



GRAY & PAPE
HERITAGE MANAGEMENT

Since 1987

Exhibit Petitioner JTR-2

60 Valley Street
Suite 103
Providence, RI 02909
401.273.9900

May 23, 2025

Jake Reed
Senior Environmental Specialist
Vermont Electric Power Company, Inc.
366 Pinnacle Ridge Road
Rutland, Vermont 05701

**RE: Sandbar Substation
Milton, Chittenden County, Vermont
Cultural Resources Review**

Dear Mr. Reed:

Vermont Electric Power Company, Inc. (VELCO) is proposing expansions, modifications, and improvements at several of its existing electrical substation facilities in Vermont. To conduct this work, VELCO will need permitting and approval under several different regulations, including cultural resources compliance under Vermont Section 248 (30 V.S.A. § 248).

In response to a request from VELCO, Gray & Pape, Inc. (Gray & Pape) reviewed the results of previous archaeological survey work conducted by the cultural resources management firm of WSP (formerly Louis Berger) at its Sandbar Substation at 586 Bear Trap Road, Milton, Vermont (Figures 1 and 2). The purpose of WSP's work was to identify any potentially National Register of Historic Places (NRHP)-eligible resources within archaeologically sensitive portions of the 133.2-acre property in advance of a proposed facility expansion. Since that date, VELCO has proposed a new project at this facility and requested Gray & Pape:

- review and confirm the results of the WSP (2020) archaeological survey,
- identify areas of archaeological sensitivity and aboveground resources more than 50 years of age in a newly added project parcel, and
- provide recommendations for additional cultural resources work, as needed.

Project History

In 2015, WSP completed an Archaeological Resources Assessment (ARA) of the Sandbar Substation parcel and identified six archaeologically sensitive areas totaling 14.16 acres (Willoughby 2015) (Figure 3). In 2016, WSP conducted a follow up Phase IB survey at Sensitivity Areas 1 and 3 (9.8 acres), found no artifacts or potentially NRHP-eligible significant archaeological sites, and recommended no additional archaeological work in those areas (Willoughby 2019) (Figure 4). The Vermont Division for Historic Preservation (VDHP) concurred with WSP's sensitivity assessment and recommendations in a letter dated April 20, 2020.

WSP also conducted an architectural survey of all aboveground resources within a 0.25-mile radius study area of the project parcel. The survey identified four residential buildings more than 50 years old within the study area but concluded none were NRHP-eligible (Bedford 2020). VDHP concurred with WSP's conclusions on March 25, 2020.

Site File Review

Thirteen precontact sites have been recorded within 1.6 kilometers (km) (1 mile [mi]) of the substation. VT-CH-0024 is a rock shelter immediately south of the substation enclosure and consists of a 30–40-ft-deep cave at base of cliff overlooking the Lamoille River 60 m to the east. Although recorded as a precontact site, the reliability of the site documentation is questionable. Two additional rock shelters (VT-CH-38 and VT-CH-1172) also are recorded along the north/west riverbank; VT-CH-38 is dated to the Middle Woodland period based on the recovery of a Jack's Reef point in association with Native pottery.

The remaining sites consist of open-air encampments on sandy, well-drained bluffs overlooking the Lamoille River at distances of 130 to 420 m. Associated artifacts primarily consist of Hathaway chert and Cheshire quartzite debitage, but the lack of diagnostic materials precludes assessment of their occupation dates.

No postcontact sites have been identified within 1.6 km/1 mi of the substation and no buildings or structures are depicted on any historical mapping of the substation parcel (e.g., Beers 1876, USGS 1915 and 1948).

Literature Review

In 1994, Archaeology Consulting Team, Inc. (ACT) completed a Phase IA archaeological sensitivity assessment for the replacement of a 1.58-mile VELCO transmission line segment from Sandbar to Grand Isle. The eastern portion of the line is approximately 1.4 km (4,720 ft) north of the Sandbar Substation and was assessed as archaeologically non sensitive (Frink 1994). In addition to the 2015 and 2016 WSP surveys, ACT excavated 15 shovel test pits (STPs) south of the Sandbar Substation in 2000 ahead of proposed improvements to the facility. Several STPs contained disturbed soils, but most contained intact profiles; no precontact or postcontact artifacts or features were identified (Frink and Dow 2000). In 2010, the University of Vermont's Consulting Archaeology Program (CAP) conducted a Phase I survey at the Sandbar Wildlife Management Area approximately 600 m (2,000 ft) northwest of the Sandbar Substation. The survey consisted of 24 STPs with the recovery of 13 flakes in filled contexts from six STPs. Designated VT-CH-1097, the site was recommended as not potentially NRHP eligible due to the extent of the observed and inferred landscape disturbance (CAP 2011).

Field Review

Gray & Pape conducted two field reviews on July 17, 2024, and April 15, 2025.

During the first field review, Gray & Pape documented the parcel as a mix of steep slope, exposed bedrock, wetlands, and scrub secondary and tertiary vegetation. The substation location itself was blasted and cleared to allow for its construction.

WSP's Sensitivity Area 2 is at the south end of the substation parcel west of and adjacent to Cliffside Park Road. At the time of the field review, the area was fully inundated from recent rains and overgrown with a mix of wild grapes, Morrow's honeysuckle, beech, and fern (Figure 5). The underlying soil consists of Limerick silt loam (prone to frequent flooding) and the entire area within a palustrine wetland more

than 90 m from the Lamoille River. Sensitivity Area 4 is in the east-central portion of the substation parcel more than 170 m from the Lamoille River and comprises Hinesburg fine sandy loam, 0-3 percent slopes. The primary vegetation consists of a mixed deciduous and evergreen canopy across flat terrain with minimal understory (Figure 6). Sensitivity Areas 5 and 6 are at the northeast corner of the parcel overlooking the Lamoille River and a large palustrine wetland to the east. Both have a similar vegetative profile to Area 4 but with more undulating terrain consisting of Rock land and Farmington extremely rocky loam, 5–20 percent slopes. Both are also within 35 m of the Lamoille River but at an elevation and slope that makes access to the river difficult.

Gray & Pape conducted the second field review on April 15, 2025. The focus of the second effort was the residential lot at 584 Bear Trap Road that VELCO has purchased to accommodate access road construction; the lot was not included in WSP's original survey or Gray & Pape's 2024 site re-evaluation. The existing house is a ca. 1968, vinyl-sided, single-story ranch with two small outbuildings on level terrain backed by a steep exposed bedrock slope to the north and woodland to the east (Figures 7 through 11); an informal trail runs from the rear yard into the woods (Figure 12). The underlying soils comprise Adams and Windsor loamy sands, 0 to 5 percent slopes, overlaying pebbly marine sand Champlain sea deposits.

Conclusions and Recommendations

Archaeological sensitivity is often assessed solely within the boundaries of a study area rather than by reference to the larger landscape. When applied in marginal environments, this blinkered approach can result in the assignment of positive sensitivity attributes to environmental criteria that otherwise would be assessed as neutral or poor within a more expansive spatial context. For example, WSP scored several areas throughout the project area as archaeologically sensitive based on their level terrain, well-drained soils, and proximity to the Lamoille River. When compared to other locations within one mile of the substation, however, the area compares unfavorably as it is more than 170 m from the Lamoille River on top of a steep bluff without dependable access to freshwater.

The identification of five precontact sites on the west side of the Lamoille River immediately opposite the substation undoubtedly influenced the results of the 2015 sensitivity assessment. But those sites occur on well-drained Windsor Adams loamy sands, 0-5 percent slopes, across a single large terrace sloping gently west to the river. That is a much different landscape context, and far more desirable settlement option, than the substation parcel, and one that would have been available just as readily as during the Precontact Period. Similarly, the floodplain bordering the substation parcel to the southeast (now used as a seasonal campground) also would have provided a more attractive settlement option with its level terrain, well drained Winooski very fine sandy loam soils, easy access to the river, and protection from northwesterly winds by a towering, exposed bedrock formation (Figures 13 and 14).

In addition to the comparatively unfavorable environmental characteristics observed within the substation parcel during the field review, Areas 4, 5, and 6 all scored as archaeologically non-sensitive on the Environmental Predictive Model with scores ranging from -16 to 12 (Attachment 1). Based on its level terrain, proximity to the river, and location within the former boundaries of the Champlain Sea deposit, Sensitivity Area 2 scored as archaeologically sensitive at 56. However, the very deep, poorly drained, and frequently flooded Limerick soils that make up the area combined with its proximity to a well-drained floodplain immediately to the east effectively preclude its sensitivity as a preferred settlement location.

In the same vein, the Environmental Predictive Model (EPM)¹ assesses the residential lot as archaeologically sensitive (32) based on its location within the former boundaries of the Champlain Sea and the current. However, the residential lot shares the same environmental characteristics as Sensitivity Area 1 that WSP tested and found no artifacts or cultural features.

Based on the results of the documentation and field review, Gray & Pape reevaluates Sensitivity Areas 2, 4, 5, and 6 as archaeologically non-sensitive and recommends no further archaeological survey.

Gray & Pape also assesses the residential lot as archaeologically non-sensitive based on its comparatively unfavorable location and environmental similarity to other portions of the substation parcel that produced no artifacts or cultural features during previous archaeological testing.

Further, although the ca. 1968 ranch-style house on the lot meets the 50-year threshold for NRHP eligibility and retains integrity, it cannot be meaningfully associated with any significant historical contexts (A), is not associated with an historically significant individual(s) (B), is not distinctive in its design or construction (C), and is unlikely to yield new or important in history (D). As such, Gray & Pape recommends the house at 584 Bear Trap Road as not eligible for listing in the NRHP.

Thank you for the continued opportunity to work with VELCO. If you have any questions or need additional information, please feel free to contact me at your convenience.

Sincerely,



Kristen Heitert, MA, RPA
Senior Principal Investigator
Gray & Pape, Inc.
Kheitert@graypape.com
860-630-0635

¹ The EPM is a predictive model that uses proximity to a select list of environmental features to forecast the probability of significant precontact archaeological sites occurring in any particular location.

References Cited

Bedford, Steven

2020 *Vermont Transco, LLC Substation Condition Assessment Project, Sandbar Substation Architectural Survey Summary*. Prepared by WSP. On file, Vermont Division for Historic Preservation, Montpelier.

Beers, J. B.

1876 *Chittenden County, Vermont*. H.W. Burgett & Company, New York.

Consulting Archaeology Program, University of Vermont [CAP]

2011 *Archaeological Phase I Site Identification Survey and Supplemental Phase I Survey for the Sandbar Wildlife Management Area Storage Building Project (VT-CH-1097), Milton, Chittenden County, Vermont*. Prepared by University of Vermont Consulting Archaeology Program, Burlington. On file, Vermont Division for Historic Preservation, Montpelier.

Frink, Douglas

1994 *VELCO Transmission Line Replacement Along the Sandbar on Lake Champlain, Phase I-A Archaeological Sensitivity Study*. Prepared by Archaeology Consulting Team, Essex Junction. On file, Vermont Division for Historic Preservation.

Frink, Douglas, and Jessica Dow

2000 *Phase I Archaeological Site Identification Study of the Proposed Upgrade to the Georgia and Sandbar Substations, Georgia, Franklin County, and Milton, Chittenden County, Vermont*. Archaeological Consulting Team, Inc. On file, The Louis Berger Group, Inc., Albany, New York.

United States Geological Survey [USGS]

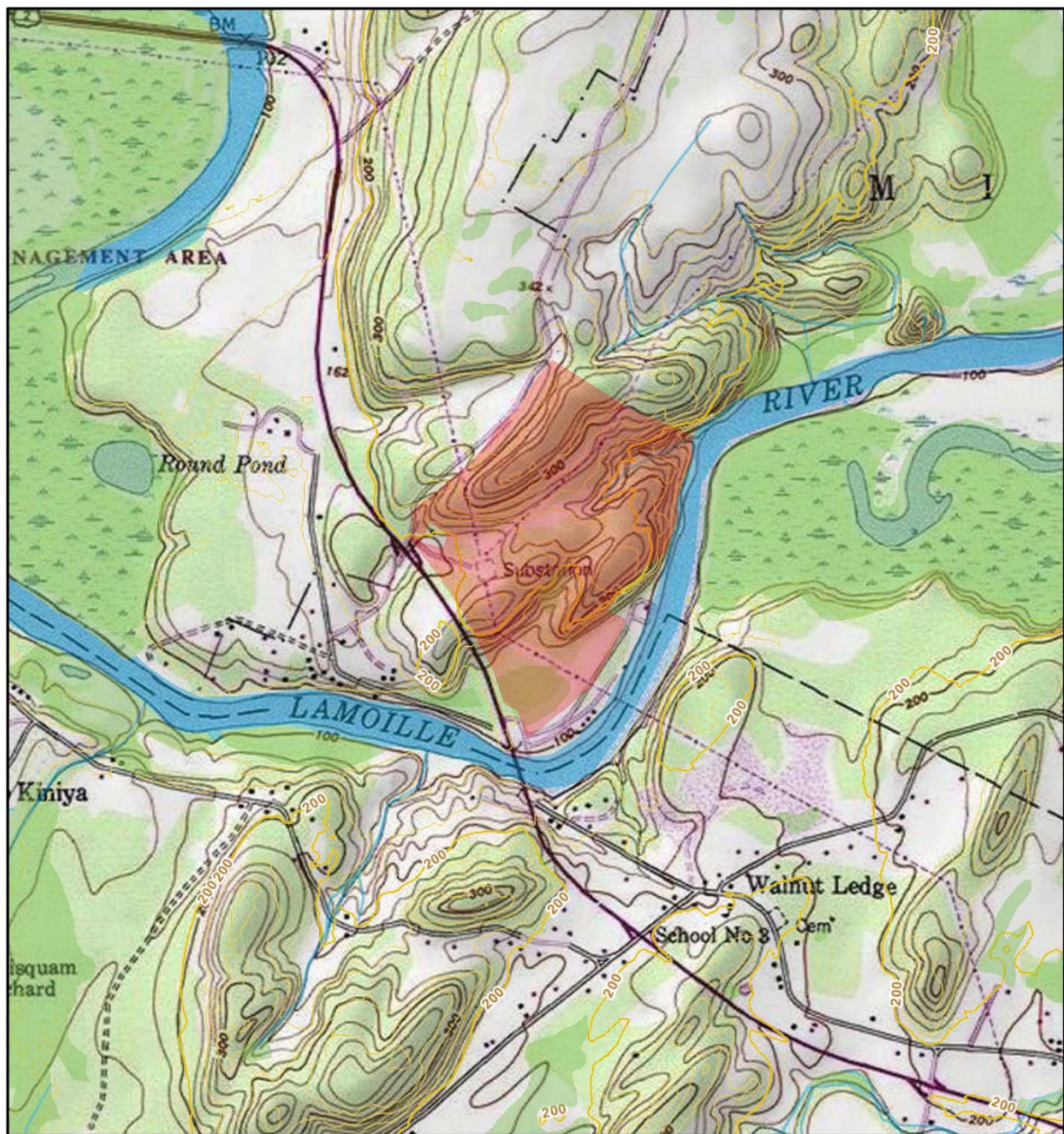
1915 *Milton, Vermont*. 15-Minute Series Topographic Quadrangle. Surveyed 1922. United States Geological Survey, Washington, D.C.

1948 *Milton, Vermont*. 15-Minute Series Topographic Quadrangle. Surveyed 1922, Revised 1957. United States Geological Survey, Washington, D.C.

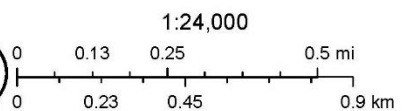
Willoughby, Wesley

2015 *Archaeological Resource Assessment and Scope of Work, Sandbar Substation VT Transco Substation Condition Assessment Project (SCAP), Chittenden County, Vermont*. Prepared by WSP. On file, Vermont Division for Historic Preservation, Montpelier.

2019 *Phase Ib Archaeology Survey, Sandbar Substation, Vt Transco Substation Condition Assessment Project (SCAP), Town of Milton, Chittenden County, Vermont*. Prepared by WSP. On file, Vermont Division for Historic Preservation, Montpelier.



8/1/2024



VCGI, Copyright © 2013 National Geographic Society, i-cubed

Figure 1. Location of the Sandbar Substation on the Milton, VT topographic quadrangle, 7.5-minute series.



8/1/2024

Sandbar Substation

Marsh, Swamp, Bog, Prairie

River

200-40 ft contours

200 ft

40 ft

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

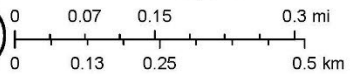
High Resolution 30cm Imagery

Citations

4.8m Resolution Metadata



1:15,000



VCGI, VCGI, Maxar, Esri Community Maps Contributors, Chittenden County RPC, VCGI, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Figure 2. Aerial map of Sandbar Substation project area showing the location of the residential lot not included in the 2015 or 2024 surveys.

Atlanta • Cincinnati • Frederick • Houston • Indianapolis • Port Charlotte • Providence • Richmond

www.graypape.com

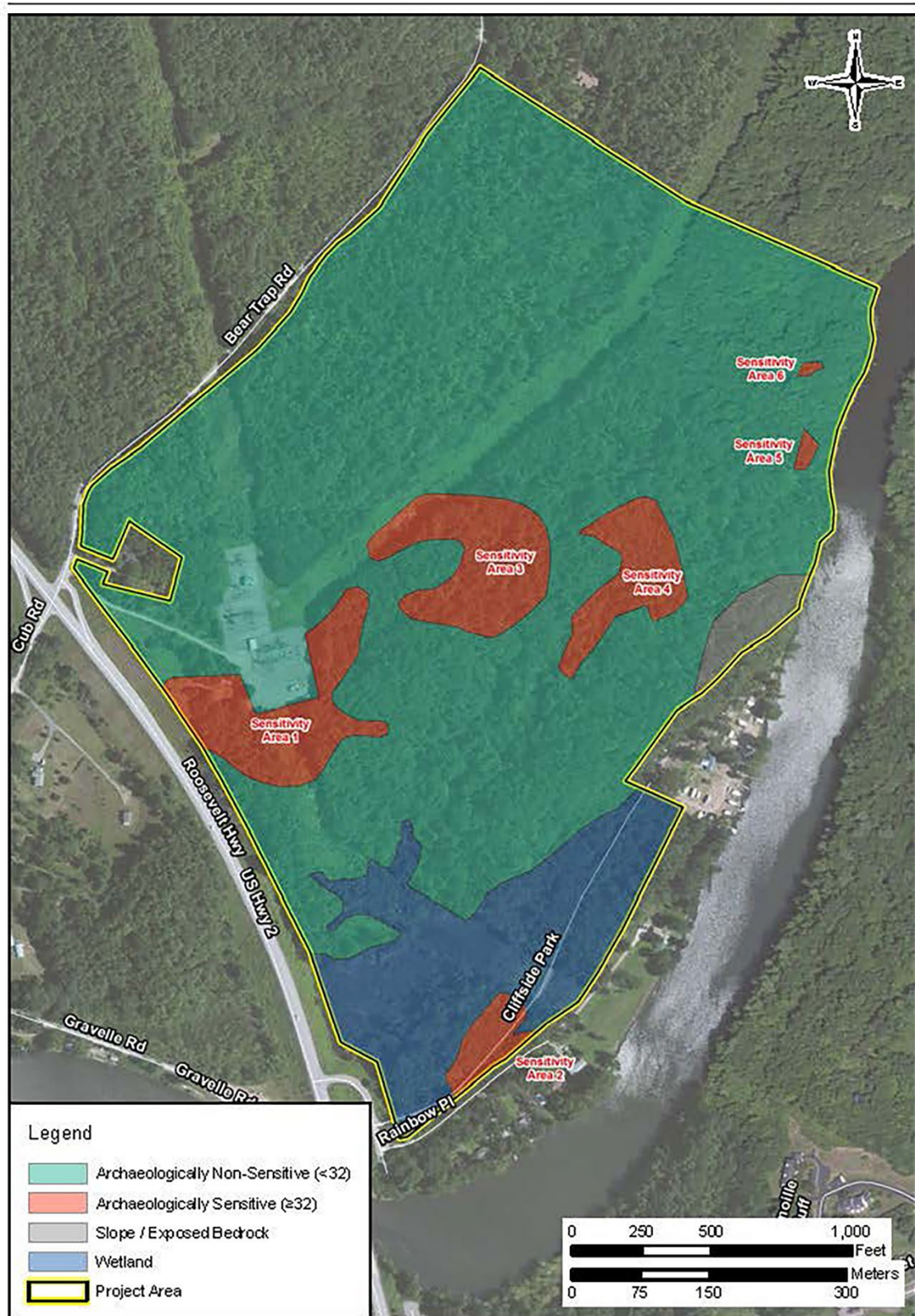


Figure 3. Archaeological sensitivity areas identified in the Sandbar Substation ARA (Willoughby 2015).



Figure 4. Subsurface testing locations, Sensitivity Areas 1 and 3 (Willoughby 2015).



Figure 5. Sensitivity Area 2, view northwest.



Figure 6. Sensitivity Area 4, view northeast.



Figure 7. Residential lot, view northeast.



Figure 8. Residential lot, view southeast from driveway.



Figure 9. Exposed bedrock slope/ledge north of house, view northwest.



Figure 10. Yard east of house, view northeast.



Figure 11. Woods east of house, view east.



Figure 12. Trail leading from house to woods, view west.



Figure 13. Seasonal campground on floodplain adjacent to southeast side of project parcel, view northeast.



Figure 14. Bedrock exposure abutting floodplain, view northwest.

Attachment 1. EPM Forms

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

Project Name Sandbar Substation

County Chittenden

Town Milton

DHP No.

Map No.

Staff Init.

Date 7/31/2024

Additional Information Sensitivity Area 2

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 90- 180 m	12 6	12
2) Distance to Intermittent Stream	0- 90 m 90-180 m	8 4	
3) Confluence of River/River or River/Stream	0-90 m 90 –180 m	12 6	
4) Confluence of Intermittent Streams	0 – 90 m 90 – 180 m	8 4	
5) Falls or Rapids	0 – 90 m 90 – 180 m	8 4	
6) Head of Draw	0 – 90 m 90 – 180 m	8 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 90 -180 m	12 6	
11) Confluence of River or Stream	0-90 m 90 –180 m	12 6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m 90 -180 m	12 6	12
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	
16) Valley edge features such as Kame/Outwash Terrace**		12	

17) Marine/Lake Delta Complex**		12	
18) Champlain Sea or Glacial Lake Shore Line**		32	32
E. OTHER ENVIRONMENTAL FACTORS:			
19) Caves /Rockshelters		32	
20) <input type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		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: 56
Other Comments :			
0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive			

VERMONT DIVISION FOR HISTORIC PRESERVATION

Environmental Predictive Model for Locating Pre-contact Archaeological Sites

Project Name Sandbar Substation

County Chittenden

Town Milton

DHP No.

Map No.

Staff Init.

Date 7/31/2024

Additional Information Sensitivity Area 4

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 90- 180 m	12 6	6
2) Distance to Intermittent Stream	0- 90 m 90-180 m	8 4	
3) Confluence of River/River or River/Stream	0-90 m 90 –180 m	12 6	
4) Confluence of Intermittent Streams	0 – 90 m 90 – 180 m	8 4	
5) Falls or Rapids	0 – 90 m 90 – 180 m	8 4	
6) Head of Draw	0 – 90 m 90 – 180 m	8 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 90 -180 m	12 6	
11) Confluence of River or Stream	0-90 m 90 –180 m	12 6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m 90 -180 m	12 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	
16) Valley edge features such as Kame/Outwash Terrace**		12	

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 type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		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			
<div style="text-align: right;">Total Score: 6</div>			
Other Comments :			
0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive			

VERMONT DIVISION FOR HISTORIC PRESERVATION

Environmental Predictive Model for Locating Pre-contact Archaeological Sites**Project Name** Sandbar Substation**County** Chittenden**Town** Milton**DHP No.****Map No.****Staff Init.****Date** 7/31/2024**Additional Information** Sensitivity Area 5

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 90- 180 m	12 6	12
2) Distance to Intermittent Stream	0- 90 m 90-180 m	8 4	4
3) Confluence of River/River or River/Stream	0-90 m 90 –180 m	12 6	
4) Confluence of Intermittent Streams	0 – 90 m 90 – 180 m	8 4	
5) Falls or Rapids	0 – 90 m 90 – 180 m	8 4	
6) Head of Draw	0 – 90 m 90 – 180 m	8 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 90 -180 m	12 6	
11) Confluence of River or Stream	0-90 m 90 –180 m	12 6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m 90 -180 m	12 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	
16) Valley edge features such as Kame/Outwash Terrace**		12	

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 type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		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	-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: -16
Other Comments :			
0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive			

VERMONT DIVISION FOR HISTORIC PRESERVATION

Environmental Predictive Model for Locating Pre-contact Archaeological Sites**Project Name** Sandbar Substation**County** Chittenden**Town** Milton**DHP No.****Map No.****Staff Init.****Date** 7/31/2024**Additional Information** Sensitivity Area 6

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 90- 180 m	12 6	12
2) Distance to Intermittent Stream	0- 90 m 90-180 m	8 4	8
3) Confluence of River/River or River/Stream	0-90 m 90 –180 m	12 6	12
4) Confluence of Intermittent Streams	0 – 90 m 90 – 180 m	8 4	
5) Falls or Rapids	0 – 90 m 90 – 180 m	8 4	
6) Head of Draw	0 – 90 m 90 – 180 m	8 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 90 -180 m	12 6	
11) Confluence of River or Stream	0-90 m 90 –180 m	12 6	12
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m 90 -180 m	12 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	
16) Valley edge features such as Kame/Outwash Terrace**		12	

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 type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		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	-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: 12
Other Comments :			
0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive			

VERMONT DIVISION FOR HISTORIC PRESERVATION

Environmental Predictive Model for Locating Pre-contact Archaeological Sites

Project Name

DHP No.

County

Map No.

Staff Init.

Town

Date

Additional Information

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 90- 180 m	12 6	
2) Distance to Intermittent Stream	0- 90 m 90-180 m	8 4	
3) Confluence of River/River or River/Stream	0-90 m 90 –180 m	12 6	
4) Confluence of Intermittent Streams	0 – 90 m 90 – 180 m	8 4	
5) Falls or Rapids	0 – 90 m 90 – 180 m	8 4	
6) Head of Draw	0 – 90 m 90 – 180 m	8 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 90 -180 m	12 6	
11) Confluence of River or Stream	0-90 m 90 –180 m	12 6	
12) Lake Cove/Peninsula/Head of Bay		12	
C. WETLANDS:			
13) Distance to Wetland (wetland > one acre in size)	0- 90 m 90 -180 m	12 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	
16) Valley edge features such as Kame/Outwash Terrace**		12	

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 type="checkbox"/> Natural Travel Corridor <input type="checkbox"/> Sole or important access to another drainage <input type="checkbox"/> Drainage divide		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:			
Other Comments :			
0- 31 = Archeologically Non- Sensitive 32+ = Archeologically Sensitive			