

Section 15
Historical and Archeological Reports

15.0 HISTORICAL AND ARCHEOLOGICAL REPORTS

Maine statute requires that Highland Wind demonstrate that adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to ensure there will be no undue adverse effect on historic resources in the area likely to be affected by the proposal. This requirement is qualified by language limiting any scenic character evaluations to those performed in accordance with 35-A MRSA Section 3452.

With regard to the direct impact of the Project, LURC Chapter 10.25 specifically requires that if any portion of a project site includes an archaeologically sensitive area or a structure listed in the National Register of Historic Places, or is considered by the Maine Historic Preservation Commission or other pertinent authority as likely to contain a significant archaeological site or structure, the applicant must conduct archaeological surveys or submit information on the structure, as requested by the appropriate authority.

Agency correspondence from the Maine Historic Preservation Commission (MHPC) is provided in Appendix 15-1. In this correspondence, MHPC requested targeted archaeological surveys to identify potential pre-historic/Native American sites, as well as surveys to identify historic aboveground structures in the area. While these requests were largely made in the context of a federal National Historic Preservation Act Section 106 analysis, which is not the standard applicable to this Application, we provide this correspondence as a record of communications.

To address these requests, Highland Wind LLC conducted historic architecture, Euro-American archeological, and pre-historic archeological investigations to determine what impact the Project might have on these resources. Here, no significant archeological site is located in the Project area. Reports from these three investigations (historic architecture, Euro-American archeological and prehistoric archeological) are included in Appendix 15-2.

With regard to the indirect impact of the Project on historic resources, there are noise regulations and scenic impact regulations which dictate what is considered reasonable under Maine law. Here, there is no adverse noise impact on historic structures, as described in both the historic architectural report in this Section of the Application, and the full Sound Report located at Section 19 of this Application. Further, as required by statute, all visual impacts of this Project are addressed in Section 16 of this Application, which concludes that there are no unreasonable adverse effects on relevant historic structures.

Appendix 15-1



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

September 18, 2008

Ms. Lisa MacDonald
Stantec Consulting
30 Park Drive
Topsham, ME 04086

Project: MHPC #1598-08 – Highland Wind Project
Town: Highland Plantation, ME

Dear Ms. MacDonald:

In response to your recent request, I have reviewed the information received August 15, 2008 to initiate consultation on the above referenced project in accordance with Section 106 of the National Historic Preservation Act.

No archaeological survey has been done in the project area, so there are no known archaeological sites. Archaeological survey will be necessary for prehistoric/Native American archaeological sites at powerline and access road crossings of streams, and where powerlines or access roads intersect glacial outwash/esker surficial deposits. In addition, a survey for bedrock exposures that may have been used as stone tool raw material sources (quarries) by Native Americans must be undertaken on the highlands where turbines and associated access roads and powerlines will be located. A list of qualified prehistoric archaeologists is enclosed along with material explaining the Phase I/II/III approach to archaeological survey. This information can also be found on our website: www.maine.gov/mhpc/project_review This office must approve any proposal for archaeological fieldwork.

Regarding architectural resources, I have concluded that there are no National Register listed or known National Register eligible properties in the project area. However, no architectural survey of the project area has ever been conducted. I have concluded that additional information is necessary to identify historic above ground properties within the proposed undertaking's area of potential effect (APE). Therefore, in order to determine whether such resources exist, a Section 106-specific architectural survey will need to be completed in accordance with our survey guidelines and associated forms, which are both downloadable from our website: www.maine.gov/mhpc/project_review (see tabs in the white box on the left side of the webpage under Project Review) Please also find attached our revised photographic policy to be referenced in lieu of the policy in our on-line survey manual. Any computer generated template other than that provided by MHPC must be approved by MHPC prior to submission.

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September 18, 2008
MHPC #1598-08

No changes to the survey forms are to be made without consulting MHPC. Please note that the APE may include properties that have been surveyed as part of prior project reviews. A list of historic preservation consultants is enclosed for your information.

Once the information mentioned above is received, we will forward a response regarding the results of our evaluation. Please contact Robin Stancampiano of my staff if we can be of further assistance in this matter.

Sincerely,



Kirk F. Mohney
Deputy State Historic Preservation Officer

enc.



JOHN ELIAS BALDACCI
GOVERNOR

MAINE HISTORIC PRESERVATION COMMISSION
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**Prehistoric Archaeologists Approved List:
Review and Compliance Consulting/Contracting (Active)**

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

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ANGUS S. KING, JR.

GOVERNOR

EARLE G. SHETTLEWORTH, JR.

DIRECTOR

CONTRACT ARCHAEOLOGY GUIDELINES

June 10, 2002

This document is provided as background information to agencies, corporations, professional consultants or individuals needing contract archaeological services (also known as Cultural Resources Management archaeology) in Maine. These guidelines are based on state rules (94-089 Chapter 812).

Project Types

The vast majority of contract archaeology survey work falls into one of three categories. **Phase I** surveys are designed to determine whether or not archaeological sites exist on a particular piece of land. Such work involves checking records of previous archaeology in the area, walking over the landscape to inspect land forms and look for surface exposures of soil and possible archaeological material, and the excavation of shovel test pits in areas of high probability.

Phase II surveys are designed to focus on one or more sites that are already known to exist, find site limits by digging test pits, and determine site content and preservation. Information from Phase II survey work is used by the Maine Historic Preservation Commission (MHPC) to determine site significance (eligibility for listing in the National Register of Historic Places). **Phase III** archaeological work, often called data recovery, is careful excavation of a significant archaeological site to recover the artifacts and information it contains in advance of construction or other disturbance.

Archaeological sites are further divided into two broad categories of culture, **prehistoric** (or Native American), and **historic** (or European-American). Different archaeological specialists are usually needed for prehistoric or historic sites because the nature of content and preservation and site locations are quite different.

Scope of Work

In responding to a project submission, the MHPC may issue a letter specifying which type of archaeological survey is needed (prehistoric, historic or both) and at what level (Phase I, II, or III). Often the response letter contains further information, such as the suspected presence of an historic site of a certain age, or a statement that only a portion of the project parcel in question is sensitive for prehistoric sites and only that portion needs archaeological survey.

Once the project applicant has one or more scopes of work (proposals) from appropriate archaeologists (see below), the applicant should submit their preferred proposal (*without attached financial information or bid total*) to the MHPC for approval. MHPC will not comment upon cost, but will comment on the appropriateness of the scale and scope of the work. An approval from MHPC of the scope of work is the applicant's guarantee that, if the field and laboratory work are done according to the scope, and appropriately described in writing, the results will be accepted by MHPC.

The final written report on the project must also be submitted to MHPC for review and comment.



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Finding an Archaeologist

At the time that MHPC issues a letter requiring archaeological survey work, MHPC will also supply one (or more) lists of archaeologists (Levels 1 and/or 2, historic or prehistoric) appropriate to the type of work (Phase I, II, III, historic or prehistoric). Archaeologists on the Level 2 Approved Lists can do projects of any level, including Phase I archaeological survey projects. Level 1 archaeologists are restricted to doing Phase I surveys, and certain planning projects for municipal governments.

MHPC maintains lists of archaeologists interested in working in different geographic areas of Maine, and those who are qualified in different types of work. The archaeologists themselves indicate their availability (except for short-term absence) to MHPC on a periodic basis, so archaeologists on the list can be expected to respond to inquiries. The applicant should solicit proposals or bids for work from archaeologists whose names appear on the list supplied by MHPC.

These archaeologists' names are taken from lists of archaeologists approved for work in Maine by MHPC under a set of rules establishing minimal qualifications, such as previous supervisory experience in northern New England, and an appropriate graduate degree. *However, the inclusion of an archaeologist on one of these lists should not be interpreted as an endorsement by the MHPC beyond these limited qualification criteria. Moreover, the MHPC cannot recommend the services of an individual archaeologist.*

Project Final Report

Whatever the archaeological survey result, a final report on the project should be submitted by the applicant to the MHPC. The MHPC will review the report, and issue further guidance or issue a "clearance" letter for the project.



JOHN ELIAS BALDACCI
GOVERNOR

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DIRECTOR

Maine Historic Preservation Commission

Photographic Policy

*Supplement to the Guidelines for Identification: Architecture and Cultural Landscapes Survey
Manual. 26 June 2008*

Architectural Survey

The following is required of grant funded, MDOT, and Federal agency surveys and encouraged with volunteer surveys.

A. Black and White Film.

Each resource shall be photographed with black and white film. This film shall be developed and a contact print made from the negatives. The negatives and contact print shall be indexed to the survey forms and the corresponding digital images (see below) and submitted with the survey.

If the facilities are available, surveyors may choose to print each film image, utilizing a true black and white photographic process and printed preferably on non-resin coated fiber based paper. The finished photographs need to be thoroughly washed, printed with borders, and measure 3 ½ x 5 inches. These photographs may be mounted on the survey forms using archivally safe adhesive, such as Elmer's Glue. Photographs attached with paperclips or staples will not be accepted.

B. Digital Images

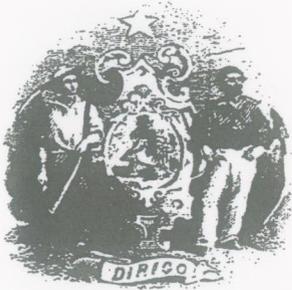
An identical (or nearly identical) image shall be taken of each resource with a digital camera. The original image size must be no smaller than 1600 x 1200 pixels at 300 pixels per inch. The digital images shall be saved in RGB color format. All digital images shall be burned onto a CD-R Gold or DVD-R Gold disk, and labeled with project name/ pin #/ surveyor name and date. The individual images must be labeled in a manner that allows them to be linked to the specific survey form.



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Each digital image shall be uploaded onto survey form in the MHPC/MDOT Survey website, (once it is on-line). A test image, in black and white, shall then be digitally printed directly onto a blank survey form (using the required cover-stock). If the printed image is clear (no bleeding), then all the survey images can be printed directly onto the forms (in black and white), when the forms are printed from the website. If the test image is not clear, then all the digital images should be printed onto photographic paper as specified below and this image will then be affixed to the submitted copy of the survey using archivally safe adhesive. The digital images shall be indexed to the survey forms and the black and white negatives.

Digital image printing: The following printer/ink/paper combinations have been found to meet a 75 year archival standards. All digital images printed for architectural surveys must meet this standard.

NOTE: The list below includes products known at this time to meet the minimum documentation specifications established for the submission of architectural surveys. The list is not intended to be restrictive or comprehensive, and does not constitute, and shall not be taken as, endorsement by the Maine Historic Preservation Commission of any of the specific products or manufacturers identified.

Epson Stylus Photo 1400	Epson ClariaA Hi-Definition Inks@	Premium Presentation Paper Matte Epson Ultra Premium Glossy Photo Paper
Epson Style Mate	Epson Picture Mate Pigment Inks	Epson PictureMate Paper
Epson Stylus CX4800 (contains scanner)	Epson DURABrite Ultra Pigmented Inks	Premium Presentation Paper Matte Epson Ultra Premium Glossy Photo Paper
Hewlett-Packard Photosmart 325 and 475	HP Vivera 95 dye-based Inks	Epson HP Premium Plus Photo Paper
Hewlett-Packard Photosmart 8450	HP Vivera dye-based Inks	HP Premium Plus Photo Paper
Hewlett-Packard Photosmart B9180	HP Vivera Pigment Inks	HP Advanced Photo Paper Glossy HP Photo Matte Paper
Hewlett-Packard Photosmart C6180 (all in one series)	HP Vivera Inks	HP Premium Plus Photo Paper
Lexmark Home Photo Center P6250	Lexmark Evercolor Dye/ Pigment Hybrid Photo Inks	Lexmark Premium Photo Paper High Gloss

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National Register Photographs.

All photographs provided to MHPC for submission with a National Register of Historic Places nomination must conform to the National Register Photographic Policy as stated by the National Park Service. This policy is available on line at:
<http://www.nps.gov/history/nr/policyexpansion.htm>



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EARLE G. SHETTLEWORTH, JR.
 DIRECTOR

Historic Preservation Consultants

The following list includes architectural and landscape historians, historians, and preservation planners who appear to meet the minimum National Park Service professional qualification standards in 36 CRF 61. Inclusion on this list does not represent an endorsement by the Maine Historic Preservation Commission.

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JOHN ELIAS BALDACCII
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

January 14, 2010

Jonathan T. Ryan
Stantec Consulting
30 Park Drive
Topsham, ME 04086

Project: MHPC #1598-08 -- Highland Wind Project, Historic Architectural
Reconnaissance Survey
Town: Caratunk, Highland Plt., Kingfield, Lexington, Moscow, Pleasant Ridge Plt., ME

Dear Mr. Ryan

In response to your recent request, I have reviewed the architectural survey information received December 16, 2009 to continue consultation on the above referenced project pursuant to Section 106 of the National Historic Preservation Act, as amended.

With regard to the identification of historic properties, the Commission concurs with the recommendations of the architectural survey report that the following properties are potentially eligible for listing in the National Register of Historic Places -- although further information and evaluation would be necessary to confirm eligibility:

- Cold Spring Ridge Farm, terminus of Reed Road, New Portland, Survey Map No. 63; and
- Farmstead, 1142 Long Falls Dam Road, Lexington, Survey Map No. 66

In addition, the National Register listed Arnold Trail to Quebec Historic District is partially located within the area of potential effect, as are the Wyman Dam, at the terminus of Station Road, Moscow (Survey Map No. 44) and the Appalachian National Scenic Trail, both of which have been previously determined by our office to be eligible for listing.

We do not agree that the following properties are also potentially eligible:

- Farmstead, 62 Mayfield Road/Rt. 16, Moscow (substantial alterations have been made to all three elements of the complex); and
- House, 105 Canada Road/Rt. 201, Moscow (modest vernacular house with compromised porch that lacks architectural significance).

The Commission requests additional information pertaining to the history and functions of the buildings recorded as Survey Map Nos. 50.3 and 50.4 that are part of the farmstead located on Barron Road, east side, approximately 0.35 miles south of Ridge Road in Pleasant Ridge Plantation. These two buildings do not appear to be mixed use barns as indicated on the survey



forms, and their form is not typical of common agricultural outbuildings.

Based on the photographs and information recorded on survey forms, it appears that the following ancillary buildings (referred to by Survey Map No.) were incorrectly recorded on Historic Barn/Agricultural Structure survey forms and should, instead, have been recorded on Historic Building/Structure survey forms or continuation sheets as appropriate: 15.3; 18.2; 25.2; 28.2; 34.2; 36.1; 47.1; 48.1; 69.1; 71.1; 71.2; and 79.2. Please submit corrected forms.

As to the effect of the proposed undertaking on historic properties, the survey report concluded that Survey Map Nos. 44, 63 and 66 will have no views of the Project, although there may be distant views (6-7 miles) from the roads in front of these properties. Based on this information, it does not appear that there will be any affect on these three properties. Therefore, we do not require the submittal of additional information to confirm the eligibility of Survey Map Nos. 63 and 66. However, we do request the following additional information relating to the Arnold Trail and Appalachian Trail, respectively:

- Visual simulations of the proposed wind turbines from areas along the Arnold Trail where they will be visible;
- The location of the two visual simulations of the wind turbines from the Applachian Trail identified on a topographic map; and
- Copies of any comments from other agencies or the public relating to the undertaking's impact on cultural resources.

Upon submittal of this additional information, we will continue our review of the proposed undertaking. Please contact Christi Mitchell of our staff if you have any questions regarding the architectural survey.

Sincerely,



Kirk F. Mohney
Deputy State Historic Preservation Officer



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JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

February 2, 2010

Mr. Jonathan Ryan
Stantec
30 Park Drive
Topsham, ME 04086

Re: Highland Wind project, Phase IA precontact archaeological review

Dear Mr. Ryan:

I have reviewed Dr. Richard Will's report dated January 29, 2010, and concur with the conclusions in the last three paragraphs on page 8. Specifically, no further prehistoric archaeological survey is necessary for this project on mountain ridges proposed for the wind turbine locations, nor at the location proposed for the operation and maintenance buildings. Prehistoric archaeological testing is necessary at the stream crossings.

Please note that this review does not include possible impact to historic period archaeological sites, nor does it include a review of possible visual impact to National Register listed or NR eligible archaeological sites or structures.

Sincerely,

Dr. Arthur Spiess
Senior Archaeologist

arthur.spieß@maine.gov



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JOHN ELIAS BALDACCI
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EARLE G. SHETTLEWORTH, JR.
DIRECTOR

April 1, 2010

Jonathan T. Ryan
Stantec Consulting
30 Park Drive
Topsham, ME 04086

Project: MHPC #1598-08 -- HighlandWind Project
Town: Caratunk, Highland Pt., Kingfield, Lexington, Moscow, Pleasant Ridge Pt., ME

Dear Mr. Ryan

I am writing to acknowledge receipt of the additional visual simulations for the subject project received February 18, 2010.

Please note that we have not as yet received further information about certain architectural resources in the project's area of potential effect or the corrected survey forms as requested in my letter of January 14, 2010. In addition, the Study Area map that accompanied your February 18 submittal does not show the location of Photosimulation 5. Finally, I requested that the location of the two visual simulations in the Historic Architectural Reconnaissance Survey [photographs 12 and 13] be shown on a topographic map. The Study Area map locates Photosimulations 1 and 2; are these the view points in photographs 12 and 13?

Having applied the "criteria of adverse effect" as set forth in 36 CFR Part 800.5(a) based on the photosimulations provided to us, the Commission concludes that the subject undertaking will have an adverse effect upon the Arnold Trail to Quebec Historic District.

As described in the "American Battlefield Protection Program Associated Historic Property Form for the Arnold March to Quebec" (copy attached), the Great Carry portion area of the Arnold March route "provides an excellent experience of the physical labor and passage through deep forest and across small lakes experienced by Arnold's men. This is one of the best preserved sections of the March route...." The Great Carry begins in what is now the impoundment of Wyman Dam and ends at Flagstaff Lake. Although both termini are now under impoundments, the Carry Ponds are, more or less, unaltered from the period of Arnold's March. Based on the visual simulation in Photosimulation 4, the Commission concludes that the proposed wind turbines that will be visible from West Carry Pond will alter the Arnold Trail's integrity of setting and feeling, thereby diminishing the integrity of the wilderness experience that is still largely evident in this area.

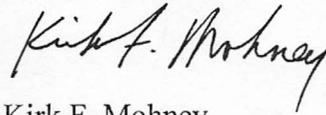


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With regard to making a finding of effect for the Appalachian National Scenic Trail, we are awaiting confirmation on the location of the photosimulations included in the Historic Architectural Reconnaissance Survey, as well as the submittal of any comments by the public or governmental agencies about the undertaking's impact on the Trail.

If you have any questions regarding our findings, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Kirk F. Mohney". The signature is written in dark ink and is positioned above the printed name.

Kirk F. Mohney
Deputy State Historic Preservation Officer

Enc.

Associated historic properties known and potential. There are no known associated historic properties, and the only potential would be for archaeological sites at overnight camp sites. Those locations are now submerged and have probably been eroded during inundation. Thus, there is no potential for associated historic properties on this stretch of the river.

Overall condition of the resource setting. The resource is destroyed along this stretch of river.

Threats to site integrity. Not applicable, see above.

Property ownership and local planning. Not applicable, see above.

Rationale for property boundary. For this segment of the river the potential NR property boundary is drawn to coincide with the margin of the Wyman impoundment pool (lake) edge. This boundary certainly includes the river flats and islands, if any existed before dam construction, that could have been used for overnight camps for Arnold's men.

The Great Carry

This portion of the Arnold Route begins at Carrying Place Stream mouth of the shore of Wyman Lake (Kennebec River), follows the Arnold route through East, Middle, and West Carry Ponds, then down to what is now Flagstaff Lake (Dead River). Both the beginning and ending of the carry are under the waters or recent impoundments. The western end of this section of the Route is the shoreline of Flagstaff Lake.

The Great Carry extended approximately 15 km east to west, of which four km were passable on the waters of high altitude ponds (the Carry Ponds). In addition to the horizontal distance, the carry began at approximately 480 feet elevation, rising to 1235 feet at East Carry Pond in 5 km (3 miles), or about 750 vertical feet, then rising to 1315 feet at West Carry Pond, and dropping to 1120 feet at the Dead River. Arnold's surveying party reached the area on October 5, 1775, and cut a rough road up the hill, apparently following a Native American portage route. The first of the main body arrived at the start of the carry on the Kennebec River bank on October 10 or 11, and Enos's trailing division did not reach the third pond (West Carry Pond) until October 17th. Arnold remained camped at First (East) Carry Pond for three days (October 11 -13), and camped on Third (West) Carry Pond on October 14th. Each pond (first, second, third, or East, Middle and West) was the location of one or more camps for portions of the main body for more than one night. In addition, Arnold gave orders on or about the 11th to construct at least two buildings. One was a store house, or "small log house for men and provisions" on the "east side of the first portage", which would be near the mouth of Carrying Place Stream. The other building, a "log house on the second carry" was a "hospital for the sick." It is located on the west side of East Carry Pond, where the (second) carry from East to Middle Carry Ponds began. This location has been confirmed by archaeological survey. None of the other camp sites, however, have been located.

Land forms, water type and impoundment, vegetation cover. The Kennebec River at the beginning of the carry has been impounded under the waters of Wyman Lake, built in the mid 20th century. Comparing the 1905 map and modern topographic map at the same scale (see Figure), shows the large extent of river flat that has been flooded. The beginning of the Great Carry, the former mouth of Carrying Place Stream, and the location of the log building at the start of the carry is now 350 m offshore, from the present mouth of Carrying Place Stream.

Arnold's carry must have started near the former mouth of Carrying Place Stream, progressed uphill on the north side of the stream for a few hundred meters, then perhaps followed along one side of the stream channel or the other. Within a mile of the mouth of the stream, the carry route must have crossed to the south side of the stream, then progressed uphill across country to the south end of East Carry Pond, because the hospital is located toward the south end of the pond. Moreover, directions in Arnold's journal indicates crossing from the south end of the pond northwesterly to the location of the hospital and start of the second carry. A gravel road, running along the south side of Carrying Place Stream, and a spur road to East Carry Pond, must follow the portage route within 200 meters today from where the carry crossed to the south side of the stream. The terrain is steep, covered with thin rocky and/or with exposed bedrock, and wooded with mixed northern hardwood/softwood forest. Once at the elevation of East Carry Pond, the terrain is gently rolling, with relief of 100 to 200 feet, and relatively easy passage through mixed wood between lakes. Each lake is shallow, with shorelines that combine low, marshy and peaty areas with boulder shorelines. The lakes trend northwest/southeast, and would have been windy in a cold north/northwest wind. Appropriate places to camp can be found on elevated 10 to 20 ft), drained terrain within a dozen yards of the lake shores.

The western carry from West Carry Pond to the former Dead River rises 200 feet from the lake through a notch or pass between two steep hills that rise another 700 feet, then it joins a small (uncanoeable) stream channel that tumbles downhill over rocks and boulders through dense mixed northern hardwood/softwood forest. Today the portage route ends abruptly at the impoundment of Flagstaff Lake, which when full rises some 20 feet above the original elevation of the Dead River. Arnold's march journals, however, indicate that this present lake bed was formerly a vast grassy wetland, probably seasonally flooded by the Dead River. So the last portion of the carry was a combination of wet hauling of the batteaux and poling and pushing down a small stream channel as it wound toward the Dead River.

Certainty of resource location. The carry route is fixed by geographic names (Carrying Place Stream, etc.) that have survived to be recorded on USGS topographic maps. Location of Arnold's hospital site (ME 529-001) is fixed by artifacts of the time period, including a spoon with sides bent upward, a common method for administering liquid medicines. This location on East Carry Pond clearly fixes the location of the second carry, between the first and second ponds (East and Middle Carry Ponds). None of the other camp sites around the Carry Ponds have been located yet, but "Arnold's Point" on West Carry Pond is the most logical location for one. Unfortunately, the beginning of the carry and the log house at the carry on the Kennebec River bank are now under water 300 m or more from shore.

Current land use. The land is managed as commercial timber land, except for a narrow strip along the river, along Carrying Place Stream, and around the lakes. Each of the lakes has a scattering of seasonal dwellings (summer camps) set back at least 75 feet from the immediate lake shore. Access to these camps is by key only through gates maintained by a landowners' association.

Associated historic properties known and potential. One archaeological site, the Arnold Expedition Hospital (ME 529-001) is known and has been located. The site was located by amateur archaeologists working under the auspices of the Arnold Expedition Historical Society, which curates a small collection from the site. The building or store house built at the beginning of the

Great Carry is a potential associated historic property, as an underwater archaeological site, now under the waters of the Wyman impoundment.

Overall condition of the resource setting. Despite light development of summer seasonal dwellings around the Carry Ponds, and despite several generations of logging in the area, the Great Carry portion of the Arnold March route provides an excellent experience of the physical labor and passage through deep forest and across small lakes experienced by Arnold's men. This is one of the best preserved sections of the March route, and could easily include a trail and interpretive material. Unfortunately, the western terminus of the Great Carry route has been flooded, also, by the Flagstaff Lake impoundment.

Threats to site integrity. Development of seasonal dwellings and access roads around the lakes is the greatest threat to the integrity of the setting. All roads in the area are built as bulldozed and graveled "woods" roads, and there is a minimum 75' setback for development around the lake shores. Future professional survey of the Hospital site and legal protection for it should be a priority.

Property ownership and local planning. The Carrying Place townships are unincorporated, and as such zoning decisions and building permits are made through a state agency (the Land Use Regulation Commission) in Augusta. LURC maintains zoning maps for the townships. It would be possible to apply for "protection – unusual area" status for the Arnold Route. The Arnold Route crosses one or two large parcels of land, and the landowner has been sympathetic in the past to Arnold Expedition Historical Society exploration of the land. Multiple smaller parcels with individual owners characterize the lake shore seasonal residential development areas.

Rationale for property boundary. The route of Arnold's March, campsites, and two building locations associated with the Great Carry can be reconstructed with relative accuracy. For example, the two building locations (storehouse and hospital) are known to less than 100 m accuracy. The carry route from the Kennebec to First Carry Pond is not known exactly, but paralleled Carrying Place Stream, and the routes between the Carry Ponds and down into the Dead River can be reconstructed within a few hundred meters accuracy from the written sources. For this portion of the route we lay the centerline of the potential National Register boundary along the reconstructed route, and place a 250 m buffer on each side for land routes. Otherwise, lake shorelines from the potential National Register boundary.

Appendix 15-2

Phase IA Precontact Archaeological Review and Assessment of the Proposed Highland Wind Project by Richard Will

This Phase IA report reviews and summarizes findings of the Precontact period archaeological sensitivity of the Highland Wind project. Recommendations are made to test several stream locations that are crossed by the proposed transmission line, which connects the wind project to the Wyman station in Moscow, Maine.

Project Description

The proposed Highland Wind Project is located in Highland Plantation and Pleasant Ridge Plantation, Somerset County Maine (see Figure 1). In particular, it lies to the west of the town of Bingham and Wyman Lake, which is a dammed portion of the Kennebec River.

Like other wind projects that the author has investigated, the Highland Wind project has several components. The first component consists of the turbine locations. There are two clusters of 48 turbines. The first cluster is located on Stewart and Witham and Bald Mountains. Seventeen turbines will be located on Stewart Mountain that are generally oriented north to south (turbines W1-W17) (Figure 1). The Witham and Bald Mountain group of nine turbines is oriented west to east (turbines W18-W26).

The second collection of towers is located to the east of the first along the ridgelines of Burnt Hill and Briggs Mountain. They consist of an almost continuous string of turbines that are oriented north to south. Turbines E27-E40 will be located on Burnt Hill; turbines E41-48 will be placed on Briggs Mountain (Figure 1).

In addition to the turbines, there is a proposed operations and maintenance building. Its location is on an existing logging road at the base of the south end of Stewart Mountain immediately south of turbine location W15 (Figure 1). A proposed collector substation is planned at the base of Witham Mountain to the north of turbine location W21 (Figure 1).

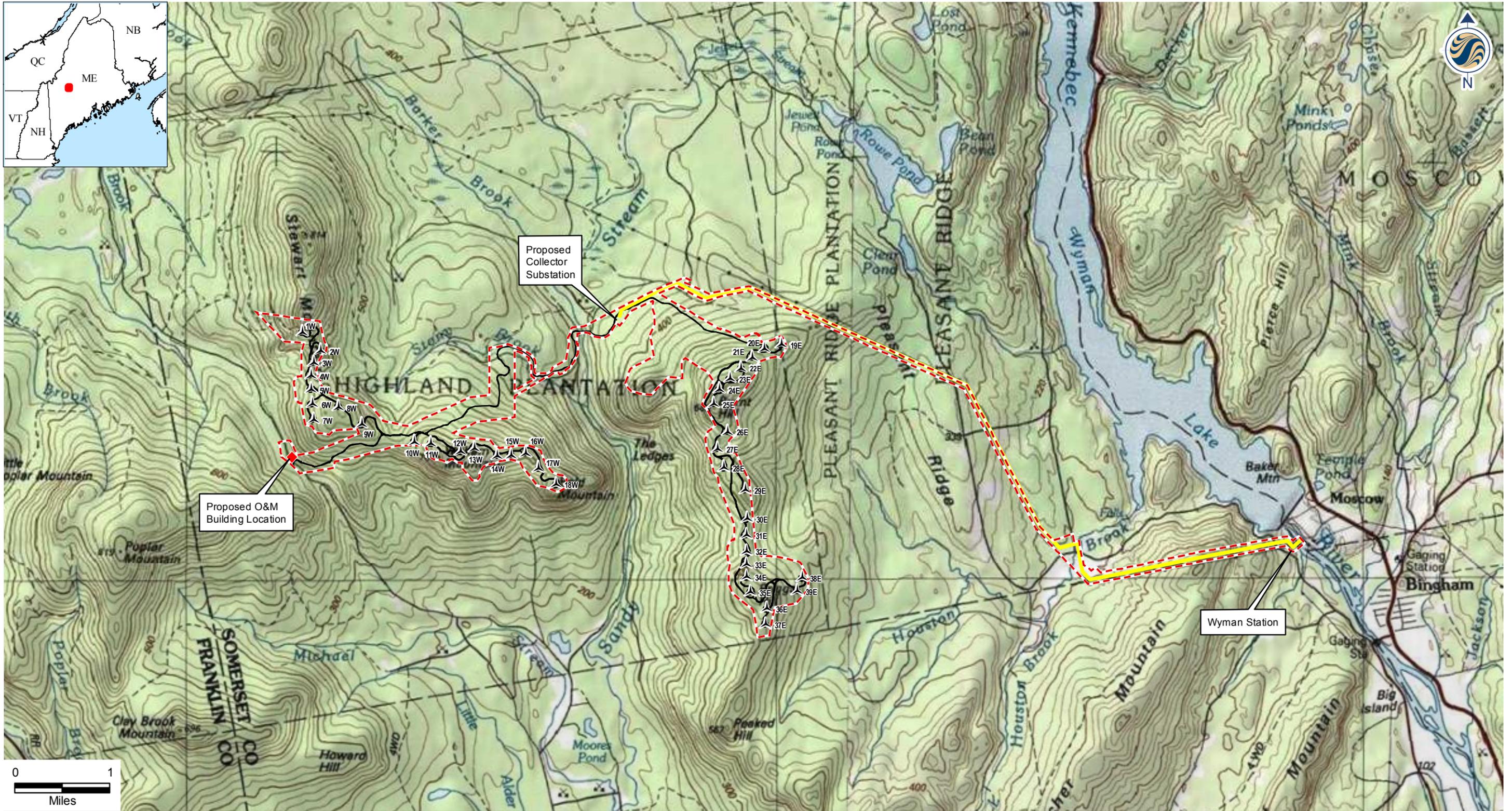
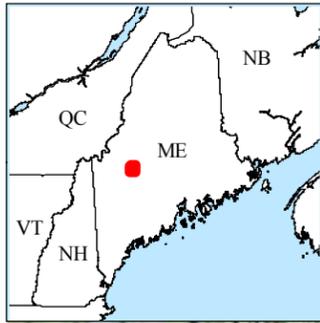
Last, a proposed collector line and generator lead will connect the project to the Wyman substation in Moscow, Maine, which is located approximately 13 miles (approximately 20.8 km) to the east of the mountain top turbine complex on Stewart Mountain. The proposed line is not straight, but has angles to it before reaching the Wyman Station.

Many of the roads to access the project area consist of improved and unimproved logging roads.

Environmental and Cultural Contexts

The environmental and cultural contexts of the project area provide pertinent information related to landscape formation and the record of human occupation in the region. These contexts are intended as background for understanding the rationale behind identification of the proposed Phase IB testing areas as well as a framework for analyzing the results of the survey.

The Project area is located in the hilly terrain of the New England Uplands. Within the project area, topography is characterized predominately by sloping terrain that ascends to the tops of Stewart and Burnt Mountains. These mountain tops range in elevation from 2,671 feet above mean sea level (amsl) to 2,241




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 Fax: (207) 729-2715
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Legend
 Turbine
 Approximate Project Area
 Proposed Access Road and Turbine Pads
 115Kv Generator Lead

Client/Project **Highland Wind, LLC**
Highland Wind Project
Highland Plantation, Maine
 195600385
 Figure No. **1**
 Title **Project Location Map**
 November 12, 2009
 Revised October 25, 2010

feet amsl, respectively. The project area traverses the eastern faces of the above mountains along terrain typically elevated 500-900 feet amsl. The project area crosses several brooks (Stony, Barker, and Houston) and a tributary of Sandy Stream.

The Project is primarily vegetated in mixed deciduous and conifer growth that is typically less than 30 cm in diameter. Unimproved roadways are vegetated with mixed shrubs, ferns, grass, and weeds. Surface topography is largely characterized by undulating to uneven surfaces with numerous scattered boulders. Disturbances in the region are largely related to logging activities. Past logging activity is indicated by cut stumps; no residential development is apparent. Disturbance from logging roads and all-terrain vehicle access roads is common throughout the Project area.

Early Landscape Formation

Geologic forces, associated with the advance and retreat of the Laurentide Ice Sheet (LIS) during the Pleistocene epoch, have shaped most of the landscape within the Project area. The LIS advanced across Maine in a southeasterly direction, scouring the landscape as it moved, before attaining a maximum position at Georges Bank in the Gulf of Maine around 22,000-20,000 years ago (Hughes et al. 1985). By 18,000 years ago, it began to retreat across the Gulf of Maine due to incursion of warm, marine waters underneath the ice. The LIS is believed to have reached the present Maine coastline around 14,000 years ago (Schnitker et al. 2001), and interior portions of Maine by 12,800 years ago (Smith and Hunter 1989). By 11,000 years ago, it had retreated across the St. Lawrence and Maine was essentially free of ice except perhaps for isolated remnants in some valleys and mountain peaks. As the ice retreated, it left behind unsorted silt, sand, and rock fragments (till) across much of the landscape. These till deposits conform to the local bedrock topography and form the surficial deposits in the Highland Wind Project area.

Colonization of the region by flora during and following deglaciation is characterized by continuous changes, particularly between 14,000 to 9,000 years ago. This time frame marks the transition from an open, tundra-like environment to woodlands, and eventually a closed forest across much of the New England region (Davis and Jacobson 1985). Pollen and macrofossil studies from lake cores suggest species responded individually to climatic changes in a time-transgressive manner, following the ice front northward. Woodland vegetation, dominated by poplar and spruce, is believed to have spread along the coastal lowlands to New Brunswick by 12,000 years ago, and pushed into interior portions by 11,000 years ago. The transition from woodlands to closed forests initially began in southern Maine around 12,000 years ago and developed rapidly over the region between 11,000 to 10,000 years ago. The closed forests were initially dominated by spruce, balsam fir, birch, and poplar, but pine emerged as the dominant species approximately 1,000 years after closure of the forests. The emergence of pine, and concomitantly the demise of spruce, signaled a warming trend that reached its peak sometime around 5,000 years ago. Studies from lake cores suggest this warming trend was characterized by a drier climate and lower water levels, particularly between 8,000-6,000 years ago (Almquist et al. 2001). Cooler, wetter conditions prevailed after about 4,500 years ago, resulting in an increase in birch, followed by a return of spruce after around 2,000 years ago (Almquist-Jacobson and Sanger 1995). During this time, water levels rose, particularly between 3,000-2,500 years ago (Almquist et al. 2001:196).

Prehistoric Cultural Context

The prehistoric archaeological record of Maine is long and complex dating back more than 10,000 years. Archaeologists have divided this record into three major periods known as Paleoindian, Archaic, and Ceramic cultural periods. Further subdivisions within these periods are based on similarities in artifact forms and cultural adaptations over broad regions. Table 1 depicts the major and minor divisions as defined by Spiess (1990) in the State Plan for Prehistoric Archaeology. It is important to note that these divisions are archaeological constructs, and that their boundaries represent changes perceived as

culturally significant by archaeologists in the region. Future research may further refine some of these divisions, or find they are not as significant as originally suspected.

Paleoindian Period. The earliest recognized prehistoric inhabitants in the Maine region, and throughout North America, are referred to as Paleoindians. Paleoindians are believed to be the first people to migrate into North America and, in their pursuit of large game, rapidly colonized the continent (Martin 1973). Throughout North America, the hallmark of Paleoindian peoples is the fluted spear point, which presumably was used to hunt down large game species, some of which are now extinct. These spear points are characterized by a lanceolate form and exhibit a long, groove-like flake struck from their base on both faces.

In Maine, the Paleoindian period is believed to date from approximately 11,500 to 9,500 years ago. This time frame roughly coincides with the rapid development of closed forests in the region, although most archaeologists assume these people inhabited an open tundra and/or woodland environment. Paleoindian peoples living in the region are characterized as highly mobile hunter and gatherers reliant mainly on caribou that presumably were favorable in the environment of that time. They crafted their tool kits out of very fine-grained, colorful rocks obtained from a limited number of sources in the region, and they camped in locations typically removed from present day water bodies (Spiess et al. 1998). These locations were rarely occupied during later cultural periods and are often strategically located above some form of low-lying terrain that may have been suitable habitat for caribou. Their campsites are typically indicative of short-term habitations by small groups, perhaps even by a single, extended family.

Table 1. Comprehensive Planning Archaeological Study Units.

Time Period (RCYBP)	Study Unit
11,500 - 10,200	Fluted Point Paleoindian Tradition
10,200 - 9,500	Late Paleoindian Tradition
10,000 - 6,000	Early and Middle Archaic Traditions
6,000 - 4,200	Late Archaic: Laurentian Tradition
6,000 - 2,000	Late Archaic: Small-stemmed Point Tradition
4,500 - 3,700	Late Archaic: Moorehead Phase
3,900 – 3,000	Late Archaic: Susquehanna Tradition
3,000 - 450	Ceramic Period
1500 - 1675 AD	Early Contact
1675 - 1760 AD	Late Contact
1760 - 1940 AD	Integration with Euro-American Life

Note: RCYBP equals radiocarbon years before present; AD equals calendar years. All dates are estimates. Source: Spiess (1990 and pers. comm. 1999).

One of the best radiocarbon dated Paleoindian period sites, the Esker Site (84.12) is located on the east shore of the Wyman impoundment approximately 10 miles (16.0 km) northeast of Stewart Mountain. Scientifically excavated in 2000, it yielded a Late Paleoindian tradition fluted point with an age of 10,090 +/- 70 radiocarbon years before present (RCYBP) (Will et al. 2001)

The end of the Paleoindian period and subsequent transition into the Early Archaic period is poorly understood. Some evidence indicates that during the later Paleoindian period, fluted spear points become less desirable and were replaced by smaller, unfluted points. Other point styles also emerge in the region, most notable of which are long, slender, lanceolate points with a distinctive parallel flaking technology. These cultural changes are believed to correspond with significant environmental changes that likely included the final transition from an open woodland environment to a closed forest, as well as the emergence of a pine-dominated forest that marks the beginnings of a warm, dry climate in the region. By the Early Archaic period, the archaeological record indicates a dramatically different material culture than the preceding Paleoindian period. No archaeological sites of this time period have been discovered in the project region.

Archaic Period. The Archaic period represents the longest cultural period in the region, spanning around 7,000 years. This time frame is indicative of persistent cultural adaptations, as inferred from artifact assemblages, which lasted over several millennia. Although Early and Middle Archaic populations probably continued a nomadic hunter and gatherer lifestyle, their subsistence and settlement patterns were most likely different from that of Paleoindians. This is suggested by the location of most Early and Middle Archaic sites along present day water bodies, and the presence of faunal remains indicative of more aquatic resources, particularly beaver, muskrat, and fish, among Early and Middle Archaic assemblages.

Similarly, archaeological assemblages dating to the Early and Middle Archaic periods in Maine are different from their Paleoindian predecessors, and somewhat unique to the Maine region, particularly with respect to the Early Archaic. Artifacts are typically produced on local stone, often collected in cobble form, and lack the finely crafted, chipped stone spear points that characterized the Paleoindian period. Rather, flakes and crudely fashioned unifacial tools dominate the assemblages. In addition, a new technology using pecking and grinding techniques appears for the first time in the archaeological record (Robinson 1992). This new technology produced a suite of groundstone tools that became more elaborate through time. By the Middle Archaic, chipped stone spear points become increasingly more abundant and the first cemetery sites are recorded. These cemetery sites reveal mortuary practices that included the sprinkling of graves with red ochre, and the offering of grave goods, such as wood working gouges, slate spear points, and stone rods (Robinson 1992). These mortuary practices continued into the Late Archaic period, culminating with the Moorehead Burial Tradition.

The Late Archaic period is divided into several traditions. Of these traditions, the most widely recognized is the Moorehead Burial Tradition, more commonly known as the “Red Paint People.” Warren Moorehead coined this term during his extensive excavations throughout Maine in the early years of the twentieth century (Moorehead 1922). The tradition is best known for its cemetery sites, which are found on the coast as well as in the interior (see Bourque 1995; Sanger 1973; Snow 1969; Willoughby 1898). Cultural affiliation for the cemetery sites, however, varies across the region, and thus the reference to “Red Paint People” is not an accurate representation. Habitation sites associated with sites of this tradition reveal that both marine and terrestrial resources were exploited, including the acquisition of swordfish (Bourque 1995). Other Late Archaic traditions known from the region are the Laurentian and Small-Stemmed Point traditions. The close of the Late Archaic period is characterized by another archaeological tradition (Susquehanna Tradition) that suggests a different lifestyle than that practiced by Moorehead Phase peoples. The Susquehanna Tradition is widespread over the Maine region and, the people associated with this tradition occupied similar environments to Moorehead Phase peoples. However, people of the Susquehanna Tradition appear to have been more focused on a terrestrial economy than a marine economy. They largely abandoned the use of red ochre in their graves, and often cremated their corpses rather than buried them intact. Diagnostic tool forms include large, broad-bladed chipped stone spear points. In addition, Susquehanna assemblages often lack the groundstone tools so prevalent among Moorehead Phase sites.

The relationships between the perceived Late Archaic cultural groups continue to be a source of debate among Maine archaeologists. At the root of the argument is whether the various archaeological assemblages of the Late Archaic reflect local, long-term cultural adaptation or movement of people into the region with a different culture and way of life. Whatever the origins of the cultural changes observed, they again roughly coincide with increasing changes in the environment that provided more favorable habitat for deer populations and possibly other more modern species as well. Several archaeological sites dating to the late Archaic period are known from the region, but they are largely confined to the banks of the Kennebec River.

Ceramic Period. The introduction of pottery manufacture in Maine signals the beginning of what archaeologists call the Ceramic period. In other parts of the country and the Northeast, this cultural period is referred to as the Woodland period. The differences between these two references is mainly that hunting and gathering are still the primary means of subsistence throughout much of Maine and the Maritimes, while other areas show more reliance on horticulture and a tendency toward larger, more permanent settlements. Ceramics first appear in the archaeological record of Maine around 2,800 years B.P. and persist up to the time of European contact when they were replaced in favor of iron and copper kettles that were traded for beaver pelts and other animal furs.

Ceramic period sites are abundant in Maine, in both coastal and interior settings. Along the coast, they are most visible in the form of shell middens, which have attracted the attention of professional and amateur archaeologists since the late 19th century (e.g., Mercer 1897; Wyman 1868). Shell midden sites are found throughout the Maine coastline and contain discarded shells of clams, oysters, mussels, and quahogs, bones of both terrestrial and marine animals, as well as broken pottery sherds and discarded stone and bone tools. Sites in the interior are most common along waterways, ponds, and lakes. Ceramic period assemblages from the interior differ from coastal sites in that the bone assemblages are poorly represented due to differences in preservation. The picture that emerges from Ceramic period sites is one showing a long-standing cultural adaptation to the diversified use of local resources. In addition, the nature of artifact forms present and certain types of stone recovered from Ceramic period sites indicate trade and communication with peoples to the far north, south, and west. By the end of the period, historical and archaeological evidence suggests horticulture was practiced in southern Maine. The Ceramic period ends with European contact around 450 years ago. At this time, most of the artifacts attributable to prehistoric inhabitants of Maine disappear from the archaeological record so that tracing specific cultural connections between historic Maine Indians and their prehistoric ancestors is not possible.

Archaeological sites dating to the Ceramic period have been found along the shore line of the Wyman impoundment as well on some of the islands in the impoundment. Although uncommon, ceramic sherds recovered from these sites suggest a Middle Ceramic period affiliation

Precontact Period Archaeological Sensitivity

Just as today, people in the Precontact period did not uniformly occupy the landscape; Maine state archaeological survey maps, which show site locations, affirm this conclusion. Some areas were more attractive than others to people deciding where to establish camps and villages. Some locations were used more often than others, because of the availability of unique resources (e.g. plants, animals, and raw materials) or perhaps even through historical accident. And, some areas may simply not have been frequented and used at all. Against this reality is the likelihood that not all human behavior produces archaeologically visible traces. Additional problems affecting understanding of Precontact period land use is the fact that even when an archaeological site is produced, it may not last long due to preservation biases created by local environmental conditions. Interpretation is further confounded, because sharp

differences in how land is used and modified in the present compared with the Precontact past has resulted in the destruction of many archaeological site locations.

Mindful of these concerns, the design of Precontact period archaeological resource surveys to discover site locations in Maine is supported by more than 100 years of archaeological field investigations and several decades of testing predictive models to determine where sites may be expected to occur. All of these efforts demonstrate that proximity to water resources was a dominant variable used by Precontact period hunter/gatherers and agricultural people for selecting site locations (see, for example, Kellogg 1987, 1994; Spiess 1994, 1996; Will et al. 1995; Will et. al. 1997; Will et. al. 1999).

This conclusion is likely not simply a sampling bias. For example, several archaeological cultural resource surveys conducted in eastern Maine (at least in part) during the last 20 years support the conclusion. First, are results obtained from the Phase I survey of the Maritimes and Northeast natural gas pipeline by ARC, Inc. in 1997-1998 (Will et. al. 1997; Will et. al. 1999) and by TRC in 2005. Briefly, the sensitivity design for the survey focused on identifying the potential for areas within that project's area of potential effect (a 200 foot or 62 m wide corridor) to contain Precontact archaeological sites. Predictions of where archaeological resources might be present, and where they were not likely to be present, were made based on a set of key environmental variables for which data could be readily obtained:

High Sensitivity:

- fresh or saltwater resources within 150 meters (m);
- well-drained sandy soils;
- level to moderately level topography (0 to 3 percent slope).

Moderate Sensitivity:

- fresh or saltwater resources within 150 to 500 m;
- well-drained to moderately well-drained, sandy to cobbly soils;
- moderately level topography (3 to 8 percent slope);
- minimal to moderate ground disturbance
- archaeological sites in vicinity of project area.

Low Sensitivity:

- no fresh or salt water for more than 500 m;
- poorly drained or inundated areas;
- steep topography (8 percent slope or greater);
- moderate to extensive ground disturbance;
- no archaeological sites in vicinity of project area.

The model was tested with information collected from more than 300 miles of the Maritime & Northeast pipeline corridor. On that project, more than 2,500 testholes were excavated in almost equal proportions among areas of high, medium, and low sensitivity. An important conclusion of this undertaking was that all Precontact period sites (with the exception of one Paleoindian period artifact) were found adjacent to water.

Second, another large archaeological survey using a similar sensitivity model was conducted in Penobscot and Washington Counties by the Maine State Museum under the direction of Dr. Stephen Cox in 1989 (Cox 1989). He surveyed a proposed Bangor Hydroelectric Company 345 kV transmission line route, and examined 87 sampling areas of varying archaeological sensitivity along the route from Orrington to the St. Croix River in Baileyville. A total of 996 testholes were excavated. Three, small, Precontact period archaeological sites were discovered, and all of them were located along a major river or stream.

Third, a major survey on a revised Bangor Hydroelectric Company 345 kV transmission line route was conducted by TRC in 2004 (Clark and Moore 2004). That survey examined a route parallel to the existing Maritimes and Northeast pipeline from Orrington to the St. Croix River. In all, 18 locations and landforms were tested for the presence of Precontact cultural sites and materials using 317 testholes. No Precontact sites or materials were discovered.

Proximity to water is unquestionably a sensitive variable for predicting the locations of Precontact period hunter/gatherers who inhabited Maine. In fact, approximately 95% of all Precontact period archaeological sites reported in Maine (out of a sample of more than 5,000 sites) have been discovered either along the seacoast or along the margins of interior rivers, streams, lakes, and wetlands (Spiess 1994). Even in New York, archaeologist Robert Funk's research (1993) has similarly shown that Precontact period sites are generally located within 300 feet of water.

Most of the sites discovered near water are campsites or villages. They may also have been food extraction locations: places to fish, hunt waterfowl, or dig clams. However, the locations of ritual sites (e.g., cemeteries) or resource extraction sites (e.g., rock quarrying for tool making) are often not near water and are discovered more often by accident rather than by design. They constitute the 5% of sites in the Precontact period inventory of archaeological sites recorded in Maine. Although they represent only a small portion of known sites, they are as equally important as near-water sites for understanding the lifestyles of Precontact people.

Archaeological sensitivity (or the ability to offer educated judgments about where archaeological resources may have been located) of the Highland Wind Project area is derived from taking into consideration where archaeological sites have already been discovered in Somerset County, where sites have not been discovered. Archaeological sensitivity ultimately, however, has to be considered in the context of the modern landscape.

What is known about the Project area is that soils are till and not always well drained and that topography is varies significantly from highlands to bottom lands (Thompson and Borns 1985).

The only kind of special purpose site that might not be associated with water that was considered was rock quarrying. Certain types of bedrock were particularly well suited for use by Precontact period people for the manufacture of stone implements. These include, fine-grained, aphanitic rocks of meta-sedimentary and volcanic origin—cherts, felsite, and quartz predominantly—because of their flaking qualities, were used to make flaked stone tools such as projectile points and scraping/processing tools. Another class of tools, manufactured through a combination of flaking, pecking, and grinding, were typically manufactured from other rock types, including basalt, slate, and phyllite.

Precontact Period Archaeological in the Highland Wind Project Area

Stewart Mountain, Witham Mountain, Bald Mountain, and Burnt Hill do have exposures of bedrock, but these Devonian age formations have been regionally metamorphosed to lithic materials that would not have been suitable for making chipped stone tools (Osberg et al. 1985). None of the mountain tops are believed to have any archaeological sensitivity and no further evaluation of them is recommended.

In contrast, the presence of several streams and proximity of archaeological sites along the Kennebec River in the Wyman impoundment suggest that locations along the transmission line where it crosses. Stony Brook, Barker brook, Houston brook, and an unnamed tributary of Sandy Stream should receive Phase IB archaeological subsurface testing. The precise location of that testing will depend on defining the exact location of the transmission line.

Last, the proposed operations and maintenance building and collector substation locations are not near water, or are they in locations with other archaeological variables identified above (Figure 1). No further archaeological evaluation of these locations as they are presently planned is recommended.

Summary

As we have seen with other wind-generating facilities being proposed in Maine, Most of the turbine locations are set along mountain ridges where sensitivity for Precontact period archaeological resources is low. Archaeologically sensitive areas within these projects typically occur in proximity to water where proposed transmission lines or road construction either to access turbine locations or haul equipment are located. The author did visit the Highland Wind project area in July 2009 and although vehicular access was not abundant, the north-south trending Sandy Stream and east-west flowing Houston Brook are both areas of archaeological concern as are the two smaller brooks (Stony and Barker). These waterways should receive archaeological testing in advance of construction of the project.

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Report Highland Wind Project Somerset County, Maine

Historic Architectural Reconnaissance Survey and Effects Assessment December 2010 PAL No. 2305.01

Submitted to:

Stantec

30 Park Drive

Topsham, Maine 04086

I. Introduction

PAL prepared this report to provide the Maine Land Use Regulation Commission (LURC) with information about aboveground historic resources at or near the development site of the Highland Wind Project (hereinafter referred to as the “Project”) that PAL understands to be relevant to determinations that LURC will be required to make under state law. It incorporates and borrows from the results of a reconnaissance-level historic architectural survey conducted by PAL in 2009 to assist Highland Wind LLC (Highland) in complying with Section 106 of the National Historic Preservation Act (36 CFR Part 800). That investigation and the subsequent consultation with the Maine Historic Preservation Commission (MHPC) regarding its findings forms the basis for identifying the historic resources that are subject to review under applicable LURC statutes and rules used in deciding whether to permit the Project, including the law governing the permitting of Grid-Scale Wind Energy Permit applications.

II. Project Description

Highland is proposing to construct an approximately 90-117 megawatt (MW) wind energy project located in Highland Plantation and Pleasant Ridge Plantation, Somerset County, Maine (Figure 1). PAL understands the following about the various elements of the Project. The Project includes 39 turbines, a 34.5-kilovolt (kV) electrical collector system, an electrical collection substation, a 115-kV generator lead, an Operations and Maintenance (O&M) building, and up to five permanent 80-meter meteorological (met) towers. The turbines will be located in two distinct strings. The western string will include 18 turbines located on the ridgeline that connects Stewart Mountain, Witham Mountain, and Bald Mountain.¹ The eastern string, consisting of 21 turbines, stretches north to south along the ridgelines of Burnt and Briggs hills. The electrical collector line will run between the turbines and connect to a new collector substation located between the two turbine strings. The 115-kV generator lead will extend from the collector substation and travel along an existing electrical transmission line

¹ PAL understands that Highland is considering using one of several different combinations of turbines to cover the variable wind conditions across the Project area. Final turbine selection and purchase agreements will not be completed until after the LURC has acted on the application. All alternatives will use the same turbine pad and road locations.




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Legend
 Turbine
 Approximate Project Area
 Proposed Access Road and Turbine Pads
 115Kv Transmission Line

Client/Project
Highland Wind, LLC
Highland Wind Project
Highland Plantation, Maine
 Figure No.
 1
 Title
 Project Location Map
 November 12, 2009
 Revised October 25, 2010

00385-F001-11x17-USGS-Locus-Turbines.mxd

Figure 1. Proposed Highland Wind Project Location.

cut to its terminus at the existing Wyman Station. Clearing for the generator lead will extend up to 75 feet out from the existing transmission line cut. The proposed O&M building will be located west of the west string of turbines on Long Falls Dam Road.

III. Survey Limits and Potential Effects

The limits of the survey were established to take into account potential direct and indirect impacts that might be caused by the Project. The limit of the “Project area” corresponds to the area on, or directly adjoining, the locations of the turbines and all associated facilities, including the generator lead, where potential direct impacts to historic properties could occur (Figure 2). The “study area” limits encompass a larger area of up to 8 miles distant of any one or more of the turbines where potential indirect impacts might occur. Potential indirect impacts were determined to be visual and noise impacts. In accordance with the Wind Power Law, the assessment of visual impacts extends only to those resources within 8 miles of any turbine that are currently listed in the National Register. Noise impacts were assessed for all resources identified as listed, determined eligible, or evaluated as potentially eligible for listing in the National Register.

IV. Survey Methodology

PAL designed the methodology for the 2009 architectural reconnaissance survey it conducted to identify aboveground historic properties (defined as properties that are listed or potentially eligible for listing in the National Register) within the study area. Although PAL understands Maine law (including Title 35-A, Chapter 34-A: Expedited Permitting of Grid-Scale Wind Energy Development) may afford a different level of protection to listed and eligible historic properties than may federal law, in order to conduct just one reconnaissance that would provide information sufficient for both state and federal permitting, PAL conducted the survey in accordance with the arguably more expansive standards and guidelines established by the federal government, in the Secretary of the Interior’s *Standards and Guidelines for Archaeology and Historic Preservation*, as amended (48 FR 44716), the MHPC’s *Above Ground Cultural Resources Survey Manual, Guidelines for Identification: Architecture and Cultural Landscapes, Section 106 Specific* (MHPC 2006), the National Park Service’s (NPS) *National Register Bulletin No. 24, Guidelines for Local Survey: A Basis for Preservation Planning* (NPS 1985), and the NPS’s *National Register Bulletin No. 15, How to Apply the National Register Criteria for Evaluation* (NPS 1997).

Prior to beginning survey fieldwork, PAL conducted research to identify all previously identified properties within the study area. The work included a review of the inventory of the MHPC’s Maine State Survey Program and the National Register Information System (NRIS), an on-line database that contains information about all National Register-listed properties in the United States.

Two PAL architectural historians conducted fieldwork for the reconnaissance survey from May 18, 2009 to May 22, 2009. The fieldwork methodology included the recording of all properties that met the basic survey criteria of being at least 50 years of age and retaining a sufficient degree of integrity in the area within 5 miles of the Project. Properties within the area between 5 and 8 miles of the Project area were surveyed and evaluated in the same fashion if they were determined to have any potential views of the constructed Project. The extension of the study area out to 8 miles in those circumstances ensured that all LURC-relevant historic resources were identified within the geographic area potentially relevant to the noise study and addressed by the Visual Impact Assessment conducted by Terrance J. Dewan & Associates and Evan Richert.

Properties within 5 to 8 miles were included in the survey if they were determined by means of a preliminary viewshed analysis and visual inspection to have potential views of the Project. PAL recorded data regarding the current condition and significant characteristics of each resource, and verified the information on the inventory forms for previously surveyed properties. In compliance with the MHPC's survey methodology, they collected unique sets of information for individual buildings, barns, and farmsteads. They mapped all identified properties in the field on USGS base maps or detailed aerial images. Site plans depicting farmsteads or other complexes with multiple resources were hand drawn on survey forms.

PAL drove all accessible public roads within the study area, including unmarked, navigable gravel/dirt trails. PAL recorded all properties that met the criteria for inclusion in the survey and were visible from public rights-of-way. To ensure that no properties were overlooked, PAL made notes on the base maps during the survey, indicating which roads had been covered and which buildings were less than 50 years old. For roads that were gated or otherwise clearly marked as private, PAL used topographic maps and aerial images to verify the presence or absence of existing structures. PAL then used historical topographic maps and atlases to determine whether any of these inaccessible properties contained resources at least 50 years old.

Based on the information collected in the field, PAL made a preliminary evaluation of the potential National Register eligibility of each property that was not previously listed or determined eligible for listing in the National Register by applying the National Register criteria for evaluation.² PAL then conducted an assessment of potential Project effects for those properties that are listed, previously determined eligible for listing, or evaluated during the survey as potentially eligible for listing in the National Register.

V. Summary of Survey Results

The 2009 historic architectural reconnaissance survey and subsequent consultation with the MHPC regarding its findings resulted in the identification of five historic resources that are located within 8 miles of the Project. A summary of those properties is as follows:

A. National Register Listed Resources

Arnold Trail to Quebec Historic District

Arnold Trail to Quebec Historic District - The Arnold Trail to Quebec Historic District was listed in the National Register in 1969 under National Register Criterion A in the area of Military history and Criterion B for its association with Benedict Arnold. The entire Arnold Trail is 194 miles long, starting at Fort Popham at the mouth of the Kennebec River in Phippsburg to the Canadian border in Gore, Maine. It follows the route Colonel Benedict Arnold and his forces took on an ill-fated expedition to

² The National Register employs four criteria for evaluation that cover the aspects of significance a historic property may possess. Criterion A applies to properties that are associated with events that made a significant contribution to the broad patterns of American history. Criterion B applies to properties that are associated with a person of historical significance. Criterion C covers properties that embody distinctive characteristics of a type, period, or method of construction; are the work of a master architect or other artisan; or possess artistic values. Criterion D applies primarily to archaeological properties that have yielded or are likely to yield information important in prehistory or history.

Quebec. In September 1775, under orders from General George Washington, Arnold and his army of 1,100 men traveled by small boats known as bateaux across waterways, including the Kennebec River, along the Dead River to the Chain of Ponds and then on to Quebec to confront British forces under Sir Guy Carleton. The arduous journey lasted 45 days, during which Arnold's men were forced to conduct long portages over difficult terrain and were confronted with harsh climate conditions and a lack of food. Arnold was met outside Quebec by forces from the Continental Army's Northern Department under the command of General Richard Montgomery. During attack on Carleton's forces, Montgomery was killed and the Americans failed to take the city. Arnold subsequently laid siege to Quebec, but was ultimately forced to withdraw down Lake Champlain when Carleton mounted a counteroffensive.

The portion of the Arnold Trail that extends through the study area includes the route up the Kennebec River, and a segment called the "Great Carrying Place Portage Trail" by The Arnold Expedition Historical Society. According to the National Register Nomination Form for the district, Arnold's forces carried their bateaux and other equipment overland between the Kennebec River and Flagstaff Lake between October 11 and October 16, 1775. This approximately 12-mile segment begins at the mouth of Carrying Place Stream on the Kennebec River (Wyman Lake), crosses portions of East Carry, Middle Carry, and West Carry Ponds, then down to the Dead River (Flagstaff Lake). The Arnold Expedition Historical Society has acquired easements over several miles of this property and has marked a narrow hiking trail route with orange blazes. The only sign for the trail is on the eastern end of it near the Kennebec River (Photograph 1). On Route 201 in Moscow there is a tablet affixed to a stone indicating the location of where Arnold left the Kennebec River (Photograph 2). The tablet reads: "this tablet marks the place\ where Colonel Benedict Arnold\ with his soldiers left the Kennebec\ river October 1775 and marched from the west shore in a north\ -westerly direction to dead river\ on their way to Quebec." A symbol with 13 stars is located below along with the following text: "placed by the Kennebec chapter\ of the daughters of the American revolution\ 1916."

Bingham Free Meetinghouse

The Bingham Free Meetinghouse is located on South Main Street (U.S. 201) in Bingham. It was built in 1835 and was listed in the National Register in 1976. It is listed under National Register Criterion A in the area of Religion and Criterion C in the area of Architecture. The Meetinghouse was not included in the 2009 historic architectural survey because it is located in an area greater than 5 miles from the Project (approximately 6.2 miles) that was determined to have no potential visual or other types of indirect effects.

B. Properties Previously Determined Eligible for Listing in the National Register

Appalachian Trail

The Appalachian Trail is a 2,178-mile foot trail from Amicalola Falls State Park in Georgia to Mount Katahdin in Maine. Within the state of Maine, the trail is 281 miles long. The idea for the trail was first developed in 1921 by Benton MacKaye who envisioned the trail as a means of linking work camps and communities in the mountains. Work building the footpath began in 1928 and was completed in 1937. It fell into disrepair after World War II and parts of the route were lost. By 1951 the trail was restored. In 1968 it was declared the first national scenic trail in the United States.



Photograph 1. Arnold Trail to Quebec Historic District (National Register-listed property).



Photograph 2. Arnold Trail Tablet, Old Canada Road/Route 201, Moscow.

The Appalachian Trail runs through the northwest corner of the study area along the northern base of Little Bigelow Mountain, around Flagstaff Lake, over Roundtop Mountain, and then north to Bates Ridge. The shortest distance between the trail and the Project site is approximately 3.6 miles from where the northernmost turbine on Stewart Mountain is located to south of where the trail crosses over an unnamed mountain between the southern end of Flagstaff Lake and Roundtop Mountain (Photograph 3).



Photograph 3. Appalachian Trail (Property determined eligible for listing in the National Register by the MHPC).

Wyman Dam

The Wyman Dam forms the southern edge of Wyman Lake in Moscow and is approximately 5.7 miles from the closest turbine site (Photograph 4). The large and elaborate hydroelectric dam building was built in 1932 by The Central Maine Power Company to provide hydroelectric power to the area. The dam is 100 feet tall and approximately one-half mile in length. The structure is significant for its association with the history of hydroelectric power generation in Maine and as an important example of an early twentieth century, large-scale concrete dam. It was designed by the firm of John Calvin Stevens, a prominent Maine architectural firm.



Photograph 4. Wyman Dam, Wyman Lake, Moscow (Property determined eligible for listing in the National Register by the MHPC).

C. Properties Evaluated during the Survey as Potentially Eligible for Listing in the National Register

Cold Spring Ranch Farmstead, Reed Road, New Portland

The Cold Spring Ranch farmstead on Reed Road in New Portland was evaluated as individually eligible for listing in the National Register under Criterion C at the local level as an example of a large, farmstead property (Photograph 5). The large property includes one large residence, a large detached barn, and three attached barns. Originally known as Gilman Farm, the property was established as a dairy farm in the 1880s and has continually operated as a dairy and cattle farm. The farmstead is located at the terminus of Reed Road, and is set back approximately 750 feet from Gilman Pond Road. It is surrounded by large open fields and Gilman Pond Mountain, located northwest of the property.

Farmstead, 1142 Long Falls Dam Road, Lexington (Survey Map No. 66)

The farmstead at 1142 Long Falls Dam Road, Lexington was evaluated as individually eligible for listing in the National Register under Criterion C at the local level as an example of an early-nineteenth-century farmstead (Photograph 6). The farmstead property is located approximately 4.8 miles from the closest turbine site. The property includes a large, two-and-one-half story, five-bay wide Federal-style residence with symmetrical interior end brick chimneys; a one-story, connected English barn; and a one-and-one-half story, connected English Barn set perpendicular to the main house.



Photograph 5. Cold Spring Ridge Farmstead, Reed Road, New Portland (Property evaluated as potentially eligible for the National Register during the 2009 survey).



Photograph 6. Farmstead, 1142 Long Falls Dam Road, Lexington (Property evaluated as potentially eligible for the National Register during the 2009 survey).

VI. Project Effects Assessment

A. Project Area – Direct Impacts

The Project area corresponds to the limits of Project-related construction activities, including land acquisition, and the area where the turbines, access roads, collector lines, buildings, and 115-kV generator lead will be located (see attached Figure 3). None of the historic resources identified during the 2009 historic architectural survey are located within the Project area. Therefore, the Project will have **no direct effect** on historic properties.

B. Study Area – Indirect Impacts

Visual Impacts

The assessment of visual impacts on historic properties is covered under Maine Revised Statute Title 35-A, Chapter 34-A: Expedited Permitting of Grid-Scale Wind Energy Development. According to the law, rather than applying the usual LURC standard for developments (i.e. that they fit harmoniously into the existing natural environment) the primary siting authority is to consider visual impacts on only those scenic resources that are of state or national significance. A scenic resource of state or national significance is not equivalent to a historic scenic resource under the National Historic Preservation Act of 1966, as amended. For the Project, the only resources that meet the State definition are the Arnold Trail to Quebec Historic District and the Bingham Free Meetinghouse.

The assessment of whether the Project will have an unreasonable adverse visual effect on scenic resources, including the Arnold Trail to Quebec Historic District and Bingham Free Meetinghouse, is being conducted by the firm of Terry J. DeWan & Associates and will be submitted to the LURC as part of the Visual Impact Assessment for the Project.

Noise Impacts

The assessment of the impacts of the Project due to noise levels extended to all six historic resources identified during the 2009 survey. Sound levels produced during construction and operation of this Project are regulated by state noise standards. In the expedited permitting area, LURC requires that applicants demonstrate compliance with the Maine Department of Environmental Protection (MDEP) noise regulations under the authority of the Site Location of Development Law (38 M.R.S.A 481-490). The current Maine DEP noise regulation, Chapter 375.10, Control of Noise, was enacted in November 1989 to protect certain land uses from excessive sound levels generated by new or expanded developments and facilities.

Sound is measured in decibels, abbreviated as dB. When measuring sounds, A-weighted (dBA) sound levels are used to simulate the hearing response of humans. The hourly equivalent sound level resulting from routine operation of a wind project is limited to 75 dBA at any facility property boundary. Within residentially zoned areas or where the predominant surrounding land use is residential, the hourly sound level limits for routine operation are 60 dBA daytime and 50 dBA nighttime. In protected areas, the hourly sound level limits for routine operation are 55 dBA daytime and 45 dBA nighttime.

The Highland Wind Project's Noise Level Assessment sets forth the predicted "worst case" sounds to be produced by the Project in its final design and configuration. The Assessment relies on a

sophisticated model to predict the sound levels from the Project. To generate a “worst-case scenario” a number of conservative assumptions were input in the model. Among these conservative assumptions were the following:

- All turbines are operating at full sound power at all times;
- Downwind conditions in all directions simultaneously;
- No foliage attenuation;
- “Hard ground” conditions throughout the Project area; and
- Applicable uncertainty factors were added to the turbine manufacturer’s turbine specification guarantee level.

All of the listed and potentially eligible properties identified during the historic architectural reconnaissance survey are located within areas to which the Chapter 375 45 dBA nighttime and 55 dBA daytime limits apply, as established by the noise assessment. Even after the employment of these conservative steps, the predicted sound levels resulting from the Project at all historic resources within the study area are below 45 dBA limit. Figure 4 shows that the 45 dBA limit is almost entirely contained within the limits of the Project area. All of the identified resources are at least 3 miles distant from that limit and within areas where no noise generated by the project will reach. Therefore, the Project cause **no indirect noise effects** on historic properties.

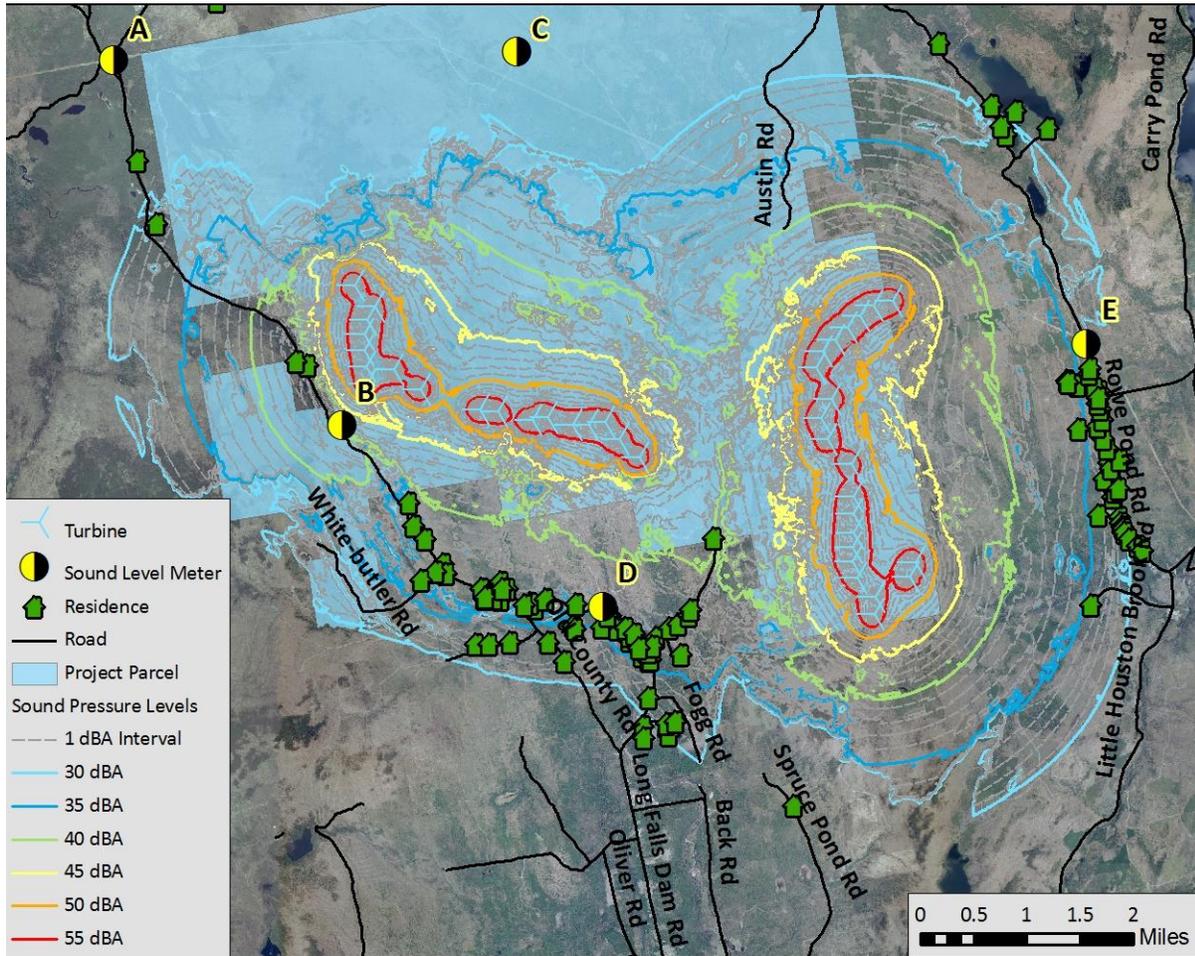


Figure 4. Highland Wind Noise Assessment Map (source: Stantec 2010).

**PHASE 0 Archaeological Reconnaissance Survey
Highland Plantation Wind Project
Highland Plantation, Somerset County, Maine**

Kathleen Wheeler, Ph. D., Principal Investigator

Prepared by
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October 29, 2009

This Report Contains Confidential Information

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INTRODUCTION

Independent Archaeological Consulting, LLC (IAC) of Portsmouth, New Hampshire has completed a sensitivity assessment for the proposed Highland Plantation Wind Project located in Highland Plantation, Somerset County, Maine (Figure 1). The assessment was completed for Stantec (formerly Woodlot Alternatives, Inc.) of Topsham, Maine. The Project includes planned construction of approximately 21 turbines (east cluster) along a north-south trending ridge and an additional 25 turbines (west cluster) along a north-south and east-west set of ridges. The project also proposes the 9- to 9.6-km (5- to 6-mile) extension of an existing transmission line corridor which originates at Wyman Station in Pleasant Ridge Plantation. A substation is planned for the approximate center of the project area. An Operations and Maintenance (O & M) building is planned for the southwestern edge of the project area (see Figure 2).

The objective of the assessment was to assess the sensitivity of the Project area for the presence of Euroamerican (i. e., “historic”) archaeological resources. IAC archaeologists Maya Carter and Jonathan Douse conducted the survey, under the supervisor of Principal Investigator, Kathleen Wheeler. Archaeological work is authorized under Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR Part 800). Dr. Wheeler exceeds the qualifications set forth by the Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1993) and 36 CFR Part 61, and are certified Level-2 Historical Archaeologists in Maine.

The assessment consists of background research (a site file review of the known inventory of sites in the project area, cartographic analysis, and review of primary and secondary sources); the development of a sensitivity model pertinent to the project environment; and a site inspection to confirm the presence or absence of potential archaeological resources. The assessment was completed in late September 2009, through map research and a visual inspection of portions of the project area. IAC found no indication of Euroamerican archaeological resources in the area of potential effect (APE). We recommend no further archaeological survey for the 46 turbines of the wind farm, associated access roads leading to the mountain ridge, or the transmission corridor.

PROJECT LOCATION AND ENVIRONMENTAL SETTING

The project area is approximately 7.0 km (4.35 miles) long and 9.0 km (5.6 miles) wide, and runs along the tops of five mountains in Highland Plantation – Stewart Mountain, Witham Mountain, Ball Mountain, Bunt Hill and Briggs Hill (Figure 2). These mountain tops range in elevation from 604 m to 696 m (1979 ft to 2299 ft) AMSL, while the bases of the mountains are at elevations around 245 m (800 ft) by Stone Brook Stream. The connecting transmission line covers an area that is approximately 17 to 18 km (11 to 12 miles). About 9.6 km (6 miles) of this follows the path of an existing transmission corridor through Pleasant Ridge Plantation and connecting with Wyman Station on the Kennebec River. The remaining proposed corridor passes through the mountainous terrain within Highland Plantation. The only vehicular access to the APE is by logging roads and ATV trails.

The surficial geology in the project area consists of extensive bedrock outcrops with occasional eskers in till (Thompson 1985). Vegetation in the project area is mixed hardwoods and softwoods and successional growth, as the mountains have been cut over several times.

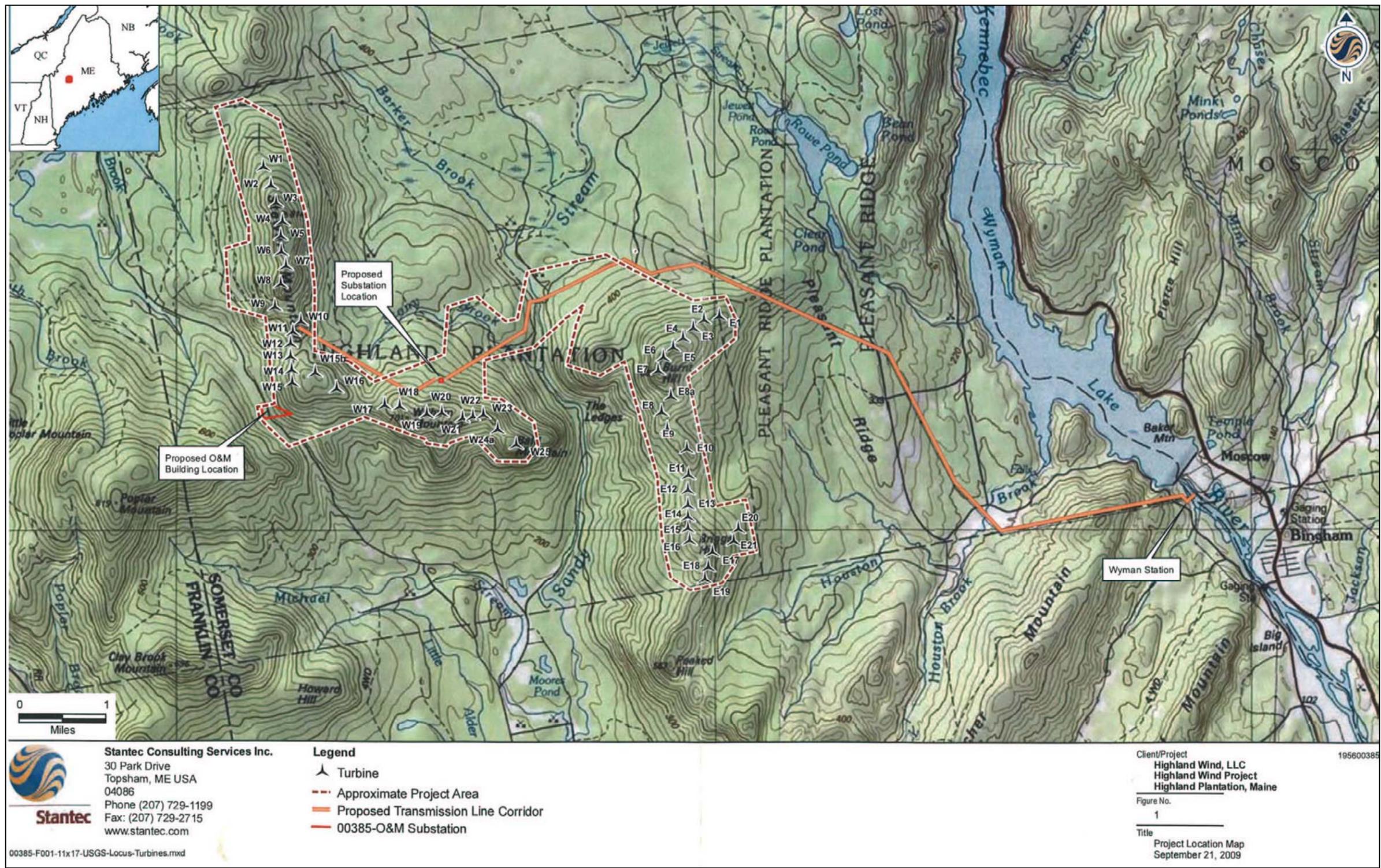


Figure 1. Proposed Highland Wind Project (Stantec 2009).

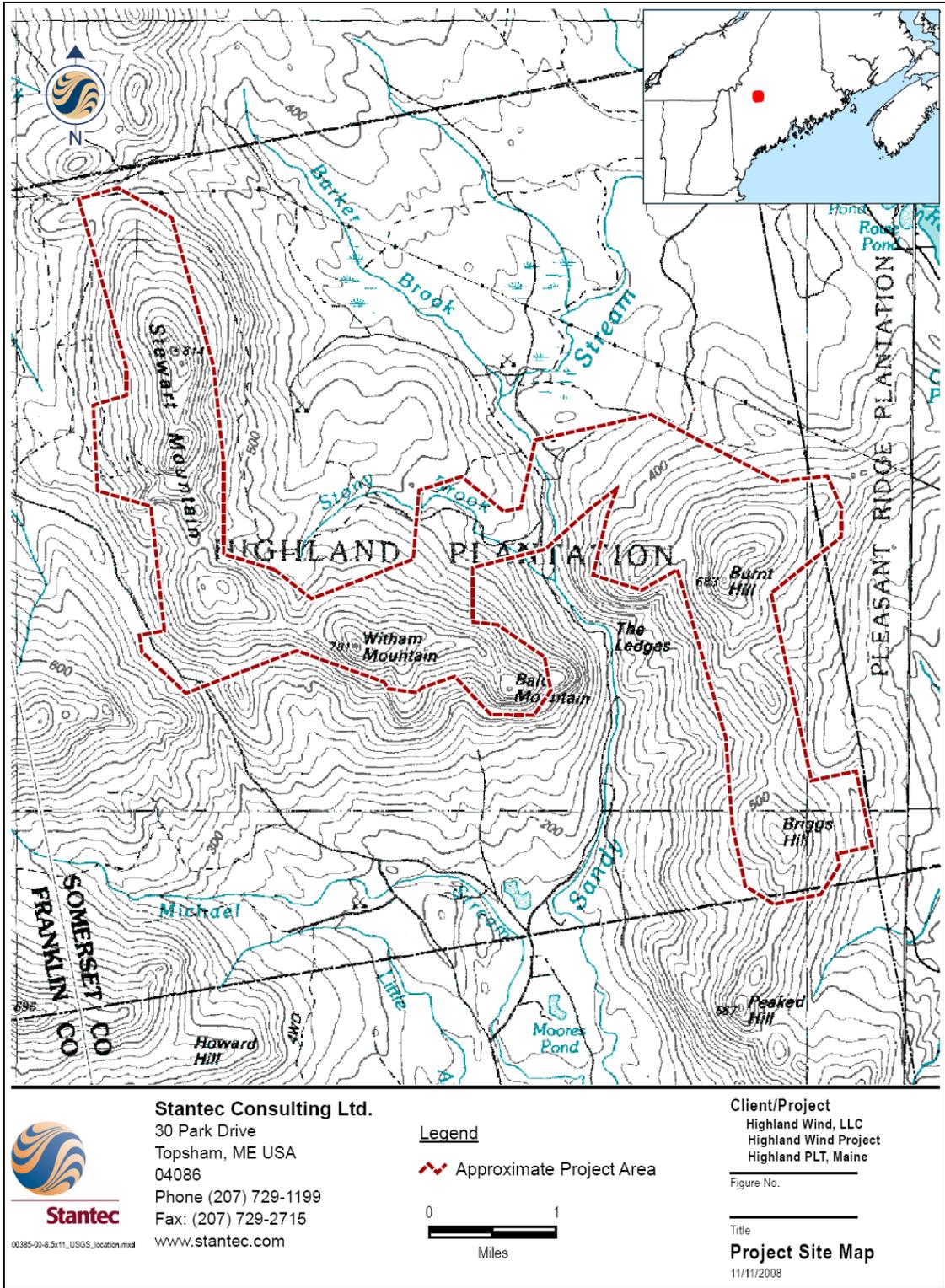


Figure 2. Mountains and ridges within the approximate wind farm project area (Stantec 2008).

EUROAMERICAN CULTURAL CONTEXT

The town of Highland Plantation is located on the western border of Somerset County. This small town is bounded by Carrying Place Plantation to the north, Pleasant Ridge to the east, and Lexington to the south. Jerusalem Plantation, in Franklin County, defines the western border. Highland Plantation has two primary watercourses: Sandy Stream, which flows from the north, converges with the westerly flowing Michael Stream in the southern part of town (Varney 1881:279).

Highland Plantation was formally organized February 10, 1886. Originally known as Plantation Number 2, the township was organized for election purposes as early as 1840. The name change was made on February 18, 1871 (State of Maine 2004). Primarily an agricultural town, Highland Plantation produced high yielding crops including hay, oats, potatoes, wheat, corn, and beans. Residents also utilized local spruce, maple and birch resources to manufacture refined spruce gum and snow shoes (Varney 1881:279).

The population of Highland Plantation witnessed its peak at 128 in the year 1870 (Table 1). A general trend of decline, culminating in 1970 when the town had only 23 residents, may be related to a decrease in small scale farming. As of 2000, the population had more than doubled to 52.

Table 1. Population of Highland Plantation from census data.

Year	Population	Change	%Change
1870	128		
1880	121	-7	-5%
1890	76	-45	-37%
1900	67	-9	-12%
1910	68	1	1%
1920	55	-13	-19%
1930	61	6	11%
1940	53	-8	-13%
1950	56	3	6%
1960	46	-10	-18%
1970	23	-23	-50%
1980	60	37	161%
1990	38	-22	-37%
2000	52	14	37%

The Colby (1881) map of Highland Plantation AND Pleasant Ridge Plantation shows little development in the north part of the township (Figures 3 and 4). Roads follow a system of streams spreading into the town's southern half. Houses cluster along these roads but within a system of regularly spaced surveyed lots. The project area, however, is well north of this lightly settled area. USGS maps (1928, 1944, 1956) show a road passing between Bald Mountain and Burnt Hill, along Sandy Stream (Figures 5, 6, and 7). No structures or other development is represented in the maps, however. These may represent logging roads extended up the slopes, but only one (Howes-Gilford Road, now a jeep trail) penetrates the APE between the two mountains, and is the same shown on the earlier USGS maps.

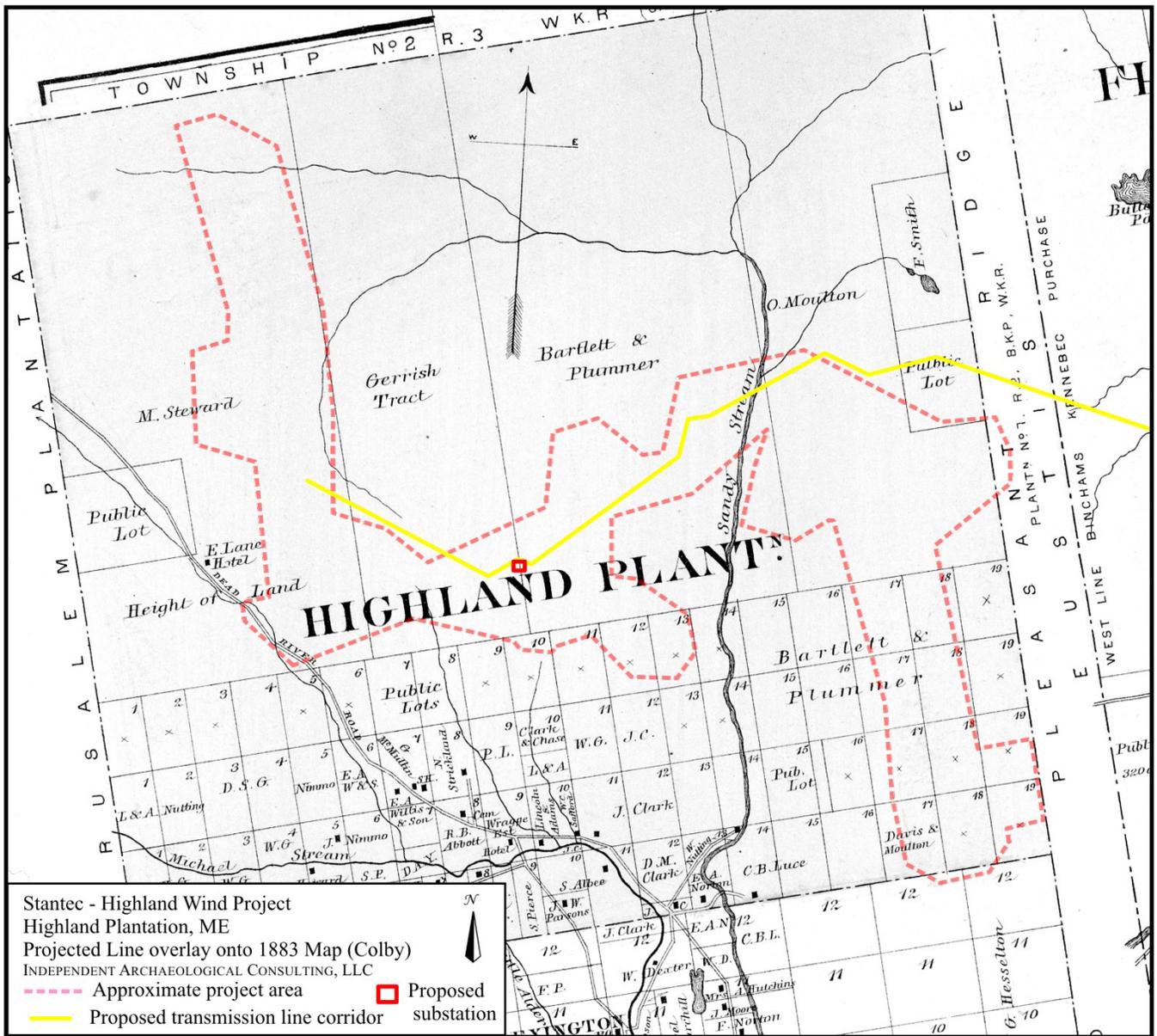


Figure 3. Colby (1883) map of Highland Plantation showing project area and areas of population density.

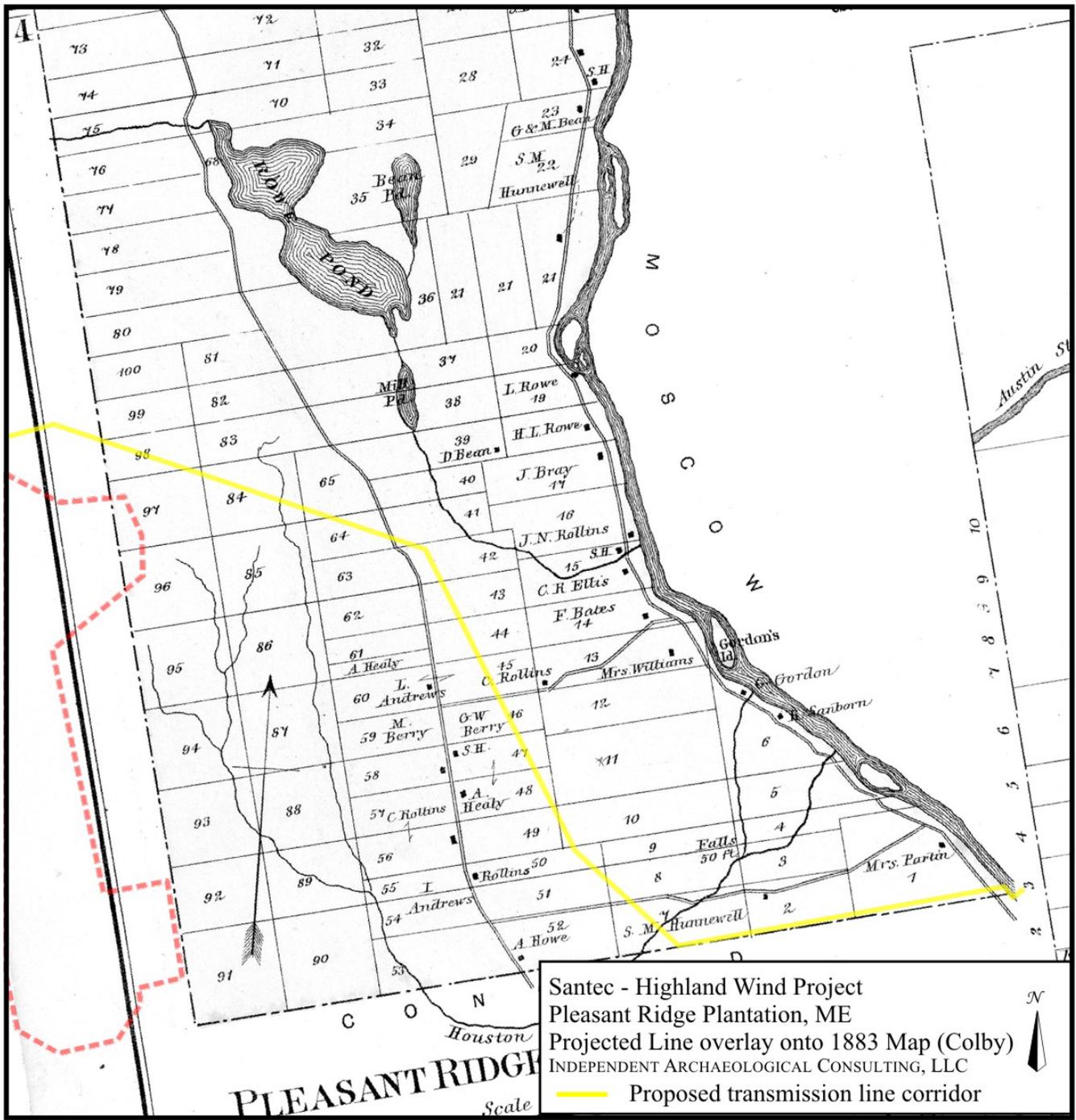


Figure 4. Colby (1883) map of Pleasant Ridge Plantation showing transmission corridor.

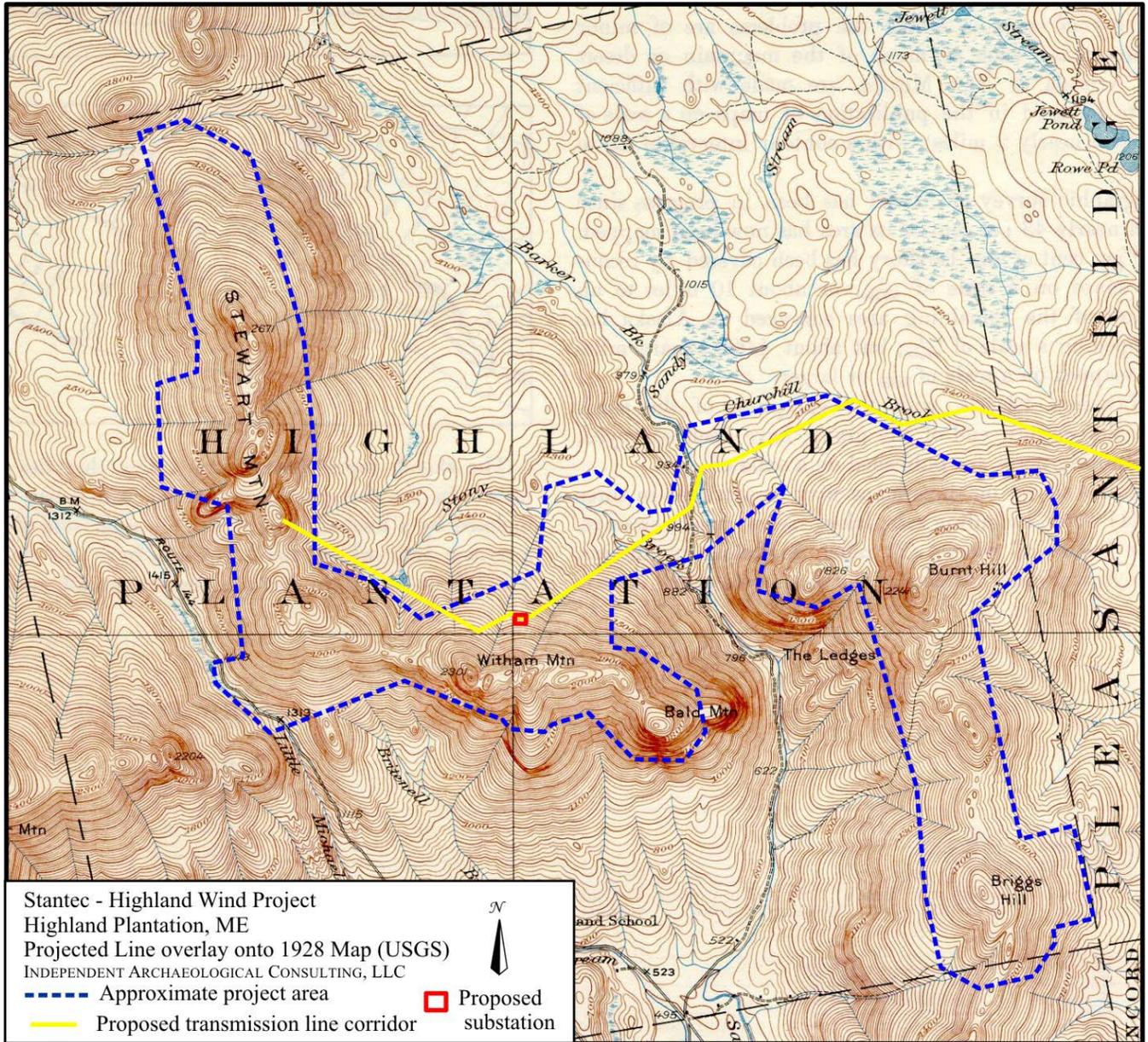


Figure 5. USGS (1928) map of Highland Plantation showing project area and roadways.

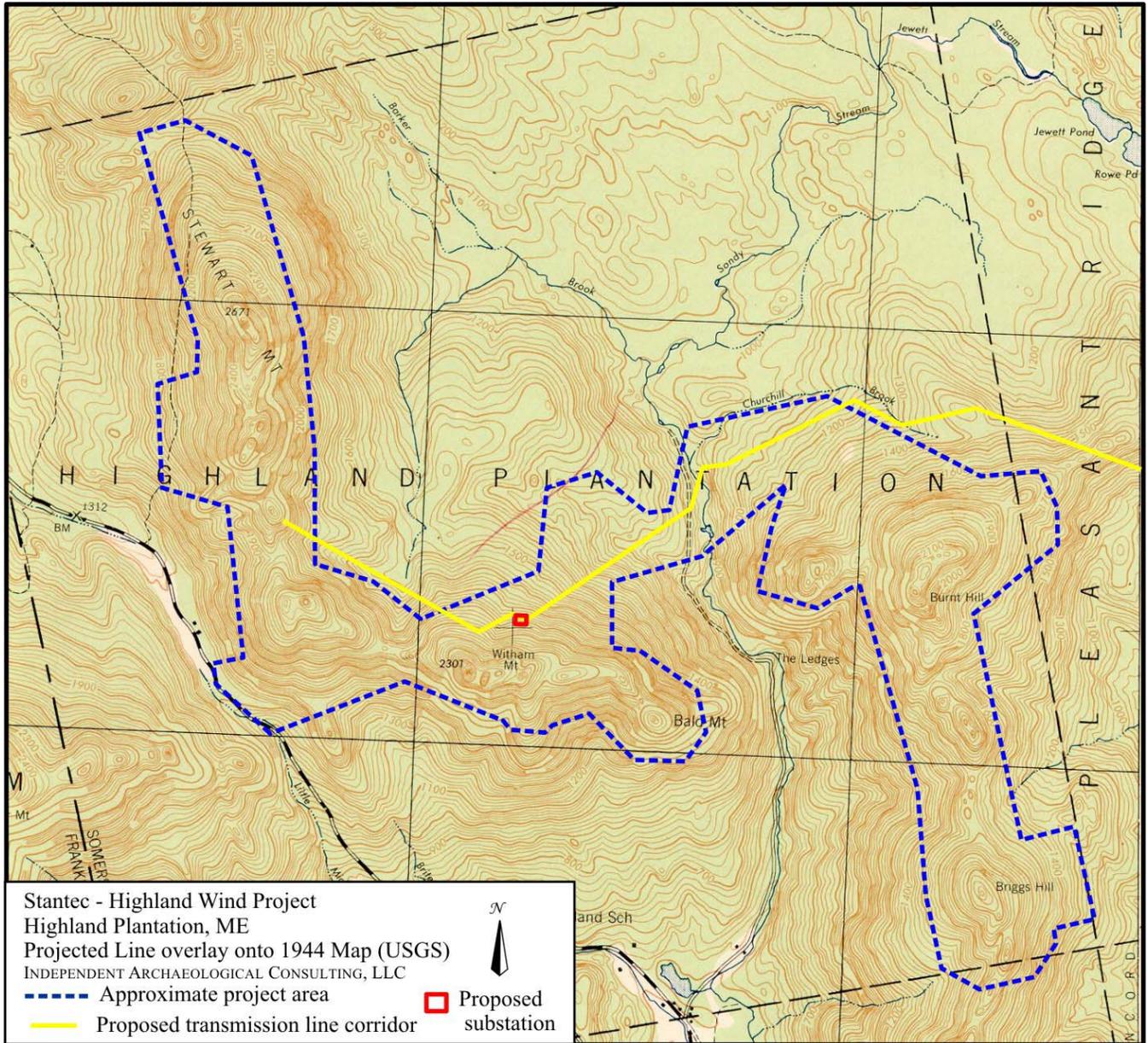


Figure 6. USGS (1944) map of Highland Plantation showing project area and roadways.

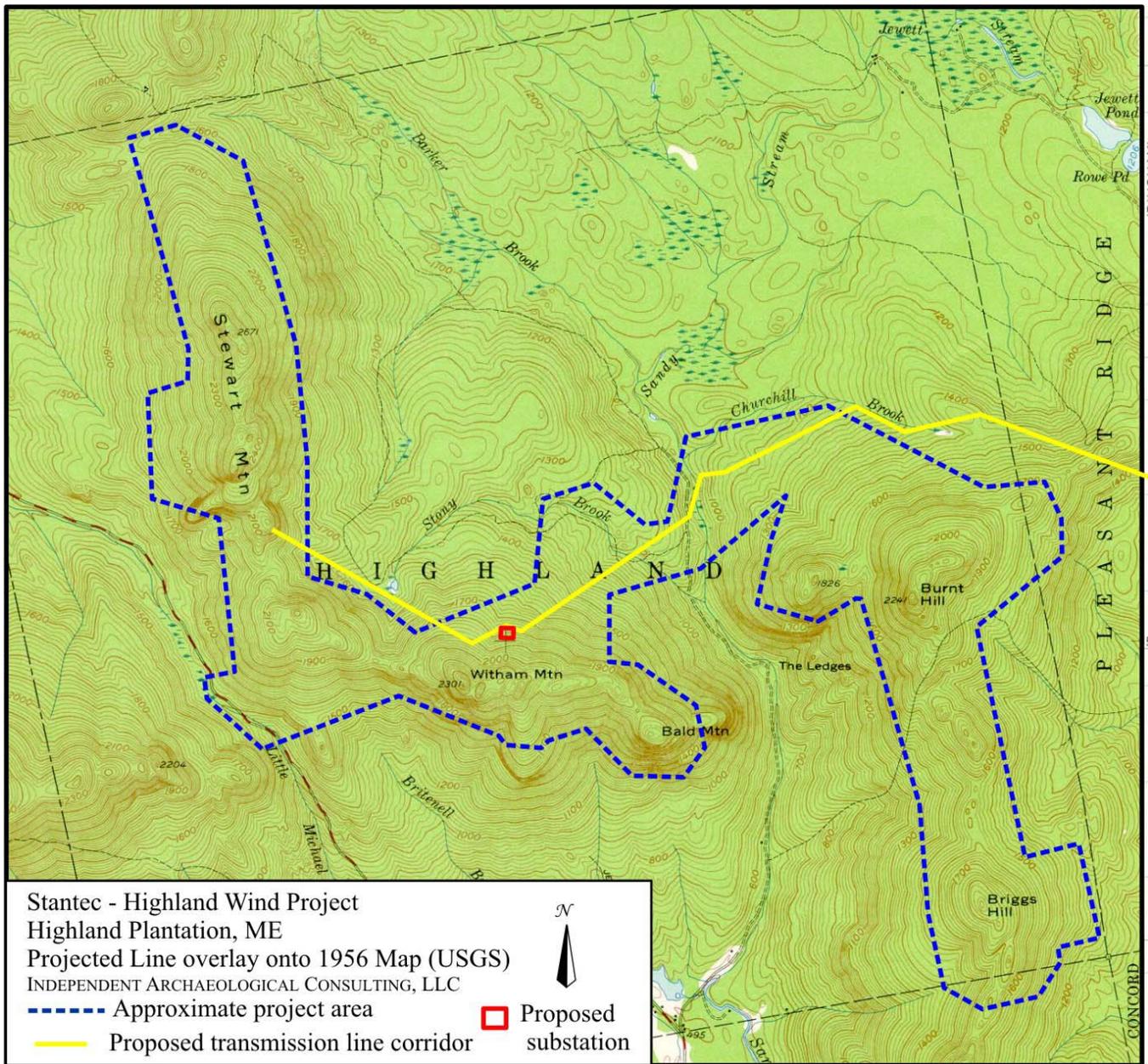


Figure 7. USGS (1956) map of Highland Plantation showing project area and roadways.

EUROAMERICAN ARCHAEOLOGICAL SENSITIVITY

The sensitivity assessment for Euroamerican archaeological resources is based mainly on cartographic evidence gathered from nineteenth- and twentieth-century maps (e. g., Colby 1883; and United States Geological Survey topographical maps). These cartographic resources pinpoint the location of dwellings, schools, mills, churches, and cemeteries, providing the archaeologist with a ready point of comparison between past and present landscapes. In this, the sensitivity assessment differs greatly from those conducted for pre-Contact-period archaeological resources. Historical archaeologists can also review secondary sources such as town histories, genealogies, photographs, and newspapers to provide a larger historical context for a project area. The sensitivity assessment also includes a site file search for known archaeological sites within the project area, or sites that might serve as analogs for the project area. Using known site types and distributions, historical archaeologists develop settlement models to make predictive statements about where to anticipate finding sites.

High archaeological sensitivity for Euroamerican resources is associated with the following variables:

- documented existence of sites (e. g., homesteads, farmsteads, schools, churches, town halls, cemeteries) through primary, secondary, or cartographic resources
- presence of known sites (whether extant, aboveground representations of early architecture, or documented archaeological site)
- proximity to transportation systems (roads, railroads, major rivers and streams) and potable water sources
- linkage to other resources (such as stone for quarrying, clay sources for brick or ceramics, or metal ores)
- High sensitivity is defined as lying *within 100 m (328 ft)* of documented or known sites, transportation systems, or sources of potential hydropower

Moderate sensitivity was assigned to areas between 100 m to 200 m (328 ft to 656 ft) of an historic road, standing architectural feature, or potable water source, in areas with minimal to moderate disturbance. Low sensitivity areas are those more than 200 m (656 ft) from documented sites, roadways, natural resources, or water sources. Low sensitivity is also assigned to areas with excessive ground disturbance, such as along railroad grades, where extensive cutting and filling are typically involved in the creation of the railroad bed. Table 2 summarizes the fundamental criteria for ranking sensitivity for Euroamerican archaeological resources.

Table 2. Summary of criteria for evaluating Euroamerican archaeological sensitivity.

Sensitivity	Criteria
High	within 100 m of transportation systems and/or sites known from maps
Moderate	within 100-200 m (328-656 ft) of roads or known sites
Low	more than 200 m from roads or known sites; or excessive disturbance

Euroamerican archaeological resources typically exist along transportation corridors, specifically roads and rivers. Environmental conditions, such as water power and land suitable for agriculture, also affect site location. Nineteenth- and twentieth-century maps of the project area confirm that most buildings and structures were located along roads, which followed streams, rivers, or ponds, because these areas were the most level and easiest to access. Euroamerican archaeological resources are commonly found where former buildings or structures stood, where people lived and have left a trace of their lives in the form of artifacts and features. As noted above, our site prediction model anticipates that most resources will be found within 100 m (330 ft) of transportation corridors.

In applying this model to the Highland Plantation project area, we note there are *no* historic roads in the APE. Population density was distinctly located well south of the project area. The only roads along the mountainsides and along the mountain ridge are logging roads and/or ATV trails made in the twentieth century. The absence of roads in the APE is a strong indication that the area was largely inhospitable for Euroamerican settlement. Instead, logging is likely to have been the only major human activity during the post-Contact period of Euroamerican settlement within these mountain ridges. The steepness of slope and underlying glacial till of the mountainside rendered the project area unsuitable to farming.

The Logging Industry in Maine Mountains

Logging was a dominant industry in Maine in the nineteenth and early twentieth centuries, and it continues as such today. Beginning in the early 1800s, settlers began cutting trees around the project area for lumber, shingles, clapboards, and to heat their homes and cook food. Lumber found a ready market for carpenters and shipbuilders for the continued maritime emphasis in Maine, New England, and abroad. Most logging in the early years of the nineteenth century was completed by small groups of men, most of whom were farmers who turned slower winter seasons into a chance to reap additional income (Wood 1971:27). In later years, logging companies became a full-time industry, usurping the seasonal loggers who were primarily farmers.

Lumber companies typically began with a land survey to determine if properties contained good timber and streams capable of driving logs. Prior to clear-cutting, work gangs would construct transportation corridors (logging roads) to bring men, equipment, and supplies into the work area, and then from the cutting site to the streams and rivers for transporting timber. A central depot, or main camp, would be built along a main road, where offices and supplies were located. From this hub, supplies would be distributed to the smaller camps where the workers lived.

Physical traces of localized and even wide-scale lumbering are often ephemeral. Worker's logging camps were less permanent than the depot and were typically located along one of the tote roads or near the river. Camps consisted of at least one bunkhouse, a hovel or shed for the animals, a place to store hay, a blacksmith shop, latrine, sometimes a kitchen, and perhaps a storage shed. Over time, the size of camps increased, especially with the advent of tractors and automobiles in the twentieth century (Wood 1971; Hilton 2004). Structures were of rough hewn logs (from readily-available materials), and roofs were either covered with splints or tar paper. Locally-available materials were used as much as possible because of the difficulties in transporting materials to camps, but manufactured materials such as stove parts, ceramic and glass cookwares and tablewares were all brought into camp. For the archaeologist seeking these camps, materials such as nails, discarded axe heads, chain links, stove parts (especially handles or stove lids), and broken crockery or glass could be an indication that logging took place in the vicinity.

The model for siting logging camps places them nearer to the base of slope, rather than at the top of a mountain. Costs would be prohibitive for transport of teams and supplies to the mountain ridge, and energy exertion for humans and animals would be excessive. Rather, camps will be set near main roads and tote roads, which were located in the brook valley for downhill hauling towards landings.

Road systems also required much thought and consideration of multiple variables, such as steepness (“especially in the direction adverse to heavy loads [Hilton 2004:8]), straightness (roads could not be excessively curving), and length (shorter was better than longer). In the Highland Plantation project area, logging roads extend along Sandy Brook at the base of the mountains, passing between Burnt Hill and Witham Mountain. The series of USGS maps (1928; 1944, 1956; see Figures 5, 6, and 7) indicates that this roadway ceased to be maintained as the twentieth century wore on, and it remains as only a jeep path today.

METHODS AND RESULTS OF SITE VISIT

Following the map review and a consideration of the physical traces of human behaviors in the project area, IAC archaeologists Maya Carter and Jonathan Douse conducted an inspection of the project area on September 30 and October 5, 2009. Overall, the mountaintop APE was assessed with low sensitivity because maps (Colby 1883; USGS 1928, 1944, and 1956) did not show historic roads or buildings along the ridgeline. They did not inspect the entire APE but instead focused on areas within the APE that were likely to contain evidence of logging activities.

Generally, previous and ongoing logging operations give the soil and landforms in the area the appearance of being heavily disturbed (Plates 1 and 2). In addition to the apparent disturbance, the landform also appear very inhospitable to building due to its steep slope (Plate 3). Archaeologists concluded that no further survey was necessary along the ridge.

Shortly after arriving on-site in Highland Plantation, the archaeologists discovered that many of the “existing” and projected trails and roads are very much in the planning phase, and are either non-existent or impassable by passenger cars. After reaching various dead-ends the archaeologists succeeded in approaching the area projected for turbine locations. The crew hiked to the approximate positions of the northwestern most turbines and confirmed (as were visible on maps supplied by Jonathan Ryan of Stantec) that the proposed turbine locations were along the top of Stewart Mountain. The archaeologists discovered pink flagging tape in multiple locations, one of which had “TP 44” written on it.

After several dead ends on trails north of the mountains, the team found Howes-Gifford Road, which runs parallel to Sandy Stream and intersects the project area between Burnt Hill and Bald Mountain. Howes-Gifford Road is fairly well maintained, and currently used as a logging road. Driving South along this road yielded similar results to the earlier survey, revealing both disturbed and rough and inhospitable terrain at the east end of Bald Mountain. The crew then attempted to reach the eastern side of Burnt Hill to survey the final line of turbine locations, and after a few unsuccessful attempts, ran out of daylight. At approximately 6:00 PM the crew left Highland Plantation. The terrain combined with the lack of historic access roads strongly indicates a complete absence of Euroamerican cultural resources. Archaeologists can date the construction of this road to the second half of the twentieth century, based on the amount of earth displacement (cutting and filling) to create a roadbed sufficient to support large lumber trucks.



Plate 1. Example of logging roads and ongoing logging operations on the west side of Stewart Mountain, looking west.



Plate 2. Disturbance and wet conditions from logging.



Plate 3. View atop Stewart Mountain from Trail B, looking west.

On Monday, October 5th, 2009 Archaeologists returned to Highland Plantation to complete the survey of the proposed transmission line associated with the proposed wind turbines. The proposed line runs parallel to an existing line in an existing corridor for about 9.6 km (6 miles) before turning west-southwest into the wind farm. At 12:30pm Ms. Carter and Mr. Douse arrived on-site at the southeastern end of the line, where it intersects Ridge Road in Pleasant Ridge Plantation. Current conditions of the area showed little chance of supporting historic structures, with a slope of approximately 45 degrees. Historic maps (Colby 1883; USGS 1928, 1944, 1956) showed no sign of resources, and the archaeologists found none.

The next road crossing encountered was Rowe Pond Road. A mobile home sits on the southern side of the road and eastern side of the corridor. The area to either side of the road is a wetland with standing water, and as such Ms. Carter decided extensive walkover would be unnecessary, and Mr. Douse took photographs of the area. The intersection of Cross Road and the power corridor also yielded somewhat wet conditions, and consistent with historic maps, showed no sign of historic occupation. The crew encountered hunters at this location. The transmission line then intersected Ridge Road a second time, again yielding no results. The final three remaining road crossings are Jeep or ATV trails, and only the second trail is passable. Archaeologists found no resources at the second trail, and due to the inhospitable terrain and lack of historic roads or projected resources, determined that no further survey is necessary on the remaining two.

SUMMARY AND RECOMMENDATIONS

Archaeologists evaluated the project area with low sensitivity for Euroamerican archaeological resources; i. e., the likelihood of finding a historical archaeological site in the Highland Plantation APE for the wind farm is low. The Euroamerican land-use of the area has been limited to logging. Logging camp sites that have been found in Maine are most often identified by a surface collection of tin cans, a cast iron cook pot, or other metal artifacts found alongside old logging roads. While logging activities could leave archaeological traces in the form of logging camp debris and structures, the likelihood of a camp being located on the ridge top is low. Such camps tended to be located in areas adjacent to logging or tote roads, alongside brooks, on level, dry ground (Hilton 2004:4). In addition, our inspection confirmed that roads leading up the mountain are relatively modern, and the height and steepness of terrain make for unsuitable camp sites.

We feel that the inspection of a portion of the APE and a survey of the surrounding landscape is sufficient to confirm that the project area conforms to our predictive model and that it has little sensitivity for Euroamerican archaeological resources. The terrain is unsuitable for historic-period settlement (i. e., farms or houses, or mills and factories tied to hydropower). Historical research and a review of maps revealed that the only likely Euroamerican within the project area was by loggers. While there is ample evidence of modern logging – in the form of skidder trails, machine-built logging roads, and stumps of trees recently felled – these features do not meet the criteria for National Register of Historic Places eligibility because of their late date and redundancy over much of modern Maine. We recommend no further archaeological investigation within the APE on the mountain tops, and no testing for the transmission line proposed to meet the needs of the wind farm.

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