NRCS Brodhead Tributaries
Canadensis, Pennsylvania
PA-463

Appendix E: Other Supporting Information

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PHASE 1 ARCHAEOLOGICAL INVESTIGATION

Brodhead Tributaries Watershed
Leavitt Branch Dam (PA-463)
Goose Pond Dam (PA-464)

Barrett Township
Monroe County, Pennsylvania

HAA 5944-11

Submitted to:
DuBois & King, Inc.
28 North Main Street
Randolph, Vermont 05050

Prepared by:
Hartgen Archeological Associates, Inc.
Jesse D. Pagels, M.A. & Mathew Kirk, M.A. RPA (Principal Investigator)

1744 Washington Avenue Ext.
Rensselaer, New York 12144
p +1 518 283 0534
f +1 518 283 6276
e hartgen@hartgen.com

www.hartgen.com

An ACRA Member Firm
www.acra-crm.org

July 2024

ABSTRACT

This report documents the results of a Phase 1 archaeological investigation completed for the proposed rehabilitation of the Leavitt Branch Dam (Brodhead Tributaries Watershed Flood Retarding Dam PA-463; NID ID PA00814) and the Goose Pond Dam (Brodhead Tributaries Watershed Flood Retarding Dam PA-464; NID ID PA00812) located in Barrett Township, Monroe County, Pennsylvania. The purpose of the Phase 1 Archaeological Investigation is to provide information for the preparation of a Supplemental Watershed Plan-EA for the Brodhead Tributaries Watershed Flood Protection Project. The Phase 1 archaeological investigation was conducted for the National Resources Conservation Service (NRCS), under contract to DDK engineering, a joint venture of DuBois & King, Inc., of Randolph, Vermont, and D'Appolonia Engineering, of Pittsburgh, Pennsylvania.

Two Areas of Potential Effect (APE) are associated with the Project—the Leavitt Branch Dam APE and Goose Pond Dam APE. The two APEs each encompass a modified 1-mile radius around dam centroid points. The 1-mile APE radii were modified to coincide with the viewshed imposed by the steep terrain of the region. Historic 100-year floodplains along Leavitt Branch and Goose Pond Dams have been incorporated into the respective APE boundaries. The Leavitt Branch Dam APE encompasses 789.06 acres, and the Goose Pond Dam APE encompasses 954.94 acres. Areas of Focus (AOF) were determined for each dam to reflect portions of landscape which have been impacted by the construction of the dams, including the maximum potential pool areas.

The proposed rehabilitation efforts of the two dams will largely impact portions of the landscape which have previously witnessed soil disturbing activities resulting from initial construction. Pennsylvania's Statewide Precontact Probability Model notes the presence of areas with high and moderate precontact probability within both the Leavitt Branch Dam AOF and Goose Pond Dam AOF. These areas were found to have been impacted by initial dam construction efforts and by floodwater inundation. If dam rehabilitation efforts are limited to areas which have previously been impacted, and the potential Top of Dam (TOD) pool area is not increased, then archaeological testing of previously impacted areas within Leavitt Branch Dam AOF and Goose Pond Dam AOF is not recommended. Alternatively, if rehabilitation efforts result in the increase of the potential TOD pool area, previously undisturbed areas with high archaeological potential are at risk of becoming inundated and therefore archaeological testing is recommended in areas potentially impacted by floodwater inundation.

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PHASE I ARCHEOLOGICAL INVESTIGATION

1 Introduction

Hartgen Archeological Associates, Inc. (Hartgen) conducted a Phase 1 archaeological investigation for the proposed rehabilitation of the Leavitt Branch Dam and Goose Pond Dam located in Barrett Township, Monroe County, Pennsylvania (Map 1). The proposed project includes upgrading the infrastructure associated with the Leavitt Branch Dam and the Goose Pond Dam.

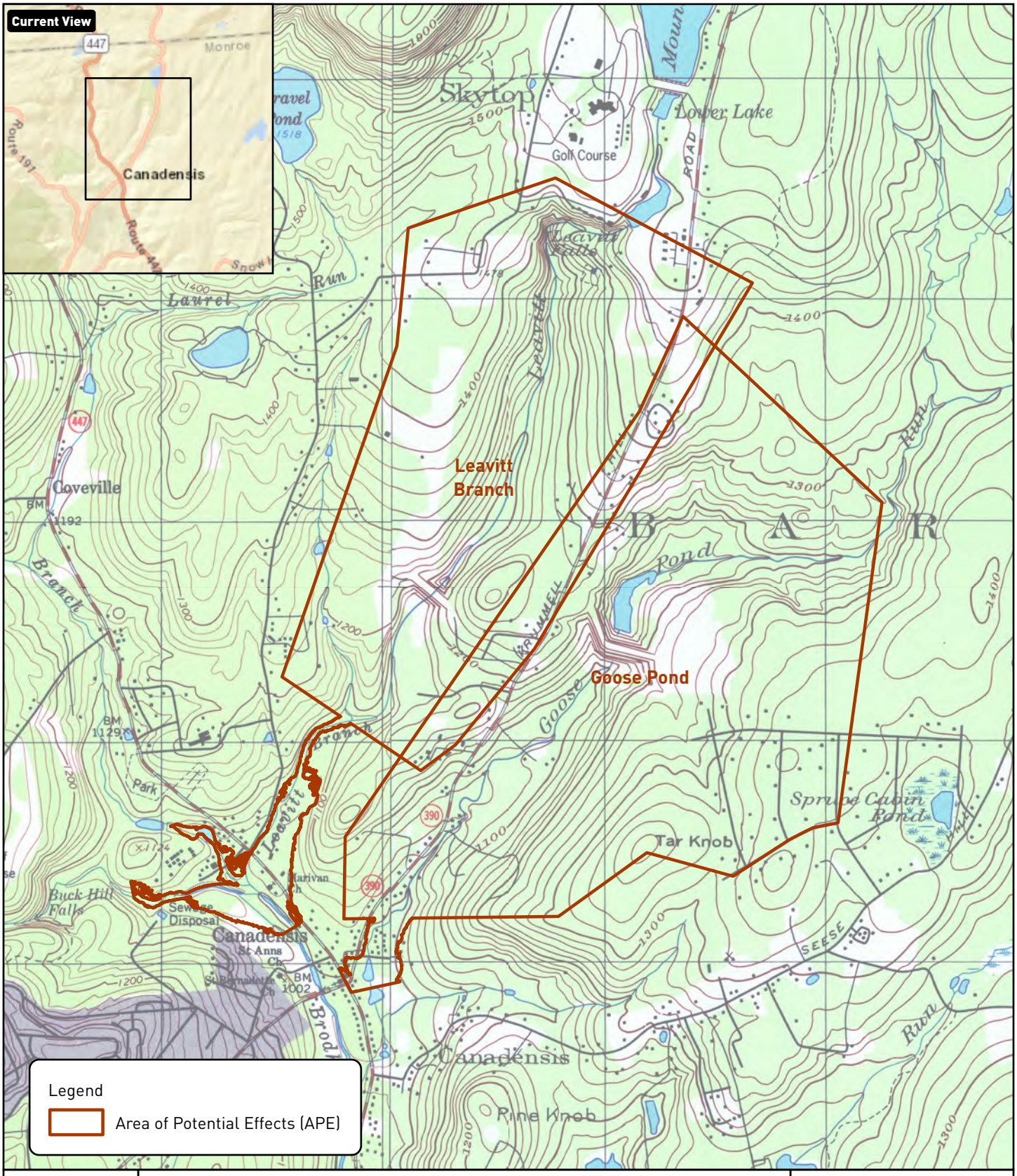
The Phase 1 archaeological investigation was conducted for the National Resources Conservation Service (NRCS), under contract to DDK Engineering, a joint venture of DuBois & King, Inc., of Randolph, Vermont, and D'Appolonia Engineering, of Pittsburgh, Pennsylvania.

This investigation was conducted to comply with 54 U.S.C§ 306108 (Section 106) of the National Historical Preservation Act (NHPA) of 1966, and its implementing regulations developed by the Advisory Council on Historic Preservation (36 CFR § 800), as amended. This report follows the requirements established in the Pennsylvania Historical and Museum Commission's (PHMC) *Guidelines for Archaeological Investigations in Pennsylvania* (2021). Due to logistical and budgeting concerns with private landowner access, shovel testing was not conducted. After project plans are developed and proposed impacts are more clearly defined, testing may be warranted in specific areas.

1.1 Description of the Project

The Project involves the proposed rehabilitation of the Leavitt Branch Dam (Brodhead Tributaries Watershed Flood Retarding Dam PA-463; NID ID PA00814) and the Goose Pond Dam (Brodhead Tributaries Watershed Flood Retarding Dam PA-464; NID ID PA00812) for the purpose of reducing the potential of uncontrolled flooding within the Brodhead Tributaries Watershed. Rehabilitation of the Leavitt Branch Dam and Goose Pond Dam will likely include restoration efforts, including grading, and result in the construction of new structures and modifications to auxiliary spillway alignments. Rehabilitation efforts may increase Top of Dam (TOD) pool areas which are bounded by the dam structures and confining topography.

Report continues next page



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Note: Contour interval is 20 feet.

Project Location

GIS Services Accessed 10/8/2024: Environmental Systems Research Institute, Inc., World Street Map; USGS Historical Maps 1997

HARTGEN archeological associates inc

Map 1

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1.2 Area of Potential Effects (APE) & Area of Focus (AOF)

Two Areas of Potential Effect are included within the scope of the Project: The Leavitt Branch APE (Map 2-1 to Map 2-3), and the Goose Pond APE (Map 2-4 to Map 2-6). Both APEs encompass a modified 1-mile radius around centroid points for each the Leavitt Branch Dam and Goose Pond Dam. The 1-mile APE radii were modified to coincide with the viewshed imposed by the steep terrain of the region. Additionally, portions of the 100-year floodplain are included as part of the southernmost portions of the APEs in areas which extend below the dams to the confluence with Brodhead Creek in the unincorporated community of Canadensis within the central portion of Barrett Township. The two APEs are located east and west of one another; however, a portion of overlap occurs encompassing an area of approximately 104 acres.

Boundaries determining the Area of Focus (AOF) were defined for each dam within the Leavitt Branch and Goose Pond APE. The AOF boundaries define the existing limits of previous construction associated with the dams combined with the Top of Dam (TOD) reservoir pool areas. The limits of construction were estimated based on reviewing As-Built plans (Appendix 1) for each of the dams along with georeferenced historical imagery showing areas of tree clearing, grubbing, and soil disturbance (Figure 1 & 2). The TOD pool areas describe the maximum area of inundation within the reservoir area as defined by the height of the dams, auxiliary spillways, and the bounding topography of the landscape. Each AOF describes the total area of impact associated with the construction of the dams in their present forms.

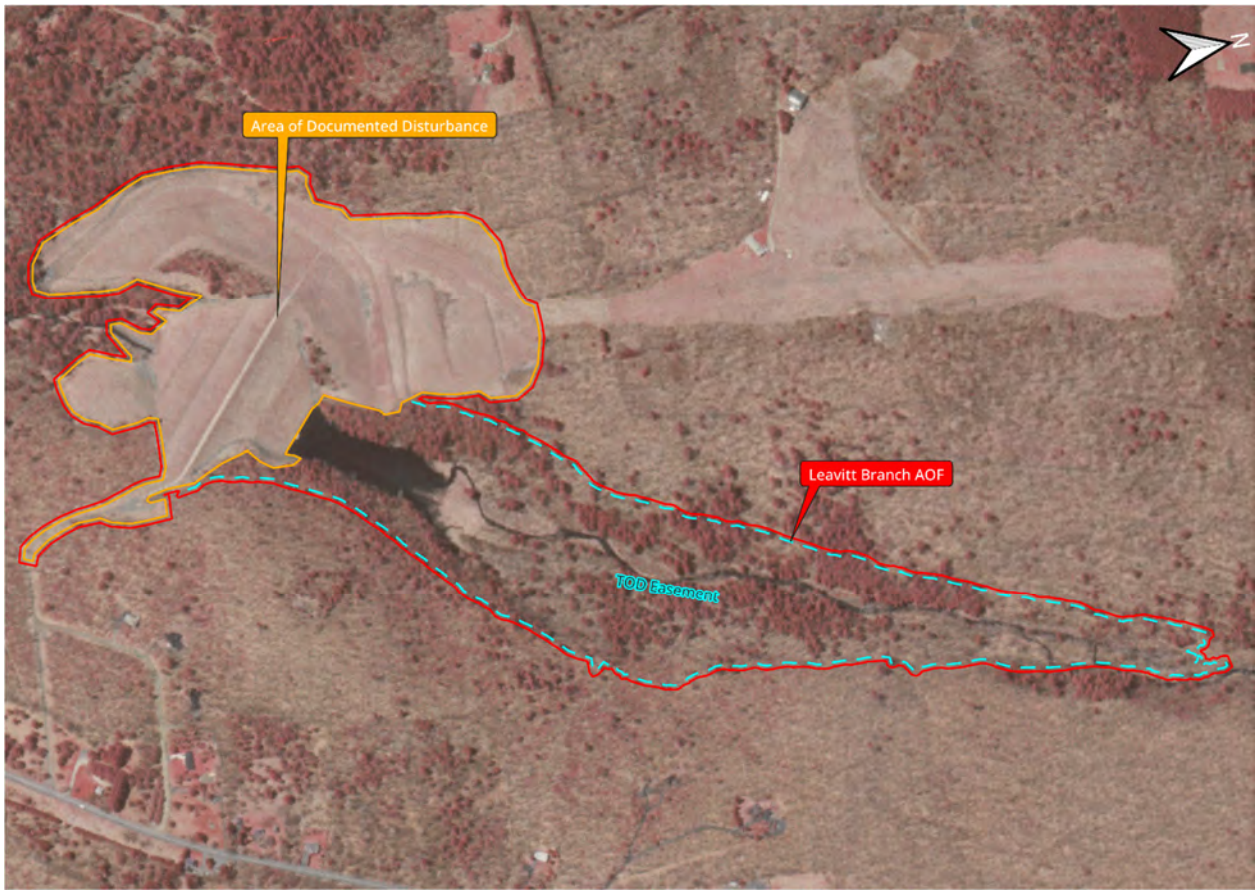


Figure 1. 1981 aerial image showing Leavitt Branch AOF comprised of Top of Dam (TOD) Easement and area of previous documented disturbance.

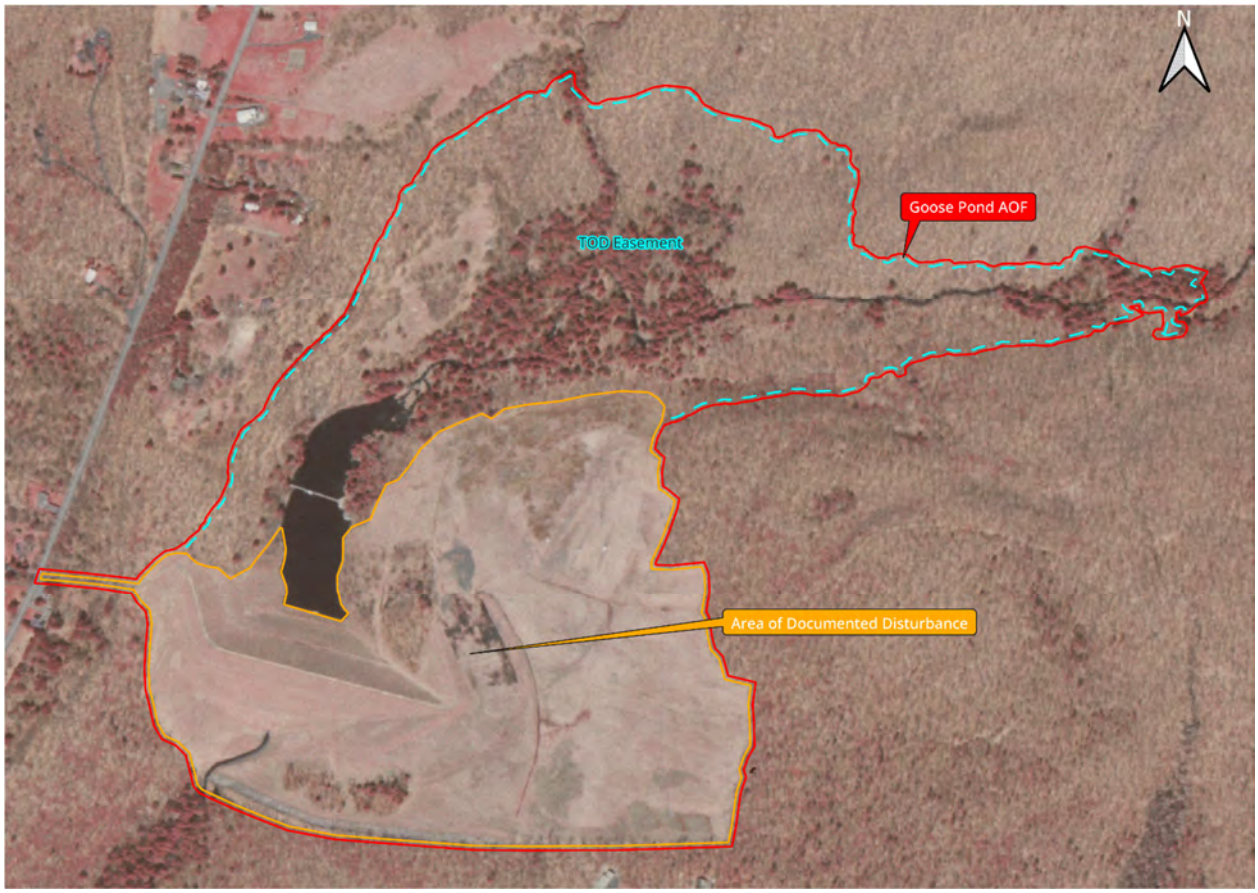


Figure 2. 1981 aerial image showing Goose Pond AOF comprised of Top of Dam (TOD) Easement and area of previous documented disturbance.

1.2.1 Leavitt Branch APE & AOF

The Leavitt Branch Dam APE is centered on the Leavitt Branch Dam and encompasses 789.06 acres. The Leavitt Branch APE encompasses a large portion of the Leavitt Branch watershed including portions of the watershed where the Leavitt Branch Creek supplies the Leavitt Branch Dam and outlets south of the impounding structure. A portion of the Leavitt Branch 100-year floodplain is included within the southern portion of the APE. The portion of the 100-year floodplain encompasses parts of Middle Branch Brodhead Creek, and Buck Hill Creek.

The Leavitt Branch AOF encompasses areas of documented disturbance associated with the dam's construction along with the potential TOD pool area totaling approximately 73 acres. The area of documented disturbance associated with construction is noted within the southern portion of the AOF which includes the earthen dam structure, auxiliary spillway, and borrow area. Rehabilitation efforts were carried out in 1986 resulting from the formation of a sinkhole on the downstream slope of the dam. Further repairs were made in 2007 resulting from the dam's spillway being activated due to heavy rains the previous year, causing erosion in the southern portion of the spillway. Repair work included backfilling and grading of the eroded area, installation of erosion control matting (ECM), construction of a rock-lined toe drain, and revegetation of disturbed areas. A review of the undertakings finds that all work was completed within the Leavitt Branch AOF. The TOD pool area is defined by the crest of the dam, auxiliary spillway, and steep mountainous terrain through which the Leavitt Branch flows.

1.2.2 Goose Pond APE & AOF

The Goose Pond APE is centered upon the Goose Pond Dam and encompasses 954.94 acres. The Goose Pond APE primarily encompasses a large portion of the Goose Pond watershed including portions of the

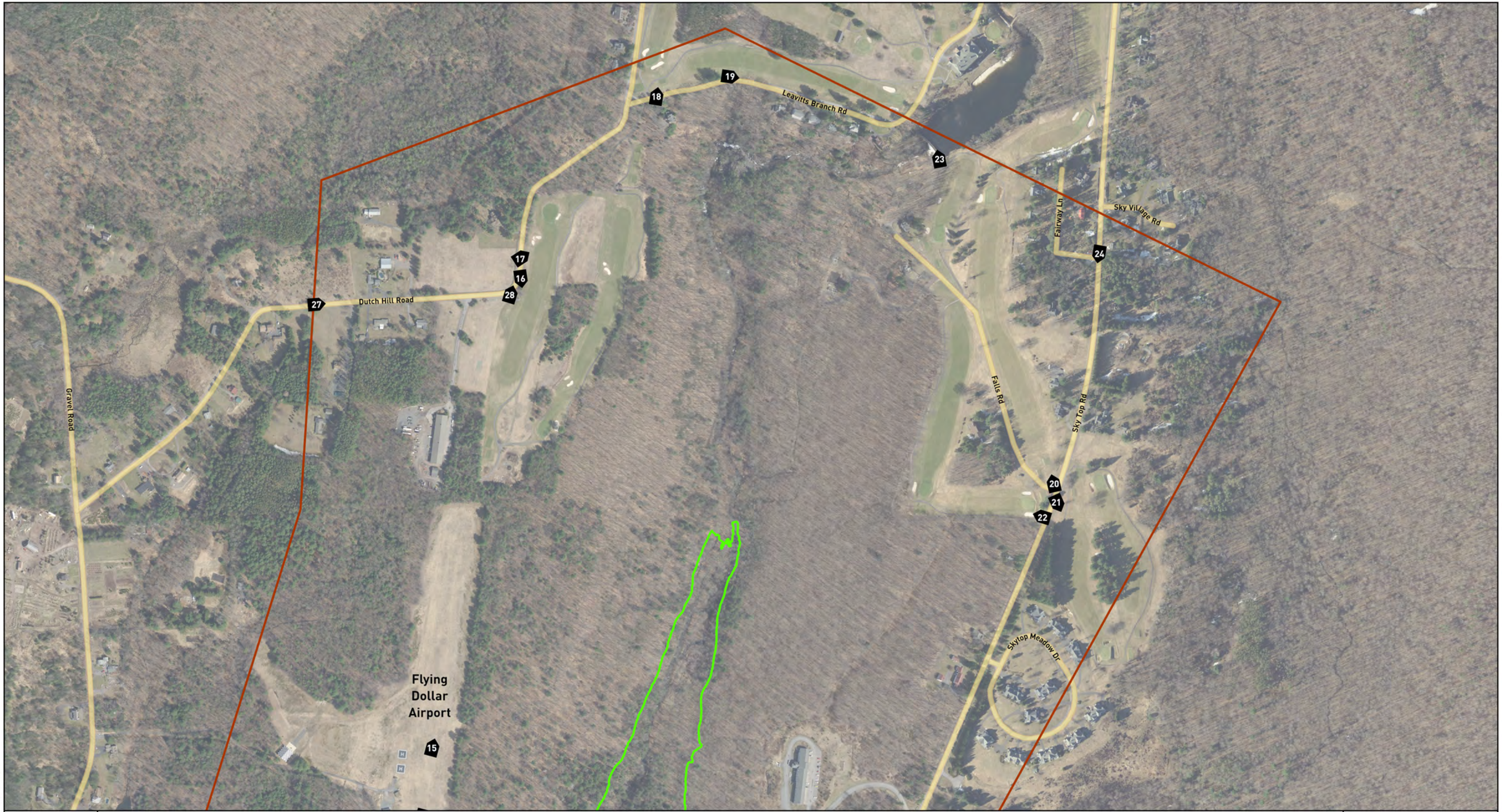
watershed where the Goose Pond Run supplies the Goose Pond Dam and outlets south of the impounding structure. A portion of the Goose Pond 100-year floodplain is included within the southern portion of the APE. The portion of the 100-year floodplain encompasses the Goose Pond Creek within the unincorporated community of Canadensis and terminates where the historic floodplain meets Pennsylvania Route 447.

The Goose Pond AOF encompasses areas of documented disturbance associated with the dam's construction along with the potential TOD pool area totaling approximately 135.5 acres. The area of documented disturbance associated with construction is noted within the southern portion of the AOF which includes the earthen dam structure, auxiliary spillway, and a borrow area. The TOD pool area is defined by the crest of the dam, auxiliary spillway, and steep mountainous terrain through which the Goose Pond flows. Flat floodplain areas with alluvial soils were noted along Goose Pond within the AOF toward its eastern extent.

1.3 Date of Survey

A pedestrian survey for the Project was conducted by Jesse Pagels on May 23rd, 2024. Matthew Kirk was the Principal Investigator and Jesse served as the report's author.

Report continues next page



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Legend

- Photo Angle
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Project Map - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 2-1

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- Photo Angle
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Project Map - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 2-2

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Photo Angle

Area of Potential Effects (APE)

Project Map - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 2-3

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Area of Potential Effects (APE)

Area of Focus (AOF)

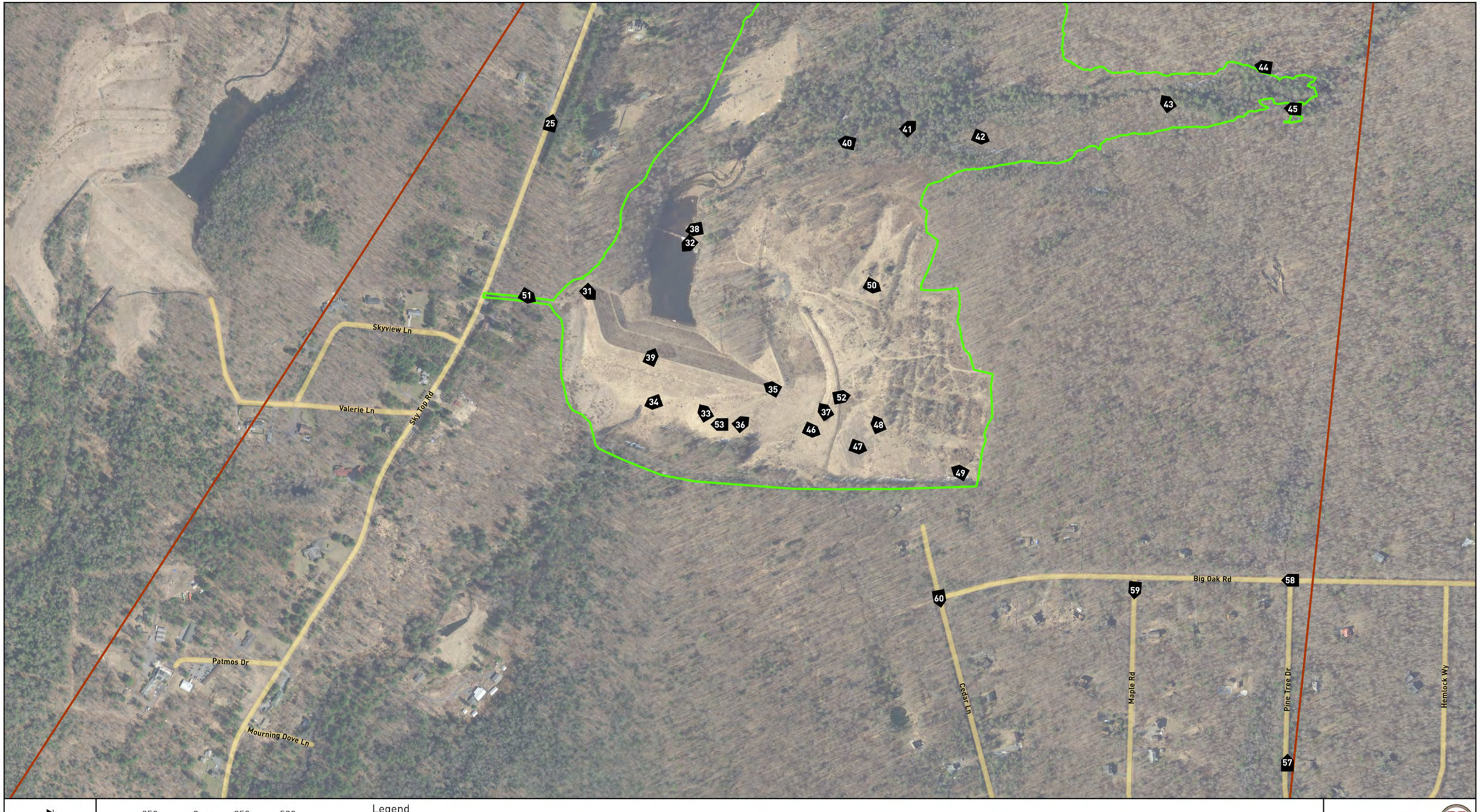
Project Map - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 2-4

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Legend

- Photo Angle
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Project Map - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

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Map 2-5

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Legend

Photo Angle

Area of Potential Effects (APE)

Project Map - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

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Map 2-6

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2 Project Location and General Description

2.1 Project Location

The Project is located centrally within Barrett Township, Monroe County, Pennsylvania.

2.2 Physiographic Description

The Project's APE is located within Pennsylvania's Poconos Mountain region which is part of a glaciated low plateau within the Appalachian Plateaus physiographic province. The dominant topographic forms are rounded hills and valleys with sandstone, siltstone, and shale being the underlying rock types. The topography of the region was formed as the result of fluvial and glacial erosion and glacial deposition (DCNR 2000).

2.2.1 Soils

Soil surveys provide a general characterization of the types and depth of soils that are found in an area. This information is an important factor in determining the appropriate methodology if, and when, a field study is recommended. The source of this data is the Soil Survey Geographic (SSURGO) Database, maintained by the Natural Resources Conservation Service, United States Department of Agriculture (2018). The soil types present within the Leavitt Branch APE are shown on Map 3. The soil types present within the Goose Pond APE are shown on Map 4.

2.2.2 Leavitt Branch APE

Floodplain, poorly drained soils, and alluvial soils are present within the Leavitt Branch APE in areas within proximity to the Leavitt Branch and associated historic floodplain within the unincorporated community of Canadensis. Alluvial (As) soils and soils associated with floodplain landforms (Po and Pp) are closely associated with the Leavitt Branch Creek which traverses the length of the Leavitt Branch APE. The alluvial soils are primarily located within the southernmost portion of the APE within the Leavitt Branch historic floodplain. Alluvial soils are characterized by flat expanses of deep silt and loam soil deposits found along streams and floodplains. These landforms were often favored by precontact indigenous populations throughout the Northeast and have the potential for locating deeply buried archaeological resources.

Poorly drained soils (MgB and MoB) are located within the westernmost portion of the Leavitt Branch APE and are associated with the Middle Branch Brodhead Creek which flows into the Leavitt Branch 0.4 miles south of the Leavitt Branch dam.

Disturbed soils within the Leavitt Branch APE are noted primarily in association with the built environment of the landscape. Large-scale soils disturbances are associated with the presence of the Leavitt Branch Dam, the Flying Dollar Airport (see Section 2.4.1), and the southern portion of the Skytop Lodge 18-hole golf course (see Sections 2.4.1). Disturbed soils associated with the Levitt Branch Dam are found within the original limits of construction (LOC) as referenced by the dam's As-Built plans (Appendix 1). The plans note that two borrow areas were utilized within the LOC—one directly north of the present spillway, and one south of the earthwork dam structure. Other disturbances within the LOC include the earthwork dam structure and the auxiliary spillway.

Soils within proximity of the Leavitt Branch Dam are noted to be channery loams associated with steep hill and mountainous landforms. The landscape encompassing Leavitt Branch Dam has witnessed large-scale disturbances owing to the dam's original construction. Likely undisturbed alluvial soils are noted immediately south of the dam structure along the Leavitt Branch Creek exiting the impounded body of water.

2.2.3 Goose Pond APE

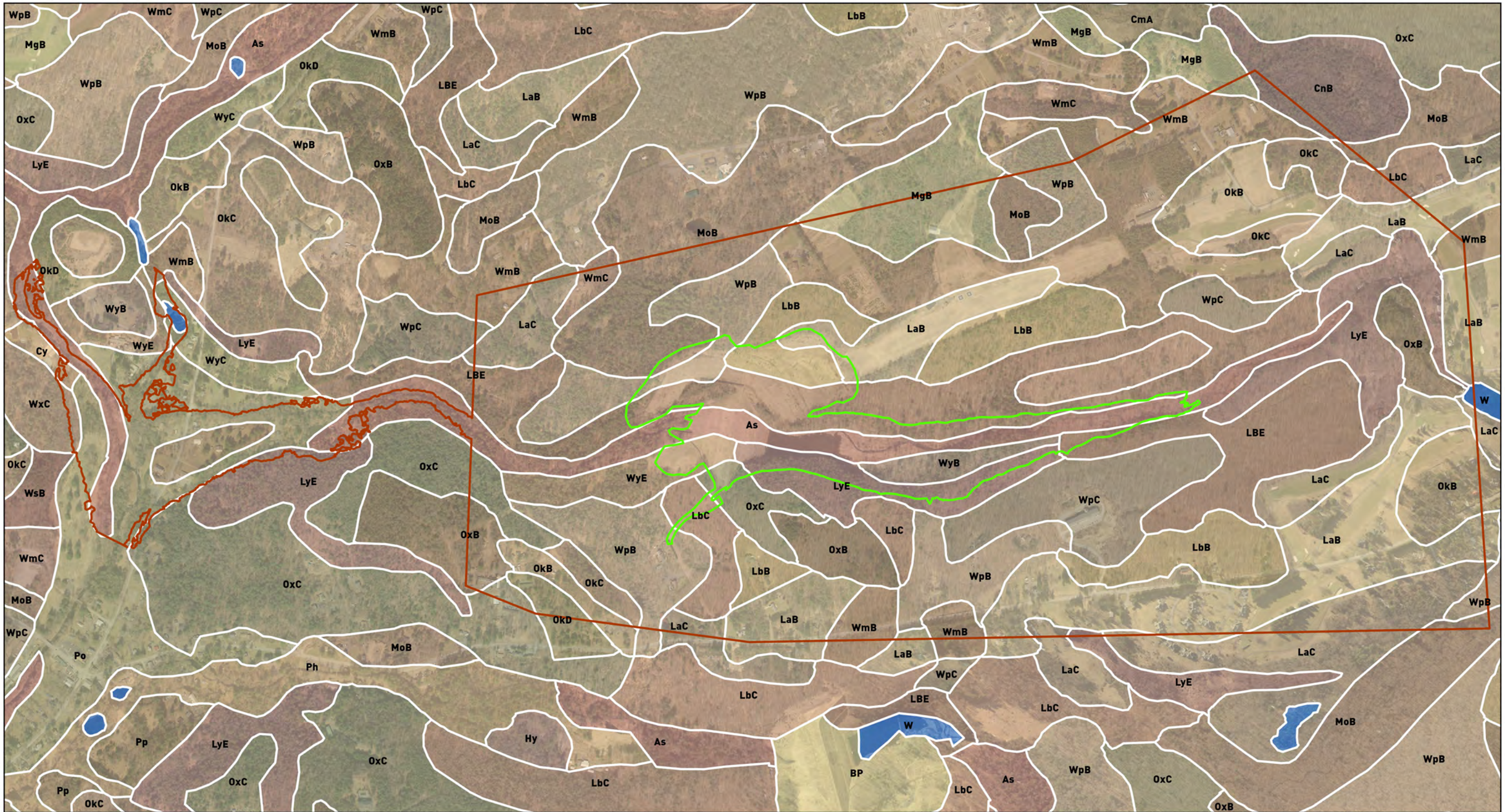
Alluvial floodplain and poorly drained soils are present within Goose Pond APE in areas primarily associated with Goose Pond which spans the length of the Goose Pond APE. Alluvial soils (AS) and poorly drained floodplain soils (Hy, Po, and Pp) are present north and south of the Goose Gond Run Dam. Other poorly

drained soils (CnB, Mob, and MoC) associated with depressions and toe slopes of hill and mountainous topography are noted within the APE's periphery within the Goose Pond watershed.

Disturbed soils within the Goose Pond APE are primarily in association with the built environment of the landscape. The construction of the Goose Pond Dam located centrally within the APE has witnessed large-scale soil disturbances. Disturbed soils associated with the Goose Pond Dam are found within the original limits of construction (LOC) as referenced by the dam's As-Built plans (Appendix 2). The plans note that two borrow areas were utilized within the LOC—one directly north of the present spillway, and one south of the earthwork dam structure. Noted disturbances associated with the dam include the dam earthwork structure, auxiliary spillway, and a borrow area. Portions of the Skytop golf course are located within the northern portion of the Goose Pond APE and likewise represent large-scale soil disturbances within the APE.

Soils within proximity of the Goose Pond Dam are noted to be channery loams associated with steep hill and mountainous landforms. Immediately northeast of the dam, along the Goose Pond Run, a flat expanse of alluvial soils is present making up portions of the creek's floodplain.

Report continues next page



400 0 400 800 Feet

120 0 120 240 Meters

Legend

- Area of Potential Effects (APE)
- Area of Focus (AOF)

Soil Map - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020; U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic Database 2022

HARTGEN archeological associates inc

Map 3

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Soil Map - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020; U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic Database 2022

HARTGEN archeological associates inc

Map 4

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Table 1. Soils within the Leavitt Branch Dam and Goose Pond Dam APEs

Symbol	Name	Depth	Textures	Slope	Drainage	Landform
As	Alluvial land	0 to 6 inches	Sandy loam	0 to 3%	Moderately well drained	Flood plains
		6 to 42 inches	Sandy loam			
		42 to 60 inches	Gravelly silt loam			
BP	Borrow pit	NA	NA	NA	NA	NA
CnB	Chippewa and Norwich	0 to 5 inches	Channery silt loam	0 to 8%	Poorly drained	Depressions, downslopes, and base slopes
		5 to 15 inches	Channery silt loam			
		15 to 45 inches	Channery silt loam			
		45 to 72 inches	Channery silt loam			
Cy	Cut and fill	NA	NA	NA	NA	NA
Hy	Holly silt	0 to 8 inches	Silt loam	0 to 3%	Poorly drained	Depressions on floodplains and backswamps
		8 to 28 inches	Very fine sandy loam			
		28 to 41 inches	Loam			
		41 to 60 inches	Stratified gravelly and sand to silt loam			
LaB	Lackawanna channery loam	0 to 7 inches	Channery loam	2 to 8%	Well drained	Mountains and hills
		7 to 17 inches	Channery loam			
		17 to 26 inches	Channery loam			
		26 to 60 inches	Channery loam			
		60 to 72 inches	Very channery loam			
LaC	Lackawanna channery loam	0 to 7 inches	Channery loam	8 to 15%	Well drained	Mountains and hills
		7 to 17 inches	Channery loam			
		17 to 26 inches	Channery loam			
		26 to 60 inches	Channery loam			
		60 to 72 inches	Very channery loam			
LbB	Lackawanna channery loam	0 to 3 inches	Channery loam	0 to 8%	Well drained	Mountains and hills
		3 to 17 inches	Channery loam			
		17 to 26 inches	Channery loam			
		26 to 60 inches	Channery loam			
		60 to 72 inches	Very channery loam			
LbC	Lackawanna channery loam	0 to 3 inches	Channery loam	8 to 25%	Well drained	Mountains and hills
		3 to 17 inches	Channery loam			
		17 to 26 inches	Channery loam			
		26 to 60 inches	Channery loam			
		60 to 72 inches	Very channery loam			
LBE	Lackawanna and Bath	0 to 3 inches	Channery loam	25 to 70%	Well drained	Mountains and hills
		3 to 17 inches	Channery loam			
		17 to 26 inches	Channery loam			
		26 to 60 inches	Channery loam			
		60 to 72 inches	Very channery loam			
LyE	Lordstown and Oquaga channery loams	0 to 4 inches	Channery highly organic loam	25 to 70%	Well drained	Mountains and hills
		4 to 17 inches	Channery loam			
		17 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
MgB	Morris channery silt loam	0 to 8 inches	Channery silt loam	2 to 10%	Somewhat poorly drained	Mountains and hills
		8 to 12 inches	Channery silt loam			
		12 to 16 inches	Channery silt loam			
		16 to 60 inches	Channery silt loam			
		60 to 70 inches	Channery loam			
MoB	Morris channery silt loam	0 to 5 inches	Channery silt loam	0 to 8%	Somewhat poorly drained	Mountains and hills
		5 to 12 inches	Channery silt loam			
		12 to 16 inches	Channery silt loam			

Symbol	Name	Depth	Textures	Slope	Drainage	Landform
		16 to 60 inches	Channery silt loam			
		60 to 70 inches	Channery loam			
MoC	Morris channery silt loam	0 to 5 inches	Channery silt loam	8 to 25%	Somewhat poorly drained	Mountains and hills
		5 to 12 inches	Channery silt loam			
		12 to 16 inches	Channery silt loam			
		16 to 60 inches	Channery silt loam			
		60 to 72 inches	Channery loam			
OkB	Oquaga-Lackawanna channery loam	0 to 7 inches	Channery loam	3 to 8%	Well drained	Mountains and hills
		7 to 15 inches	Very channery loam			
		15 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
OkC	Oquaga-Lackawanna channery loam	0 to 7 inches	Channery loam	8 to 15%	Well drained	Mountains and hills
		7 to 15 inches	Very channery loam			
		15 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
OkD	Oquaga-Lackawanna channery loam	0 to 7 inches	Channery loam	15 to 25%	Well drained	Mountains and hills
		7 to 15 inches	Very channery loam			
		15 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
OxB	Oquaga-Lackawanna complex	0 to 5 inches	Channery highly organic loam	0 to 8%	Well drained	Mountains and hills
		5 to 15 inches	Very channery loam			
		15 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
OxC	Oquaga-Lackawanna complex	0 to 5 inches	Channery highly organic loam	8 to 25%	Well drained	Mountains and hills
		5 to 15 inches	Very channery loam			
		15 to 24 inches	Very channery loam			
		24 to 30 inches	Extremely channery loam			
Ph	Philo silt loam	0 to 10 inches	Silt loam	0 to 3%	Moderately well drained	Flood plains
		10 to 40 inches	Fine sandy loam			
		40 to 60 inches	Gravelly fine sandy loam			
Po	Pope silt loams	0 to 10 inches	Silt loam	0 to 3%	Well drained	Flood plains
		10 to 30 inches	Silt loam			
		30 to 60 inches	Loamy very fine sand			
Pp	Pope silt loams, high bottom	0 to 10 inches	Silt loam	0 to 3 %	Well drained	Flood plains
		10 to 30 inches	Silt loam			
		30 to 60 inches	Loamy very fine sand			
W	Water	NA	NA	NA	NA	NA
WmB	Wellsboro channery loam	0 to 8 inches	Channery loam	3 to 8%	Moderately well drained	Mountains and hills
		8 to 22 inches	Channery loam			
		22 to 55 inches	Channery loam			
		55 to 72 inches	Very channery loam			
WmC	Wellsboro channery loam	0 to 8 inches	Channery loam	8 to 15%	Moderately well drained	Mountains and hills
		8 to 22 inches	Channery loam			
		22 to 55 inches	Channery loam			
		55 to 72 inches	Very channery loam			
WpB	Wellsboro	0 to 8 inches	Channery loam	0 to 8%	Moderately	Mountains and

Symbol	Name	Depth	Textures	Slope	Drainage	Landform
	channery loam	8 to 22 inches	Channery loam		well drained	hills
		22 to 55 inches	Channery loam			
		55 to 72 inches	Very channery loam			
WpC	Wellsboro channery loam	0 to 8 inches	Channery loam	8 to 25%	Moderately well drained	Mountains and hills
		8 to 22 inches	Channery loam			
		22 to 55 inches	Channery loam			
		55 to 72 inches	Very channery loam			
WsB	Wurtsboro channery loam	0 to 3 inches	Channery loam	8 to 25%	Moderately well drained	Mountains and Hills
		3 to 22 inches	Channery loam			
		22 to 55 inches	Channery loam			
		55 to 72 inches	Very channery loam			
WxC	Wurtsboro extremely stony loam	0 to 8 inches	Channery loam	8 to 25%	Moderately well drained	Hills
		8 to 21 inches	Gravelly loam			
		21 to 60 inches	Gravelly sandy loam			
WyB	Wyoming gravelly sandy loam	0 to 7 inches	Gravelly sandy loam	3 to 8%	Somewhat excessively drained	Terraces
		7 to 25 inches	Very gravelly sandy loam			
		25 to 60 inches	Extremely gravelly coarse sand			
WyC	Wyoming gravelly sandy loam	0 to 7 inches	Gravelly sandy loam	8 to 15%	Somewhat excessively drained	Terraces
		7 to 25 inches	Very gravelly sandy loam			
		25 to 60 inches	Extremely gravelly coarse sand			
WyE	Wyoming gravelly sandy loam	0 to 8 inches	Very gravelly sandy loam	25 to 70%	Somewhat excessively drained	Terraces
		8 to 26 inches	Very gravelly sandy loam			
		26 to 60 inches	Stratified sand to very gravelly loamy sand			

2.2.4 Bedrock Geology

According to the Geologic Map of Pennsylvania, the bedrock within the Goose Pond and Leavitt Pond APEs is part of the Catskill Formation ((Socolow 1980)). The major lithic constituents of the Catskill Formation are sandstones, siltstones, and mudstones. The Catskill Formation is not a chert-bearing formation. There are no known bedrock outcrops within the two APEs.

2.2.5 Hydrography

2.2.5.1 Leavitt Pond APE

The primary hydrographic feature within the Leavitt Branch APE is the Leavitt Branch Dam (PA-463), a 1.67 acre freshwater pond habitat classified as being palustrine, having an unconsolidated shore, and is seasonally flooded (PUSC) (USFWS 2024a). The Leavitt Branch Dam is within the Leavitt Branch watershed and is a result of impounding Leavitt Branch Creek which flows south from Mountain Lake located approximately 1.67 miles upstream and north of the dam. The Leavitt Branch outlets the Leavitt Branch Dam to the confluence of the Middle Branch Brodhead Creek and Buck Hill Creek, forming the main branch of Brodhead Creek approximately 1.05 miles to the south. Brodhead Creek ultimately outlets into the Delaware River approximately 22 miles to the southeast.

2.2.5.2 Goose Pond APE

The primary hydrographic feature within the Goose Pond APE is the Goose Pond Dam (PA-464), a 5.08 acre freshwater pond habitat classified as being palustrine, having an unconsolidated shore, and is seasonally flooded (PUSC) (USFWS 2024b). The Goose Pond Dam is within the Goose Pond watershed and is a result of impounding Goose Pond Creek which flows south from a series of ponds (Goose Pond and Ransberry Pond) located approximately 2 miles northeast. The Goose Pond Creek outlets the Goose Pond Dam to the south where it runs approximately 1.7 miles in a southwesterly direction and drains into Brodhead Creek.

2.3 Present Land Use Patterns

2.3.1 Leavitt Branch APE

Six land use patterns are noted within the Leavitt Branch APE, and include the management of the Leavitt Branch Dam, residential habitation, places of religious practice, operation of commercial businesses, air travel transportation, and outdoor recreation.

Numerous residential structures are located throughout the APE, with most being located toward the eastern, southern, and western portions of the APE. A survey of the area noted that many of the residential structures are operated as seasonally occupied rental vacation homes and cabins.

Three places of religious worship are noted within the Leavitt Branch APE. Located primarily within the southern portion of the APE, these include St. Michaels Ukrainian Orthodox Church, Chabad Yeshiva of Poconos, and St. John the Beloved Monastery Patmos.

Commercial interests within the APE are located primarily in the western portion of the APE, along Dutch Hill Rd. These include the Pocono Rabbit Farm and Lab and Dutch Hill Preserves.

An airport is operated within the western portion of the APE, immediately northwest of the Leavitt Branch Dam. The airport is privately operated and can accommodate small personal aircraft, including helicopters. The landing strip consists of an unpaved grass runway 0.45 miles in length.

The northern portion of the APE includes portions of Skytop Lodge's 18-hole golf course. The Skytop Lodge is an historic vacation destination and represents a major component of the outdoor vacation tourism in the area.

2.3.2 Goose Pond APE

Five land use patterns are noted within the Goose Pond APE and include the management of the Goose Pond Dam, residential habitation, places of religious practice, operation of commercial businesses, and outdoor recreation.

Private residences are located primarily within the southern and eastern portions of the Goose Pond APE. A small residential community is noted within the eastern portion of the APE consisting of homes along Birch Rd., Pine Tree Dr., Big Oak Rd., Maple Rd., and Cedar Ln. Within the northern portion of the APE a small cluster of homes are located immediately adjacent to the southernmost portion of Skytop Lodge's 18-hole golf course.

Two places of religious practice are located within the Goose Pond APE. Located primarily within the southern portion of the APE, these include Am Echad Poconos Shul, and St. John the Beloved Monastery Patmos.

Commercial properties are largely found within the southern portion of the APE near the intersection of Krummel Hill Rd. and Creek Rd. Businesses within the APE consist of Linder Engineering, a laundromat, Exton Automotive, and the First Place Café.

Areas associated with hospitality and outdoor recreation are noted throughout the APE. Businesses offering lodging and hospitality services include the Leavitt Lodge, Pump House Inn and Spa, Frogtown Inn Bed and

Breakfast, and the Magnolia Streamside Resort. Portions of Skytop Lodge's 18-hole golf course are noted within the northernmost portions of the APE. Seasonal hunting grounds likewise make up areas of recreation within the APE.

2.4 Description of Current Conditions

2.4.1 Leavitt Branch APE

The Leavitt Branch APE encompasses the entirety of the Leavitt Branch Dam. The Leavitt Branch Dam is comprised of an earthen dam structure (Photos 1 & 2) with a principal spillway riser (Photo 3) with waters from the Leavitt Branch exiting the dam on its southern side (Photo 4). The dam's pool area is bounded on each side—east and west—with steep wooded natural embankments provided by the mountainous topography of the region (Photo 5). The crest of the dam was constructed in a NW–SE orientation (Photo 6). An auxiliary spillway wraps around the north and west portions of the dam, connecting from the dam's pool area, and exiting into the Levitt Branch on the dam's south side (Photos 7–9). Large-scale soil disturbances were noted around the dam's structural components. A terraced borrow area was noted immediately adjacent to the auxiliary spillway's northernmost boundary (Photos 10 & 11). A mounded earthen body, forming part of the dam's abutment contact, was noted immediately adjacent to the dam's structure on the south side along the east bank of the Leavitt Branch Creek (Photo 12). Restricted Access to the dam is provided by a gravel access road with a locked gate near the western end of Valerie Ln. (Photo 13).

Two of the more notable features of the landscape within the northern half of the Leavitt Branch APE include the Flying Dollar Airport and portions of the Skytop Lodge 18-hole golf course. The Flying Dollar Airport is located immediately adjacent to the borrow area associated with the construction of the Leavitt Branch Dam. The airport's runway has a north-to-south orientation and is comprised of a flat expanse of level grass (Photos 14 & 15). The runway measures approximately 0.46 miles in length, 300 feet in width.

Portions of Skytop Lodge's recreational facilities are located with the northern portion of the APE. As many as eleven holes are entirely or partially within the bounds of the APE, representing approximately half of the golf course's playable area (Photos 16–22). Portions of Skytop Lodge's Swimming Lake, an impounded waterbody along the Leavitt Branch, is also within the northernmost boundary of the APE. The artificial lake is impounded by a stone and concrete structure designed to allow the lake's water to cascade down its downstream slope (Photo 23).

Municipal infrastructure, residential and commercial structures, and places of religious practice are noted throughout the APE. Kummel Hill Rd. (PA Route 390) is one of the primary thoroughfares represented within the APE (Photos 24 & 25). Other roads within the APE include Creek Rd. (Photo 26) and Dutch Hill Rd. (Photos 27 & 28). A bridge—PA 447 (LR 458) over Leavitt Branch; BIN 26859—along Creek Rd., immediately east of Dutch Hill Rd., is within the boundary of the Leavitt Branch APE (Photo 29). The bridge spans Leavitt branch (Photo 30) which forms a confluence with Buck Hill Creek approximately 700 feet to the southeast. Roads associated with private residences were encountered throughout the APE but were not surveyed due to restricted access. Residential housing and resort lodging are noted within proximity of the golf course links along Kummel Hill Rd. within the northern portion of the APE. Another residential area is noted within the southernmost portion of the APE along PA Route 447.



Photo 1. View of Leavitt Branch Dam (18N 479217 4561748) showing downstream slope portion of dam structure, facing north .



Photo 2. View of downstream slope of Leavitt Branch Dam (18N 479158 4561968), facing SE. Note, rounded mounded body near the dam's abutment contact appears to be associated with the dam's construction.



Photo 3. Northeast-facing view of the Leavitt Branch Dam impounded water body showing the dam's principal spillway riser (18N 479301 4561944).



Photo 4. View of Leavitt Branch Dam's principal spillway outlet at toe of dam (18N 479167 4561788), facing northeast.



Photo 5. Northeast-facing view of Leavitt Branch Dam's impounded waterbody (18N 479248 4561888). Note steeply sloped terrain east and west of dam's forming portions of the dam's potential pool area.



Photo 6. Northwest-facing view showing crest of Leavitt Branch Dam (18N 479336 4561807).



Photo 7. View of Leavitt Branch Dam's auxiliary spillway, facing west (18N 479290 4562038).



Photo 8. View of Leavitt Branch Dam's auxiliary spillway, facing southwest (18N 479119 4562003).



Photo 9. View of Leavitt Branch Dam's auxiliary spillway, facing southeast (18N 479028 4561871).



Photo 10. North-facing view of terraced borrow pit area immediately north of Leavitt Branch Dam's auxiliary spillway (18N 479176 4561953).



Photo 11. View of Leavitt Branch Dam's terraced borrow pit area showing portion of the dam's auxiliary spillway, facing southwest (18N 479248 4562172).



Photo 12. Southeast-facing view of Leavitt Branch Dam's downstream slope showing earthen mounded body constructed near the dam's contact abutment (18N 479187 4561834).



Photo 13. North-facing view of utility road to Leavitt Branch Dam accessed from Valerie Ln (18N 479357 4561696).



Photo 14. View of Fly Dollar's landing strip and runway (18N 479278 4562502), facing south.



Photo 15. View of Flying Dollar's landing strip and runway (18N 479298 4562617), facing north.



Photo 16. View of Skytop Lodge's golf course showing seventh fairway (18N 479467 4563376), facing south.



Photo 17. View of Skytop Lodge's golf course showing seventh fairway and green (18N 479469 4563412), facing northeast.



Photo 18. North-facing view of Skytop Lodge's golf course (18N 479698 4563667) showing portion of the sixth and nineth fairways.



Photo 19. East-facing view showing Leavitts Branch Rd. and Skytop Lodge's golf course (18N 479819 4563695).



Photo 20. Northwest-facing view of Skytop Lodge's golf course (18N 480325 4563016) showing 15th tee and fairway.



Photo 21. Southeast-facing view of Skytop Lodge's golf course (18N 480331 4562982) showing portion of the 13th fairway.



Photo 22. West-facing view of Skytop Lodge's golf course (18N 480309 4562980) showing 12th green and fairway.



Photo 23. View of Skytop Lodge Swimming Lake impoundment facing north (18N 480155 4563551).



Photo 24. View of Krummel Hill Rd. (PA Rte. 390) near north extent of Leavitt Branch APE (18N 480411 4563386), facing south.



Photo 25. North-facing view of Krummel Hill Rd. (PA Rte. 390) near easternmost extent of Leavitt Branch APE (18N 479910 4562053).



Photo 26. Southeast-facing view of Creek Rd. (PA Rte. 447) within southernmost portion of Leavitt Branch APE (18N 478472 4560687).



Photo 27. East-facing view of Dutch Hill Rd. within northwest extent of Leavitt Branch APE. (18N 479133 4563345)



Photo 28. North-facing view of Dutch Hill Rd. alongside Skytop Lodge's eighth fairway. (18N 479454 4563359)



Photo 29. Northeast-facing photo showing bridge—PA 447 (LR 458) BIN 26859—spanning Leavitt Bridge along Creek Rd. Bridge constructed ca. 1995 (18N 478425 4560702).



Photo 30. View of Leavitt Branch south along west bank, facing south (18N 478413 4560682).

2.4.2 Goose Pond APE

The Goose Pond APE encompasses the entirety of the Goose Pond Dam. The Goose Pond Dam is comprised of an earthen dam structure (Photos 31–33) and a principal spillway riser with waters from the Goose Pond exiting the dam on its southern side (Photo 34). The crest of the dam was constructed in WNW–ESE orientation with the western portion of the crest changing its angle toward the northwest (Photo 35). An auxiliary spillway was constructed on the dam's eastern side allowing waters from the dam's pool area to drain into the Goose Pond along its eastern bank (Photos 36 & 37). Portions of an earlier dam structure (18N 480110 4561862) were noted within the dam's pool area (see Section 3.2.4). The earlier, and now defunct dam was of concrete design and spanned approximately 220 feet crossing Goose Pond (Photo 38). The present dam's pool area is bound by steep slopes of mountainous terrain to the west, with more subdued sloping terrain to the east (Photo 39). A survey of the dam's potential TOD pool area noted pooling waters have the potential to extend into a flat expanse of forested area comprising portions of Goose Pond's floodplain (Photos 40–45).

Large-scale soil disturbances associated with the dam include the dam's structural components. A survey of the dam noted soil disturbing activities immediately east of the dam where the area had been used as a borrow pit for the construction of the earthen dam structure (Photos 46–49). Stripped topsoil and areas of exfoliating bedrock were observed during field reconnaissance efforts (Photo 50). Restricted Access to the dam is provided by a gravel access road with a locked gate off Krummel Hill Rd. (Photo 51)

Portions of the APE are noted to be used for recreational purposes. Two links of Skytop Lodge's golf course are within the APE's northwestern boundary (Photo 21; see Section 2.4.1). Additionally, and not associated with the Skytop Lodge, areas of recreational hunting were observed within portions of the landscape associated with the dam being used by the Deer Run Hunting Club. Areas of brushy vegetation had been cleared—primarily within dam's borrow pit area—for the purposes of deer and game hunting (Photos 52 & 53).

Much of the Goose Pond APE consists of residential housing and commercial interests—largely, but not solely, centering to the seasonal Poconos tourism industry. Krummel Hill Rd., one of the primary thoroughfares in the area, spans the length of the APE (Photo 24, see Section 2.4.1; Photos 54 & 55). The road traverses the APE from its northernmost point to the APE's southernmost point in central Canadensis. Residential homes and seasonally rented cabins were noted with access from Krummel Hill Rd. along the western border of the APE. A residential area was noted within the eastern portion of the APE with homes and rented cabins being constructed off Birch Rd., Pine Tree Dr., Maple Rd., Big Oak Rd., and Cedar Ln. (Photos 56–60).

Report continues next page



Photo 31. Southeast-facing view of Goose Pond Dam's upstream slope. Note impounded water body and principal spillway riser at base of upstream slope (18N 479965 4561768).



Photo 32. View of Goose Pond Dam's impounded water body and upstream slope, facing south. Photo location taken from remnant of earlier constructed dam no longer in service (18N 480136 4561852).



Photo 33. Northwest-facing view showing downstream slope of Goose Pond Dam (18N 480149 4561566).



Photo 34. Southwest-facing view of Principal spillway outlet with waters draining into Goose Pond at toe of dam (18N 480064 4561583).



Photo 35. View of crest of Goose Pond Dam, facing west. Note crest of dam changes direction toward the northwest approximately 900 feet from photograph's location (18N 480261 4561602).



Photo 36. Northeast-facing view of Goose Pond Dam's auxiliary spillway (18N 480211 4561546).



Photo 37. View of Goose Pond Dam's auxiliary spillway, facing northwest (18N 480348 4561561).



Photo 38. Southwest-facing view of early dam concrete structure constructed across Goose Pond (18N 480141 4561868). The early dam was documented having been constructed as early as the late 1930s (see Figure 7, Section 3.2.4).



Photo 39. North-facing view of Goose Pond Dam's impounded water body (18N 480065 4561660). Note area of steep terrain east and west of the impounded body forming portion of the dam's potential pool area.



Photo 40. West-facing view of Goose Pond showing floodplain with the dam's potential pool area (41.20917540, -75.23381313).



Photo 41. Northeast-facing view of Goose Pond and floodplain within the dam's potential pool area (18N 480504 4562026).



Photo 42. West-facing view of floodplain along the southern bank of Goose Pond within the dam's potential pool area (18N 480622 4562005).



Photo 43. View of Goose Pond facing northwest. Note areas of flat terrain forming portions of the run's floodplain (18N 480931 4562054).



Photo 44. West-facing view of floodplain along the north portion of Goose Pond. View shows area of high and moderate archaeological sensitivity as per Pennsylvania's Statewide Precontact Probability Model (18N 481092 4562108).



Photo 45. West-facing view of floodplain along the southern portion of Goose Pond. View shows area of high and moderate archaeological sensitivity as per Pennsylvania's Statewide Precontact Probability Model (18N 481139 4562036).



Photo 46. View of borrow area associated with construction of Goose Pond Dam, facing east (18N 480327 4561528).



Photo 47. East-facing view showing area with stripped topsoil within Goose Pond's borrow area (18N 480403 4561498). Note exfoliating bedrock exposed from stripping (photo right).



Photo 48. View of borrow area associated with construction of Goose Pond, facing northwest (18N 480435 4561537).



Photo 49. View from the easternmost extent of borrow area, facing west (18N 480567 4561453). Note portions of the borrow pit area are heavily overgrown with brushy vegetation.



Photo 50. View of Goose Pond borrow area showing exfoliating bedrock facing east (18N 480435 4561764).



Photo 51. East-facing view of gated utility road for Goose Pond Dam accessed from Krummel Hill Rd. (18N 479864 4561765).



Photo 52. East-facing view of Goose Pond Dam borrow area showing hunting blind (18N 480378 4561583
).



Photo 53. West-facing view of Goose Pond Dam's auxiliary spillway (18N 480173 4561544). Note hunting blind erected within the dam's spillway.



Photo 54. North-facing view showing Krummel Hill Rd. (PA Rte. 390) near the Goose Pond Dam APE's westernmost extent (18N 479109 4560608).



Photo 55. View of Krummell Hill Rd. (PA Rte. 390) near intersection with Creek Rd. (PA Rte. 447), facing northeast (18N 478884 4560133).



Photo 56. East-facing view showing Birch Rd. within eastern portion of Goose Pond Dam APE (18N 480718 4560684).



Photo 57. North-facing view showing Pine Tree Dr. within eastern extent of Goose Pond Dam APE (18N 481096 4560954).



Photo 58. West-facing view showing Big Oak Rd. within eastern extent of Goose Pond Dam Dam APE (18N 481110 4561256).



Photo 59. South-facing view showing Maple Rd. within eastern extent of Goose Pond Dam APE (18N 480852 4561247).



Photo 60. South-facing view showing Cedar Ln. within eastern extent of Goose Pond APE (18N 480529 4561243).

3 Background Research and/or Context

3.1 Regional Precontact Context

The precontact history of northeast Pennsylvania is generally divided into four major periods, the Paleo-Indian period, stretching from 10,500 BC to 7000 BC, the Archaic period, stretching from 7000 BC to 1000 BC, the Transitional period, stretching from 1000 BC to AD 1, and the Woodland period, stretching from AD 1 to AD 1600.

3.1.1 Paleo-Indian Period

The Paleo-Indian period is characterized by the retreat of the Wisconsin glacial formations and abutting environments of tundra or park-tundra, consisting primarily of coniferous forests. The Paleo-Indian peoples are typically thought to have hunted large mammals such as caribou or mastodon, but subsistence remains recovered from northeastern sites show that the people of the Paleo-Indian period exploited a wide range of food resources. Identified Paleo-Indian sites are generally camp sites and resource extraction sites including quarries and kill sites typified by stone tools (Funk 1978:16–27) however in the Susquehanna River Valley, there is little evidence of Paleo-Indian occupation. Finds from this period are generally restricted to isolated fluted points with the exception of the Shoop Site, located in Dauphin County, where fluted points and cutting and scraping tools, consistent with other Northeastern Paleo-Indian sites, were discovered (AHC 1990).

3.1.2 Archaic Period

The Archaic period is divided into Early (7000-5000 B.C.), Middle (5000-3000 B.C.), and Late Archaic (3000-1000 B.C.) periods. As a whole, this period is marked by an expansion of subsistence practices to include hunting, fishing, and gathering, all made possible by a diversifying environment in the wake of the retreating glaciers that supported deer, bear, elk, smaller mammals, birds, turtles, fish, and shellfish populations, as well as nuts, seeds, and other plant materials. The Middle Archaic period was marked by a continued northward shift of glacial cover and the tailing tundra zones. Increasingly diversified broadleaved forests consisting largely of oak and chestnut likewise continued to extend northward, representing a maturing of the forests as the conifer-dominated forests moved north ahead of them. Few Middle Archaic sites have been discovered in Pennsylvania, and as a result site data is sparse. Middle Archaic sites, which have been found, were seasonal occupation sites and short-term camps similar to those of the Early Archaic period. The Late Archaic period marked the first major expansion of the area's possible population by a still increasing carrying capacity as the forests continued to mature and diversify. In addition to this, the occupation sites during this period appeared to be of longer duration and in some cases are considered to be permanent or semi-permanent (Tuck 1978:28–43). Many more sites for this period are known in Pennsylvania than the preceding periods, and site collections reveal an expanded tool kit of generally higher quality than previously identified, and an expanded diet including a wide selection of wild seeds and nuts.

3.1.3 Transitional Period

Following the Archaic period, a transitional period that extended from 1000 BC to AD 1 was identified and distinguished by technological changes. These changes included the expanded use of rhyolite for fabrication of tools, the source of which is in the Reading Prong in southeastern Pennsylvania, the expanded use of soapstone, and the introduction of ceramics. The introduction of broadspear points associated with the use of atlatls also occurred during this period (AHC 1990:16).

3.1.4 Woodland Period

The Woodland period lasted from approximately 1000 BC to AD 1600 or the approximate time of contact with Europeans. This period is divided into three periods, the Early Woodland (1000 BC to AD 1), the Middle Woodland (AD 1 to AD 1000), and Late Woodland (1000 AD to 1600 AD). Several Early Woodland period sites have been located in the nearby Susquehanna Valley, though they are relatively rare compared with later periods, primarily due to the relatively few projectile point types associated with this period. Personal decorative

ornaments and tailored clothing appeared well established by the end of this period, and permanent pole framed structures were generally in use by this time. In addition, burials involving red ochre are also found dating to this period. The Middle Woodland period was characterized by a continued increase in overall population ultimately reaching its peak during this period. It is also during this time that populations who concentrated at specific settlement sites during the summer months reached their height and their subsistence practices began to move towards a horticulture-based strategy, though at this time, it was still a mixed acquisition pattern. The Late Woodland period is well-documented in Pennsylvania and is marked by a shift to permanent settlements with horticulture widely practiced, and ceramic design becoming increasingly complex (Fitting 1978:44–57).

Towards the end of the precontact period, a group of Native Americans later known as the Susquehannock established cultural and political hegemony over the northern tier of Pennsylvania, perhaps as early as the late 1400s AD in the upper Lackawanna River valley (Grumet 1995:424). Due to pressure from the growing Iroquois confederacy in New York, it appears the Susquehannock largely abandoned the northern tier of Pennsylvania and moved closer to the Chesapeake Bay in the late 16th century (Grumet 1995:425). Later Native American settlement included émigrés from the Delaware, Munsee, and Shawnee tribes as they fled westward through the area after the Susquehannock were routed by the Iroquois. Subsequently, the Susquehannock took shelter in nearby Maryland under the protection of the colonial government. In the 18th century, other emigrant groups such as the Tuscarora often settled in and around the valley creating refugee communities that began to interact with encroaching European settlers and missionaries. After the Revolutionary War, however, many remaining Native settlements removed from northern Pennsylvania and were forcefully relocated to the west, leaving the area open for further European settlement (Grumet 1995:429).

3.2 Historical Context

3.2.1 Monroe County and Barrett Township

Monroe County was created through the joining of Northampton and Pike counties on April 1st, 1836. Upon creation of the county, offers of donations in real estate and money were solicited to defray the expenses of the lands and buildings designated for public use (Rupp 1845:144). Israel D. Rupp, in his 1845 recorded history of Monroe County, states that by the time of his writing, the county was generally very mountainous and largely unsettled (Rupp 1845:147). Upon the county's creation, the few settlers present preferred to homestead in the southern portion of the county in the valley formed by the Delaware River and Brodhead Creek closer to the Pennsylvania–New Jersey border.

Barrett township, within Monroe County, was created in 1859 by combining portions of Price and Paradise townships. Prior to the creation of the township, the area was heavily wooded and attracted an early lumber industry (Mathews 1886:1262–1263). By the mid-1880s, approximately half the township had been deforested and utilized for cultivation. Late 19th-century industry within Barrett largely consisted of farming wherein produce and manufactured items were delivered by rail provided by the Delaware, Lackawanna, and Western Railroad which passed through south Barrett (Mathews 1886:1263). A tannery was operated within the village of Canadensis starting in 1847 but was shuttered in 1875 as the scarcity of bark in the region rendered the industry unprofitable (Mathews 1886:1267).

3.2.2 Vacationing in the Poconos

After the Civil War the United States witnessed a period of industrialization leading to the creation of large East Coast metropolises and a population of newly minted middle-class urbanites with the means to spend their surplus funds on travel and extended vacation stays in nearby popular destinations (Squeri 2002:15). Boarding houses and resort hotels sprung up in the last quarter of the 19th century wherever suitable locations could be found. These generally consisted of places with scenic natural vistas, such as sea sides, lakes, and mountainous forested regions and stood in stark contrast to the sprawling and cramped super cities of the day. Vacationing had become a national obsession, and summer getaways were marketed as healthy alternatives to the dangers associated with modern life. The clean seaside and mountain air of the distant countryside attracted the health-conscious metropolitan middle and upper classes who held real fears about the presence of deadly miasmas—the foundations on which 19th-century notions of health and hygiene were built upon.

Where New York socialites had ready access to the Catskill mountains for their summer resort vacation stays, the Poconos Mountain region of Pennsylvania was advantageously situated within reach of the large metropolises of the Northeast. The Poconos attracted 19th-century vacationers from Philadelphia and New York City, and from smaller burgeoning Pennsylvania cities, including Allentown, Bethlehem, Easton, and Lehigh Valley (Squeri 2002:15). While hotel, resort owners, and souvenir sellers tirelessly promoted the region to attract a new generation of city dwellers looking to reconnect with the wilderness they abandoned, it was the railroads which brought them there. As the network of railroads expanded throughout the Northeast, destinations like the Poconos Delaware Gap became immensely popular, drawing large crowds every summer.

3.2.3 Skytop Lodge

At the beginning of the 20th century, the well-established resorts of the 1900s faced a formidable challenge which few would overcome: the automobile. The automobile changed the way Americans vacationed by offering an unbridled freedom to set their eyes on destinations beyond the reaches that railroads could offer. In the 19th century, many popular vacation resorts relied on their proximity to the railroad for providing transportation to their hotels and attractions. With the rise of the automobile, however, modern Americans were free to seek out more remote, less crowded scenic vacation locales (Squeri 2002:99).

In the early 1920s, John S. Stubbs, a New York City securities broker and frequenter of the prestigious Inn at Buck Hill Falls grew weary of their unyielding acceptance of modern cultural shifts and decided to construct an exclusive resort in the Poconos of his own design (Squeri 2002:119). In 1925 Stubbs formed Skytop Lodges, Inc. and sold stock to fund the venture for a hotel resort managed by his nephew, Sam Packer (Squeri 2002:120). Stubbs and Packer settled on the remote mountain farming hamlet of Canadensis for the location of resort. Not only was it remote, and free of the crowds found further south in Delaware Gap, the land was available for purchase. The mountaintop soil was thin and not ideal for growing crops, and economic hardships of the 1920s spurred landowners to sell their land. In total eight tracts, totaling 2,500 acres were purchased for the hotel location and outdoor activities (Squeri 2002:121). By 1926, construction was well underway with the landscape being reshaped to include an 18-hole golf course (Figure 3) and impounded water bodies for fishing, boating, swimming, and aquatic leisure activities (Figure 4 & 5; see Photo 23, Section 2.4.1). The second growth trees which reclaimed the farmland were left to their own devices, lending to the forested natural aesthetic the recreational resort would hope to promote. In 1928 the austere hotel of stone construction was finished, and Skytop Lodge opened its doors to a few select members and invited guests (Figure 6).

Report continues next page



Figure 3. Skytop Lodge golf course construction ca. 1925 (Gierwatowski 2015:18).



Figure 4. Skytop Lodge swimming lake and impoundment ca. 1928 (Gierwatowski 2015:62).



Figure 5. Walkway spanning impoundment for Skytop Lodge swimming lake ca. 1928 (Gierwatowski 2015:62).

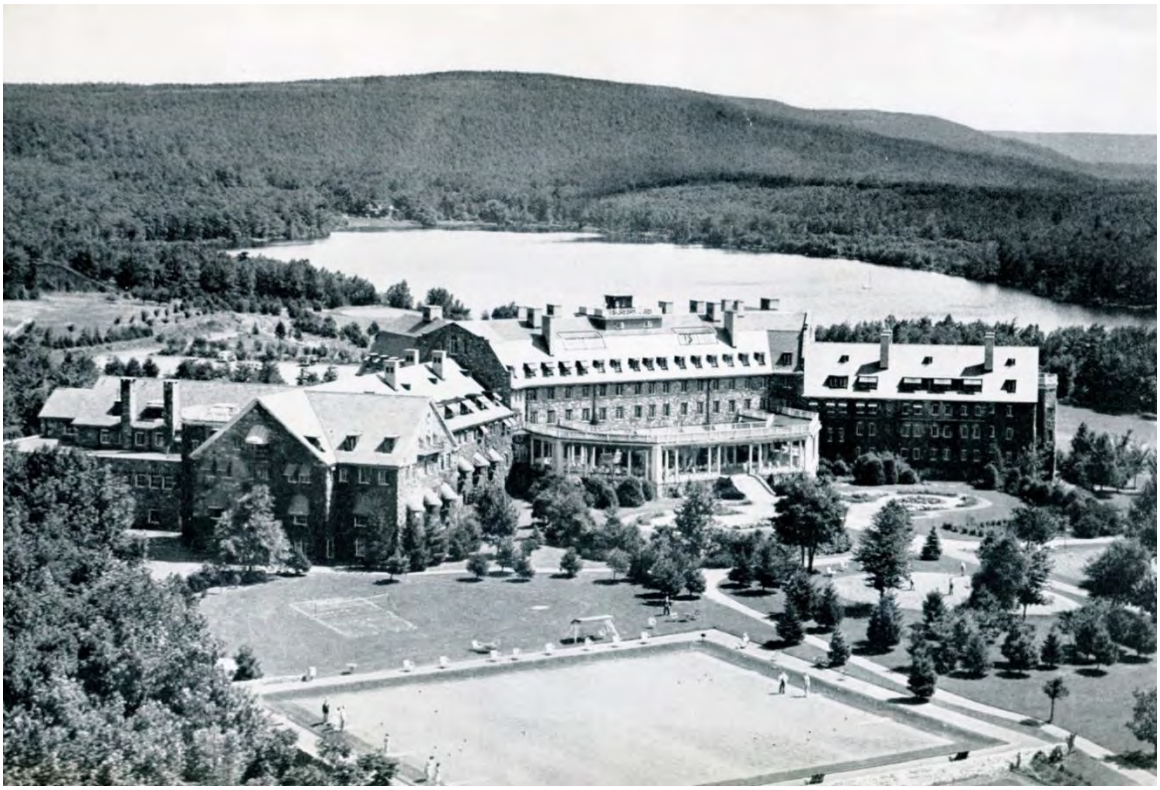


Figure 6. Skytop Lodge resort hotel ca. 1928 (Skytop Lodge).

3.2.4 The Poconos Flood of 1955

In August of 1955, Hurricane Diane, one of the most devastating storm events on record to impact the Poconos region, resulted in unprecedented rainfall causing extreme flooding events along Brodhead Creek and the Delaware River. The flooding event occurred during the peak of the Poconos vacation season causing chaos, confusion, and the loss of important infrastructure in the area—including roads, railroads, and bridges—along with the lives of over 100 people. Prior to the flooding event, a small concrete dam had been constructed across Goose Pond (Figure 7). The dam, however, was insufficient in regulating the torrents of water draining into the watershed, feeding the raging Brodhead Creek downstream. While many of the resorts remained unscathed, many visitors reported having been marooned for days without power or water. Roads had washed away, and helicopter operators worked in shifts to rescue the stranded and deliver needed supplies. After the storm had cleared, many vacationers had cancelled their reservations causing many Poconos hotels and resorts to operate without guests during the busiest time of the vacation season (Wallenhorst 1955).



Figure 7. 1939 Aerial photograph showing concrete dam constructed across Goose Pond Creek.

During the hurricane, Skytop's Mountain Lake flooded and breached its causeway both stranding guests and resulting in widespread damage south of the resort in Canadensis and Stroudsburg (Figure 8). The resulting flood waters stemming from the Leavitt Branch, Goose Pond, and surrounding watersheds culminated in catastrophic flooding along Brodhead Creek and other adjoining creeks and streams. Photographs documenting the aftermath of Hurricane Diane within Canadensis include a washed-out concrete bridge along Creek Rd. (Figure 9 & 10). The bridge spanned the Leavitt Branch along Creek Rd. within the southern portion of the Leavitt Branch APE. The bridge has since been rebuilt and upgraded resulting in the construction of PA 447 over Leavitt Branch (BIN 26859). Homes and structures constructed near waterways within Canadensis and Barrett Township witnessed extensive damage resulting from the flooding event (Figure 11). South of Barrett, flood waters washed away roads and railroad infrastructure constructed paralleling Brodhead Creek (Figure 12).

In response to the historic flooding event, the USDA/NRCS planned to construct four dams within the effected regions: Leavitt Branch, Goose Pond, Griscom, and Buck Hill Dams. Two were constructed including the Leavitt Branch Dam and the Goose Pond Dam. During initial planning, the Goose Pond Dam was the largest of the four, rising to a total of 93 feet. The Leavitt Branch Dam was originally proposed to serve as a

multipurpose dam, aiding in flood prevention and offering recreational swimming, boating, and fishing (Daily Record, 21 February 1961:1). Both the Leavitt Branch and Goose Pond dams were built under the Watershed Protection and Flood Prevention Act, with construction taking place throughout the 1960s. Construction for the two dams were completed between 1975 and 1976.



Figure 8. Damage to the Skytop's Mountain Lake causeway having been breached by floodwaters in 1955 (Gierwatowski 2015:73).

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Figure 9. Bridge along Creek Rd in Canadensis Township washed out by 1955 floodwaters (courtesy of Monroe County Historical Association).



Figure 10. Alternate view of bridge along Creek Rd in Canadensis Township washed out by 1955 floodwaters (courtesy of Monroe County Historical Association).



Figure 11. Residence in Canadensis damaged by 1955 Hurricane Diane floodwaters (courtesy of Monroe Historical Association).



Figure 12. Flooding along Brodhead Creek looking north toward Barrett (Courtesy of Monroe County Historical Association).

3.3 Historical Map Review

Maps depicting the Leavitt Brach Dam and Goose Pond Dam APEs between 1860 and the present were examined. The maps were reviewed for the presence of map-documented structures (MDS). While each of the two APEs were reviewed independently, the MDS locations were numbered sequentially, starting with structures within the Goose Pond APE and continuing into the Leavitt Branch APE. Some MDS locations are represented in both the Leavitt Branch and Goose Pond APE due to overlapping portions of the two boundaries. The maps reviewed for the survey include in the Henry F. Walling's 1860 *Map of the Counties of Monroe and Carbon, Pennsylvania*; Frederick W. Beers' 1875 *County Atlas of Monroe, Pennsylvania*; and 15-minute USGS topographical quadrangles for Pocono (1923), PA and Bushkill PA-NJ (1924). Portions of the Leavitt Branch and Goose Pond APEs are split across the two quadrangles, each of which were mapped independently from the other. A review of the recorded MDS locations has been assembled in a table below (Table 2; Section 3.3.4).

3.3.1 Walling's 1860 *Map of the Counties of Monroe and Carbon, Pennsylvania*

3.3.1.1 Leavitt Branch APE

Walling's 1860 Map of the Counties of Monroe and Carbon, Pennsylvania, drafted one year after the township's creation, shows a sparsely settled region with dwellings having been constructed within proximity to Leavitt Branch and Brodhead Creeks (Map 5). The major distinguishable landmarks within the APE include the Leavitt Branch Creek, and portions of present-day Creek Rd. (PA Route 447), and Dutch Hill Rd. The 1860s map portrays four structures near the intersection of Creek Rd. and Dutch Hill Rd. (MDS 7–9). Two of the structures—MDS 6 & 8—likely represent dwellings inhabited by the John Deubler and J. H. Deubler families. Alfred Mathews, in his 1860 account of Barrett township notes that one John M. Deubler was among the earliest settlers of the region, having immigrated from Germany in 1843, He resided in the township till his death and was the father to 14 children, many of which continued to occupy the region (Mathews 1886:1264). West of the Deubler homesteads, a single structure is noted immediately near the Leavitt Branch (MDS 7). The structure, not labeled, is later associated with one J. M. Wagner (see Section 3.3.2.1).

Constructed at the northeast intersection of Creek and Dutch Hill Roads, a structure relating to a Moravian church is depicted (MDS 9). Mathews notes that prior to 1859, the Moravians within the region held their service in the home of John Deubler. In 1858, a committee was formed for the construction of a permanent house of worship. In 1859 a one-and-a-half story structure was constructed for the cost of $1,200 (Mathews 1886:1269). The church structure is no longer present at the time of this report's writing.

North of the Moravian church, a single dwelling is noted on the west side of Dutch Hill Rd. associated with one Chrisian Deubler (MDS 10). The structure is not depicted on later maps and no extant structures were associated with the MDS.

Within the northwest portion of the APE five structures are mapped along Dutch Hill Rd. (MDS 11–15). While the five structures are mapped within or on the boundary of the Leavitt Branch APE, subsequent maps depict the structures outside of the APE's alignment. The placement of the structures within the APE on the 1860 Walling map likely reflects mapping limitations of 19th-century cartographers.



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- Map-Documented Structure (MDS)
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Historical Map - Leavitt Branch

Walling 1860

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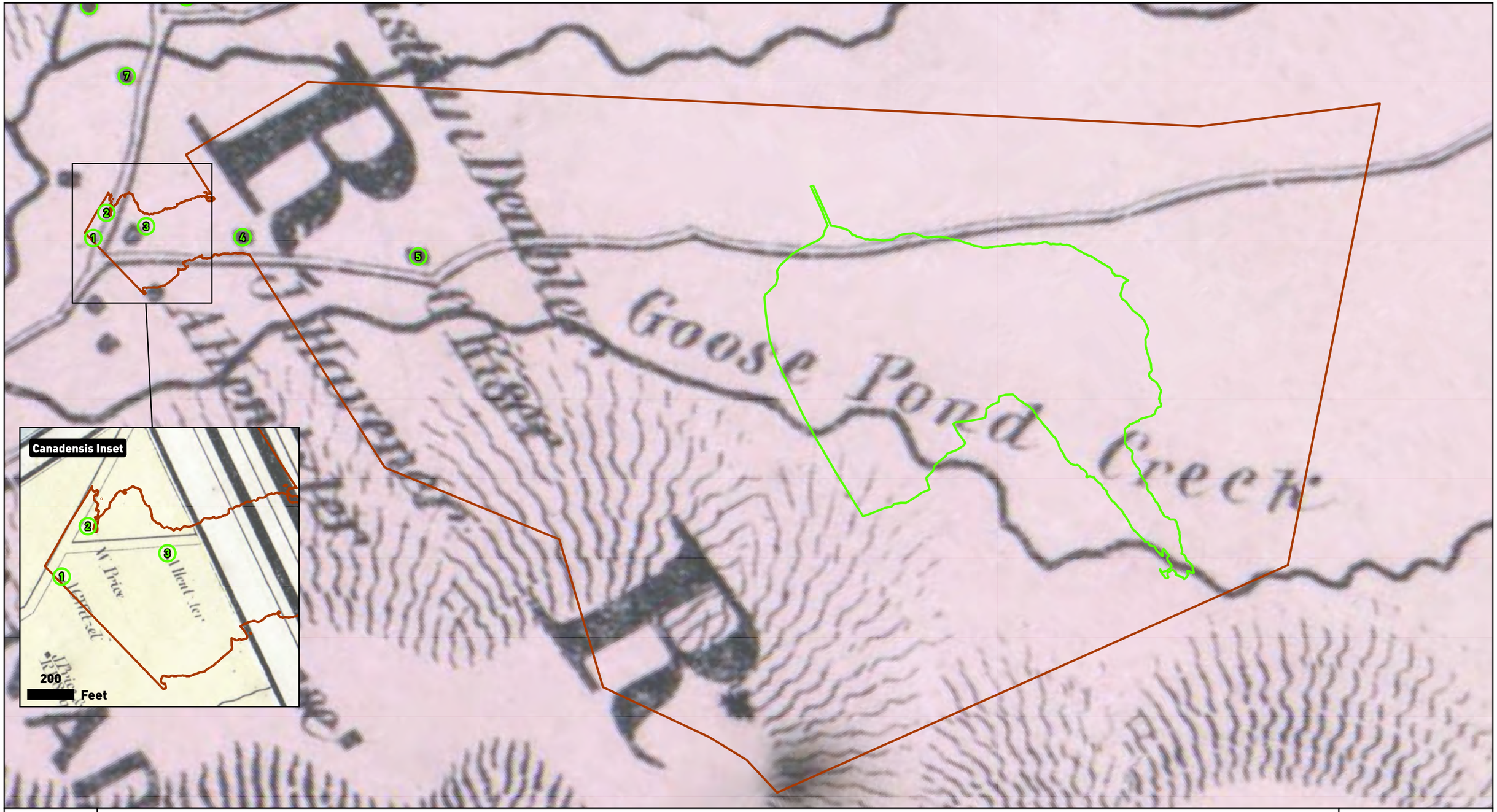
Map 5

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3.3.1.2 Goose Pond APE

Walling's 1860 map of the Barrett township depicts the Goose Pond APE as sparsely settled (Map 6). The primary geographic features mapped within the APE include Goose Pond—labeled Goose Pond Creek—and present-day Krummel Hill Rd. spanning the length of the APE. Immediately east of Goose Pond, a series of hills are mapped comprising a majority of the APE's eastern boundary. Five structures are mapped within the APE, all having been constructed within proximity of the intersection of Krummel Hill Rd. and Creek Rd. A map inset referencing Canadensis within Barrett Township notes the presence of three dwellings in the northern portion of the inset. Structures are associated with A.G. Witzel (MDS 1), W. Price (MDS 2), and A. Henster (MDS 3). Two structures are mapped along the west side of present-day Krummel Hill Rd. just north of its intersection with Creek Rd and are listed as the dwellings of J. Havener (MDS 4) and C. Kiser (MDS 5).

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Historical Map - Goose Pond

Walling 1860

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Map 6

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3.3.2 Beers' 1875 *County Atlas of Monroe, Pennsylvania*

3.3.2.1 Leavitt Branch APE

The region encompassing the village of Canadensis had witnessed a period of growth and is evident in Beers' 1875 *County Atlas of Monroe, Pennsylvania* (Map 7). Four structures are shown within the southernmost portion of the Leavitt Branch APE. Two structures are mapped along the south side of Creek Rd., east of the confluence of Leavitt Branch and Middle Branch Brodhead Creek. MDS 7—likewise portrayed in the 1860 map—is noted immediately west of a structure associated with one J.M. Wagner (MDS 18). The Moravian church (MDS 9) is shown at the intersection of Creek and Dutch Hill Rd.; however, the map's georeferenced alignment portrays the structure as potentially having been constructed outside of the APE. North of the Moravian church, two structures are noted parallel to each other along Dutch Hill Rd. The structure to the west (MDS 20) is unlabeled and potentially associated with the Moravian church a short distance away. The structure on the east side of the road lists the residence of one Jno (John) Deubler (MDS 19).

Two structures are mapped just south of the present-day Leavitt Branch Dam. A short road or path is noted extending west off Dutch Hill Rd. forming portions of present-day Evergreen Ln. to the south, and Pamlynn Rd. to the north. Two structures are noted along road with one associated to a Jas (James) Steese (MDS 21) and Wm (William) Smith (MDS 22). Neither of the two structures were recorded in the earlier 1860s map.

Four structures are mapped having been constructed within the northern portion of the APE. One structure, associated with one John Krummell (spelled Krummel when referenced elsewhere), is depicted along the east side of Krummel Hill Rd. John Krummel is noted as having been elected as the township's supervisor in 1886 (Mathews 1886:1266). North of the Krummell residence, three structures are mapped along the Leavitt Branch—labelled Leves Branch on the 1875 map. A sawmill (MDS 25) is mapped immediately east of Leves (Leavitt) Branch Falls. South of the mill, two structures are associated with E. Price and Bro. (MDS 23 & 24).

MDS 11 and MDS 12, previously depicted as having been constructed within the APE, are now noted as outside the APE's western boundary. These structures include residences associated with F. Gravel (MDS 12) and A. Albert (MDS 11).

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- Area of Potential Effects (APE)
- Area of Focus (AOF)

Historical Map - Leavitt Branch

Beers 1875

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Map 7

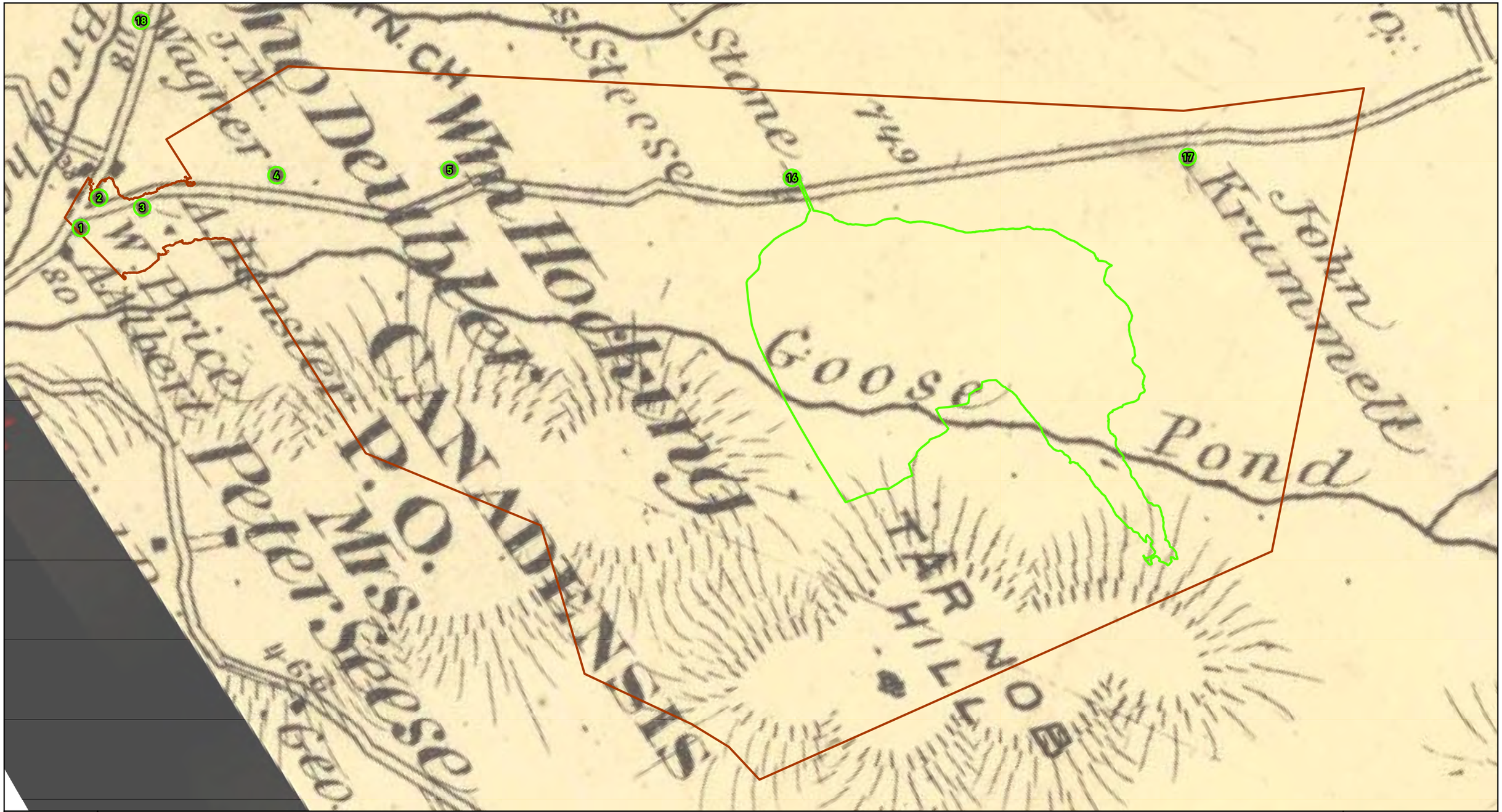
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3.3.2.2 Goose Pond APE

Relatively few changes are noted in association with Beers' 1875 map depicting Monroe County (Map 8). Three structures are mapped within the southernmost portion of the Goose Pond near the intersection of Creek Rd. and Krummel Hill Rd. The three structures associated with A.G. Witzel (not labelled; MDS 1), W. Price (MDS 2), and A. Henster (MDS 3) share similar locational proximities with structures found in Walling's 1860 map of Canadensis.

Four residences are noted along Krummel Hill Rd. One structure, which is not labelled (MDS 4), shares the location of a residence previously associated with one J. Havener on the 1860 map. Similarly, the residence of one Wm (William) Hocking (MDS 5) is noted within the same proximity as a residence of a C. Kiser on the Walling map. Within the northern portion of the APE, two residences are mapped along Krummel Hill Rd. A structure associated with one R. Stone (MDS 16) is plotted east of the present-day Leavitt Branch Dam. Further to the north, a structure associated with one John Krummell (MDS 17) is noted (see section 3.3.2.1). The easternmost portion of the APE, with references to Tar Nob Hill, is depicted as being largely unsettled.

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- Area of Potential Effects (APE)
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Historical Map - Goose Pond

Beers 1875

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Map 8

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3.3.3 1923 & 1924 USGS 15-Min. Topographical Quadrangles

3.3.3.1 Leavitt Branch APE

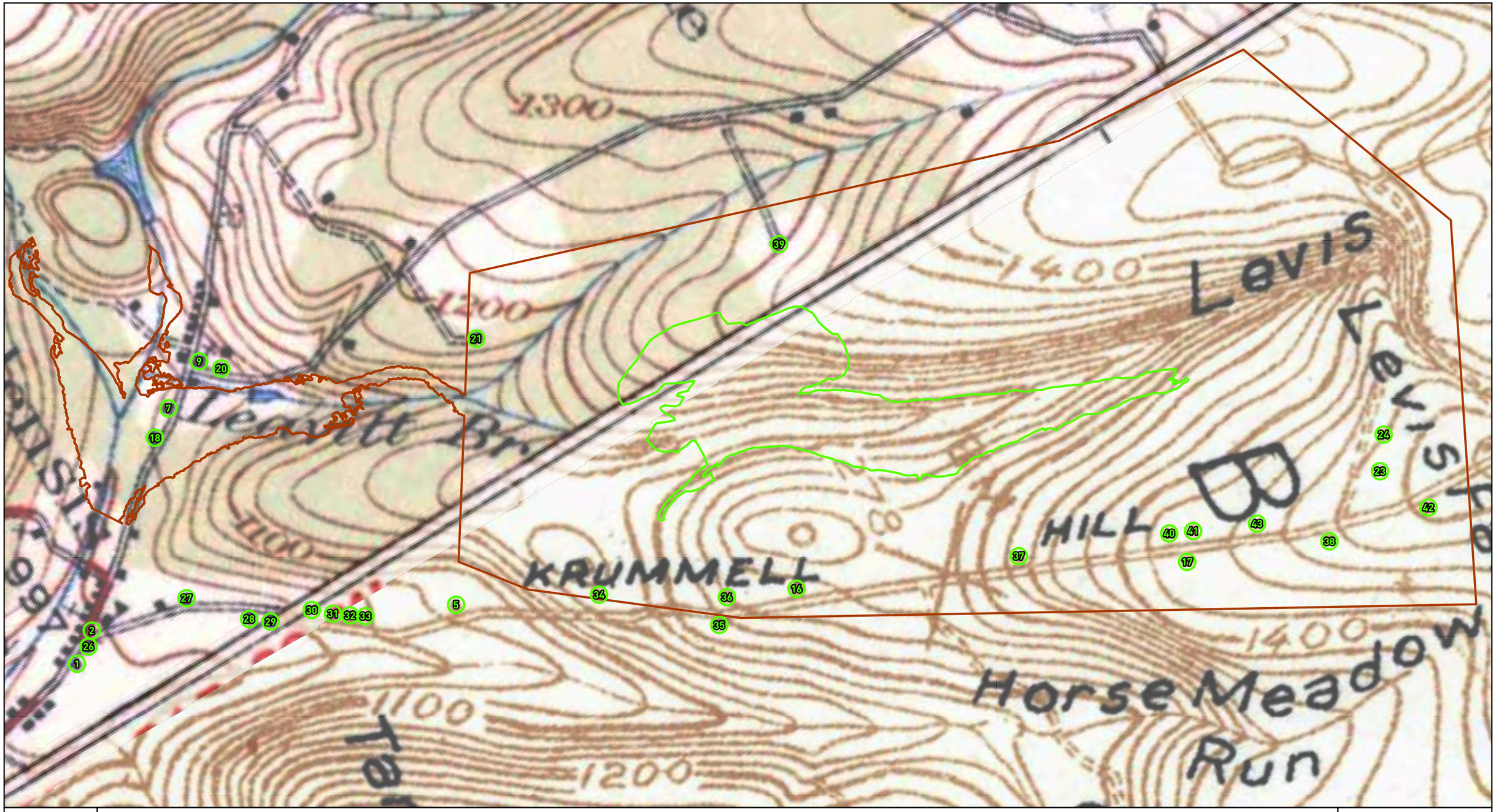
The 1923 and 1924 USGS topographic maps depicting the Barrett Township and Village of Canadensis portrays the built environment of the region only a short time prior to the construction of the Skytop lodge and private golf course (Map 9). By the first quarter of the 20th century, an increase in mapped structures is noted, primarily along Krummel Hill Rd. within the northeastern portion of the Leavitt Branch APE. In the southernmost portion of the APE, two structures likely associated with MDS 7 and MDS 18 are noted. Three structures (MDS 9, 19, & 20), including the Moravian church found within the APE on the Walling 1860 and Beers 1875 maps, are referenced outside of the APE's eastern boundary.

North of the buildings mapped near the intersection of Creek and Dutch Hill Rd., a structure with similar proximity to the Jas (James) Steese residence (MDS 21) is noted. Where a small connecting road was found in the Beer's 1875 map connecting the residence to Dutch Hill Rd., only a portion of the road is found in the 1923 topographic map. The mapped road likely references the present-day alignment of Evergreen Ln.

Twelve structures are mapped within the APE, along the east and west sides of Krummel Hill Rd. Two structures present are associated with mapped structures found in the 1875 Beers map. The residence previously associated with R. Stone (MDS 16) is noted on the west side of Krummel Hill Rd. Similarly, the residence previously associated with John Krummell (MDS 17) is noted on the east side of Krummel Hill Rd. within the northern portion of the APE. Eight additional structures are mapped along Krummel Hill Rd. (MDS 34, 36–38, & 40–43) but are not labelled and not found on earlier maps. Two structures (MDS 23 & 24), located along the north side of a path, share a similar proximity to two structures associated with E. Price & and Bro. found in the Beers 1875 map. The location of the two structures is within portions of Skytop Lodge's golf course and were likely demolished as part of landscaping efforts dating to 1925.

Two structures are noted within the western portion of the APE. One structure (MDS 21), located toward the end of present-day Evergreen Ln., shares a similar proximity to a structure associated with the residence of one Jas (James) Steese. Another structure (MDS 39), located at the eastern end of present-day Haab Rd., was not mapped previously on earlier reviewed maps.

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- Map-Documented Structure (MDS)
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Historical Map - Leavitt Branch

USGS 1923-24

HARTGEN archeological associates inc

Map 9

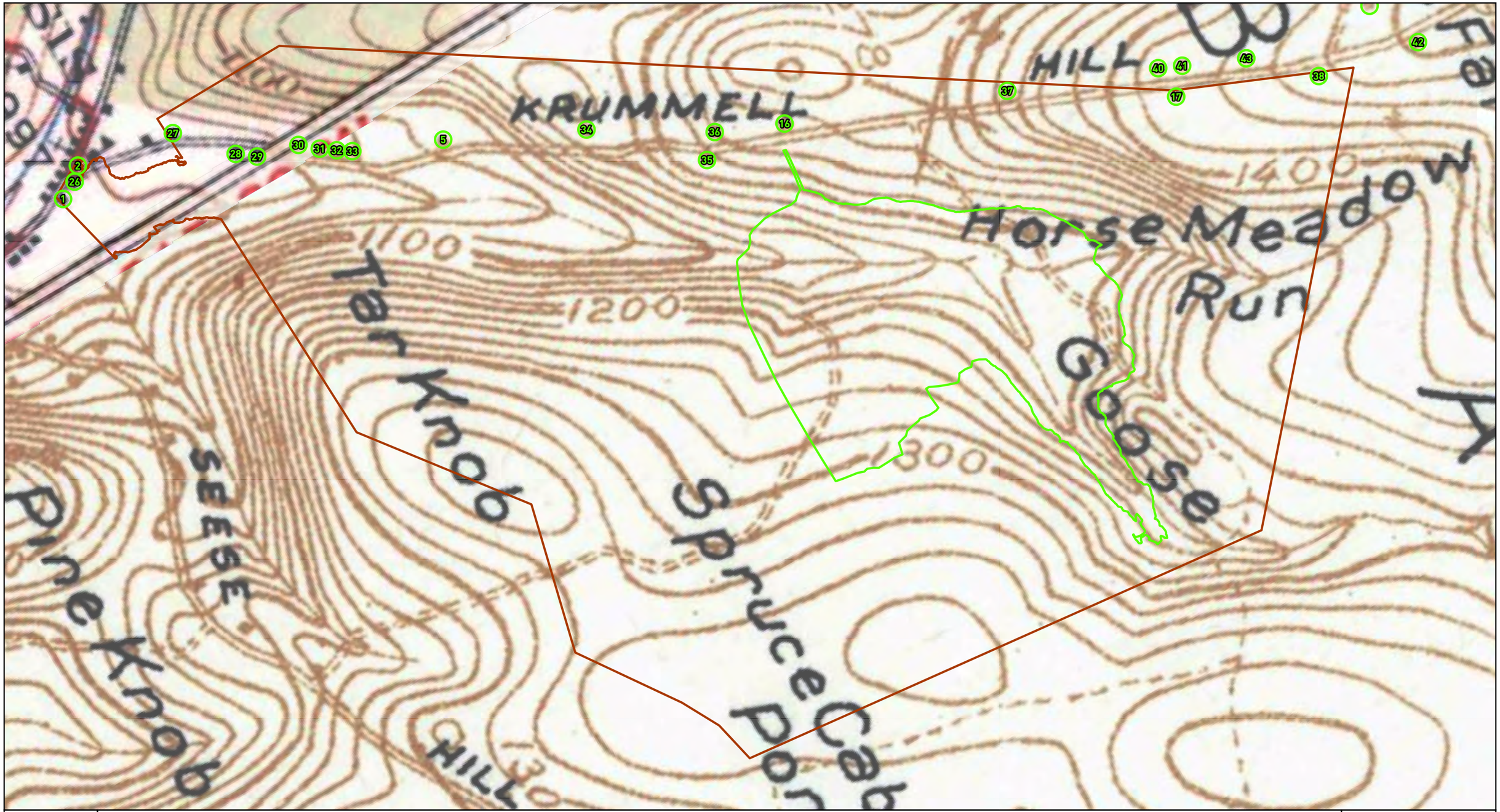
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3.3.3.2 Goose Pond APE

The 1923 and 1924 USGS topographic maps depicting the Goose Pond APE within the town of Barrett show that all mapped structures had been constructed along Krummel Hill Rd. (Map 10) or at the intersection of Krummel Hill Rd. and Creek Rd. In the southernmost portion of the APE, two structures (MDS 1 & 2) are noted along Creek Rd. and share proximity with structures depicted on both the 1860 Walling map and 1875 Beers map. Additionally, a structure (MDS 26) is mapped immediately east of the road intersection. One structure (MDS 3) is noticeably absent from the topographic map.

Fifteen structures are mapped along Krummel Rd. north of the previously mentioned structures. Four of the fourteen structures share proximity to previously mapped buildings along the roadway. One structure mapped within the southern portion of the APE (MDS 4) shares a location with a structure noted in both the 1860 and 1875 maps. Within the northern portion of the APE, two structures (MDS 16 & 17) share locations with structures depicted in Beers' 1875 map. Additionally, ten structures (MDS 27–38), previously unrecorded, are mapped along the east and west sides of Krummel Hill Rd. within the APE.

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- Map-Documented Structure (MDS)
- Area of Potential Effects (APE)
- Area of Focus (AOF)

Historical Map - Goose Pond

USGS 1923-24

HARTGEN archeological associates inc

Map 10

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3.3.4 Tabulated Map-Documented Structures

Table 2. Summary of map-documented and existing structures within the Leavitt Branch and Goose Pond APEs

Structure #	1860 Walling	1875 Beers	1923 & 1924 USGS Topos	Extant
1	AG Witzel	×	×	Indeterminate†
2	W Price	W Price	×	No
3	A Henster	A Henster		No
4	J Havener	×		Indeterminate†
5	C Kiser	Wm Hocking	×	Yes
6	×			No
7	×	×	×	No
8	JH Deubler			No
9	Moravian Ch*	Church	×	No
10	Chrisian Deubler			No
11	A Albert*	A Albert*		No
12	F Gravel*	F Gravel*		No
13	C Summers*			No
14	M Bender*			No
15	J Hamer*			No
16		R Stone	×	Yes
17		John Krummell	×	No
18		JM Wagner	×	No
19		Jno Deubler		No
20		×*	×	No
21		Jas Steese	×	No
22		Wm Smith		No
23		E. Price & Bro.	×	No
24		E Price & Bro.	×	No
25		Saw Mill		No
26			×	No
27			×	Yes
28			×	Indeterminate†
29			×	Indeterminate†
30			×	Yes
31			×	Yes
32			×	Yes
33			×	Yes
34			×	No
35			×	No
36			×	Yes
37			×	Yes
38			×	Indeterminate†
39			×	Yes
40			×	Yes
41			×	Yes
42			×	Yes
43			×	Yes

×. Marks the presence of unlabeled map-documented structure (MDS)

⁎. Indicates structure had been—or was found to be—constructed outside of the APE in reviewing later maps.

†. Extant structure of appropriate age but lacking definitive association with one or more MDS locations.

3.4 PA-SHARE File review

Hartgen conducted research using the Pennsylvania Historic and Archaeological Resource Exchange (PA-SHARE), PA-SHARE contains an inventory of archeological sites, State and National Register (NR) properties, properties determined eligible for the NR (NRE), and previous cultural resource surveys.

3.5 Archeological Sites

An examination of PA-SHARE identified no reported archaeological sites within 1.61 km (1 mi.) of the Project Area. Previously reported archeological sites provide an overview of both the types of sites that may be present in the APE and the relation of sites throughout the surrounding region. The presence of few reported sites, however, may result from a lack of previous systematic survey and does not necessarily indicate a decreased archeological sensitivity within the APE.

3.6 Historic Properties

An examination of PA-SHARE identified ten inventoried properties within the Project Area. Inventoried properties within the Project Area include one NRE historic property with no properties or districts being listed on the NR (Table 3).

Table 3. Inventoried properties within the Leavitt Branch and Goose Pond APE.

ID. Number	Property Name	Status	Description	Proximity to APE
2015RE01579	Skytop Lodge	NRE	1 Skytop Lodge; Dutch Colonial style hotel/lodge complex; main lodge built in 1928; building with 15 resources.	Intersects the northern tip of Leavitt Branch Dam APE and the northwest corner of the Goose Pond Dam APE
1995RE29788	Marli's Antiques & Country Store	Undetermined	PA State Route 447; Antique and Country store; 2.5-story frame house with gable roof, stone foundation, clapboard siding, two=bay façade, two bay sides, and a 6/6 sash; built ca. 1800-1899.	50 feet west of the southwest tip of the Goose Pond Dam APE
1995RE29789	Guy's Blue Room Bar & Grill	Undetermined	2426 PA State Route 390; built ca. 1920; 2.5-story building with cobblestone foundation and clapboard siding first floor and wood shingle siding second floor.	Parcel is within south portion of Goose Pond Dam APE
1995RE29795	John Krummel Property	Undetermined	PA State Route 390 (Krummel Hill Road); built c. 1900; boarding house with three stories, three-bay façade, two-bay side, stone foundation, and clapboard siding; demolished.	Within northwest corner of Goose Pond Dam APE
1995RE29796	Pump House Inn	Undetermined	2735 PA State Route 390; built in 19th century; restaurant/hotel; 2.5-story original farmhouse with three bay, clapboard, and cross gables in gable roof.	Within the east-central portion of Goose Pond Dam APE
2019RE05534	Boarding House	Undetermined	2468 PA State Route 390; c. 1870 boarding house; three-story building with irregular bays, rectangular with numerous additions; home of Hensler family.	Within the south portion of Goose Pond Dam APE

ID. Number	Property Name	Status	Description	Proximity to APE
2019RE08958	Phoenix Press	Undetermined	4728 PA State Route 447; ca. 1900 old schoolhouse; 1.5-story building with stucco siding and severely altered hip roof, octagonal cupola on top and round arched windows.	Parcel is within southeast corner of Goose Pond Dam APE
2019RE12487	Indian Trading Post	Undetermined	PA State Route 447 and PA State Route 390; 2.5-story building; gable roof, pediment returns, composition shingle siding; enclosed first floor contains souvenir store; two gable end buildings side-by-side; original bays gone.	Within southeast corner of Goose Pond Dam APE
2019RE22705	1920 House	Undetermined	2435 PA State Route 390; ca. 1920 Bungalow/Craftsman-style domestic single-dwelling; 2.5-story house with 5-bay central section of house projects under cross gable.	Within southeast corner of Goose Pond Dam APE
2019RE22706	1890 Cottage	Undetermined	PA State Route 390; ca. 1890 cottage house with two stories and clapboard siding; demolished.	Within southeast corner of Goose Pond Dam APE

3.7 Previous Surveys

A review of PA-SHARE identified no previous surveys within the immediate vicinity of the Project.

4 Statewide Precontact Probability Model

Pennsylvania's Geographic Information Systems (GIS) Statewide Precontact Probability Model was designed to aid in identifying areas within Pennsylvania wherein precontact archaeological resources are anticipated. The model is based on a number of criteria, including landforms (digital elevation models), National Wetland Inventory (NWI) data, United States Department of Agriculture (USDA) soils data, and historical data (Harris et al. 2015).

4.1 Leavitt Branch APE

Pennsylvania's Statewide Precontact Probability model (Map 11) shows Leavitt Branch APE contains approximately 15% of area with high probability, and 33% of area with moderate potential for precontact archaeological resources (Table 4).

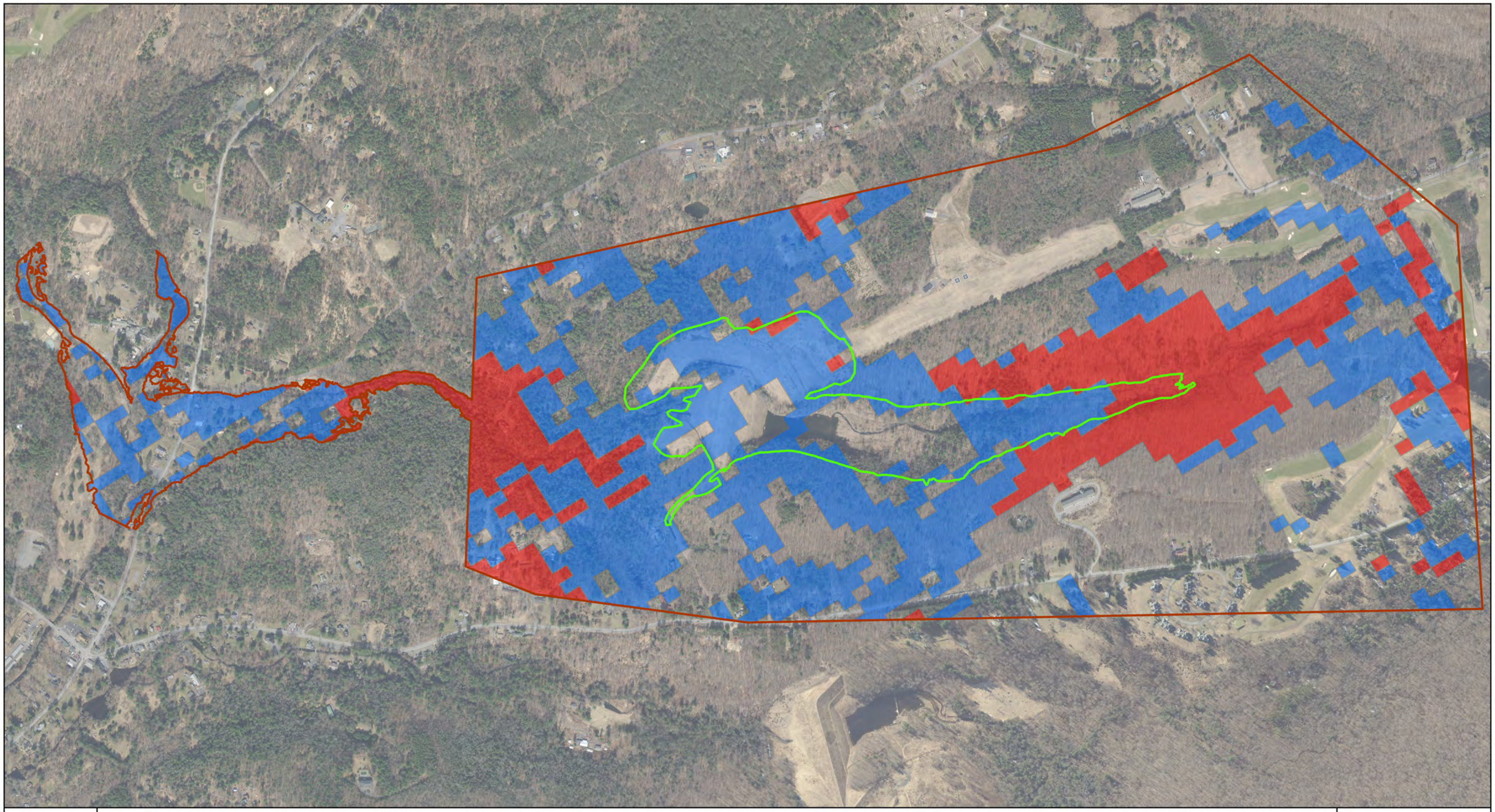
A review of the model's data finds that most of the areas with high potential for Precontact archaeological resources are exhibited within portions of the floodplain and areas of steep topography (slope > 15%) immediately adjacent to the Leavitt Branch. Two prominent clusters of high archaeological potential are noted within the Leavitt Branch APE. One cluster follows the Leavitt Branch north of the Leavitt Branch Dam within a wooded area with steep topography. Another cluster is located south of the dam and is likewise within an area with steep and varied terrain.

Areas of moderate precontact archaeological sensitivity can be found throughout the Leavitt Branch APE, with clusters of high density noted centrally within proximity of the present dam location, and within the southernmost portion of the APE. Areas of moderate sensitivity closest to the dam contain steeply sloped topography. The southernmost portion of the APE, comprising portions of Leavitt Branch's 100-year floodplain, shows areas of moderate sensitivity. This area is largely populated with private residences and structures associated with religious practice.

Table 4. Statewide Precontact Probability Model Area within the Leavitt Branch APE

Sensitivity Tier	Area Within Tier	Percent of Leavitt Branch APE
High	114.06 acres	15%
Moderate	260.91 acres	33%
Low	414.09	52%

Report continues next page



400 0 400 800 Feet

120 0 120 240 Meters

Legend

- Area of Potential Effects (APE)
- Area of Focus (AOF)

Precontact Probability

- Moderate
- High

Pennsylvania Statewide Precontact Probability Model - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 11

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4.2 Goose Pond APE

Pennsylvania's Statewide Precontact Probability model (Map 12) shows that the Goose Pond APE contains approximately 17% of area with high probability, and 29% of area with moderate potential for precontact archaeological resources (Table 5).

A review of the model's data finds that most of the areas with high potential for Precontact archaeological sensitivity are located within the southwestern portion of the Goose Pond APE. These areas are within, or near, Goose Pond's floodplain downstream of the present Goose Pond Dam. Portions of these high sensitivity areas are in areas that exhibit flat topography and contain potentially deep alluvial soils. Areas with steep and varied topography are noted with the east and west bounds of high sensitivity zone within the southwestern portion of the APE.

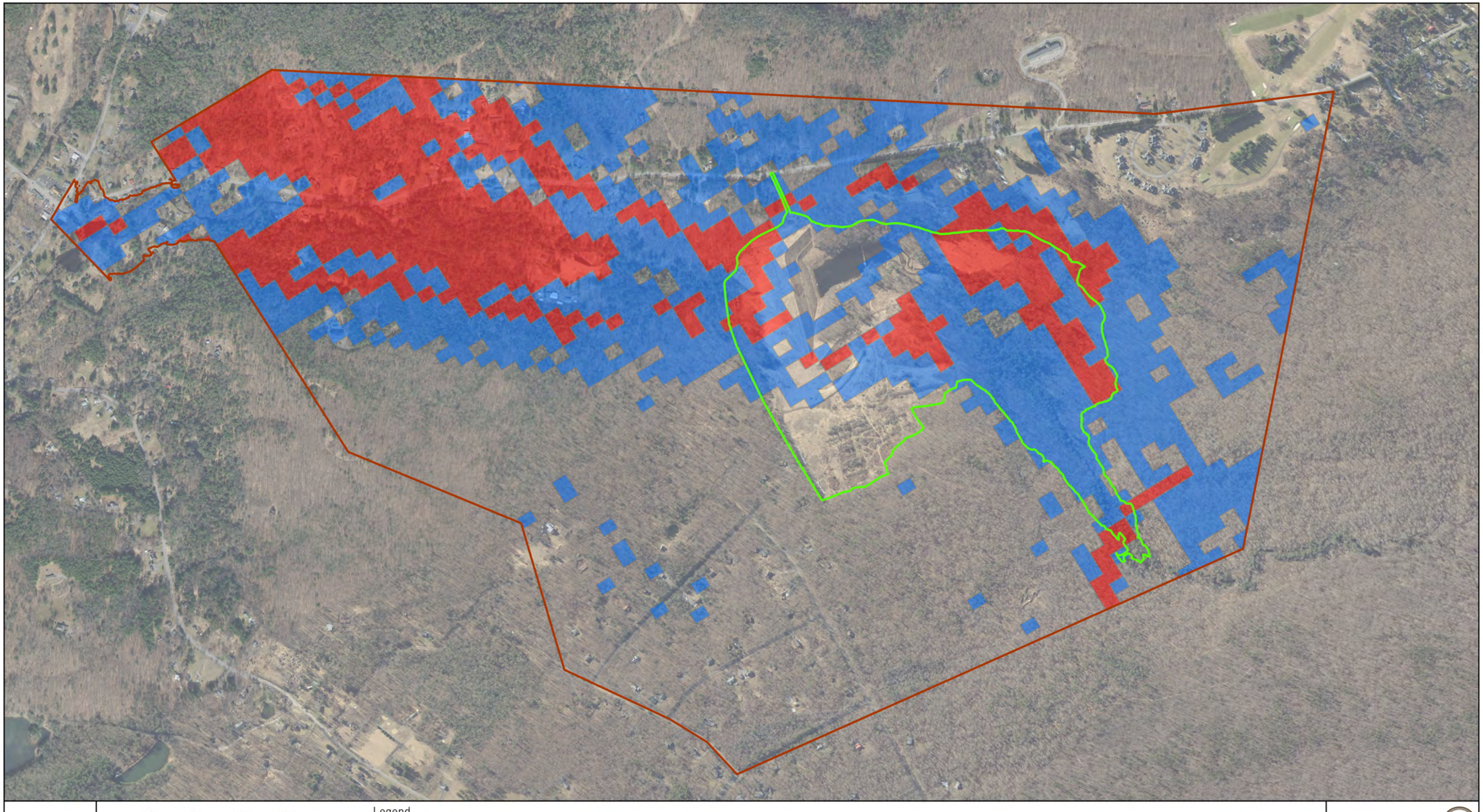
Smaller clusters of areas with high Precontact archaeological sensitivity are noted around the present-day Goose Pond Dam. A majority of these high sensitivity areas are within the historical construction limits associated with the initial building of the dam, or within existing easements associated with the TOD pond fill area. Immediately south of the dam, areas of high sensitivity are noted immediately adjacent to, and overlapping with portions of the earthen dam structure and spillway outlet. This area has a steep topography and has witnessed previous disturbances associated with the dam's construction. North of the dam's structure, and within the potential pool area, areas of high and moderate sensitivity are noted within Goose Pond's floodplain. This area has a flat and subdued topography with potentially deep alluvial soils.

Areas exhibiting moderate potential for precontact archaeological resources are noted following the alignment of the Goose Pond Run. Portions of the areas of moderate sensitivity immediately adjacent to Goose Pond Creek are associated with the flat and subdued topography of the creek's floodplain. These areas are found to have potentially deep alluvial soils. Beyond the creek's floodplain, many of the moderately sensitive areas are associated with steep mountainous topography.

Table 5. Statewide Precontact Probability Model Area within the Goose Pond APE

Sensitivity Tier	Area Within Tier	Percent of Goose Pond APE
High	159.98	17%
Moderate	274.72	29%
Low	520.24	54%

Report continues next page



400 0 400 800 Feet

120 0 120 240 Meters

Legend

- Area of Potential Effects (APE)
- Area of Focus (AOF)

Precontact Probability

- Moderate
- High

Pennsylvania Statewide Precontact Probability Model - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 12

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5 Discussion

Precontact and historical archaeological potential within the Leavitt Branch APE and Goose Pond APE were assessed using a variety of factors, including the PHMC's Statewide Precontact Probability Model data, landforms and soil types, historical maps, and other resources. These factors help to establish a contextual framework on which to analyze the archaeological potential within each of the Project's APEs.

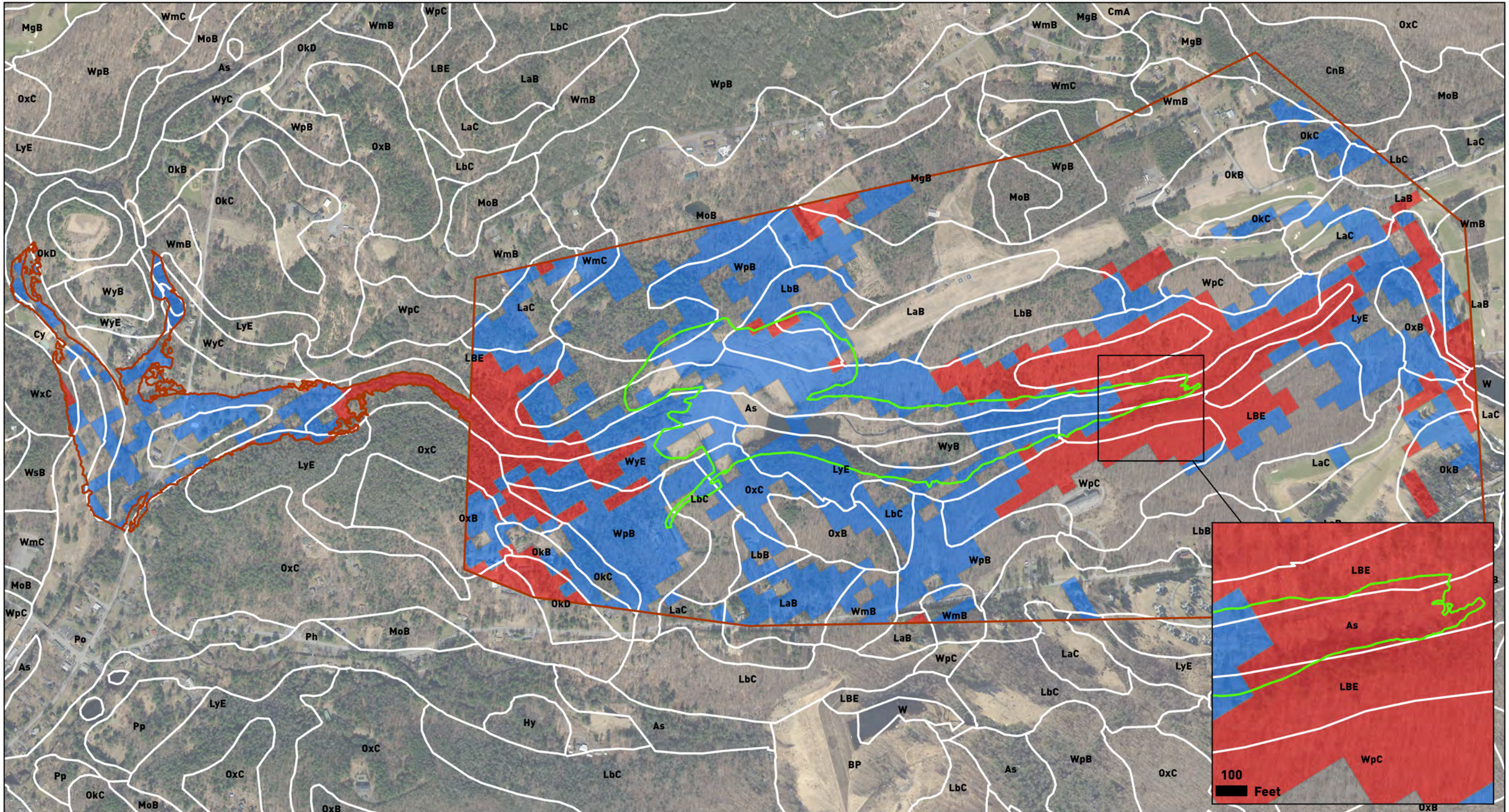
5.1 Leavitt Branch APE

5.1.1 Precontact Archaeological Potential

The PHMC's Statewide Precontact Probability Model shows the Leavitt Branch APE comprises approximately 15% of areas with high probability and 33% of areas with moderate probability. Precontact Indigenous Peoples relied heavily on streams and rivers for navigation, travel, and food. Within the Leavitt Branch APE, many of the areas with high and moderate probability are within proximity to Leavitt Branch and the waterway's floodplains. A review of the Statewide Precontact Probability Model shows an area of high probability within the northernmost portion of the Leavitt Branch AOF, representing the upper limit of the potential TOD pool area (Map 13). As alluvial soils are noted along Leavitt Branch within and outside of the Leavitt Branch AOF, changes to the dam's design resulting in an increase of the TOD pool area can potentially inundate areas of high precontact probability.

South of the Leavitt Branch Dam's pool area, areas of moderate precontact probability, with smaller pockets of high probability are observed within and around the built environment of the dam. A review of As-Built plans (Appendix 1), ortho imagery documenting construction disturbances (Figure 1, Section 1.2), and site reconnaissance finds that much of the area had witnessed soil disturbances relating to the construction of the dam. Three pockets of high precontact probability are noted north of the dam structure but are within portions of the borrow pit where the natural topography of the area has been significantly altered. Additionally, a small area of high probability is located to the south of the dam, within the dam's permanent easement. The area of high probability has likewise witnessed prior disturbances as a large earthen mound relating to the dam's construction has been documented within the area (Photo 2; see Section 2.4.1).

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Pennsylvania Statewide Precontact Probability Model - Leavitt Branch

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 13

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5.1.2 Historical Archaeological Potential

Prior to the formation of Monroe County and Barrett Township, the region was sparsely settled. Early settlers logged the area, setting up a sawmill along Leavitt Branch near present-day Leavitt Falls—a prominent water feature within the acreage of the historic Skytop Lodge (see Section 3.2.3). A review of historic maps dating between 1860 and 1924 (see Section 3.3) finds that no structures were constructed within any portion of the Leavitt Branch AOF. Prior to the construction of the Leavitt Branch Dam, large portions of the APE encompassing the AOF were logged and later farmed into the 20th century. By the 1920s, much of the farmland was sold off—partially to Skytop Lodge—and left fallow for second generation forests to fill in the landscape. The largest impact to the landscape within the Leavitt Branch AOF is the construction of the Leavitt Branch Dam in 1974. The southern portion of the Leavitt Branch AOF encompasses the dam structure, auxiliary spillway, and borrow pit areas. These areas show significant modifications to the natural landscape. Overall, the Leavitt Branch APE and AOF elicits low potential for historical archaeological resources.

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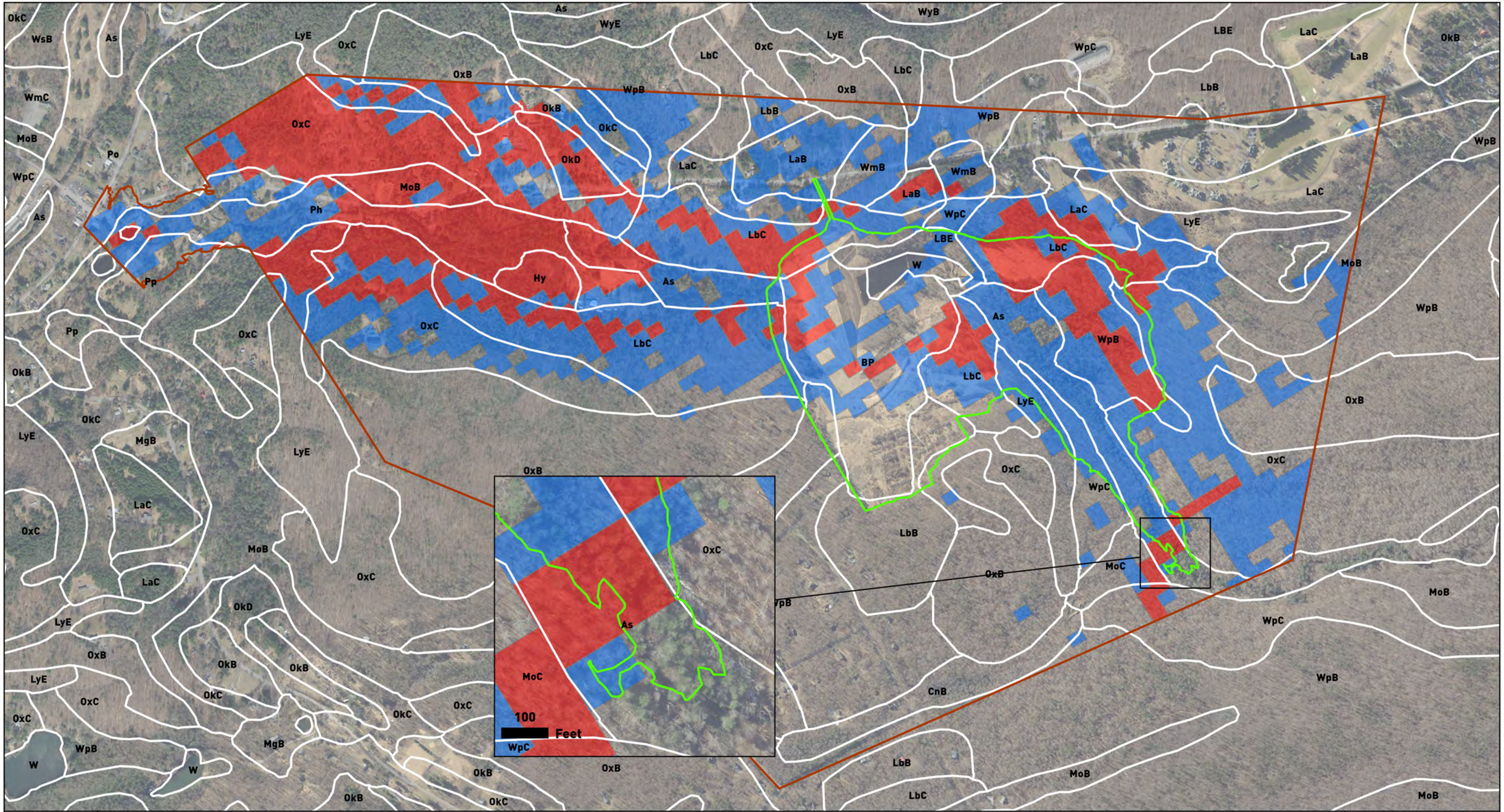
5.2 Goose Pond APE

5.2.1 Precontact Archaeological Potential

The PHMC's Statewide Precontact Probability Model shows the Goose Pond APE comprises approximately 17% of areas with high sensitivity and 29% of areas with moderate sensitivity. Areas of high and moderate precontact probability are noted primarily within the western half of the Goose Pond APE, with the highest concentration of high probability being located within the southern portion of the APE, outside of the Goose Pond AOF boundary. Areas of high and moderate precontact probability are noted within the Goose Pond AOF but have largely witnessed disturbances resulting from the dam's construction and inundation associated with the TOD pool area.

Areas of high and moderate precontact probability within the southern portion of the Goose Pond AOF have witnessed soil disturbances associated with the construction of the dam structure, auxiliary spillway, and borrow pit area with construction having been completed in 1974. A review of As-Built plans (Appendix 2), ortho imagery documenting construction disturbances (Figure 2, Section 1.2), and site reconnaissance finds that much of the area had witnessed soil disturbances relating to the construction of the dam. North, and east of the dam structure, areas of high and moderate precontact probability are noted within Goose Pond's floodplain which is characterized by an expanse of flat land with potentially deep alluvial soils. Large portions of these areas of high and moderate probability are within the Goose Pond AOF and have likely witnessed inundation events associated with the filling of the potential TOD pool area. Areas of high and moderate probability within immediate proximity of the AOF are largely characterized by steep topography. An area of high probability located within the easternmost portion of the Goose Pond AOF is at risk of becoming inundated if modifications of the Goose Pond Dam result in an increase of the TOD pool area (Map 14).

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Pennsylvania Statewide Precontact Probability Model - Goose Pond

Pennsylvania Emergency Management Agency, Orthoimagery, 2018-2020

HARTGEN archeological associates inc

Map 14

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5.2.2 Historical Archaeological Potential

Historical records indicate that the area within the Goose Pond APE was sparsely settled, with early structures having been mapped nearest the intersection of present-day Krummel Hill Rd. and Creek Rd. north of downtown Canadensis. A review maps dating between 1860 and 1924 (see Section 3.3) finds that structures built within the Goose Pond APE primarily favored proximity to present-day Krummel Hill Rd. Much of the area within the Goose Pond APE had been deforested and subsequently farmed into the 1920s. A majority of the farmland has since been left to fallow, allowing for a second generation of tree growth to reclaim much of the land. Historical maps depicting the Goose Pond AOF do not depict any structures having been constructed within the boundary. Aerial imagery dating to 1939 (see Section 3.2.4; Figure 7) shows a concrete dam predating the construction of the present Goose Pond Dam being built within the first half of the 20th century. Remnants of the early dam are presently visible (see Section 2.4.2), but the dam is no longer operable. Overall, few historical resources are noted within Goose Pond APE and AOF.

6 Recommendations

The proposed rehabilitation efforts of the Leavitt Branch Dam (Brodhead Creek Watershed Floodwater Retarding Dam PA-463) and Goose Pond Dam (Brodhead Creek Watershed Floodwater retarding Dam PA-464) will largely impact portions of the landscape which have previously witnessed significant soil disturbing activities resulting from initial construction efforts dating to the 1960s and 1970s. Pennsylvania's Statewide Precontact Probability Model notes the presence of areas with high and moderate precontact probability within both the Leavitt Branch AOF and Goose Pond AOF. These areas were found to have been impacted by initial dam construction efforts and by floodwater inundation.

The Leavitt Branch Dam and Goose Pond Dam are recommended as not being eligible for the National Register of Historic Places. Both the Leavitt Brand Dam and the Goose Pond Dam were found to lack distinguishing features requisite to qualify for listing on the National Register under Criterion C. The two dams also lack known associations that would make them eligible under Criteria A or B.

If dam rehabilitation efforts are limited to areas which have previously been impacted, and the potential Top of Dam (TOD) pool area is not increased, then archaeological testing of previously impacted areas within Leavitt Branch AOF and Goose Pond AOF is not recommended. Alternatively, if rehabilitation efforts result in the increase of the potential TOD pool area, previously undisturbed areas with high archaeological potential are at risk of becoming inundated and therefore archaeological testing would be recommended in those areas potentially impacted by floodwater inundation.

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