



# GRAY & PAPE

## HERITAGE MANAGEMENT

Gray & Pape Project No. 23-96601.001

Archaeological Resources Assessment  
Windsor Substation Facility  
488 Hunt Road  
Windsor, Windsor County, Vermont

**Prepared for:**

Vermont Transco LLC  
366 Pinnacle Ridge Road  
Rutland, Vermont 05701.

**Prepared by:**

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November 21, 2024

## INTRODUCTION

Vermont Transco LLC (VT Transco) is proposing expansion, modifications, and improvements to its 22-acre Windsor Substation at 488 Hunt Road in Windsor, Vermont (Figures 1 and 2). To conduct this work, VT Transco will need permitting and approval under several different regulations, including cultural resources compliance under Vermont Section 248 (30 V.S.A. § 248).

Under contract to VT Transco, Gray & Pape, Inc. (Gray & Pape) has prepared the following Archaeological Resources Assessment (ARA) for the Windsor Substation Expansion Project (Project). The purpose of the ARA was to identify areas of archaeological sensitivity and any visible indications of archaeological sites and landscape disturbances within an approximately 10-acre study area that will be subject to Project-related construction impacts. All work described below was conducted in accordance with relevant guidelines including the Secretary of Interior's *Standards and Guidelines for Archeology and Historic Preservation* (63 CFR 20496), *Guidelines for Conducting Archaeology in Vermont* (Vermont Division for Historic Preservation [VDHP 2017]), and VDHP's Section 248 review and compliance protocols.

## METHODS

### SITE FILE SEARCH AND LITERATURE REVIEW

Gray & Pape conducted research to identify previously recorded archaeological sites and cultural resource management (CRM) studies within a 1-mile radius of the Project study area using Vermont's Online Resource Center (ORC). ORC provides online access to VDHP's documentation related to historic preservation activities throughout the state since the 1960s including environmental/project reviews, historic sites and structures surveys, National and State Registers of Historic Places documentation; project administration files, town files and reports, and the Vermont Archaeological Inventory (VAI). ORC also includes a GIS-based map tool that includes archaeological site locations and data, previously identified areas of archaeological sensitivity and associated sensitivity criteria, , and LiDAR mapping. Gary & Pape also used the Vermont Center for Geographic Information to view environmental data (e.g., soils, bedrock, topographic contours, and wetlands and waterways) relevant to the study area.

### FIELD INSPECTION

Gray & Pape conducted a field inspection of the Project study area on August 9, 2023, and July 18, 2024. The purpose of the inspection was to document existing conditions, including evidence of observed or inferred ground disturbance, and identify any surface indications of archaeological sites (e.g., surface artifact finds or cellar holes). The walkover was informed by the results of VDHP's Environmental Predictive Model (EPM) (Table 1). The EPM functions as an initial ranking of precontact archaeological sensitivity to be verified and refined by a field inspection. The EPM may also assist in locating early postcontact settlement sites.

## RESEARCH RESULTS

### ENVIRONMENTAL PROFILE

The Project study area is in the upper Connecticut River valley and spans both sides of Interstate 91 (I-91) approximately 1.5 miles west of the Connecticut River. The Connecticut River is the longest river in

New England and is fed by hundreds of large and small tributaries, including Kimball Brook, which flows west-to-east on the south side of Hunt Road opposite the substation. The river valley floodplain is wide, flat, and fertile and variably bordered by steeply sloped hill and mountains, including Mount Ascutney, which rises abruptly 2.5 miles south of the study area to an elevation of 3,144. The study area ranges in elevation from 720 to 800 feet.

The study area is underlain by Waits River Formation bedrock consisting of dark gray to silvery-gray, lustrous, carbonaceous muscovite-biotite-quartz ( $\pm$ garnet) phyllite with abundant beds of punky-brown-weathering, dark-bluish-gray micaceous quartz (DSw). The bedrock is overlaid by Vershire-Dummerston complex soils, characterized as deep, well-drained soils occurring on 8 to 15 percent slopes. Most areas, including the study area, are wooded with hardwoods (e.g., birch, beech, and maple) and evergreens (e.g., balsam fir, red spruce, eastern hemlock, and eastern white pine) (United States Department of Agriculture-Natural Resources Conservation Service 2024).

### **ARCHAEOLOGICAL AND HISTORICAL CONTEXT**

No precontact sites are recorded within one mile of the study area. The closest precontact site, Park Road Solar (VT-WN-0528), is approximately 1.8 miles to the northeast in a 2.2-acre field adjacent to a very steep terrace edge overlooking an intermediate terrace and the Connecticut River (Mandel and Knight 2020). The site assemblage consists of 112 pieces of non-diagnostic debitage, bifaces, hammerstones, abraders, and fire-cracked rock (FCR) surface collected and excavated from plowzone and subsoil contexts. Most of the artifacts were made from locally available milky quartz with smaller amounts of chert and quartzite. Despite the recovery of the FCR, no hearth features were identified.

One postcontact archaeological site, the F. Hawley Homestead, is recorded within the study area. It was identified during a previous ARA at the Project's south end and is reported as a stone retaining wall and stone foundation filled with charred timbers and (Willoughby 2015:22). The Beers (1869) map of Windsor shows a house owned by F. Hawley in that location. The 1929 and 1998 USGS maps continue to depict the house as does a 2009 orthophoto; the building is gone by 2011, likely destroyed by fire. Three additional postcontact sites are recorded within one mile of the study area: J.A. Ballou Homestead (VT-WN-0115), American Precision Museum (VT-WN-0183), and the American Precision Museum East Wing (VT-WN-0194). The nineteenth-century Ballou homestead consisted of a nineteenth-century farmstead complex including a well, cellar hole, and relict road alignment identified during a Phase I survey (Frink 1989). The American Precision resources comprise an extant industrial complex on the south bank of Mill Brook that includes a c. 1864 brick building originally used as an armory and machine shop, converted to a cotton mill in 1870, and a hydroelectric power station from 1898 to 1966 (Charles 1991).

No aboveground resources have been inventoried within 0.25-mile of the Project study area.

### **FIELD INSPECTION RESULTS**

The study area west of I-91 is accessible via a paved road that runs northwest and upslope from Hunt Road (Photo 1). The road drops sharply along its east and west sides and appears to have been alternately cut and filled as part of its construction (Photo 2). At the top of the slope the road splits

northwest and north. The northwest-aligned road segment dead ends in a cleared, graded, and graveled construction staging area; push piles and gravel piles are visible along its edges (Photos 3 and 4).

The north-aligned road segment continues approximately 325 meters (m) (1,080 feet [ft]) to the substation and at its south end appears to have been alternately bermed and cut to accommodate the original topography and provide sufficient drainage (Photos 5 and 6). The east property line is bounded by a chain link fence with the successional tree canopy and understory vegetation to the west consisting of white pine, birch, beech, maple, hemlock, goldenrod, bracken fern, and staghorn sumac. The terrain at the road's north end drops steeply to the west with a more gradual slope to the east (Photo 7). This appearance suggests the area was substantially filled and contoured to provide a level roadbed to the substation on an otherwise unusable sloped hillside. The landscape west of the access road and substation is characterized by excessively steep slopes and massive bedrock outcrops, portions of which show clear evidence of mechanical blasting to allow for the substation construction (Photos 8 through 12).

The study area east of I-91 is a linear corridor accessible via a dirt road connecting the Mount Ascutney Hospital and Health Center to the highway (Figure 13). The corridor was extremely overgrown during the field inspection resulting in poor landscape visibility, but a cleared, level house lot adjacent to it provided good site lines to Hubbard Brook to the east and Kimball brook to the south (Figure 14). A 0.36-acre palustrine wetland occurs where the study corridor turns west to cross I-91 (Figure 15). After crossing I-91, the study area corridor begins to slope up gently to meet the substation and continues along a significantly steeper slope north of the substation (Figure 16).

## CONCLUSIONS

Vermont's major river valleys have been a focus of human settlement for thousands of years. More than 150 sites have been recorded within the Connecticut River valley, including nearly three dozen in Windsor County, consisting primarily of precontact open air fishing and hunting camps. The Skitchewaug Site in Springfield (VT-WN-41), for example, is a complex, multi-component Late Archaic through Contact period occupation used as a large hunting camp site with evidence of limited horticulture. Moving west out of the valley into the steeply sloped and irregular terrain dissected by the river's many tributaries, site numbers drop dramatically. Those that are recorded consist mostly of eighteenth- and nineteenth-century residential, (e.g., farmsteads), commercial (e.g., stores), and small-scale industrial (e.g., blacksmith shops) resources, trash dumps, and cemeteries.

This general pattern is evident in the Project study area. The rugged terrain, lack of an easily accessible freshwater source, and rocky shallow soils mitigate against its precontact use (see EMP score). Similarly, its postcontact use was limited to the mid-nineteenth-century F. Hawley Homestead occupation followed by the substation construction in 1978 (Vermont Electric Power Company 2023). The structural remains of the Hawley homestead (as identified during a previous ARA for the Project) were completely overgrown and obscured from view at the time of the August 2023 field assessment. However, the area immediately east and outside of the Project study area is (comparatively) flat with a park-like appearance and more mature tree canopy and open understory (Photo 17). This landscape, which makes up only a small portion of the surrounding terrain, formerly extended into the Project study area and was selected as the one feasible location for the construction of the Hawley house.

## RECOMMENDATIONS

Based on the results of the research, EPM scoring, and field assessment, the Project study area is assessed with low precontact archaeological sensitivity. One postcontact archaeological site, the F. Hawley Homestead, is recorded within the study area but is corroborative to the documentary record, exhibits poor landscape and structural integrity, and is unlikely to yield new or important information about the nineteenth-century agrarian use of the area.

**Gray & Pape identified no potentially National Register-eligible resources within the Project study area and recommends no further archaeological review in advance of Project construction.**

## REFERENCES CITED

Charles, Sheila

1991 *Monitoring of Backhoe Excavation, Southeast Corner of the East Wing of the American Precision Museum*. On file, Vermont Division for Historic Preservation, Montpelier, VT.

Frink, Douglas S.

1989 *Phase I Archaeological Site Identification Survey of Old Mill Pond Development Project, Town of Windsor, Windsor County, Vermont*. On file, Vermont Division for Historic Preservation, Montpelier, VT.

Geoffrey A. Mandel and Charles Knight

2020 *Archaeological Phase I and II Studies for the Proposed Park Road Solar Project, Windsor, Windsor County, Vermont*. On file, Vermont Division for Historic Preservation, Montpelier, VT.

United States Department of Agriculture-Natural Resources Conservation Service

2023 Web Soil Survey. Electronic resource,  
<https://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>, accessed August 28, 2023.

Vermont Division for Historic Preservation (VDHP)

2017 *Guidelines for Conducting Archaeology in Vermont*. Electronic resource,  
<https://accd.vermont.gov/historic-preservation/review-compliance>, accessed August 28, 2023.

Vermont Electric Power Company

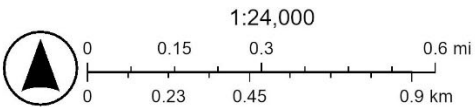
2023 *History*. Electronic resource, <https://www.velco.com/about/history>, accessed August 28, 2023.

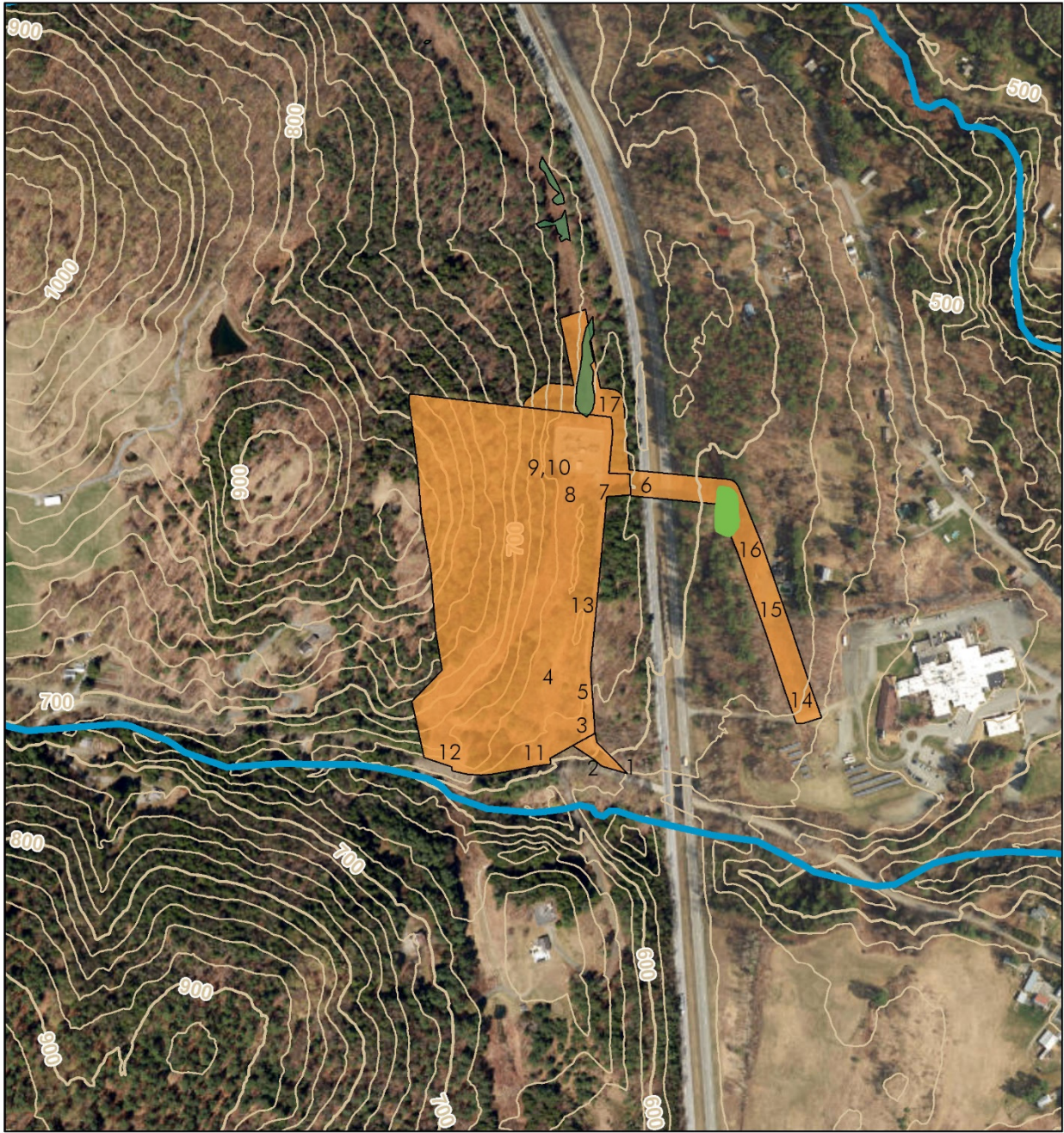
Willoughby, Wesley

2015 *Archaeological Resource Assessment, Windsor Substation and Windsor Adjacent Parcel, VT Transco Substation Condition Assessment Project (SCAP)*. Prepared by Louis Berger. Submitted to Vermont Transco LLC, Rutland, VT.



Figure 1  
Project study area in the Windsor, VT, USGS topographic  
quadrangle, 7.5-minute series.





-  Bog, marsh
-  Study Area
-  Palustrine Wetland
-  Kimball Brook

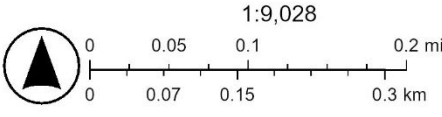


Figure 2  
Project study area showing existing conditions and photo locations.



Photo 1. Access road from Hunt Road into Project study area, view northwest.



Photo 2. Cut embankment along northeast edge of access road from Hunt Road into Project study area, view northeast.





Photo 3. Laydown area, view northwest.



Photo 4. Laydown area, view southeast.



Photo 5. Paved access road leading to substation, view north.



Photo 6. Windsor substation, view northwest.



Photo 7. Steep embankment on west side of access road, view southwest.



Photo 8. Transmission line right-of-way from substation, view southwest.



Photo 9. Exposed bedrock ledge west of substation, view northwest.



Photo 10. Quarry blast holes along the east-facing bedrock ledge face, view west.



Photo 11. Cut and bermed hill on north side of Hunt Road, view west.



Photo 12. Transmission line right-of-way from Hunt Road, view north.



Photo 13. Undisturbed terrain east and outside of the Project study area; view southeast.



Figure 14. Project study area corridor from dirt access road, view north.



Figure 15. Project study area corridor, view north.



Figure 16. Palustrine wetlands in Project study area corridor



Photo 17. Project study corridor north of substation, view north; note visible slope from west to east.