APPENDIX O

Archaeological Phase 1A Literature Review and Sensitivity Analysis

PHASE 1A LITERATURE REVIEW AND SENSITIVITY ANALYSIS

LOST LAKE RESORT

St. Joseph's Road
Town of Forestburgh.
Sullivan County, New York.

Prepared For:

Tim Miller Associates, Inc.
10 North Street
Cold Spring, New York

Prepared By:

CITY/SCAPE: Cultural Resource Consultants
166 Hillair Circle
White Plains, New York 10605

May 2008

LOST LAKE RESORT

St. Joseph's Road
Town of Forestburgh. Sullivan County, New York

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Management Summary

SHPO Project Review Number (if available):

Involved State and Federal Agencies :

Phase of Survey: **Phase 1A Literature Review & Sensitivity Analysis**

Location Information:

Location: **St. Joseph's Road**

Minor Civil Division: **Town of Forestburgh**

County: **Sullivan County**

Survey Area (Metric & English)

Length: **5125 m (16,810')**

Width: **2719.5(8920')**

Depth (when appropriate):

Number of Acres Surveyed: **±2091.06 acres (846.2 hectares)**

Number of Square Meters & Feet Excavated (Phase II, Phase III only):

Percentage of the Site Excavated (Phase II, Phase III only):

USGS 7.5 Minute Quadrangle Map: **Hartwood**

Archaeological Survey Overview

Number & Interval of Shovel Tests:

Number & Size of Units:

Width of Plowed Strips:

Surface Survey Transect Interval:

Results of Archaeological Survey

Number & name of prehistoric sites identified: **0**

Number & name of historic sites identified: **0**

Number & name of sites recommended for Phase II/Avoidance: **0**

Results of Architectural Survey

Number of buildings/structures/cemeteries within project area: 0

Number of buildings/structures/cemeteries adjacent to project area: N/A

Number of previously determined NR listed or eligible buildings/structures/cemeteries/districts:

Number of identified eligible buildings/structures/cemeteries/districts:N/A

Report Author (s): **Stephanie Roberg-Lopez M.A., R.P.A. Gail T. Guillet and Beth Selig**

Date of Report: M**ay 2008**

MAP AND FIGURE LIST

Maps

Figures

LOST LAKE

St Joseph's Road
Town of Forestburgh. Sullivan County, New York
(OPRHP 07PR02975)

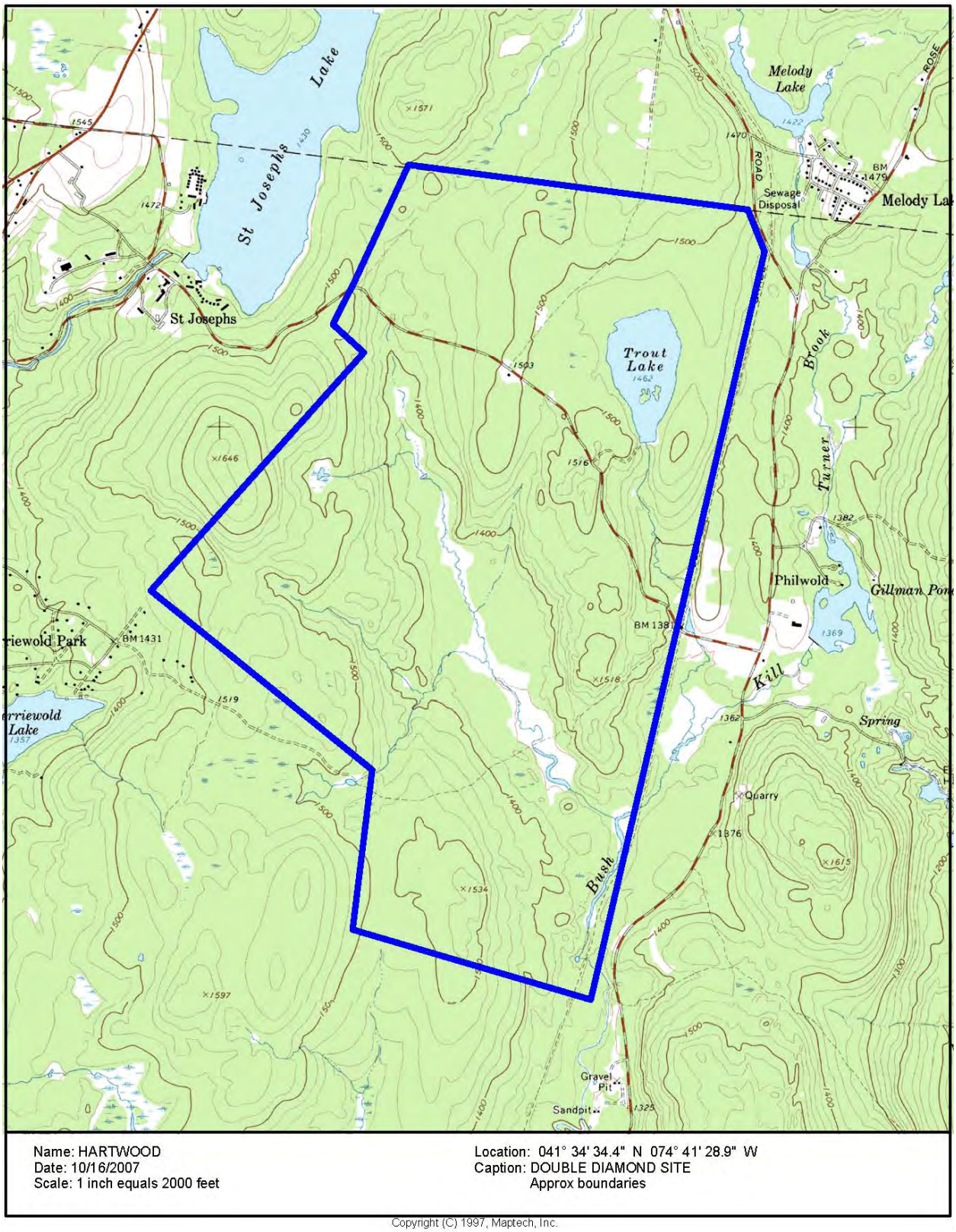
Introduction

In April of 2008, CITY/SCAPE: Cultural Resource Consultants undertook at Phase 1A Literature Review and Sensitivity Analysis of the *Lost Lake Resort*. The *Lost Lake Resort*, which encompasses ±2091.06 acres (846.2 hectares), is situated in the in the northern portion of the Town of Forestburgh, Sullivan County, New York. (Map 1-2) St. Joseph's Road or County Route 108 bisects the project area traveling west from Bushkill Road/ Cold Spring Road to County Route 42. (Photo 2 & 27) The largest portion of the site is on the south side of this road, with a smaller portion on the north extending to the Town line. The northern boundary of the project area is the Town of Thompson line. (Photo 5) Access to the site is from St. Joseph's Road and the terminus of Merriewold Club Road, located along the southwestern boundary of the project area. (Photo 26)

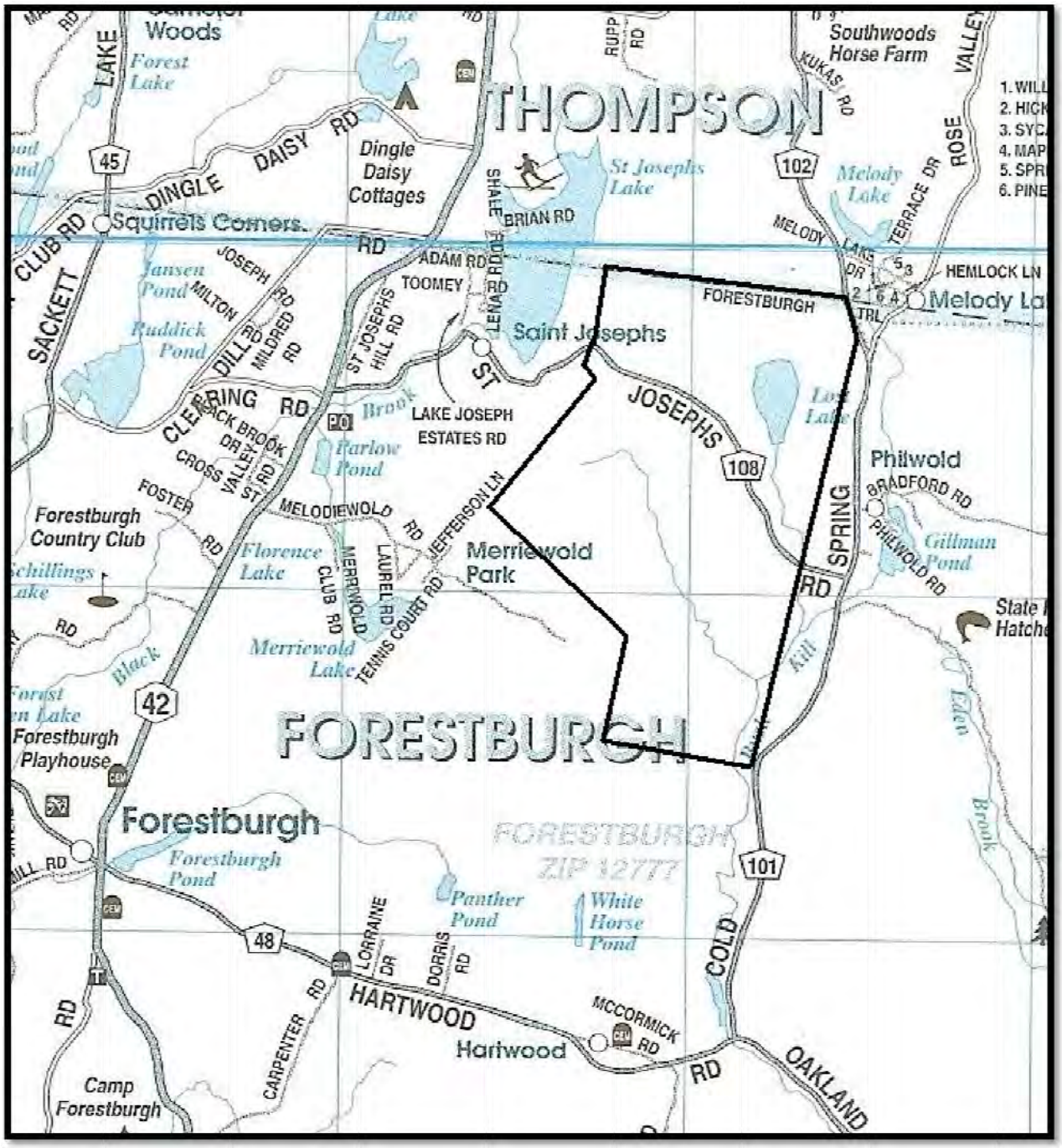
The following report, which included a comprehensive walkover of the project area, presents the results of a Phase 1A Literature Review and Sensitivity Analysis prepared for Tim Miller Associates, Inc. As part of the comprehensive examination of the site, a careful examination was made for any Map Documented Structures (hereafter referred to as MDS) that were located within the project area. Although the proposed Area of Potential Effect (APE) has been delineated on plans included in this report, for the purposes of the Phase 1A report the APE is considered the entirety of the property.

The proposed project requires a number of permits from local and state agencies, including permits from the New York State Department of Environmental Conservation (DEC), the New York State Department of Health, the Delaware River Basin Commission, and the Sullivan County Department of Public Works. Local permits from the Town of Forestburgh are also required. The need for New York State permits mandates that the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) be consulted and a sign off be obtained stating that they have no archaeological concerns regarding the proposed project.

The Phase 1A was performed in accordance with the requirements of the State Environmental Quality Review Act (SEQRA) 6NYCRR, part 617 of the New York State Environmental Conservation, as well as relevant federal standards (36 CFR 61). The work completed also conforms to the State Historic Preservation Office requirements (in effect as of May 30, 2005), which conform to those laid out in Section 106 of the National Historic Preservation Act and Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law, and the New York State Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (The New York Archaeological Council 1994).



Map 1: 1986 USGS Topographical map. Hartwood Quad. (Source: Tim Miller Associate, Inc.) Scale: 1"=2000'.



Map 2: Location map including the project area. (Source: Jimapco Hudson Valley Street Atlas 2004).
Scale: 1"=4000'

Project Area Description

Lost Lake Resort is a planned development of the forested area surrounding Trout Lake. Trout Lake, alternatively and hereafter called Lost Lake, is a 50 acre body of water located on the north side of St. Joseph's Road in the northern portion of the Town of Forestburgh. Lost Lake is a man-made body of water created sometime between 1911 and 1925. (Photo 1 &17) The proposed plan will incorporate ±48.4% (a minimum of 40%) of its

acreage as open or green space. The current plan indicates that the resort will contain a driving range, full golf course, an amenity village, and an equestrian center, surrounded by approximately 2357 housing lots. The current plan also proposes to construct a tunnel under St. Josephs Road to connect the two portions of the development, as well as construct approximately 133,000' of roads. Infrastructure, such as sewer, storm water collection, and other improvements, are included in the proposed plan.

Environmental Conditions

The project area is located on portions of the glaciated Allegheny plateau in a geologic setting called the Allegheny Front. The glaciated portion of the dissected plateau has lower relief and gentler slopes. The characteristics of a dissected plateau include areas of high elevation and deep valleys. The topography of the project area can be described as moderately rugged. The elevations of the project area in general rise from 1340-1390' (408.5-424 m) AMSL in the eastern portion of the site to 1470-1510' (448-460m) AMSL in the western portion of the site. The overall terrain is comprised of elevated terraces overlooking ponds and wetlands.

The wetlands and pond in the northern part of the residential portion of the site drain southeast into Bush Kill, connecting to the Basher Kill, which drains into the Neversink River south of the project area in the Town of Mount Hope. The Neversink and Mongaup Rivers drain the central portion of Sullivan County into the Delaware River, which is located along the southwestern boundary of the county. St. Joseph's Lake, a natural lake, located to the northwest of the project area, drains into Black Brook. (Photo 1) Lost Lake, located in the northeastern portion of the project area, is, as stated above, a man-made lake created by damming the northern branch of the Bush Kill. (Photo 17)

As previously discussed, the project area is located on the Allegheny Plateau, within the larger province of the Appalachian Plateau. The Allegheny Plateau is bordered by the Hudson River Valley to the east and the Mohawk River Valley to the north. Surficial deposits, the result of glacial deposition, cover most of the plateau with bedrock outcrops. It is believed that the area remained glaciated until approximately 12,000 BC. Hilltops were scraped, and unconsolidated deposits of glacial debris that included pebbles, cobbles and boulders covered the landscape. These deposits, which may contain chert pebbles and cobbles, are generally thicker in the valleys and thinner along the ridges and on the hilltops. The underlying bedrock in the region consists of Devonian-age red and grayish brown sandstone, shale and conglomerates. Bedrock exposures and escarpments were found within the project area, most just a short distance from St. Joseph's Road. These exposures face north, and, in one instance, it was found that local wildlife had been using them for shelter. (Photo 9-13) Glacial striation are visible within the exposed rock face, indicating the glacial movement was along the latitude plane. No crypto-crystalline rock was found within these bedrock exposures.

The characteristics of the soils within the project area has an important impact on the potential for the presence of cultural material, since the types of soils present affected the ability of an area to support human populations. The *Natural Resources Conservation Service and the Sullivan County Soil Survey* indicates that the soils within the project area are a mix of excessively well drained to poorly drained soils. (Appendix B) The two largest soil groups within the western parcel are Wellsboro and Wurtsboro soils (WIC, 33.5%) and Wurtsboro Loam, (WuB 11.7%). The Wellsboro and Wurtsboro soils are very well drained. The balance of the soils (shown in detail in Appendix B) can be divided as 27.1% well drained soils and 27.7% poorly drained soils. The poorly drained soils are located in or adjacent to designated wetland areas, while the well drained soils are located in the

higher elevations. Scriba stony soils, which comprise 6 % of the soils found within the project area, contain a large percentage of surface rock in the form of cobbles, stones, or boulders. (Photo 14)

The project area is currently a mix of wetlands and forested uplands. (Photo 23& 25) The wetlands located within the *Lost Lake Resort* project area were flagged in 2007, and are indicated on the topographical map as having 100'(30m) buffer zones. A large wetland is centrally located within the property and drains to the east into Bush Kill. The majority of the project area is wooded, with the exception of the wetland areas, which are open and contain only marsh grasses. (Photo 23) Lost Lake, located in the northeastern portion of the project area, also drains into Bush Kill. It is clear from the cartographic research conducted that this lake was created after 1911. A concrete dam can be found at the southern end of the teardrop shaped body of water. (Photo 18-19) St. Joseph's Lake is located off the northwest corner of the property, and drains southwest into Black Brook, located immediately west of the project area. Black Brook is a tributary of the Mongaup River, which flows into the Delaware River to the west.

The project area lies within the Northern Hardwoods and Appalachian Oak Forest zone, where sugar maple, hemlock, white pine, beech, basswood and yellow birch are the predominant trees (Küchler 1964). At the present time, the majority of the old growth forest is hemlock and juniper, while the recent growth consisting of hardwoods, mainly birch, small oaks and maple. These forested areas are interspersed with mountain laurel and wild blueberry bushes. (Photo 3) At the time of the site visit the underbrush was clear due to winter freeze.

Figure 1: Aerial Photograph of the *Lost Lake Resort* project area. Scale:1"=4200'

An open area of meadow grasses is located along the southern side of St. Joseph's Road, within the central portion of the project area. Two outbuildings were noted in this area. This is the location of a map documented structure (hereafter MDS) attributed to J. Mc. Neely. This structure can be seen on the USGS topo map dating to 1986 (Map 1). The foundation of the dwelling was not readily visible on the surface; however, the raised mound of it former location was visible on the ground surface. (Photo 6-7) Large flagstones found in association with the foundation mound support this conclusion. (Photo7) On the historical topographical maps, and on a street map dating to 1925, there is a road leading from the McNeely house across St. Joseph's Road into the northern portion of the project area, extending into the Town of Thompson. The 1925 map mentioned above was found on the Sullivan County Historical Society web site, but no citation was given, nor was it possible to reproduce this map for inclusion in this report.

Potential for Site to Contain Prehistoric and Historic Cultural Resources

As part of the initial research for the Phase 1A Literature Review and Sensitivity Analysis, CITY/SCAPE: Cultural Resource Consultants examined the OPRHP and New York State Museum (NYSM) archaeological site maps housed at Peebles Island. These files indicate that there are no reported prehistoric sites within a mile of the project area. No prehistoric sites are reported within a 2-mile (3.2 km) radius in either the OPRHP or New York State Museum site files. Indeed, few prehistoric sites have been identified in the interior of Sullivan County away from the Delaware River. The reasons for this may be that the landscape, an upland area, was not hospitable for prehistoric peoples, but it is more likely that the paucity of sites is related to the fact that until quite recently few systematic surveys have been made of the area. To date, the majority of all recorded prehistoric sites in Sullivan County are along the Delaware, Mongaup and Neversink Rivers, as well as along the Basher and Shawangunk Kills.

Although no prehistoric sites are located within a mile of the *Lost Lake Resort* project area, there are environmental factors that would suggest that the site would be potentially sensitive for prehistoric cultural resources, including:

- the presence on the site of wetlands overlooked by generally level areas that could have served as magnets for prehistoric peoples;
- the presence of a series of lakes, wetlands and stream within and adjacent to the project area;
- finally, the presence of Bush Kill immediately to the west, which could have provided access to the area from the Neversink River

Our research, undertaken at the New York State Museum and OPRHP, indicates that the *Lost Lake Resort* has no reported historic cultural resources within its boundaries. There is, however, a cluster of historic buildings and a historical marker located adjacent to the eastern boundary of the project area identifying the location Gilman;s Station, which is discussed in greater detail below.

There are no National Register eligible or listed properties within the *Lost Lake Resort*, nor are there any reported within a 1 mile radius of its boundaries or, indeed, within the Town of Forestburgh. However, despite the apparent absence of historic sites in the Town of Forestburgh, several historic markers were noted in the vicinity of

the project area. (Photo 22) These include the Stephan Crane house in the hamlet of Hartwood, and St. Jospeh's Convent, now operating as the Inn at Lake Joseph.

History of the Site

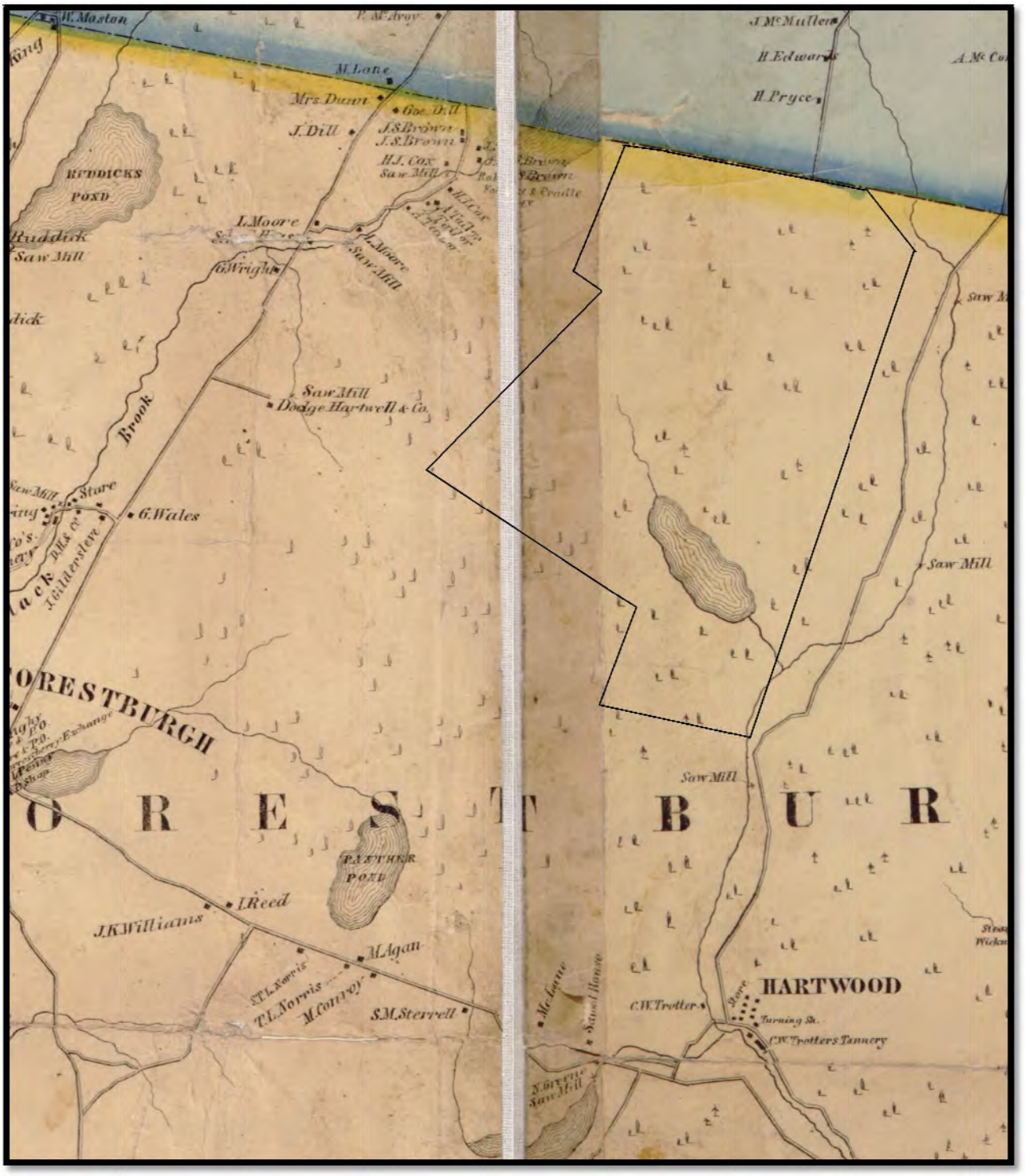
As part of the Phase 1A Literature Review and Sensitivity Analysis, historic maps of the area were examined to determine whether the project area had the potential to contain historic cultural resources. Research was conducted to specifically looking for map documented structures (MDS) that might be located within the project area boundaries. Maps available for Sullivan County are limited, as opposed to those for other counties, such as Orange County. The available maps include Gates; 1856 *Map of Sullivan County* and Beers' 1875 *County Atlas of Sullivan*, as well as a historic topographical map. While there may earlier maps that may include the project area, these maps generally do not include owners' names or property boundaries. The material presented below is not, therefore, intended to be an exhaustive examination of the history of the site, but is, rather, an exercise to locate and identify structures either on or adjacent to the project area that may be of historic significance. For this purpose, historic maps available at the State Museum in Albany have provided the basis for the discussion.

At the beginning of the 18th century, almost all of Sullivan County was secured by patents, including Hardenberg Patent (or Great Patent) (Quinlan 1873:9-11). Over time these land holdings were sub-divided into Great Lots, which were in turn divided into smaller lots that were then sold off, but despite the land sales the area remained only sparsely settled until after the Revolutionary War (Quinlan 1873: 11, 111-114). One of the impediments to settlement was the hostilities between the European settlers and the Native American population, who were at times under the sway of the French, and later the British.

Following the Revolutionary War, the construction of transportation networks, including the Newburgh-Cochecton Turnpike, which linked Newburgh and the Delaware River at Cochecton, encouraged movement into the area. The Newburgh-Cochecton Turnpike, chartered in 1801, was among the first in the state. (Wakefield 1970:2-3). It was the brain child of a group of Newburgh businessmen, who wished to see an increase in the flow of goods between their riverfront stores and the interior. Shortly after the establishment of the turnpike, the increase in population by 1809 led to the formation of Sullivan County from Ulster. Settlement focused on areas such as Bloomingburg, Monticello and Liberty, with smaller villages, such as Wurtsboro, growing up along the D & H Canal, which was chartered in 1823. In addition to the Newburgh-Cochecton Turnpike and the D & H Canal, which brought people and business to the village, there was also a lead mine and smelting facilities, as well as tanneries, a mainstay of the Catskill Mountain economy in the early years of the 19th century. The exploitation of the hemlock, used to tan the leather, led to a collapse of the tanning industry, but at the time of the Civil War it was boasted that over 80 percent of the boots and leather goods used by the Union Army were supplied from tanneries of Sullivan County (Wakefield 1970:6 quoted in NYSED9:32).

The earliest map included in this report is the C. Gates & Son 1856 *Map of Sullivan County, New York,* which dates to the years before the Civil War. (Map 3) This map shows NYS Route 42, once the Monticello Turnpike and St. Joseph's Hill Road, which leads northeast to St. Joseph Lake. In 1856, St. Joseph's Road, which bisects the project area, had not yet been constructed. In 1856, the production of lumber and the tanning of hides were two important industries in Sullivan Count. The surrounding area had several saw mills and tanneries, two of which were located northeast of the Lost Lake Resort along Black Brook and three to the east along Bush Kill. To the southeast, in the hamlet of Hartwood, was the location of a large tannery owned by C. W. Trotter. A furniture

and cradle factory owned by R. Brown was located on the southern edge of Lake Joseph. The Gates map indicates that the entirety of the project area is forested interior land. A large pond is located in the southeastern central portion of the project area which is now classified as a wetland.

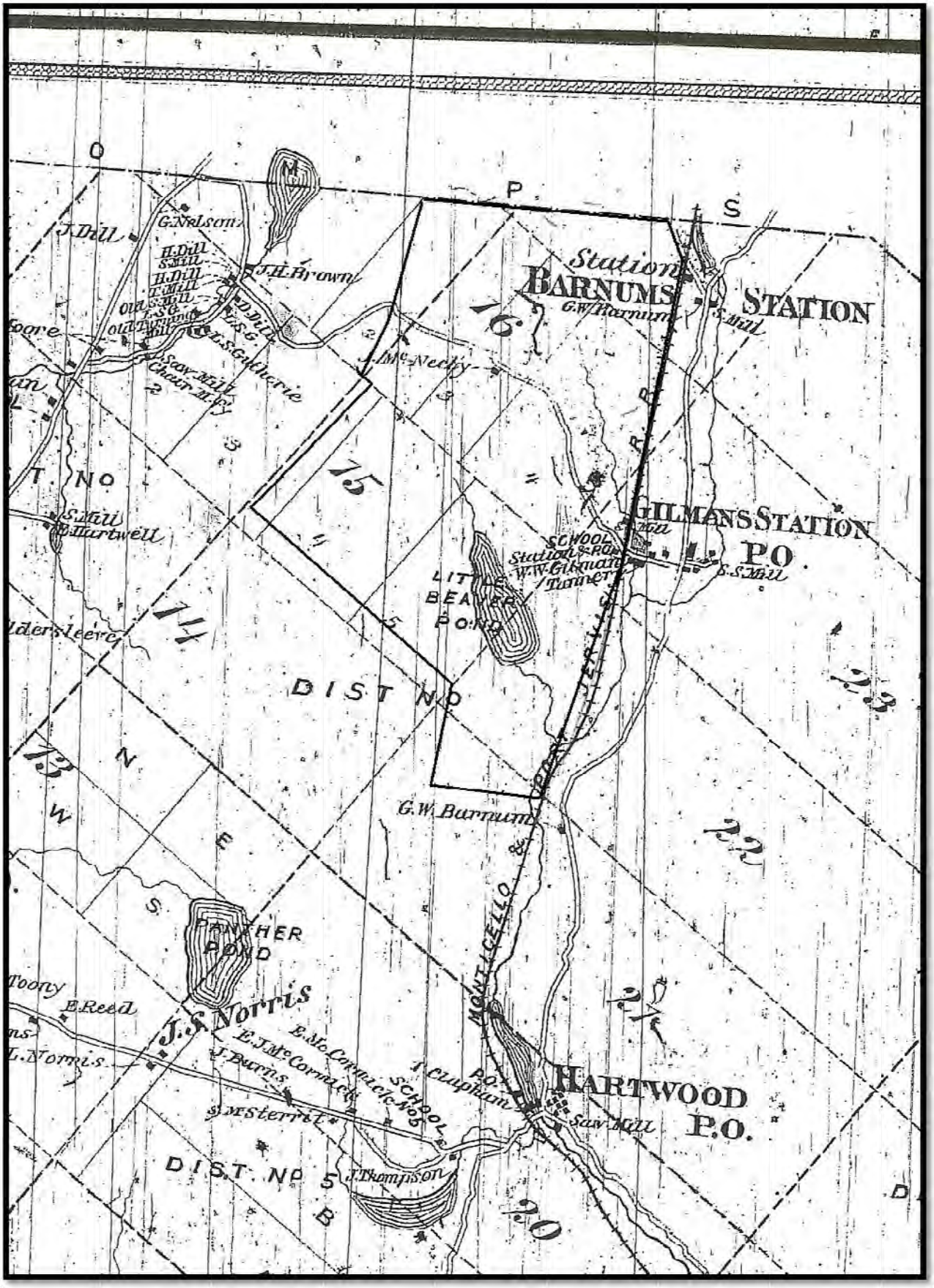


Map 3: 1856 Gates *Map of Sullivan County, New York.* (Source: Library of Congress Digital Collection)
Scale: 1"=3060'

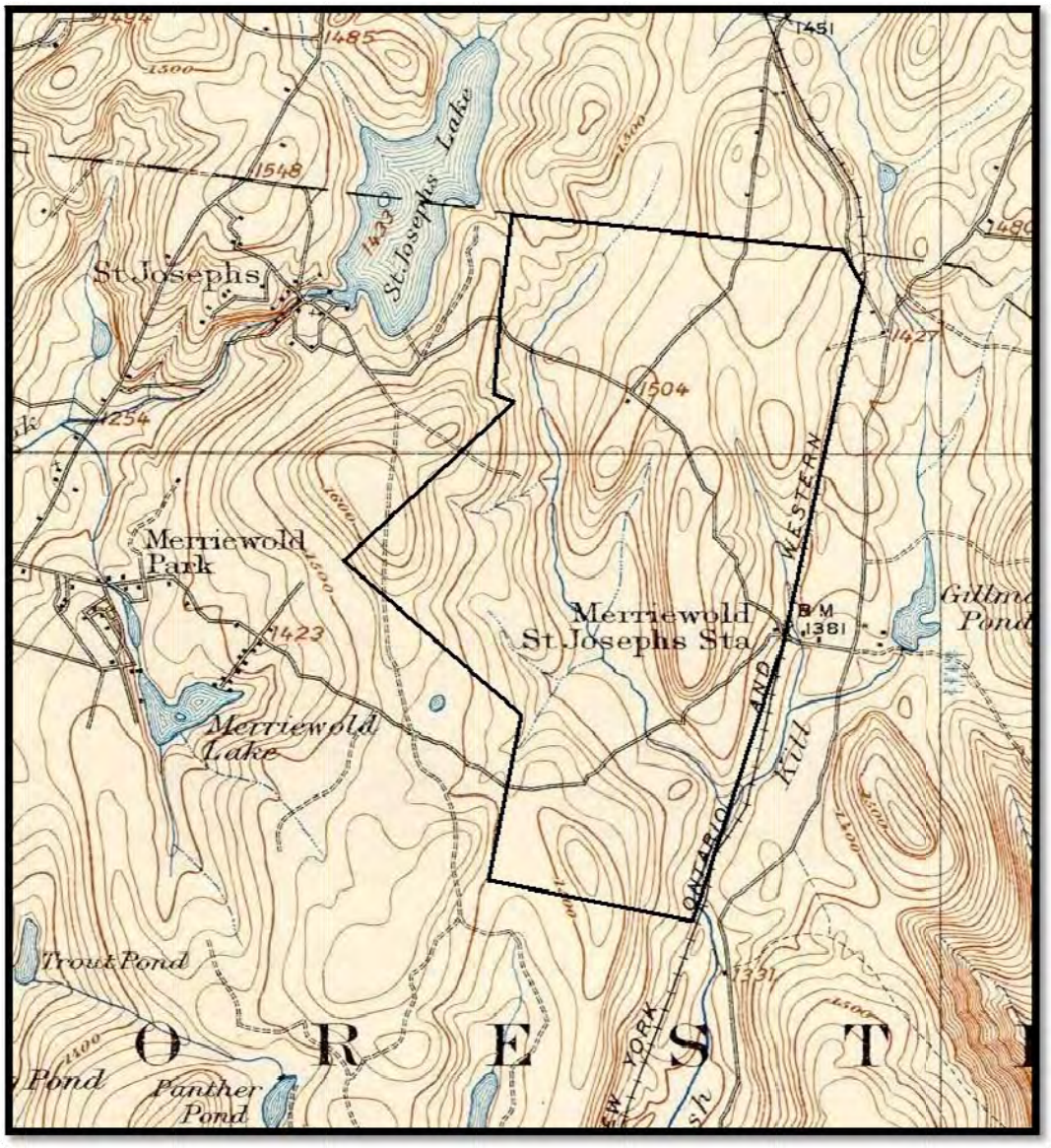
The construction of the railroads through Sullivan County, which began along the Delaware River in the 1840s, and elsewhere in the 1860s and 1870s, doomed the turnpikes and canals. The railroad provided easy access to markets for many of the farming communities of the county, but also provided the route by which tourists came to Sullivan County, generating the summer vacation industry that was the mainstay of the county's economy for many years. The first of the railroads to reach central Sullivan County was the New York & Oswego Midland Railroad, which, upon its bankruptcy in 1880, it was acquired by the New York, Ontario & Western Railroad, referred to locally as the "Old & Weary". By the 1870's, several railroads had been constructed connecting Monticello with areas to the south and north.

W.W. Gilman, who brought trade and growth to the area around the mid 19th century, benefited largely from the construction of the railroad. The Town of Forestburgh web page indicates that Gilman established a lumber mill, a tannery, and a store, creating Gilman's Station. To accommodate his employees, he also constructed homes and boarding houses. When the railroad was commissioned, a depot was built at the intersection of St. Joseph's Road and Cold Spring Road. The railroad was the impetus for the increased growth and success of Gilman's Station, which led to the establishment of a post office in the hamlet. W. W. Gilman's brother, George, founded and renamed the A & P Tea Company. Gilman's Station, located along the eastern boundary of the project area, will not be impacted by the proposed development.

On F. W. Beers' 1875 *County Atlas of Sullivan, New York*, the cluster of saw mills at the southern edge of Lake Joseph has increased in number. Five mills are now located at the northern portion of Black Brook; included among them is the "Old Turning Mill", which is still standing. (Photo 28) Of these five mills, one is a textile mill, and another a saw mill and chair factory. These mills were located outside the proposed project area in the hamlet of St. Joseph southwest of the lake. Along the southern portion of St. Joseph's Road, within the boundaries of the project area, is the J. Mc. Neely farmstead, which was mentioned above. On the Beer's map, Lost Lake has not been constructed, nor any of the roads leading to it. The railroad and Gilman's Station was shown along the southern boundary of the project area. (Photo 21-24) Gilman's Station in 1875 included a school and post office, as well as a tannery and two saw mills. W.W. Gilman's residence was also located in this area. Near the southeastern corner of the project area, along Cold Spring Road, is the residence of G. W. Barnum. Barnum's Station is located along the northeastern corner of the project area. On the Beers' map all of the structures associated with Barnum's Station were located on the eastern side of the railroad outside the project area boundaries.



Map 4: 1876 F. W. Beers *Atlas of the County of Sullivan.* Scale: 1"=2940'



Map 5: USGS Topographical Map. Monticello Quad. 15 Minute series. Scale:1"=3200'

The final map consulted is the 1911 (reprinted 1931) USGS topographical map (Monticello Quad), which includes the project area. (Map 5) This map indicates there were a series of both farm lanes and established roads within the boundaries of the Lost Lake Resort project area. St. Joseph's Road followed its current path, bisecting the northern portion of the project area, while the southern portion of the project area was crossed by Merriewold Club Road, which connects to St. Joseph's Road in Gilman's Station. On the 1911 map, Gilman's Station had been renamed Merriewold/St. Joseph's Station. The McNeely dwelling was still depicted along St. Joseph's Rd. A road was shown traversing northeast from the McNeely residence into the Town of Thompson. In the northeastern corner of the project area, a structure was shown along the western side of the railroad that creates the eastern boundary of the project area. This structure would be n the vicinity of the former Barnum's Station, which is no longer shown. A series of farm lanes are depicted descending from the hamlet of St. Joseph into the interior of the project area. There are no structures depicted along these roads. It is believed that these roads represent the efforts of the local tanneries to harvest the hemlock forest. In 1911, Lost Lake had not yet been created.

Additional Research Undertaken

No professionally excavated prehistoric sites have been identified on or immediately adjacent to the project area. One professional survey located ½ mile to the southwest of the project area was undertaken and completed in January of 2008. This survey of the Sho Fu Den site was undertaken by CITY/SCAPE: Cultural Resource Consultants. The survey included 102.7 acres, including the Sho Fu Den pavilion and gardens, as well as surrounding forest land. The Phase 1B Field Reconnaissance Survey, which excavated 1331 shovel tests, failed to identify any historic or prehistoric cultural resources within the Sho Fu Den property. (CITY/SCAPE: Cultural Resource Consultants 2008b)

William Beauchamp and Arthur Parker list five prehistoric sites in Sullivan County. All of these are described as village sites. Two of these village sites are located in the Town of Mamakating, while two others are located on the banks of the Delaware River in the Town of Delaware and the Town of Cochecton, west of the project area. The final site listed is located near Indian Field Pond in the Town of Bethel, southwest of the project area. More recently, William Ritchie and Robert Funk identified no prehistoric sites in Sullivan County.

Sensitivity Assessment and Site Prediction

Archaeological surveys undertaken in the past years indicate the presence of prehistoric sites in Sullivan County; however, most of the recorded prehistoric archaeological sites in the area are confined to the major drainages such as the Delaware River, Neversink River, Shawangunk Kill and Basher Kill. It is along these major drainages that large camp sites would have been be located. Smaller specific resource procurement sites would be expected along some of the tributaries that flow into the major drainages. It is also possible that small camp sites, such as hunting camps, or special use camps associated with the utilization of wetland resources, may be located in the interior portions of the county. To date, few such resources have been identified in Sullivan County, but it may be that this is because few professional surveys have been completed for the area. Archaeologists believe that it is the lack of professional surveys, rather than the lack of prehistoric sites, that is reflected in the limited number of archaeological sites reported for the county. Each survey has, therefore, the potential to greatly expand our understanding of the use of the land by prehistoric peoples.

A previously discussed, the project area is located along the Allegheny Plate within the Allegheny Front. Professional surveys undertaken within the plateau regions of New York State indicates that a remarkably low number of prehistoric sites have been identified within the plateau geologic provinces. Based on the information presented above, it is the conclusion of CITY/SCAPE: Cultural Resource Consultants that a Phase 1B Archaeological Field Reconnaissance Survey of the *Lost Lake Resort* site is warranted. The potential of the site to contain a prehistoric site or sites is considered to be moderate, however, the probability of these resources being present is increased by the wetland and fresh water resources on or in the immediate vicinity of the site.

Conclusions and Recommendations

CITY/SCAPE: Cultural Resource Consultants completed a Phase 1A Literature Review and Sensitivity Assessment for the *Lost Lake Resort*. Site specific research was undertaken to identify archaeological sites in the vicinity of the project area, along with map research to identify map documented structures (MDS) located on or adjacent to the site. The work included a site visit that includes a comprehensive examination of the site, along with

photographs of the site to show the current conditions and environment. Information was also on topography and soils, both of which have a significant impact on the potential of the site to contain prehistoric cultural resources.

In areas that have been systematically surveyed by professional archaeologists, the absence of reported prehistoric resources within a 1-mile (1.6 km) radius might be taken as an indication that prehistoric peoples did not utilize the area. However, as discussed above, the interior of Sullivan County has not been the subject of systematic professional surveys and excavation. That is now changing, with the result that professional surveys are beginning to take place over a broad area. Because of this, we would expect to identify prehistoric and historic sites in areas where none have been previously reported.

It is the position of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) that if we continue to look only where sites have previously been reported, we will not expand our knowledge base or learn how prehistoric peoples utilized the landscape in the interior areas of Sullivan County. As we have learned over the last several years, environmental factors, such as the presence of wetlands and easy access to fresh water, are a good indicator for prehistoric use. It is for this reason that, while we examine the archaeological site files for reported prehistoric site, we also employ an environmental model in our assessment of the potential of a site to contain prehistoric sites.

Knowledge gained through repeated surveys indicates that wetland areas overlooked by level terraces and gently sloped land were regularly utilized by prehistoric peoples collecting and processing wetland resources. Among these resources would have been the animals drawn to the wetland such as deer and moose, the birds that used wetlands as a refuge, such as water fowl, amphibians that inhabit wetlands, such as frogs, and a variety of insects. Prehistoric peoples also collected and processed the starchy roots of wetland vegetation, including cattail and water lilies. These apparently served much the same purpose in the diet of prehistoric peoples in the Northeast as potatoes did for those of South America (CITY/SCAPE 2001). The reeds and shafts of phragmites were utilized in the construction of wigwams. Another possible attraction of wetland areas could have been the presence of beavers; a recent article in *Current Archaeology* discussed the exploitation of beaver by prehistoric peoples in Britain, concluding that the modification of the landscape by beavers could have attracted early hunter-gathers looking for game, wildfowl and fish (*Current Archaeology* 2007: 20-21). In addition, as the article points out, virtually every part of the beaver would have been useful, from the ivory-like incisors, used for making chisels and gaming pieces, to its tail, which could be made into waterproof pouches.

Based on the potential for the *Lost Lake Resort* site to contain prehistoric sites associated with the wetland areas or Lost Lake, formerly part of a stream system tributary to Bush Kill, it is recommended that a Phase 1B Archaeological Field Reconnaissance Survey be completed for areas that will be impacted by the proposed development. This area is referred to by OPRHP as the Area of Potential Effect (APE). Areas outside the APE that will not be impacted in any way may be excluded from testing, as may slopes in excess of 15%, wetland areas, and wetland buffer zones. The exclusion of the wetland and wetland buffer zones assumes that neither the wetlands nor the buffer zone will be disturbed by road crossings, storm water drainage systems, or any other impacts.

With respect to historic cultural resources, with the exception of the McNeeley dwelling, it is considered unlikely that any historic cultural material associated with former usage of the site will be present. The recommendation for the McNeeley dwelling is a survey at the level of a Phase 1B.

The size and scope of the proposed development incorporates large areas of land that require testing at the level of a Phase 1B Field Reconnaissance Survey in accordance with the NYSHPO Guidelines (2005). Due to the

size of the project area, testing this site's Area of Potential Effect (APE), approximately 1000 acres, in its entirety is problematic. It is, therefore, recommended that the NYSHPO *Guidelines for Wind Farm Development Cultural Resources Survey Work,* prepared in 2006, the current OPRHP guidelines, and the environmental model developed by Robert Funk in 1993, be employed to design an appropriate testing strategy once the APE has been finalized. Robert Funk's environmental model was developed after site excavations along the dissected plateau (Allegheny Plateau) in the Upper Susquehanna Valley in New York State. This model divides sites into Environmental Zones, which can then be subdivided into Local Habitat Area (LHAs). The similarity of Funk's study area to that found within the *Lost Lake Resort* site suggests that it might serve as an appropriate model for the Phase 1B survey of the *Lost Lake Resort*. Should the NYS OPRHP agree with this approach the application of such would significantly reduce the scope of work, and, thereby, the Phase 1B expenditure.

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CITY/SCAPE: Cultural Resource Consultants
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APPENDICES

LIST OF APPENDICES

APPENDIX A

PHOTOGRAPHS

Photo 1: Lake Joseph northwest of project area. View north.

Photo 2: St. Joseph's Rd bisects project area. View east.

Photo 3: Terrain of project area is open level terraces. View southwest.

Photo 4: Wetlands within project area have been flagged. View north.

Photo 5: northern portions of project area have recently burned. View northwest.

Photo 6: Location of MDS on south side of St. Joseph's Road. View southeast.

Photo 7: Remains of MDS owned by McNeely. View northeast.

Photo 8: Series of trails lead into the forested land of the project area. Forest mostly recent growth hardwoods. View south.

Photo 9: Bedrock overhang containing caves located in southern portion of project area. View southeast.

Photo 10: Small cave within overhang currently frequented by a small mammal. View south.

Photo 11: View from overhang of descending slope and St. Joseph's Road. View north.

Photo 12: Exposed limestone escarpment east of bedrock overhang. No veins of crypto-crystalline rock were identified. View south.

Photo 13: Escarpment is proceeded by level, yet boulder strewn ground. Glacial striations are visible on rock surface. View south.

Photo 14: Landscape of northern central portion of Lost Lake Resort property is Scriba extremely stony soil class with 9% of the surface covered with cobbles.

Photo 15: Dirt path leads to Lost Lake (Trout Lake) View North. .

Photo 16: Stone wall appears to be remnants of early road. View east.

Photo 17: Lost Lake, within the northern portion of the project area. View north.

Photo 18: Southern portion of Lost Lake. Lake was damned and created after 1911. View east of dam.

Photo 19: View of spillway of dam. Currently upkeep of the dam is aided by a beaver colony. View southeast.

Photo 20: Residence in Gillman's Station. In location of MDS School. View west.

Photo 21: Train Depot located in Gillman's Station. Old Rail line creates project area eastern boundary, and was located in rear of Depot. View west.

Photo 22: Historical Marker located along St. Joseph's Road, outside project area. View north.

Photo 23: Remnants of the Gilman Station Mill pond, currently a wetland. View north.

Photo 24: Stone remains are in location of MDS Tannery in Gilman's Station, outside project area. View south.

Photo 25: Large wetland located on southwestern boundary of project area. View southeast.

Photo 26: Stone quarry located outside southwestern portion of the project area. View northwest.

Photo 27: View of eastern boundary of project area (white stake), former railroad and rear of Gillman's Station train depot. View east.

Photo 28: Old Tanning Mill located on the southern extent of Lake Jospeh, and along Black Brook, outside project area. View north.

APPENDIX B

SOIL DESCRIPTIONS

Name	Soil Horizon Depth	Texture/ Inclusions	Slope (Percent)	Drainage	Landform
Alden Silt Loam (Ad)	Surface: 12" (30 cm) Subsoil: 33" (84 cm) Substratum: 60" (150 cm)	Silt Loam Silt Loam Gravelly Silt Loam	0 to 3%	Very Poorly Drained	Depressions (Toeslope)
Arnot-Lordstown Complex Very Rocky (AIC)	Surface: 3" (7.62 cm) Subsoil: 17" (43.1 cm) Substratum: 21" (53.3 cm) Surface: 6" (15cm) Subsoil: 20" (50 cm) Substratum: 28" (70 cm) Terminus: 32" (80 cm)	Channery Loam Very Channery Loam Un-weathered bedrock Silt Loam Channery Loam Channery Loam Un-weathered Bedrock	0 to 15% 0 to 15%	Somewhat Excessively Drained Well Drained	Hill, Ridges & Benches (shoulder)
Arnot-Lordstown Complex Very Rocky (AIE)	Surface: 3" (7.62 cm) Subsoil: 17" (43.1 cm) Substratum: 21" (53.3 cm) Surface: 6" (15cm) Subsoil: 20" (50 cm) Substratum: 28" (70 cm) Terminus: 32" (80 cm)	Channery Loam Very Channery Loam Un-weathered bedrock Silt Loam Channery Loam Channery Loam Un-weathered Bedrock	15 to 35%	Somewhat Excessively Drained Well Drained	Hill, Ridges & Benches (backslope)
Arnot-Oquaga Complex Very rocky (AoC) Arnot Oquaga	Surface: 3" (7.62 cm) Subsoil: 17" (43.1 cm) Substratum: 21" (53.3 cm) Surface: 6" (15.2 cm) Subsoil: 36" (91.4 cm) Substratum: 40" (101.6 cm)	Channery Loam Very Channery Loam Un-weathered bedrock Very Channery Silt Loam Very Channery Loam Un-weathered Bedrock	0 to 15% 0 to 15%	Somewhat Excessively Drained Well Drained	Hill, Ridges & Benches (shoulder)

Name	Soil Horizon Depth	Texture/ Inclusions	Slope (Percent)	Drainage	Landform
Arnot- Rock Outcrop (ArC) Rock outcrop	Surface: 3" (8 cm) Subsoil: 17" (43 cm) Substratum: 21" (53 cm) Surface: 60" (150cm)	Channery Loam Very Channery Loam Un-weathered Bedrock Un-weathered Bedrock	0 to 15%	Somewhat excessively drained	Hills, Ridges & Benches (shoulder)
Arnot- Rock Outcrop (ArE) Rock outcrop	Surface: 3" (8 cm) Subsoil: 17" (43 cm) Substratum: 21" (53 cm) Surface: 60" (150cm)	Channery Loam Very Channery Loam Un-weathered Bedrock Un-weathered Bedrock	15 to 35%	Somewhat excessively drained	Hills, Ridges & Benches (shoulder)
Carlisle Muck (Ca)	Surface: 60" (150cm)	Muck	0 to 2%	Very poorly drained	Swamps & Marshes
Carlisle, Palms, and Alden soils (Ce) Carlisle Palms Alden	Surface: 60" (150cm) Surface: 12" (30 cm) Subsoil: 22" (55 cm) Substratum: 60" (150 cm) Surface: 12" (30 cm) Subsoil: 33" (84 cm) Substratum: 60" (150 cm)	Muck Muck Muck Loam Silt Loam Silt Loam Gravelly Silt Loam	0 to 2% 0 to 3%	Very poorly drained	Swamps & Marshes (toeslope) Depressions
Fluvaquents-Udifluvents (Fu) Udifluvents	Surface: 5" (13 cm) Substratum: 70" (175 cm) Surface: 4" (10 cm) Substratum: 70" (175 cm)	Gravelly Silt Loam Very Gravelly Sandy Loam Gravelly Silt Loam Very Gravelly Sandy Loam	0 to 3% 0 to 5%	Poorly Drained Moderately well drained	Floodplains (toeslope)
Lordstown Silt Loam (LoB)	Surface: 6" (15 cm) Subsoil: 20" (50 cm) Substratum: 28" (70 cm Terminus:32" (84 cm)	Silt Loam Channery Loam Channery Loam Unweathered Bedrock	3 to 8%	Well Drained	Hills Ridges and Benches

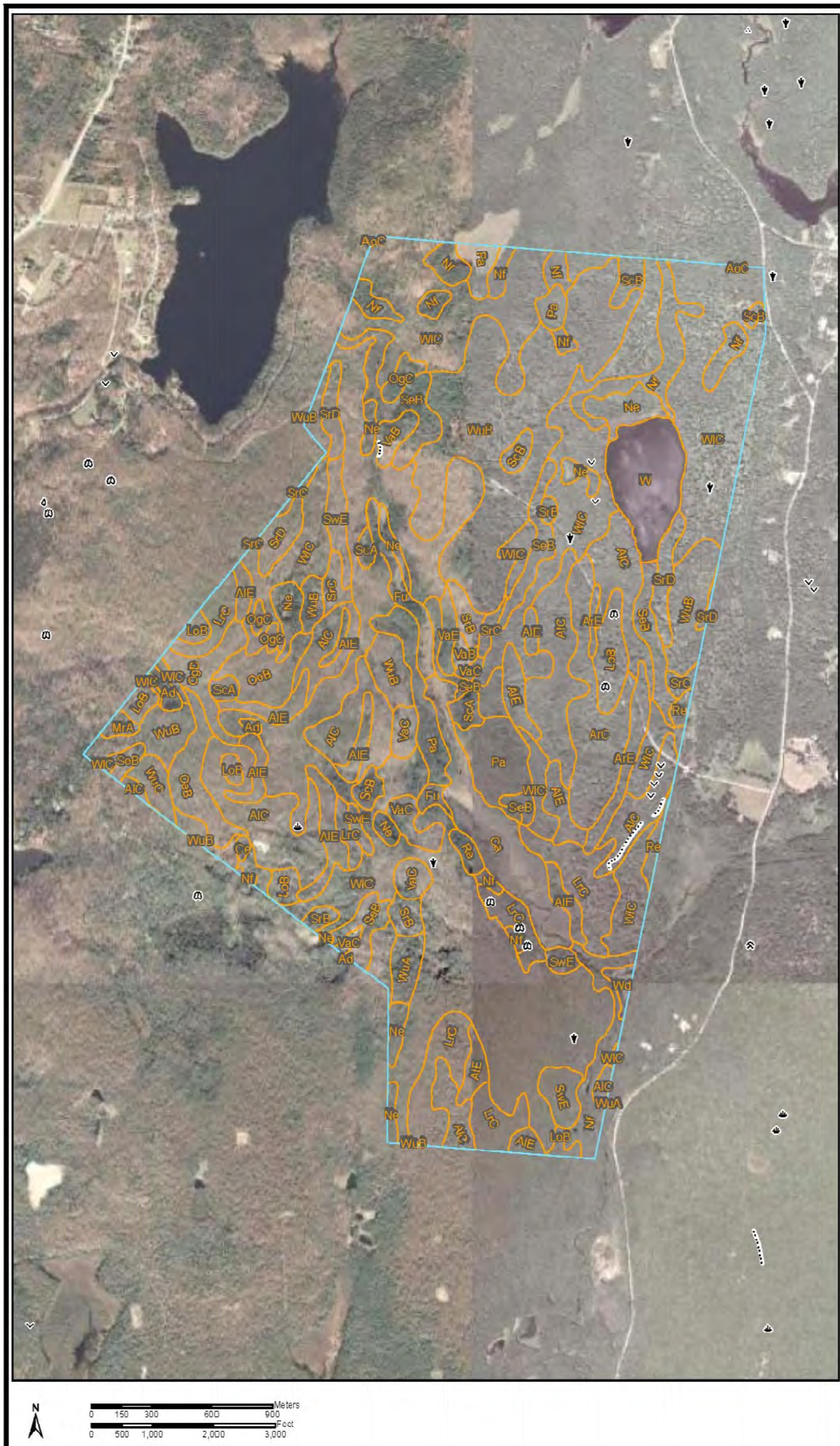
Name	**Soil Horizon Depth**	**Texture/ Inclusions**	**Slope (Percent)**	**Drainage**	**Landform**
Lordstown-Arnot Complex Very Rocky (LrC)	Surface: 3" (7.62 cm) Subsoil: 17" (43.1 cm) Substratum: 21" (53.3 cm)	Channery Loam Very Channery Loam Un-weathered bedrock	8 to 15%	Somewhat Excessively Drained	
Lordstown	Surface: 6" (15cm) Subsoil: 20" (50 cm) Substratum: 28" (70 cm) Terminus: 32" (80 cm)	Silt Loam Channery Loam Channery Loam Un-weathered Bedrock	8 to 15%	Well Drained	
Morris Loam (MrA)	Surface: 6" (15 cm) Subsoil: 29" (73 cm) Substratum: 60" (150 cm)	Loam Gravelly Loam Gravelly Loam	0 to 3%	Somewhat poorly drained	Dumlinoid ridges, Hills & Till plains (footslope summit)
Neversink Loam (Ne)	Surface: 7" (18 cm) Subsoil: 23" (58 cm) Substratum: 60" (150 cm)	Loam Gravelly Loam Gravelly Sandy Loam	0 to 3%	Poorly Drained	Depressions (toeslope)
Neversink and Alden soils very stony (Nf) Neversink	Surface: 7" (17.7 cm) Subsoil: 23" (58.4 cm) Substratum: 60" (152.4 cm)	Loam Gravelly Loam Gravelly Sandy Loam	0 to 3%	Poorly Drained	Depressions (toeslope)
Alden	Surface: 12" (20.48 cm) Subsoil: 33" (83.8 cm) Substratum: 60" (152.4 cm)	Silt Loam Silt Loam Gravelly Silt Loam		Very poorly Drained	
Oquaga Very channery silt loam (OeB)	Surface: 6" (15.24 cm) Subsoil: 36" (91.4 cm) Substratum: 40" (101.6 cm)	Very Channery Silt Loam Very Channery Loam Un-weathered Bedrock	3 to 8%	Somewhat Excessively Drained	Hills, Ridges & Benches (summit)

Name	**Soil Horizon Depth**	**Texture/ Inclusions**	**Slope (Percent)**	**Drainage**	**Landform**
Oquaga-Arnot Complex (OgC) Oquaga Arnot	Surface: 6" (15.2 cm) Subsoil: 36" (91.4 cm) Substratum: 40" (101.4 cm) Surface: 3" (8 cm) Subsoil: 17" (43 cm) Substratum: 21" (53 cm)	Very Channery Silt Loam Very Channery Loam Un-weathered Bedrock Channery Loam Very Channery Loam Un-weathered Bedrock	8 to 15%	Somewhat excessively drained	Hill, Ridges & Benches (shoulder)
Oquaga_Arnot Complex (OgD) Oquaga Arnot	Surface: 6" (15cm) Subsoil: 36" (90 cm) Substratum: 40" (100 cm) Surface: 3" (8 cm) Subsoil: 17" (43cm) Substratum: 21" (53 cm)	Very Channery Silt Loam Very Channery Loam Un-weathered Bedrock Channery Loam Very Channery Loam Un-weathered Bedrock	15 to 25%	Somewhat excessively drained	Hills, Ridges & Benches (backslope)
Palms Muck (Pa)	Surface: 12" (30 cm) Subsoil: 22" (55 cm) Substratum: 60" (150 cm)	Muck Muck Loam	0 to 2%	Very poorly drained	Swamps, Marshes (toeslope)
Red Hook sandy loam (Re)	Surface: 7" (17.7 cm) Subsoil: 38" (96.5 cm) Substratum: 60" (152.4 cm)	Sandy Loam Loam Very Gravely Coarse Sandy Loam	0 to 3%	Somewhat Poorly Drained	Valley trains & Terraces (footslope)
Scriba Loam stony (ScA)	Surface: 8" (17.9 cm) Subsoil: 20" (50.8 cm) Substratum: 60" (152.4 cm)	Loam Channery Loam Channery Loam	0 to 3%	Somewhat Poorly Drained	Drumlins & Till Plains (footslope)
Scriba Loam stony (ScB)	Surface: 8" (17.9 cm) Subsoil: 20" (50.8 cm) Substratum: 60" (152.4 cm)	Loam Channery Loam Channery Loam	3 to 8%	Somewhat Poorly Drained	Drumlins & Till Plains (footslope)

Name	**Soil Horizon Depth**	**Texture/ Inclusions**	**Slope (Percent)**	**Drainage**	**Landform**
Scriba and Morris Loam (SeB) Scriba, Extremely Stony Morris Loam, gently sloping	Surface: 8" (17.9 cm) Subsoil: 20" (50.8 cm) Substratum: 60" (152.4 cm) Surface: 6" (15.2 cm) Subsoil: 20" (50.8 cm) Substratum: 60" (152.4 cm)	Loam Channery Loam Channery Loam Loam Gravelly Loam Gravelly Loam	2 to 8 %	Somewhat Poorly Drained	Drumlins & Till Plains (footslope) Dumlinoid ridges, Hills & Till plains(footslope, summit)
Swartwood Gravelly Loam (SrB)	Surface: 1" (2.5 cm) Subsoil: 26" (65 cm) Substratum: 60" (150 cm)	Gravelly Loam Gravelly Loam Gravelly Sandy Loam	3 to 8%	Well Drained	Hill and Till plains (Summit)
Swartwood Gravelly Loam (SrC)	Surface: 1" (2.5 cm) Subsoil: 26" (65 cm) Substratum: 60" (150 cm)	Gravelly Loam Gravelly Loam Gravelly Sandy Loam	8 to 15%	Well Drained	Hill and Till plains (Shoulder)
Swartwood Gravelly Loam, stony (SrC)	Surface: 1" (2.5 cm) Subsoil: 26" (65 cm) Substratum: 60" (150 cm)	Gravelly Loam Gravelly Loam Gravelly Sandy Loam	15 to 25%	Well Drained	Hill and Till plains (Shoulder)
Smartswood and Lackawanna soils (SwE) Smartswood Lackawanna	Surface: 1" (2.5 cm) Subsoil: 26" (65 cm) Substratum: 60" (150 cm) Surface: 5" (13 cm) Subsoil: 34" (87 cm) Substratum: 60" (150 cm)	Gravelly Loam Gravelly Loam Gravelly Sandy Loam Channery Loam Channery Loam Channery Loam	15 to 35%	Well Drained	Hill and Till plains (Shoulder)
Valois gravelly sandy loam (VaB)	Surface: 4" (10 cm) Subsoil: 26" (66 cm) 37" (93 cm) Substratum: 60" (150 cm)	Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam	3 to 8%	Well Drained	Valley Sides, Lateral moraines & End moraines (summit)

Name	**Soil Horizon Depth**	**Texture/ Inclusions**	**Slope (Percent)**	**Drainage**	**Landform**
Valois gravelly sandy loam (VaC)	Surface: 4" (10 cm) Subsoil: 26" (66 cm) 37" (93cm) Substratum: 60" (150 cm)	Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam	8 to 15%	Well Drained	Valley Sides, Lateral moraines & End moraines (summit)
Valois gravelly sandy loam (VaE)	Surface: 4" (10 cm) Subsoil: 26" (66 cm) 37" (93 cm) Substratum: 60" (150 cm)	Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam Gravelly Sandy Loam	25 to 35%	Well Drained	Valley Sides, Lateral moraines & End moraines (summit)
Wayland (Wd)	Surface: 7" (18 cm) Subsoil: 20" (50 cm) 32" (81 cm) Substratum: 60" (150 cm)	Silt Loam Silt Loam Silt Loam Silt Loam	0 to 3%	Very poorly drained	Flood Plains
Wellsboro and Wurtsboro soils (WIC) Wellsboro, extremely stony Wurtsboro, extremely stony	Surface: 7" (17.7 cm) Subsoil: 23" (58.4 cm) Substratum: 60" (150 cm) Surface: 4" (10 cm) Subsoil: 28" (71.1 cm) Substratum: 60" (150 cm)	Gravelly Loam Gravelly Loam Gravelly Loam Loam Loam Gravelly Fine Sandy Loam	0 to 15%	Moderately Well Drained	Dumlinoid ridges, Hills & Till plains(summit) Hills & Till plains (summit)
Wurtsboro loam stony (WuA)	Surface: 4" (10 cm) Subsoil: 28" (72 cm) Substratum: 60" (150 cm)	Loam Loam Gravelly Fine Sandy Loam	3 to 8 %	Moderately Well Drained	Hills & Till plains (summit)
Wurtsboro loam stony (WuB)	Surface: 4" (10 cm) Subsoil: 28" (72 cm) Substratum: 60" (150 cm)	Loam Loam Gravelly Fine Sandy Loam	0 to 3 %	Moderately Well Drained	Hills & Till plains (summit)

Name	**Soil Horizon Depth**	**Texture/ Inclusions**	**Slope (Percent)**	**Drainage**	**Landform**
Wurtsboro loam stony (WuC)	Surface: 4" (10 cm) Subsoil: 28" (72 cm) Substratum: 60" (150 cm)	Loam Loam Gravelly Fine Sandy Loam	8 to 15 %	Moderately Well Drained	Hills & Till plains (summit)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