantly change, the activities conducted on the property. While there have been some refinements over the years, much of what was stated in *The History of the Town of Shawangunk, 1788 Bicentennial 1988* (1988), page 111, remains current, even though twenty years have passed:

[Watchtower Farms] is an extension of the world headquarters of Jehovah’s Witnesses located at 25 Columbia Heights Brooklyn, New York. The purpose of the Watchtower Farms is primarily to print the Bible journals, the Watchtower and Awake! Also a multi-language computer publishing system has been designed and assembled here for the distribution to many of the Watchtower Society’s branches for use in translating and producing Bible literature in more than [400] languages worldwide. This facility also provides food for the volunteers located here and at the Brooklyn facility, who are diligently working to print and distribute Bibles and Bible literature for use by Jehovah’s Witnesses in their educational activity regarding God’s Kingdom. During the past 25 years, the farming activities have consisted of field and garden crops, orchards, beef, swine, dairy and poultry operations.

While printing, office, and agricultural activities have been refined over the years depending upon specific needs, the general activities in the proposed project are the same, and the modest population growth from this project is expected to be compatible in the context of adjoining neighbors and the overall Town of Shawangunk. In addition, this project removes approximately 13 acres of pasture from agricultural use but does not affect other ongoing agricultural activities.

#### III.F.1.d Adjacent Land Uses—Potential Impacts

Adjacent land uses as described in section III.F.1.a can generally be described as agricultural, residential, and commercial. The applicant does not propose any new uses on the project site, but rather a continuation of existing uses to which the community is accustomed.

Concerning potential impacts on agricultural uses, the proposed population increase of approximately 200 residents, or 15 percent, would involve residents who are accustomed to the agricultural activities conducted on the property and off-site. As shown in the traffic study<sup>1</sup>, the corresponding increase in traffic would not negatively impact the level of service at the intersections that were studied. It is not anticipated that this would negatively impact farm-related traffic, such as tractors, from other area farmers.

The nearest structural improvement (i.e., driveway or building) would be over 1,500 feet from the nearest residential structures outside of the project site. The nearest dwelling on New Prospect Road is located over 1,500 feet northwest of the proposed residential building, but it is visually screened by woodland. To the south, the nearest dwelling on Whitaker Lane was built in 2005 with a view across Red Mills Road and up sloping pasture towards the proposed parking garage and recreation building. This dwelling would be visually screened by the proposed berm. Other potential impacts include noise and lighting from existing outdoor recreational fields that would be relocated. These would also be over 1,500 feet northwest of the existing dwelling.

While the applicant maintains on-site dining facilities and limited guest accommodations, at times residents and/or their guests use the services of other nearby establishments. This has the potential for a favorable economic impact on hospitality-type establishments such as in the hamlets of Dwaarkill and Bruynswick.

#### III.F.1.e Construction Schedule—Impacts on Adjacent Land

The Watchtower Farms improvements would require the disturbance of approximately 46 acres. However, the location of the disturbed area is essentially surrounded by land also owned and operated by the applicant. The construction sequencing would be phased so that no more than five acres of land would be disturbed at one time.

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<sup>1</sup> See Appendix 6.

Access to the disturbed area of the site would be limited to three construction exits stabilized with stone anti-tracking pads of sufficient length to prevent tracking sediment onto public roads by construction vehicles. It is anticipated that there would be a short-term increase of construction vehicles for the duration of the construction period due to the necessity of delivery of materials. All staging and stockpiling of materials would be accommodated on the property.

Erosion and Sedimentation Control Measures (ESCM) would be implemented including maintenance and inspection to minimize any affects on adjacent land.

### **MITIGATION MEASURES**

#### III.F.1.f Proposed Mitigation Measures

The proposed site plan has been designed to minimize visual impacts by clustering the proposed development within or adjacent to previously developed areas. The visual impact is further reduced by a proposed visual screening berm that would protect the view of the Shawangunk Ridge by northbound drivers. This northbound view has not always been available. It was recently created with the realignment of Red Mills Road in 1998 that shifted the road west to higher elevation and away from its prior location immediately adjacent to the Shawangunk Kill.

To mitigate nighttime visual impact, whether for residences near the project site or for more elevated residences approximately one or more miles to the east off of Hoagerburgh Road, exterior lighting would be directed downward and shielded. Clustering the proposed buildings in the previously developed portion of the property would similarly mitigate the nighttime “glow” effect.

During the construction period, the following mitigations would be implemented: In order to minimize the overall amount of disturbed soil that would be subject to potential erosion at one time, the project would be phased disturbing a maximum of 5 acres at one time. Additional phases would begin only when the prior phase is near completion and exposed soil has been stabilized by means of seeding or mulching. A silt fence would be installed around the perimeter of the entire site other than the construction entrances as well as the perimeter of each construction phase. Other sediment control measures would include the construction of temporary sediment basins and earth dikes. Stone anti-tracking pads would be installed at all exits to prevent the off-site transport of sediment by construction vehicles. Dust would be controlled by using a mobile water truck to apply water to disturbed areas once site grading has been initiated. Spraying of disturbed areas would be performed at least once per day during dry months or as needed to control dust. These measures are discussed in detail in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13, located in Volume 2 of this DEIS.

## III.F.2 Zoning

### **ENVIRONMENTAL SETTING**

#### III.F.2.a Existing Zoning—Project Site and Adjoining Properties

As shown in Figure III.F-3 Town of Shawangunk Zoning Map, the entire Parcel 99.4-1-11 (“property”), including the project site, is in Zoning District R-Ag 4 Residential-Agricultural. According to the *Town of Shawangunk Code*, Chapter 177, Zoning, Article II, 177-7 D(1):

The purpose of this district is to encourage the continuation of agriculture and low-density uses compatible with the soil, topography and location of this district; to control activities not compatible with agriculture and related low-density development; and otherwise to create conditions conducive to carrying out the broad purposes of this chapter.

The principal permitted uses in the R-Ag 4 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 D(2), are:

- Agricultural uses and structures
- Cemeteries
- Essential Services
- Houses of worship and related residences
- Nurseries and greenhouses
- Parks and playgrounds
- Public correctional institutions
- Public schools
- Single-family detached dwellings.

The permitted accessory uses in the R-Ag 4 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 D(3) are:

- Accessory farm buildings
- Farm labor housing in accordance with New York State Department of Health standards
- Home occupations, professions and trades
- Private garages and parking and loading areas

- Roadside stands for the sale of agricultural products produced primarily on the premises
- Signs
- Other accessory uses and structures customarily appurtenant to a principal permitted use

The special uses in the R-Ag 4 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 D(4) are:

- Accessory dwelling
- Community buildings, clubs, lodges and fraternal organizations
- Eating and drinking establishments
- Junkyards, outdoor storage of junk, automobile wrecking yards, etc.
- Kennels
- Light industrial activities and businesses of a kindred nature
- Mining and excavation
- Mobile homes in accordance with Town of Shawangunk applicable local laws
- Multiple dwelling
- Planned development groups
- Private schools
- Refuse and garbage dumps in accordance with applicable town laws
- Sanitary landfills per the requirements of the Department of Environmental Conservation
- Senior citizen development
- Signs

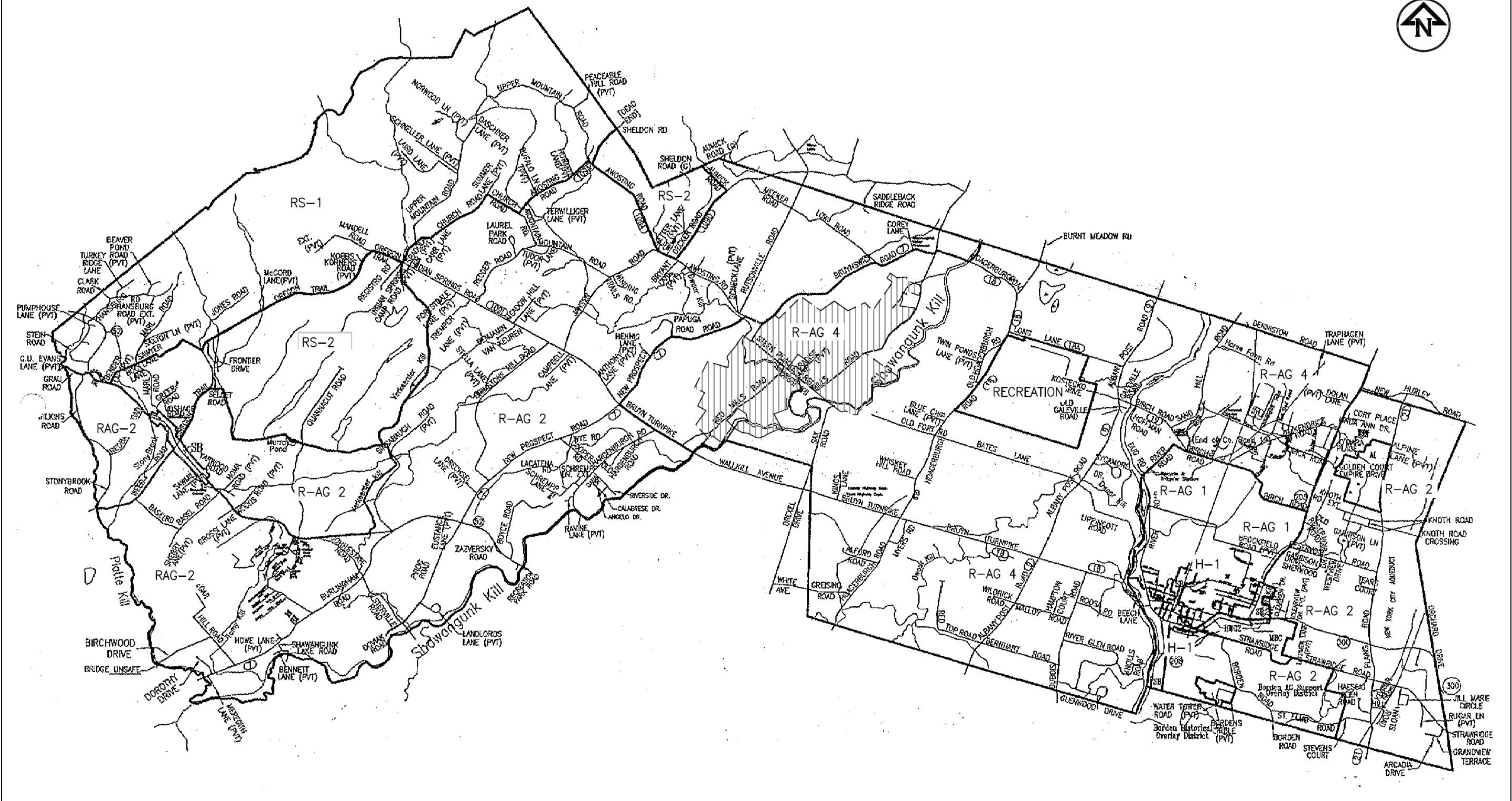


Figure III.F-3 Town of Shawangunk Zoning Map and Parcel 99.4-1-11





- Two-family detached dwellings

All parcels adjoining the property, with the exception of two (Parcels 99.4-1-2 and 99.2-4-29), are located in the same R-Ag 4 zoning district. The R-Ag 4 zoning district's general geographic boundary, approximately four miles east of the project site, is the Wallkill River.

The property primarily fronts onto Red Mills Road, which is to the east. Ulster County Route 7, also known in the area as Bruynswick Road and New Prospect Road, is west of the property, which has limited road frontage on County Route 7 north of its intersection with Steen Road. This is north of the project site.

County Route 7 marks the eastern boundary of Zoning District R-Ag 2 Residential-Agricultural. Thus two adjacent properties across County Route 7 are in this district. Regarding the R-Ag 2 zoning district, according to the *Town of Shawangunk Code*, Chapter 177, "Zoning," Article II, 177-7 B(1):

The purpose of this district is to provide reasonable standards for the development of residential areas in the vicinity of established residential centers; to encourage a greater variety of lot sizes and housing types; to control activities not compatible with moderate-density residential development; and otherwise to create conditions conducive to carrying out the purposes of this chapter.

The principal permitted uses in the R-Ag 2 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 B(2), are:

- Agricultural uses
- Houses of worship and related residences
- One-family detached dwellings
- Parks and playgrounds
- Public schools

The permitted accessory uses in the R-Ag 2 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 B(3) are:

- Fowl: the keeping of fowl for noncommercial use shall be restricted to 20 per acre unless the property conforms to the definition of a farm as contained in this chapter. Such fowl shall be adequately housed, fed and confined so as to eliminate objectionable conditions being experienced by adjoining residential properties within the district.
- Home gardening and the keeping of small domestic animals for noncommercial uses, but not including the keeping of goats, mink or other like fur-bearing animals

- Home occupations, professions and trades
- Horses and cows: The keeping of horses and cows shall not be at a density greater than 1 animal per acre.
- Private garages and parking and loading areas
- Other accessory uses and structures customarily appurtenant to a principal permitted use

The special uses in the R-Ag 2 zoning district, according to the *Town of Shawangunk Code*, Chapter 177-7 B(4) are:

- Accessory dwelling
- Automotive service stations
- Cemeteries
- Commercial groups
- Community buildings, clubs, lodges and fraternal organizations
- Eating and drinking establishments
- Essential services
- Light industrial activities and businesses of a kindred nature
- Mining and excavation
- Mobile homes in accordance with Town of Shawangunk Local Law for the Regulation of Mobile Homes and Mobile Home Camps
- Multiple dwellings
- Neighborhood stores
- Nurseries and greenhouses
- Nursery schools and home daycare facilities
- Nursing and convalescent homes in accordance with all applicable state, county and local laws
- Planned development groups
- Private breeding kennels

- Private schools
- Recreation and amusement uses
- Senior citizen development
- Signs
- Two-family detached dwellings

As described above, the entire project site and most adjoining properties are located in the R-Ag 4 zoning district. Two adjoining properties across CR7 are located in the R-Ag 2 zoning district.

### **POTENTIAL IMPACTS**

#### III.F.2.b Proposed Action—Conformance to Town of Shawangunk Plans

According to the *State of New York Local Government Handbook 5<sup>th</sup> Edition*, January 2000 (Chapter XVI p. 2), “the comprehensive plan should be thought of as a blueprint on which zoning and other land use regulations are based.” The recently prepared Town of Shawangunk Comprehensive Plan, July 2003, by Fairweather Consulting in New Paltz, New York, provides a framework in which to assess the proposed action.

Section I, “Introduction,” states:

The Town of Shawangunk is committed to being ‘farm-friendly’ and strongly believes that agriculture should continue to be encouraged as an important land use and economically viable industry within the Town. Contemporary agriculture provides the town with more than the sum total of the products produced on agricultural lands: it preserves and protects important environmental resources, wildlife habitat, and aesthetics that contribute to quality of life, as well as representing a living testament to our town’s heritage. Agriculture contributes to the economy of the Town through sales of products and employment of workers, and indirectly, by enhancing tourism.

While Watchtower Farms is not a typical farm in the area, based either on its size or purpose, its agricultural activities in the Town of Shawangunk are substantial. Watchtower Farms’ history in the Shawangunk Valley began in 1963 when the applicant took over operation of the small Goebel farm on Red Mills Road in the Town of Shawangunk. Having greatly expanded its agricultural operations since then, Watchtower Farms now supplies food to approximately 4,000 Watchtower staff at the United States branch offices in Brooklyn and Patterson, and at Watchtower Farms itself. It actively farms the majority of its property, with well over 2,000 acres in the Shawangunk Valley maintained in agricultural production. The main agricultural products are beef cattle, field crops, garden crops, and an orchard. The following table relates Watchtower Farms’ agricultural production in the Town of Shawangunk, excluding other production occurring in the Shawangunk Valley.

**Table III.F-2 Watchtower Farms 2007 Agricultural  
Production in the Town of Shawangunk**

<b>Product</b>	<b>Amount</b>
Apples	1,600 bushels
Apple Cider	1,000 gallons
Apple Juice	5,600 gallons
Blueberries	7,000 quarts
Grapes	62,000 pounds
Grape Juice	2,400 gallons
Sweet Corn	87,000 pounds
Beef Cattle	320,000 pounds
Corn Silage	267 tons
Round Grass Bales	400 bales

During 2007, the applicant reported approximately 3,700 acres in New York State maintained in cropland, pasture, and woodland. This primarily included activities in the Hudson Valley and smaller agricultural activities in Lansing and Patterson, New York.

In Section I, "Introduction," of the Town of Shawangunk Comprehensive Plan, under the heading "A Vision for the Town of Shawangunk," the following statement is made: "The Town of Shawangunk will grow and develop in ways that . . . ." Following this, eight visions are provided. The proposed project is reviewed in the light of each vision below:

- Vision: Protect and preserve important natural resources and views in the Town, particularly those associated with the Shawangunk Ridge and the Shawangunk Kill and Walkkill River corridors.

The proposed project has been clustered around previously developed portions of the project site. It has been visually screened in a manner that protects the view of the Shawangunk Ridge for northbound vehicles on Red Mills Road north of the intersection with Bruyn Turnpike. The project site is also outside of the Shawangunk

Kill Recreational River Boundary and would not affect views to or from the Shawangunk Kill. The project site is not proximate to the Wallkill River.

- Vision: Promote the Hamlet of Wallkill as a compact and lively community center.

The proposed project would not have a direct impact on the hamlet of Wallkill. However, residents of and visitors to Watchtower Farms visit restaurants, stores, and similar services in Wallkill and nearby communities such as Bruynswick, Dwaarkill, and Pine Bush, and to more distant communities such as Gardiner, New Paltz, Newburgh, and Middletown. To the extent that the Hamlet of Wallkill provides such services, it is well positioned near Watchtower Farms to benefit from such business.

- Vision: Encourage appropriate commercial and industrial development in and near the hamlet centers

Commercial and industrial development that is located near the hamlet centers, such as Dwaarkill, Bruynswick, and Wallkill, is well-positioned to supply Watchtower Farms with materials and services.

- Vision: Promote an agriculture and forestry sector in the Town that is economically viable and that also protects the natural environment.

The proposed project would not remove significant areas of agriculture or forestry from production. Watchtower Farms has had an operating sawmill for many years, and the forested lands are subject to a woodland management program.

- Vision: Protect important areas of open space.

Because the proposed project is clustered on previously developed areas, it would not have an impact on important areas of open space on the property.

- Vision: Ensure that all development blends in with the natural environment through high-quality, environmentally sensitive design and landscaping.

The project would blend with the natural environment in several different ways. The size, appearance, and lighting for new construction would match the existing structures. This would include shielded exterior lighting.

In addition, effort would be made to design the new residence, office, and recreation building to accepted sustainability standards. The goal is to achieve a 3 *Green Globes* award level (this corresponds to a LEED® Green Building Rating System™ (Leadership in Energy and Environmental Design [*Gold* award level]) in sustainable design through the Green Globes™ System, which is explained in more detail below.

According to the <http://www.thegbi.org> Web site, The Green Globes™ System is a voluntary, consensus-based national rating system developed by the not-for-profit organization Green Building Initiative (GBI). Their stated mission is:

...to accelerate the adoption of building practices that result in energy efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction.

Green Globes emphasizes state-of-the-art strategies for sustainable site development, energy efficiency, water savings, resources and materials selection and waste management, emissions control and indoor environmental quality. Green Globes is a practical rating tool for green building design and construction that provides immediate and measurable results for building owners and occupants.

The Web site continues:

The Green Globes™ System is a revolutionary green management tool that includes an assessment protocol, rating system and guide for integrating environmentally friendly design into commercial buildings. Once complete, it also facilitates recognition of the project through third-party review and assessment. It's an interactive, flexible and affordable approach to environmental design.

Sustainable design initiatives would include the following:

#### SITE DEVELOPMENT

- Undeveloped areas to remain undisturbed.
- Landscaping would integrate native planting and naturalization.
- “Heat island” effect to be minimized by using high albedo paving surfaces.
- Exterior lighting to minimize glare, night trespass, night sky glow.
- Design to reduce bird collisions with buildings.
- Natural habitat cores and corridors to be preserved.
- Site grading to increase infiltration.
- Reduce run-off by use of plants, trees, detention ponds, infiltration trenches.
- Use of indigenous plants in landscaping would reduce water use.

#### ENERGY

- DOE *Energy Star* Target Finder rating of 65 percent or better (indicates upper 35 percent).

- Shading devices, glazing to reduce energy use.
- Building orientation reduces energy use and maximizes daylighting capability.
- Building envelope to optimize energy savings.
- High-efficiency lamps, ballasts and lighting controls save energy.
- Variable-frequency drives (VFDs), energy-efficient motors and elevators to be installed.
- Pedestrian walkways for commuting would have minimal effects on fossil-fuel consumption.

## WATER

- Consumption targets—less than 10 gallons per square foot per year in offices and 11,000 gallons per dwelling unit per year.
- Water saving fixtures.
- Irrigation through rainwater storage.
- On-site wastewater treatment.

## RESOURCES AND MATERIALS

- Use of locally manufactured materials.
- Durable and low-maintenance materials to be used.
- Strategies to re-use and recycle demolition waste.

## EMISSIONS

- Low ozone-depleting refrigerants to be used.
- All new combustion equipment to meet *Energy Star* or other energy saving standards.

## INDOOR ENVIRONMENTAL QUALITY

- Ventilation rates to comply with *ASHRAE* Standard 62.1-2004 for indoor air quality.
- Strategies to control sources of indoor pollutants.
- Strategies to optimize lighting comfort for occupants, including daylighting.

- Strategies to provide acoustic comfort.

The applicant's use of the Green Globes™ System would contribute towards a development that blends in with the natural environment through high-quality, environmentally sensitive design and landscaping.

- Vision: Provide a diversity of housing types so that the Town remains affordable for all of its residents.

While the proposed project provides room for modest residential growth, its intent is to improve quality of life for residents by providing private, individual bathrooms, and small kitchenettes. This meets the need of providing conveniences that are typical in contemporary society. Because of the nature of the applicant's facility, the proposed residence building would have no impact on the cost of housing in the town.

- Vision: Protect historic resources of the Town.

The nearest historic resource, which is located on the subject property north of the project site, is the Dill Farm, also listed as the Meredith House in *Open Space Inventory and Analysis – Shawangunk, New York*, page 43 (see Figure III.F-4). The Dill Farm was added to the National Historic Register in 1983 (Building #83001816) based on the significance of its Greek Revival architecture. The historical structures were built in the late 18th century. The Dill Farm is separated from the project site by the Dwaarkill. It is located approximately 2,000 feet northwest of the project site on the same property. Following the applicant's purchase and restoration of the property, in 1999, members of an informal group known as the "Old House Group," a local group of homeowners who share historic information, toured the property. The president of the group wrote in a letter, dated April 7, 1999:

In particular, I should like to commend your high quality, sensitive restoration and the tasteful decoration of your historic house. You clearly have a sense of the responsibility that private ownership of these rare and valuable properties entails.<sup>1</sup>

The proposed project is not anticipated to have a potential impact on the Johannes Decker Home or William Decker House, nearby historic structures that are screened from the project site.

In addition to the eight visions discussed above, the *Town of Shawangunk Comprehensive Plan* also makes several statements in Section II, "Key Issues Emerging from the Inventory." One of these is that Shawangunk's population is growing and that traditional sources of open space are in transition. It states that "[a]griculture,

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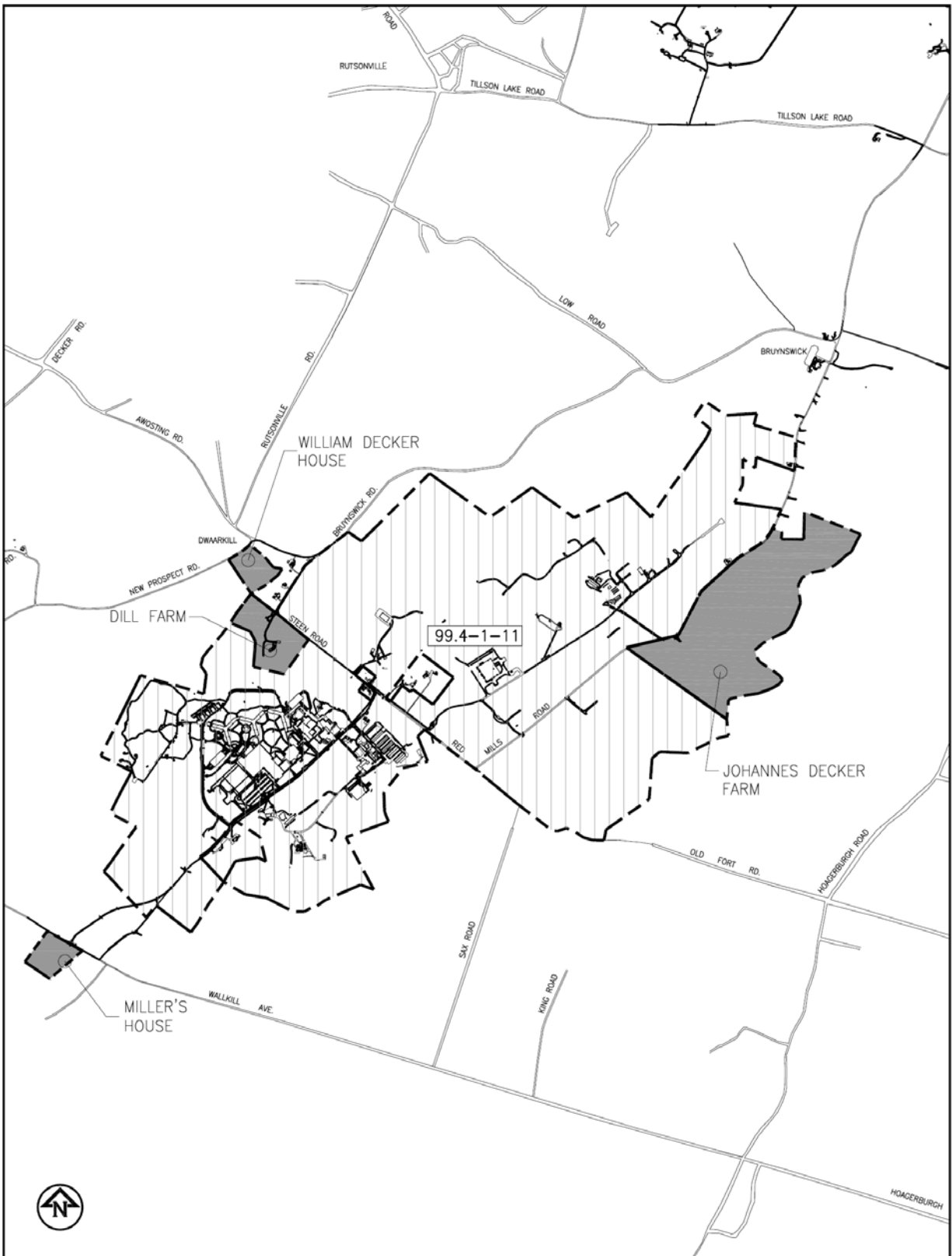
<sup>1</sup> See Appendix 2.



vacant lands and community services, particularly the Watchtower Farms complex in the center of the Town) are dominant uses.” It also notes:

...the data show that 41.4 percent of Shawangunk-area farmers spend at least 200 days working off the farm each year, compared to approximately 30 percent of farm operators countywide or at the State level. This suggests that farming in the area is indeed undergoing immense change.

In a similar way, Watchtower Farms has focused its agricultural activities in the past decade, increasing its planting of blueberries and sweet corn while eliminating its dairy herd. Although more efficient methods mean that less time is spent by individual residents on direct agricultural activities, the applicant’s cumulative agricultural activity is significant.



**Figure III.F-4 Historic Locations Map**

The *Town of Shawangunk Comprehensive Plan* also comments on preserving water resources. No groundwater sources directly supply the project site. The applicant operates private, state-regulated, water and wastewater treatment systems. Potable water is supplied from two surface water reservoirs that, including their watersheds, are totally contained on the property. Non-potable water for irrigation is supplied primarily from a pump station located on the Shawangunk Kill. Treated wastewater is discharged under a New York State Pollutant Discharge Elimination System (SPDES) permit (NY #002 5925) to the Shawangunk Kill. Thus, in harmony with the Town of Shawangunk Comprehensive Plan, water resources would not be impacted by the proposed project.

The Town of Shawangunk Comprehensive Plan notes that certain areas of the town may be subject to increasing traffic. The transportation study considered eleven intersections of interest. The applicant retained John Collins Engineers, P.C., from Hawthorne, NY, to study these intersections, including traffic counts.<sup>2</sup> The intersections studied include: (1) Bruyn Turnpike and Hoagerburgh Road, (2) Bruyn Turnpike and Red Mills Road, (3) Bruyn Turnpike and Hardenburgh Road, (4) Hardenburgh Road and North Street/Maple Road, (5) Bruyn Turnpike and New Prospect Road/Indian Springs Road, (6) Red Mills Road and Steen Road, (7) Red Mills Road/Hoagerburgh Road and Bruynswick Road, (8) Red Mills Road and Watchtower Farms Driveways, (9) Wallkill Avenue and Drexel Drive, (10) NYS Route 52 and County Route 7 (New Prospect Road), and (11) NYS Route 52 and Maple Avenue (Route 302).

The transportation study includes the following summary comments on page 20:

Based on the results of the field inspections of the roadways in the vicinity of the site together with the results of the capacity analysis for the individual intersections, the traffic generated by the expansion of the Watchtower Farms facilities should not result in a significant negative impact on traffic operations in the area. Several recommendations have been identified which should be completed regardless of the proposed expansion. These will have to be coordinated with the Town of Shawangunk and the Highway Superintendent as part of the approval process.

The types of recommendations noted in the summary include some clearing and grading to improve sight lines, supplemental warning signs at intersection(s), speed reduction warning sign(s), double yellow centerline, pavement “stop” bars, and minor signal timing modifications.

The Town of Shawangunk Comprehensive Plan states that “there is increasing demand for local/neighborhood parks.” The applicant has supported various volunteer initiatives at Verkeerderkill Park, Garrison Park, Wallkill Rail Trail, and the Galeville Recreation Area. The *Town of Shawangunk Comprehensive Plan* particularly focuses on local, neighborhood parks. In harmony with those comments, the applicant proposes providing private recreation facilities to mitigate possible demands on other town services, such as athletic fields, that may be at a premium.

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<sup>2</sup> See Appendix 6.

Another area of concern in the *Town of Shawangunk Comprehensive Plan* is that “in many areas, the town needs to improve and maintain the appearance and condition of the built environment.” The applicant has a reputation for maintaining its property and assisting, where possible, with community beautification efforts. A letter submitted by a neighbor to the Town of Shawangunk Planning Board concerning the scoping document requested a hard look at the project in its overall context within the town.<sup>3</sup> The neighbor also included the following comment:

Watchtower has been a valuable asset in our town for many years. Their members are hard-working, law-abiding people who are a credit to our community. It is a pleasure to drive through their property, which they maintain beautifully. Out of sense of civic responsibility they have frequently donated skilled labor and materials to public projects that range from road building and maintenance to the enlargement of the Volunteer Firehouse at Bruynswick. Their current project before the Planning Board has been designed with sensitivity toward keeping the project inconspicuous and conserving open space.

The Shawangunk Mountains Scenic Byway Corridor Management Plan (October 2005), comments on page G-59:

In some years, close to 100,000 visitors tour the main facilities of Watchtower Farms located near the Byway off Red Mills Road in the Town of Shawangunk. This facility is part of the worldwide organization of Jehovah’s Witnesses. A main focus of the more than 1,000 volunteers who live and work here is the printing of Bible-based literature. This is done with a computerized system capable of publishing in any language, and with a printing capacity of over 300,000 publications per hour. In addition, the agricultural operations of Watchtower Farms provide some of the most beautiful views of the countryside and the Shawangunk Mountains. Land is farmed in the towns of Shawangunk, Gardiner, New Paltz and Rosendale. About half the land is rolling pasture for its beef herds. The balance grows such crops as field corn, wheat, alfalfa and hay. Located here since 1963, Watchtower Farms has a long-standing commitment to the community and to the principles of sustainability. This has resulted in a well-planned operation with a balance of publishing and farming that has helped to preserve the rural character of the community as well as many wonderful views of the Shawangunk Mountains.

Concerning the mixture of various uses that Watchtower Farms represents, the Town of Shawangunk Comprehensive Plan includes the recommendation, under Section IV.E, “Economic Development,” to:

...encourage farmers to maximize Return on Lands not in production in environmentally responsible manner through improved tax planning, woodlot management, agri-tourism and allowing other income producing activities as accessory uses to farming. . . . Part of this effort should consider ways of encouraging existing farms to create nonfarm uses on a portion of their land in order to generate additional sources of income so that the farm itself can stay in operation.

As a religious not-for-profit organization, the applicant does not intend to generate income; however, the applicant endeavors to make the best use of its human and physical resources. Having compatible non-farm uses improves the applicant’s flexibility and stability in the community.

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<sup>3</sup> Letter to Town of Shawangunk Planning Board, January 17, 2008. See Appendix 2

### III.F.2.c Zoning Standards—Compliance

According to “Zoning,” Chapter 177 from the *Code of the Town of Shawangunk*, the zoning map updated in 2004 shows the project site in Zoning District R-Ag 4. In accordance with Sections 177-7.D(4), 177-22, and 177-23, the applicant is seeking a special use permit and site-plan review approval for 300 multiple-family dwellings to be constructed in a three-story residential building attached to an existing residential building. The Applicant also proposes to construct and expand various ancillary uses including, but not limited to, a two-story parking garage with cellar accommodating 400 spaces, three-story accessory office building with basement, recreation building, technical equipment building, with proposed additions to existing dining room and laundry and dry cleaning buildings.

The applicant proposes no variances, modifications, or waivers of the *Town of Shawangunk Zoning Code* or other town codes or laws, except for the following two variances. First, the applicant intends to seek a variance from providing sprinklers in the existing E Residence dining room on the basis of several unique circumstances. These include that the applicant maintains a private fire brigade, a continuous security watch, a non-smoking policy on the premises, and there would be a disproportionate, adverse potential impact from adding the sprinklers to the existing dining room. This variance would be requested in accordance with the procedure of the *Building Code of New York State*. Second, the applicant intends to seek a variance allowing the basement windows at parts of one side and the rear of the proposed three-story accessory office building to be exposed. The height at these sections of the building would reach a maximum of 44 feet, 6 inches, which would exceed the maximum requirement of 35 feet in height.

#### R-Ag 4 Bulk Regulations—Overlay Districts

The project site is not located in either of the Town of Shawangunk’s zoning overlay districts—the Borden Home Farm Historic Overlay District (*Town of Shawangunk Zoning Code*, Section 177-7.H) or the Aquifer Protection Overlay District (*Town of Shawangunk Zoning Code*, Section 177-7.I)

#### Building Height and Bulk Table

The project site is not located in an airport district (*Town of Shawangunk Zoning Code*, Section 177-9). The permitted exceptions in Section 177-9.C allow a parapet of four feet or less above the limiting height of the building. The maximum building height in the R-Ag 4 zoning district is 35 feet. According to the definitions in Section 177-41, Building Height is:

...the vertical distance measured from the mean level of the ground surrounding the building to a point midway between the highest and lowest point of the roof, but not including chimneys spires, towers, tanks and similar projections.

Also according to The *Town of Shawangunk Zoning Code*, Schedule II, the following are minimum lot and maximum height requirements in the R-Ag 4 zoning district: Front yard—75 feet; Rear yard—100 feet; Side yard, 1–50 feet, both—100 feet; Minimum lot

width—250 feet; Minimum lot depth—200 feet; Maximum impervious coverage—15 percent; Maximum building height—3 stories.

For the proposed project, the minimum distance to the property line is approximately 300 feet. This is from some of the relocated outdoor recreation fields to an undeveloped property west of the project site, Parcel 99.4-1-40.31. The impervious coverage on the property, including public roads, driveways, sidewalks, parking areas, and buildings would increase by 3.5 acres, or 0.3 percent of the entire parcel. Total impervious surface coverage on the property would be approximately 7.1 percent.

The maximum height of the proposed buildings would be three stories or less, and the building height would be below the permitted height of 35 feet and a 4 foot or less roof parapet with the exception of the proposed accessory office building, where a variance is being sought. The building complies with the height requirements of *The Town of Shawangunk Zoning Code* at the street frontage and east side. The grade at the west side and rear of the building is retained, allowing the basement windows to be exposed to light with a total height of 44 feet, 6 inches, in these locations. Without this exposure, the basement floor is limited to non-office uses, not allowing the full capacity of the building to be realized. The building is located between two existing structures, a 52-foot-high residence building and a 30-foot-high office building. The exposed basement is obscured at the sides and rear by the existing structures and a one (1) story enclosed walkway. The proposal includes the installation of a sprinkler system in the entire building, which is proposed to mitigate additional fire exposure caused by reduced accessibility. The proposed height is less than an existing adjacent five-story structure, and the applicant proposes that it is in harmony with zoning district objectives and is absent of any objectionable characteristics as described in *Town of Shawangunk Zoning Code, Section 177-23 (C)*, “General Standards for Special Permit Use Review”.

According to the Town of Shawangunk Local Law No. 8 of the Year 2004, a local law entitled “Calculation of minimum lot sizes in all zoning districts and grandfather clause,” net acreage rather than gross acreage is used for density calculations. The property is 1,141 acres and contains 133± acres of land inside the Federal Emergency Management Agency 100-year floodplain for the Dwaarkill and Shawangunk Kill streams, 27± acres of delineated wetlands outside the 100-year floodplain, and 33± acres of natural or constructed waterbodies, including retention and detention basins. Therefore, the net acreage used for density calculations on the property is 948± acres.

#### Accessory Structures in Yards

An accessory structure that is not attached to a principal structure can be located no closer to a principal structure than 10 feet (*Town of Shawangunk Zoning Code, Section 177-11.C[2]*). Any proposed accessory structure(s) that are not attached to a principal structure would be separated by at least ten feet. For the proposed project, accessory structures are attached to existing principal structures or separated by at least ten feet.

## Landscaping

Any use in a residential district and which is not conducted within a completely enclosed building, such as junkyards, storage yards, lumber and building material yards, and parking lots, and like uses, shall be entirely enclosed by a fence or landscaping to effectively shield such use (*Town of Shawangunk Zoning Code*, Section 177-12). The proposed parking garage is very similar to the two existing parking garages on the property. It would be screened by landscaping and an earthen berm. The building façade would be similar to those of the other parking garages.

## Density for Residential Uses—Multiple Dwelling

Residential districts allow one dwelling unit per minimum lot area. Commercial districts allow one retail use or service per five thousand (5,000) square feet of lot area. Industrial districts allow one use or service per 40,000 square feet of lot area. (*Town of Shawangunk Zoning Code*, Section 177-13). The proposed project is located in a residential-agricultural district. Apartments within multiple dwellings shall conform to minimum size limitations: 1 bedroom—550 square feet, 2 bedroom—700 square feet, and 3 bedroom—850 square feet. The minimum lot area required for each dwelling unit in a multiple dwelling in the R-Ag 4 zoning district where central water and sewer is provided is 1 bedroom—5,000 square feet, 2 bedroom—10,000 square feet, and 3 bedroom—10,000 square feet (*Town of Shawangunk Zoning Code*, Section 177-18.A(7)).

The applicant proposes construction of 300 dwelling units in a multiple dwelling. These non-apartment dwelling units primarily rely on central services, including dining and laundry, which are provided by the applicant. Area sizes for the multiple-dwelling units are generally 350 square feet for studio dwelling units and 450 to 550 square feet for one-bedroom dwelling units. Since none of the dwelling units is larger than one bedroom, construction of the proposed multiple dwelling with 300 dwelling units therefore requires 5,000 square feet of property per dwelling unit, or 34.4 acres on the project site. This is less than the 46-acre area that is to be disturbed with the multiple dwelling, ancillary recreation building, parking garage, outdoor recreation fields, and landscaped areas associated with this project. Therefore, the proposed project meets the density requirements.

## Supplementary Regulations

Because the facility is private, not open to the public, and is non-commercial, the requirements of the *Town of Shawangunk Zoning Code*, Section 177-15.C, “Commercial recreation, indoor” are not applicable. However, the proposed project would comply with all applicable regulations, such as those regulating building, fire, and safety. Also, the proposed accessory office building is not a commercial activity; however the proposed project would meet the requirements (*Town of Shawangunk Zoning Code*, Section 177-15.B) for commercial group buildings of a minimum 60-foot setback from the front lot line, paved and marked parking areas, placement and screening of dumpsters in rear yards, single exit, and appropriate landscaping.

The project site does not include an “eating and drinking place” as defined by the *Town of Shawangunk Zoning Code*, Section 177-15.D, “Eating and Drinking Places.” The property contains on-site dining room(s) that are non-commercial and provided without charge to serve residents and their guests. Thus, it is not subject to site-plan and architectural review by the Zoning Board of Appeals.

Automotive service stations and repair garages cannot be located within 200 feet of playground and churches. Cars stored outside must be in an orderly fashion and at least twenty (20) feet from any rights of way. (*Town of Shawangunk Zoning Code*, Section 177-15.F) There are no automotive service stations or repair garages located within 200 feet of any areas used for recreation or churches.

None of the activities associated with this project constitute a “light industrial use” according to the *Town of Shawangunk Zoning Code*, Section 177-17.J. However, this section is considered in managing various activities conducted on the project site including noise, vibration, smoke, odor, particulate matter, wastes, water resources, lights, landscaping, and access.

#### Agricultural Uses

Farm buildings and structures shall be no closer than two hundred (200) feet to any property line, and accessory farm buildings not housing animals shall be no closer than fifty (50) feet to any property line. (*Town of Shawangunk Zoning Code*, Section 177-16.A[1]). The proposed project complies with this requirement.

#### Outdoor Recreation

No outdoor recreation building shall be located within 100 feet of any property line. Unenclosed recreational facilities shall be located not less than 150 feet from any property line, except where greater distances are otherwise required and shall be effectively screened from adjoining uses. Illuminated signs and other lights shall be directed away or shielded from adjoining properties. No public address system is permitted except where it would not be audible at the property line. (*Town of Shawangunk Zoning Code*, Section 177-16.E).

The proposed recreation building and outdoor recreation fields would be for use by Watchtower Farms residents. The relocated outdoor recreation fields would be at least 300 feet from the nearest property line and would not include a public address system. The nearest adjacent dwelling within sight distance across agricultural fields is located at Parcel 99.4-1-28 on Whitaker Lane, south of Red Mills Road. It is approximately 1,800 feet away. Another adjacent dwelling on Parcel 99.4-1-48.1 on Bruyn Turnpike, to the southwest of the project site across fields and through forested land, is approximately 800 feet away. Lighting would be shielded from adjoining properties.

#### Essential Services

Essential services include electric substations, transformers, switches, sewage treatment plants, auxiliary apparatus serving a distribution area and water-pumping



stations. Such facilities shall be located to draw a minimum of vehicular traffic through residential streets, shall not adversely affect the character of surrounding residential area, and shall have adequate fences, barriers, safety devices, and landscaping. (*Town of Shawangunk Zoning Code*, Section 177-17.C) The proposed technical equipment room is considered an ancillary use rather than essential services as the use does not fall within the definition for “essential services” (*Town of Shawangunk Zoning Code*, Section 177-41). It is located in a previously developed area and would be visually shielded from Red Mills Road by other buildings and landscaping.

### Signs

Directional signs are permitted. For buildings other than dwellings, one (1) identification sign not exceeding 32 square feet in area may be displayed for each 250 feet of road frontage. Signs must be constructed of durable materials, maintained in good condition and not allowed to become dilapidated. No sign shall be higher than 15 feet above the ground. No exterior neon signs shall be permitted and no flashing signs or those causing objectionable glare at the lot line of the property in question (*Town of Shawangunk Zoning Code*, Section 177-19).

Exterior signs on the project site would be directional in nature or for building identification purposes. The applicant does not maintain any “billboard”-type signs on the property and none are proposed to be added as part of this project. Signage would be coordinated with other existing signs on the facility and maintained in good condition.

### Off-street Parking

Each off-street parking space must have an area of not less than 200 square feet, exclusive of access drives or aisles. Parking areas shall be suitably drained and paved. Access shall be limited to several well-defined locations. All permitted and required off-street parking spaces shall be located on the same lot as the use to which such spaces are accessory. The *Town of Shawangunk Zoning Code*, Section 177-20, Table I, requires one parking space per dwelling unit.

The proposed parking garage’s parking spaces would have an area of at least 200 square feet per space, exclusive of access drives or aisles. Both the parking garage and any outdoor parking spaces, such as in short-term loading areas or near the recreation areas, would be suitably drained and paved. The parking garage has discreet entrances on each level and access to surface parking lots would be at well-defined locations. All proposed parking is located on the same property as the use to which such spaces are accessory, Parcel 99.4-1-11. The proposed parking garage and surface parking would provide approximately 400 parking spaces. The net number of parking spaces added after removal of existing parking spaces lost due to the proposed construction would be approximately 250. This would care for the new demand. Current records maintained on the project site show that there are 0.66 cars for per resident. For the estimated population increase of 208 residents, the corresponding parking demand would be 137 spaces. An additional number of spaces are provided for guests and

short-term parking. This conservatively provides for the off-street parking demand of the proposed project.

#### Environmental Considerations

The *Town of Shawangunk Zoning Code*, Section 177-21, includes environmental considerations. There is no construction of buildings proposed in areas of special flood hazard. There are no freshwater wetlands mapped by the New York State Department of Conservation (DEC) on the project site, as stated in the letter, dated January 25, 2008, from the DEC to the Town of Shawangunk Planning Board<sup>4</sup>. The same letter states that state-eligible wetlands appear to be accurately mapped and requests re-vegetation in a portion of the area formerly occupied by modular trailers and buffer vegetation between the wetlands and driveway. The Planning Board is performing the environmental quality review process in advance of any decision regarding issuance of building permits, site-plan approval, or a special use permit. According to a meeting between the applicant's engineer, Richard Eldred, and a DEC Environmental Analyst, Rebecca Crist, on February 28, 2008, it appears that the project site is outside of the Wild, Scenic and Recreational River Corridor for the Shawangunk Kill.

#### Site-plan Review

The proposed project requires site-plan approval in accordance with the *Town of Shawangunk Zoning Code*, Section 177-22. In reviewing the site plan, the Planning Board shall consider the site plan's conformity with the Master Plan, as it may be amended, the physical limitations maps and relevant town codes and ordinances. A full and complete site plan is being submitted to the Town Planning Board concurrently with the submission of this DEIS.

#### Ulster County Planning Board Review

The proposed project must be referred to the Ulster County Planning Board.

#### Special Use Permit Review

The proposed project requires special permit use review in accordance with the *Town of Shawangunk Zoning Code*, Section 177-23. In its review of this application, the Planning Board may consider the public health, safety, morals and general welfare of the community, the comfort and convenience of the public and the residents of the immediate neighborhood and conformity with any Master Plan or portion thereof which may have been adopted by the Town Board.

The proposed project is in an R-Ag 4 residential-agricultural district. It serves a community need or convenience as described in Section II.C.2 of this DEIS. It is in harmony with the zoning district in which it is located as described in Section III.F.1 of

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<sup>4</sup> See Appendix 2.

this DEIS. As shown in Section II.B of this DEIS, the location, nature and height of buildings, walls, and plantings would not hinder or discourage the appropriate use and development of adjacent land and buildings. There are no characteristics such as noise, fumes, or vibrations as described in Section III.K of this DEIS that would be objectionable to nearby properties. Adequate off-street parking would be provided. It would not cause undue traffic or congestion, as described in Section III.G of this DEIS, and it would generally be accessible to fire, police, and other emergency vehicles via a Loop Driveway that provides access from two separate directions. The proposed project would not overload any public water, drainage, or sewer system, or any other municipal facility, or degrade any aquifer, natural resource, or ecosystem as described in this DEIS in Sections III.B, III.C, III.D, and III.E. The nature of the existing development and the layout of structures and buffer areas is proposed to ensure compatibility with surrounding property uses. The development is clustered to reduce the visual impact. As described in Section III.F.1 of this DEIS, the proposed use would be consistent with the goals of the *Town of Shawangunk Comprehensive Plan*.

#### III.F.2.d Existing Zoning Regulations—Site Use Assessment

The project site is entirely in religious use. As described in Section III.F.1, various activities are conducted on the project site in support of this use. In this respect, it is similar to the many activities that are conducted at the Shawangunk and Walkkill Correctional Facilities. Activities conducted at the correctional facilities have been diverse, as indicated in a 2002 letter describing an audit by the State of New York Office of the State Comptroller:

The Facility administers several vocational programs for its inmates: a Farm with 325 cows that provide milk and meat products for the Facility and neighboring correctional facilities; a horse program with 38 retired thoroughbred horses, funded primarily by the Thoroughbred Retirement Foundation; and an optics program, which manufactures over 100,000 pairs of eyeglasses each year for upstate Medicaid recipients, DOCS inmates, youth in facilities run by the Office of Children and Family Services and residents of State mental health facilities. The Facility also maintains a recycling facility that is used by local area businesses and municipalities.

These correctional facilities are also located in the R-Ag 4 zoning district.

The scoping document directs the applicant to consider alternative zoning language that may better reflect the various operations being conducted at the facility, as well as uses that may be anticipated as a result of any long-term plans for the facility. As discussed in Section III.F.1, the long-term use of the property has been consistent over the years, with a religious use that incorporates key activities of printing, residential, office, and agricultural, along with various ancillary activities. The proposed project is a continuation that demonstrates the applicant's intent to maintain this stability.

The following alternative zoning language might better describe the various uses occurring on the project site. It would involve a Proposed New Use Definition—Mixed-use Planned Community Development (MPCD). The description follows:

A structure or group of structures on a tract of land held in common ownership or unified control that is served by a central water treatment and distribution system and a central

sewage collection system and EPA permitted sewage treatment plant and developed with a combination of several or all of the following uses: agricultural, farm, house of worship, institutional, light industrial, office, parking, recreational, and residential, together with one or more ancillary support uses (such as auto maintenance and repair shop, automotive fuel station, food processing and preparation and communal eating facilities, health/recreation facility, nursing and convalescent home, personal service establishment, and repair garage) that are provided exclusively for the benefit of the residents of the MPCD and their guests. The density of residential development for a MPCD would be based on the gross density allowable in the underlying zoning district for multiple dwellings where central water and sewer is provided (the “underlying zone”) plus a density bonus of up to a total of 50 percent greater than that allowed in the underlying zone. The density bonus would be determined by the Planning Board based on conditions specifically applicable to the MPCD site including, but not limited to, topography, the character of the surrounding property, traffic movement, adequacy of public services, open space, stormwater drainage, and MPCD planning and management.

The applicant is not recommending alternative zoning language but simply considering an option that may better reflect the various operations being conducted at the facility as requested in the scoping document.

### **MITIGATION MEASURES**

#### III.F.2.e Proposed Mitigation Measures

Proposed mitigation measures are described below:

- The size, appearance, and lighting for new construction would match the existing structures. This would include shielded exterior lighting.
- The new residence, office and recreation building would be designed to accepted sustainability standards. The goal is to achieve a 3 *Green Globes* award level (this corresponds to a “LEED® Green Building Rating System™ (Leadership in Energy and Environmental Design [*Gold* award level]) in sustainable design through the *Green Globes™* System. The *Green Globes™* System is a voluntary, consensus-based national rating system developed by the not-for-profit organization Green Building Initiative (GBI) encouraging the adoption of building practices that result in energy-efficient, healthier and environmentally sustainable buildings.
- In order to reduce off-site impacts, the applicant proposes providing on-site recreation facilities for residents.
- The applicant would continue to maintain its property in a visually attractive condition.
- Private surface water reservoirs, rather than groundwater-supplied wells, would continue to supply the facility.

- Appropriate distance buffers of 300 feet to the nearest property line and more than 1,300 feet to dwellings would mitigate impacts on adjacent properties.
- A parking garage with covered parking on three levels would reduce the amount of impervious coverage, visual impact of surface parking lots, and stormwater/drainage impacts.
- Appropriate plantings would be provided in portions of the area north of the modular residences that are to be removed. These would support the wetlands to the north of the existing modular units.
- The proposed development would be located to minimize visual impacts. The proposed residence building would be connected to an existing residence building and clustered on the project site in order to reduce visual impacts. This building, along with the proposed parking garage, indoor recreation building, and relocated recreational fields, would be located behind a visual screening berm with plantings that would mitigate the visual impact while still allowing a view of the ridgeline to northbound traffic on Red Mills Road. The proposed accessory office building would be located between two existing buildings in the developed area. The proposed dining room and laundry additions would also be located in previously developed areas that have very limited visibility from Red Mills Road.
- The proposed development would be situated outside of the Shawangunk Kill Recreational River Corridor, thereby avoiding any impact to this corridor. Also, stormwater/drainage from the project site to the Shawangunk Kill would be via an existing outlet, not adding new outlets. The stormwater pollution prevention plan (SWPPP) would meet the permit issuance requirements of no net increase in off-site stormwater flow rate and meeting water quality treatment standards.

### **III.G Transportation**

#### **III.G.1 Traffic Study**

##### ***ENVIRONMENTAL SETTING***

The Watchtower Farms Facility is located in Ulster county in the Town of Shawangunk. The property site is bisected on its east-west axis by Red Mills Road and bordered on northeast by Steen Road. The northwestern property boundary reaches County Route 7, also known near this general location as Bruynswick Road or New Prospect Road. Red Mills Road terminates at Bruyn Turnpike, named Wallkill Avenue on the south side of Shawangunk, southwest of the property site. The site in relation to the existing vicinity roadway system is shown in Figure III.G-1.

##### **III.G.1.a Area Intersections Study**

A Traffic Impact Study was conducted in 2007 by John Collins Engineers, P.C. to evaluate both existing and future traffic conditions in the vicinity of the site and assesses the potential traffic impacts of the proposed action on the surrounding roadway network. Both manual turning movement and machine traffic counts were conducted at several intersections in the vicinity of the site to identify existing traffic volumes for various peak periods. The existing counted traffic volumes were also compared with other available data in the area. Together this resulted in the 2007 Existing Traffic Volumes. The Traffic Impact Study, dated July 20, 2007 (revised April 30, 2008), is included in Appendix 6 of this DEIS.

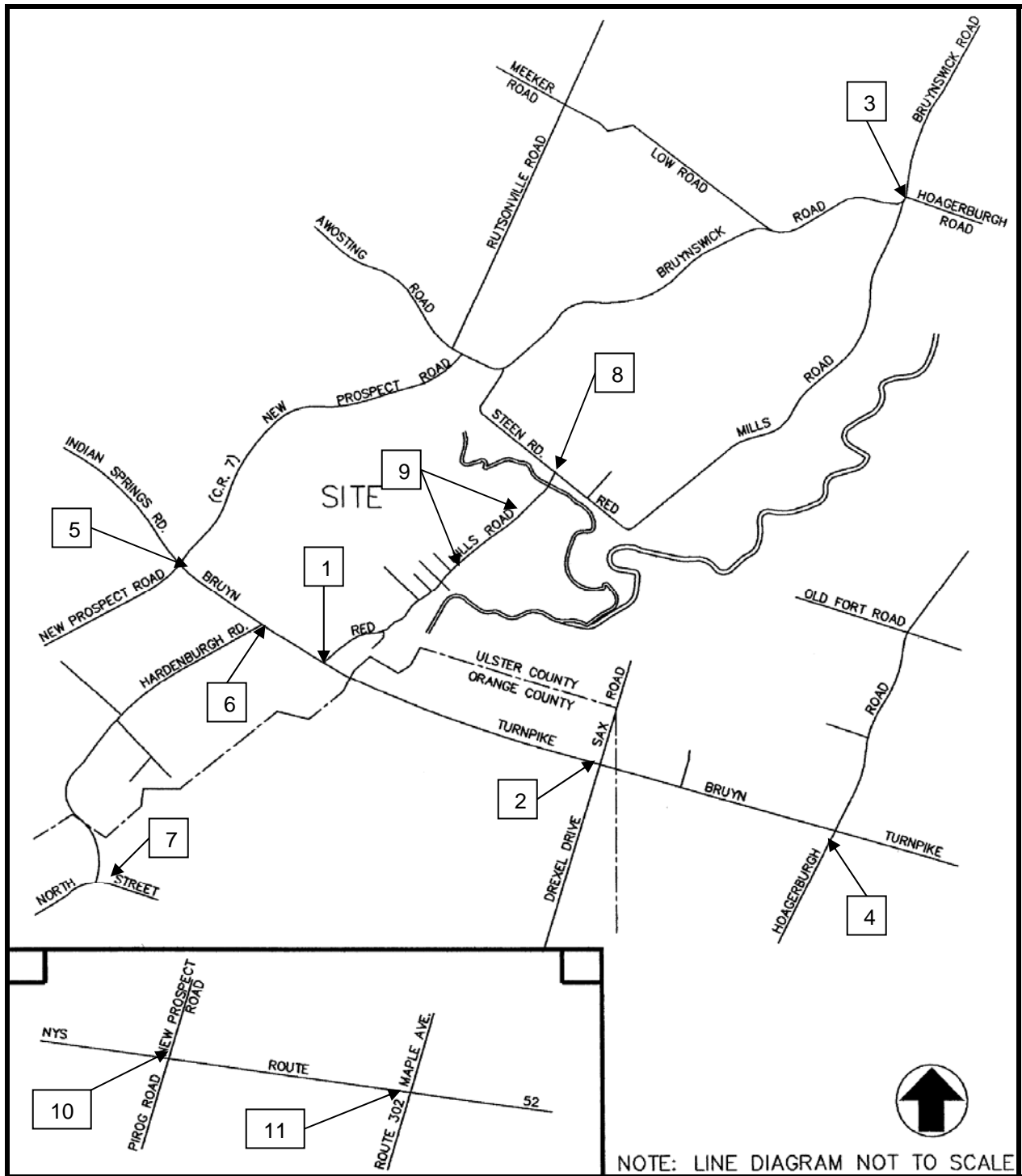
The Traffic Impact Study specifically evaluates traffic conditions at eleven intersections identified by the SEQR Scoping Document. These include the intersections specified in a letter of comment from the Town of Crawford supervisor dated January 1, 2008.<sup>1</sup> They are as follows:

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<sup>1</sup> See Appendix 2.

1. Bruyn Turnpike and Red Mills Road
2. Wallkill Avenue and Drexel Drive
3. Red Mills Road/Hoagerburgh Road and Brunswick Road
4. Bruyn Turnpike and Hoagerburgh Road
5. Bruyn Turnpike and New Prospect Road/Indian Springs Road
6. Bruyn Turnpike and Hardenburgh Road
7. Hardenburgh Road and Maple Avenue/North Street
8. Red Mills Road and Steen Road
9. Red Mills Road and Watchtower Farms Driveways
10. NYS Route 52 and County Route 7—New Prospect Road
11. NYS Route 52 and Maple Avenue (Route 302)

These intersections are shown on the site location map in Figure III.G-1.



NOTE: LINE DIAGRAM NOT TO SCALE

Figure III.G-1 Site Location Map



### III.G.1.b Peak Hour Traffic Volume

The traffic counts were collected between 6:45 a.m. to 9:30 a.m. and 3:00 p.m. to 7:30 p.m. Based upon the results of the traffic counts, the peak hours were determined to occur generally as follows:

Weekday Peak a.m. Highway Hour—7:30 a.m. to 8:30 a.m.

Weekday Peak p.m. Highway Hour—4:30 p.m. to 5:30 p.m.

Weekday Peak Evening Hour—6:00 p.m. to 7:00 p.m.

It should be noted that based on the machine traffic counts, during the Weekday Peak Evening Hour, there was significant variation in the day-to-day volumes from the highest day. The higher volumes were used in the analysis presented in the study.

### III.G.1.c Roadway Analysis

As previously noted, the project site is located in the Town of Shawangunk and is bisected on its east-west axis by Red Mills Road and bordered on the northeast by Steen Road. The site is served by existing driveways located on Red Mills Road. A description of the local roadway system is provided below.

1. Red Mills Road—is generally a two lane roadway which runs between Bruyn Turnpike and Steen Road. The roadway has a posted speed limit of 35 mph and much of the roadway also has paved shoulders. Sidewalks are also provided along this roadway. North of the main site, prior to the intersection with Steen Road, there is an existing narrow bridge crossing. Red Mills Road continues from the intersection with Steen Road in a northeasterly direction intersecting and terminating at Bruynswick Road and Hoagerburgh Road.
2. Bruyn Turnpike—is an east/west roadway which, in the vicinity of the site, intersects with other roadways including Albany Post Road, Hoagerburgh Road, Red Mills Road, Hardenburgh Road and terminates at an intersection with New Prospect Road and Indian Springs Road. The eastern portion of this roadway is also County Route 18, which changes to a northerly alignment at the intersection of Hoagerburgh Road. The speed limit along this roadway varies. The easterly section has a posted speed limit of 30 mph while the westerly section is 40 mph. The majority of the roadway has a double yellow centerline and has a fairly steep vertical curve at its intersection with Hoagerburgh Road. The intersection is an all-way stop controlled intersection.
3. New Prospect Road—is a two lane roadway which originates at an intersection with Bruynswick Road. It continues in a southwesterly direction and it has a posted speed limit 45 mph and no centerline striping. It continues in a southwesterly direction intersecting with Bruyn Turnpike.

4. Bruynswick Road (C.R. 7)—is a two lane roadway with a posted speed limit of 45 mph. It extends from New Prospect Road in a northeasterly direction and also intersects with Red Mills Road and Hoagerburgh Road.
5. Hardenburgh Road—originates at a “T” intersection with Bruyn Turnpike, continues in a southerly direction serving primarily a residential area, continues into Orange County and terminates at an intersection with North Street in the hamlet of Pine Bush in the Town of Crawford. This roadway has a double yellow centerline and 35 mph posted speed limit which changes to 30 mph in Pine Bush.
6. NYS Route 52—is a primarily two lane State Highway which traverses throughout Orange County Route 52 (Main Street) has a signalized intersection with NYS Route 302 and Maple Avenue NYS in Pine Bush. It then continues into Ulster County.
7. NYS Route 302—is a primarily State Highway which runs in a generally northeast and southwest direction through the Town of Walkkill in Orange County. It has an interchange connection with NYS Route 17 and a signalized intersection with NYS Route 17K south of this area. It terminates at a signalized intersection with NYS 52 in Pine Bush.
8. Steen Road—is a two lane local road which connects from Bruynswick Road (C.R. 7) to Red Mills Road. It intersects with Red Mills Road at “stop” sign controlled “T” intersections and extends in a northeasterly direction. It has a 35 mph posted speed and terminates at a “Y” type intersection with Bruynswick Road.

## **POTENTIAL IMPACTS**

### III.G.1.d Analysis of Impacts

Based on the proposed action, a residence building and ancillary spaces including an office building, recreation building, technical equipment building (TER) and additions to the dining room and laundry would be added to the existing site facility. The 2007 Existing Traffic Volumes were projected to the design year of 2012 to evaluate the potential traffic impacts after the opening and operating of the completed buildings.

Unlike typical residential and commercial facilities, a significant portion of the traffic generated is expected to “stay on site” or in the immediate area of Red Mills Road. This occurs since the residents live at the same facility where they work, eliminating the “commute to work.” Also, the private loop drives on each side of Red Mills Road will remain, minimizing the need for traffic to access the public road. The proposed project does not include production-type facilities for increased industry.<sup>2</sup> Therefore, the applicant does not anticipate that implementing the proposed project will generate a significant increase in truck traffic.

Arrival and departure patterns were projected and future conditions were evaluated for all study intersections for the building of the project (Build). See Figures III.G-2 and III.G-3 for the anticipated arrival patterns and percentage of use.

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<sup>2</sup> See letter of comment dated February 7, 2008 to the Town of Shawangunk Supervisor.

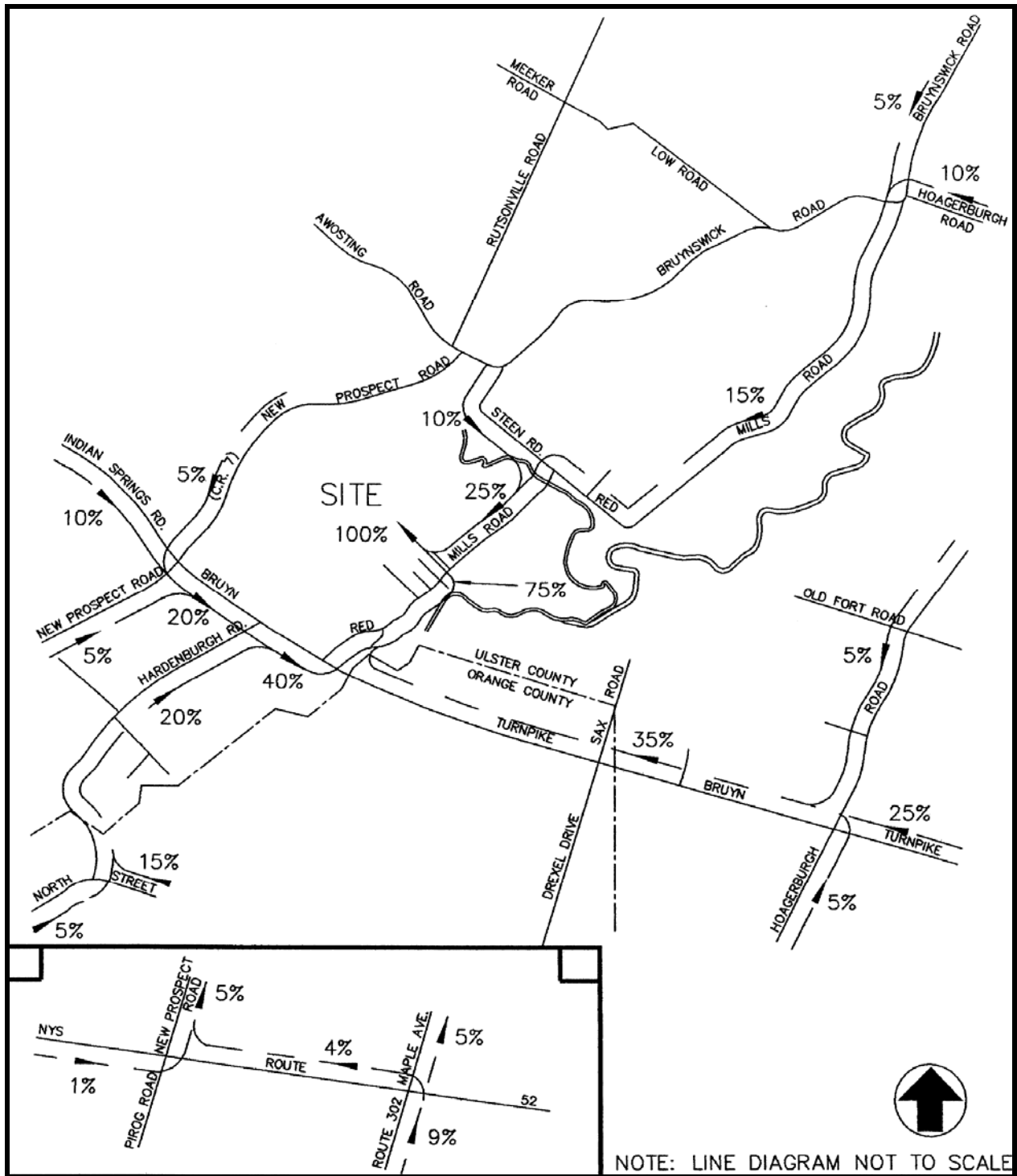


Figure III.G-2 Arrival Distribution



The important and relevant analysis is to compare the Build with the No-Build condition as both sets of conclusions take into account increases in traffic exclusive (No-Build) and inclusive (Build) of the proposed action. Both sets of analyses are based on the same time period (2012) and a background growth factor of 3 percent per year was applied to the existing traffic volumes to obtain the No-Build volumes. Table III.G-1 documents the anticipated generated traffic volumes measured hourly and Tables III.G-1 and III.G-2 compare the existing Levels of Service to those anticipated with the Build and No-Build Conditions.

**Table III.G-1 Hourly Trip Generation Rates (HTGR) and Anticipated Site Generated Traffic Volumes**

WATCHTOWER SHAWANGUNK, NY	ENTRY		EXIT	
	HTGR*	VOLUME	HTGR*	VOLUME
RESIDENTIAL DWELLING UNITS				
PEAK AM HOUR	0.10	25	0.40	102
PEAK PM HOUR	0.40	102	0.22	55

Notes: \*The hourly trip generation rates (HTGR) are based on data published by the institute of Transportation Engineers (ITE) as contained in the Trip Generation Handbook, 7<sup>th</sup> Edition, 2003.

**Table III.G-2 Level of Service Summary Table 1**

		2007 EXISTING			2012 NO-BUILD			2012 BUILD		
		AM	PM (HIGHWAY)	PM (EVENING)	AM	PM (HIGHWAY)	PM (EVENING)	AM	PM (HIGHWAY)	PM (EVENING)
1	BRUYN TURNPIKE & HOAGERBURGH ROAD UN SIGNALIZED NB SB EB WB OVERALL	A[7.2] A[7.9] A[8.1] A[7.5] A[7.9]	A[7.7] A[7.8] A[7.8] A[8.3] A[8.1]	A[7.4] A[7.9] A[8.1] A[7.9] A[8.0]	A[7.3] A[8.0] A[8.3] A[7.6] A[8.0]	A[7.8] A[7.9] A[7.9] A[8.6] A[8.3]	A[7.6] A[8.0] A[8.4] A[8.1] A[8.2]	A[7.5] A[8.2] A[8.7] A[7.7] A[8.3]	A[8.1] A[8.0] A[8.2] A[9.0] A[8.7]	A[7.9] A[8.1] A[8.6] A[8.4] A[8.4]
2	BRUYN TURNPIKE & RED MILLS ROAD UN SIGNALIZED SB EB	A[9.2] A[7.4]	A[9.9] A[7.6]	B[10.5] A[7.5]	A[9.3] A[7.4]	B[10.2] A[7.7]	B[11.1] A[7.5]	A[9.9] A[7.4]	B[11.5] A[7.9]	B[13.0] A[7.7]
3	BRUYN TURNPIKE & HARDENBURGH ROAD UN SIGNALIZED NB WB	A[9.4] A[7.6]	B[10.4] A[7.5]	B[10.1] A[7.5]	A[9.6] A[7.6]	B[10.9] A[7.5]	B[10.5] A[7.5]	A[9.8] A[7.7]	B[11.3] A[7.6]	B[10.6] A[7.6]
4	NORTH STREET & HARDENBURGH ROAD UN SIGNALIZED SB EB	A[9.7] A[7.5]	B[10.6] A[7.9]	A[9.3] A[7.5]	A[10.0] A[7.5]	B[11.0] A[8.0]	A[9.5] A[7.5]	B[10.2] A[7.5]	B[11.4] A[8.1]	A[9.7] A[7.6]
5	NEW PROSPECT ROAD & BRUYN TURNPIKE/ INDIAN SPRINGS ROAD UN SIGNALIZED NB SB EB WB	A[7.5] A[7.5] B[10.7] B[11.0]	A[7.6] A[7.6] B[11.3] B[13.5]	A[7.5] A[7.5] A[9.8] B[11.7]	A[7.5] A[7.5] B[11.1] B[11.4]	A[7.6] A[7.6] B[11.9] C[15.2]	A[7.5] A[7.5] B[10.0] B[12.6]	A[7.5] A[7.5] B[11.2] B[11.8]	A[7.6] A[7.6] B[12.5] C[16.2]	A[7.5] A[7.5] B[10.5] B[13.1]
6	RED MILLS ROAD & STEEN ROAD/ RED MILLS ROAD UN SIGNALIZED NB WB	A[8.8] A[7.4]	A[9.2] A[7.4]	A[8.9] A[7.3]	A[8.8] A[7.4]	A[9.4] A[7.4]	A[9.0] A[7.3]	A[9.0] A[7.4]	A[9.7] A[7.5]	A[9.2] A[7.4]

Notes: The above represents the Level of Service and average delay in seconds, C [16.2], for each key approach of the intersection indicated. It also indicates the overall intersection delay for the signalized intersections.

**Table III.G-3 Level of Service Summary Table 2**

7	BRUYN SWICK ROAD HOAGERBURGH ROAD & RED MILLS ROAD/ BRUYN SWICK ROAD	UN SIGNALIZED									
		NB	A[7.4]	A[7.5]	A[7.4]	A[7.4]	A[7.5]	A[7.4]	A[7.4]	A[7.5]	A[7.4]
		SB	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]
		EB	A[10.0]	B[10.1]	A[9.6]	B[10.2]	B[10.4]	A[9.8]	B[10.4]	B[10.5]	A[9.9]
		WB	A[9.2]	A[9.5]	A[9.0]	A[9.3]	A[9.7]	A[9.1]	A[9.5]	A[9.9]	A[9.4]
8	RED MILLS ROAD & WATCHTOWER DRIVEWAY	UN SIGNALIZED									
		NB	A[7.4]	A[7.5]	A[7.6]	A[7.4]	A[7.5]	A[7.7]	A[7.5]	A[7.8]	A[7.9]
		SB	A[7.4]	A[7.4]	A[7.3]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]	A[7.4]
		EB	A[9.3]	A[9.7]	B[10.4]	A[9.5]	A[9.9]	B[10.9]	A[10.0]	B[11.5]	B[13.1]
		WB	A[9.0]	A[9.2]	B[10.1]	A[9.1]	A[9.3]	B[10.4]	A[9.7]	B[10.4]	B[12.7]
9	BRUYN TURNPIKE /WALLKILL AVENUE & DREXEL DRIVE/SAX ROAD	UN SIGNALIZED									
		NB	A[9.1]	A[9.2]	A[9.1]	A[9.2]	A[9.3]	A[9.3]	A[9.5]	A[9.6]	A[9.5]
		SB	A[9.7]	A[8.9]	A[8.6]	A[9.9]	A[8.9]	A[8.7]	B[10.2]	A[9.1]	A[8.9]
		EB	A[7.3]	A[7.5]	A[7.4]	A[7.3]	A[7.5]	A[7.4]	A[7.3]	A[7.6]	A[7.5]
		WB	A[7.5]	A[7.4]	A[7.5]	A[7.5]	A[7.4]	A[7.5]	A[7.6]	A[7.5]	A[7.6]
10	NYS ROUTE 52 & PIROG ROAD/ NEW PROSPECT ROAD	SIGNALIZED									
		NB	C[21.8]	C[22.4]	C[21.4]	C[21.9]	C[22.7]	C[21.6]	C[21.9]	C[22.7]	C[21.6]
		SB	E[56.6]	D[40.8]	C[32.4]	F[80.9]	D[50.6]	D[36.5]	F[86.8]	D[52.2]	D[37.3]
		EB	A[5.9]	A[4.8]	A[4.2]	A[6.6]	A[5.2]	A[4.3]	A[6.6]	A[5.2]	A[4.4]
		WB	A[4.0]	A[7.2]	A[5.4]	A[4.2]	A[8.5]	A[5.9]	A[4.2]	A[8.6]	A[6.0]
	OVERALL	B[16.4]	B[11.8]	A[9.7]	C[21.9]	B[14.0]	B[10.7]	C[23.4]	B[14.3]	B[10.9]	
	WITH SIGNAL TIMING MODIFICATIONS	NB	-	-	-	B[15.2]	B[15.5]	B[15.0]	B[15.2]	B[15.5]	B[15.0]
		SB	-	-	-	C[23.0]	C[20.5]	B[18.8]	C[23.4]	C[20.6]	B[18.9]
		EB	-	-	-	B[13.2]	B[10.0]	A[8.4]	B[13.2]	B[10.1]	A[8.4]
		WB	-	-	-	A[8.0]	B[18.3]	B[11.5]	A[8.1]	B[18.6]	B[11.6]
		OVERALL	-	-	-	B[14.3]	B[16.3]	B[11.9]	B[14.4]	B[16.5]	B[12.0]
11	NYS ROUTE 52 (MAIN ST.) & ROUTE 302/MAPLE AVENUE	SIGNALIZED									
		NB	B[18.4]	C[26.6]	B[18.3]	B[19.0]	D[37.4]	B[19.2]	B[19.0]	D[40.4]	B[19.6]
		SB	B[17.4]	B[16.5]	B[15.9]	B[17.7]	B[16.9]	B[16.2]	B[17.7]	B[17.0]	B[16.2]
		EB	C[23.9]	B[17.5]	B[15.9]	C[32.8]	B[18.7]	B[16.5]	C[33.4]	B[18.8]	B[16.5]
		WB	B[14.4]	C[26.8]	B[18.0]	B[15.2]	D[50.0]	B[19.6]	B[15.3]	D[50.8]	B[19.6]
OVERALL	C[20.5]	C[23.4]	B[17.3]	C[25.5]	D[35.3]	B[18.3]	C[25.8]	D[36.4]	B[18.4]		

Notes: The above represents the Level of Service and average delay in seconds, C [16.2], for each key approach of the intersection indicated. It also indicates the overall intersection delay for the signalized intersections.

### III.G.1.e Pedestrian Environment

Pedestrian movement within the site would be facilitated by a series of sidewalks, tunnels and walkways, interior and exterior, interconnected to the extensive existing facility pedestrian movement system.

The proposal includes driveways within the project sized with wide shoulders to accommodate travel by bicycle, as is common throughout the existing facility. Bike racks, in addition to those already existing on site, would be located at secondary building entrances for temporary use. Permanent storage of bicycles would be located within the proposed parking garage.

## **MITIGATION MEASURES**

### III.G.1.f Mitigation:

Based on the results of the traffic analyses, a number of improvements to several intersections have been identified.

- Bruyn Turnpike and Hardenburgh Road

In addition to the “stop” sign on the Hardenburgh northbound approach to this intersection, it is recommended that additional pavement markings including a painted “stop” bar be added on this approach.

- New Prospect Road and Bruyn Turnpike / Indian Springs Road

The sight distance looking north of the Bruyn Turnpike approach to this intersection is somewhat restricted due to excess vegetation and grading problems. Some clearing and grading should be completed to improve sightlines regardless of the proposed action. In addition, supplemental warning signs at the intersections should be considered.

- Red Mills Road and Steen Road

The installation of a painted “stop” bar should be added to this intersection and speed reduction warning signs should be added to Red Mills Road east of Steen Road.

- Bruynswick Road and Hoagerburgh Road / Red Mills Road

A painted “stop” bar should be added to the intersection along with the existing posted “stop” sign regardless of the proposed action.

- Wallkill Avenue and Drexel Drive

A painted “stop” bar should be added to the intersection along with the existing posted “stop” sign regardless of the proposed action.

- NYS Route 52 and County Route 7 / New Prospect Road / Pirog Road

The capacity analysis conducted at this four-way signalized intersection (Signal No. U-89) indicates that during peak periods modifications to the traffic signal timings would be required to provide improved operation, especially during the peak AM Peak Hour, to accommodate future traffic volumes regardless of the proposed action.

- NYS Route 52 (Main Street) and NYS Route 302 / Maple Avenue

The capacity analysis conducted at this signalized four-way intersection (Signal No. O-23) indicates that during peak periods modifications to the traffic signal timings would be required to provide improved operation, especially during the peak a.m. and p.m. peak hours, to accommodate future traffic volumes regardless of the proposed action.



In summary, based on the results of the Traffic Impact Study which is included in Appendix 6 of the DEIS, some improvements to signage, vegetation removal, grading and signalization are recommended to accommodate future traffic volumes, under Build, as well as No-Build conditions. The Levels of Service will, in general, be equal to the No-Build Levels of Service. Since the proposed mitigation measures are maintenance-related or suggested regardless of the proposed action, the Town, County and State Transportation Departments would implement the measures that they determine to be feasible.

### **III.H Aesthetic Resources**

#### **III.H.1 Visual Study**

##### ***ENVIRONMENTAL SETTING***

###### **III.H.1.a Existing Visual Character**

The following analysis is based on DEC Program Policy DEP-00-2, "Assessing and Mitigating Visual Impacts," Issuance Date July 31, 2000. The general procedure involves preparing an inventory of aesthetic resources, performing a visual assessment, considering the potential significance of the impact, and determining what mitigation measures may be necessary. Accompanying this section is the Viewshed Map Study located in Appendix 7 of this DEIS.

The project site is divided into northwest and southeast sections by Red Mills Road and is bordered by Steen Road, the Dwaarkill, and Shawangunk Kill. Southeast of Red Mills Road, a variety of structures border a large field that is in agricultural use, primarily for sweet corn. Blueberries are also grown in this area. Structures include storage and equipment sheds, small farm labor housing residences, a larger brick residence building, a food and materials storage building, and a meat processing building.—See Figures III.H-1, III.H-2 and III.H-3 for a project site map and photographs of the existing project site southeast of Red Mills Road.

Northwest of Red Mills Road is the most developed portion of the property. Bordered by pasture, woodland, and blueberries are modular housing units, silos, barns, parking garages, a concrete batch plant, vehicle repair garages, residence buildings, a printery, and other accessory buildings.—See Figures III.H-4, III.H-5 and III.H-6 for photographs of the existing project site northwest of Red Mills Road.

The northernmost section of the project site consists of pasture, woodlands, and the Dwaarkill with associated wetlands. The historic building, the Dill Farm, is located on this portion of the property and accessed from Steen Road.—See Figure III.H.-7 for photographs of the view of the existing project site from Steen Road and behind the Dill Farm.

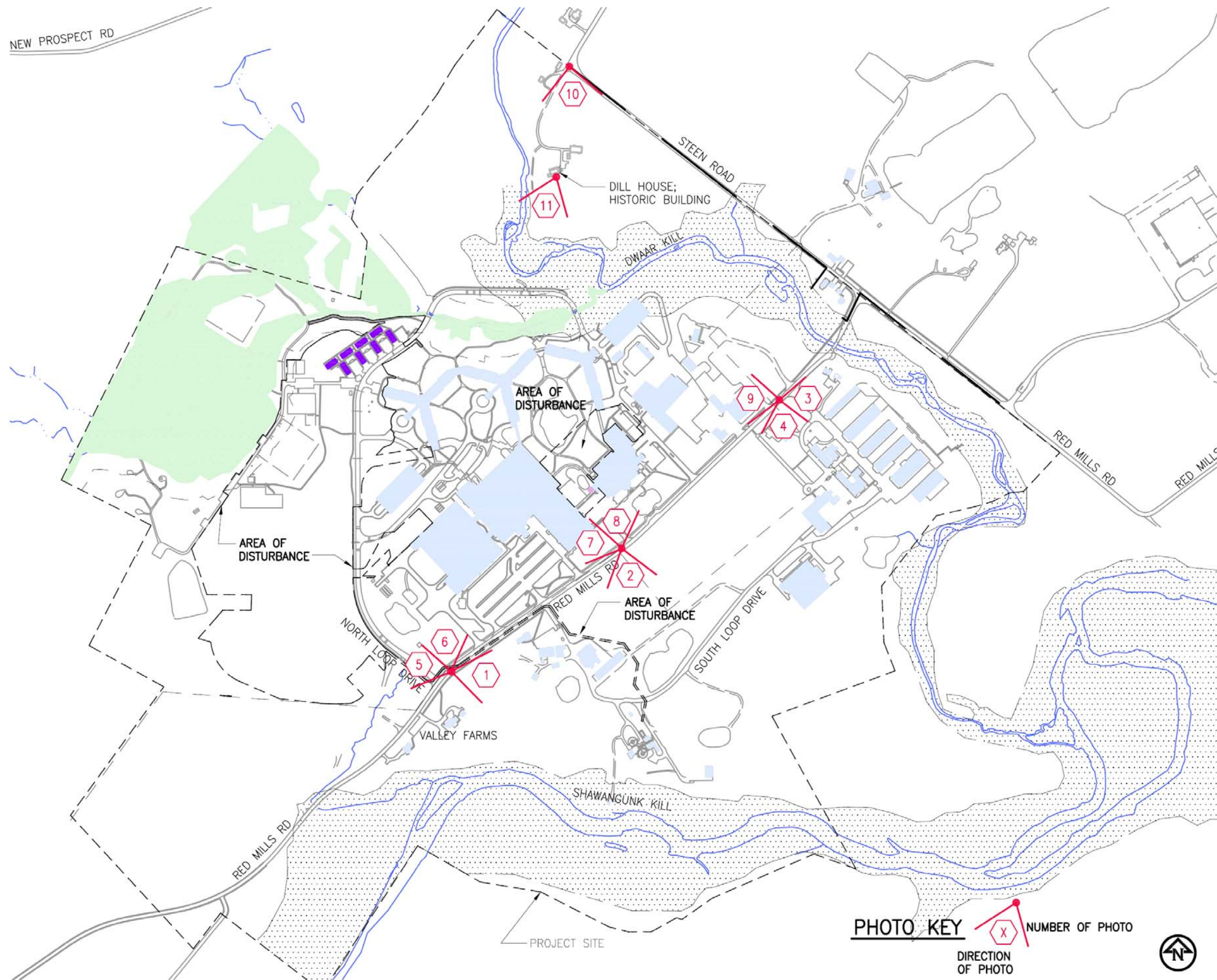


Figure III.H-1 Project Site Map with Photo Key







Photo #1: View of Blueberry Field and Farm Labor Housing



Photo #2: View of Uncultivated Corn Field, Farm Storage and Meat Processing Building

**Figure III.H-2 Existing Views of Project Site: Southeast Red Mills Road**







Photo #3: View of Storage and Equipment Sheds



Photo #4: View of Brick Residence Building and Farm Labor Housing

**Figure III.H-3 Existing Views of Project Site: Southeast Red Mills Road**







Photo #5: View of North Loop Driveway Entrance with Adjacent Blueberry Field



Photo #6: View of Blueberry Field with Printery Beyond

**Figure III.H-4 Existing Views of Project Site: Northwest Red Mills Road**







Photo #7: View of Office Building with Printery Beyond



Photo #8: View of Parking Lot (hidden by landscaping), Walkway and Residence Building

**Figure III.H-5 Existing Views of Project Site: Northwest Red Mills Road**





Photo #9: View of Feed Mill, Dairy Barn, Feed Silos and Batch Plant

**Figure III.H-6 Existing Views of Project Site: Northwest Red Mills Road**







Photo #10: View of Dill Farm Historic Building from Steen Road toward Project Site



Photo #11: View in the Direction of the Disturbed Area of Project Site (past second row of trees) from behind Dill Farm Historic Building

**Figure III.H-7 Existing Views of Project Site: Steen Road**





An inventory of aesthetic resources shows that the following categories of resources are located within five miles of the project site:

- A property on or eligible for inclusion in the National or State Register of Historic Places

In a letter to the Town of Shawangunk Planning Board dated November 16, 2007, the New York State Office of Parks, Recreation and Historic Preservation (See Appendix 2) identified a National Register listed property, the Dill Farm. The Dill Farm was added to the National Historic Register in 1983 (Building #83001816) based on the significance of its Greek Revival architecture. The historical structures were built in the late 18th century. The Dill Farm is separated from the project site by the Dwaarkill. It is located on the property, approximately 2,000 feet northwest of the nearest proposed soil disturbance. The applicant obtained and restored the Dill Farm approximately ten years ago. Several existing three story buildings, including buildings for residence and a parking garage, are already located within the view from a control point at the Dill Farm, which would be on the resource end of a line of sight profile. All areas of proposed soil disturbance and particularly the proposed new residence building are more distant from and better screened by existing vegetation, including mature trees, than the existing buildings.—See Figure III.F-4 Historic Locations Map in Section III.F.2 for location.

The Johannes Decker House at 337 Red Mills Road, is listed on a historic register and located approximately 700 feet east of the property and 1 mile northeast of the project site. It is completely screened by existing topography from areas of disturbance associated with the proposed project.—See Figure III.F-4 Historic Locations Map in Section III.F.2 for location.

The William Decker House in the Hamlet of Dwaarkill is listed on a historic register and located approximately 2,000 feet from the nearest soil disturbance. It is completely screened by existing vegetation from areas of disturbance associated with the proposed project.—See Figure III.F-4 Historic Locations Map in Section III.F.2 for location.

The Miller's House at Red Mills is listed on a historic register and located approximately 2,000 feet south of the project site. It is completely screened by existing topography and vegetation from areas of disturbance associated with the proposed project.—See Figure III.F-4 Historic Locations Map in Section III.F.2 for location.

Other historic buildings not on the historic register, listed below, are approximately one mile from the project site: the "New Fort", 1663 historical site, north end of Old Fort Road and Terwilliger House, 1766 house, north end of Old Fort Road. While the northeast portion of the property is visible from Old Fort Road, these properties are

screened by existing topography and vegetation from areas of disturbance associated with the proposed project.

- State Parks

The Minnewaska State Park Preserve, located in the Shawangunk Mountains, is approximately 4 miles northwest of the project site. Various carriageways, such as the Hamilton Point Carriageway, and overlooks, such as Hamilton Point and Gertrude's Nose, in the Minnewaska State Park Preserve have views of the Hudson Valley, including the project site. The applicant's existing structures on the project site are visible, depending upon weather conditions as shown in the Viewshed Map Study included in Appendix 7 of this DEIS.

- National Wildlife Refuges, State Game Refuges and State Wildlife Management Areas

The Shawangunk Grasslands National Wildlife Refuge was established in 1999 on the site of the former Galeville Airport to protect the habitat of grassland-dependent migratory birds. It is located approximately 2 miles east of the project site, and the topography completely screens the project site from the Shawangunk Grasslands National Wildlife Refuge.

- Rivers designated as National or State Wild, Scenic or Recreational

Article 15 Title 27 of the Environmental Conservation Law and implementing regulations at Title 6 of the New York Code of Rules and Regulations (NYCRR) Part 666, also known as the Wild, Scenic and Recreational Rivers System Act, designate the Shawangunk Kill River as a Recreational River adjacent to the project site. The proposed project involves some adjustments at the existing wastewater treatment plant, 400 feet north of the Shawangunk Kill. This work location is completely screened by vegetation, topography, and existing buildings. The nearest proposed buildings are approximately 1,500 feet northwest of a bend in the Shawangunk Kill; however this area is completely screened by existing topography. Approximately 1,000 feet south of the aforementioned bend, there is a possible seasonal view of disturbed area from a distance of approximately 2,000 feet. This view is through existing stream bank vegetation and trees, across a field used for cropland, over Red Mills Road, across existing pasture, and to existing buildings.

- A site, area, lake, reservoir, or highway designated or eligible for designation as scenic.

The project site is within the Shawangunk Mountains Scenic Byway region; however it is not visible from any roads of the byway, such as state and county routes 44, 52, 55, 208, 209, and 299. The property is mentioned in the Shawangunk Mountains Scenic Byway Corridor Management Plan (October 2005) on page G-59: "the agricultural operations of Watchtower Farms provide some of the most beautiful

views of the countryside and the Shawangunk Mountains . . . . Located here since 1963, Watchtower Farms has a long-standing commitment to the community and to the principles of sustainability. This has resulted in a well-planned operation with a balance of publishing and farming that has helped to preserve the rural character of the community as well as many wonderful views of the Shawangunk Mountains.” The Open Space Inventory and Analysis – Shawangunk, New York (March 2004) on page 37, depicts Red Mills Road adjacent to the project site as a scenic road stating, “Summary: Views of the Shawangunk Ridge and surrounding natural landscape enhance the everyday quality of life for residents and visitors alike.” While Red Mills Road adjacent to the project site does not have an official designation by the Town of Shawangunk, the ridgeline of the Shawangunk Mountains is visible to northeast-bound traffic on Red Mills Road, north of its intersection with Bruyn Turnpike. This view includes fenced pasture in the foreground, existing buildings in the mid-ground, and the Shawangunk Mountains in the background.

## **POTENTIAL IMPACTS**

### III.H.1.b Change in Visual Character

In the context of the region, the project site contains a clustered developed area surrounded by areas of open space generally in agricultural use. The proposed project adds to the clustered developed area but does not involve new development in more visible areas on the property. The visual character of existing and proposed buildings on the project site is perhaps somewhat comparable, within the Town of Shawangunk, to the Shawangunk and Wallkill Correctional facilities. These are also clustered areas of development surrounded by open space. However, aboveground utilities and the layout and architecture of the correctional facilities are significantly different from the applicant’s buildings. The Shawangunk and Wallkill Correctional facilities are located on Route 208, which is part of the Shawangunk Mountains Scenic Byway.

Concerning the viewshed from Historic buildings, the Dill Farm is located on the property and separated from the project site by the Dwaarkill. It is located approximately 2,000 feet northwest of the nearest soil disturbance. The Dill Farm was added to the National Historic Register in 1983 (Building #83001816) based on the significance of its Greek Revival architecture. The historical structures were built in the late 18th century. The applicant obtained and restored the Dill Farm approximately ten years ago. The visual character from the Dill Farm would not significantly change with the proposed project. Existing buildings on the project site of comparable size and appearance are already located closer to the Dill Farm than the structures proposed for construction. Existing topography and vegetation provides more screening between the Dill Farm and the proposed residence building than exists for the existing buildings as shown in Figure III.H-7.

The applicant does not anticipate a change in the visual character of the view from the resource control point at the Shawangunk Kill Recreational River, 2,000 feet south of the clustered area of soil disturbance for the new residence building, parking garage, recreational building, and athletic fields at the project control point. The screening

vegetation at the river bank and the no proposed change to the existing agricultural cropland, roadway, and immediate fenced pasture in the foreground of the view are expected to retain the visual character of this location on the Shawangunk Kill.

According to the Town of Shawangunk Open Space Inventory and Analysis dated March 2004, Red Mills Road is noted as a local scenic road in the vicinity of the project site. In particular, drivers traveling north on Red Mills Road from the intersection at Bruyn Turnpike/Wallkill Avenue pass through a wooded area before the view opens to fenced pasture in the foreground. In the mid-ground are cropland, blueberries, a wooded intermittent watercourse, and existing buildings. In the background is Shawangunk Ridge. The proposed construction, particularly the proposed parking garage and recreation building, would be clearly in view from Red Mills Road without mitigation measures.

For southbound drivers on Red Mills Road, south of its intersection with Steen Road, there would be brief views between existing buildings of the proposed laundry addition and accessory office building. The proposed dining room addition is completely screened from views on all roads by existing buildings.

The Town of Shawangunk Open Space Inventory and Analysis dated March 2004 also includes County Route 7 (New Prospect Road / Bruynswick Road) and Steen Road as scenic roads. Views to the south from Steen Road and to the east from County Route 7 show obscured views of various larger buildings on the project site when there is no foliage. Because the proposed new construction is clustered, a significant change in visual character is not anticipated.

#### III.H.1.c Visual Impacts of Proposed Action

The following analysis is based on DEC Program Policy DEP-00-2, "Assessing and Mitigating Visual Impacts," Issuance Date July 31, 2000. The general procedure involves determining what mitigation measures may be necessary. Accompanying this section is the Viewshed Map Study located in Appendix 7 of this DEIS showing localized points of potential impact.

As shown on the site plan of the proposed action in Figure III.H-8, three proposed buildings are located in the northwest vicinity of the project site in the location of an existing outdoor recreation area containing athletic fields, courts and picnic area. Pasture and wooded area are also within the area of disturbance. This area would have the most visual impact while traveling north on Red Mills Road from the Bruyn Turnpike/Red Mills Road intersection. The applicant proposes additions to existing buildings by extending into existing surface parking lots and some landscaped areas that lie within the developed section. Some of these proposed ancillary spaces are completely hidden by other existing buildings of equal or greater height while others would be partially visible from Red Mills Road. Mitigation would be accomplished by means of land sculpting, landscaping and preservation of existing vegetation to reduce the visual and aesthetic impact of the proposed action.

To assist in the assessment of the mitigation measures, Figures III.H-9 through III.H-15 represent photos from existing vantage points with an accompanying photosimulation. The methodology used to develop the photosimulation involved starting with a series of digital photos taken with a Nikon D 70 camera for each of the designated views. Below is a summary of the camera lens, date, time and number of photographs used to prepare the photosimulation.

**Table III.H-1 Designated Camera Shots**

<b>View</b>	<b>Camera Lens</b>	<b>Date</b>	<b>Time</b>	<b>Number of Shots Stitched per View</b>
View "A"	70mm	May 8, 2007	1:40 p.m.	33
View "B"	24mm	May 8, 2007	1:48 p.m.	9
View "C"	24mm	May 8, 2007	1:52 p.m.	11
View "D"	66mm	May 16, 2007	10:50 a.m.	28
View "E"	75mm	May 8, 2007	11:25 a.m.	23
View "F"	24mm	May 16, 2007	1:48 p.m.	25
View "F" In Winter	17 mm	April 9, 2007	10:08 a.m.	6

Once taken, the views were stitched together into each panoramic view. All photo-editing work was done using the *Adobe Photoshop CS2* software. The same views (camera and target location angles) were then matched within a three-dimensional (3-D) model composed of the site topography, existing, and proposed buildings. The *Autodesk AutoCAD 2004* construction drawings were imported into the 3-D software, *Autodesk VIZ 2007*. The 3-D models were accurately built within *Autodesk VIZ 2007*. The digital images from the entire 3-D site model were then overlaid to match the digital photos. The existing 3-D-modeled buildings were used as an alignment reference to verify the heights of the proposed model in the final images.

There are no proposed utilities that would result in visual or aesthetic impact. The project site contains an elevated water tower, and no additional water towers are proposed.

It is noted that mere visibility of a facility/development does not automatically mean it has an adverse visual or aesthetic impact. Aesthetic impact occurs when there is a demonstrated detrimental effect on the public enjoyment of an aesthetic resource. Visual impact occurs when mitigation measures, or the mitigating effects of perspective,

do not adequately reduce the visibility of a facility from an aesthetic resource to an insignificant level.

### **MITIGATION MEASURES**

#### III.H.1.d Visual Effects of Site Lighting

The lighting plan would be designed to provide nighttime illumination at intensity levels to avoid lighting “hot spots” while, at the same time, adequate for public safety and security. Lighting would be located on all primary driveways, building entrances, parking areas and sidewalks by means of pole-mounted roadway lights and lighting bollards. (Refer to Drawing E-101 located in Appendix 12 for a site lighting plan and fixture specifications). The driveway lights are not intended to uniformly illuminate the entire road, but to light the intersections of travel and a few points along the way as is typical of country roads.

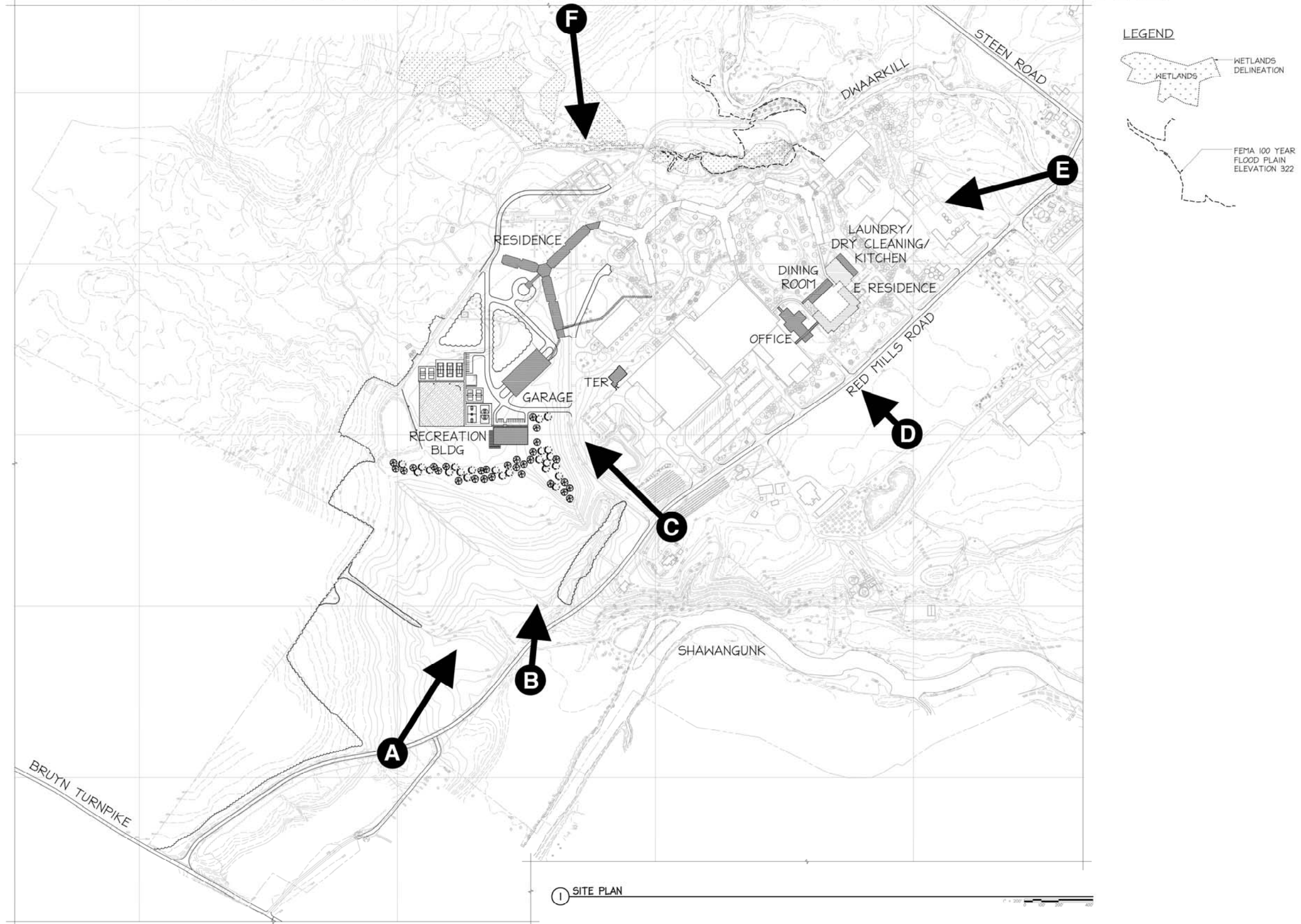
The pole-mounted driveway lights are Illuminating Engineering Society (IES) designated “full cutoff” high-pressure sodium fixtures that do not provide any uplight above horizontal, thus avoiding night trespass and night sky glow. This approach is part of the initiative to address green building design issues using The Green Globes™ System. These roadway lights are also similar in appearance to the existing roadway lighting fixtures. Lighting bollards would be located around the building entrances and sidewalks. These high-pressure sodium fixtures would match the lighting around the existing buildings in the vicinity and are designed as low-wattage, low-intensity fixtures providing minimal uniform illumination housed in an ornamental package. The existing outdoor athletic fields are being relocated as a result of the new construction and the associated lighting would be relocated as well. These lights are timer-controlled with a manual override “On” or “Off”. Automatic shut-off controls would limit the hours of use. Electrical site lighting plans are included in the Filing drawing set showing the proposed lighting locations for new and/or adjusted driveway areas. The existing lighting to be removed has been included for reference and comparison.

#### III.H.1.e Mitigation Measures to Lessen Visual Impact

Mitigation strategies can be categorized into three general groups: professional design and siting, maintenance, and offsets. The applicant proposes using the following professional design and siting strategies: screening, low profile, and lighting.



# WATCHTOWER FARMS IMPROVEMENTS



① SITE PLAN

Figure III.H-8 Site Plan with Photosimulation Key







**View "A" Existing**



**View "A" Proposed**

**Figure III.H-9 View "A" Existing and Proposed**







**View "B" Existing**



**View "B" Proposed**

**Figure III.H-10 View "B" Existing and Proposed**







**View "C" Existing**



**View "C" Proposed**

**Figure III.H-11 View "C" Existing and Proposed**







**View "D" Existing**



**View "D" Proposed**

**Figure III.H-12 View "D" Existing and Proposed**







**View "E" Existing**



**View "E" Proposed**

**Figure III.H-13 View "E" Existing and Proposed**







**View “F” Existing**



**View “F” Proposed**

**Figure III.H-14 View “F” Existing and Proposed—Summertime**







**View “F” Existing in Wintertime**



**View “F” Proposed in Wintertime**

**Figure III.H-15 View “F” Existing and Proposed—Wintertime**



To preserve the scenic views along the southerly part of Red Mills Road, an existing earth berm would be extended to the west and south. The berm would be landscaped with a mix of deciduous and evergreen trees of both fast and slow growth varieties. The heights at purchase would be on the average of 15 feet, with a maturity height of fifty to eighty-five feet. The varieties would have canopies that would provide a dense year round visual barrier. Also, an existing, mature grove of trees located adjacent to Red Mills Road and in heights exceeding forty feet would remain. These would adequately reduce the visibility of the proposed residence, garage and recreation buildings from any aesthetic resource to an insignificant level.

The proposed berm and vegetation would be designed to obscure the view of the proposed low-profile new residence building, parking garage, and recreation building from northbound traffic on Red Mills Road. At the same time, the proposed berm and vegetation would be designed to avoid obscuring the view of the Shawangunk Mountains ridgeline approximately four miles behind the project site.—See Figures III.H-9 through III.H-11.

The proposed action also includes a new office building, serving an ancillary function, in the location of an existing one-story structure fronted on Red Mills Road. The new three-story office building would be located between, but set back from, two existing buildings three and five stories respectively. Special care would be taken to design the façade to follow the aesthetic preference set by the adjacent existing buildings, thereby mitigating the visual impact of the new building. It is also located behind an existing surface parking area accessed from Red Mills Road. The existing mature trees and shrubbery help to reduce the scale of the building and significantly lessen the visual and aesthetic impact.—See Figure III.H-12.

An expansion to the existing dining room is included in the proposed action. This would be accomplished by extending the existing building into the courtyard, not visible from Red Mills Road, mitigating the visual impact.

An addition onto the existing laundry building, set back from Red Mills Road, would house the proposed laundry expansion. This is located between existing buildings and be landscaped to mitigate visual impact from Red Mills Road.

Maintenance strategies generally involve removing existing facilities that are no longer in use. Offset strategies involve removing aesthetic problems that are in the viewshed as compensation for other losses. Neither of these strategies appear to be applicable to the proposed project. The applicant historically removes decommissioned equipment and facilities, and there do not appear to be significant potentials for offsets in the involved viewsheds.

### **III.I Historic and Archaeological Resources**

#### **III.I.1 NYS OPRHP Letter—Comments**

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) provided a letter of comment to the Town of Shawangunk Planning Board, dated November 17, 2007.<sup>1</sup> The applicant retained a qualified archaeologist, according to Title 36 Code of Federal Regulations, Part 61, who performed a Phase I cultural resource investigation that considered the Dill Farm and surrounding properties. The applicant discussed the proposed project with members of the Walkkill Historical Society. The president of the Walkkill Historical Society expressed interest in the outcome of the archaeological study. The completed study (review number 08PRO1180) is included in Appendix 9 for review.

#### **III.I.2 NYS OPRHP—Archaeological Study**

As per the NYS OPRHP recommendations, the Phase 1A cultural resources assessment was developed and completed by Dr. Eugene J. Boesch, Ph.D., R.P.A, archaeologist and historic preservationist in June 2008. The Phase 1 study includes the Area of Potential Effect (APE) divided into Zone A, Zone B, Zone C (see Figure 4 of the Study). Zone A is the existing development north of Red Mills Road. Zone B, also north of Red Mills Road, is in the field area of the proposed berm. Zone C is the limited width utility corridor that follows the south side of Red Mills Road, crosses the cultivated garden and ends at the existing sewer plant. The report, section 5.1, page 27, notes the following in regards to the three zones:

Zone A—This zone is no longer considered to be archaeologically sensitive due to the prior site construction within the developed area.

Zone B—The fenced pasture and proposed recreational area has undergone little or no disturbance (other than cultivation) and is considered to be sensitive for the presence of Native American sites.

Zone C—The route of the utility corridor (for the 8-inch wastewater pipe) has undergone little or no disturbance (other than cultivation) and is considered to be sensitive for the presence of Native American sites.

The Phase 1A report recommended, on page 27, that a Phase 1B-level archaeological investigation be undertaken in the portions of Zone B and Zone C that would be disturbed by activities associated with the proposed construction project. The report recommended, on page 28, that further study of Zone A was not warranted. Based on the review by the Planning Board and NYS OPRHP of the Phase 1A investigation, the

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<sup>1</sup> See Appendix 2



applicant was directed to follow with a Phase 1B investigation of the specific areas of proposed disturbance within Zone B and Zone C.

The Phase 1B cultural resources assessment was developed and completed by Dr. Eugene J. Boesch, Ph.D., R.P.A, in August 2008, and is included in its entirety in Appendix 9 of this DEIS. The objectives of the study were to determine whether Native American period archaeological resources are present within the archaeologically sensitive portions of the projects APE and to assess whether any further investigations would be necessary. The study was to be accomplished by conducting sub-surface investigation consisting of the excavation of archaeological shovel tests following current NYS OPRHP standards. The Phase 1A report had already determined that the APE was not sensitive for the presence of Historic period archaeological sites, so no Historic period study was conducted. Also, since none of the soils mapped for the area consisted of alluvial deposits, the presence of deeply buried Native American archaeological sites within the tested area was considered to be unlikely.

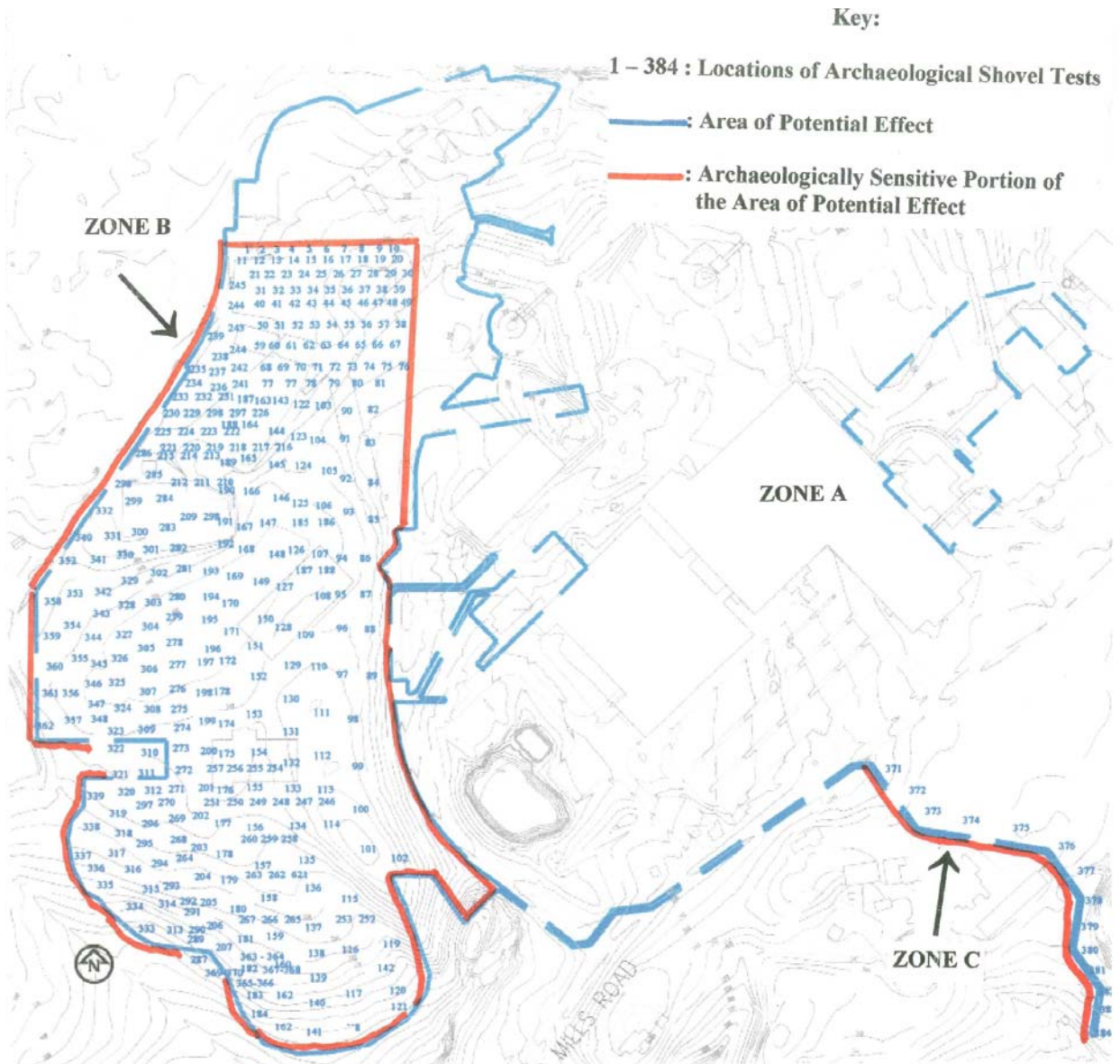
The testing consisted of the excavation of a total of 384 archaeological shovel tests. The shovel tests were extended to depths below which naturally occurring, culturally sterile, sub-soil was encountered and each was excavated stratigraphically. All soil removed from the shovel tests was screened through one-quarter-inch (1/4) mesh (hardware cloth) to detect the presence of artifacts. The artifacts were returned to the laboratory where they were cleaned, examined, and identified as to type, function, cultural affiliation, and period of manufacture possible in the first stage of analysis. Each item was then placed in plastic bags labeled according to provenience. The second stage of analysis consisted of studying the stratigraphy encountered by the shovel tests in conjunction with the artifacts recovered in order to interpret the survey results.

Included in the NYS OPRHP study report in Appendix 9 are the listed description of each shovel test by number, the stratigraphy encountered, the depths of each sequence and the artifacts recovered from each stratigraphic context. In locations where tests revealed the presence of Native American activity, the methodology required additional shovel tests to be excavated in the immediately surrounding area. The additional tests were excavated in the cardinal locations surrounding the spot of the initial shovel test find at three-meter and five-meter intervals.

Zone B, consisting of 13 acres, is made up of formerly cultivated land now used primarily as seed pasture but also utilized as an overflow parking lot and recreational fields. This is the location of the planned new parking garage, recreation building, roadways, below-ground utilities and landscaped grounds. The testing of this area consisted of the shovel tests numbered 1 through 370 covering approximately 0.75 square meters (2.5 square feet) of ground surface as shown in Figure III.I-1.

The testing of Zone C consisted of the shovel tests numbered 371 through 384 located within the one-quarter- (0.25-) acre portion of the APE along the proposed route of the wastewater utility piping south of Red Mills Road as shown in Figure III.I-1. The proposed pipeline route is approximately 1,050 feet long and 10 feet wide. The route will

extend along the edge of an existing agricultural field and across landscaped grounds and grassy terrain to the existing wastewater treatment facility.



**Figure III.I-1 Locations of Archaeological Shovel Tests**



### **III.I.3 NYS OPRHP—Archaeological Impact Mitigation**

Of the 370 shovel tests excavated in the pasture north of Red Mills Road in Zone B, four stratigraphic sequences were encountered. The nature of the stratigraphy indicated that Zone B had previously been cultivated or used for pasture with the northern most portion of the zone also being filled relatively recently. Some erosion has also occurred there. These soil sequences for Zone B are:

- I. The first stratigraphic sequence encountered by shovel tests numbered 1 through 81 located in the northern most portion of Zone B. The shovel tests revealed the presence of relatively recently developed soil and relatively recently deposited fill, overlying a former plow zone layer and the naturally occurring sub-soil. The fill reportedly was placed in the area about 15 years ago, deriving from excavation for an existing parking garage located just to the east of Zone B. No Historic period or Native American period sites were identified by these shovel tests.
- II. In the eastern, western, and central portions of Zone B, the second stratigraphic sequence was seen in shovel tests numbered 82 through 264, as well as in shovel tests numbered 363 through 370. The soil sequence revealed the presence of relatively recently developed near-surface soils overlying a former plow-zone layer and the naturally occurring sub-soil. No Historic period or Native American period sites were identified by these shovel tests. The single, isolated find, a Native-American-period gray-black chert flake was found in this area in shovel test number 182. Additional investigation within five meters of the initial find location did not reveal additional Native American artifacts or other evidence of Native American activity.
- III. The third stratigraphic sequence was encountered by shovel tests numbered 265 through 324 and 336 through 362, located in the western portion of Zone B. The soil sequence revealed the presence of relatively recently developed near-surface soils overlying a former plow-zone layer and the naturally occurring sub-soil. The plow zone revealed in these shovel tests was slightly darker in color than that seen in shovel test numbers 82 through 264 and 363 through 370, likely as a result of increased moisture content. No Historic period or Native American period sites were identified by these shovel tests.
- IV. The southwestern portion of Zone B revealed the fourth stratigraphic sequence by shovel tests numbered 325 through 335. The soil sequence revealed the presence of relatively recently former, near-surface soils overlying the naturally occurring sub-soil. The plow zone was not present in this location which is a swale-like area. It either had eroded or the localized area was never plowed, preventing the plow-zone layer from

forming. No Historic period or Native American period sites were identified by these shovel tests.

Five stratigraphic sequences indicative of disturbed soils were encountered by the 14 shovel tests in Zone C reflecting the various uses to which the different portions of the area have been put. These include landscaped grounds, cultivation, and construction. The soil sequences for Zone C are:

- I. The first stratigraphic sequence revealed in a grassy lawn along the wastewater utility piping route immediately south of Red Mills Road was encountered by shovel tests numbered 371 through 373. Underlying the relatively recently formed, near-surface soils was a disturbed soil layer overlying the naturally occurring sub-soil. The sequence indicated ground disturbance had occurred in the area, probably as a result of landscaping. No Historic period or Native American period sites, or isolated Native American artifacts, were identified by these shovel tests.
- II. Along the margin of a currently cultivated field, the second stratigraphic sequence was seen in shovel tests numbered 374 and 375. The soil sequence revealed the presence of a plow zone overlying the naturally occurring sub-soil. No Historic period or Native American period sites, or isolated Native American artifacts, were identified by these shovel tests.
- III. The third stratigraphic sequence was encountered by shovel test numbered 376 and 377 located immediately east of an existing maintenance building in Zone C. The soil sequence revealed graded and otherwise disturbed soils overlying the naturally occurring sub-soil. No Historic period or Native American period sites, or isolated Native American artifacts, were identified by these shovel tests.
- IV. South of the maintenance building the fourth stratigraphic sequence was revealed by shovel tests numbered 378 through 380. The soil sequence revealed graded and otherwise disturbed soils overlying the naturally occurring sub-soil. No Historic period or Native American period sites, or isolated Native American artifacts, were identified by these shovel tests.
- V. The fifth stratigraphic sequence was seen in shovel test numbered (381 through 384). These were located near the existing wastewater treatment facility. The sequence also revealed relatively recently formed, near-surface soils and disturbed soils—the latter likely resulting from construction of the wastewater treatment facility or the installation of existing pipelines and utilities leading to it, overlying naturally occurring sub-soil. No Historic period or Native American period sites, or isolated Native American artifacts, were identified by these shovel tests.

Based upon the results of the Phase 1B fieldwork completed by Dr. Eugene J. Boesch, Ph.D., R.P.A, the report concluded with the comments that no additional archaeological

investigations are recommended for the proposed Watchtower Farms Improvement project Area of Potential Effect. Thus, no mitigation measures or alternatives are being pursued. A copy of the Phase 1B report has been forwarded to the NYS OPRHP in its entirety.

### **III.J Community Facilities and Services**

#### **III.J.1 Demand on Community Facilities and Services**

##### ***ENVIRONMENTAL SETTING***

###### **Police**

The Town of Shawangunk police department is located at 13 Bona Ventura Road in the hamlet of Wallkill. The police department has one full-time chief, two full-time sergeants, three full-time patrol officers, and ten part-time officers. The typical response time to travel the approximately six miles from the police station to the project site is about 15 minutes, and this would vary depending on the time of day and location of the nearest officer.

The Town of Shawangunk population was 12,042 according the 2000 U.S. census, so the ratio of full-time officers to population is 0.5 per 1,000 population. This is lower than the Bureau of Justice Statistics report on Local Police Departments report in 2003, which listed the ratio at 2.0 per 1,000 population for populations of 10,000 to 24,999. In addition to the Town of Shawangunk police department, the Ulster County Sheriff's office has three full-time and two part-time officers at the Wallkill Station Zone 2. During some overnight hours, police coverage is provided by the New York State Police and Ulster County Sheriff's department. Additionally, State Police Troop F, serving Orange and Ulster counties, has locations nearby in Gardiner, Middletown, Newburgh, and Pine Bush.

The applicant maintains 24-hour on-site security with a staff of 11 persons. The on-site security staff maintains physical and video surveillance of the property, including buildings and various agricultural lands, which helps deter trespassing and vandalism. They have also assisted with on-site storm preparation, accidents, intruders, stranded vehicles, and other on-site emergencies, contacting appropriate authorities as needed. The coordination of emergency response activities takes place from a central desk, which is equipped with radio and telephone communication and is the response location for all fire and building alarms.

###### **Fire Protection**

The proposed project site is located in the Shawangunk Valley Fire District (SVFD), and it is approximately four miles away (eight minutes driving time) from the station at 2150 Bruynswick Road. A typical response time from the fire house to the applicant's property would be between 15 and 20 minutes. The SVFD coordinates with other fire departments throughout the area through mutual-aid agreements.

Some nearby fire departments in Ulster County include: the Wallkill Hook, Ladder and Hose Company—two pumpers, tanker and rescue vehicle; Gardiner Fire Department—ambulance, rescue truck, three engines, tanker, and brush truck housed in two firehouses; Walker Valley Chemical Engine Co. No. 1; and New Paltz Fire Department.



Located nearby in Orange County are the Pine Bush Hook and Ladder Company No. 1 and Bullville Fire Department.

In addition to relying on the above-mentioned services, the applicant maintains its own private fire brigade consisting of 16 members. The Watchtower Farms Fire Department (WTFFD) was established in the early 1970's. Considering the complexity of the applicant's facility and nature of the buildings, the value of having on-site first response personnel was determined to be advantageous at that time. The WTFFD has trained to be a full-response brigade. Its members are progressively trained to respond to fire emergencies, hazardous materials response, and to perform confined space and high-angle rescue as needed until mutual aid arrives. On site the applicant has a fire engine with a 500-gallon booster tank with a 1,000-gallon-per-minute capacity.

Since the major residence buildings have been constructed out of fire-resistive material (reinforced concrete) fire spread would primarily be limited to any combustible finishes. Since all of the proposed buildings would be compartmentalized with code-compliant fire-rated doors, partitions and construction, the risk of fire spread is relatively low. The majority of the larger residence buildings and both parking garages also have standpipe and some sprinkler systems installed. The recently added printery building is fully sprinklered and portions of the original printery have also been retrofitted with sprinkler systems.

Fire prevention measures instituted by the applicant include a strict site-wide no-smoking policy and guidelines on the use of candles, halogen lamps, and similar objects that have the potential to be ignition sources. Each year every resident receives fire safety reminders, watches a fire safety video, and is required to read the fire escape plan for their room and building. There is an annual fire safety inspection of each occupant room and work area, looking for such things as hazardous use of candles, overloaded electrical outlets, frayed cords, housekeeping of storage areas, etc. Additionally, each work area is required to include various fire and safety reminders in their regular shop meetings.

Each building is connected by a fire alarm network to a command center that is staffed 24 hours per day. The sensors connected to this network also are tested regularly in accordance to NFPA 25 and NFPA 72. The system detects malfunctioning sensors so that they can be replaced. Each of the smoke alarms in the residence rooms are regularly tested by hand to ensure their operation.

In the case of fire, the complex is serviced by over 20 hydrants located around the property. Some of these areas are fed from non-potable sources totaling approximately 5,150,000 gallons, and others from potable sources typically containing 312,000 gallons. Additionally, water could be pumped directly from other strategically located aboveground sources such as ponds and reservoirs containing about 109,000,000 gallons.

## Ambulance

The Town of Shawangunk Volunteer Fire Department and Ambulance Corps (SVFD) station is located less than eight minutes away at 2150 Bruynswick Road. Other nearby ambulances include the Wallkill Volunteer Ambulance Corps (16 minutes away in the hamlet of Wallkill), the Town of Gardiner Rescue Squad (17 minutes away), and the Pine Bush Volunteer Ambulance Corps (10 minutes away in Orange County).

Mobile Life Support Services (MLSS) provides Advanced Life Support (ALS) level care and mutual-aid services for communities that operate their own volunteer services. They also aid some volunteer services by leasing EMS staff to these communities when they do not have sufficient coverage from their volunteers. MLSS is staffed by approximately 260 persons who operate a fleet of 32 paramedic units, 4 four-wheel-drive ALS First Response Vehicles, and provide helicopter MedEvac services operated out of Stewart International Airport. Specially trained flight paramedics staff the MedEvac at the airport and are available for immediate response. MLSS units are deployed from 14 operational stations located throughout Orange, Ulster, and Dutchess Counties. MLSS organizes their staffing and deployment needs in order to maintain minimal response times in their primary coverage areas. MLSS is part of the Enhanced 911 system, and their communication center handles over 48,000 requests for service each year. MLSS also has a Special Operations Response Team (SORT) that is available for activation during mass casualty incidents (MCI), or other unusual incidents. In the event that advanced life support assistance is needed, the applicant has a standing arrangement with MLSS for over a decade to arrange for en-route transfer from Basic Life Support (BLS) ambulance to the MLSS Advanced Life Support (ALS) care.

The applicant maintains an on-site infirmary that has two full-time doctors on staff, one with extensive emergency room care and supervisory experience. Currently there are also approximately 15 full-time registered nurses, one part-time doctor, and a trained paramedic on-site. The applicant currently has eight trained emergency medical technicians (EMT) for on-site emergency response and a BLS ambulance for patient transport. The applicant's Watchtower Farm Medical Unit (WFMU) has developed its ambulance policies and procedures in harmony with the *NYS EMS Code* (Part 800) and Article 30 of the NYS Public Health Law for EMS.

The WFMU practices responding to Mass Casualty Incident (MCI) response events on a regular basis, and has trained its members on working with and transferring control to 911 responders. In the event of an on-site MCI, in conjunction with their on-site fire brigade, an Incident Command System (ICS) established. This is structured in harmony with the principles of the Department of Homeland Security's National Incident Management System (NIMS) as outlined by the Bureau of EMS Policy Statement #06-05, dated June 5, 2006.

In addition, the applicant has located several automatic defibrillators in various buildings and trained its registered nursing staff in advanced cardiac life support. Many dozens of occupants also receive regular refresher training in cardio-pulmonary resuscitation (CPR).

## Education

The applicant is located within the Pine Bush School District. The Pine Bush Central School District covers seven townships located in portions of Ulster, Sullivan, and Orange counties. Established in 1938, the district is composed of four elementary schools, two middle schools, and a high school. It has a student enrollment of 6,200 and budget of \$87.1 million.

The Pine Bush School System has Kindergarten through 12<sup>th</sup> grade facilities within approximately five miles of the proposed project location. These schools include the E.J. Russell Elementary School, grades K–5, with an enrollment of 686 students; the Pine Bush Elementary School, grades K–5, with an enrollment of 824 students; the Crispell Middle School, grades 6–8, with an enrollment of 852 students; and the Pine Bush High School, grades 9–12, with a student enrollment of 2,086 students.

## Recreation and Open Space

There are several parks located near the project site in the Town of Shawangunk. These include Popp's Memorial Park, Garrison Park, Galeville Park, Greer Park, VerKeerderkill Park, and the Borden Library Park. Additionally, the Town of Shawangunk has been working on a recreational rail trail that extends toward Walden and New Paltz. Parks include equipment for all age groups, such as playground equipment, sports fields, and pavilions, and barbeque pits.

## Solid-waste Disposal

The applicant diverts recyclable materials from municipal waste streams in accordance with the Ulster County Mandatory Source Separation and Recycling Law of 1991. In 2006, approximately 185 tons of glass, plastic, and metals were recycled along with 4,800 tons of wastepaper and 1,100 tons of cardboard. Typically, approximately 500 tons of other solid waste is disposed of annually by licensed waste contractors such as Waste Management or Ashland Environmental. Manure is spread on fields as fertilizer and food wastes are composted.

### **III.J.2 Existing and Proposed Population**

The existing population on Parcel 99.4-1-11 (“property”) is approximately 1,350 residents. Following completion of the project, the projected site population would have the potential to increase by 208 residents, or approximately 15 percent. Therefore the proposed population is anticipated to be near a target of 1,558 residents.

The new residential building would have 300 dwelling units (designated in the *Zoning Code* as multiple-family dwellings). Of these, approximately 151 dwelling units would replace dwelling units lost in other buildings as a result of this project. The dwelling units that are lost would mainly be due to quality-of-life improvements with the objective of increasing their size to include individual, rather than communal, bathrooms and simple kitchenettes. An example of dwelling units that would be lost is the modular housing north of the new residential building. Also, historically at the site, approximately 15 percent of dwelling units must be allocated for occasional guests, temporary workers (seasonal and otherwise), short-term training, and special needs such as temporarily housing residents whose units are undergoing maintenance or renovation. Thus another 45 dwelling units would not be available for residents. This figure is also intended to incorporate under-utilization of dwelling units, which are typically designed to house two residents. For example, an older widow or widower may live alone, rather than with a roommate. Subtracting 196 (151 + 45) dwelling units from the 300 total dwelling units in the new residential building generates an estimated increase of 104 dwelling units, or 208 residents.

## **POTENTIAL IMPACTS**

### **III.J.3 Project Impact on Service Providers**

#### Police

The applicant had conversations with Chief Frank Petrone of the Town of Shawangunk Police Department on March 19 and April 10, 2008. Chief Petrone indicated that the Shawangunk Police Department has responded to calls for assistance with petty mischief by outside parties, minor property damage, vehicle collisions, incomplete or abandoned 911 calls, and other miscellaneous matters. On an average they respond to calls relating to the Watchtower Farms four times per year.

The proposed project would generate a 15 percent increase in population with an anticipated corresponding increase in calls to approximately five per year. Chief Petrone would expect limited impact from the proposed action. Since there are no planned additional access points onto the property, there is no increase regarding access security or traffic intersections.

#### Fire Protection

The proposed project would add several new buildings to the site as outlined in Section I of this document. The additional construction would have the potential impact of increasing the demand on the community fire-protection services. Additionally, since the site has an on-site fire protection and emergency response program, the new buildings could also increase demand on these existing services. Further details regarding the potential impacts can be found in the Mitigation Measures section, which addresses in detail the potential impacts identified by the Shawangunk Valley Fire District.

#### Ambulance

The applicant estimates that the Shawangunk Valley Ambulance Corps averages approximately one ambulance transport per year related to Watchtower Farms. The applicant estimates that Mobile Life Support Services (MLSS) averages approximately four ambulance transports per year related to Watchtower Farms. The applicant anticipates that the proposed project would result in 15 percent more ambulance transports based on its projected 15-percent population growth. This would annually result in a total of two ambulance transports by the Shawangunk Valley Ambulance Corps and five ambulance transports by MLSS. Neither increase is anticipated to be significant; however, during a meeting involving representatives of the applicant, the Shawangunk Valley Fire District, and the Shawangunk Valley Ambulance Corps on March 26, 2008, interest was expressed in preparedness for a mass casualty incident (MCI) on the project site.

The applicant contacted Mr. Arthur Snyder, the director of Emergency Communications and Emergency Management for Ulster County on April 10, 2008, to review the

proposed project. The Ulster County Office of Emergency Services serves as the link between the public and the police, fire and emergency medical services. In the event of a mass casualty incident, the SVFD would take the lead and request additional help from the Emergency Communications office, which would dispatch mutual aid as needed from the nearest adjoining communities. There are mutual-aid agreements throughout Ulster County and also with adjoining Counties, such as Orange County. Mr. Snyder anticipated that the proposed action would have negligible impact on the ambulance and 911 services for the County since they have coordinated these services to ensure that no area is left without adequate coverage.

The applicant also contacted Mr. Andrew La Marca, the Director of Business Development of Mobile Life Support Services, to review the proposed project. As he expressed in correspondence to the applicant, dated April 22, 2008, a mass casualty incident could:

...necessitate assistance through the Ulster County Mutual Aid Plan. I think this is a reasonable expectation for any community or facility today that faces a large multiple patient incident, to plan on both using and participating in County-Administrated Mutual Aid Plans. While I would defer to the primary providers that serve your community, Mobile Life Support Services would not be in any way negatively affected by this expansion.<sup>1</sup>

### Education

In correspondence received from the Pine Bush Central School District, dated March 13, 2008, the Interim Director of Schools, Dr. William Bassett, expressed the following:

I have surveyed our administrative staff district-wide, and my report to you is that the Pine Bush Central School District has experienced no impact on the normal operation of our school district as a result of the existence of the Watchtower Farm. I would anticipate that the planned expansion will not impact the school district.<sup>2</sup>

Although modest residential growth is planned on the project site, the character of the residents would reflect that of current residents. The Watchtower Farms Facility is staffed by adult Jehovah's Witnesses who are members of a special religious order. The residents perform their duties full-time, have chosen to live either unmarried or married without children, and have taken a simple vow of obedience and poverty. Therefore no significant impact is anticipated on the public educational system.

### Recreation and Open Space

In a telephone conversation on March 12, 2008, a representative of the applicant discussed the proposed project with Mr. Adrian M. DeWitt, a Town of Shawangunk Councilperson with (a) Primary Committee Oversight of Liaison To Highway Superintendent, Buildings/Parks & Grounds, Recreation and (b) Secondary Committee

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<sup>1</sup> See Appendix 2.

<sup>2</sup> See Appendix 2.

Oversights of Liaison to Recreation, Solid Waste and Recycling, Verkeerderkill—Greer Parks. Mr. DeWitt noted that the proposed project includes a recreation building and athletic fields to provide such services on-site, rather than increasing demands on local community services. He anticipated no significant impact on community recreation services and commented favorably on the applicant's contributions to Garrison Park, Verkeerderkill Park, and the Walkkill Rail Trail. The applicant anticipates payment of a recreation fee established by the town board that would be commensurate with the proposed project's impacts.

#### Solid-waste Disposal

The applicant anticipates a corresponding 15-percent increase in waste generation based upon the proposed increase in population, with recyclables continuing to be diverted from the waste stream for recycling. The primary waste hauler for the facility, Waste Management, stated that their Kingston District can properly handle the construction-related and long-term waste generated by the proposed project.<sup>3</sup>

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<sup>3</sup> See Appendix 2 for correspondence from Jeff Budik, Waste Management Account Manager, dated February 15, 2008.

## **MITIGATION MEASURES**

### **III.J.4 Community Services Mitigation**

#### Police

No additional mitigation measures are anticipated at this time. The applicant would continue to maintain its on-site private security arrangement that includes 24-hour physical and camera surveillance. All residents continue to go through a strict screening process in order to verify, to the extent possible, that they are law abiding and honest. The applicant continues to maintain emergency response procedures for its residents including the provision of back-up power generation in the event of an outage.

#### Fire Protection

The Shawangunk Valley Fire District (SVFD) Board of Commissioners wrote a letter, dated January 12, 2008<sup>4</sup>, to the Town of Shawangunk Planning Board in response to the routing of the scoping document. This letter identified seven areas of concern with the proposed project, and these were discussed at a meeting with the applicant on March 26, 2008. Each item is considered in detail below:

- 1) “[The SVFD is] concerned about the height of the building(s) as related to firefighting and rescue operations and accessibility. There needs to be a critical evaluation in relation to readily available firefighting apparatus.”

As recommended by the SVFD, in April 2008 the applicant’s fire brigade purchased and practiced with a 35-foot ground ladder that would be maintained on-site in case of a fire emergency. The applicant’s fire brigade is equipped for high-angle rope rescue if needed. The proposed buildings and additions would be built with firefighting equipment as noted in the following descriptions, in addition to being connected to the existing fire alarm network:

- Though not required by NY State fire codes, the recreation building would have a Class II standpipe and hose station installed so that all portions of the building can be reached
- The parking garage cellar would have a dry-pipe sprinkler system and the entire garage would include a dry-pipe Class III standpipe and hose system, and a Siamese connection would be added to an accessible face of the building.

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<sup>4</sup> See Appendix 2.



- The accessory office building would be equipped with a wet automatic sprinkler system and a Siamese connection would be added to an accessible face of the building.
- The residence building would be equipped with a wet automatic sprinkler system and Class II standpipe and hose system and a Siamese connection would be added to an accessible face of the building.
- Although not required by *NY State Building Code*, the technical equipment building would have a pre-action sprinkler system along with smoke and heat detectors. All of the fire protection components would be monitored remotely at a 24-hour manned reception desk.
- Adjustments to the dwelling units in the existing E residence, which is the tallest building in the site, would include the upgrade to adding a wet automatic sprinkler and a Class II standpipe and hose system.

The maximum height of the proposed buildings would be three stories or less, and the building height would be below the permitted height of 35 feet and a 4 foot or less roof parapet with the exception of the proposed accessory office building, where a variance would be sought. The building complies with the height requirements of *The Town of Shawangunk Zoning Code* at the street frontage and west side. The grade at the east side and rear of the building is retained, allowing the basement windows to be exposed to light, resulting in a total building height of 44 feet, 6 inches, in these locations. Without this exposure, the basement floor is limited to non-office uses, not allowing the full capacity of the building to be realized. The building is located between two existing structures, a 52-foot-high residence building and a 30-foot-high office building. The exposed basement is obscured at the sides and rear by the existing structures and a one (1) story enclosed walkway. The proposal includes the installation of a sprinkler system in the entire building, which is proposed to mitigate additional fire exposure caused by reduced accessibility.

Additionally, construction would meet the following building codes as applicable: *Building Code of NYS—2007* version, *Fire Code of NYS—2007* Version, *NFPA 13—1999* version (Standard for the Installation of Sprinkler Systems), *NFPA 13R—1999* version (Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height), *NFPA 14—2000* version (Standard for the Installation of Standpipe and Hose Systems), *Fuel Gas Code of NYS—2007* version.

- 2) “[The SVFD is] concerned regarding accessibility to all sides of the building[s] for firefighting or rescue operations.”

The proposed project incorporates the recommendation from the SVFD to install and maintain landscaping that would avoid interfering with firefighting or rescue operations, such as trees adjacent to buildings and dense or uneven landscape features that would make firefighting and rescue operations difficult.

- 3) “[The SVFD is] concerned regarding the increase in the Farm’s population and how that may affect both the Watchtower Farm’s [and] the District’s ability to handle EMS emergencies.”

As recommended by the SVFD, the applicant has apprised Ulster County Emergency Services and Mobile Life Support Services of the proposed project. The applicant would continue to maintain appropriate on-site personnel for emergency response including the licensed doctors, registered nurses, emergency medical technicians, and a fire brigade.

The applicant has also reviewed its pre-plans for emergencies including a mass casualty incident (MCI). As an example of the typical response process, the applicant’s on-site medical dispatch desk immediately informs the on-site responders who include emergency medical technicians, doctors, and registered nurses. If necessary, 911 is called for additional help. If needed in the event of a large scale MCI, the on-site medical responders are trained to set up an incident command center and start triage so that the most critically injured receive immediate attention. The most critically injured would receive transport on Advanced Life Support ambulance services as they become available from the community responders, or from Mobile Life Support Services. Those with lesser injuries would be transported on the applicants Basic Life Support (BLS) ambulance and those BLS ambulances that respond from the community. Also the applicant’s local shuttle vans could also be used for hospital transport in the case of emergency. The applicant is in the process of pre-locating a suitable location for MedEvac helicopter landing to serve the property, if necessary.

- 4) “[The SVFD is] concerned regarding the increase in the fire load of buildings on the Farm as related to the capacity of the water supply and the ability of their systems to deliver that water supply to hydrants and/or sprinklers throughout the existing and proposed Watchtower property and improvements.”

The applicant’s fire suppression systems are supplied by potable and non-potable sources. The potable system has a maximum on-hand capacity of 492,000 gallons and a typical on-hand capacity of 312,000 gallons, depending on the time of day and day of the week. The non-potable system is fed from two ponds with a typical capacity of 5,150,000 gallons. If necessary, mobile fire protection apparatus can also draft water from ponds that have been located near appropriate buildings around the property.

The potable system is pressurized by the water tower and two 40-hp pumps at 1,350 gallons per minute (gpm). The non-potable water system is divided into two sections. One is pressurized by a 200-hp pump at 1,750 gpm. The other is pressurized by two 25-hp pumps, each capable of pumping approximately 350 gpm. This section presently provides water to three fire hydrants and the sprinkler system for one building. One of these non-potable hydrants is presently used to fill community fire company tankers if they request water for local fire emergencies.

All of the fire suppression system pumps are also on emergency backup power sources. These systems become active within 10 to 60 seconds of a power disruption depending on the location. There is also a portable generator which can be connected to the potable system as a secondary backup within 30 minutes.

5) “[The SVFD is] concerned if there is an appropriate and ongoing testing procedure to ensure there is adequate water supply and backup for emergency firefighting and/or sprinkler operations.”

The applicant has a regular schedule of testing. All inspections and testing are done in accordance with NFPA 25 and NFPA 72. These test procedures include the following:

- Each month a visual inspection of Siamese connections, standpipes, hoses, valves, and sprinkler heads on the entire complex is performed.
  - Every three months (some components only require yearly testing) the water-flow devices and tamper switches are tested, and water pressure is recorded.
  - Every five years a hydrostatic test of all sprinkler piping systems is performed by over-pressurizing of the system to verify the integrity of the piping.
  - All the hydrants are tested semi-annually when they are flushed, bleeder valves are checked, all ports and valve stems are lubricated, water pressure is checked, and the flow rate is verified.
  - The non-potable fire sprinkler system pump is checked each week according to the following procedure: the pump is operated for ten minutes; it is dead-headed; the suction and discharge pressures are recorded, and bearings and packing are checked. A chart recorder records weekly system operation.
  - Every year an extensive full operation test of the system is performed which includes recording flow rate.
- 6) “[The SVFD is] concerned on whether there are accurate and up-to-date inventories of on-site hazardous materials and adequate protective equipment/gear to handle exposures to those materials as related to their ongoing activities.”

The applicant maintains a facility operating permit with the Town of Shawangunk Building Department that identifies locations containing hazardous materials. The applicant has set aside specific fire-resistant locations for the storage of hazardous materials, and has equipped these locations with the required ventilation, fire suppression systems, and spill containment equipment. The

applicant also maintains an inventory of the chemicals on site, and their associated Material Safety Data Sheets (MSDS).

The chemical storage rooms also contain personal protective equipment (PPE) that is suitable for the chemicals located in each respective room. In addition to this PPE, the WTFFD also has obtained Hazmat gear for responding to Hazmat incidents.

The applicant's Hazmat team has received Hazardous Waste Operations and Emergency Response (HAZWOPER) technician-level training to enable them to respond to chemical spills, set up work zones, determine appropriate evacuation and how to follow through with proper disposal and contacting the local authorities.

The applicant is in the process of working with the SVFD to provide additional graphical information concerning the location, type, and quantities of any hazardous materials stored on the property. This would allow the applicant's fire brigade and all emergency responders to quickly identify the locations and respond safely and quickly.

- 7) "[The SVFD is] concerned if there is a mass evacuation plan for the facility/farm for circumstances requiring evacuation (hazardous material exposure, bomb threat, etc.)."

The applicant has implemented standard operating procedures for responding to various types of emergencies. These include natural events, such as severe weather, and those that are malicious in nature, such as bomb threats. The applicant has evacuation plans that care for evacuating individual residence buildings and a mass evacuation plan for the entire facility. As discussed at a meeting involving the applicant and the SVFD on March 26, 2008, the SVFD will review this plan with the applicant. The applicant can make this plan available to other emergency services providers, including the Town of Shawangunk, on a basis that protects the safety of residents and the security of the facility.

The proposed buildings would be constructed according to the latest New York State fire codes. Additionally, in harmony with New York State fire codes, when improving existing buildings, the E Residence and Services Building for example, fire-protective measures would be installed to meet or surpass the applicable requirements of the *Building Codes of New York State*. The potential impact of the additional buildings would be mitigated by the applicant's existing voluntary fire protection and emergency response measures, with a proportional increase in additional staff trained and added to emergency response teams. The applicant anticipates that the mitigation measures described above would be appropriate for the proposed project.

### Ambulance

The proposed project designates major access to all the residence buildings as no parking—fire zones in order to allow access to these areas by emergency vehicles at all times. The applicant would continue to maintain its basic life support ambulance and supplement its operation as needed with additional personnel and equipment. The applicant is also investigating pre-locating a MedEvac landing site to serve the property. The applicant is following with the SVFD to identify a suitable location.

### Education

No impact is anticipated on educational facilities and no mitigation measures are anticipated.

### Recreation and Open Space

The proposed project includes a recreation building and relocated athletic fields that would mitigate anticipated demand on community recreation and open-space facilities.

### Solid-waste Disposal

The proposed project incorporates waste reduction measures including recycling and use of bulk containers during both the construction and post-construction phases. All wastes would be transported and disposed of by appropriately licensed vendors.

### **III.K Noise and Air Resources**

#### **III.K.1 Noise**

##### ***ENVIRONMENTAL SETTING***

A Noise Measurement and Analysis was conducted in 2008 by B. Laing Associates Environmental Consultants to examine the existing and future noise levels at and in the vicinity of the Watchtower Farms Facility. Multiple noise sources associated with the project were considered. First, there is the possibility of increased noise due to the grading of the site and construction of buildings during the project, though temporary. Second, noise would be generated by project related cars and trucks as they circulate the local roadway network to access the site. Finally, there is the potential for noise to be generated by new activities related to internal traffic circulation on the site itself. The Noise Measurement and Analysis dated April 2008, along with a supplement dated August 2008, is included in Appendix 10 of this DEIS.

Sound is created and received when changes of pressure (waves) are produced in the air. These pressure changes are created at many frequencies (i.e., spacing of the waves). Each frequency is detectable at different pressure levels. The system for sound measurement which mimics the human ear is an A-weighted decibel system or dB(A), thus used in the analysis. The human ear can barely detect a 3-dB(A) change in the sound levels, which is approximately a doubling of sound wave pressure.

The existing environment of the Watchtower Farms Facility, located in the Town of Shawangunk, is described as rural since it is fairly remote in regards to other land, structures and neighborhoods. The majority of land within a 0.5-mile radius of the proposed new residence building is owned and operated by the applicant.

As indicated in Table III.K-1 below, facility observations determined that while the highest peak noise levels were measured at the Loop Road—northwest portion, the highest average noise levels were at Red Mills Road—main lobby entrance. The peak noise levels were the result of sparse, authorized-access-only periodic truck traffic as stated in Appendix 10. The higher average noise levels were attributable primarily to the visitor vehicular traffic, which included buses entering the main lobby entrance. Since visitor traffic was observed to be the most significant contributing factor to noise generation it was determined that mid-morning, when a realistic sampling of visitor traffic could be measured, would be the most appropriate time period for readings to ascertain the noise level in a “worst-case” scenario. Measurements were taken at three different locations on site: the main lobby entrance on Red Mills Road and two points along the North Loop Driveway. The readings were taken in 15 and 30 minute intervals and were monitored at a fixed point given existing conditions. Table III.K-1 shows the noise level readings at each of the selected sample points.

**Table III.K-1 Measured Noise Levels at Selected Sample Points**

<b>Sample Points</b>	<b>1<sup>st</sup> Period 15 minutes</b>	<b>2<sup>nd</sup> Period 30 minutes</b>	<b>Peak/Low</b>	<b>Average</b>
North Loop Driveway —West Portion	38 dB	38 dB	63 dB /38 dB	38 dB
North Loop Driveway —Northwest Portion	38 dB	38 dB	80 dB /38 dB	38 dB
Red Mills Road —Main Lobby Entrance	40 dB	45 dB	75 dB /40 dB	42.5 dB

Given the noise levels measured, the North Loop Driveway existing sound levels are less than would be expected for a “typical” residential land use site. Thus it would be better classified as quiet/rural. <sup>1</sup>

**POTENTIAL IMPACTS**

During the proposed construction, noise levels would be temporary and would occur at two distinctly different levels. The temporary component results from the transient nature of the construction process. The U.S. Environmental Protection Agency (EPA) Construction Noise Control Technology Initiatives, Table 2.2 reports noise levels measured at 50 feet at housing projects ranging from 88 dB(A) to a low of 75 dB(A), the higher occurring at grading and heavy construction operations and the lower during finishing construction operations.

Given that the approximate location of the proposed construction occurs at a distance of 1,400 feet to the nearest neighbor’s dwelling southeast across Red Mills Road and that no other receptors are in a direct line of sight, noise generated by the construction process would decrease as a function of distance. Given initial noise measurement standardized at 50 feet from the noise source, every doubled distance would decrease the noise level by approximately 3 to 5 dB(A). Thus, the noise generated by grading and heavy construction would be decreased at Red Mills Road to an approximate level of 55.6 to 79.4 dB(A). It is anticipated that sound levels would decrease as the finish construction work is accomplished with tools that are smaller, less continuously used and doing work within the enclosed structures. These levels would likely be reduced to 51.5 to 74.5 dB(A).

Any levels of sound which could potentially be created by increased traffic generated by the proposed action on local roadways would not be expected to have any significant impact on the area neighborhoods. The added traffic would be a difference of less than 3 to 5 dB(A) and would be consistent with existing noise sources. Using the audibility of the human ear as a reference, any increase between 3 dB(A) and 5 dB(A) is audible

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<sup>1</sup> Cowan, James, *Handbook of Environmental Acoustics*, 1994. Egan, David, *Architectural Acoustics*, 1998.

only to those with average hearing.<sup>2</sup> Thus, given the distances to public receptors, any noise increases during the operational phase would be dissipated to a sufficient degree so as not to create any noticeable increase in local noise levels. Also, it is expected that there would not be a significant increase to the percentage of time sound level increases would be experienced due to the limited number of passing vehicles or traffic delays anticipated in the future.

The majority of “noise” created in and around the facility is located at the guest/main entrance off Red Mills Road, a public roadway. Although Red Mills Road is a public road and any increase in traffic would potentially disturb adjacent areas, the applicant owns and operates all the land within a 2,500-foot radius of the main entrance and residence buildings. While it is not anticipated that visitor vehicular traffic will increase as a result of the proposed action, if any “increase” in the noise levels is noticed, it is likely to be exclusively heard by the on-site residents.

### **MITIGATION MEASURES**

Given the particular circumstances of the Watchtower Farms Facility, its existing condition as a quiet rural neighborhood, the ownership of the surrounding parcels and structures, and the private driveway network within the facility minimizing public road use, it is not likely that any possible increases in sound levels would be detected by others. No other private landowners or outside receptors are considered close enough to be directly or significantly affected by any short term increase in construction noise or any long term increase in vehicle noise. Thus no mitigation measures are proposed to be incorporated into the project.

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<sup>2</sup> Bruel & Kjaer, *Acoustic Noise Measurements*, June 1998, Table 2.1.



### **III.K.2 Air Resources:**

#### ***ENVIRONMENTAL SETTING***

The existing environment of the Watchtower Farm facility, located in the Town of Shawangunk, is continental in nature. Temperatures are below the national average and remain above freezing approximately 5 months of the year and exceed 80 degrees fewer than 1.5 months of the year. Precipitation in Ulster County is abundant and is evenly distributed throughout the year. The annual precipitation for Shawangunk is 47 inches versus the national average of 39 inches. Snowfall averages 68 inches per year and the frost-free season lasts from May to September.

Air quality is a relative measure of potentially noxious substances in the air caused by natural or human processes. Air contaminants or pollutants can be defined as solid particles, liquid particles, and vapors or gases that are discharged into or may form in the outdoor atmosphere. Air quality in any particular location is influenced by pollutants discharged into the atmosphere and by regional and local climatic and weather conditions.

The Federal Clean Air Act (1990) establishes *National Ambient Air Quality Standards* (NAAQS) that are monitored by the United States Environmental Protection Agency (EPA). The NAAQS monitor air contaminants using six pollutants as criteria contaminants. These are listed in Table III.K-2 along with information on the minimum standards required for each pollutant. In addition to the general protection of human health, these standards are intended to protect the health and well-being of particularly sensitive sectors of the general population. These especially sensitive population sectors include children, the elderly, and individuals suffering from respiratory disease. There are no especially sensitive receptors within close proximity of the project site such as healthcare facilities, nursing homes, or schools. Table III.K-3 describes the principle sources of such pollutants.

**Table III.K-2 EPA Monitored Air Pollutants <sup>3</sup>**

<b>Pollutant</b>	<b>Type</b>	<b>Standard</b>	<b>Averaging Time</b>
Sulfur Dioxide (SO <sub>2</sub> )	Primary	0.14 ppm (365 $\mu\text{m}^3$ )	24-hour
Sulfur Dioxide (SO <sub>2</sub> )	Primary	0.030 ppm (80 $\mu\text{m}^3$ )	annual
Sulfur Dioxide (SO <sub>2</sub> )	Secondary	0.5 ppm (1,300 $\mu\text{m}^3$ )	3-hour
Particulates (PM <sub>10</sub> )	Primary and Secondary	150 $\mu\text{m}^3$	24-hour
Particulates (PM <sub>2.5</sub> )	Primary and Secondary	35 $\mu\text{m}^3$	24-hour
Particulates (PM <sub>2.5</sub> )	Primary and Secondary	15 $\mu\text{m}^3$	Annual
Carbon Monoxide (CO)	Primary	35 ppm (40 mg/m <sup>3</sup> )	1-hour
Carbon Monoxide (CO)	Primary	9 ppm (10 mg/m <sup>3</sup> )	8-hour
Ozone (O <sub>3</sub> )	Primary and Secondary	0.12 ppm	1-hour
Ozone (O <sub>3</sub> )	Primary and Secondary	0.075 ppm	8-hour
<b>Pollutant</b>	<b>Type</b>	<b>Standard</b>	<b>Averaging Time</b>
Nitrogen Oxide (NO <sub>2</sub> )	Primary and Secondary	0.053 ppm (100 $\mu\text{m}^3$ )	Annual
Lead (Pb)	Primary and Secondary	1.5 $\mu\text{m}^3$	quarterly

**Table III.K-3 Principal Sources of Community Air Pollutants**

<b>Pollutant</b>	<b>Principle Source</b>
Sulfur Dioxide (SSO <sub>2</sub> )	Electric power generation (40%) Space heating (30%) Other combustion of fuels in industrial processes (30%)
Carbon Monoxide (CO)	Motor vehicles (90%) Other combustion sources (10%)
Nitrogen Oxide (NO <sub>x</sub> )	Stationary source combustion (50%) Motor vehicles (50%)
Particulates (part)	Many sources, (stationary and mobile) including crushing and grinding operations and natural sources
Hydrocarbons (HC)	Motor vehicles (60%) Industrial process and evaporative losses from storage facilities (40%)
Oxidants (primarily Ozone)	Produced by the action of sunlight on HC and NO <sub>x</sub> compounds in the atmosphere

The EPA designates those regions where the air exceeds the NAAQS for at least one of the six criteria contaminants as a nonattainment area. Each State is required to adopt a State Implementation Plan (SIP) with the goal of identifying the specific measures and control strategies to reduce air pollution in nonattainment areas. At the present, New

<sup>3</sup> EPA NAAQS Title 40 of the Federal Regulations Part 50.

York State is under mandate to develop SIPs to address ozone and fine particulates less than 2.5 microns in size.

New York State is divided into nine Air Quality Control Regions (AQCR) for the purpose of measuring and recording air quality. The Town of Shawangunk is located in AQCR Region 3 which encompasses: Westchester, Rockland, Orange, Putnam, Dutchess, Ulster, and Sullivan counties. The Federal criteria contaminants that are monitored in AQCR Region 3 are: sulfur dioxide (SO<sub>2</sub>), fine particulate matter (PM<sub>2.5</sub>), ozone (O<sub>3</sub>), and lead (Pb). Of the remaining two criteria contaminants, nitrogen oxides (NO<sub>2</sub>), are monitored in Region 1 and carbon monoxide is measured in Regions 2 and 4. Region 1 includes all of Long Island, Region 2 includes the five boroughs of New York City and Region 4 includes: Albany, Schenectady, Rensselaer, Columbia, Greene, Schoharie, Montgomery, Otsego and Delaware counties.

Using the NYSDEC monitoring station data of the year of 2007 (see supplement in Appendix 11), an Air Quality Analysis was conducted in 2008 by B. Laing Associates Environmental Consultants to examine the existing and future air quality at and in the vicinity of the Watchtower Farms Facility. The Air Quality Analysis dated April 2008, and Supplement dated August 2008, is included in Appendix 11 of this DEIS.

The Region 3 measurement of sulfur dioxide (SO<sub>2</sub>) resulted in an annual average (arithmetic) of 1.5 parts per billion (ppb), well within the NAAQS of 300 ppb. Additionally, no three-hour averages exceeded the 500 ppb NAAQS (the closest was 19 ppb) and no 24-hour averages exceeded the 140-ppb NAAQS (the closest was 9 ppb), also within the standards.<sup>4</sup>

The *Federal Total Suspended Particulates Standards* (TSP) are based on the fraction of total suspended particulate matter less than 10 microns in diameter (PM<sub>2.5</sub>). This size fraction of particulate matter is of greatest concern in terms of potential human health impacts when inhaled and is generated by industrial activities and operations, residential fuel combustion sources, motor vehicle engines and other sources. Ulster County has been declared an attainment area for PM<sub>2.5</sub> since the measured levels equal or exceed the *National Ambient Air Quality Standards* (NAAQS). The nearest PM<sub>2.5</sub> station is in Newburgh with a three-year average of 10.8 µ/m<sup>3</sup> and a one-year average of 10.6 µ/m<sup>3</sup> versus a standard of 15 µ/m<sup>3</sup>.

The closest representative NYSDEC monitoring station for carbon monoxide (CO), located in Region 4 at Loudonville, New York,<sup>5</sup> recorded peak level readings of 1.5 ppm for the one hour and an average of 1.1 ppm for the eight-hour condition. These measurements are below average and within the standards. Generally, CO and TSP are the pollutants of concern in traffic impacts.

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<sup>4</sup> The *National Ambient Air Quality Standard* (NAAQS) is referenced as the standard when the *State Ambient Air Quality Standard* (SAAQS) is the same.

<sup>5</sup> Region 2 (New York City) stations are the closest CO monitoring stations but are not representative of the area.

In regard to ozone (O<sub>3</sub>) the pollutant exceeds NAAQS in the NYSDEC Region 3, a statewide problem requiring New York State to determine a SIP. This condition is considered a national and state transport issue, meaning the ground level O<sub>3</sub> is generated by hydrocarbon catalysts transported over wide areas. New York State's O<sub>3</sub> NAAQS exceedances are generated by hydrocarbons emitted in the mid-western United States and central Canada. The O<sub>3</sub> standard requires that no more than three 8-hour periods shall exceed 0.08 ppm within a three-year length of time. In year 2005, all three Region 3 stations (Millbrook, Mount Ninham and Belleayre Mountain) exceeded this standard for one day with a high of 0.096 ppm. In year 2006, the three stations met the ozone standard. In year 2007 the Mount Ninham station exceeded this standard for one day with a high of 0.086 ppm.

The Region 1 Nassau County monitoring station measurement of nitrogen oxides (NO<sub>x</sub>) resulted in an annual average (arithmetic) of 18 parts per billion (ppb), well within the NAAQS of 50 ppb and SAAQS of 53 ppb.

The monitoring station for lead (Pb) is located in Region 3 at Walkkill, New York. The measurement results of the quarterly average of 0.03 µ/m<sup>3</sup>, when compared to the standard of 15 µ/m<sup>3</sup>, is within the NAAQS requirement.

### **POTENTIAL IMPACTS**

The short-term use of heavy equipment during construction at the site would result in a temporary minor increase in pollutant emissions. However, the major concern would be the control of fugitive dust during site clearing, excavation, demolition, grading, and general construction vehicle movement. Fugitive dust is essentially airborne soil particles caused by heavy equipment movement and wind erosion of the exposed soil after groundcover is removed. All construction related air quality impacts would be of relatively short duration and generally not in proximity to public receptors.

The long-term use is divided into two categories of emissions, direct source and indirect source. The only direct source emissions would apply to the anticipated use of boilers for the residential heating system. These boilers would burn No. 4, low-sulfur diesel fuel oil and would not exceed heat output of 250-million Btu per hour, the level at which NYS air quality regulations and permitting procedures are applied. The facility maintains an air facility registration certificate in accordance with 6 NYCRR Part 201-4<sup>6</sup> and any proposed modernization would be reflected in an application for an amended certificate to the New York State Department of Environmental Conservation. Thus, significant atmospheric contaminant emissions related to the operation of residential heating would not occur. Indirect source emissions would potentially be emitted by the additional traffic generated by the site causing the local carbon monoxide (CO) concentrations to rise. This is usually anticipated at very high traffic volumes and Levels of Service (LOS) are

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<sup>6</sup> See Appendix 3 for the applicant's current air facility registration certificate effective October 30, 2006.

classified as D, E, and F<sup>7</sup>. Since local roadways in the vicinity of the project site anticipate only minor increases in the traffic volume, maintaining LOS's of A and B (one intersection rated as C, the same as the No-Build 2012 scenario), no significant atmospheric contaminant emissions are anticipated.

### **MITIGATION MEASURES**

The existing site location is rural with the air quality threats usually caused by space heating equipment emissions and automobile traffic emissions, specifically ambient concentrations of carbon monoxide and total-suspended particulates. Neither of these pollutants is anticipated to have a significantly increased emission level due to long term use following the proposed project.

During construction, control of the fugitive dust (particulate matter) would be established as part of the Erosion and Sediment Control Measures (ESCM) described in the Stormwater Pollution Prevention Plan (SWPPP) in Appendix 13 located in Volume 2 of this DEIS. Dust from the site would be controlled by means of spraying water from a mobile water truck (stationed on-site) to disturbed areas that are dry and susceptible to creating dust. Dust control would be implemented as needed once site grading has been initiated and during windy conditions while site grading is occurring. As maintenance, spraying would be performed at least once per day during dry months or as needed to control dust.

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<sup>7</sup> New York State Department of Transportation Environmental Procedures Manual, Chapter 1.1, Section 9.

### III.L Agricultural Resources

#### III.L.1 Current Agricultural Operation Affected by Project

##### **ENVIRONMENTAL SETTING**

The project site is located on a southwest portion of Parcel 99.4-1-11 (“property”) in the Town of Shawangunk. It is located in Ulster County Agricultural District No. 2—Walkkill Valley. As of March 28, 2008, this district contains 614 parcels and 26,435 acres, and the Town of Shawangunk has 262 parcels and 11,081 acres<sup>1</sup>. Parcel 99.4-1-11 is 1,141 acres and is entirely included within the agricultural district. Thus it constitutes more than 10 percent of the Town of Shawangunk’s land in the agricultural district.

While Watchtower Farms is not a typical farm, based either on its size or purpose, its agricultural activities in the Town of Shawangunk are substantial. Watchtower Farms’ history in the Shawangunk Valley began in 1963 when the Watchtower Bible and Tract Society of New York, Inc., took over operation of the small Goebel farm on Red Mills Road. Having greatly expanded its agricultural operations since then, Watchtower Farms supplies food to approximately 4,000 Watchtower staff at the United States branch office facilities in Brooklyn, Patterson, and at Watchtower Farms itself. Table III.L-1 describes the applicant’s agricultural production in the Town of Shawangunk, excluding other production occurring in the Shawangunk Valley.

**Table III.L-1 2007 Applicant’s Agricultural Production in the Town of Shawangunk**

<b>Agricultural Product</b>	<b>Quantity</b>
Apples	1,600 bushels
Apple Cider	1,000 gallons
Apple Juice	5,600 gallons
Blueberries	7,000 quarts
Grapes	62,000 pounds
Grape Juice	2,400 gallons
Sweet Corn	87,000 pounds
Beef Cattle	320,000 pounds
Corn Silage	267 tons
Round Grass Bales	400 bales

During 2007 in New York State, including smaller agricultural activities in Lansing and Patterson, the applicant reported approximately 3,700 acres in cropland, pasture, and woodland. This includes well over 2,000 acres farmed in the Shawangunk Valley’s towns of Shawangunk, Gardiner, and New Paltz. The main agricultural products are

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<sup>1</sup> Per telephone conversation with Virginia Craft, Ulster County Planning Board on March 28, 2008.

beef cattle, field crops, garden crops, and an orchard. These activities are centered around the agricultural and support activities conducted at the project site. The applicant continually adjusts overall agricultural activities based on needs and conditions. This has included selling a few outlying properties, fencing additional pasture, removing a vineyard, replacing apple trees, and planting additional blueberries. The applicant is currently exploring the potential for additional orchard plantings on the project site.

Land that would be disturbed on the project site includes the following soil groups: Cambridge gravelly silt loam (CaB) is a deep, gently sloping, and moderately well-drained soil located on hilltops and foot slopes; Castile gravelly silt loam (CgA) is a deep, nearly level, moderately well-drained soil formed in glacial outwash; Churchville silt loam (CvA) is a deep, nearly level, somewhat poorly drained soil that was formed in 20 to 40 inches of lake-laid silt and clay deposits; Hoosic Gravelly Loam (HgA) is a deep, gently sloping, somewhat excessively drained soil located on outwash terraces, stream terraces, and fans; Volusia gravelly silt loam (VoA) consists of a deep, nearly level, somewhat poorly drained soil located on foot slopes, broad hilltops and drainage ways. According to the United States Department of Agriculture Natural Resources Conservation Service 2007 listing of *Prime and other Important Farmlands in Ulster County, New York*, CaB and CgA are prime farmland, and HgA and VoA are farmland of statewide importance.

### **POTENTIAL IMPACTS**

Approximately 13 acres of pasture would be removed from agricultural use, and the remaining balance of disturbed acreage is already developed or landscaped. No land currently in crop production would be lost. The project site would remain in the Ulster County Agricultural District No. 2—Walkkill Valley.

The pasture to be lost primarily consists of approximately five acres of Volusia gravelly silt loam (VoA), a deep, nearly level, somewhat poorly drained soil located on foot slopes, broad hilltops and drainage ways, and approximately eight acres of Castile gravelly silt loam (CgA), a deep, nearly level, moderately well-drained soil formed in glacial outwash. To establish a uniform statewide land classification system, the New York State Department of Agriculture and Markets uses differences in soil productivity in order to classify New York State farmland. The highest quality is rated 1a and the poorest quality is rated 10. According to the *2008 New York Agricultural Land Classification—Ulster County* (December 2007), VoA soil is in Soil Group 6b and CgA soil is in Soil Group 2b. The *Soil Survey of Ulster County, New York* (1979) describes VoA soil as follows: “Most of the acreage of this soil is ideal or is used for crops, hay, pasture, orchards, or woodland. This soil has fair potential for farming.” It describes CgA soil as follows:

In unlimed areas, reaction is very strongly acid or strongly acid in the surface layer and subsoil. Most of the acreage of this soil is used for cultivated crops, fruit crops, hay, or pasture. This soil has good potential for farming, but it is not well suited to many community development uses.

In the context of the overall agricultural activities on the project site, the development of approximately 13 acres of pasture that is farmland considered prime or of statewide

importance is not expected to have a significant impact on the overall agricultural activities on the project site.

### **III.L.2 Mitigation Measures for Loss of Agricultural Soils—Crop Production**

Because no land in crop production would be lost as a result of this project, and the approximately 13 acres of agricultural soils (pasture) to be lost are not considered significant in the context of the applicant's overall agricultural activities, the applicant does not propose direct replacement of agricultural acreage as a mitigation measure. However, the project design incorporates a number of mitigation measures that are sensitive to agricultural activities:

- The project design is clustered with the development area generally inside already developed areas and centralized to reduce the impact on surrounding agricultural lands.
- The residence building is not located adjacent to areas in intensive agricultural use. It is also buffered from agricultural pasture lands by activities that are less sensitive to typical agricultural activities including early morning work, animal noise, and odors.



#### **IV UNAVOIDABLE ADVERSE IMPACTS**

The project would result in some temporary adverse environmental impacts associated with the construction phase. Once construction is complete, there would be limited long-term environmental impacts envisioned as most of the potential impacts would be mitigated as noted in preceding chapters of the DEIS.

##### Anticipated Short-Term Impacts:

- The increased susceptibility to soil erosion as vegetation is removed. A description of the potential erosion and the proposed erosion control plan is provided in Section III.A.2 of this DEIS.
- The movement of construction and delivery vehicles on the site and on surrounding roads.
- The localized increase in noise levels due to the operation of construction vehicles and equipment. This impact is anticipated to be limited as the nearest adjacent neighbor to the project site is approximately 1,500 feet away.

##### Anticipated Long-Term Impacts:

- The alteration of approximately 46 acres of existing topography to accommodate buildings, driveways, landscaping, and development areas and associated relocation of topsoil.
- Net loss of 13 acres of pasturage.



## **V ALTERNATIVES**

### **V.A No-Action Alternative**

The regulations implementing the New York State Environmental Quality Review Act (SEQRA) with respect to alternatives require the following:

A description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor. The description and evaluation of each alternative should be at a level of detail sufficient to permit a comparative assessment of the alternatives discussed. The range of alternatives must include the no action alternative. The no action alternative discussion should evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future, in the absence of the proposed action.

Thus, in accordance with SEQRA regulations, the No-Action Alternative must evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future in the absence of the proposed action. The No-Action Alternative is the scenario that would occur if no development were to take place at the site. Under this alternative, the proposed areas of disturbance would remain in their current state used for athletic fields, parking, pasture, landscaped area, and an outdoor recreation area. The desired quality-of-life improvements would also be unattainable since there would not be means to accomplish the desired improvements. The necessary office centralization and upgrades would also be unattainable without the renovation of existing offices and construction of a new, energy-efficient and environmentally sensitive office building. Similarly, the modernization of existing laundry and dry cleaning equipment to more environmentally sensitive equipment would also not be achievable due to the larger spatial requirement for the newer equipment.

The No-Action Alternative would also eliminate some of the specific impacts identified in this report, whether adverse or beneficial.

Primarily, none of the direct impacts of construction identified in this report would take place if the proposed action were not to occur. The following is a comparison of the impacts of the No-Action Alternative versus those of the proposed action.

#### **Geology, Soils, and Topography**

There would be no impact to soils and topography with this alternative compared to the proposed action since there would be no grading disturbances. Although there would be no introduction of buildings and parking areas into the site under the No-Action Alternative, the existing impervious parking areas and recreation areas would remain.

#### **Surface-water Resources**

Since the project site is supplied by a surface-water supply from a watershed entirely within property owned by the applicant, there would be no impact to groundwater resources whether the proposed action or No-Action Alternative were pursued. No adjustments are proposed to the existing watershed, water treatment plant, or existing water distribution network with the proposed action, so there is no impact to the existing surface-water resources whether the proposed action or No-Action Alternative were pursued.

## Groundwater Resources / Water Supply System

The project site is not presently supplied by groundwater resources, such as wells, and the project proposes no adjustments to this system. The existing water supply system is adequate to meet all needs of the proposed project. In the case of the No-Action Alternative, no new distribution lines would be installed.

## Wastewater / Sewage Disposal

There would be no impact due to installation of sewage collection lines or adjustments to the wastewater treatment plant.

## Terrestrial and Aquatic Ecology

Whether the proposed action or No-Action Alternative were pursued, there would be no impact to threatened or endangered species since none were found to exist on the project site. As the proposed action is generally restricted to redevelopment of previously disturbed areas, a residential environment without natural plant communities and presently landscaped, there would be minimal impact to the wildlife habitat. The No-Action Alternative would leave these areas in their current use as surface-paved parking areas, paved recreation areas, outdoor athletic fields, and landscaped area or seeded pastureland. There would be no difference to the impacts of aquatic life since none of the existing watercourses, water bodies, or wetlands would be disturbed.

## Land Use and Zoning

The land use at the project site, under the No-Action Alternative, would remain in its current state of developed land, surface-paved parking areas, paved recreation areas, outdoor athletic fields, and landscaped area or seeded pastureland. The town would not benefit from any additional use of it given the nature of its surroundings, incorporated in an existing facility. The proposed action would require approval of a special use permit for the multiple-family residential building attached to an existing residential building of similar size.

## Transportation

The No-Action Alternative eliminates the limited additional traffic that would be introduced onto municipal roads by the additional multiple-family dwelling units and operation of ancillary uses. The traffic patterns that presently occur in the site area would not change. The proposed action would not adjust any municipal roads, only those driveways within the project site. The existing site access driveway would be extended and some areas re-routed to reach the newly developed areas. As the Traffic Study indicates, the proposed action should not result in a significant negative impact on traffic operations in the area.

## Aesthetic Resources

There would be no change to the visual environment under the No-Action Alternative. There would be no improved visual screening of the existing structures for northbound drivers on Red Mills Road north of its intersection with Bruyn Turnpike. The previously

disturbed areas of the proposed action would remain as they currently are; landscaped, paved, or planted areas.

#### Historic and Archaeological Resources

Both the proposed action and the No-Action Alternative would have no physical impact on historic and archaeological resources such as the Dill Farm.

#### Community Facilities and Services

The proposed action would increase the persons residing on the site by approximately 200 persons. This would place limited subsequent demand on community service providers since most services typically provided by the community are already provided by the applicant on site, including: firefighting, ambulance provision, on-site security, recreation, solid-waste disposal, and on-site collection of surface water for domestic use. These would not occur under the No-Action Alternative. Neither the proposed action nor the No-Action Alternative would remove any land off existing tax rolls since the development land is already owned by the applicant, a religious, not-for-profit corporation with tax-exempt status. Both the proposed action and the No-Action Alternative would not result in any increase in the number of students enrolled in the Pine Bush Central School District since no children reside at Watchtower Farms.

#### Noise and Air Resources

There would be no temporary, short-term increase in ambient noise as a result of construction activities under the No-Action Alternative. Once the development is constructed, ambient noise levels would remain the same as present conditions whether the proposed action or No-Action Alternative were pursued. Concerning air resources, there would be no temporary, short-term increase in dust as a result of the construction of the development under the No-Action Alternative, as well as any long-term impact due to the additional emissions produced by the minimal increase in traffic. There would also be no long-term proportional increase in fuel, electricity, or other resource usage for heating, cooling, and maintaining the proposed buildings.

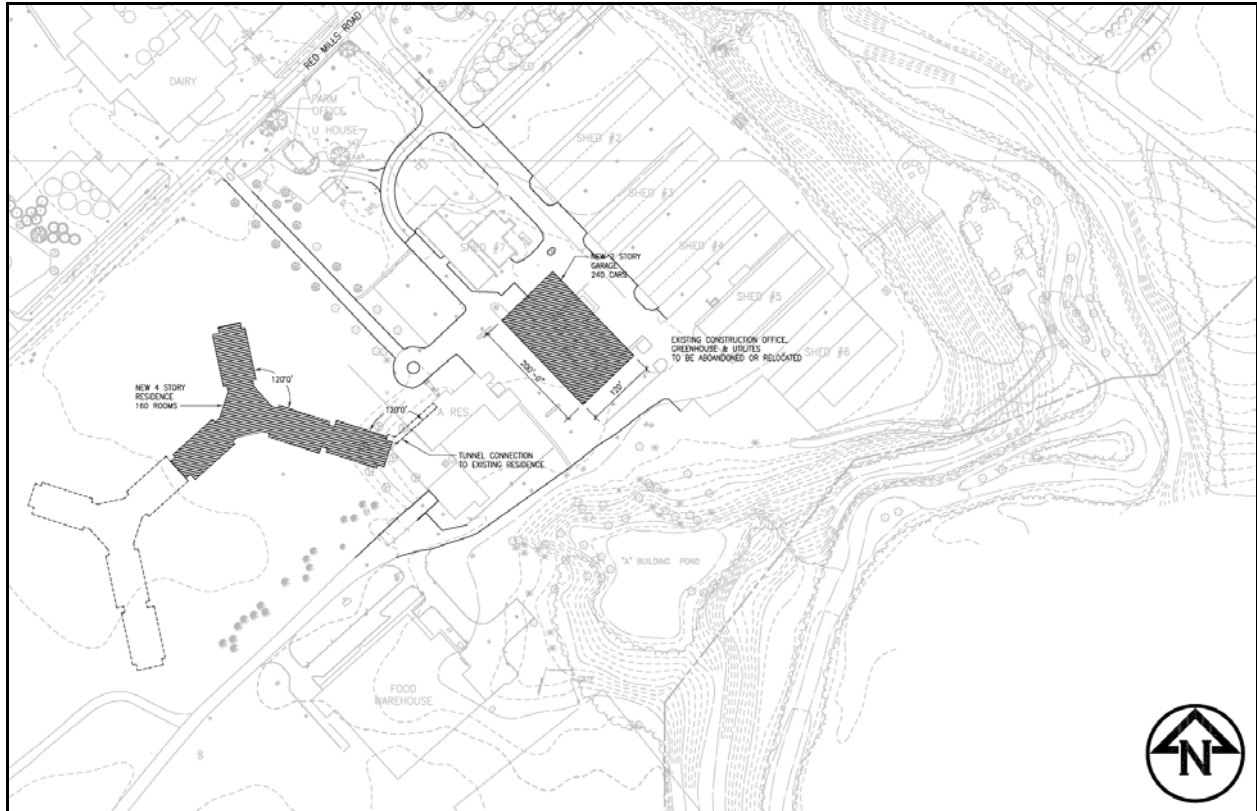
#### Agricultural Resources

Under the No-Action Alternative, approximately 13 acres of pasture would not be developed as buildings, driveways, or landscaped areas.

## V.B Alternative Designs and Locations

### V.B.1 South Residence Alternative

As required by the SEQRA regulations, various alternatives besides the proposed action and No-Action alternatives, must be included and evaluated. This alternative presents a layout that would locate the proposed residence building on the south side of Red Mills Road. Other aspects of the layout, including the proposed office building, TER building, dining room, and laundry expansion are the same as the proposed plan. This alternative is shown in Figure V.B-1.



**Figure V.B-1 Partial Site-plan South Residence Alternative**

This alternate was considered for several reasons, including land availability, more convenient access to utilities without conflicting with the location of the existing site infrastructure, and centrally locating the proposed residence in close proximity to the services provided on site, particularly the dining room. Its main potential impacts involve land use and zoning, aesthetic resources, and agricultural resources.

The South Residence Alternative would have the following impacts in comparison to the proposed action as described below:

#### Geology, Soils, and Topography

There would be less movement of soils required with this alternative as compared to the proposed action since minimal grading disturbances would be required to build on the

relatively level cropland. No known rock outcroppings are present on the South Residence Alternative site.

#### Surface-water Resources

There would be no impact to ground or surface-water resources as this site would be supplied by a surface-water supply from a watershed entirely within property owned by the Applicant, and no adjustments would be needed to the existing watershed.

#### Groundwater Resources / Water Supply System

The project site is not presently supplied by groundwater resources such as wells, and both the proposed action and the South Residence Alternative would not result in the installation of wells. The existing water supply system is adequate to meet all needs of the proposed project. In the case of the South Residence Alternative, the water distribution lines would need to be rerouted. The physical location closer to the water treatment plant would probably result in reduced lengths for the distribution system.

#### Wastewater / Sewage Disposal

The South Residence Alternative would differ from the proposed action in that the sewage collection routing would be reduced in length due to its closer proximity to the existing wastewater treatment plant. The adjustments to the wastewater treatment plant would still be the same.

#### Terrestrial and Aquatic Ecology

There would be no impact to natural plant communities, wildlife habitat, or aquatic life if the South Residence Alternative was pursued, since it would be located on seeded pastureland. There would be no impact since the location would be generally restricted to redevelopment of previously disturbed areas currently being used as paved parking areas, paved recreation areas, outdoor athletic fields, and landscaped area or seeded pastureland. There would be no difference to the impacts to existing wetlands since they would remain in their present state whether the proposed action or South Residence Alternative were sought.

#### Land Use and Zoning

The parcel has the same R-Ag 4 zoning as the proposed project site. The land is being used as seeded pastureland. The converted use to a residential environment would mean the loss of agricultural land. Both the proposed action and South Residence Alternative would require approval of a special use permit for the multiple-dwelling residential building. The location of the South Residence Alternative is closer to the Shawangunk Kill and the applicant would likely need to seek a Recreational River Corridor Permit.

#### Transportation

Both the proposed action and South Residence Alternative would minimally increase the amount of additional traffic that would be introduced onto municipal roads by the additional multiple-family dwelling units and operation of ancillary uses. Neither

alternative would precipitate any adjustments to any municipal roads, only the driveways within the Watchtower Farms Complex. Minor adjustments would be needed to an existing site-access driveway to reach the newly developed area.

#### Aesthetic Resources

The South Residence Alternative would be located closer to Red Mills Road and would be visible as a new building mass to passing drivers. This is in comparison to the proposed action, which would incorporate the new buildings in the existing building mass. While this would not affect the view of the Shawangunk Mountains from Red Mills Road, it could create a more urbanized feel on Red Mills Road by removing the juxtaposition of the developed area and adjacent sweet corn fields. This South Residence Alternative would be visually screened by topography, vegetation, and buildings from other aesthetic resources, including the Dill Farm, Shawangunk Kill Recreational River Corridor.

#### Historic and Archaeological Resources

The South Residence Alternative would require a Phase 1 cultural resources assessment in a different location than the proposed action. There are no known cultural resources in this area. This alternative would be located further from and would have no impact on the Dill Farm.

#### Community Services and Facilities

The South Residence Alternative would increase the residents on the project site by approximately 200 persons, similar to the proposed action proposal. Thus, the subsequent demand on community service providers would continue to be minimal as described in the No-Action Alternative of Section V.A.2.

#### Noise and Air Resources

Once the development is constructed, ambient-noise levels would remain the same as present conditions whether any of the alternatives were pursued. Once the development is constructed, any long-term air resources impacts due to the additional emissions produced by the minimal increase in traffic in the proposed action would be similar to the proposed action. There would be the same long-term proportional increase as for the proposed action in fuel, electricity, and other resources for heating, cooling, and maintaining the proposed buildings.

#### Agricultural Resources

The South Residence Alternative would develop approximately 20 acres of land currently in agricultural production and identified as a prime agricultural soil<sup>1</sup>. This land is currently used for sweet corn and is adjacent to and clearly visible from Red Mills Road. This alternative would preserve 13 acres of pasture further from Red Mills Road that will be developed as part of the proposed action.

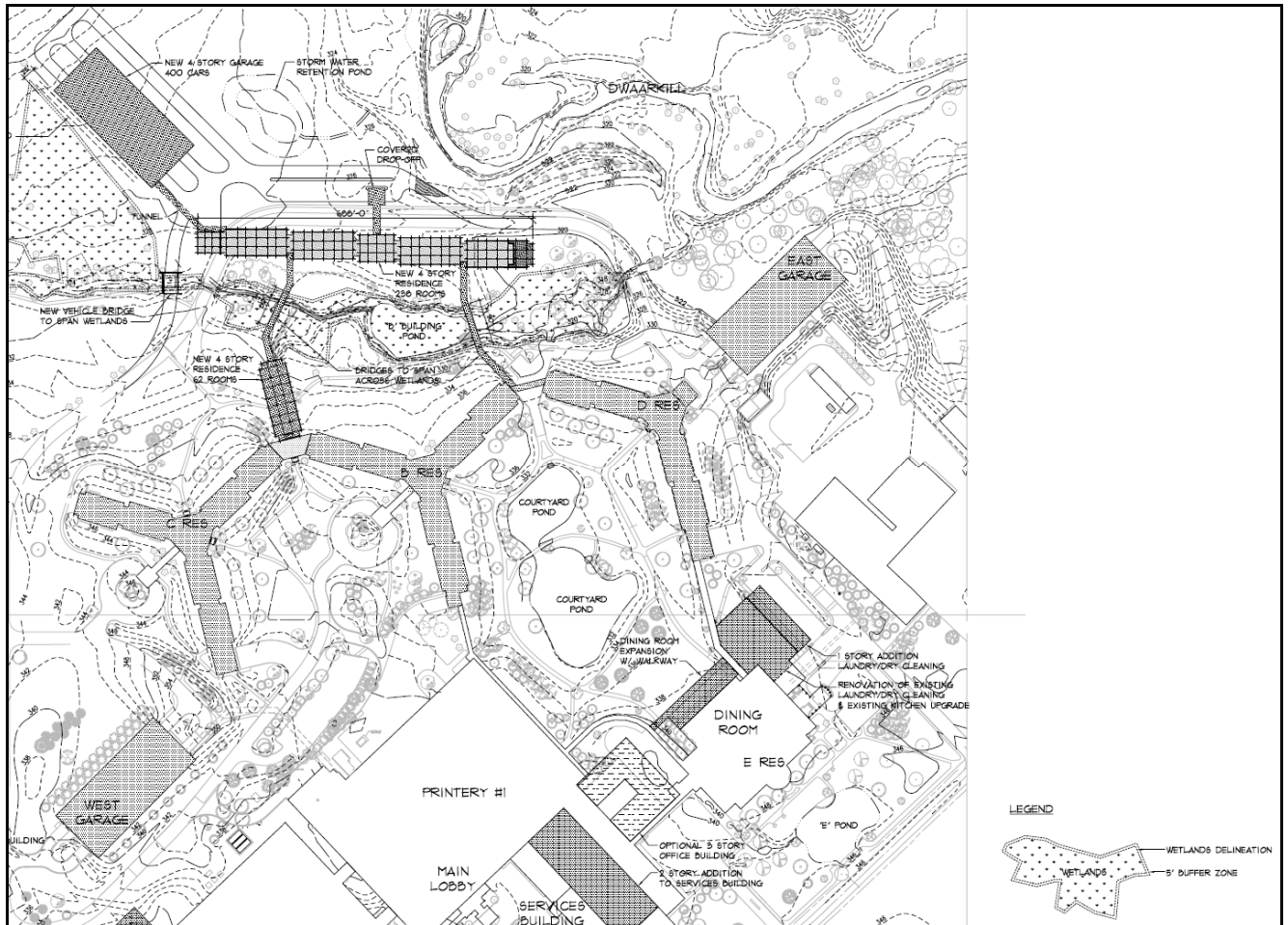
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<sup>1</sup> Source: *Open Space Inventory and Analysis—Shawangunk, New York*, October 2004, page 32.



## V.B.2 Far North Residence Alternative

This alternative presents a layout that would locate the proposed residence building on the north side of Red Mills Road, adjacent to the existing residence buildings. Other aspects of the layout, including the proposed office building, TER building, dining room, and laundry expansion are the same as the proposed plan. This alternative is shown in Figure V.B.2.



**Figure V.B-2 Partial Site-plan Far North Residence Alternative**

This alternative was considered for several reasons: land availability; it provides access to utilities without conflicting with the location of the existing site infrastructure; it would more centrally locate the proposed residence to the services provided on site, particularly locating it in closer proximity to the dining room; and the proposed residence building and parking garage would be completely screened from Red Mills Road. Its potential impacts involved terrestrial and aquatic ecology, aesthetic resources, and historic and archaeological resources.

Geology, Soils and Topography: There would be more impact to soils and topography with this alternative as compared to the proposed action since considerable grading disturbances would be required to build on a portion of the wetland area.

Surface-water Resources: There would be limited impact to surface-water resources as the applicant would meet the standards for issuance of a Stormwater Pollution Prevention Plan (SWPPP). While there would be no change in the existing drainage patterns, the proposed construction would involve two passageways crossing an existing wetland.

Groundwater Resources / Water Supply System: The project site is not presently supplied by groundwater resources, such as wells, and both the proposed action and the South Residence Alternative would not result in the installation of wells. The existing water supply system is adequate to meet all needs of the proposed project. In the case of the Far North Residence Alternative, the water distribution lines would need to be rerouted. The physical location north of the existing wetlands and south of the corridor would require careful routing of site utilities.

Wastewater / Sewage Disposal: The Far North Residence Alternative would differ little from the proposed action. The physical location north of the existing wetlands and south of the corridor would require careful routing of site utilities. The adjustments to the wastewater treatment plant would still be the same.

Terrestrial and Aquatic Ecology: The Far North Residence Alternative would involve construction of passageways over an existing wetlands area. By comparison, the proposed action would have no impact since the location would be generally restricted to redevelopment of previously disturbed areas currently being used as paved parking areas, paved recreation areas, outdoor athletic fields, and landscaped area or seeded pastureland where there are no natural plant communities, wildlife habitat, or aquatic life. This alternative also locates the new parking garage closer to another wetland area.

Land Use and Zoning: The parcel has the same R-Ag 4 zoning as the proposed project site. The site for the building in the Far North Alternative is north of the natural wetland area and would require additional New York State Department of Environmental Conservation (DEC) review and approval. It is located outside of the Shawangunk Recreational River Corridor. Both the proposed action and South Residence Alternative would require approval of a special use permit for the multiple-dwelling residential building.

Transportation: Both the proposed action and Far North Residence Alternative would minimally increase the amount of additional traffic that would be introduced onto municipal roads by the additional multiple-dwelling units and operation of ancillary uses. Neither alternative would precipitate any adjustments to any municipal roads, only those within the Watchtower Farms Facility. Minor adjustments would be needed to an existing site access driveway to make room for the building in the determined location.

Aesthetic Resources: The Far North Residence Alternative would have the least impact from Red Mills Road since it is located behind the bulk of the existing facility. It would be closer to and more visible from Steen Road and County Route 7.

Historic and Archaeological Resources: The Far North Residence Alternative would require a Phase 1 cultural resources assessment in a different location than the proposed action. There are no known cultural resources in this area. This alternative would be located closer to and, without mitigation, be clearly visible from the Dill Farm.

Community Facilities and Services: The Far North Residence Alternative would increase residents on the project site by approximately 200 persons, similar to the proposed action proposal. Thus, the subsequent demand on community service providers would continue to be minimal as described in the No-Action Alternative of Section V.A.2.

Noise and Air Resources: Once completed, the Far North Residence Alternative's ambient noise levels would remain the same as present conditions whether any of the alternatives were pursued. Once the development is constructed, any long-term impacts due to the additional emissions produced by the minimal increase in traffic in the proposed action would be similar to the proposed action. There would be the same long-term proportional increase as for the proposed action in fuel, electricity, and other resources for heating, cooling, and maintaining the proposed buildings.

Agricultural Resources: This alternative's impact on agricultural resources would be similar to that of the proposed action. It would develop approximately 15 acres of pasture.

### V.B.3 Summary

The following table compares the proposed action, No-Action Alternative, South Residence Alternative, and Far North Residence Alternative.

**Table V.B-1 Summary of Alternatives**

<b>Area</b>	<b>No Action Alternative</b>	<b>South Residence Alternative</b>	<b>North Residence Alternative</b>
Geology, Soils and Topography	No change	Less soil movement than proposed action	Area of disturbance is closer to existing wetlands than proposed action
Surface-water Resources	No change	Same as proposed action	Area of disturbance is closer to existing surface water resources than proposed action
Groundwater Resources / Water Supply System	No change	Same as proposed action with rerouting of distribution lines	Same as proposed action
Wastewater / Sewage Disposal	No Change	Same as proposed action with rerouting of distribution lines	Same as proposed action
Terrestrial and Aquatic Ecology	No change	Same as proposed action	Constructs passageways across existing wetlands
Land Use and Zoning	No change	Possible Recreational River Corridor Permit	Same as proposed action
Transportation	No change	Same as proposed action	Same as proposed action
Aesthetic Resources	No improvement due to visual screening berm	Less temporary construction-related impact on ridge view from Red Mills Road than proposed action but develops agricultural field adjacent to Red Mills Road.	Less visibility from Red Mills Road than the proposed action but increased visibility from County Route 7 and Steen Road
Historic and Archaeological Resources	No change	Located further from Dill Farm	Located closer to Dill Farm
Community Facilities and Services	No change	Same as proposed action	Same as proposed action
Noise and Air Resources	No change	Same as proposed action	Same as proposed action
Agricultural Resources	No change	Develops approximately 20 acres of land currently in agricultural production for sweet corn instead of 13 acres of pasture in proposed action	Similar to proposed action, this would also involve the development of approximately 15 acres of pasture.

## **VI IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The proposed plan would commit approximately 46 acres of land for the construction of approximately 151,661 square feet (3.48 acres) lot coverage of residence and ancillary facilities. Once committed to these uses, the site would be unavailable for other uses for the foreseeable future.

A variety of resources, both materials and energy to construct and then maintain the facility upon completion, would need to be irretrievably committed to the proposed action. The committed resources for construction would include concrete, asphalt, steel, lumber, paint products, and other building materials.

Also, during the construction process, fossil fuels and other finite energy sources would be consumed to operate construction equipment. The completed and functioning residential and ancillary spaces would require electricity, heating, and cooling—each requiring the use of fossil fuels either directly or indirectly.

The construction phase of the project would require the commitment of approximately 500-person years of labor.



## **VII GROWTH-INDUCING ASPECTS**

### **Sewer:**

The proposed project will not affect municipal sewer services since it would be supported by the solely owned, operated, and maintained Watchtower Farms Wastewater Treatment Plant (WWTP). The WWTP complies with effluent limitations set by the New York State Department of Environmental Conservation (DEC). Process control testing, monitoring, recording, and reporting are carried out daily by the full-time licensed staff of certified technicians in an on-site New York State certified environmental laboratory. This includes the testing of organics, nutrients, bacteria, and solids contaminants to ensure compliance with the required standards. Planned improvements and mitigation measures are described in Sections III.D.4 and III.D.5.

### **Water Supply:**

The proposed project will not affect municipal water supplies since it would be supported by the existing facility water supply system, solely owned, operated, and maintained by the applicant. This water supply system is fed by a watershed that encompasses approximately 180 acres of protected land owned by the applicant, which area receives around 230-million gallons of rainfall in an average year. The rainwater is stored in two reservoirs with a combined capacity of about 90-million gallons. The New York State Department of Health (NYSDOH) has approved the water treatment plant for a design capacity of 250 gpm (360,000 gpd). The water plant operators are licensed by New York State and the treated water quality meets all applicable criteria established by the Department of Health. The treated water is stored in two finished water storage tanks with a combined capacity of 250,000 gallons. In 2007, the facility population served by this water supply used an average of 40.5-million gallons of potable water. Operational records demonstrate that no upgrades to the existing water system are needed to meet the domestic and irrigation needs of the proposed expansion.

### **Roadway System:**

The proposed project will not require the enlargement of any municipal roadways. The mitigation measures proposed in Section II.B.7 would minimize the impact of short-term construction work, and the anticipated long-term traffic produced by the approximately 200 additional residents would have minimal impact to the existing roadway system.

### **Other:**

This project allows for modest population growth by adding dwelling units, parking, office space, and central dining space. The population growth is categorized as modest in the context of comparative growth in the surrounding community. The applicant's population is growing at a slower rate than the overall Town of Shawangunk. The applicant's most recent request for residential growth was fourteen years ago, in 1994. From 1994 to 2007, the central population of Watchtower Farms has increased from 1,094 to 1,350 persons, an average rate of increase of 1.6 percent per year. This is

lower than the Town of Shawangunk's average rate of annual increase of 1.8 percent over a similar ten-year period. According to United States Census data, the town's population increased from 10,081 to 12,022 from 1990 to 2000. In summary, this project is based on an organizational assessment of long-term needs and reflects the same stable pattern initiated in the early 1970s of integrating agricultural, office, residential, and printery activities. The applicant is committed to the continued consistent use of the property that has been demonstrated for decades. Implementation of the proposed project is, therefore, not expected to have significant growth-inducing aspects.



## VIII EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES

Typically, energy consumption is anticipated for the construction and use of any proposed project. Short-term energy would be consumed during the construction of the proposed project consisting of power needed to operate equipment and tools and fuel to operate construction vehicles.

Long-term energy consumption by the 392,500 square feet of residential and ancillary spaces would be required of various energy sources for space heating, air-conditioning, domestic water heating, and lighting. Liquefied petroleum gas (LPG) and No. 4 oil are the predominant fuel sources for heating, and electric is the predominant energy source for cooling.

According to data published in the 2001 U.S. Residential Energy Consumption Survey (Source: U.S. Department of Energy), and the 2003 Energy Commercial Energy Consumption Survey (Source: U.S. Department of Energy), the anticipated annual building energy consumption of the proposed buildings is 27 billion Btu.<sup>1</sup>

These figures are approximate and do not take into account the savings in energy consumption that may be realized due to the effort to apply efficiency standards through sustainable design as described below.

An effort would be made to design the new residence, office, and recreation buildings to accepted sustainability standards. The goal is to achieve a 3 *Green Globes* award level (this corresponds to a "LEED® Green Building Rating System™ [Leadership in Energy and Environmental Design] *Gold* award level) in sustainable design through the Green Globes™ System.

According to the <http://www.thegbi.org> Web site, The Green Globes™ System is a voluntary, consensus-based national rating system developed by the not-for-profit organization, Green Building Initiative (GBI). Their stated mission is "to accelerate the adoption of building practices that result in energy-efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction." Green Globes emphasizes state-of-the-art strategies for sustainable site development, energy efficiency, water savings, resources and materials selection and waste management, emissions control and indoor environmental quality. Green Globes is a practical rating tool for green building design and construction that provides immediate and measurable results for building owners and occupants.

The Web site continues, "The Green Globes™ System is a revolutionary green management tool that includes an assessment protocol, rating system and guide for

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<sup>1</sup> Btu, or British Thermal Unit, is a unit of heat equal to the amount of heat required to raise one pound of water one degree Fahrenheit at one atmosphere pressure; equivalent to 251.997 calories.

integrating environmentally friendly design into commercial buildings. Once complete, it also facilitates recognition of the project through third-party review and assessment. It's an interactive, flexible and affordable approach to environmental design.”

Sustainable design initiatives will include the following:

#### SITE DEVELOPMENT

- Undeveloped areas to remain undisturbed.
- Landscaping will integrate native planting and naturalization.
- “Heat island” effect to be minimized by using high albedo paving surfaces.
- Exterior lighting to minimize glare, night trespass, and night sky glow.
- Design to reduce bird collisions with buildings.
- Natural habitat cores and corridors to be preserved.
- Site grading to increase infiltration.
- Reduce run-off by use of plants, trees, detention ponds, and infiltration trenches.
- Use of indigenous plants in landscaping will reduce water use.

#### ENERGY

- DOE Energy Star Target Finder rating of 65 percent or better (indicates upper 35 percent).
- Shading devices, glazing to reduce energy use.
- Building orientation reduces energy use and maximizes daylighting capability.
- Building envelope to optimize energy savings.
- High-efficiency lamps, ballasts, and lighting controls to save energy.
- Variable frequency drives (VFDs), energy efficient motors, and elevators to be installed.
- Commuting to and from site will have minimal effects on fossil-fuel consumption.

#### WATER

- Consumption targets—less than 10 gallons per square foot per year in offices and 11,000 gallons per dwelling unit per year in residences.
- Water saving fixtures.
- Irrigation through rainwater storage.
- On-site wastewater treatment.

#### RESOURCES AND MATERIALS

- Use of locally manufactured materials.
- Durable and low-maintenance materials to be used.
- Strategies to reuse and recycle demolition waste.

## EMISSIONS

- Low ozone-depleting refrigerants to be used.
- All new combustion equipment to meet Energy Star or other energy saving standards.

## INDOOR ENVIRONMENTAL QUALITY

- Ventilation rates to comply with *ASHRAE Standard 62.1-2004* for indoor air quality.
- Strategies to control sources of indoor pollutants.
- Strategies to optimize lighting comfort for occupants, maximizing daylighting.
- Strategies to provide acoustic comfort.

In addition to the energy-efficient practices incorporated into the sustainable design approach, required energy conservation measures would be incorporated in the design of each specific building as described in Section II.B. At no time will the energy conservation measures fall below the standards required by the state as mandated in the current *Energy Conservation Construction Code of New York State (ECCCNYS)*. The code specifies, within each given climate zone, basic requirements that would be applied to the building envelope, mechanical systems, and lighting as mandatory for residential and commercial buildings.

With regard to the design of building envelopes, the *ECCCNYS* requires the following:

- Insulation R-values, glazing, and door U-factors to be certified by the National Fenestration Rating Council (NFRC) or by using default values found in the tables included in the code.
- Insulation levels for walls, roofs, below-grade walls, and floors over outdoor air or unconditioned space meet or exceed minimum thermal resistance levels.
- Insulation levels for glazing areas, and U-factors for windows and skylights meet or exceed minimum efficiency levels.
- The building envelope to be sealed to limit air leakage.
- Vapor retarders to be installed in non-vented framed ceiling, wall, and floor areas.

With regard to the design of water heating equipment and air-cooling and heating mechanical systems, the *ECCCNYS* requires the following:

- HVAC equipment complies with performance requirements.
- Include temperature and humidity controls as required.
- Comply with ventilation standards set forth in the *Building Code of New York State (BCNYS)*, and include shut-off dampers and economizer cooling capability as required.
- Insulation R-values for ducts, plenums, and piping meet or exceed minimum thermal resistance levels and are properly sealed.
- Installation completion includes system balancing.

In terms of lighting standards, the *ECCCNYS* requires the following:

- Manual or automatic controls or switches that allow occupants to dim lights and turn them on or off when appropriate.
- Total connected loads for indoor lighting systems do not exceed power allowances as specified in the code for each building.
- Exterior lighting to comply with energy-efficiency criteria as specified in the code.

The proposed project would be required to comply with requirements of the *ECCCNYS*.