
APPENDIX C: SECTION 106 COORDINATION



June 8, 2021

Laura Trieschmann
Senior Historic Preservation Officer
Vermont Division of Historic Preservation
One National Life Drive
Deane C. Davis Building, 6th Floor

Re: **Early Agency Scoping for Runway 17/35 Obstruction Removal Environmental Assessment
E.F. Knapp State Airport
Berlin, Vermont**

Dear Laura Trieschmann:

This early agency scoping letter is being sent to inform you that the Vermont Agency of Transportation (VTrans) is preparing an Environmental Assessment (EA) for the proposed obstruction removal at the E.F. Knapp State Airport (MPV). The Federal Aviation Administration (FAA) is the lead Federal agency that is funding the environmental study and will ultimately issue an environmental finding on the Proposed Action. The EA process will analyze alternatives, undertake studies, and disclose the potential for environmental impacts that could be directly (or indirectly) caused by the Proposed Action.

MPV, owned and operated by VTrans, is located in the Town of Berlin, approximately four miles south of Montpelier and three miles west of Barre, Vermont. The Proposed Action includes the clearing of obstructions to various design surfaces within the approach of Runway 17 and Runway 35 (see attached exhibits). The proposed obstruction removal will take place on airport property and on approximately nine (9) private parcels.

The EA document will be prepared in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. As part of our early coordination effort for the referenced project, you are asked to study the enclosed information and provide a written evaluation of the potential impacts upon resources that are under your jurisdiction. You are asked to return a reply within 30-days of receipt of this packet. A Phase 1 resources assessment meeting the Vermont Archaeology Guidelines at the Resource ID level is being conducted as part of this EA and will be submitted to your office when completed. The

evaluation will include archival research, application of the environmental predictive model, and a field visit with soil core samples, photos. The associated narrative report will provide the context, information on known sites, sensitivity of the proposed impacted areas, and recommendations.

If you would like additional information on this project, please do not hesitate to contact me at (216) 273-8638 or email at mheckroth@chacompanies.com. Please send any written comments to the following address:

Mark Heckroth, ENV SP
Senior Project Manager
CHA Consulting, Inc,
1501 North Marginal Road, Suite 200
Cleveland, Ohio 44114

We appreciate your interest in the project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Heckroth", with a stylized flourish at the end.

Mark Heckroth, ENV SP
Senior Project Manager

Cc: Mr. Richard Doucette, Federal Aviation Administration
Mr. Adam Goudreau, VTrans



Heckroth, Mark

From: Dillon, Scott <Scott.Dillon@vermont.gov>
Sent: Monday, July 12, 2021 2:35 PM
To: Heckroth, Mark
Subject: [--EXTERNAL--]: RE: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport

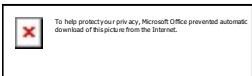
Hi Mark- Thank you for this notification. Our role in this matter is consultation. We look forward to the receipt of the archaeological assessment report that is being prepared for the project. Thanks, Scott

R. Scott Dillon
Senior Historic Preservation Review Coordinator
Vermont Division for Historic Preservation
One National Life Drive, Davis Bldg, 6th Floor
Montpelier, VT 05620-0501
802-272-7358
scott.dillon@vermont.gov

From: Heckroth, Mark <MHeckroth@chacompanies.com>
Sent: Tuesday, June 8, 2021 10:42 AM
To: Trieschmann, Laura <Laura.Trieschmann@vermont.gov>
Subject: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.
Please see attached. Thank you.

Mark Heckroth, ENV SP
Senior Project Manager
Aviation Planning and Programming
CHA
Office: (216) 273-8638
Cell: (216) 904-6283
mheckroth@chacompanies.com
www.chacompanies.com



Responsibly Improving the World We Live In





September 20, 2021

Mr. R. Scott Dillon
Senior Historic Preservation Review Coordinator
Vermont Division of Historic Preservation
One National Life Drive, Davis Building, 6th floor
Montpelier, Vermont 05620

Re: Runway 17-35 Obstruction Removal
E.F. Knapp State Airport (MPV)
Section 106 Review

Dear Mr. Dillon:

On behalf of the Federal Aviation Administration (FAA), we are submitting this Archeological Resource Assessment (ARA) for the proposed obstruction (tree) removal for Runway 17-35 at E.F. Knapp State Airport. The ARA was completed to determine if areas within the Area of Potential Effect (APE) are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological resources of potential significance are unlikely to be present. Based on the ARA, nine archaeologically sensitive areas (ASAs) were defined. All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology.

Although the report does recommend a Phase I survey within the ASAs if there is ground disturbance, the proposed removal methods within ASAs (as well as wetlands and wetland buffer) will not cause ground disturbance. Any trees identified for obstruction removal will be cut and removed; however, the root systems of all felled trees will be allowed to remain in place to preserve the existing soil stability and topographic profile. Mechanized removal of the trees utilizing low-ground pressure forestry equipment will be permitted during the winter, when the ground is frozen. Should this not be possible, the cutting and removal will be accomplished through hand falling and skidding with equipment designed to provide minimal disturbance to the surrounding vegetation. If you have any questions, please contact me at 216-273-8638 or mheckroth@chacompanies.com. We look forward to your comments, at which time, the FAA will make an effect determination.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mark Heckroth', is written in a cursive style.

Mark Heckroth, ENV SP
Senior Project Manager

Cc: Mr. Richard Doucette, Federal Aviation Administration
Mr. Adam Goudreau, VTrans

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

prepared for:

CHA

and

Vermont Department of Transportation

prepared by

Sarah Loftus, Ph.D.

Nick S. Vickers

Robert N. Bartone, M.A.

and

Gemma-Jayne Hudgell, Ph.D.

Northeast Archaeology Research Center
382 Fairbanks Road
Farmington, Maine 04938

September 8, 2021

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Table of Contents

List of Tables and Figures.....	iv
I: Introduction	1
II: Methods.....	1
III: Environmental Setting	2
IV: Cultural Setting.....	4
V: Archaeological Sensitivity	8
V: Project Effects, Conclusions and Recommendations.....	11
References Cited	12
Appendix I: Vermont Predictive Model Example	31
Appendix II: CHA Wetland Delineation Maps	34

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Abstract

The Northeast Archaeology Research Center, Inc. (NE ARC) has completed an Archaeological Resource Assessment (ARA) of the proposed Archaeological Resource Assessment of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont. The work was undertaken at the request of CHA and the Vermont Department of Transportation (VTTrans) as part of an overall Environmental Assessment (EA) for the Project, in order to meet guidelines determined by the Vermont Division for Historic Preservation (VDHP). The Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. The total proposed clearing is approximately 33 acres. It should be noted that stump removal will not take place within wetlands, wetland buffers, or in archeologically sensitive areas identified in this report. The ARA was designed to determine if areas within the Project are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological resources of potential significance are unlikely to be present. Based on the ARA, nine archaeologically sensitive areas (ASAs) were defined (ASAs 1-9). All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs if ground disturbance is associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

List of Tables and Figures

- Table 1. Archaeologically Sensitive Areas defined within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.*
- Figure 1. Topographic map showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 2. Aerial photograph showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 3. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the southern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 4. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the northern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 5. Map of the major drainage basins in Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Winooski River drainage basin.
- Figure 6. Map of the physiographic regions of Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Vermont Piedmont.
- Figure 7. Aerial photograph showing soil types within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 8. Cultural timeline of Native American history for Vermont and the broader region.
- Figure 9. 1858 Walling map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of P. Perrin residence in the southern portion of the Project.
- Figure 10. 1873 Beers map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of J. E. Perrin residence in the southern portion of the Project.
- Figure 11. View northeast of ASA 1 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

- Figure 12. View north of ASA 2 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 13. View south of a portion of ASA 4 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note the historic barn associated with the 1858 P. Perrin and 1873 J. E. Perrin farm.
- Figure 14. View south of ASA 5 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 15. View northeast of ASA 8 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

I: Introduction

The Northeast Archaeology Research Center, Inc. (NE ARC) has completed an Archaeological Resource Assessment (ARA) of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont (Figures 1 and 2). The work was undertaken at the request of CHA and the Vermont Department of Transportation (VTrans) as part of an overall Environmental Assessment (EA) for the Project. This work must meet the requirements mandated under guidelines determined by the Vermont Division for Historic Preservation (VDHP) (VTSHPO 2017).

The Project involves tree removal that are obstructions to the Runway 17-35 end approaches. The proposed tree removal is approximately 33 acres. Within this general area there are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres and totaling approximately 33 acres. Although specific access points have not been identified or negotiated with the landowner, there will be no ground disturbance for access to a clearing area through an ASA.

The ARA was designed to determine if areas within the Project are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological sites of potential significance are not likely to be present. Significant archaeological sites are those that meet eligibility criteria for the State and National Registers of Historic Places (NRHP). The ARA included background research, sensitivity modeling and a field inspection.

Based on the ARA, nine archaeologically sensitive areas (ASAs) were defined (ASAs 1-9) (Table 1) (Figures 3 and 4). All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs prior to ground disturbance associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

II: Methods

The Archaeological Resource Assessment of the Edward F. Knapp Airport Tree Removal Project included background research, sensitivity modeling and a field inspection of the Project Area. The background research included a review of available environmental, historical and archaeological data

including soil survey data, historic maps, and relevant printed and online literature. Additionally, the state archaeological site files available online through the Vermont Online Resource Center (ORC) which manages the Vermont Archaeology Inventory (VAI) were reviewed. The research was conducted to develop brief environmental and cultural contexts for the Project and to establish general archaeological sensitivity within the Project prior to the field inspection. In addition, as detailed below archaeological sensitivity modeling utilized the Vermont *Environmental Predictive Model for Locating Pre-Contact Archaeological Sites* (VDHP 2017).

With regard post-contact Euroamerican sites, the research focused on early European colonization and settlement within and near the Project Area and the town of Berlin. Historic map research included a review of the 1796 map of the State of Vermont by Whitelaw, an 1858 map of Washington County by Walling and an 1873 Washington County atlas surveyed by Beers as well as later twentieth century USGS topographic maps (Beers 1873; Walling 1858; Whitelaw 1796). Historic maps were compared with current aerials, LIDAR, and current USGS topographic maps.

In addition to background research, the ARA included a field inspection conducted by NE ARC archaeologist Nick Vickers over a period of two days on August 3rd and 4th, 2021, in order to ground-truth the results of the research as well as to assess the area of the Project for additional aspects of sensitivity not present on maps or aerial photographs. The field inspection included sampling subsurface soil deposits in select areas utilizing a 4 inch bucket augur to evaluate possible indications of prior disturbance or intact soil stratigraphy. Features detracting from archaeological sensitivity were also noted such as excessive slope, wetlands, and areas of disturbance. A GPS was utilized to assist in delineating the ASAs and pinpointing the locations of features, resources, and other points of interest, such as wetlands and historic artifact scatters or structural remains.

III: Environmental Setting

Local and regional environmental conditions are briefly summarized here since human lifeways, past and present, are better understood in relation to the ecological settings in which they occur. This overview is also relevant in that it supplies information bearing on the presence or absence of archaeological sites in a given area, as well as the conditions of preservation there.

The Edward F. Knapp Airport is located within the Stevens Branch sub-basin of the Winooski River drainage basin. The Winooski River is one of four major tributaries of Lake Champlain. The river begins in the town of Cabot and flows approximately 90 miles to the lake, draining approximately 1,080 square miles along the way. The Winooski watershed encompasses all of Washington County and half of Chittenden County as well as portions of Lamoille and Orange Counties (Vermont Agency of

Environmental Conservation 1986) (Figure 5). The Project is situated in the southeastern portion of the watershed between Berlin Pond, a natural pond augmented by a dam approximately 800 to 2,500 m to the west, and Stevens Branch approximately 8 kilometers to the east. Unnamed tributaries of Stevens Branch flow through both the northern and southern portions of the Project.

The airport and Project are situated within the Vermont Piedmont physiographic zone (Stewart and MacClintock 1969:22) (Figure 6). The Vermont Piedmont covers a large swath of Vermont to the east of the Green Mountains and is comprised of rolling hills and valleys that run the entire length of the state from Canada to Massachusetts. The town of Berlin is in the central portion of the Vermont Piedmont. As with all of New England, this area was significantly impacted by glaciation and glacial retreat roughly 12,000 years ago the close of the last ice age, and the current topography and surficial geology of the landscape resulted from these glacial processes. The most common rocks are sedimentary and metamorphic, but igneous rocks are also present, and the surrounding area includes a number of isolated peaks of glacially resistive granite, known as monadnocks that rise above the lower valleys such as West Hill approximately 1.1 km east of the airport. Local bedrock is comprised of Silurian-Devonian metasedimentary rocks deposited in the post-Taconian Connecticut Valley Trough and is part of the Wait's River formation which includes limestone with lesser amounts of phyllite and schist (Doll 1970). Elevations within the Project Area range from 450 m (1475 ft) amsl at a high point on the southern end to 300 m (985 ft) amsl on the far northern end. Soils with the Project are mapped as Glover Vershire Complex soils with 8 to 15 percent slopes in the southern portion of the Project and Buckland loam with 3 to 8 percent slopes in the northern portion of the Project (Figure 7). Glover Vershire soils are well drained soils that formed in loamy till on uplands. Similarly, Buckland soils are moderately well drained soils formed from loamy lodgment till on hills in glaciated uplands (USDA 2021).

The climate of the Vermont Piedmont is moderate, cooler and moister than the Champlain Valley and warmer and drier than the Green Mountains. The average growing season ranges from 110 to 130 days, with 36 to 52 inches of annual precipitation (depending on elevation) (Meeks 1975; Thompson and Sorenson 2005). The evolutionary development of local and regional biota has varied over the millennia, influencing human settlement in myriad ways throughout the Holocene epoch. Tundra and spruce-fir parkland vegetation emerged after initial deglaciation in the late Pleistocene and dominated the region until ca. 9500 B.P. (7500 B.C.). Mixed hardwood-conifer forests advanced during the milder postglacial climatic optimum, ca. 7500 B.P. (5500 B.C.) to 4500-4000 B.P. (2500-2000 B.C.). Today the region is dominated by Northern Hardwood Forests with stands of yellow birch, sugar maple, American Beech, hemlock, and white pine as well as substantial amounts of spruce/fir aspen/birch oak and hickory that were more common prior to land clearance in the 1800s (Davis et al. 1980; Davis and Jacobson 1985).

IV: Cultural Setting

General Native American Context

The history of human occupation in Vermont and the broader New England region is currently understood as corresponding to four major periods of time (Figure 8) (Haviland and Power 1994). These periods relate to cultural changes that occurred in response to a variety of environmental factors such as those described above, as well as social and political factors, and continue to be further defined as new evidence emerges concerning stylistic and functional changes in the artifacts people left behind, their shifting settlement patterns, and presence across the landscape. The following outline broadly defines current archaeological understanding of human history in New England up until the contact era when Europeans arrived, and massive cultural shifts occurred across the present day northeastern United States (Haviland and Power 1994; Petersen 1995).

- Paleoindian period, ca. 9000-7000 B.C.
 - Early Paleoindian period, ca. 9000-8300 B.C.
 - Middle Paleoindian period, ca. 8300-8100 B.C.
 - Late Paleoindian period, ca. 8100-7000 B.C.
- Archaic period, ca. 7000-1000 B.C.
 - Early Archaic period, ca. 7000-5500 B.C.
 - Middle Archaic period, ca. 5500-4000 B.C.
 - Late Archaic period, ca. 4000-1000 B.C.
- Woodland period, ca. 1000 B.C.-A.D. 1550
 - Early Woodland period, ca. 1000-100 B.C.
 - Middle Woodland period, ca. 100 B.C.-A.D. 1000
 - Late Woodland period, ca., A.D. 1000-1550
- Contact period, ca. A.D. 1550-1750

Following from the previous description of Vermont's environmental development it is notable that major landscape aspects such as topography and drainage have altered since the time of the last glaciation. People first entered the region during the Paleoindian cultural era soon after glacial retreat around 12,000 years ago. Paleoindian populations are believed to have been small groups of semi-nomadic hunter-gatherers, who were adapted to residence and subsistence within rapidly evolving tundra and tundra-woodland environments. Their encampments are often found in elevated settings on well-drained soils, including in proximity to high stands of the post-glacial Champlain Sea and various glacial lakes, and on elevated, strategic landforms away from major, canoe-navigable water resources (Crock and Robinson 2012).

Following climatic amelioration beginning in the Late Paleoindian/Early Archaic period, increasing warmth and rainfall as well as draining of the Champlain Sea and post glacial lakes down to

their current elevations led to drastic changes in Vermont's landscape, with the creation of substantial wetlands, the opening of major river valleys and floodplains, and an increase in forest cover. This new landscape provided an entirely new set of resources for Vermont's Native peoples, and thus sites of the Archaic period onwards (and some of the Late Paleoindian period) tend to be found close to significant (usually canoe-navigable) water sources, such as adjacent to expansive wetlands and along major rivers and upland streams.

Archaic populations are generally considered to have been hunter-gatherer groups who utilized a broad spectrum of resources found in evolving Holocene environments. Archaeologically identified Archaic settlements appear to be focused along rivers and streams, and a general trend toward larger populations became pronounced during this period. The largest sites representing long-term seasonal habitations or villages did not occur until the later portion of the Woodland period and are most often located in the lower reaches of Vermont's major river valleys. A particularly notable development during the Woodland period was the regional adoption of the full suite of maize-beans-squash horticulture, established in Vermont by around A.D. 1000 (Hudgell et al. 2021).

The Contact period, ca. A.D. 1550-1750, refers to the time when Europeans began to migrate into and colonize the region, primarily the French and British. Archaeologically, this period is typified by material culture traits of both Native American and European origin and was a dynamic period wrought with violence and disease that led to the near collapse of traditional Native American lifeways. Within a few generations, Native people were rapidly dispossessed of much of their hunting and farming lands as European settlement increased and communities were destroyed through sweeping European diseases and warfare leading to massive social and political upheaval, including genocide among the Abenaki and Mohican in Vermont. As a result, many Native people were forced northwards into Quebec. Today contemporary tribes in Vermont include the Elnu Abenaki, Nulhegan Abenaki, Koasek Traditional Band of the Koas Abenaki Nation, and the Abenaki Nation at Missisquoi, among others (Vermont Commission of Native American Affairs 2021).

Project Specific Native American Archaeological Context

As part of the background research, the *Vermont Archaeological Site Inventory (VAI)* was reviewed to identify and gather information on previously recorded archaeological sites in proximity to the Project Area. Information on near-by previously recorded sites can provide a general indication of site types that might be identified within the Project. There are three Native American archaeological sites recorded within 5-km of the Project Area. The closest site, VT-WA-0099, represents a segment of the "Coos" or "Cohas" trail which was used for generations by Indigenous peoples. The trail is depicted

on a 1793 historic map accredited to Whitelaw and is believed to correspond with the orientation of a present-day town road. Use of Indigenous trails by Europeans during the post-contact era was common and the transition of the "Coos" or "Cohas" trail to a present-day road is likely. The portion of the trail designated as an archaeological site is approximately 1.5 km east of the Project Area. The other two sites are to the north of the Project – sites VT-WA-0181 and VT-WA-0182. Site VT-WA-0191 was recorded approximately 3.2 km north of the northern portion of the Project and is described as a “saucer-shaped fire pit” identified within an excavation trench. No artifacts are mentioned in association with the feature. Site VT-WA-0182 is slightly further north, approximately 4.5 km, and is represented by a broken quartzite flake, one small Champlain Valley chert flake/frag, and five fragments of fire-cracked-rock. The low density of previously recorded Native American sites near the Project and within the town of Berlin does not reflect an absence of Native American archaeology in this region of Vermont, but is more likely related to a lack of professional archaeological survey in this area.

In addition to reviewing previously recorded sites in the Project vicinity, the VDHP *Environmental Predictive Model for Locating Precontact Archaeological Sites* was used to assist in the determining archaeological sensitivity for Native American sites within the Project Area. Scores within the predictive model are based on the presence of desirable landscape features, such as water or wetlands, or distances to such features. The Project received scores ranging from 0 to 48. A score of 31 is determined to be non-sensitive while 32 and above is determined to be sensitive) (see Table 1).

Environmental variables positively influencing sensitivity for Native American sites include the location of some of the tree removal areas on level terrace landforms in proximity to tributaries of Stevens Branch, a permanent stream that feeds into the Winooski River and eventually out to Lake Champlain. While there is currently a dearth of previously recorded Native American sites in this area, people have been traversing this general region of Vermont since the Paleoindian era, the beginning of human settlement in New England and given the favorable environmental variables it is possible archaeological sites are present within the Project. Potential site types within the Project Area include Native American sites of the Woodland period, ca. 1000 B.C.-A.D. 1600 and Contact period, ca. A.D. 1600-1750, located near rivers, streams and wetlands, as well as sites of greater antiquity; Archaic age, ca. 8500-1000 B.C., or older Paleoindian sites.

General Post-Contact Historic Euroamerican Archaeological Context

The town of Berlin, within which the Project is located, was first incorporated in 1763 and began to be settled by European immigrants around 1785 following the Revolutionary War. The first settlers arrived from New Hampshire and Massachusetts and settled along the Dog River, a tributary of the

Winooski River, located approximately 4.5 km to the west of the Project beyond Berlin Pond. By 1790 over twenty families had settled in the town, mostly clustered along the Dog River (Nye 1951; Hemenway 1882). Early names included Fowler, Silloway, Hubbard, Perrin, Nye, Bailey, Sawyer, Flagg, Taylor and Black among others. The first sawmill was built in 1791 on the upper falls of Pond Brook and was followed by a school, store, and tavern by 1800. Settlement continued to increase throughout the nineteenth century along the Dog River and also to the northeast along Stephen's Brook and along the edges and tributaries that flow into Berlin Pond (Hemenway 1882). The Central Vermont Railroad arrived in Berlin in by 1858, traveling parallel to the Dog River and crossing over the Winooski River at Montpelier. The railroad connected towns across the region with New York and Canada and fostered additional settlement and economic development within Berlin and adjacent towns.

Project Specific Post-Contact Historic Euroamerican Archaeological Context

The village of Berlin Center (now Berlin Corners) is the closest post-contact settlement to the Project and is on the northern end of Berlin Pond less than a kilometer west of the Edward F. Knapp Airport. The airport was first established as a grass runway in 1929 under the name the Barre-Montpelier Airport and was locally operated for over 40 years (Turner 2012). The communities of Barre and Montpelier came together and voted to build the airport out of necessity following the historic 1927 flood that ripped through central Vermont and destroyed many routes of communication and trade. One of the airports most famous visitors was Emilia Earhart who landed here in 1933. The State of Vermont assumed control of the airport in 1968 following a statewide trend and renamed it the Edward F. Knapp State Airport after the retiring Commissioner of Aeronautics (Turner 2012).

As the airport expanded it absorbed the historic East Road, also known as "Bible Street", which now forms one of the runways. A couple of historic farmsteads were also absorbed, but most are mapped outside of the current tree removal Project (Nye 1951; Walling 1858; Beers 1873) (Figures 9 and 10). There is one historic farmstead within the southern portion of the Project that remains standing. The structure is on the south side of Airport Road near the intersection with Scott Hill Road and first appears on historic maps in 1858 (Walling 1858). In this year the house was the residence of P. Perrin and in 1873 was the home of J. E. Perrin. The Perrin family are mentioned in early accounts of the history of Berlin as ministers and judges and several structures along Scott Hill Road are attributed to the Perrin family on historic maps (Walling 1858; Beers 1873).

Aside from these mapped 19th century households, a review of the VAI indicates there are seven previously recorded post-contact sites located within 5.0 km (3.1 mi) of the Project Area. The sites represent a variety of resources including farmsteads, mills, granite works, and historic sugaring

equipment. The sites closest to the airport are the Stewart Farmstead (VT-WA-0163) and the associated Stewart Mill Site (VT-FR-0164) located approximately 2.5 km to the west of the northern portion of the Project on the other side of Berlin Pond. Site VT-WA-0163 includes a stone foundation and cellar hole as well as a barn foundation and stone well attributed to the nineteenth century Stewart Family. Site VT-WA-0164 is approximately 800 ft downstream from the farmstead and includes the remnants of two breached dams believed to be associated with a set of mills owned by the Stewarts. Site VT-WA-0165 is also recorded in this general area and represents the remains of a maple sugaring operation as suggested by the presence of a sugar arch or evaporator pan. To the east of the airport, Site VT-WA-0175 is the location of the Barre Granite Museum approximately 3.6 km distant. Further to the south within two to four km of the southern portion of the Project are three additional historic farmsteads: the Durkee tin shop and residence (VT-WA-0161), the E. Wood barn foundation (VT-WA-0187) and the Thurber house site (VT-WA-0185). All of these previously recorded sites are well outside the area of the current Project.

V: Archaeological Sensitivity

The determination of archaeological sensitivity for the Project considers the background research presented above in combination with sensitivity modeling utilizing the Vermont *Environmental Predictive Model for Locating Pre-Contact Archeological Sites* (Appendix I) (VDHP 2017), which scores locations based on a range of environmental and other factors, and a field inspection. The field inspection was used to “ground truth” the results of a preliminary review of the Project using the *Environmental Predictive Model*.

As detailed above in the methods, NE ARC archaeologist Nick Vickers performed a walk-over inspection of the Project Area over two days on August 3rd and 4th, 2021, to ground-truth the results of the background research and to assess the project for additional aspects of sensitivity not present on maps or aerial photos, such as microtopography, springs, unmarked drainages and heads of draw (existing and potentially relict), and historic features such as cellarholes, stone walls, and dumps. Features detracting from archaeological sensitivity were also noted such as excessive slope and disturbance from construction, sand or gravel extraction, or erosion. Auger tests were also excavated in select areas to evaluate possible indications of prior disturbance or intact soil stratigraphy. The areas of archaeological sensitivity (ASAs) defined as a result are described in Table 1 and marked in Figures 3 and 4.

Project Overview and Description

The proposed Edward F. Knapp Airport Tree Removal Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. Within this general area, there are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres which total approximately 33 acres. There will be no ground disturbance for access to a clearing area through an ASA. Overall, the airport proper where the runways and associated hangers are located is within a level valley that rises in elevation on all sides, particularly to the south of the runways. The tree clearing areas are to the north and south within this more elevated, rolling landscape, which is bisected by drainages, larger unnamed permanent streams and associated wetlands. Stump removal will not take place within wetlands, wetland buffers, or in ASAs (for wetland delineations, see Appendix II).

The northern portion of the Project contains seven tree clearing areas (see Figure 2). This portion of the Project is roughly rectangular in shape and tapers to the south as it approaches the north end of Runway 17-35 south of Comstock Road. The northeast corner crosses State Highway 62 and the overall area encompasses a Shaws Grocery Store and parking lot on the northwestern end as well as a FedEx Shipping complex and Pike Industries on the east side. A tributary stream of Stevens Brook bisects this portion of the Project and in places where development has not yet occurred the landscape is a mix of forest and pasture, particularly to the southwest. Along the tributary stream there are significant associated wetlands in lower areas as well as a few higher elevation terrace landforms with level to rolling ground.

The southern portion of the Project is more elongated and triangular and is less developed than the northern section. This portion of the Project contains eight tree removal areas (see Figure 2). The area near the south end of the runway adjacent to Scott Hill Road and Airport Road, which cross the Project, is relatively rolling to level and dominated by plowed fields and pasture. An historic farmstead is present in this area and was designated as ASA 4 during the field inspection. To the south of the agricultural fields the land begins to slope significantly and continues to rise in elevation as it approaches the far southern end of the Project. Several unnamed tributary streams and drainages cut through this southern area and pockets of wetlands were noted along the stream edges as well as vernal pools and high overlooks with good views of the surrounding landscape. Areas that appear archaeologically sensitive were typically within undisturbed forest settings or pasture, however, auger tests along Comstock Road, which is in proximity to a permanent stream, revealed disturbance at auger locations 1-4 (locations shown in Figure 4).

Archaeologically Sensitive Areas

A total of nine archaeologically sensitive areas were defined as a result of the assessment, designated ASAs 1 to 9 (refer to Table 1 and Figures 11-15 for representative photographs of the ASAs). All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology.

Pre-Contact Archaeological Sensitivity

Archaeological sensitivity for pre-contact Native American sites is based on several factors: the basis of which is commonly the presence of relatively level ground (slope <8%), and proximity to water (<180 m) and these factors form the basis of the *Environmental Predictive Model* (Appendix I). The Edward F. Knapp Airport's general location on high terraces between two major tributaries the Winooski River, the Dog River and Stevens Brook, as well as the presence of the natural Berlin Pond approximately 800 m to the west suggests general archaeological sensitivity for the overall area. Specific ASAs within the Project were defined in areas where level ground is present and along elevated terrace landforms proximate to tributary streams and large swaths of wetlands. The scoring system for the *Environmental Predictive Model* has a cut-off score of 32, with 32 and above indicating archaeological sensitivity. All of the defined ASAs within the Project area score 36 and above (see Table 1). Higher scoring ASAs are located in particularly strategic settings along terrace edge landforms proximate to streams and associated resource rich wetlands and within likely travel corridors (Appendix I provides the score for ASA 9 as an example). Lower scoring ASAs are most commonly located at greater distances from major water sources.

Post-Contact Archaeological Sensitivity

The results of the ARA indicate sensitivity for the presence of post-contact archaeology within ASA 4 in the southern portion of the Project along the south side of Scott Hill Road. ASA 4 includes an historic farmstead that was mapped as the residence of P. Perrin in 1858 and J. E. Perrin in 1873 (Walling 1858; Beers 1873) (see Figures 9 and 10). The Perrin family are mentioned in early accounts of the history of Berlin as ministers and judges and several structures along Scott Hill Road, which bisects the Project on the south end, are attributed to the Perrin family on historic maps. No other historic structures are mapped with the Project, and none were encountered during the field inspection.

Non-Sensitive Areas

Archaeological sites are considered unlikely to be present within all other portions of the Project outside of the nine defined ASAs. Areas not designated as pre-contact Native American ASAs showed signs of excessive disturbance, or are sloped, rocky or submerged wetland areas. As such, they do not meet scoring criteria indicated in the VDHP's *Environmental Predictive Model*. Regarding post-contact sensitivity no other historic buildings, structures or other historic features were noted aside from those described in association with ASA 4 and no other areas within the current Project is regarded as sensitive for post-contact archaeological resources.

V: Project Effects, Conclusions and Recommendations

The Northeast Archaeology Research Center, Inc. has completed an Archaeological Resource Assessment of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont. The work was undertaken at the request of CHA and VTrans as part of an overall Environmental Assessment for the Project. The Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. There are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres and totaling an area of approximately 33 acres. There will be no ground disturbance for access to a clearing area through an ASA, and stump removal will not take place within wetlands, wetland buffers, or in ASAs.

Based on the ARA, nine archaeologically sensitive areas (ASAs) were defined (ASAs 1-9) (Table 1) (Figures 3 and 4). All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs prior to ground disturbance associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

References Cited

- Beers, F.W.
1873 *Atlas of Franklin and Grand Isle Counties, Vermont*. New York: F.W. Beers.
- Crock, John G., and Francis W. Robinson
2012 *Maritime Mountaineers: Paleoindian Settlement Patterns on the West Coast of New England*. In *Late Pleistocene Archaeology and Ecology in the Far Northeast*, pp. 48–76. Texas A&M University Press.
- Davis, Ronald B., and George L. Jacobson
1985 *Late Glacial and Early Holocene Landscapes in Northern New England and Adjacent Areas of Canada*. *Quaternary Research* 23:341–368.
- Doll, Charles G. (editor)
1970 *Surficial Geologic Map of Vermont*. Vermont Geological Survey, Montpelier.
- Haviland, William A., and Marjory W. Power
1994 *The Original Vermonters: Native Inhabitants, Past and Present*. Second edition. University Press of New England, Hanover.
- Hemenway, Abby Maria
1882 *The History of Washington County*. Vermont Watchman and State Journal Press, Montpelier.
- Hudgell, Gemma-Jayne, Ellen R. Cowie, Robert N. Bartone, and Stephen R. Scharoun
2021 *Archaeological Phase III Data Recovery of the Headquarters and Porcupine Sites (VT-FR-318 and VT-FR-326) in the Vermont Route 78 Swanton Project NH036-1(9), Swanton, Franklin County, Vermont*. In Preparation, for the Vermont Agency of Transportation by the Northeast Archaeology Research Center, Farmington, ME.
- Meeks, Harold A.
1975 *The Geographic Regions of Vermont: A Study In Maps*. Special Bicentennial Publication, Geography Publications at Dartmouth No. 10, Hanover.
- Nye, Mary Greene
1951 *The Early History of Berlin, Vermont, 1763-1820*. Capital City Press, Montpelier.
- Stewart, D., and P. MacClintock
1969 *The Surficial Geology and Pleistocene History of Vermont*. Vermont Geological Survey Bulletin 31, Montpelier.
- Thompson, Elizabeth H., and Eric R. Sorenson
2005 *Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont*. The Nature Conservancy and the VT Fish and Wildlife. University Press of New England, Hanover.
- Turner, Robert W.
2012 *From Barre-Montpelier to E. F. Knapp: The Story of a Small Airport in Berlin, Vermont*. Berlin Historical Society, Berlin.

USDA

2021 Web Soil Survey. Electronic Source, <http://websoilsurvey.nrcs.usda.gov>. Accessed 2020.

VDHP

2017 Vermont Division for Historic Preservation Environmental Predictive Model for Locating Pre-Contact Archaeological Sites. Electronic Source: <http://acd.vermont.gov/sites/acdnew/files/documents/HP/Environmental%20Predictive%20Model.pdf>. Accessed May 2017.

Vermont Agency of Environmental Conservation

1986 *Vermont Rivers Study*. Vermont Agency of Environmental Conservation, Montpelier.

Vermont Commission of Native American Affairs

2021 *Cultural Resources*. Electronic source, <https://vcnaa.vermont.gov/cultural-resources>, Accessed 2021.

VTSHPO

2017 *The Vermont State Historic Preservation Office's Guidelines for Conducting Archaeology In Vermont and Appendices*. Vermont State Historic Preservation Office, Montpelier, VT.

Walling, H.F.

1858 *Map of Franklin and Grand Isle Counties, Vermont*, New York.

Whitelaw, J.

1796 *A Correct Map of the State of Vermont from Actual Survey*. University of Vermont Special Collections, Burlington.

Table 1. Archaeologically Sensitive Areas defined within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

ASA	Description	Soils	Acerage	Post-Contact Sensitivity	Pre-Contact Sensitivity	Native American Sensitivity Scores (see Environmental Predictive Model for Locating Precontact Archaeological Sites)								Total Score	
						Rivers and streams (existing or relict)			Wetlands	Valley edge/glacial landforms		Other enviro. factors			
						Distance to river/permanent stream	Distance to intermittent stream	Head of Draw		Distance to wetland > 1 acre	High elevated landform e.g. knoll top/ridge/promontory	Special Environmental Area, such as mountain top, etc.	Travel Corridor		
1	ASA 1 is a level to gently rolling hilltop landform located in the more elevated southern portion of the Project. The landform offers commanding views of the surrounding landscape and is situated above a vernal pool approximately 300 m north of an unnamed stream. The ASA is currently wooded and though logged in the past, does not appear to have been heavily disturbed.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	5.44	No	Yes					12	32		44		
2	ASA 2 is a thin stretch of land on top of a hill in the southern portion of the Project that is currently under construction for a home development. The hill is presently mowed grass overlooking an agricultural field and offers good views of the surrounding landscape. While no streams or water sources were noted on the hill, the landform is situated between two unnamed streams located approximately 150 m to the north and 200 m to the south.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	0.62	No	Yes	6				12	32		50		
3	ASA 3 is approximately 200 m southeast of ASA 3 in the southern portion of the Project and is a slightly rounded forested hill surrounded by agricultural fields approximately 140 m north of an unnamed stream.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	0.25	No	Yes	6				12	32		50		
4	ASA 4 is a level section of land along the south side of Scott Hill Road near the intersection with Airport Road in the southern portion of the Project. A wetland is located nearby to the west and a stream forms the western boundary of the ASA. The ASA includes an historic farmstead that appears on the 1858 and 1873 historic maps as the residence of P. Perrin and J. E. Perrin, respectively. The historic barn associated with farmstead is still standing. The farmhouse appears to have been somewhat modified but remains occupied.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	1.87	Yes, residence of P. Perrin 1858 and J. E. Perrin 1873. Historic Barn remains standing and house is occupied.	Yes	12			12			12	36		
5	ASA 5 is to the north of Comstock Road in the northern portion of the Project and bordered on the east by a FedEx Shipping Center. The landform is mostly level and wooded and is surrounded by wetlands on the west and north ends. An unnamed tributary of Stevens Brook is located approximately 120 m to the west.	Buckland loam, 3 to 8 percent slopes	0.61	No	Yes	6	8		12	12		12	50		
6	ASA 6 is approximately 30 m north of ASA 5 in the northern portion of the Project on a similar level, forested, linear landform. The landform is surrounded by wetlands on the south end and is approximately 120 m to the east of an unnamed tributary of Stevens Brook.	Buckland loam, 3 to 8 percent slopes	0.6	No	Yes	6	8		12	12		12	50		

Table 1. continued.

ASA	Description	Soils	Acerage	Post-Contact Sensitivity	Pre-Contact Sensitivity	Native American Sensitivity Scores (see <i>Environmental Predictive Model for Locating Precontact Archaeological Sites</i>)								Total Score	
						Rivers and streams (existing or relict)			Wet-lands	Valley edge/glacial landforms		Other enviro. factors			
						Distance to river/ permanent stream	Distance to inter- mittent stream	Head of Draw		Distance to wetland > 1 acre	High elevated landform e.g. knoll top/ridge/ promontory	Special Environmental Area, such as mountain top, etc.	Travel Corridor		
7	ASA 7 is a densely forested pocket of level, dry land on a small terrace in the northern portion of the Project. The ASA is on the north side of Vast Lane and north of Pike Industries and is surrounded on the north and east by wetlands. An unnamed tributary stream of Stevens Brook that bisects the northern portion of the Project is located approximately 250 m to the west.	Buckland loam, 3 to 8 percent slopes	0.07	No	Yes				12	12		12	36		
8	ASA 8 is part of a level, dry landform within the northern portion of the Project. The ASA has been logged in the past is currently a mix of some recent tree growth, brush, and tall grass. The ASA is surrounded by wetlands to the west and is approximately 75 m east of the unnamed tributary stream of Stevens Brook that bisects the northern portion of the Project.	Buckland loam, 3 to 8 percent slopes	0.55	No	Yes	12			12			12	36		
9	ASA 9 includes part of a high, level landform on the southern edge of an open meadow in the northern portion of the Project. The ASA is bordered by slope down to wetlands on the southeast and over looks an unnamed tributary stream of Stevens Brook approximately 30 m to the southeast.	Buckland loam, 3 to 8 percent slopes	0.13	No	Yes	12			12	12		12	48		

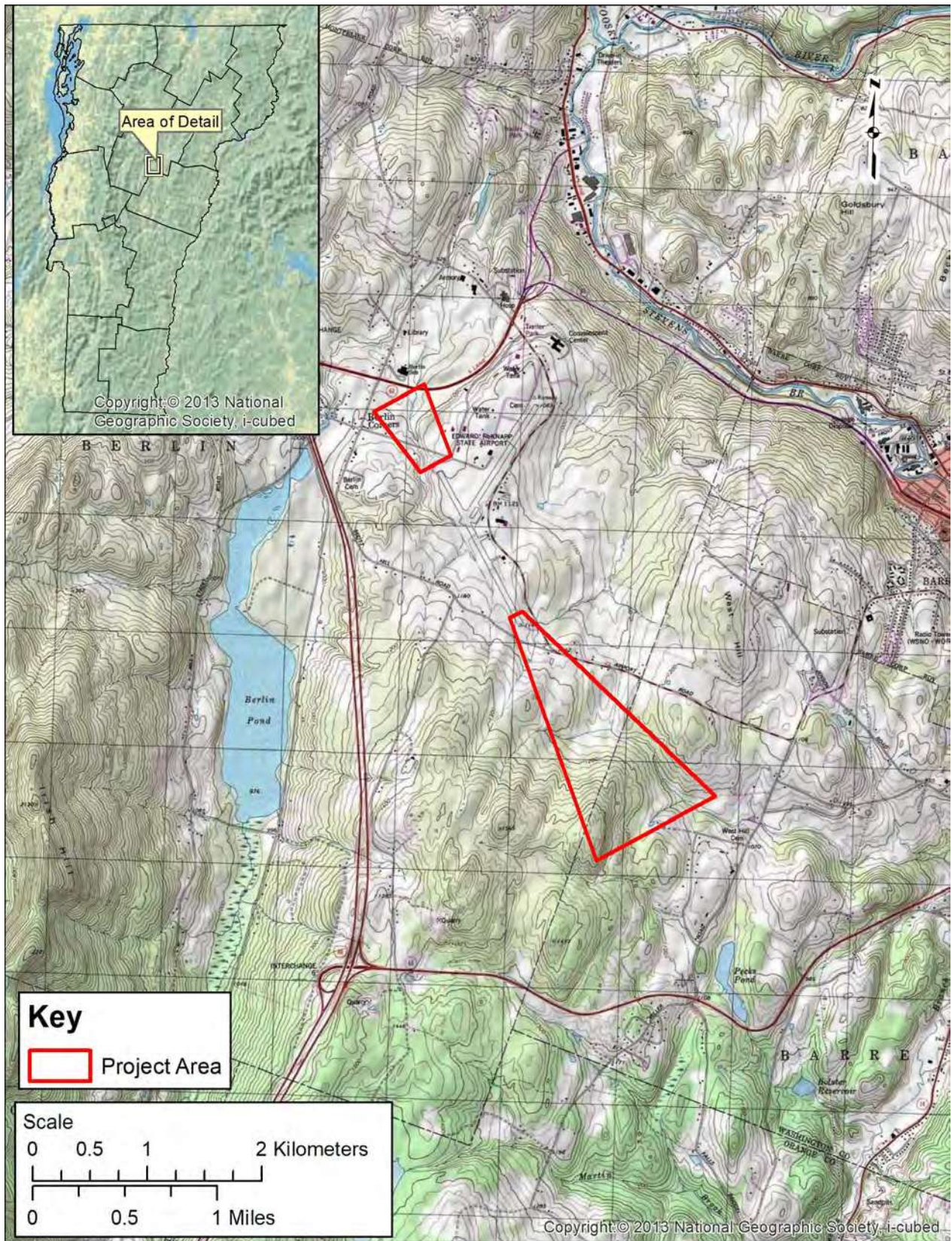


Figure 1. Topographic map showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

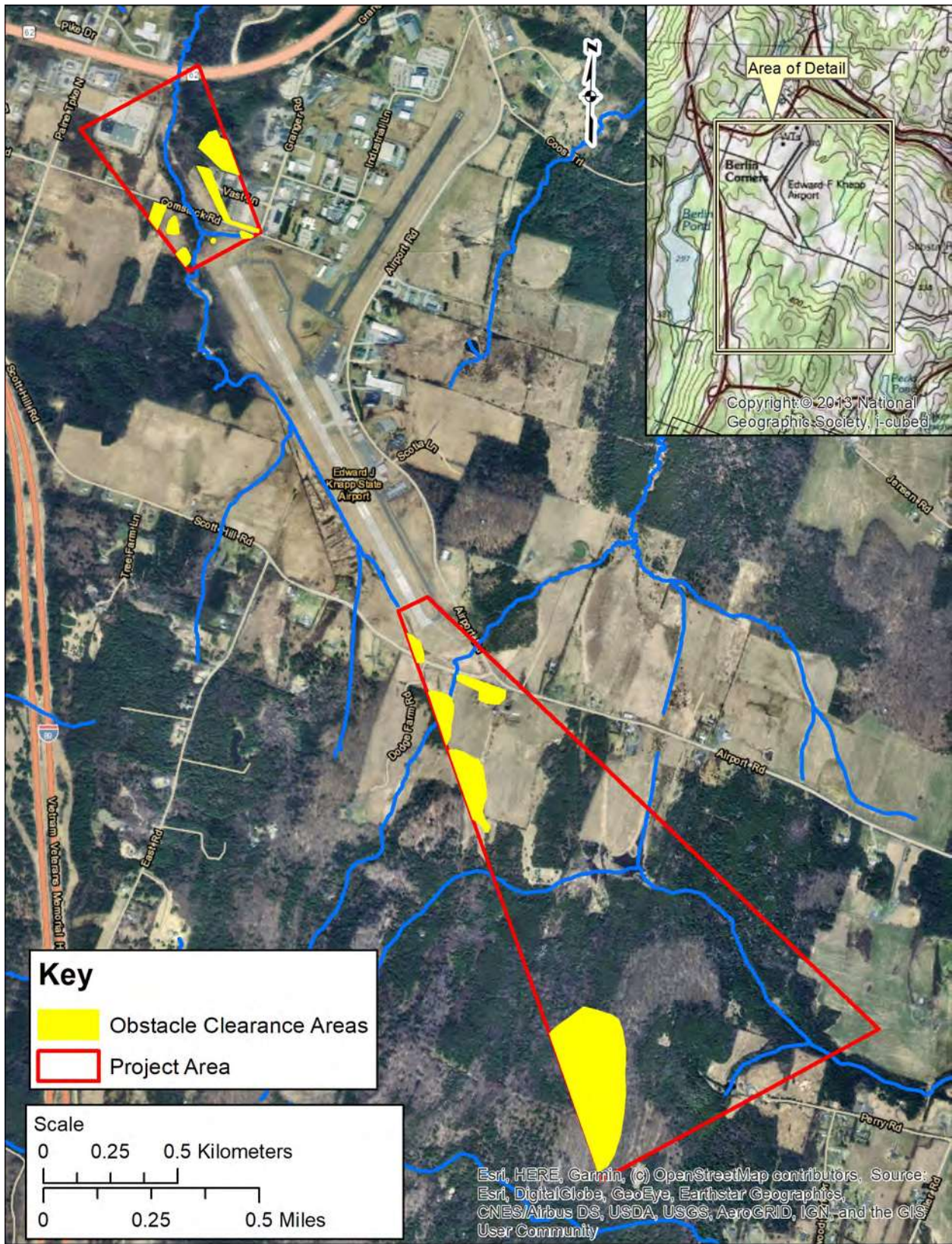


Figure 2. Aerial photograph showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

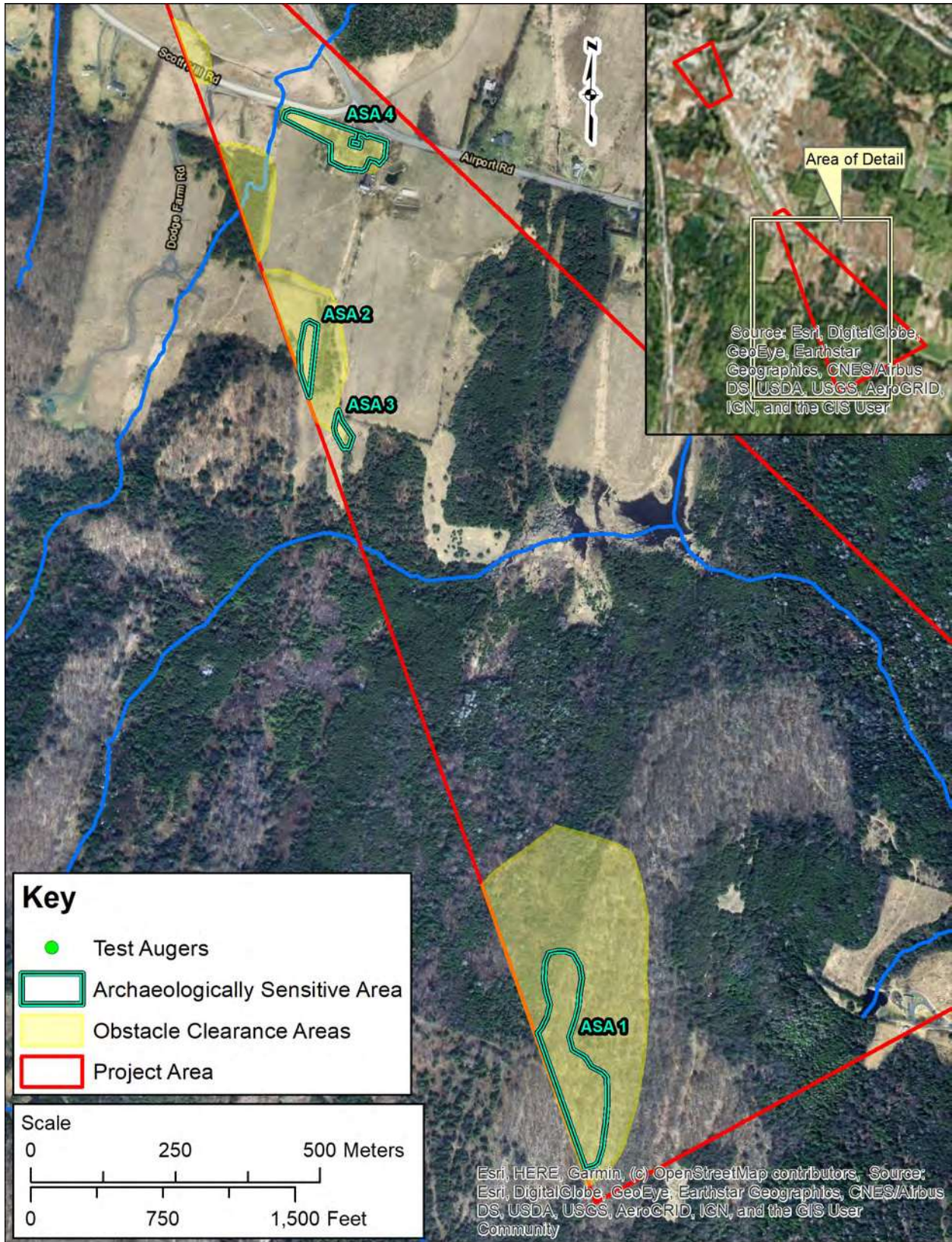


Figure 3. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the southern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

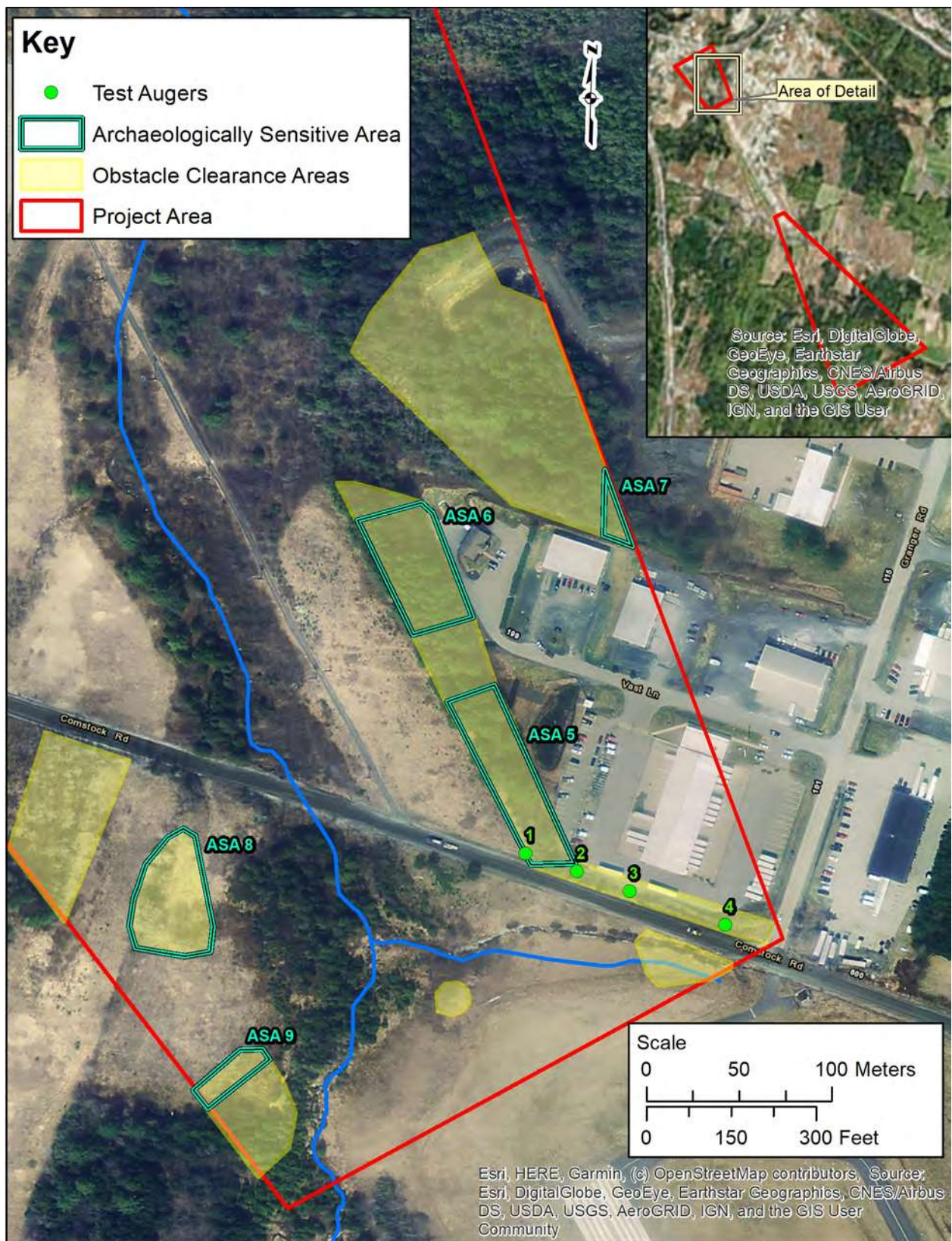


Figure 4. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the northern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

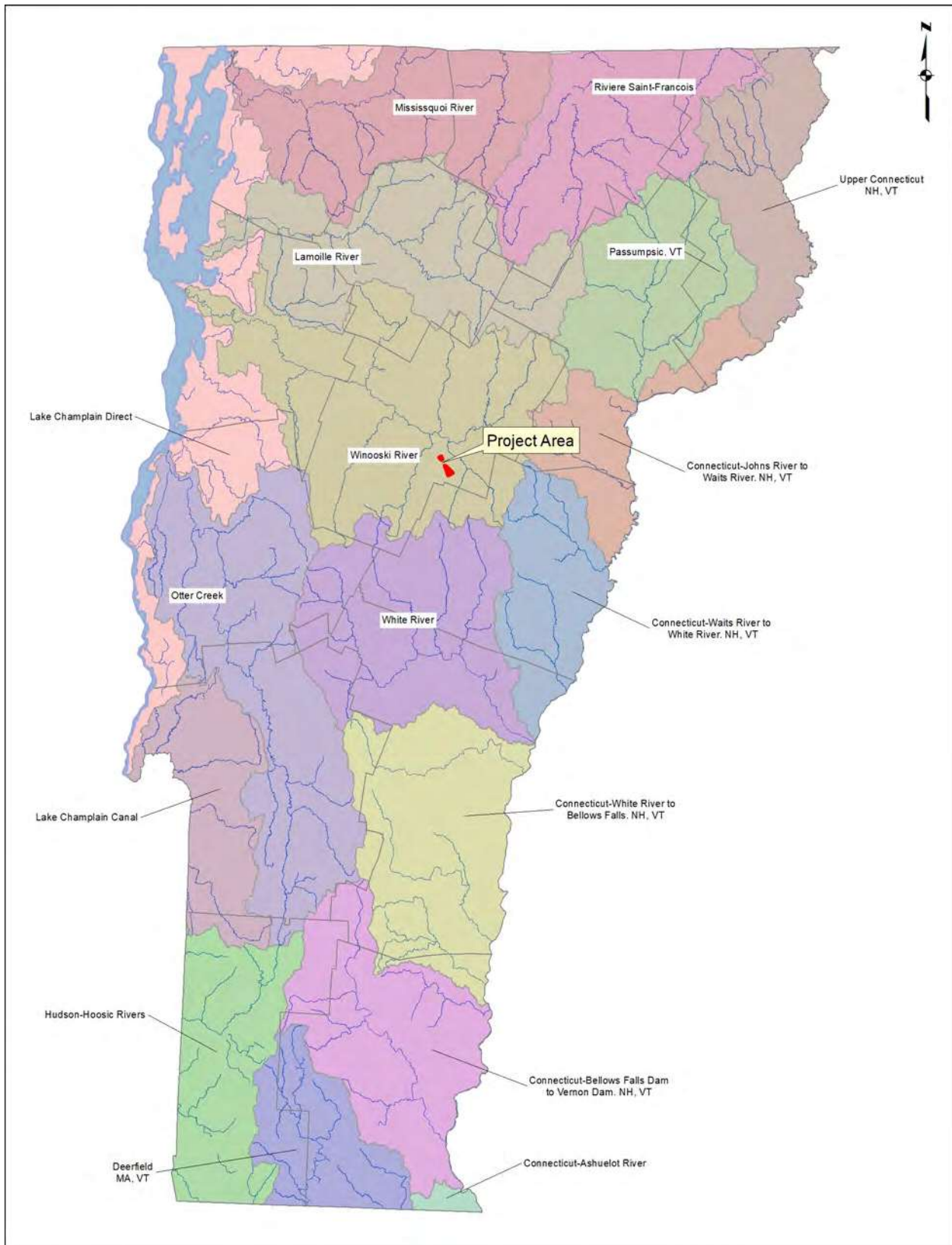


Figure 5. Map of the major drainage basins in Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Winooski River drainage basin.

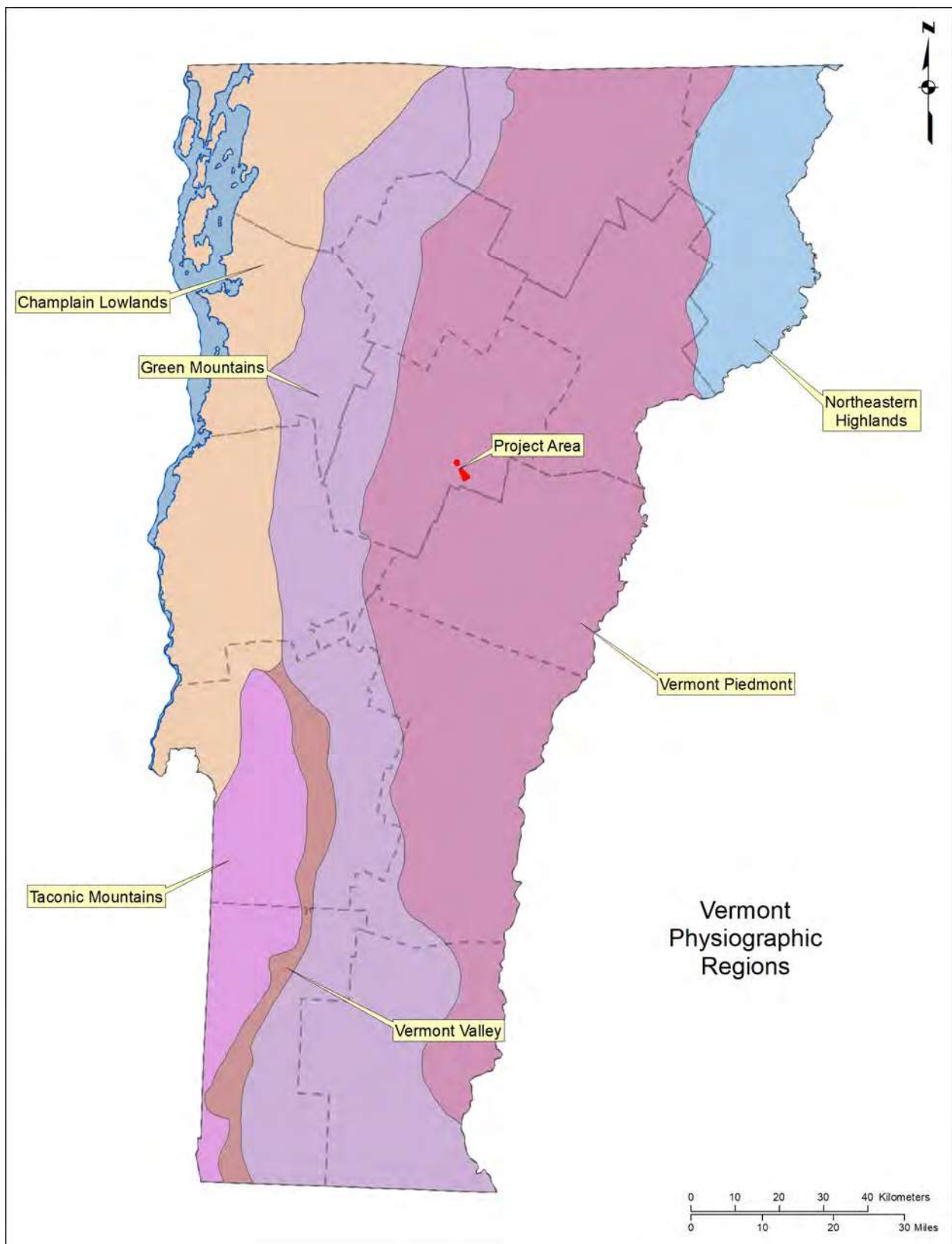


Figure 6. Map of the physiographic regions of Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Vermont Piedmont.

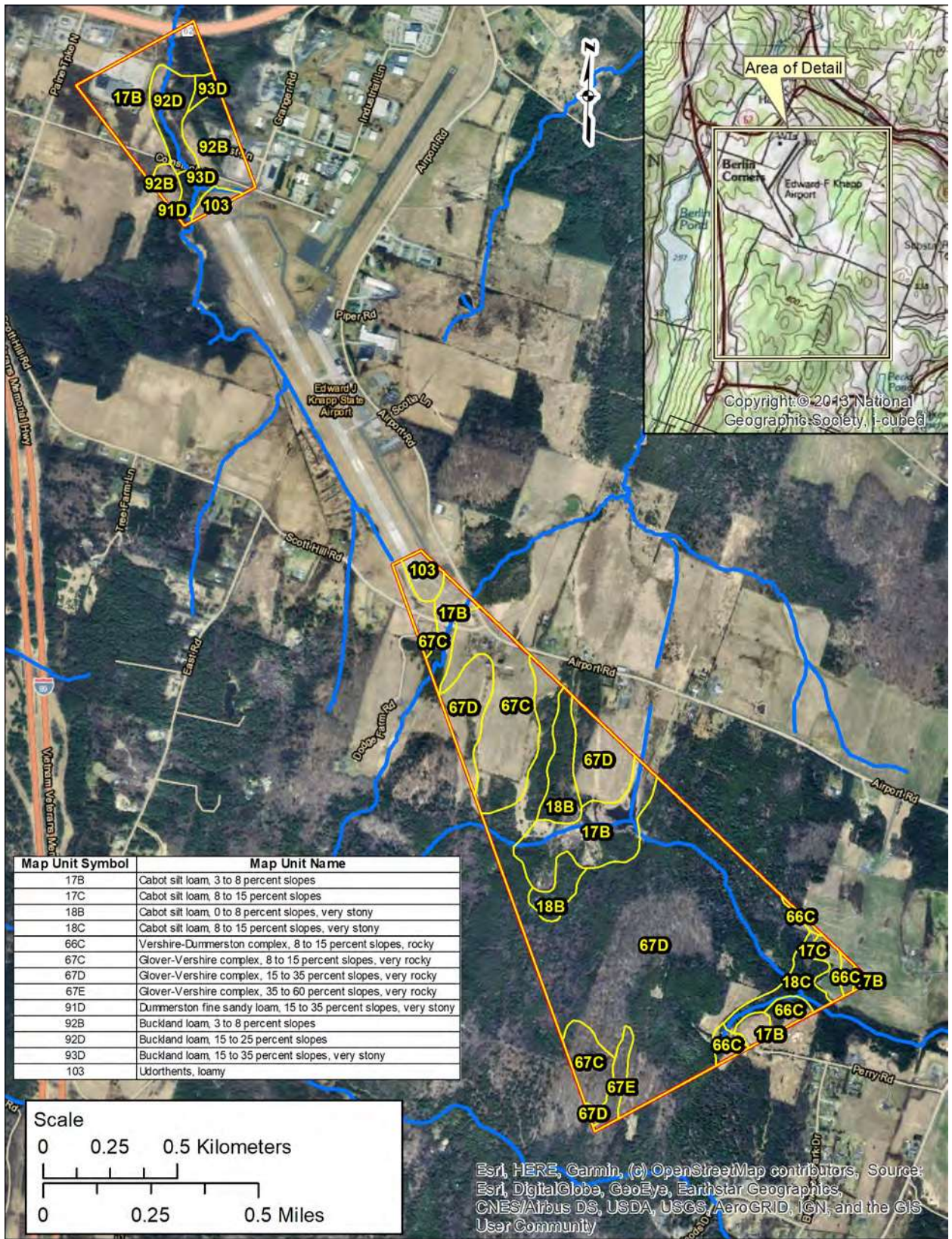


Figure 7. Aerial photograph showing soil types within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

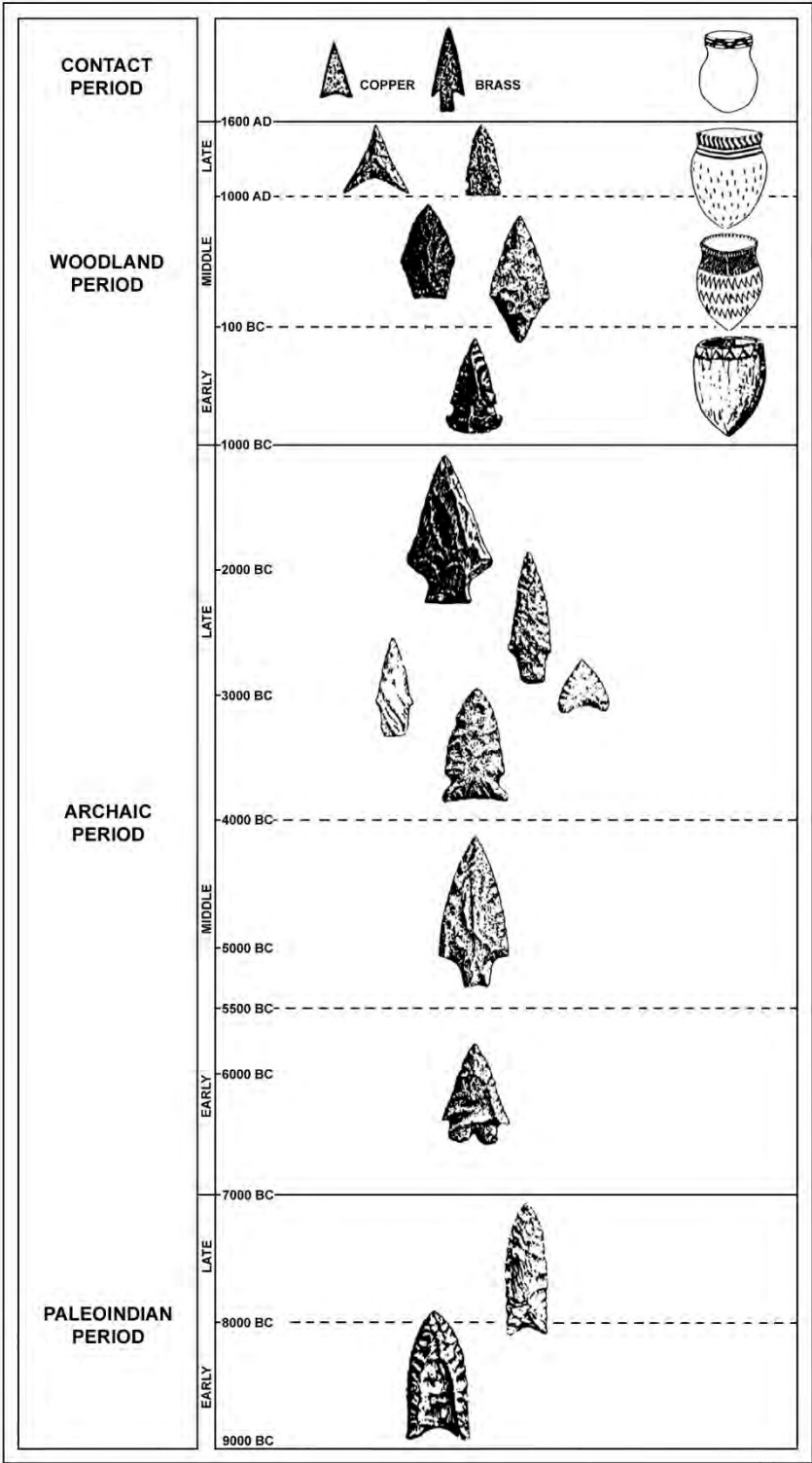


Figure 8. Cultural timeline of Native American history for Vermont and the broader region.

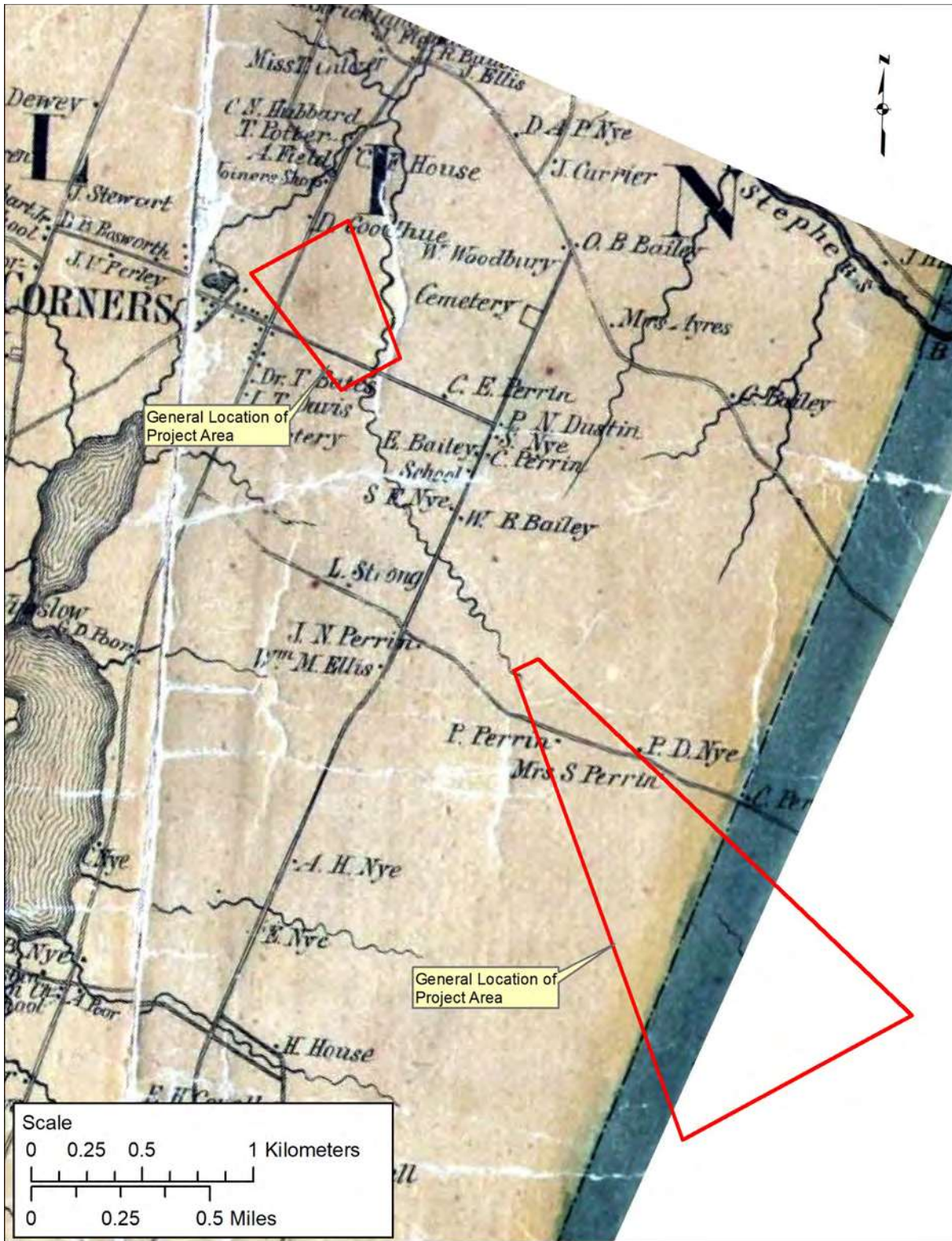


Figure 9. 1858 Walling map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of P. Perrin residence in the southern portion of the Project.



Figure 10. 1873 Beers map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of J. E. Perrin residence in the southern portion of the Project.



Figure 11. View northeast of ASA 1 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 12. View north of ASA 2 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 13. View south of a portion of ASA 4 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note the historic barn associated with the 1858 P. Perrin and 1873 J. E. Perrin farm.



Figure 14. View south of ASA 5 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 15. View northeast of ASA 8 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

Appendix I: Vermont Predictive Model Example

VERMONT DIVISION FOR HISTORIC PRESERVATION
Environmental Predictive Model for Locating Pre-contact Archaeological Sites

Edward F. Knapp Airport

Project Name
DHP No.

Map No.

County Washington
Staff Init.

Town Berlin
Date 8/02/2021

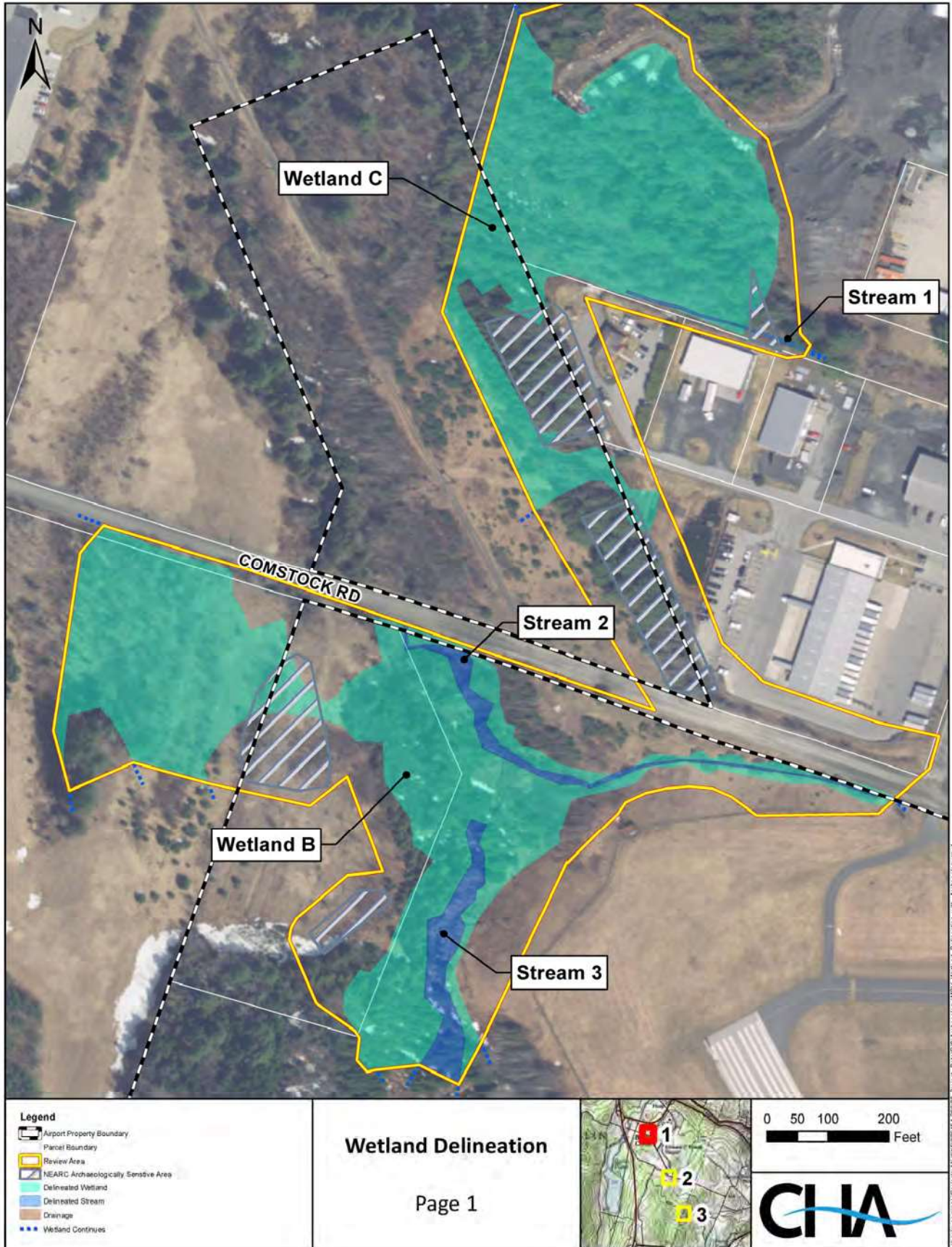
Additional Information ASA 9

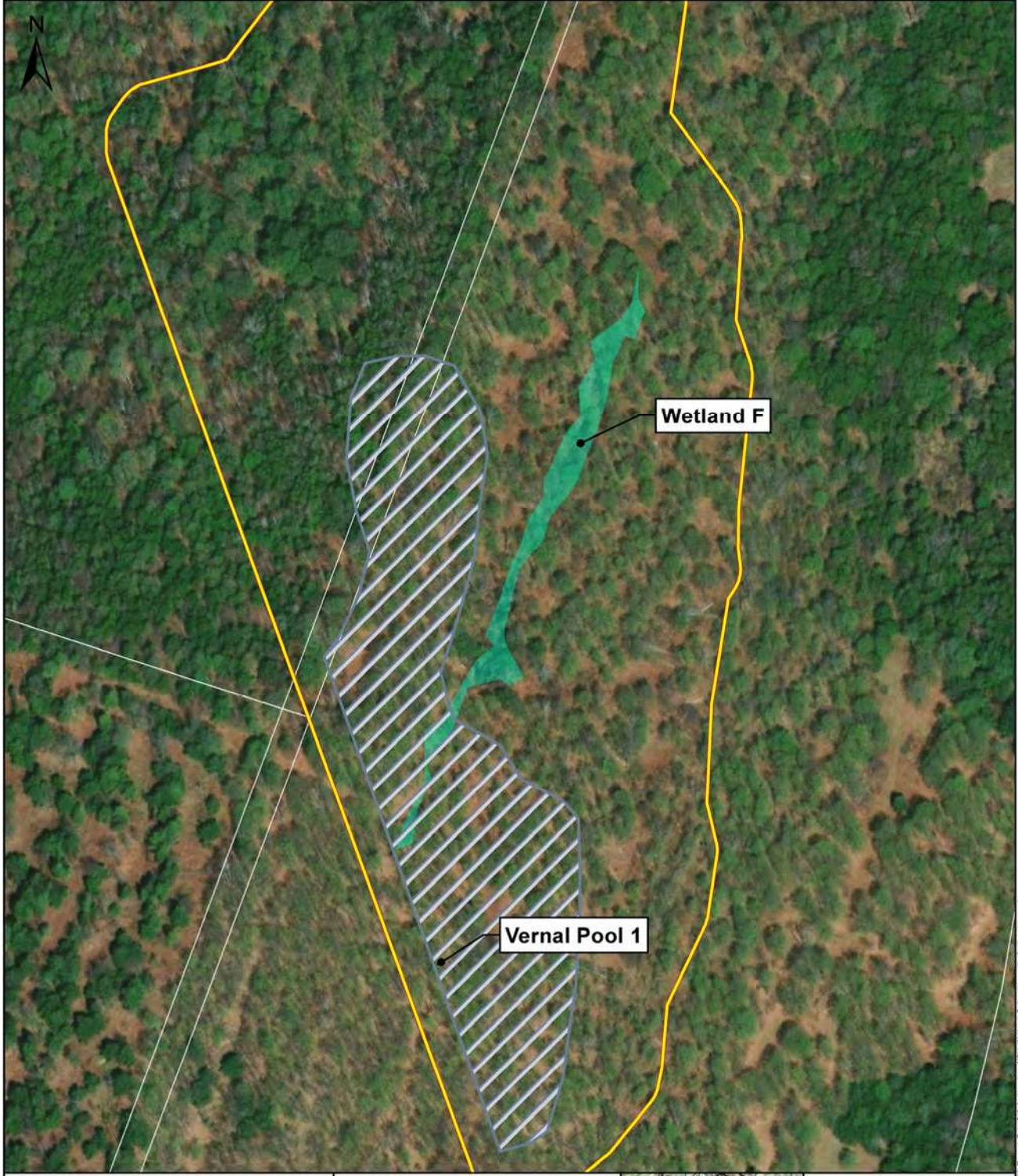
Environmental Variable	Proximity	Value	Assigned Score
A. RIVERS and STREAMS (EXISTING or RELICT):			
1) Distance to River or Permanent Stream (measured from top of bank)	0- 90 m	12	12
	90- 180 m	6	
2) Distance to Intermittent Stream	0- 90 m	8	
	90-180 m	4	
3) Confluence of River/River or River/Stream	0-90 m	12	
	90 –180 m	6	
4) Confluence of Intermittent Streams	0 – 90 m	8	
	90 – 180 m	4	
5) Falls or Rapids	0 – 90 m	8	
	90 – 180 m	4	
6) Head of Draw	0 – 90 m	8	
	90 – 180 m	4	
7) Major Floodplain/Alluvial Terrace		32	
8) Knoll or swamp island		32	
9) Stable Riverine Island		32	
B. LAKES and PONDS (EXISTING or RELICT):			
10) Distance to Pond or Lake	0- 90 m	12	
	90 -180 m	6	
11) Confluence of River or Stream	0-90 m	12	
	90 –180 m	6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m	12	12
	90 -180 m	6	
14) Knoll or swamp island		32	
D. VALLEY EDGE and GLACIAL LAND FORMS:			
15) High elevated landform such as Knoll Top/Ridge Crest/ Promontory		12	12
16) Valley edge features such as Kame/Outwash Terrace**		12	

Table Appendix I. continued.

17) Marine/Lake Delta Complex**		12	
18) Champlain Sea or Glacial Lake Shore Line**		32	
E. OTHER ENVIRONMENTAL FACTORS:			
19) Caves /Rockshelters		32	
20) <input checked="" type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		12	12
21) Existing or Relict Spring	0 – 90 m 90 – 180 m	8 4	
22) Potential or Apparent Prehistoric Quarry for stone procurement	0 – 180 m	32	
23)) Special Environmental or Natural Area, such as Milton aquifer, mountain top, etc. (these may be historic or prehistoric sacred or traditional site locations and prehistoric site types as well)		32	
F. OTHER HIGH SENSITIVITY FACTORS:			
24) High Likelihood of Burials		32	
25) High Recorded Site Density		32	
26) High likelihood of containing significant site based on recorded or archival data or oral tradition		32	
G. NEGATIVE FACTORS:			
27) Excessive Slope (>15%) or Steep Erosional Slope (>20)		- 32	
28) Previously disturbed land as evaluated by a qualified archeological professional or engineer based on coring, earlier as-built plans, or obvious surface evidence (such as a gravel pit)		- 32	
** refer to 1970 Surficial Geological Map of Vermont			
			Total Score: 48
Other Comments :			
<p>0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive</p>			

Appendix II: CHA Wetland Delineation Maps





Legend

	Airport Property Boundary
	Parcel Boundary
	Review Area
	NEARC Archaeologically Sensitive Area
	Delineated Wetland
	Delineated Stream
	Drainage
	Wetland Continues

Wetland Delineation

Page 3



0 50 100 200
Feet

C:\GIS\Projects\Wetland\Map_Series\Wetland_Delineation_With_Archaeology.mxd

Heckroth, Mark

From: Dillon, Scott <Scott.Dillon@vermont.gov>
Sent: Wednesday, October 20, 2021 2:36 PM
To: Heckroth, Mark
Cc: Goudreau, Adam; Doucette, Richard (FAA)
Subject: RE: [--EXTERNAL--]: RE: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport
Attachments: Knapp Airport Tree Removal ARA VDHP 10-20-21 Concurrence.pdf; Lower Otter Creek WMA Timber Sale VDHP 11-2-18 Comment.pdf

Good afternoon Mark- Attached is our concurrence with the ARA. However, the procedures to avoid any effects to archaeologically sensitive areas during tree clearing briefly summarized in your cover letter will have to be defined in detail in a conditional No Adverse Effect document. Because of the inconsistent winter conditions we have been experiencing in recent years, constant frozen ground conditions seem to be a thing of the past. As a result, for tree clearing activities recently conducted by Forest, Parks, and Rec. for forestry management in Wildlife Management Areas, we devised a set of stipulations describing the actions that would be required to avoid ground disturbance resulting from changing ground conditions. Central to this was having a qualified person in charge who could review and evaluate the conditions on a daily basis and provide immediate feedback to the contractor doing the work. I attached one of the conditional letters for reference to give the general idea of what would be required. My understanding is that the VTrans Archaeology Officer is working on developing conditional No Adverse Effect stipulations for similar tree clearing work at the Franklin County Airport which may also be of use. I look forward to further discussion regarding this concern. Thanks, Scott

R. Scott Dillon
Senior Historic Preservation Review Coordinator
Vermont Division for Historic Preservation
One National Life Drive, Davis Bldg, 6th Floor
Montpelier, VT 05620-0501
802-272-7358
scott.dillon@vermont.gov

From: Heckroth, Mark <MHeckroth@chacompanies.com>
Sent: Monday, September 20, 2021 4:53 PM
To: Dillon, Scott <Scott.Dillon@vermont.gov>
Cc: Goudreau, Adam <Adam.Goudreau@vermont.gov>; Doucette, Richard (FAA) <richard.doucette@faa.gov>
Subject: RE: [--EXTERNAL--]: RE: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Scott,
As a follow up to our early coordination letter back in June, attached please find the Archeological Resource Assessment for the Runway 17-35 obstruction clearing at EF Knapp State Airport for your consideration and review. If you have any question, please let me know.

Thanks,
Mark

Mark Heckroth, ENV SP

Office: (216) 273-8638

Cell: (216) 904-6283

From: Dillon, Scott <Scott.Dillon@vermont.gov>

Sent: Monday, July 12, 2021 2:35 PM

To: Heckroth, Mark <MHeckroth@chacompanies.com>

Subject: [--EXTERNAL--]: RE: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport

Hi Mark- Thank you for this notification. Our role in this matter is consultation. We look forward to the receipt of the archaeological assessment report that is being prepared for the project. Thanks, Scott

R. Scott Dillon

Senior Historic Preservation Review Coordinator

Vermont Division for Historic Preservation

One National Life Drive, Davis Bldg, 6th Floor

Montpelier, VT 05620-0501

802-272-7358

scott.dillon@vermont.gov

From: Heckroth, Mark <MHeckroth@chacompanies.com>

Sent: Tuesday, June 8, 2021 10:42 AM

To: Trieschmann, Laura <Laura.Trieschmann@vermont.gov>

Subject: Early Agency Scoping - Environmental Assessment @ EF Knapp State Airport

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please see attached. Thank you.

Mark Heckroth, ENV SP

Senior Project Manager

Aviation Planning and Programming

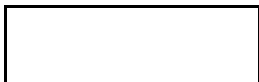
CHA

Office: (216) 273-8638

Cell: (216) 904-6283

mheckroth@chacompanies.com

www.chacompanies.com



Responsibly Improving the World We Live In



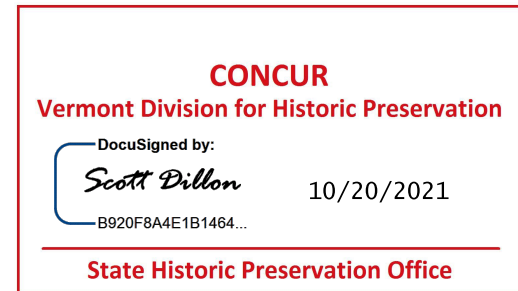
**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

prepared for:

CHA

and

Vermont Department of Transportation



prepared by

Sarah Loftus, Ph.D.

Nick S. Vickers

Robert N. Bartone, M.A.

and

Gemma-Jayne Hudgell, Ph.D.

Northeast Archaeology Research Center
382 Fairbanks Road
Farmington, Maine 04938

September 8, 2021

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Table of Contents

List of Tables and Figures.....	iv
I: Introduction	1
II: Methods.....	1
III: Environmental Setting	2
IV: Cultural Setting.....	4
V: Archaeological Sensitivity	8
V: Project Effects, Conclusions and Recommendations.....	11
References Cited	12
Appendix I: Vermont Predictive Model Example	31
Appendix II: CHA Wetland Delineation Maps	34

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Abstract

The Northeast Archaeology Research Center, Inc. (NE ARC) has completed an Archaeological Resource Assessment (ARA) of the proposed Archaeological Resource Assessment of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont. The work was undertaken at the request of CHA and the Vermont Department of Transportation (VTTrans) as part of an overall Environmental Assessment (EA) for the Project, in order to meet guidelines determined by the Vermont Division for Historic Preservation (VDHP). The Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. The total proposed clearing is approximately 33 acres. It should be noted that stump removal will not take place within wetlands, wetland buffers, or in archeologically sensitive areas identified in this report. The ARA was designed to determine if areas within the Project are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological resources of potential significance are unlikely to be present. Based on the ARA, nine archaeologically sensitive areas (ASAs) were defined (ASAs 1-9). All nine of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs if ground disturbance is associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

prepared for:

CHA

and

Vermont Department of Transportation

prepared by

Sarah Loftus, Ph.D.

Nick S. Vickers

Robert N. Bartone, M.A.

and

Gemma-Jayne Hudgell, Ph.D.

Northeast Archaeology Research Center
382 Fairbanks Road
Farmington, Maine 04938

September 8, 2021
Revised: December 2, 2021

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Table of Contents

List of Tables and Figures.....	iv
I: Introduction	1
II: Methods.....	2
III: Environmental Setting	3
IV: Cultural Setting.....	5
V: Archaeological Sensitivity	10
V: Project Effects, Conclusions and Recommendations.....	13
References Cited	14
Appendix I: Vermont Predictive Model Example	34
Appendix II: CHA Wetland Delineation Maps	37

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

Abstract

The Northeast Archaeology Research Center, Inc. (NE ARC) has completed an Archaeological Resource Assessment (ARA) of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont. The work was undertaken at the request of CHA and the Vermont Department of Transportation (VTrans) as part of an overall Environmental Assessment (EA) for the Project, in order to meet guidelines determined by the Vermont Division for Historic Preservation (VDHP). The Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. The total proposed clearing is approximately 43 acres. It should be noted that stump removal will not take place within wetlands, wetland buffers, or in archeologically sensitive areas identified in this report. The ARA was designed to determine if areas within the Project are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological resources of potential significance are unlikely to be present. Based on the ARA, eleven archaeologically sensitive areas (ASAs) were defined (ASAs 1-11). All eleven of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs if ground disturbance is associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

List of Tables and Figures

- Table 1. Archaeologically Sensitive Areas defined within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.*
- Figure 1. Topographic map showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 2. Aerial photograph showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 3. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the southern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 4. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 5-11 defined for the northern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 5. Map of the major drainage basins in Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Winooski River drainage basin.
- Figure 6. Map of the physiographic regions of Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Vermont Piedmont.
- Figure 7. Aerial photograph showing soil types within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 8. Cultural timeline of Native American history for Vermont and the broader region.
- Figure 9. 1858 Walling map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of P. Perrin residence in the southern portion of the Project.
- Figure 10. 1873 Beers map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of J. E. Perrin residence in the southern portion of the Project.
- Figure 11. View northeast of ASA 1 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

- Figure 12. View north of ASA 2 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 13. View south of a portion of ASA 4 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note the historic barn associated with the 1858 P. Perrin and 1873 J. E. Perrin farm.
- Figure 14. View south of ASA 5 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 15. View northeast of ASA 8 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.
- Figure 16. View northwest of ASA 11 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

**Archaeological Resource Assessment of the Proposed
Edward F. Knapp Airport Tree Removal Project
Berlin, Washington County, Vermont**

I: Introduction

The Northeast Archaeology Research Center, Inc. (NE ARC) has completed an Archaeological Resource Assessment (ARA) of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont (Figures 1 and 2). The work was undertaken at the request of CHA and the Vermont Department of Transportation (VTrans) as part of an overall Environmental Assessment (EA) for the Project. This work must meet the requirements mandated under guidelines determined by the Vermont Division for Historic Preservation (VDHP) (VTSHPO 2017). The ARA fieldwork was conducted in two episodes of work, the first being from August 3rd to 4th, and the second on November 11th, 2021.

The Project involves tree removal that are obstructions to the Runway 17-35 end approaches. The proposed tree removal is approximately 43 acres. Within this general area there are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres and totaling approximately 43 acres. Although specific access points have not been identified or negotiated with the landowner(s), there will be no ground disturbance for access to a clearing area through an Archaeologically Sensitive Area (ASA).

The ARA was designed to determine if areas within the Project are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological sites of potential significance are not likely to be present. Significant archaeological sites are those that meet eligibility criteria for the State and National Registers of Historic Places (NRHP). The ARA included background research, sensitivity modeling and a field inspection.

Based on the ARA, eleven ASAs were defined (ASAs 1-11) (Table 1) (Figures 3 and 4). All eleven of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes a historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs prior to ground disturbance associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

II: Methods

The Archaeological Resource Assessment of the Edward F. Knapp Airport Tree Removal Project included background research, sensitivity modeling and a field inspection of the Project Area. The background research included a review of available environmental, historical and archaeological data including soil survey data, historic maps, and relevant printed and online literature. Additionally, the state archaeological site files available online through the Vermont Online Resource Center (ORC) which manages the Vermont Archaeology Inventory (VAI) were reviewed. The research was conducted to develop brief environmental and cultural contexts for the Project and to establish general archaeological sensitivity within the Project prior to the field inspection. In addition, as detailed below archaeological sensitivity modeling utilized the Vermont *Environmental Predictive Model for Locating Pre-Contact Archaeological Sites* (VDHP 2017).

With regard post-contact Euroamerican sites, the research focused on early European colonization and settlement within and near the Project Area and the town of Berlin. Historic map research included a review of the 1796 map of the State of Vermont by Whitelaw, an 1858 map of Washington County by Walling and an 1873 Washington County atlas surveyed by Beers as well as later twentieth century USGS topographic maps (Beers 1873; Walling 1858; Whitelaw 1796). Historic maps were compared with current aeriels, LIDAR, and current USGS topographic maps.

In addition to background research, the ARA included a field inspection conducted by NE ARC archaeologist Nick Vickers over a period of three days, first on August 3rd and 4th, 2021 and later on November 18^h, 2021, in order to ground-truth the results of the research as well as to assess the area of the Project for additional aspects of sensitivity not present on maps or aerial photographs. The field inspection included sampling subsurface soil deposits in select areas utilizing a 4-inch bucket auger to evaluate possible indications of prior disturbance or intact soil stratigraphy. Features detracting from archaeological sensitivity were also noted such as excessive slope, wetlands, and areas of disturbance. A GPS was utilized to assist in delineating the ASAs and pinpointing the locations of features, resources, and other points of interest, such as wetlands and historic artifact scatters or structural remains.

III: Environmental Setting

Local and regional environmental conditions are briefly summarized here since human lifeways, past and present, are better understood in relation to the ecological settings in which they occur. This overview is also relevant in that it supplies information bearing on the presence or absence of archaeological sites in each area, as well as the conditions of preservation there.

The Edward F. Knapp Airport is located within the Stevens Branch sub-basin of the Winooski River drainage basin. The Winooski River is one of four major tributaries of Lake Champlain. The river begins in the town of Cabot and flows approximately 90 miles to the lake, draining approximately 1,080 square miles along the way. The Winooski watershed encompasses all of Washington County and half of Chittenden County as well as portions of Lamoille and Orange Counties (Vermont Agency of Environmental Conservation 1986) (Figure 5). The Project is situated in the southeastern portion of the watershed between Berlin Pond, a natural pond augmented by a dam approximately 800 to 2,500 m to the west, and Stevens Branch approximately 8 kilometers to the east. Unnamed tributaries of Stevens Branch flow through both the northern and southern portions of the Project.

The airport and Project are situated within the Vermont Piedmont physiographic zone (Stewart and MacClintock 1969:22) (Figure 6). The Vermont Piedmont covers a large swath of Vermont to the east of the Green Mountains and is comprised of rolling hills and valleys that run the entire length of the state from Canada to Massachusetts. The town of Berlin is in the central portion of the Vermont Piedmont. As with all of New England, this area was significantly impacted by glaciation and glacial retreat roughly 12,000 years ago the close of the last ice age, and the current topography and surficial geology of the landscape resulted from these glacial processes. The most common rocks are sedimentary and metamorphic, but igneous rocks are also present, and the surrounding area includes a number of isolated peaks of glacially resistive granite, known as monadnocks that rise above the lower valleys such as West Hill approximately 1.1 km east of the airport. Local bedrock is comprised of Silurian-Devonian metasedimentary rocks deposited in the post-Taconian Connecticut Valley Trough and is part of the Wait's River formation which includes limestone with lesser amounts of phyllite and schist (Doll 1970). Elevations within the Project Area range from 450 m (1475 ft) amsl at a high point on the southern end to 300 m (985 ft) amsl on the far northern end. Soils with the Project are mapped as Glover Vershire Complex soils with 8 to 15 percent slopes in the southern portion of the Project and Buckland loam with 3 to 8 percent slopes in the northern portion of the Project (Figure 7). Glover Vershire soils are well drained soils that formed in loamy till on uplands. Similarly, Buckland soils are moderately well drained soils formed from loamy lodgment till on hills in glaciated uplands (USDA 2021).

The climate of the Vermont Piedmont is moderate, cooler and moister than the Champlain Valley and warmer and drier than the Green Mountains. The average growing season ranges from 110 to 130 days, with 36 to 52 inches of annual precipitation (depending on elevation) (Meeks 1975; Thompson and Sorenson 2005). The evolutionary development of local and regional biota has varied over the millennia, influencing human settlement in myriad ways throughout the Holocene epoch. Tundra and spruce-fir parkland vegetation emerged after initial deglaciation in the late Pleistocene and dominated the region until ca. 9500 B.P. (7500 B.C.). Mixed hardwood-conifer forests advanced during the milder postglacial climatic optimum, ca. 7500 B.P. (5500 B.C.) to 4500-4000 B.P. (2500-2000 B.C.). Today the region is dominated by Northern Hardwood Forests with stands of yellow birch, sugar maple, American Beech, hemlock, and white pine as well as substantial amounts of spruce/fir aspen/birch oak and hickory that were more common prior to land clearance in the 1800s (Davis et al. 1980; Davis and Jacobson 1985).

IV: Cultural Setting

General Native American Context

The history of human occupation in Vermont and the broader New England region is currently understood as corresponding to four major periods of time (Figure 8) (Haviland and Power 1994). These periods relate to cultural changes that occurred in response to a variety of environmental factors such as those described above, as well as social and political factors, and continue to be further defined as new evidence emerges concerning stylistic and functional changes in the artifacts people left behind, their shifting settlement patterns, and presence across the landscape. The following outline broadly defines current archaeological understanding of human history in New England up until the contact era when Europeans arrived, and massive cultural shifts occurred across the present day northeastern United States (Haviland and Power 1994; Petersen 1995).

- Paleoindian period, ca. 9000-7000 B.C.
 - Early Paleoindian period, ca. 9000-8300 B.C.
 - Middle Paleoindian period, ca. 8300-8100 B.C.
 - Late Paleoindian period, ca. 8100-7000 B.C.
- Archaic period, ca. 7000-1000 B.C.
 - Early Archaic period, ca. 7000-5500 B.C.
 - Middle Archaic period, ca. 5500-4000 B.C.
 - Late Archaic period, ca. 4000-1000 B.C.
- Woodland period, ca. 1000 B.C.-A.D. 1550
 - Early Woodland period, ca. 1000-100 B.C.
 - Middle Woodland period, ca. 100 B.C.-A.D. 1000
 - Late Woodland period, ca., A.D. 1000-1550
- Contact period, ca. A.D. 1550-1750

Following from the previous description of Vermont's environmental development it is notable that major landscape aspects such as topography and drainage have altered since the time of the last glaciation. People first entered the region during the Paleoindian cultural era soon after glacial retreat around 12,000 years ago. Paleoindian populations are believed to have been small groups of semi-nomadic hunter-gatherers, who were adapted to residence and subsistence within rapidly evolving tundra and tundra-woodland environments. Their encampments are often found in elevated settings on well-drained soils, including in proximity to high stands of the post-glacial Champlain Sea and various glacial lakes, and on elevated, strategic landforms away from major, canoe-navigable water resources (Crock and Robinson 2012).

Following climatic amelioration beginning in the Late Paleoindian/Early Archaic period, increasing warmth and rainfall as well as draining of the Champlain Sea and post glacial lakes down to their current elevations led to drastic changes in Vermont's landscape, with the creation of substantial wetlands, the opening of major river valleys and floodplains, and an increase in forest cover. This new landscape provided an entirely new set of resources for Vermont's Native peoples, and thus sites of the Archaic period onwards (and some of the Late Paleoindian period) tend to be found close to significant (usually canoe-navigable) water sources, such as adjacent to expansive wetlands and along major rivers and upland streams.

Archaic populations are generally considered to have been hunter-gatherer groups who utilized a broad spectrum of resources found in evolving Holocene environments. Archaeologically identified Archaic settlements appear to be focused along rivers and streams, and a general trend toward larger populations became pronounced during this period. The largest sites representing long-term seasonal habitations or villages did not occur until the later portion of the Woodland period and are most often located in the lower reaches of Vermont's major river valleys. A particularly notable development during the Woodland period was the regional adoption of the full suite of maize-beans-squash horticulture, established in Vermont by around A.D. 1000 (Hudgell et al. 2021).

The Contact period, ca. A.D. 1550-1750, refers to the time when Europeans began to migrate into and colonize the region, primarily the French and British. Archaeologically, this period is typified by material culture traits of both Native American and European origin and was a dynamic period wrought with violence and disease that led to the near collapse of traditional Native American lifeways. Within a few generations, Native people were rapidly dispossessed of much of their hunting and farming lands as European settlement increased and communities were destroyed through sweeping European diseases and warfare leading to massive social and political upheaval, including genocide among the Abenaki and Mohican in Vermont. As a result, many Native people were forced northwards into Quebec. Today contemporary tribes in Vermont include the Elnu Abenaki, Nulhegan Abenaki, Koasek Traditional Band of the Koas Abenaki Nation, and the Abenaki Nation at Missisquoi, among others (Vermont Commission of Native American Affairs 2021).

Project Specific Native American Archaeological Context

As part of the background research, the *Vermont Archaeological Site Inventory (VAI)* was reviewed to identify and gather information on previously recorded archaeological sites in proximity to the Project Area. Information on near-by previously recorded sites can provide a general indication of site types that might be identified within the Project. There are three Native American archaeological sites

recorded within 5-km of the Project Area. The closest site, VT-WA-0099, represents a segment of the "Coos" or "Cohas" trail which was used for generations by Indigenous peoples. The trail is depicted on a 1793 historic map accredited to Whitelaw and is believed to correspond with the orientation of a present-day town road. Use of Indigenous trails by Europeans during the post-contact era was common and the transition of the "Coos" or "Cohas" trail to a present-day road is likely. The portion of the trail designated as an archaeological site is approximately 1.5 km east of the Project Area. The other two sites are to the north of the Project – sites VT-WA-0181 and VT-WA-0182. Site VT-WA-0191 was recorded approximately 3.2 km north of the northern portion of the Project and is described as a “saucer-shaped fire pit” identified within an excavation trench. No artifacts are mentioned in association with the feature. Site VT-WA-0182 is slightly further north, approximately 4.5 km, and is represented by a broken quartzite flake, one small Champlain Valley chert flake/frag, and five fragments of fire-cracked-rock. The low density of previously recorded Native American sites near the Project and within the town of Berlin does not reflect an absence of Native American archaeology in this region of Vermont, but is more likely related to a lack of professional archaeological survey in this area.

In addition to reviewing previously recorded sites in the Project vicinity, the VDHP *Environmental Predictive Model for Locating Precontact Archaeological Sites* was used to assist in the determining archaeological sensitivity for Native American sites within the Project Area. Scores within the predictive model are based on the presence of desirable landscape features, such as water or wetlands, or distances to such features. The Project received scores ranging from 0 to 48. A score of 31 is determined to be non-sensitive while 32 and above is determined to be sensitive) (see Table 1).

Environmental variables positively influencing sensitivity for Native American sites include the location of some of the tree removal areas on level terrace landforms in proximity to tributaries of Stevens Branch, a permanent stream that feeds into the Winooski River and eventually out to Lake Champlain. While there is currently a dearth of previously recorded Native American sites in this area, people have been traversing this general region of Vermont since the Paleoindian era, the beginning of human settlement in New England and given the favorable environmental variables it is possible archaeological sites are present within the Project. Potential site types within the Project Area include Native American sites of the Woodland period, ca. 1000 B.C.-A.D. 1600 and Contact period, ca. A.D. 1600-1750, located near rivers, streams and wetlands, as well as sites of greater antiquity; Archaic age, ca. 8500-1000 B.C., or older Paleoindian sites.

Post-Contact Historic Euroamerican Archaeological Context

The town of Berlin, within which the Project is located, was first incorporated in 1763 and began to be settled by European immigrants around 1785 following the Revolutionary War. The first settlers arrived from New Hampshire and Massachusetts and settled along the Dog River, a tributary of the Winooski River, located approximately 4.5 km to the west of the Project beyond Berlin Pond. By 1790 over twenty families had settled in the town, mostly clustered along the Dog River (Nye 1951; Hemenway 1882). Early names included Fowler, Silloway, Hubbard, Perrin, Nye, Bailey, Sawyer, Flagg, Taylor and Black among others. The first sawmill was built in 1791 on the upper falls of Pond Brook and was followed by a school, store, and tavern by 1800. Settlement continued to increase throughout the nineteenth century along the Dog River and also to the northeast along Stephen's Brook and along the edges and tributaries that flow into Berlin Pond (Hemenway 1882). The Central Vermont Railroad arrived in Berlin in by 1858, traveling parallel to the Dog River and crossing over the Winooski River at Montpelier. The railroad connected towns across the region with New York and Canada and fostered additional settlement and economic development within Berlin and adjacent towns.

The village of Berlin Center (now Berlin Corners) is the closest post-contact settlement to the Project and is on the northern end of Berlin Pond less than a kilometer west of the Edward F. Knapp Airport. The airport was first established as a grass runway in 1929 under the name the Barre-Montpelier Airport and was locally operated for over 40 years (Turner 2012). The communities of Barre and Montpelier came together and voted to build the airport out of necessity following the historic 1927 flood that ripped through central Vermont and destroyed many routes of communication and trade. One of the airports most famous visitors was Emilia Earhart who landed here in 1933. The State of Vermont assumed control of the airport in 1968 following a statewide trend and renamed it the Edward F. Knapp State Airport after the retiring Commissioner of Aeronautics (Turner 2012).

As the airport expanded it absorbed the historic East Road, also known as "Bible Street", which now forms one of the runways. A couple of historic farmsteads were also absorbed, but most are mapped outside of the current tree removal Project (Nye 1951; Walling 1858; Beers 1873) (Figures 9 and 10). There is one historic farmstead within the southern portion of the Project that remains standing. The structure is on the south side of Airport Road near the intersection with Scott Hill Road and first appears on historic maps in 1858 (Walling 1858). In this year the house was the residence of P. Perrin and in 1873 was the home of J. E. Perrin. The Perrin family are mentioned in early accounts of the history of Berlin as ministers and judges and several structures along Scott Hill Road are attributed to the Perrin family on historic maps (Walling 1858; Beers 1873).

Aside from these mapped 19th century households, a review of the VAI indicates there are seven previously recorded post-contact sites located within 5.0 km (3.1 mi) of the Project Area. The sites represent a variety of resources including farmsteads, mills, granite works, and historic sugaring equipment. The sites closest to the airport are the Stewart Farmstead (VT-WA-0163) and the associated Stewart Mill Site (VT-FR-0164) located approximately 2.5 km to the west of the northern portion of the Project on the other side of Berlin Pond. Site VT-WA-0163 includes a stone foundation and cellar hole as well as a barn foundation and stone well attributed to the nineteenth century Stewart Family. Site VT-WA-0164 is approximately 800 ft downstream from the farmstead and includes the remnants of two breached dams believed to be associated with a set of mills owned by the Stewarts. Site VT-WA-0165 is also recorded in this general area and represents the remains of a maple sugaring operation as suggested by the presence of a sugar arch or evaporator pan. To the east of the airport, Site VT-WA-0175 is the location of the Barre Granite Museum approximately 3.6 km distant. Further to the south within two to four km of the southern portion of the Project are three additional historic farmsteads: the Durkee tin shop and residence (VT-WA-0161), the E. Wood barn foundation (VT-WA-0187) and the Thurber house site (VT-WA-0185). All of these previously recorded sites are well outside the area of the current Project.

V: Archaeological Sensitivity

The determination of archaeological sensitivity for the Project considers the background research presented above in combination with sensitivity modeling utilizing the Vermont *Environmental Predictive Model for Locating Pre-Contact Archeological Sites* (Appendix I) (VDHP 2017), which scores locations based on a range of environmental and other factors, and a field inspection. The field inspection was used to “ground truth” the results of a preliminary review of the Project using the *Environmental Predictive Model*.

As detailed above in the methods, NE ARC archaeologist Nick Vickers performed a walk-over inspection of the Project Area over three days, first on August 3rd and 4th, 2021 and second on November 18th, 2021 to ground-truth the results of the background research and to assess the Project for additional aspects of sensitivity not present on maps or aerial photos, such as microtopography, springs, unmarked drainages and heads of draw (existing and potentially relict), and historic features such as cellarholes, stone walls, and dumps. Features detracting from archaeological sensitivity were also noted such as excessive slope and disturbance from construction, sand or gravel extraction, or erosion. Auger tests were also excavated in select areas to evaluate possible indications of prior disturbance or intact soil stratigraphy. The areas of archaeological sensitivity (ASAs) defined as a result are described in Table 1 and marked in Figures 3 and 4.

Project Overview and Description

The proposed Edward F. Knapp Airport Tree Removal Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. Within this general area, there are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres which total approximately 43 acres. There will be no ground disturbance for access to a clearing area through an ASA. Overall, the airport proper where the runways and associated hangers are located is within a level valley that rises in elevation on all sides, particularly to the south of the runways. The tree clearing areas are to the north and south within this more elevated, rolling landscape, which is bisected by drainages, larger unnamed permanent streams and associated wetlands. Stump removal will not take place within wetlands, wetland buffers, or in ASAs (for wetland delineations, see Appendix II).

The northern portion of the Project contains seven tree clearing areas (see Figure 2). This portion of the Project is roughly rectangular in shape and tapers to the south as it approaches the north end of Runway 17-35 south of Comstock Road. The northeast corner crosses State Highway 62 and the overall area encompasses a Shaws Grocery Store and parking lot on the northwestern end as well as a FedEx

Shipping complex and Pike Industries on the east side. A tributary stream of Stevens Brook bisects this portion of the Project and in places where development has not yet occurred the landscape is a mix of forest and pasture, particularly to the southwest. Along the tributary stream there are significant associated wetlands in lower areas as well as a few higher elevation terrace landforms with level to rolling ground.

The southern portion of the Project is more elongated and triangular and is less developed than the northern section. This portion of the Project contains eight tree removal areas (see Figure 2). The area near the south end of the runway adjacent to Scott Hill Road and Airport Road, which cross the Project, is relatively rolling to level and dominated by plowed fields and pasture. A historic farmstead is present in this area and was designated as ASA 4 during the field inspection. To the south of the agricultural fields the land begins to slope significantly and continues to rise in elevation as it approaches the far southern end of the Project. Several unnamed tributary streams and drainages cut through this southern area and pockets of wetlands were noted along the stream edges as well as vernal pools and high overlooks with good views of the surrounding landscape. Areas that appear archaeologically sensitive were typically within undisturbed forest settings or pasture, however, auger tests along Comstock Road, which is in proximity to a permanent stream, revealed disturbance at auger locations 1-4 (locations shown in Figure 4).

Archaeologically Sensitive Areas

A total of eleven archaeologically sensitive areas were defined as a result of the assessment, designated ASAs 1 to 11 (refer to Table 1 and Figures 11-15 for representative photographs of the ASAs). All eleven of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology.

Pre-Contact Archaeological Sensitivity

Archaeological sensitivity for pre-contact Native American sites is based on several factors: the basis of which is commonly the presence of relatively level ground (slope <8%), and proximity to water (<180 m) and these factors form the basis of the *Environmental Predictive Model* (Appendix I). The Edward F. Knapp Airport's general location on high terraces between two major tributaries the Winooski River, the Dog River and Stevens Brook, as well as the presence of the natural Berlin Pond approximately 800 m to the west suggests general archaeological sensitivity for the overall area. Specific ASAs within the Project were defined in areas where level ground is present and along elevated terrace landforms proximate to tributary streams and large swaths of wetlands. The scoring system for the *Environmental*

Predictive Model has a cut-off score of 32, with 32 and above indicating archaeological sensitivity. All of the defined ASAs within the Project area score 36 and above (see Table 1). Higher scoring ASAs are located in particularly strategic settings along terrace edge landforms proximate to streams and associated resource rich wetlands and within likely travel corridors (Appendix I provides the score for ASA 9 as an example). Lower scoring ASAs are most commonly located at greater distances from major water sources.

Post-Contact Archaeological Sensitivity

The results of the ARA indicate sensitivity for the presence of post-contact archaeology within ASA 4 in the southern portion of the Project along the south side of Scott Hill Road. ASA 4 includes an historic farmstead that was mapped as the residence of P. Perrin in 1858 and J. E. Perrin in 1873 (Walling 1858; Beers 1873) (see Figures 9 and 10). The Perrin family are mentioned in early accounts of the history of Berlin as ministers and judges and several structures along Scott Hill Road, which bisects the Project on the south end, are attributed to the Perrin family on historic maps. No other historic structures are mapped with the Project, and none were encountered during the field inspection.

Non-Sensitive Areas

Archaeological sites are considered unlikely to be present within all other portions of the Project outside of the eleven defined ASAs. Areas not designated as pre-contact Native American ASAs showed signs of excessive disturbance, or are sloped, rocky or submerged wetland areas. As such, they do not meet scoring criteria indicated in the VDHP's *Environmental Predictive Model*. Regarding post-contact sensitivity no other historic buildings, structures or other historic features were noted aside from those described in association with ASA 4 and no other areas within the current Project are regarded as sensitive for post-contact archaeological resources.

V: Project Effects, Conclusions and Recommendations

The Northeast Archaeology Research Center, Inc. has completed an Archaeological Resource Assessment of the proposed Edward F. Knapp Airport Tree Removal Project in Berlin, Washington County, Vermont. The work was undertaken at the request of CHA and VTrans as part of an overall Environmental Assessment for the Project. The Project involves tree removal and related earth disturbance on the northern and southern ends of Runway 17-35. There are 12 designated tree clearing areas of various sizes and amorphous shapes ranging from 0.06 to 27 acres and totaling an area of approximately 43 acres. There will be no ground disturbance for access to a clearing area through an ASA, and stump removal will not take place within wetlands, wetland buffers, or in ASAs.

Based on the ARA, eleven archaeologically sensitive areas (ASAs) were defined (ASAs 1-11) (Table 1) (Figures 3 and 4). All eleven of the ASAs are sensitive for pre-contact Native American archaeology and ASA 4, which includes an historic farmstead, is sensitive for both pre- and post-contact archaeology. Archaeological Phase I survey is recommended within the ASAs prior to ground disturbance associated with the proposed Project to determine if potentially significant archaeological sites are present, and to determine potential Project effects on archaeological deposits if identified.

References Cited

- Beers, F.W.
1873 *Atlas of Franklin and Grand Isle Counties, Vermont*. New York: F.W. Beers.
- Crock, John G., and Francis W. Robinson
2012 *Maritime Mountaineers: Paleoindian Settlement Patterns on the West Coast of New England*. In *Late Pleistocene Archaeology and Ecology in the Far Northeast*, pp. 48–76. Texas A&M University Press.
- Davis, Ronald B., and George L. Jacobson
1985 *Late Glacial and Early Holocene Landscapes in Northern New England and Adjacent Areas of Canada*. *Quaternary Research* 23:341–368.
- Doll, Charles G. (editor)
1970 *Surficial Geologic Map of Vermont*. Vermont Geological Survey, Montpelier.
- Haviland, William A., and Marjory W. Power
1994 *The Original Vermonters: Native Inhabitants, Past and Present*. Second edition. University Press of New England, Hanover.
- Hemenway, Abby Maria
1882 *The History of Washington County*. Vermont Watchman and State Journal Press, Montpelier.
- Hudgell, Gemma-Jayne, Ellen R. Cowie, Robert N. Bartone, and Stephen R. Scharoun
2021 *Archaeological Phase III Data Recovery of the Headquarters and Porcupine Sites (VT-FR-318 and VT-FR-326) in the Vermont Route 78 Swanton Project NH036-1(9), Swanton, Franklin County, Vermont*. In Preparation, for the Vermont Agency of Transportation by the Northeast Archaeology Research Center, Farmington, ME.
- Meeks, Harold A.
1975 *The Geographic Regions of Vermont: A Study In Maps*. Special Bicentennial Publication, Geography Publications at Dartmouth No. 10, Hanover.
- Nye, Mary Greene
1951 *The Early History of Berlin, Vermont, 1763-1820*. Capital City Press, Montpelier.
- Stewart, D., and P. MacClintock
1969 *The Surficial Geology and Pleistocene History of Vermont*. Vermont Geological Survey Bulletin 31, Montpelier.
- Thompson, Elizabeth H., and Eric R. Sorenson
2005 *Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont*. The Nature Conservancy and the VT Fish and Wildlife. University Press of New England, Hanover.
- Turner, Robert W.
2012 *From Barre-Montpelier to E. F. Knapp: The Story of a Small Airport in Berlin, Vermont*. Berlin Historical Society, Berlin.

USDA

2021 Web Soil Survey. Electronic Source, <http://websoilsurvey.nrcs.usda.gov>. Accessed 2020.

VDHP

2017 Vermont Division for Historic Preservation Environmental Predictive Model for Locating Pre-Contact Archaeological Sites. Electronic Source: <http://acd.vermont.gov/sites/acdnew/files/documents/HP/Environmental%20Predictive%20Model.pdf>. Accessed May 2017.

Vermont Agency of Environmental Conservation

1986 *Vermont Rivers Study*. Vermont Agency of Environmental Conservation, Montpelier.

Vermont Commission of Native American Affairs

2021 *Cultural Resources*. Electronic source, <https://vcnaa.vermont.gov/cultural-resources>, Accessed 2021.

VTSHPO

2017 *The Vermont State Historic Preservation Office's Guidelines for Conducting Archaeology In Vermont and Appendices*. Vermont State Historic Preservation Office, Montpelier, VT.

Walling, H.F.

1858 *Map of Franklin and Grand Isle Counties, Vermont*, New York.

Whitelaw, J.

1796 *A Correct Map of the State of Vermont from Actual Survey*. University of Vermont Special Collections, Burlington.

Table 1. Archaeologically Sensitive Areas defined within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

ASA	Description	Soils	Acerage	Post-Contact Sensitivity	Pre-Contact Sensitivity	Native American Sensitivity Scores (see Environmental Predictive Model for Locating Precontact Archaeological Sites)								Total Score	
						Rivers and streams (existing or relict)			Wet-lands	Valley edge/glacial landforms		Other enviro. factors			
						Distance to river/ permanent stream	Distance to inter- mittent stream	Head of Draw		Distance to wetland > 1 acre	High elevated landform e.g. knoll top/ridge/ promontory	Special Environmental Area, such as mountain top, etc.	Travel Corridor		
1	ASA 1 is a level to gently rolling hilltop landform located in the more elevated southern portion of the Project. The landform offers commanding views of the surrounding landscape and is situated above a vernal pool approximately 300 m north of an unnamed stream. The ASA is currently wooded and though logged in the past, does not appear to have been heavily disturbed.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	5.44	No	Yes						12	32		44	
2	ASA 2 is a thin stretch of land on top of a hill in the southern portion of the Project that is currently under construction for a home development. The hill is presently mowed grass overlooking an agricultural field and offers good views of the surrounding landscape. While no streams or water sources were noted on the hill, the landform is situated between two unnamed streams located approximately 150 m to the north and 200 m to the south.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	0.62	No	Yes	6					12	32		50	
3	ASA 3 is approximately 200 m southeast of ASA 3 in the southern portion of the Project and is a slightly rounded forested hill surrounded by agricultural fields approximately 140 m north of an unnamed stream.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	0.25	No	Yes	6					12	32		50	
4	ASA 4 is a level section of land along the south side of Scott Hill Road near the intersection with Airport Road in the southern portion of the Project. A wetland is located nearby to the west and a stream forms the western boundary of the ASA. The ASA includes an historic farmstead that appears on the 1858 and 1873 historic maps as the residence of P. Perrin and J. E. Perrin, respectively. The historic barn associated with farmstead is still standing. The farmhouse appears to have been somewhat modified but remains occupied.	Glover Vershire Complex, 8 to 15 percent slopes, very rocky	1.87	Yes, residence of P. Perrin 1858 and J. E. Perrin 1873. Historic Barn remains standing and house is occupied.	Yes	12			12				12	36	
5	ASA 5 is to the north of Comstock Road in the northern portion of the Project and bordered on the east by a FedEx Shipping Center. The landform is mostly level and wooded and is surrounded by wetlands on the west and north ends. An unnamed tributary of Stevens Brook is located approximately 120 m to the west.	Buckland loam, 3 to 8 percent slopes	0.61	No	Yes	6	8		12	12			12	50	
6	ASA 6 is approximately 30 m north of ASA 5 in the northern portion of the Project on a similar level, forested, linear landform. The landform is surrounded by wetlands on the south end and is approximately 120 m to the east of an unnamed tributary of Stevens Brook.	Buckland loam, 3 to 8 percent slopes	0.6	No	Yes	6	8		12	12			12	50	

Table 1. continued.

ASA	Description	Soils	Acerage	Post-Contact Sensitivity	Pre-Contact Sensitivity	Native American Sensitivity Scores (see <i>Environmental Predictive Model for Locating Precontact Archaeological Sites</i>)								Total Score
						Rivers and streams (existing or relict)			Wetlands	Valley edge/glacial landforms		Other enviro. factors		
						Distance to river/permanent stream	Distance to intermittent stream	Head of Draw	Distance to wetland > 1 acre	High elevated landform e.g. knoll top/ridge/promontory	Special Environmental Area, such as mountain top, etc.	Travel Corridor		
8	ASA 8 is part of a level, dry landform within the northern portion of the Project. The ASA has been logged in the past is currently a mix of some recent tree growth, brush, and tall grass. The ASA is surrounded by wetlands to the west and is approximately 75 m east of the unnamed tributary stream of Stevens Brook that bisects the northern portion of the Project.	Buckland loam, 3 to 8 percent slopes	0.55	No	Yes	12			12				12	36
9	ASA 9 includes part of a high, level landform on the southern edge of an open meadow in the northern portion of the Project. The ASA is bordered by slope down to wetlands on the southeast and over looks an unnamed tributary stream of Stevens Brook approximately 30 m to the southeast.	Buckland loam, 3 to 8 percent slopes	0.13	No	Yes	12			12	12			12	48
10	ASA 10 is located to the north of Comstock Road in the northern portion of the Project. The landform is a relatively flat edge of a high knoll in an open meadow overlooking an unnamed tributary of Stevens Brook located within, although the project area ends before reaching the summit of the knoll. Steep slope is present within the meadow to the east of the ASA as the landform descends down to the tributary and associated wetlands.	Cobalt Silt Loam, 3 to 8 percent slopes	0.59	No	Yes	12			12	12			12	48
11	ASA 11 is located to the north of Comstock Road in the northern portion of the Project. The ASA is located on a high, mostly level landform overlooking an unnamed tributary of Stevens Brook to the west, with the ASA bordered by slope to the north and west. Some wetland is present to the northeast and between ASA 11 and ASA 6.	Buckland loam, 3 to 8 percent slopes	1.14	No	Yes	12			12	12			12	48

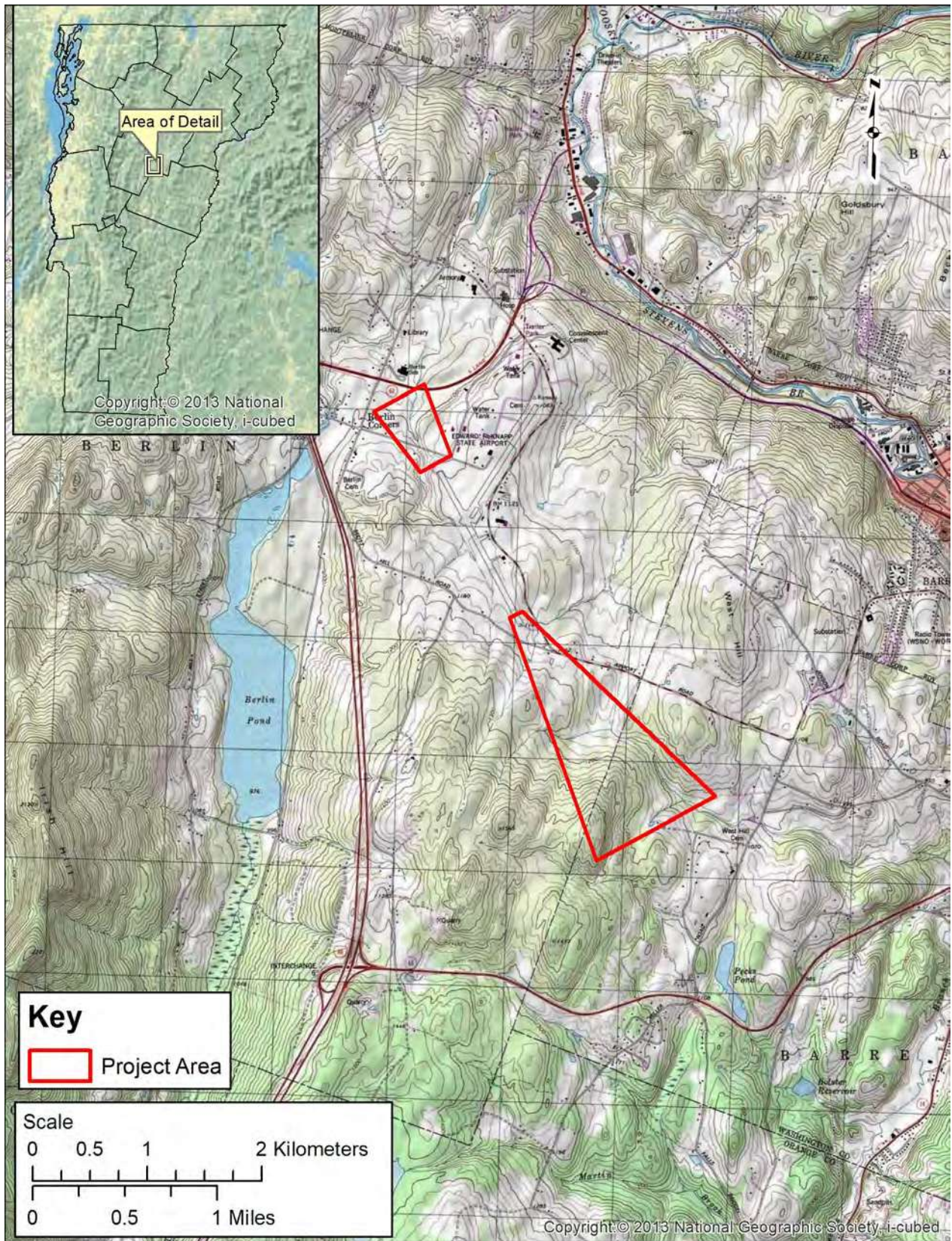


Figure 1. Topographic map showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

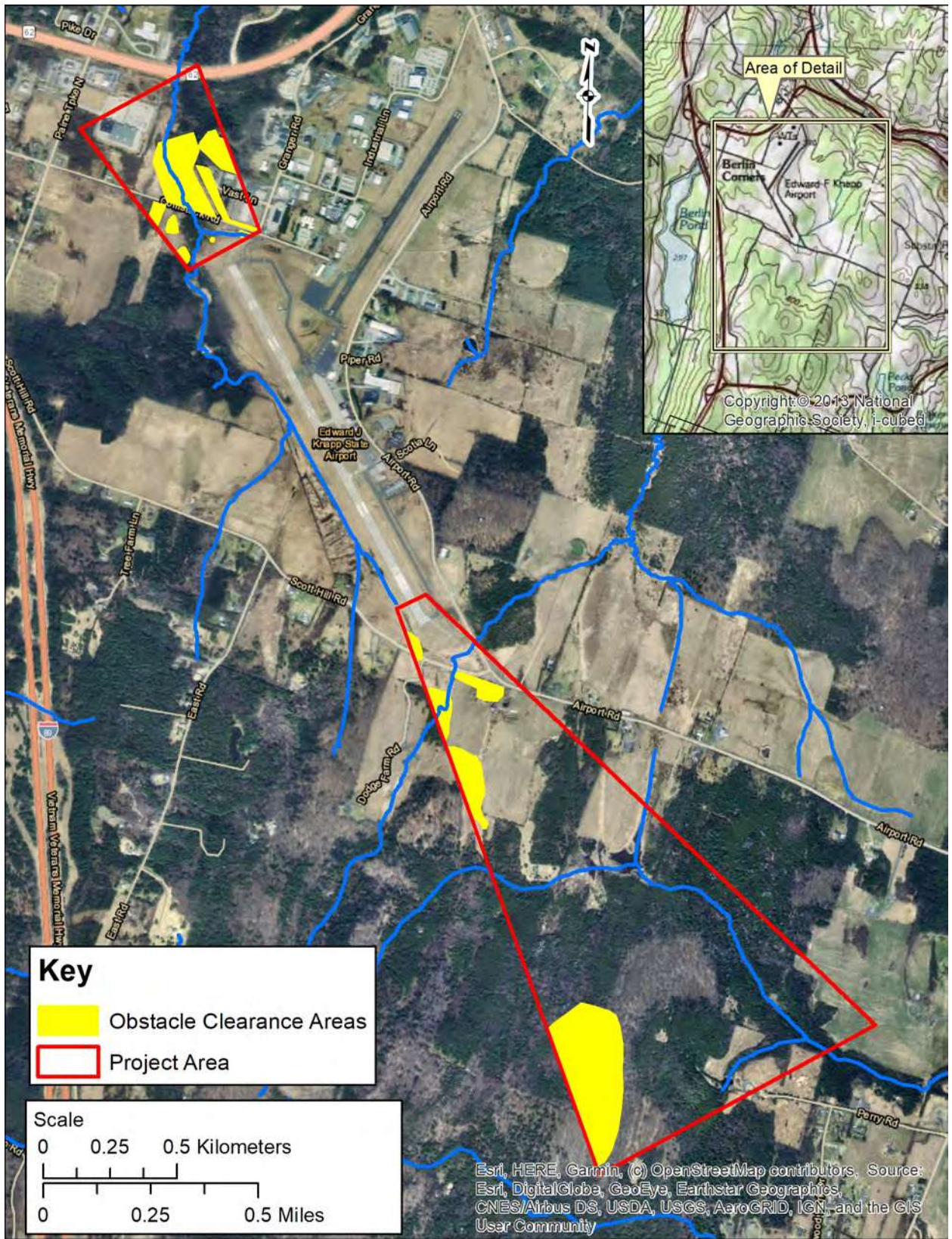


Figure 2. Aerial photograph showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

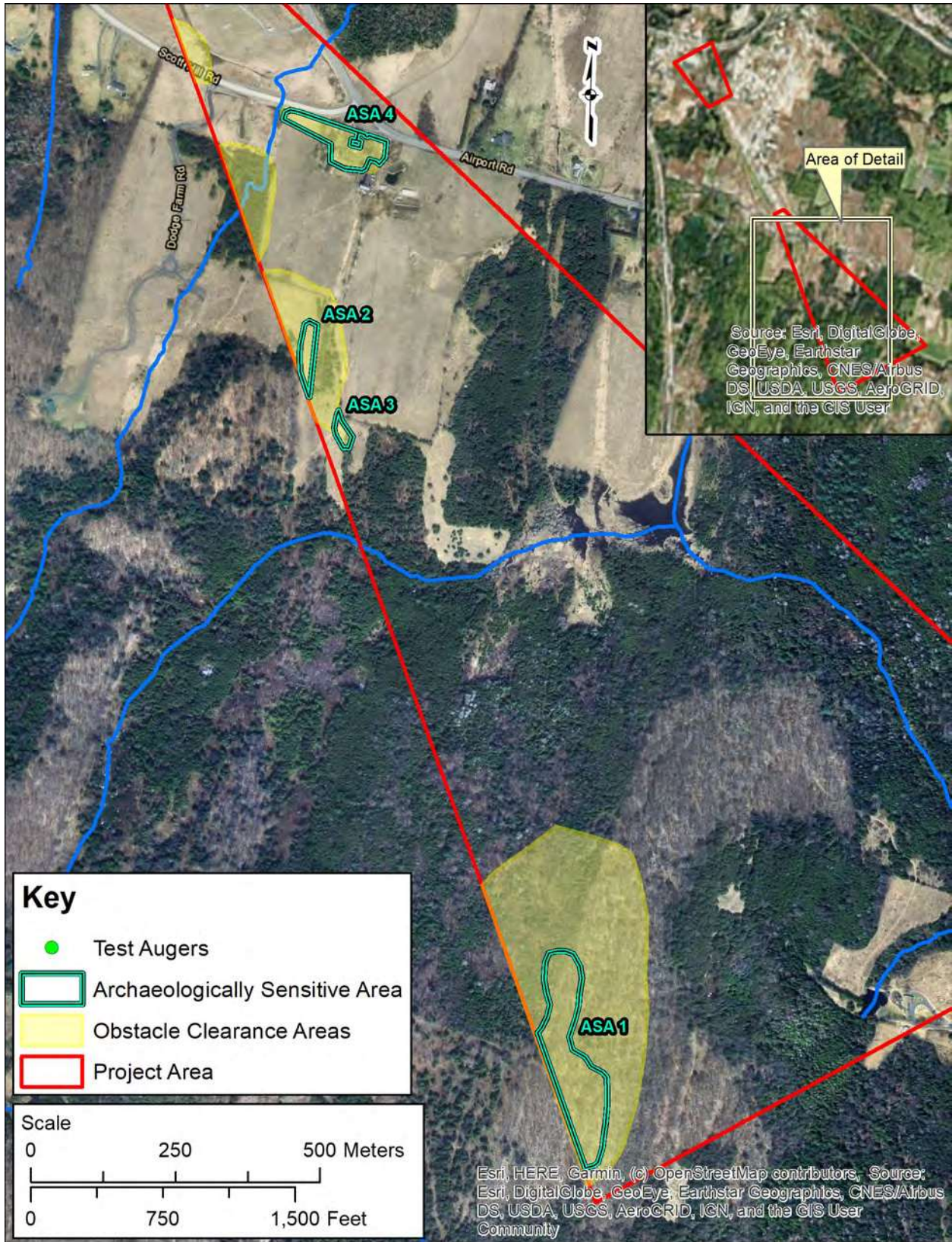


Figure 3. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 1-4 defined for the southern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

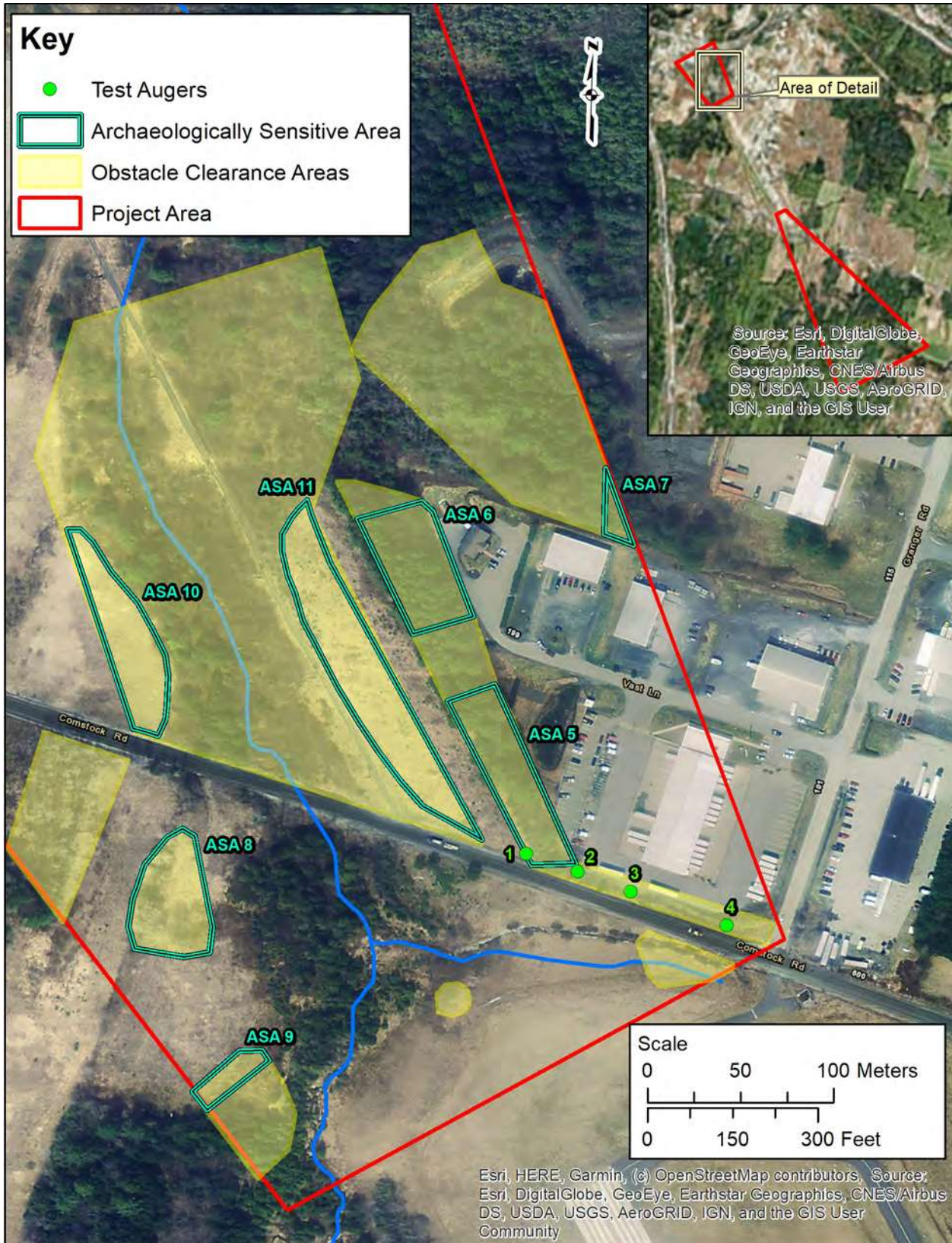


Figure 4. Aerial photograph showing Archaeologically Sensitive Areas (ASAs) 5-11 defined for the northern portion of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

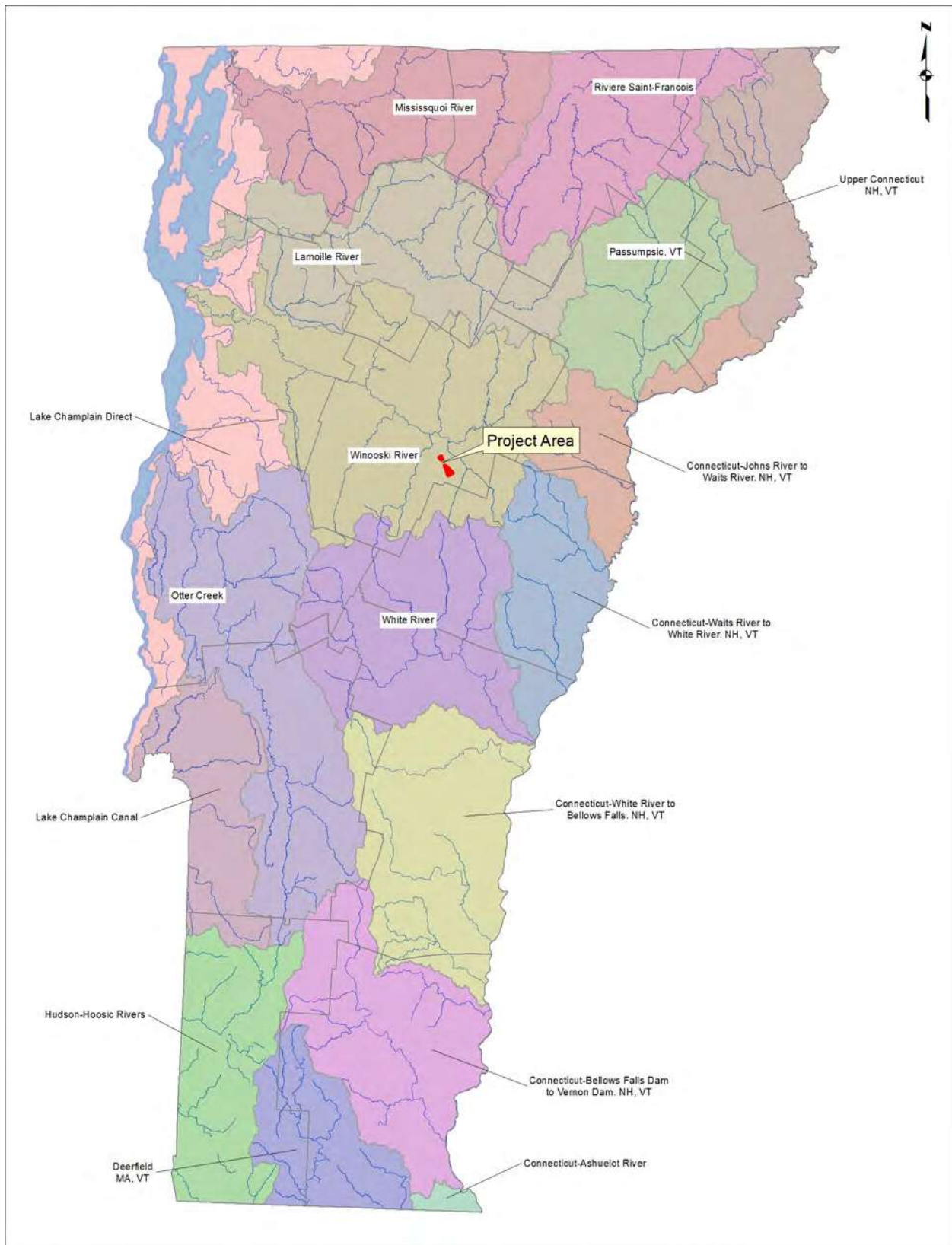


Figure 5. Map of the major drainage basins in Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Winooski River drainage basin.

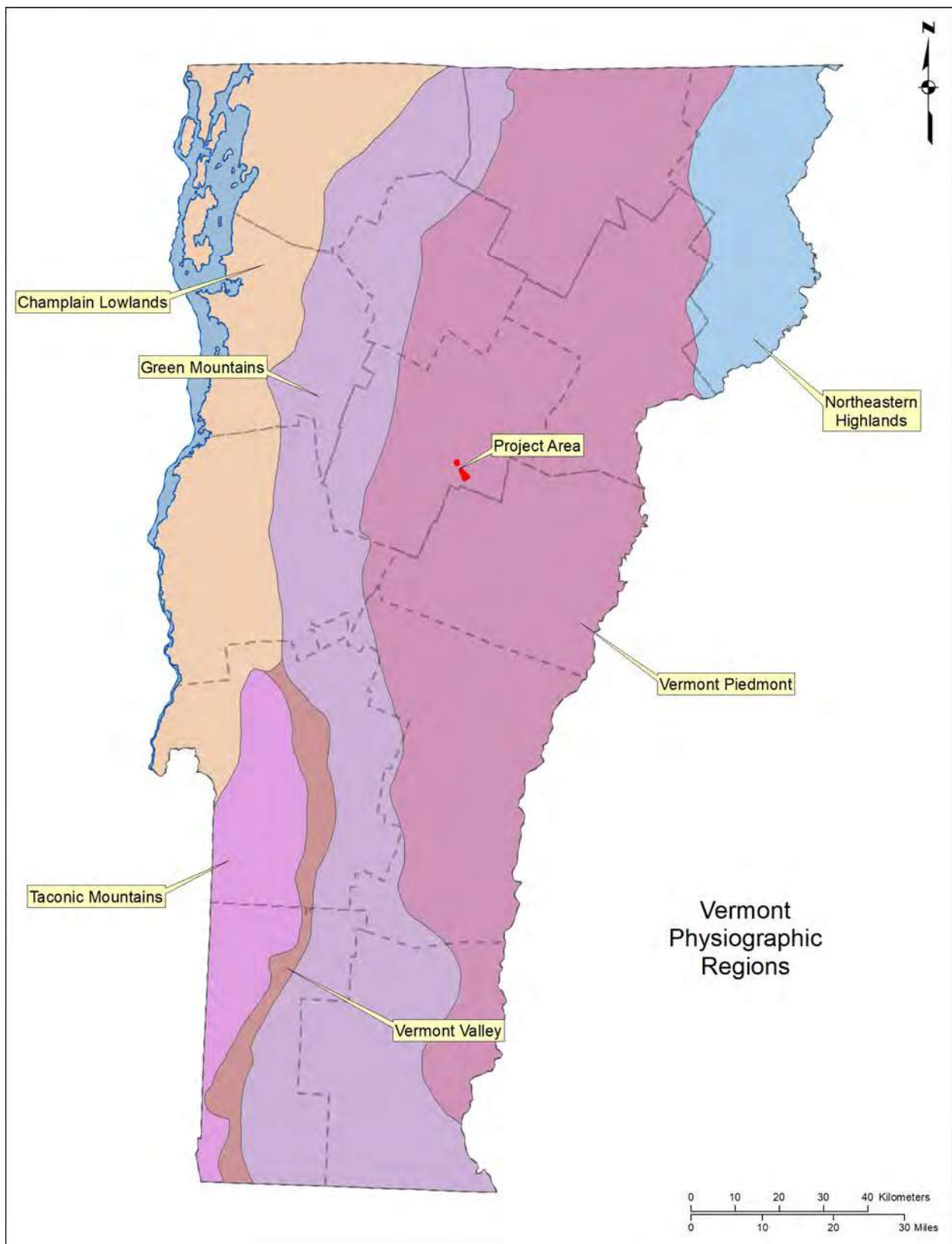


Figure 6. Map of the physiographic regions of Vermont showing the location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont in the Vermont Piedmont.

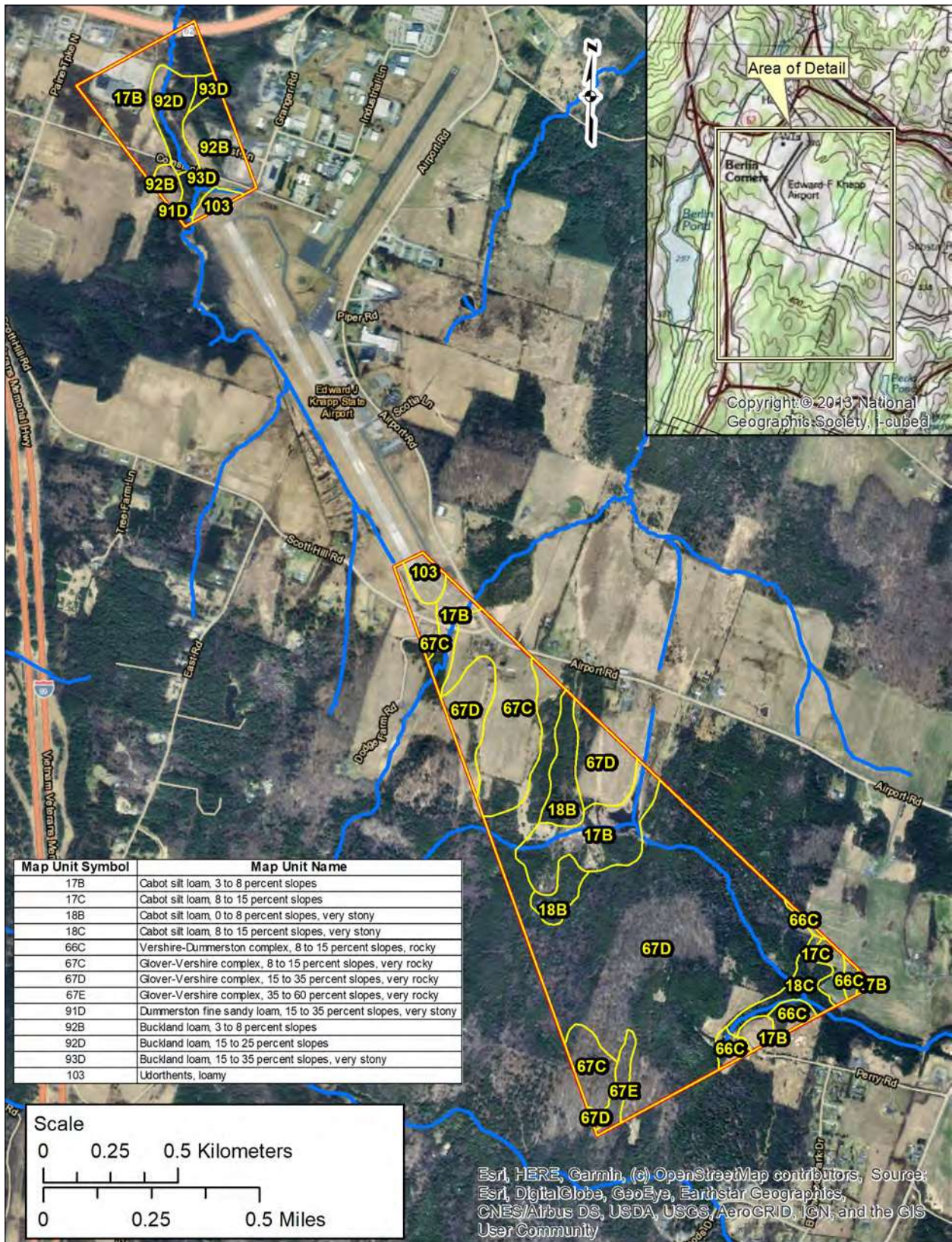


Figure 7. Aerial photograph showing soil types within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

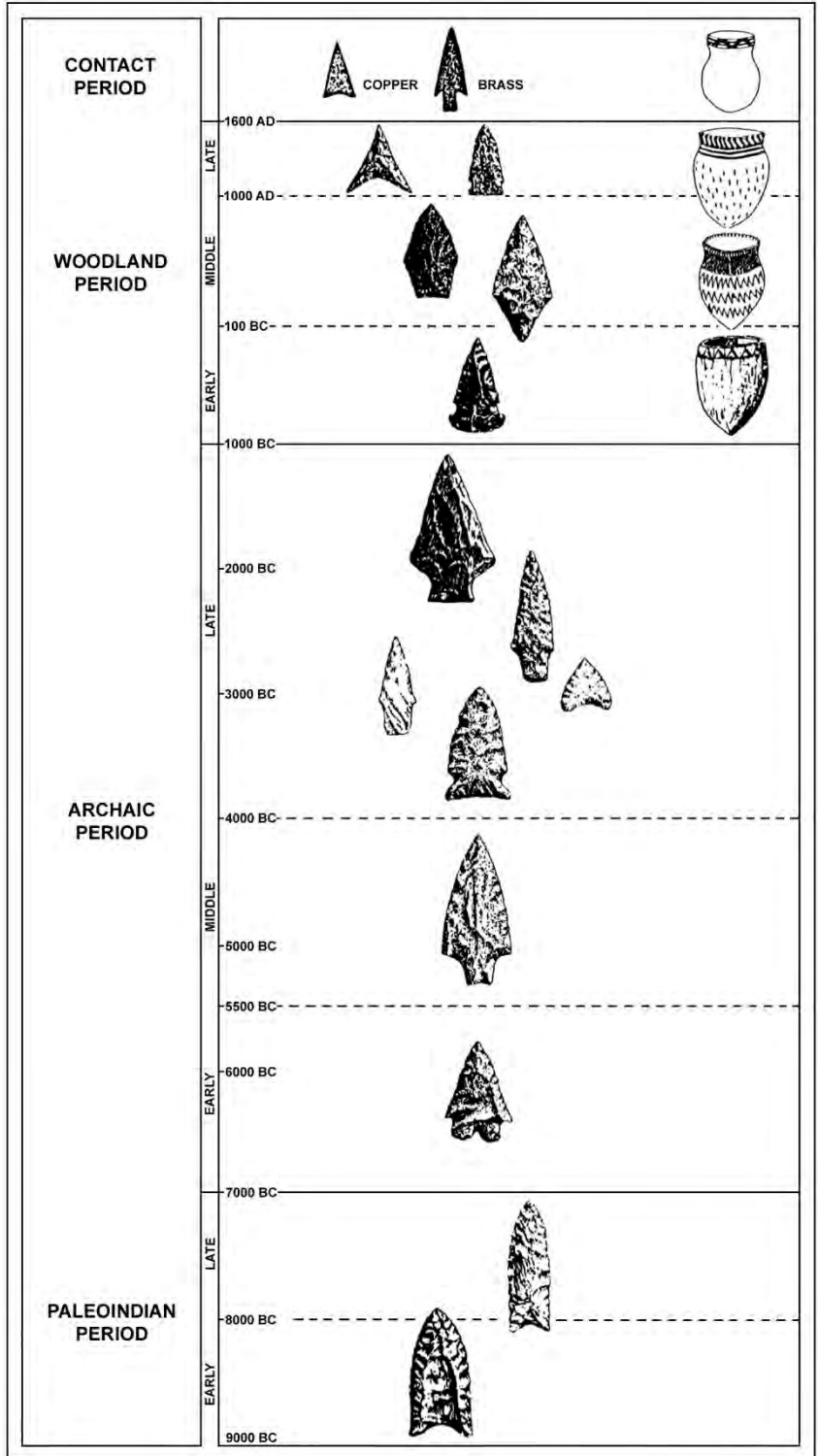


Figure 8. Cultural timeline of Native American history for Vermont and the broader region.

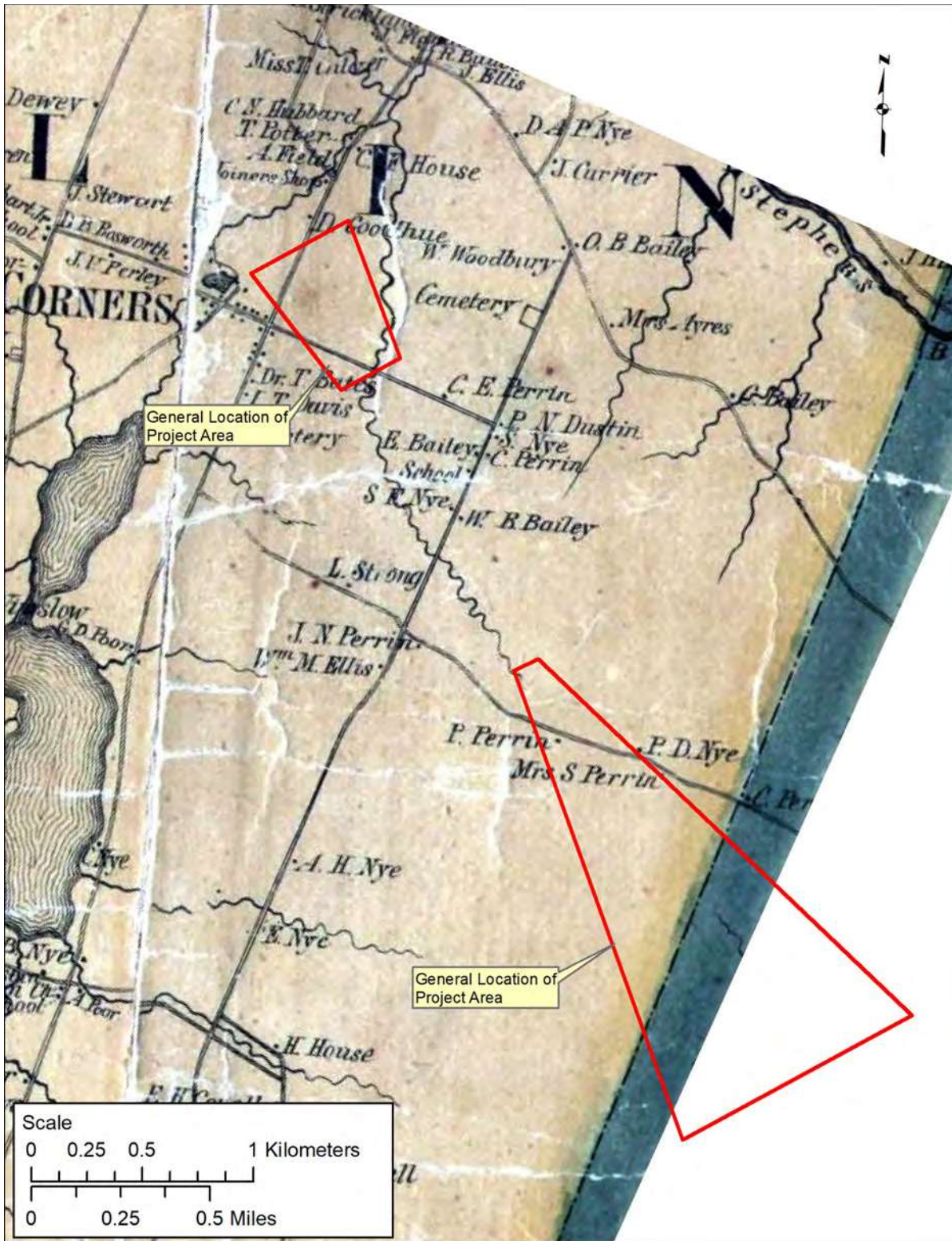


Figure 9. 1858 Walling map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of P. Perrin residence in the southern portion of the Project.

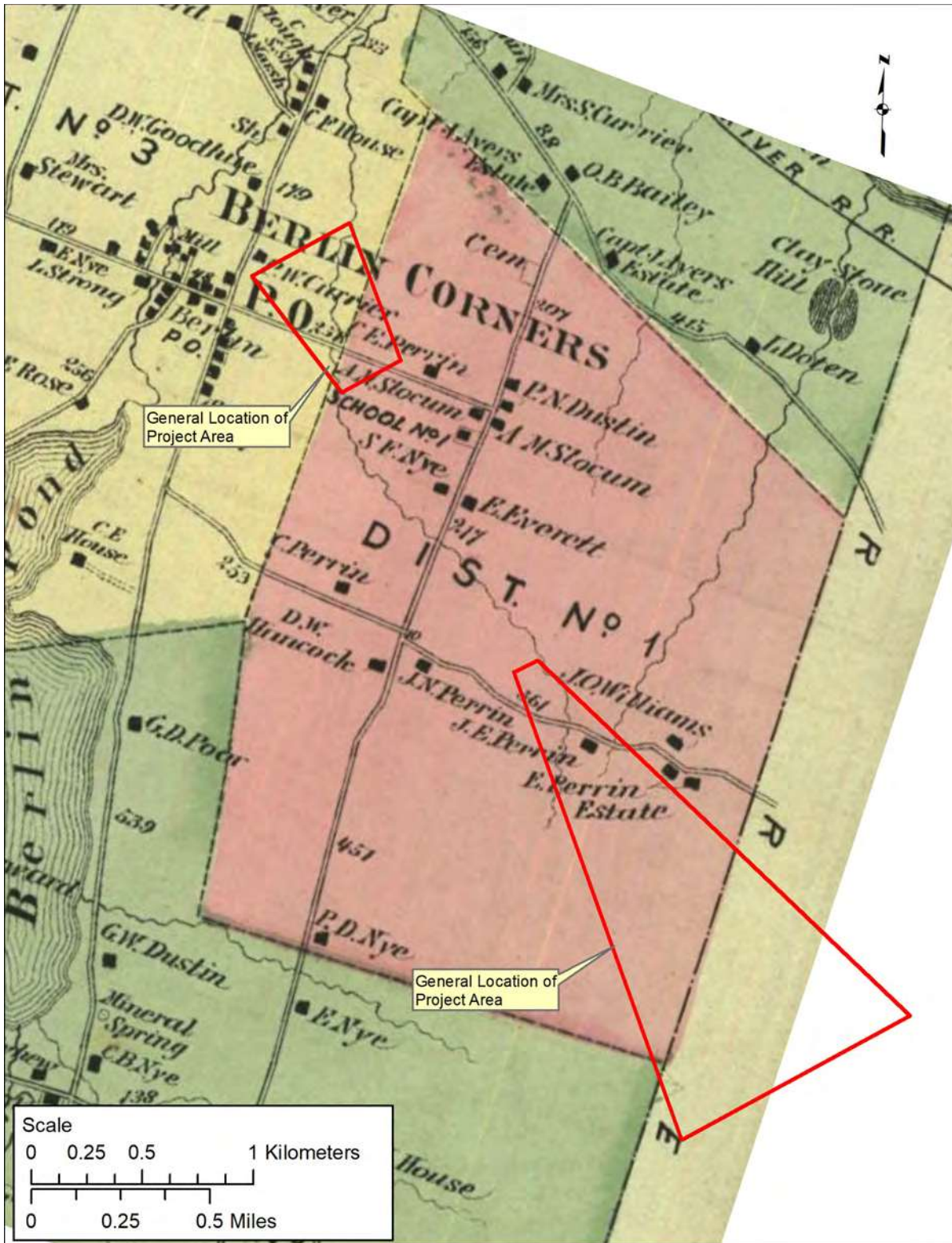


Figure 10. 1873 Beers map of Washington County showing the general location of the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note location of J. E. Perrin residence in the southern portion of the Project.



Figure 11. View northeast of ASA 1 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 12. View north of ASA 2 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 13. View south of a portion of ASA 4 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont. Note the historic barn associated with the 1858 P. Perrin and 1873 J. E. Perrin farm.



Figure 14. View south of ASA 5 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 15. View northeast of ASA 8 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.



Figure 16. View northwest of ASA 11 within the proposed Edward F. Knapp Airport Tree Removal Project, Berlin, Washington County, Vermont.

Appendix I: Vermont Predictive Model Example

VERMONT DIVISION FOR HISTORIC PRESERVATION
Environmental Predictive Model for Locating Pre-contact Archaeological Sites

Edward F. Knapp Airport

Project Name
DHP No.

Map No.

County Washington
Staff Init.

Town Berlin
Date 8/02/2021

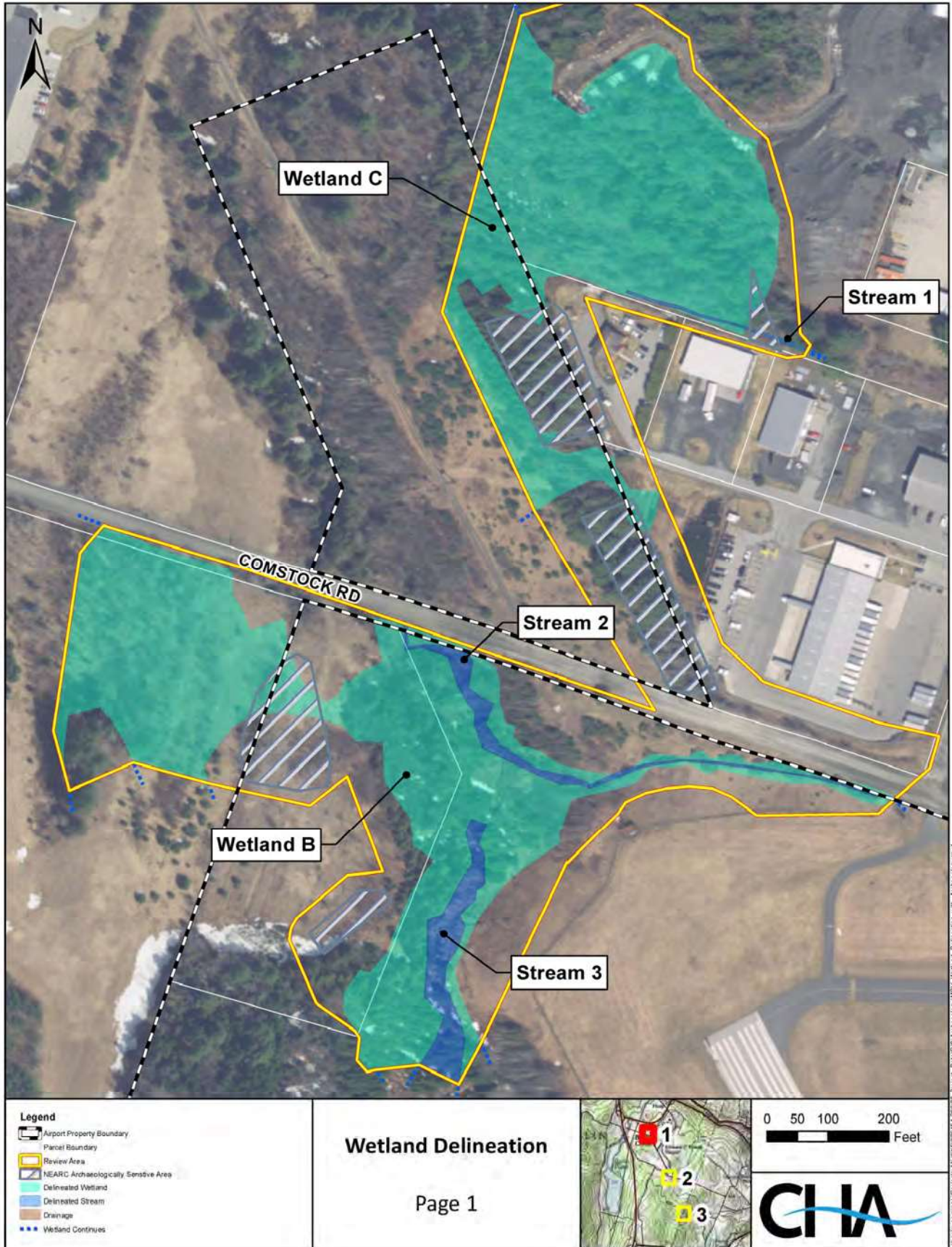
Additional Information ASA 9

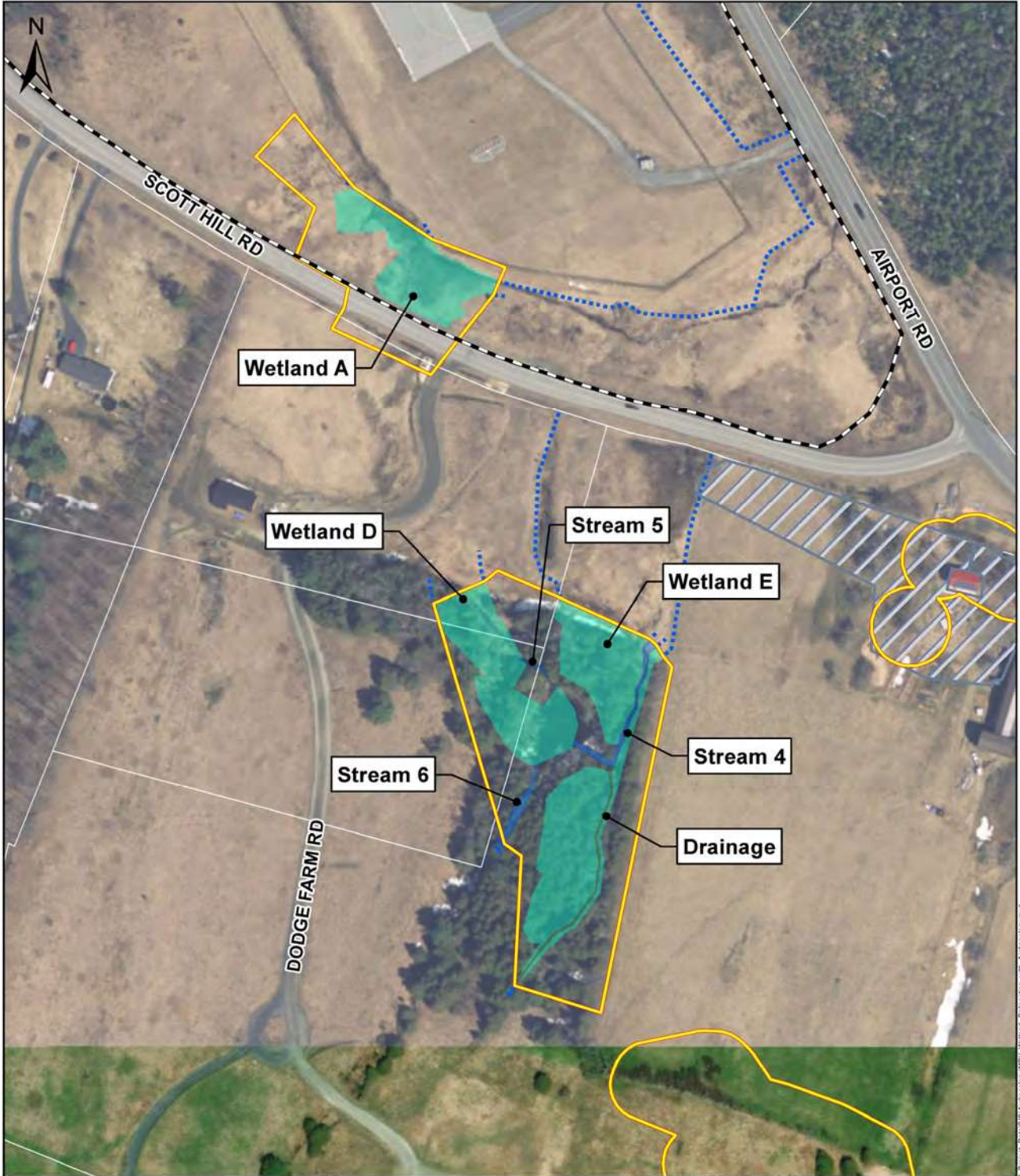
Environmental Variable	Proximity	Value	Assigned Score
A. RIVERS and STREAMS (EXISTING or RELICT):			
1) Distance to River or Permanent Stream (measured from top of bank)	0- 90 m	12	12
	90- 180 m	6	
2) Distance to Intermittent Stream	0- 90 m	8	
	90-180 m	4	
3) Confluence of River/River or River/Stream	0-90 m	12	
	90 –180 m	6	
4) Confluence of Intermittent Streams	0 – 90 m	8	
	90 – 180 m	4	
5) Falls or Rapids	0 – 90 m	8	
	90 – 180 m	4	
6) Head of Draw	0 – 90 m	8	
	90 – 180 m	4	
7) Major Floodplain/Alluvial Terrace		32	
8) Knoll or swamp island		32	
9) Stable Riverine Island		32	
B. LAKES and PONDS (EXISTING or RELICT):			
10) Distance to Pond or Lake	0- 90 m	12	
	90 -180 m	6	
11) Confluence of River or Stream	0-90 m	12	
	90 –180 m	6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m	12	12
	90 -180 m	6	
14) Knoll or swamp island		32	
D. VALLEY EDGE and GLACIAL LAND FORMS:			
15) High elevated landform such as Knoll Top/Ridge Crest/ Promontory		12	12
16) Valley edge features such as Kame/Outwash Terrace**		12	

Table Appendix I. continued.

17) Marine/Lake Delta Complex**		12	
18) Champlain Sea or Glacial Lake Shore Line**		32	
E. OTHER ENVIRONMENTAL FACTORS:			
19) Caves /Rockshelters		32	
20) <input checked="" type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		12	12
21) Existing or Relict Spring	0 – 90 m 90 – 180 m	8 4	
22) Potential or Apparent Prehistoric Quarry for stone procurement	0 – 180 m	32	
23)) Special Environmental or Natural Area, such as Milton aquifer, mountain top, etc. (these may be historic or prehistoric sacred or traditional site locations and prehistoric site types as well)		32	
F. OTHER HIGH SENSITIVITY FACTORS:			
24) High Likelihood of Burials		32	
25) High Recorded Site Density		32	
26) High likelihood of containing significant site based on recorded or archival data or oral tradition		32	
G. NEGATIVE FACTORS:			
27) Excessive Slope (>15%) or Steep Erosional Slope (>20)		- 32	
28) Previously disturbed land as evaluated by a qualified archeological professional or engineer based on coring, earlier as-built plans, or obvious surface evidence (such as a gravel pit)		- 32	
** refer to 1970 Surficial Geological Map of Vermont			
			Total Score: 48
Other Comments :			
<p>0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive</p>			

Appendix II: CHA Wetland Delineation Maps





Legend

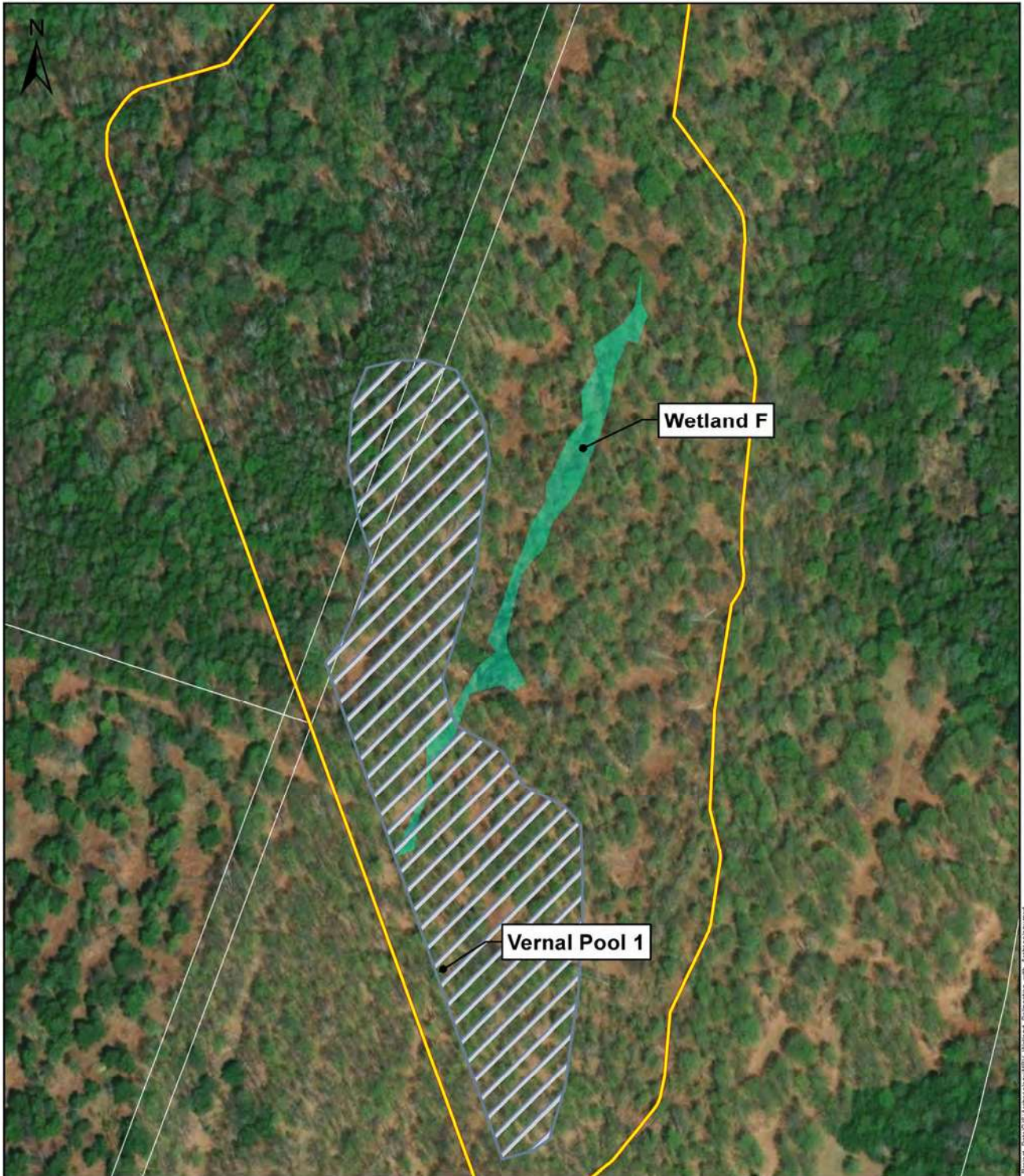
- Airport Property Boundary
- Parcel Boundary
- Review Area
- NEARC Archaeologically Sensitive Area
- Delineated Wetland
- Delineated Stream
- Drainage
- Wetland Continues

Wetland Delineation

Page 2

0 50 100 200
Feet

C:\Users\jgarcia\Documents\Projects\20180518_Archaeology\01012018\Project_01012018_Archaeology\01012018\Wetland_Delineation_with_Archaeology.mxd



Legend

- Airport Property Boundary
- Parcel Boundary
- Review Area
- NEARC Archaeologically Sensitive Area
- Delineated Wetland
- Delineated Stream
- Drainage
- Wetland Continues

Wetland Delineation

Page 3



0 50 100 200
Feet

I:\GIS\Projects\Wetland\Wetland_Delineation\Map\Wetland_Delineation_with_Archaeology.mxd



December 29, 2021

Vermont Division for Historic Preservation
One National Life Drive
Deane C. Davis Building, 6th Floor
Montpelier, VT 05620

Via email: ACCD.projectreview@vermont.gov.

RE: E.F. Knapp State Airport Obstruction Removal
Above-ground Historic Resources Evaluation

Dear Sir or Madam:

The Vermont Agency for Transportation (Vtrans), in accordance with guidelines from the Federal Aviation Administration, has proposed an undertaking, as described below that has the potential to indirectly affect historic properties. In compliance with instructions from the Vermont Division for Historic Preservation, which serves the State Historic Preservation Office (SHPO), we have photographically documented all of the buildings that lie within the indirect Area of Potential Effects (APE). The attached map of the project area identifies the APE. As part of this project, Harvey Research & Consulting was contracted to analyze the buildings within the APE. Their analysis is below.

Above-Ground Resources Evaluation

The APE contains twenty-one buildings. Fifteen of these buildings are industrial or commercial buildings that have been built since 1985. Of the six buildings that are at least 45 years old, three are located on the grounds of the E.F. Knapp Airport:

- Airport Terminal (1959)
- Vermont Flying Service Building (1946)
- former National Life Hangar (1956)

The remaining three historic resources within the APE are located immediately south of the airport boundary near the intersection of Airport Road and Scott Hill Road. One of these, the Dodge Farm, consists of a house and barn, both built in approximately 1840 and determined eligible for the State Register of Historic Places. The other two are single-family residences. We have completed Vermont Architectural Resource Inventory Forms for these six resources, which are attached.

Harvey Research & Consulting has recommended that one of these buildings, the E.F. Knapp State Airport Terminal, is eligible for the National Register of Historic Places under Criterion C (Architecture). The building was designed by the Vermont architect Gordon G. Woods and completed in 1959. It is a good example of a small-scale building in the International Style and has retained excellent integrity. The Dodge Farm has been previously determined eligible for the Vermont State Register of Historic Places. We recommend that the

building remains eligible for the State Register given its historical association with the Town of Berlin, but that it is not eligible for the National Register of Historic Places due to its loss of integrity. In particular, it has modern replacement windows and doors. We recommend that the remaining four buildings that were included in the survey are not eligible for the National Register of Historic Places.

Photographs of all except one of the buildings within the APE were photographed and are attached below. One building, No. 18 on the attached APE map (370 Dodge Farm Road, 2012), is located approximately 0.4 miles south of Scott Hill Road on a private road and was not accessible. A second building, No. 20 on the attached APE map (1292 Airport Road, 1965), is located approximately 400 feet from Airport Road and is partially obscured.

The purpose of the Proposed Action is to enhance airfield safety, maintain aircraft landing minimums, regain the ability to land at night, and comply with FAA design standards by eliminating obstructions within the approaches for Runway 17 and 35 while maintaining the existing runway length of 5,000 feet. The FAA has established airspace and design criteria to provide for safe aircraft operations. In 2020, the VTrans conducted an obstruction study to evaluate the airspace at the Airport. Based on the FAA design criteria, the results of this analysis identified several tree obstructions within several FAA design standards for both approaches to Runway 17-35. The Airport is also required to take appropriate action to comply with FAA obligations associated with receiving Federal grant funds that are enumerated in the FAA Sponsor Grant Assurances and FAA Order 5190.6B: Airport Compliance Manual. In particular, FAA Grant Assurance No. 20 (Hazard Removal and Mitigation) obligates the Airport to take appropriate actions to assure the airspace is adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards. The proposed undertaking will include the following elements:

- Obtain avigation easements on private property
- Clear approximately 5.8 acres of trees within the Runway 17 approach surface
- Clear approximately 28 acres of trees within the Runway 35 approach surface

Thank you for your assistance with this project. Please do not hesitate to contact me at 216-904-6283 or at mheckroth@chacompanies.com or Mr. Bruce Harvey at (315) 657-2817 or bgharvey@me.com with any questions.

Sincerely,



Mark Heckroth, ENV SP
Senior Project Manager – Aviation

Cc: Bruce Harvey, Harvey Research & Consulting (email only)
Richard Doucette, Federal Aviation Administration

State of Vermont
Division for Historic Preservation
1 National Life Dr., Davis Building, 6th Floor
Montpelier, Vermont 05620-0501
http://accd.vermont.gov/strong_communities/preservation/

Agency of Commerce and
Community Development

[Phone] 802-828-3045
[Fax] 802-828-3206

HISTORIC PRESERVATION PROJECT REVIEW COVER FORM

Please complete this form and attach it to the top of all information submitted to this office for review.
Accurate and complete forms will assist in the timely processing and response to your request.

1. DOES THIS INFORMATION RELATES TO A PREVIOUSLY SUBMITTED PROJECT? Please check box.

If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

1a. PREVIOUS PROJECT REVIEW NUMBER or PROJECT NAME

E.F. Knapp Airport Obstruction Removal

TOWN Berlin

COUNTY Washington

2. IS THIS A NEW PROJECT?

Please check box

If you have checked this box you will need to complete ALL of the following information

Project Name E.F. Knapp State Airport Tree Clearing

Location 1979 Airport Road, Berlin, VT

You MUST include street number, street name and/or County, State or Interstate route number if applicable.

Point Data UTM 694907E, 4896962N GIS Coordinates/Location Information/UTM Latitude-Longitude

City/Town/Village Berlin

List the correct city/town/village in which your project is being undertaken.

County Washington

If the undertaking covers multiple towns/counties please email a list defining all towns/counties included with your digital submission at ACCD.Projectreview@vermont.gov.

PLEASE PROVIDE A BRIEF DESCRIPTION OF THE PROJECT (include a more detailed summary or cover letter describing the details of your project as an attachment.)

Clearing trees at north and south ends of the airport

The Historic Preservation Review Process in Vermont

In order to insure that historic preservation is carefully considered in publicly-funded or permitted undertakings, there are laws at each level of government that require projects to be reviewed for their potential impact/effect on historic properties.

These laws include:

- **10 V.S.A. Chapter 151 - Act 250/Criterion 8** - For projects requiring a new Act 250 permit or an amendment to an existing permit.
- **Section 248** - Public Service Board - For projects requiring a Certificate of Public Good.
- **22 V.S.A. Chapter 14** -The Vermont Historic Preservation Act - For projects with state involvement in the form of funding, licenses or permits.
- **Section 106 of the National Historic Preservation Act of 1966** - For projects with federal involvement in the form of funding, licenses or permits.

Regulations on line at: <http://accd.vermont.gov/historic-preservation/resources-rules>

Project review consists of identifying a project's potential impacts to historic buildings and structures, historic districts, historic landscapes and settings, and to known or potential archaeological resources. Project review is a consultative process between the applicant and the Division. Applicants are encouraged to contact our office as early as possible in the project planning process. We can assist in identifying historic resources in the project area and provide guidance on how to evaluate and avoid potential adverse effects to those resources as an outcome of the project. While protecting historic resources, this can save you time and money in the development of your project.

TYPE OF REVIEW REQUIRED/REQUESTED (Please answer both questions)

1. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?

Yes No If yes, list agency name(s) and permit(s)/approval(s) Don't Know Yet

Agency Involved

Vermont Agency for Transportation
Federal Aviation Administration

Section 106 Section 248 - PSB
 22 VSA Other
 Act 250

2. Does the project site involve or is it near a property listed or recommended for listing in the Vermont State or National Registers of Historic Places? Yes No Unknown

ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING MATERIALS

Project Description – Attach a full description of the nature and extent of the work to be undertaken as part of this project. Relevant portions of project applications to other state and/or federal agencies and environmental statements may be submitted if applicable.

Location Map - Include a map locating the project in the community. The map must clearly show street and road names surrounding the project area as well as the location of all portions of the project. Appropriate maps to include are USGS quadrangle map or google map.

- Site Plan** – The site plan should include the project boundaries and areas of proposed excavation and construction, as applicable.
- Project Plans** – Architectural and/or engineering plans drawings, etc.
- Photographs** - Photographs may be scanned black-and-white prints, digital images, color prints or color photo copies; save them as either JPEGS or in a PDF format. Standard (black & white) photocopies are not accepted.

Architecture

Are there any **resource(s)** (buildings, structures such as bridges, walls, culverts, and objects), districts or landscapes within the project area? Yes No If no, please skip to the Archaeology section.

If yes, please submit the following information: To research a building click on the link to access our [Online Research Center](#)

- The resource is 50 years old or older - Approximate age(s):
- The resources(s) are listed in the State or National Register of Historic Places
 - Individually part of a historic district Unknown
- Photographs of **each** resource or streetscape within the project area, with captions, along with a photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? Yes No
 If yes, please submit the following information:

- Description of current and previous land use and disturbance.
- Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the review process.

CONTACT PERSON FOR PROJECT

Name & Title

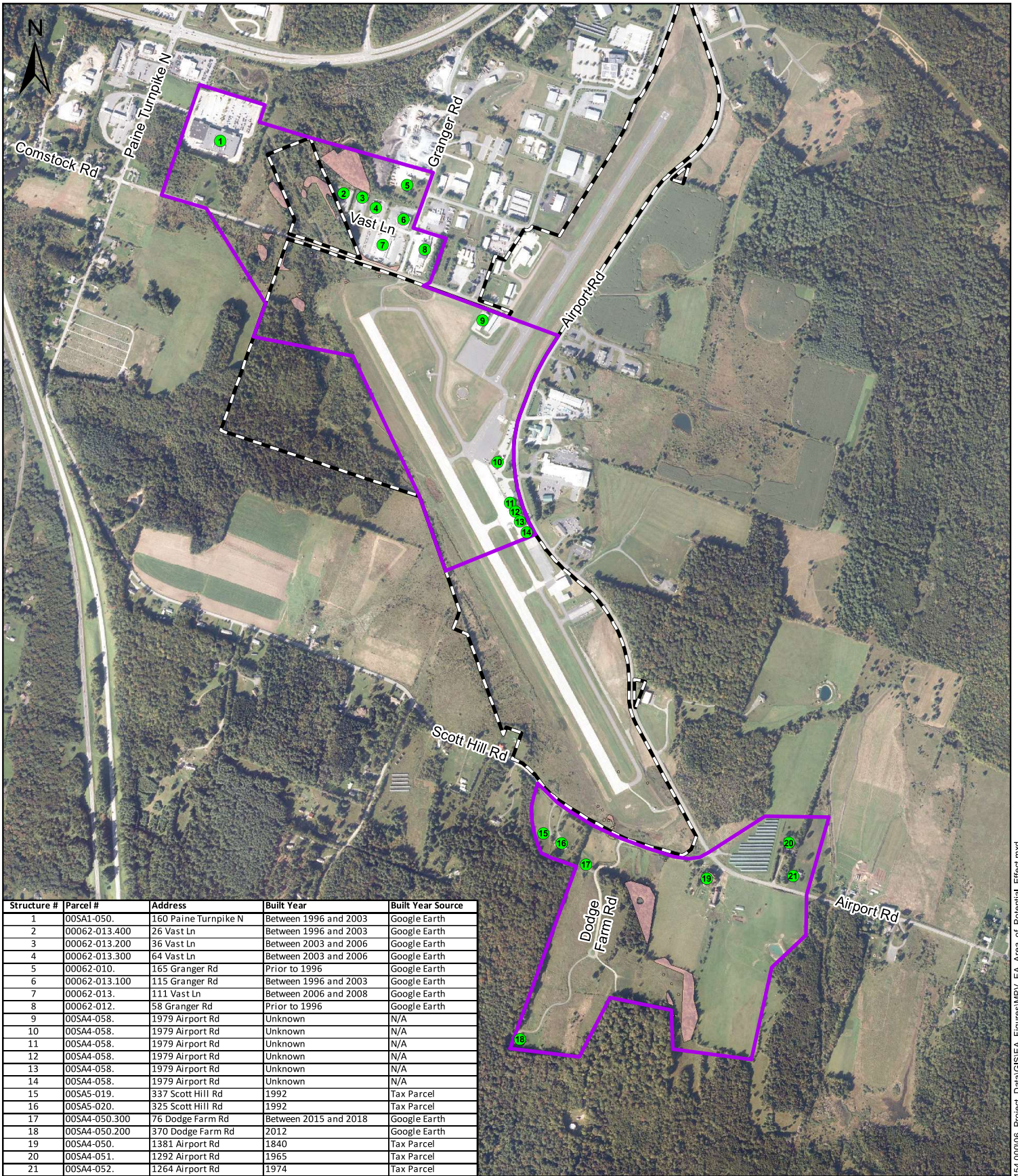
Firm/Agency

Address

City State Zip

Phone

email



Structure #	Parcel #	Address	Built Year	Built Year Source
1	00SA1-050.	160 Paine Turnpike N	Between 1996 and 2003	Google Earth
2	00062-013.400	26 Vast Ln	Between 1996 and 2003	Google Earth
3	00062-013.200	36 Vast Ln	Between 2003 and 2006	Google Earth
4	00062-013.300	64 Vast Ln	Between 2003 and 2006	Google Earth
5	00062-010.	165 Granger Rd	Prior to 1996	Google Earth
6	00062-013.100	115 Granger Rd	Between 1996 and 2003	Google Earth
7	00062-013.	111 Vast Ln	Between 2006 and 2008	Google Earth
8	00062-012.	58 Granger Rd	Prior to 1996	Google Earth
9	00SA4-058.	1979 Airport Rd	Unknown	N/A
10	00SA4-058.	1979 Airport Rd	Unknown	N/A
11	00SA4-058.	1979 Airport Rd	Unknown	N/A
12	00SA4-058.	1979 Airport Rd	Unknown	N/A
13	00SA4-058.	1979 Airport Rd	Unknown	N/A
14	00SA4-058.	1979 Airport Rd	Unknown	N/A
15	00SA5-019.	337 Scott Hill Rd	1992	Tax Parcel
16	00SA5-020.	325 Scott Hill Rd	1992	Tax Parcel
17	00SA4-050.300	76 Dodge Farm Rd	Between 2015 and 2018	Google Earth
18	00SA4-050.200	370 Dodge Farm Rd	2012	Google Earth
19	00SA4-050.	1381 Airport Rd	1840	Tax Parcel
20	00SA4-051.	1292 Airport Rd	1965	Tax Parcel
21	00SA4-052.	1264 Airport Rd	1974	Tax Parcel

Legend

- Airport Property Boundary
- Tree Clearing Area
- Area of Potential Effect (APE)
- Structure in APE

Area of Potential Effect

E.F. Knapp State Airport
Runway 17/35 Obstruction Removal EA



0 300 600 1,200
Feet

Sources: VTGIS, CHA (2021)

E.F. Knapp Airport Obstruction Removal
Photographs of Buildings in Survey Area
December 9, 2021
Bruce G. Harvey

Caption List:

1. 160 Paine Turnpike, c. 2000. Looking north
2. 26 Vast Lane, c. 2000. Looking north
3. 36 Vast Lane, c. 2000. Looking northeast
4. 64 Vast Lane, c. 2000. Looking northwest
5. 165 Granger Lane, c. 1985. Looking southwest
6. 115 Granger Lane, c. 2000. Looking northeast
7. 111 Vast Lane, c. 2007. Looking southwest
8. 58 Granger Lane, c. 1990. Looking southeast
9. 1979 Airport Road, c. 2000. Looking northwest
10. 1979 Airport Road, terminal, 1959. Looking south
11. 1979 Airport Road, Vermont Flying Service, 1946. Looking southeast
12. 1979 Airport Road, State Cold Storage, c. 1990. Looking northeast
13. 1979 Airport Road, National Life hangar, 1956. Looking northeast
14. 1979 Airport Road, Civilian Air Patrol building, c. 1982. Looking southeast
15. 337 Scott Hill Road, 1992. Looking south
16. 325 Scott Hill Road, 1992. Looking south
17. 76 Dodge Hill Road, c. 2016. Looking southwest
18. 370 Dodge Farm Road, 2012. Inaccessible, no photograph available
19. 1381 Airport Road, Dodge Farm, c. 1840. Looking southwest

20. 1292 Airport Road looking east, 1965. Partially obscured

21. 1264 Airport Road, 1974. Looking northeast

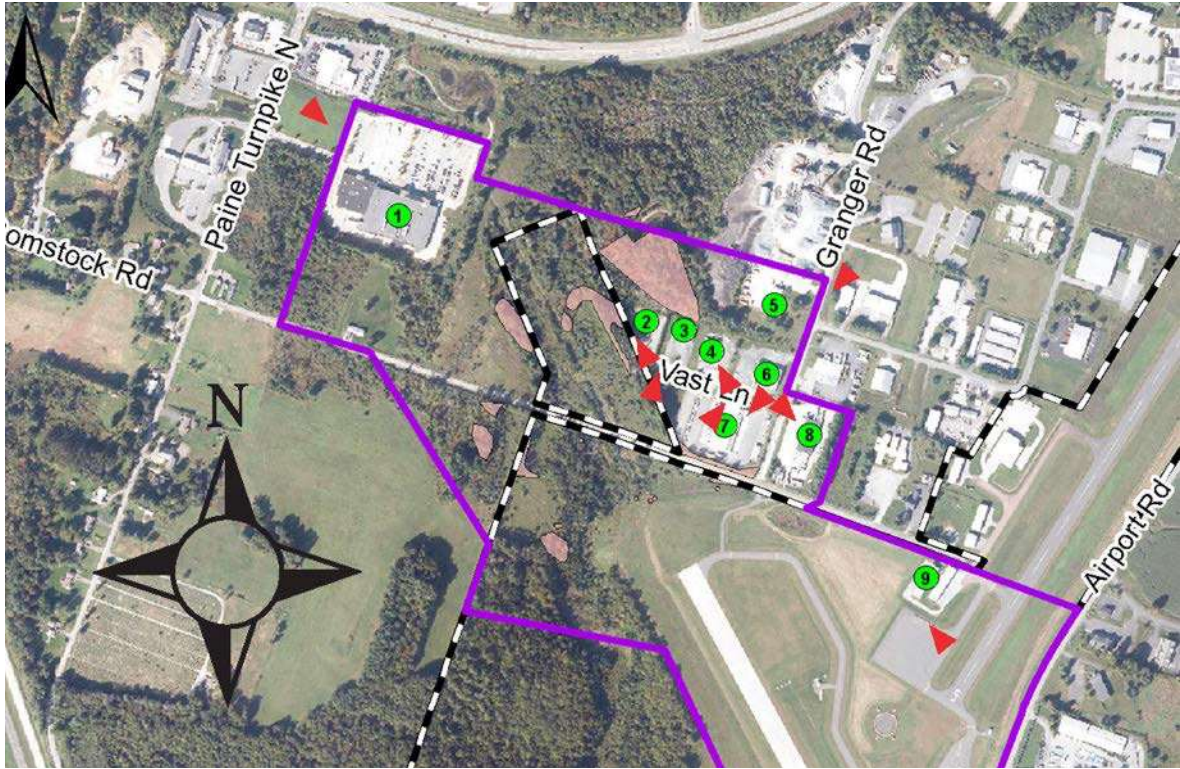


Photo locations, 1-9

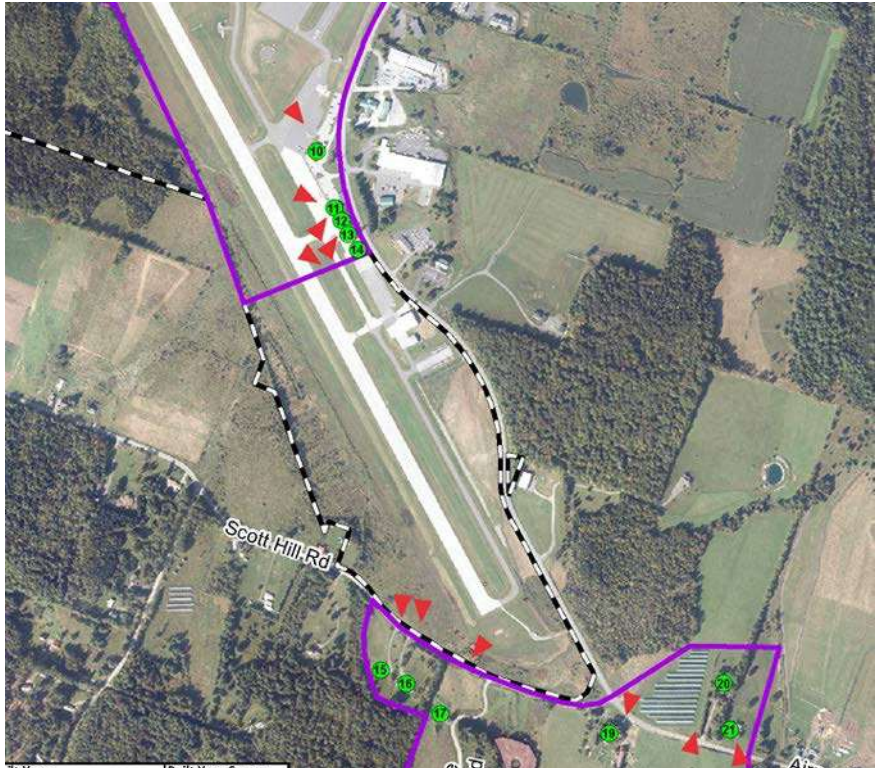


Photo locations, 10-21



1. 160 Paine Turnpike looking north



2. 26 Vast Lane looking north



3. 36 Vast Lane looking northeast



4. 64 Vast Lane looking northwest



5. 165 Granger Lane looking southwest



6. 115 Granger Lane looking northeast



7. 111 Vast Lane looking southwest



8. 58 Granger Lane looking southeast



9. 1979 Airport Road looking northwest



10. 1979 Airport Road, terminal looking south



11. 1979 Airport Road, Vermont Flying Service looking southeast



12. 1979 Airport Road, State Cold Storage looking northeast



13. 1979 Airport Road, National Life hangar looking northeast



14. 1979 Airport Road, Civil Air Patrol building looking southeast



15. 337 Scott Hill Road looking south



16. 325 Scott Hill Road looking south



17. 76 Dodge Farm Road looking southwest



19. 1381 Airport Road looking southwest



20. 1292 Airport Road looking east



21. 1264 Airport Road looking northeast

STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input type="checkbox"/> Date:
	PRESENT FORMAL NAME: Vermont Flying Service
	ORIGINAL FORMAL NAME: Vermont Flying Service
COUNTY: Washington	PRESENT USE: Airplane hangar
TOWN: Berlin	ORIGINAL USE: Airplane hangar
ADDRESS: 1979 Airport Road, Berlin, VT	ARCHITECT/ENGINEER:
COMMON NAME:	BUILDER/CONTRACTOR:
PROPERTY TYPE: Building	DATE BUILT: 1956
OWNER: ADDRESS: , 1979 Airport Road, Berlin, VT	
ACCESSIBILITY TO PUBLIC: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input checked="" type="checkbox"/> State <input type="checkbox"/> National <input type="checkbox"/>	STYLE:
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input type="checkbox"/> Plank <input type="checkbox"/> Balloon <input type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input checked="" type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input checked="" type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input type="checkbox"/> Stone Veneer <input type="checkbox"/> Other: Concrete block 4. <u>Roof Structure</u> Truss: Wood <input type="checkbox"/> Iron <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other: 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Sheet Metal <input checked="" type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input checked="" type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Barrel Number of Stories: 1 Entrance Location: Side wing, off-center Number of Bays: 1 Approximate Dimensions: 65 x 50 feet	
Criteria for Eligibility: A: Historic <input type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input checked="" type="checkbox"/> Workmanship <input checked="" type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input checked="" type="checkbox"/>	
Areas of Significance:	

* Formerly known as the Historic Sites and Structures Survey

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

A one-story hangar/repair building with a barrel roof and a shed-roofed side wing. The barrel roof faces west toward the tarmac with a single, full-width roll-up garage door. The wing extends the full length of the north façade, with an off-center single door amid five modern side-by-side windows. The exterior walls of the wing are unclad concrete block, while seamed metal siding covers the other walls. A detached one-story, three-bay garage with a flat roof is located behind the building to the northeast, and is contemporary with the hangar.

RELATED RESOURCES: (Describe)

The terminal building is part of the Edward F. Knapp State Airport.

STATEMENT OF SIGNIFICANCE:

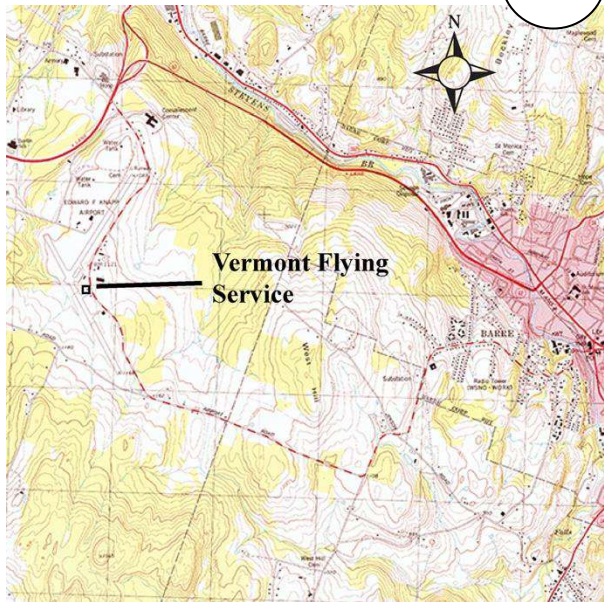
The building was built by the Vermont Flying Service, a private company that had a contract to operate the airport on behalf of Barre and Montpelier, providing airplane repair service, selling gasoline, and offering flying lessons. The State of Vermont took over the airport's management in 1970, the VFS continues as a private business, for airplane repair and storage, providing flying lessons, owned by the son of the founders.

REFERENCE CITATIONS:

Richard W. Turner, *From Barre-Montpelier to E.F. Knapp: The Story of a Small Airport in Berlin, Vermont* (by the author, 2011).

MAP: (Indicate North in Circle)

See attached



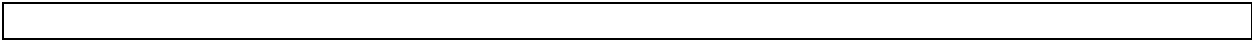
SURROUNDING ENVIRONMENT:

- Open Woodland
- Scattered Buildings
- Moderately Built Up
- Densely Built Up
- Residential Commercial
- Agricultural Industrial
- Roadside Strip Development
- Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021

ORGANIZATION: Harvey Research and Consulting

DATE RECORDED: 9 December 2021



STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input type="checkbox"/> Date:
	PRESENT FORMAL NAME:
	ORIGINAL FORMAL NAME:
COUNTY: Washington	PRESENT USE: Residential
TOWN: Berlin	ORIGINAL USE: Residential
ADDRESS: 1381 Airport Road, Berlin, VT	ARCHITECT/ENGINEER:
COMMON NAME:	BUILDER/CONTRACTOR:
PROPERTY TYPE: Building	DATE BUILT: 1974
OWNER: ADDRESS: , 1264 Airport Road, Berlin, VT	
ACCESSIBILITY TO PUBLIC: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input type="checkbox"/> State <input type="checkbox"/> National <input type="checkbox"/>	STYLE: Raised Ranch
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input type="checkbox"/> Plank <input type="checkbox"/> Balloon <input checked="" type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input type="checkbox"/> Stone Veneer <input type="checkbox"/> Other: 4. <u>Roof Structure</u> Truss: Wood <input checked="" type="checkbox"/> Iron <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other: Unknown 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input checked="" type="checkbox"/> Sheet Metal <input type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input checked="" type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Barrel Number of Stories: 2 Entrance Location: Center Number of Bays: 3 Approximate Dimensions: 40 x 48 feet	
Criteria for Eligibility: A: Historic <input type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input checked="" type="checkbox"/> Workmanship <input checked="" type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input checked="" type="checkbox"/>	
Areas of Significance:	

* Formerly known as the Historic Sites and Structures Survey

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

A two-story frame house with a side gable roof. Raised-ranch in form with a central entrance between the two stories, flanked on the right by two double windows on the upper level and a one-car garage door on the lower level, and on the left by a tripartite window on the upper level and a double window on the lower. A detached three-bay garage is connected to the house by an open walkway.

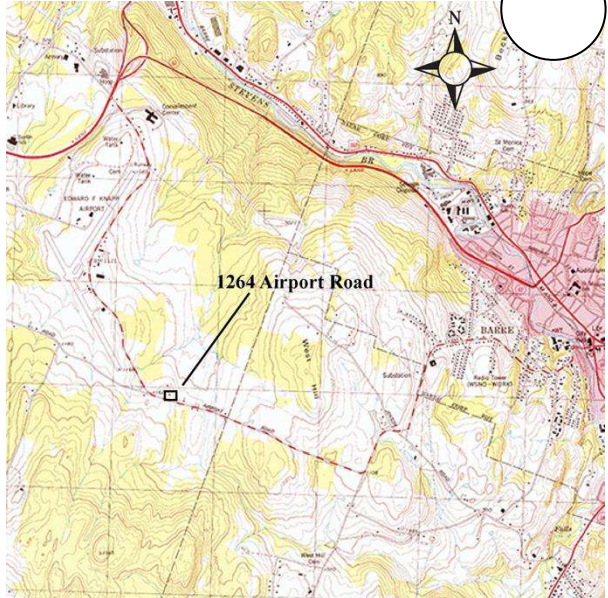
RELATED RESOURCES: (Describe)

STATEMENT OF SIGNIFICANCE:

REFERENCE CITATIONS:

MAP: (Indicate North in Circle)

See attached



SURROUNDING ENVIRONMENT:

- Open Woodland
- Scattered Buildings
- Moderately Built Up
- Densely Built Up
- Residential Commercial
- Agricultural Industrial
- Roadside Strip Development
- Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021

ORGANIZATION: Harvey Research and Consulting

DATE RECORDED: 9 December 2021

STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input type="checkbox"/> Date:
	PRESENT FORMAL NAME:
	ORIGINAL FORMAL NAME:
COUNTY: Washington	PRESENT USE: Residential
TOWN: Berlin	ORIGINAL USE: Residential
ADDRESS: 1381 Airport Road, Berlin, VT	ARCHITECT/ENGINEER:
COMMON NAME:	BUILDER/CONTRACTOR:
PROPERTY TYPE: Building	DATE BUILT: 1965
OWNER: ADDRESS: , 1292 Airport Road, Berlin, VT	
ACCESSIBILITY TO PUBLIC: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input type="checkbox"/> State <input type="checkbox"/> National <input type="checkbox"/>	STYLE: Raised Ranch
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input type="checkbox"/> Plank <input type="checkbox"/> Balloon <input checked="" type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input checked="" type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input type="checkbox"/> Stone Veneer <input type="checkbox"/> Other: 4. <u>Roof Structure</u> Truss: Wood <input checked="" type="checkbox"/> Iron <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other: Unknown 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input checked="" type="checkbox"/> Sheet Metal <input type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input checked="" type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input checked="" type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Barrel Number of Stories: 2 Entrance Location: Off-center Number of Bays: 3 Approximate Dimensions: 40 x 50 feet	
Criteria for Eligibility: A: Historic <input type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input checked="" type="checkbox"/> Workmanship <input checked="" type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input checked="" type="checkbox"/>	
Areas of Significance:	

* Formerly known as the Historic Sites and Structures Survey

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

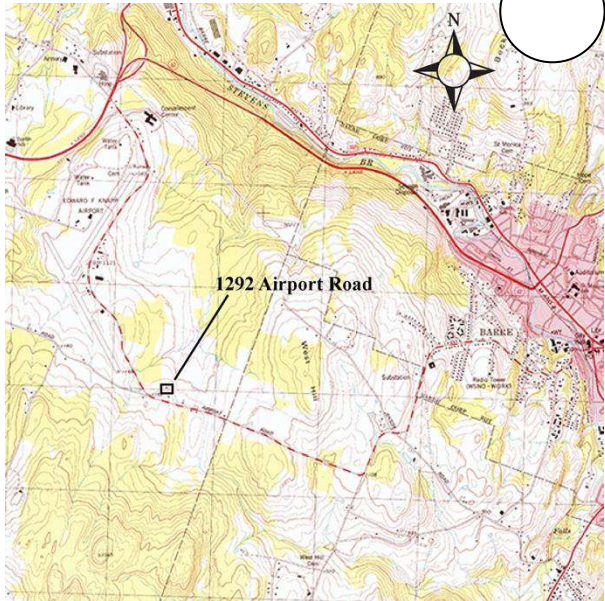
A two-story frame house with a side gable roof. The house is set back approximately 400 feet from the road, and is largely obscured from view.

RELATED RESOURCES: (Describe)

STATEMENT OF SIGNIFICANCE:

REFERENCE CITATIONS:

MAP: (Indicate North in Circle)
See attached



SURROUNDING ENVIRONMENT:

- Open Woodland
- Scattered Buildings
- Moderately Built Up
- Densely Built Up
- Residential Commercial
- Agricultural Industrial
- Roadside Strip Development
- Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021

ORGANIZATION: Harvey Research and Consulting

DATE RECORDED: 9 December 2021

STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input checked="" type="checkbox"/> Date:
	PRESENT FORMAL NAME: Dodge Farm
	ORIGINAL FORMAL NAME: Perrin Farm
COUNTY: Washington	PRESENT USE: Farmstead
TOWN: Berlin	ORIGINAL USE: Farmstead
ADDRESS: 1381 Airport Road, Berlin, VT	ARCHITECT/ENGINEER:
COMMON NAME:	BUILDER/CONTRACTOR:
PROPERTY TYPE: Building	DATE BUILT: 1840 ca.
OWNER: ADDRESS: , 1381 Airport Road, Berlin, VT	
ACCESSIBILITY TO PUBLIC: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> National <input type="checkbox"/>	STYLE: Greek Revival
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input checked="" type="checkbox"/> Brick <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input checked="" type="checkbox"/> Plank <input type="checkbox"/> Balloon <input type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input checked="" type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input type="checkbox"/> Stone Veneer <input type="checkbox"/> Other: 4. <u>Roof Structure</u> Truss: Wood <input checked="" type="checkbox"/> Iron <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other: Unknown 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input checked="" type="checkbox"/> Sheet Metal <input type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input checked="" type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input checked="" type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Barrel Number of Stories: 2 Entrance Location: Center Number of Bays: 5 Approximate Dimensions: 40 x 25 feet	
Criteria for Eligibility: A: Historic <input checked="" type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input type="checkbox"/> Workmanship <input type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input type="checkbox"/>	
Areas of Significance: Agriculture	

* Formerly known as the Historic Sites and Structures Survey

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

A two-story frame house with a side gable roof. The symmetrical five-bay façade faces north toward the intersection of Scott Hill Road and Airport Road, and features a central door flanked on each side by two single windows, with five symmetrical windows across the second floor. An open shed roof porch extends to the west. No chimney is visible. The house has been altered with the replacement of all windows and the front door.

RELATED RESOURCES: (Describe)

A large three-story timber-framed barn with a gambrel roof lies to the southeast of the house, featuring an H-shape with a long (115 x 30) section extending north toward Airport Road and short (50 x 30) cross section at the south, while a small one-story front gable section extending to the north. The barn is clad in clapboard siding with a modern raised-seam metal roof.

STATEMENT OF SIGNIFICANCE:

The house and barn were built in approximately 1840 by Porter (1790-1871) and Lucy Perrin, who took over the farm created in the early 19th century by Porter’s parents, Zachariah (1750-1838) and Mary Perrin, who moved to Berlin in 1786 from Hebron, CT; Zachariah had served as one of the first set of three Selectman for the Town of Berlin in 1791. Porter Perrin was the first male child born in the Town of Berlin; his son, J. Newton Perrin, took over the farm after Porter’s death. The farm was purchased by George Dodge (b. 1926), who sold it in 1988 with a life tenancy provision. It remains in use as a farm.

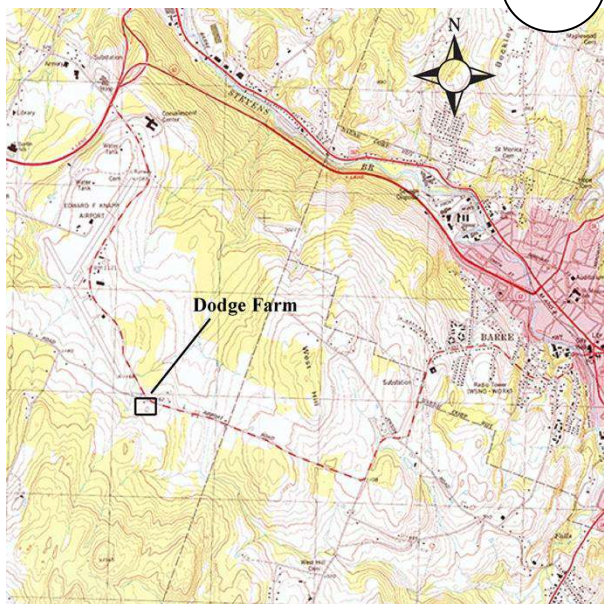
REFERENCE CITATIONS:

VDHR Barn Preservation Grant Application, 2010.

Abby Maria Hemenway, comp., *The History of Washington County in the Vermont Historical Gazetteer* (Montpelier: VT Watchman and State Journal Press, 1882).

MAP: (Indicate North in Circle)

See attached ☒



SURROUNDING ENVIRONMENT:

- Open Woodland
- Scattered Buildings
- Moderately Built Up
- Densely Built Up
- Residential Commercial
- Agricultural Industrial
- Roadside Strip Development
- Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021
ORGANIZATION: Harvey Research and Consulting
DATE RECORDED: 9 December 2021

STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input type="checkbox"/> Date:
	PRESENT FORMAL NAME: National Life Hangar
	ORIGINAL FORMAL NAME: National Life Hangar
COUNTY: Washington	PRESENT USE: Airplane hangar
TOWN: Berlin	ORIGINAL USE: Airplane hangar
ADDRESS: 1979 Airport Road, Berlin, VT	ARCHITECT/ENGINEER:
COMMON NAME:	BUILDER/CONTRACTOR:
PROPERTY TYPE: Building	DATE BUILT: 1956
OWNER: ADDRESS: , 1979 Airport Road, Berlin, VT	
ACCESSIBILITY TO PUBLIC: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input checked="" type="checkbox"/> State <input type="checkbox"/> National <input type="checkbox"/>	STYLE:
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input type="checkbox"/> Plank <input type="checkbox"/> Balloon <input type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input checked="" type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input checked="" type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input type="checkbox"/> Stone Veneer <input type="checkbox"/> Other: 4. <u>Roof Structure</u> Truss: Wood <input type="checkbox"/> Iron <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other: Unknown 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Sheet Metal <input checked="" type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input checked="" type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Barrel Number of Stories: 1 Entrance Location: Off-center Number of Bays: 1 Approximate Dimensions: 65 x 50 feet	
Criteria for Eligibility: A: Historic <input type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input checked="" type="checkbox"/> Workmanship <input checked="" type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input checked="" type="checkbox"/>	
Areas of Significance:	

* Formerly known as the Historic Sites and Structures Survey

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

A one-story hangar/repair building with a barrel roof and a shed-roofed side wing. The barrel roof faces west toward the tarmac with a single, full-width roll-up garage door. The wing extends the full length of the south façade beneath a continuation of the barrel roof, with an off-center single door on the west façade with a tripartite bay window. A one-story side gable addition extends to the south.

RELATED RESOURCES: (Describe)

The terminal building is part of the Edward F. Knapp State Airport.

STATEMENT OF SIGNIFICANCE:

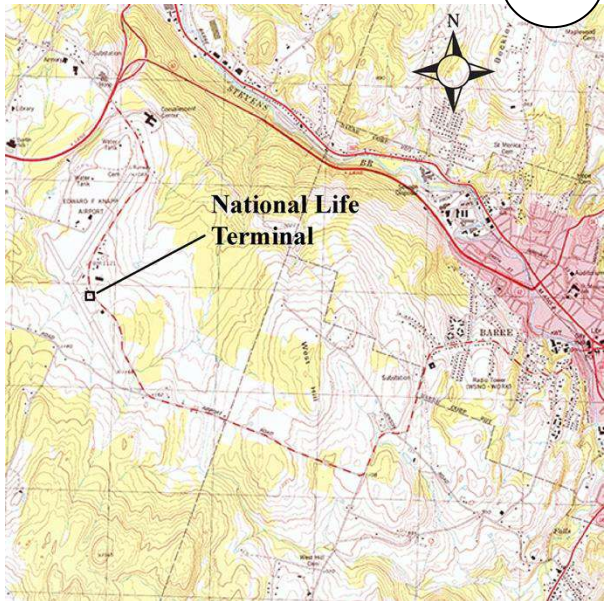
The building was built in 1956 for the National Life Insurance Company to house the airplane that they purchased to transport company officials.

REFERENCE CITATIONS:

Richard W. Turner, *From Barre-Montpelier to E.F. Knapp: The Story of a Small Airport in Berlin, Vermont* (by the author, 2011).

MAP: (Indicate North in Circle)

See attached



SURROUNDING ENVIRONMENT:

- Open Woodland
- Scattered Buildings
- Moderately Built Up
- Densely Built Up
- Residential Commercial
- Agricultural Industrial
- Roadside Strip Development
- Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021

ORGANIZATION: Harvey Research and Consulting

DATE RECORDED: 9 December 2021

STATE OF VERMONT Division for Historic Preservation VERMONT ARCHITECTURAL RESOURCE INVENTORY* Individual Property Survey Form	SURVEY NUMBER: (Assigned by VDHP).
	Listed in State Register <input type="checkbox"/> Date:
	Determined Eligible for State Register <input type="checkbox"/> Date:
	PRESENT FORMAL NAME: Edward F. Knapp State Airport Terminal
	ORIGINAL FORMAL NAME: Barre-Montpelier Airport Terminal
COUNTY: Washington	PRESENT USE: Airport terminal
TOWN: Berlin	ORIGINAL USE: Airport terminal
ADDRESS: 1979 Airport Road, Berlin, VT	ARCHITECT/ENGINEER: Gordon G. Woods
COMMON NAME:	BUILDER/CONTRACTOR: Thomas B. Oakes Construction Company
PROPERTY TYPE: Building	DATE BUILT: 1959
OWNER: ADDRESS: VT Agency for Transportation, 219 N. Main Street, Barre, VT	
ACCESSIBILITY TO PUBLIC: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Restricted <input type="checkbox"/>	PHYSICAL CONDITION OF STRUCTURE: Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
LEVEL OF SIGNIFICANCE: Local <input checked="" type="checkbox"/> State <input checked="" type="checkbox"/> National <input type="checkbox"/>	STYLE: Modern
GENERAL DESCRIPTION: Structural System: 1. <u>Foundation:</u> Stone <input type="checkbox"/> Brick <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Concrete Block <input type="checkbox"/> 2. <u>Wall Structure</u> a. Wood Frame: Post & Beam <input type="checkbox"/> Plank <input type="checkbox"/> Balloon <input type="checkbox"/> Platform <input type="checkbox"/> b. Load Bearing Masonry: Brick <input type="checkbox"/> Stone <input type="checkbox"/> Concrete <input type="checkbox"/> Concrete Block <input checked="" type="checkbox"/> c. Metal: Iron <input type="checkbox"/> Steel <input type="checkbox"/> d. Other: 3. <u>Wall Cladding:</u> Clapboard <input type="checkbox"/> Board & Batten <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Shiplap <input type="checkbox"/> Novelty <input type="checkbox"/> Asbestos Shingle <input type="checkbox"/> Aluminum Siding <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Vinyl Siding <input type="checkbox"/> Brick Veneer <input checked="" type="checkbox"/> Stone Veneer <input checked="" type="checkbox"/> Other: 4. <u>Roof Structure</u> Truss: Wood <input type="checkbox"/> Iron <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other: 5. <u>Roof Covering:</u> Slate <input type="checkbox"/> Wood Shingle <input type="checkbox"/> Asphalt Shingle <input type="checkbox"/> Sheet Metal <input type="checkbox"/> Built Up <input type="checkbox"/> Rolled <input type="checkbox"/> Tile <input type="checkbox"/> Standing Seam <input type="checkbox"/> Other: Tar and gravel 6. <u>Engineering Structure:</u> 7. Other: Appendages: Porches <input checked="" type="checkbox"/> Towers <input type="checkbox"/> Cupolas <input type="checkbox"/> Dormers <input type="checkbox"/> Chimneys <input type="checkbox"/> Sheds <input type="checkbox"/> Ells <input type="checkbox"/> Wings <input type="checkbox"/> Bay Window <input type="checkbox"/> Other: Roof Styles: Gable <input type="checkbox"/> Hip <input type="checkbox"/> Shed <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Mansard <input type="checkbox"/> Gambrel <input type="checkbox"/> Jerkinhead <input type="checkbox"/> Saw Tooth <input type="checkbox"/> With Monitor <input type="checkbox"/> With Bellcast <input type="checkbox"/> With Parapet <input type="checkbox"/> With False Front <input type="checkbox"/> Other: Number of Stories: 1 Entrance Location: Façade, off-center Number of Bays: 6 Approximate Dimensions: 91 x 53 feet	
Criteria for Eligibility: A: Historic <input type="checkbox"/> B: Person <input type="checkbox"/> C: Architectural <input checked="" type="checkbox"/> D: Archeological <input type="checkbox"/>	
Integrity: Location <input checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Setting <input checked="" type="checkbox"/> Materials <input checked="" type="checkbox"/> Workmanship <input checked="" type="checkbox"/> Feeling <input checked="" type="checkbox"/> Assoc. <input checked="" type="checkbox"/>	

* Formerly known as the Historic Sites and Structures Survey

Areas of Significance:
Transportation, Architecture

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

A one-story metal-framed building clad in brick on three sides and granite cladding on the fourth façade, and granite trim at wainscot and eave level. The building has a rectangular footprint, oriented southwest to northeast, with a flat roof. The building has two facades, one facing the tarmac and one facing the road and parking lot. The road façade is asymmetrical with six bays, with an off-center double metal door on the northeast side, four single metal-framed windows to the southeast and one to the northeast. A flat-roofed open porch protects the entrance is supported by four slender metal posts angled outward from the ground to the roof. The tarmac façade is clad in granite panels with a nearly continuous row of metal framed windows, an off-center double metal door to the northeast, a single metal door in the center and a single metal door at the southwest end. The entire façade is protected by an open flat roof porch supported by slender metal posts angled outward from the ground to the roof.

RELATED RESOURCES: (Describe)

The terminal building is part of the Edward F. Knapp State Airport.

STATEMENT OF SIGNIFICANCE:

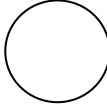
The terminal building was built in 1959 to replace the original terminal building for the Barre-Montpelier Airport that was located nearby in an early 20th century farmhouse that was renovated in 1941. The cities of Barre and Montpelier jointly owned and operated the airport from 1935 to 1970, and received funding from the Civil Aeronautics Administration in 1957 to build a new terminal. Architect Gordon G. Woods of St. Johnsbury won the bid for the design, Thomas B. Oakes Construction Company was hired to build the terminal, completed in 1959. The terminal building's exterior has remained unchanged, the interior remains largely the same.

REFERENCE CITATIONS:

Richard W. Turner, *From Barre-Montpelier to E.F. Knapp: The Story of a Small Airport in Berlin, Vermont* (by the author, 2011).

Barre-Montpelier Airport Records, 1950-1968. Vermont Historical Society.

MAP: (Indicate North in Circle)
See attached

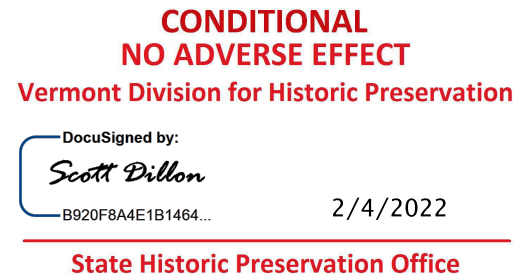


SURROUNDING ENVIRONMENT:

Open Woodland
Scattered Buildings
Moderately Built Up
Densely Built Up
Residential Commercial
Agricultural Industrial
Roadside Strip Development
Other: Small municipal airport

RECORDED BY: Bruce G. Harvey, 2021
ORGANIZATION: Harvey Research and Consulting
DATE RECORDED: 9 Decemberr, 2021

**FEDERAL AVIATION ADMINISTRATION
SECTION 106 NO ADVERSE EFFECT FIND
Pursuant to 36 CFR Section 800.11(e)
SECTION 4(f) COMPLIANCE REQUIREMENTS**



DESCRIPTION OF THE UNDERTAKING

The purpose of the Proposed Action is to enhance airfield safety, maintain aircraft landing minimums, regain the ability to land at night, and comply with FAA design standards by eliminating obstructions within the approaches for Runway 17 and 35 while maintaining the existing runway length of 5,000 feet. The FAA has established airspace and design criteria to provide for safe aircraft operations. In 2020, the VTrans conducted an obstruction study to evaluate the airspace at the Airport. Based on the FAA design criteria, the results of this analysis identified several tree obstructions within several FAA design standards for both approaches to Runway 17-35. The Airport is also required to take appropriate action to comply with FAA obligations associated with receiving Federal grant funds that are enumerated in the FAA Sponsor Grant Assurances and FAA Order 5190.6B: *Airport Compliance Manual*. In particular, FAA Grant Assurance No. 20 (Hazard Removal and Mitigation) obligates the Airport to take appropriate actions to assure the airspace is adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards. The proposed undertaking will include the following elements (see attached exhibit).

- Obtain aviation easements on private property
- Clear approximately 5.8 acres of trees within the Runway 17 approach surface
- Clear approximately 28 acres of trees within the Runway 35 approach surface

AREA OF POTENTIAL EFFECT

[Pursuant to 36 CFR Section 800.4(a)(1)]

The Area of Potential Effect (APE) for above ground resources was based on the undertaking's potential to cause impacts indirectly by potential changes in viewshed as the proposed tree clearing would not directly impact an above ground resource. The APE for below ground resources was based on the proposed construction limits for tree clearing.

Efforts to Identify Resources

[Pursuant to 36 CFR Section 800.4(b)]

The effort to identify resources included identifying structures that were over 45-years old within the indirect APE, which contained twenty-one buildings. Fifteen of these buildings were industrial or commercial buildings that have been built since 1985 and were eliminated from further evaluation. Of the six buildings that are at least 45 years old, three are located on airport property [Airport Terminal (1959); Vermont Flying Service Building (1946); and the former National Life Hangar (1956)]. The remaining three historic resources within the APE are located immediately south of the airport boundary near the intersection of Airport Road and Scott Hill Road. One of these, the Dodge Farm, consists of a house and barn, both built in approximately 1840 and determined eligible for the State Register of Historic Places. The other two are single-family residences.

For below ground resources, an Archeological Resources Assessment (ARA) was conducted on the proposed clearing areas and identified with eleven (11) potential archeological sensitive areas (ASA)s.

ELIGIBILITY DETERMINATIONS

[Pursuant to 36 CFR 800.4(c)]

For above ground resources, a historic survey evaluation was conducted in December 2021. During efforts to identify above ground resources within the APE, only one resource was identified as having the potential to be eligible for the National Register: the E.F. Knapp State Airport Terminal (1059). The terminal is eligible for the National Register of Historic Places under Criterion C (Architecture). The building was designed by the Vermont architect Gordon G. Woods and completed in 1959. It is a good example of a small-scale building in the International Style and has retained excellent integrity.

In August and November 2021, an ARA was completed on the APE pursuant to the guidelines set forth by the Vermont Division of Historic Preservation (VDHP). The ARA was completed to determine if areas within the APE are sensitive for the presence of pre- or post-contact archaeological sites, or to show that archaeological resources of potential significance are unlikely to be present. Based on the ARA, 11 archaeologically sensitive areas (ASAs) were defined. All 11 of the ASAs are sensitive for pre-contact Native American archaeology and one, which includes the Dodge Farm, is sensitive for both pre- and post-contact archaeology. An Archaeological Phase I survey was recommended within the ASAs where proposed ground disturbance would take place.

EFFECT FINDING

[Pursuant to 36 CFR 800.5(b)]

For indirect impacts, the proposed tree clearing within the viewshed of the one eligible property (Airport Terminal) will have no adverse effect on the resource. The existing Airport Terminal building is more than 0.5 miles from the proposed tree clearing and will not impact the integrity of the resource.

For direct impacts, the obstruction clearing will remove the tree, grind the stump, and topsoil and seed; however, within wetlands and their buffer, as well as any of the identified ASAs, the tree stumps would be left in place and the trees would be cut by hand. Any smaller trees and understory would remain. There would be no mechanical equipment allowed within the ASAs. In addition, the following requirements will be implemented during construction within the ASAs:

- A full-time resident engineer will be assigned to monitor tree clearing and ensure that the work is carried out under frozen ground conditions or other suitable winter conditions such as adequate packed snow, and/or with timber matting in wetland areas.
- The full-time resident engineer will assess the ground conditions daily and inform the contractor of the need to halt construction if there is a thaw or if ground disturbance is occurring. Use of mechanized equipment shall not resume until appropriate conditions are confirmed by the resident engineer.

- If there is a winter thaw or ground disturbance is identified, work will be limited to that which can be cut by hand. Mechanized equipment work will be suspended until appropriate ground conditions are confirmed by the resident engineer.
- Topsoil removal, grading, scraping, soil stockpiling, grubbing, or stumping shall not occur within the ASAs
- Access to tree removal will occur on existing haul roads and no new roads will be created.
- The contractor assigned to tree clearing activities will be notified of the above restrictions and any contract will explicitly refer to the required job conditions listed here.

SECTION 4(F) COMPLIANCE REQUIREMENTS

This undertaking will not convert property from any Section 4(f) historic property to a transportation use; the FAA has determined the appropriate Section 106 finding is "No Adverse Effect"; therefore; a Section 4(f) evaluation is not required.



Richard Doucette, Environmental Protection Specialist
Federal Aviation Administration
New England Region

January 3, 2022

Approved Date