

Heritage Wind Project

Case No. 16-F-0546

1001.20 Exhibit 20

Cultural Resources

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EXHIBIT 20 CULTURAL RESOURCES

The Applicant has consulted with the New York State Office of Parks, Recreation and Historic Preservation/State Historic Preservation Office (NYSOPRHP/SHPO) to develop the scope and methodology for cultural resources studies for the Facility.¹ To date, formal consultation with NYSOPRHP/SHPO has included initiating Facility review and consultation through NYSOPRHP/SHPO's Cultural Resources Information System (CRIS) website,² submission of technical reports/work plans, and completion of follow-up cultural resource survey reports.

Cultural resources studies typically define an Area of Potential Effect (APE), which defines the potential direct and indirect impacts and appropriate study area for a given project. Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) prepared the project-specific cultural resources studies for the Facility, which included defining the APE for Direct Effects and Indirect Effects. Per the SHPO *Wind Guidelines* and Section 2.3 (a)(5) of the Final Scoping Statement, the APE for Direct Effects is defined as those areas where soil disturbance (or direct physical impacts) is proposed to occur during construction. The APE for Indirect Effects, which includes those areas where the Facility may result in indirect visual or auditory effects on historic resources, is defined as those areas within five miles of proposed turbines which are within the potential viewshed of a given project. These potential effects, and the studies undertaken to evaluate the Facility's potential effects on cultural resources, are described in greater detail below.

(a) Archaeological Resources

(1) Summary of Impacts and Avoidance/Minimization Measures

To identify potential archaeological sites within the Facility Site, the Applicant completed a Phase IB archaeological survey in accordance with the Phase IA Archaeological Resources Survey³ (EDR, 2019a; Appendix 20-A) and subsequent Updated Phase IB Archaeological Scope of Work/Research Design (EDR 2019b, Appendix 20-B).

The Phase IA Report was submitted to NYSOPRHP/SHPO through the CRIS database on February 21, 2019.

¹ As defined throughout this Application, the Facility refers to all components of the proposed project, including the wind turbines, access roads, electrical collection lines, the collection substation, the point of interconnection (POI) substation, the interconnection lines, permanent meteorological towers, the operation and maintenance (O&M) facility, the concrete batch plant (if used), and laydown area(s).

² NYSOPRHP/SHPO's Cultural Resources Information System is accessible at: <https://parks.ny.gov/shpo/online-tools/>.

³ This report was submitted to the NYSOPRHP/SHPO in February 2019. Per Section 14.09 of the New York State Historic Preservation Act, archaeological site location information is considered sensitive and should therefore be treated as confidential: Under that section, "[I]nformation on archaeological sites that may be damaged by unauthorized investigators if their location be generally known may be withheld from the public at the discretion of the commissioner in consultation with the commissioner of Education, and will be released, where appropriate, in a format approved by such commissioners" (also summarized within NYSDOT, 2015). Therefore, the Phase IA Archaeological Resources Survey is a confidential report.

NYSOPRHP/SHPO responded to the report on March 14, 2019 requesting a more specific Phase IB scope of work be submitted once the APE for Direct Effects had been further defined (Ferguson, 2019a). EDR provided the Updated Phase IB Archaeological Scope of Work/Research Design via CRIS on August 14, 2019, which was reviewed and approved by the NYSOPRHP/SHPO on September 9, 2019 (Ferguson, 2019b).

To support the Applicant's Article 10 Application, a Phase IB Archaeological Survey Summary Report has been prepared (EDR, 2020; Appendix 20-C). Consistent with the procedure/schedule established by NYSOPRHP/SHPO, a Phase IB Archaeological Survey Report is currently being prepared and will be submitted to NYSOPRHP/SHPO at a later date in support of future consultations required under Section 106 of the National Historic Preservation Act.

The locations of the sites recorded in the Phase IB survey were shared with the Applicant and their design engineers, who then redesigned the Facility to avoid impacts to these sites. See Exhibit 9, Table 9-1 for examples of changes made to avoid archaeological impacts. The Applicant will continue to consult with NYSOPRHP/SHPO to determine if additional avoidance measures are warranted.

The locations of all potentially significant archaeological sites (i.e., eligible or unevaluated for the State/National Register of Historic Places [S/NRHP]) within approximately 200 feet (61 meters) of proposed Facility-related impacts will be identified as "Environmentally Sensitive Areas," or similar on Facility construction maps and marked in the field by construction fencing with signs that restrict access. These areas will be regarded as off-limits but will not be identified as archaeological sites in order to protect the resources. These measures should be adequate to avoid impacts to archaeological resources.

In the event that unanticipated archaeological resources are encountered during construction, the Facility's Unanticipated Discovery Protocol (UDP), described below, will include provisions to stop all work in the vicinity of the archaeological finds until those resources can be evaluated and documented by an archaeologist. With the adoption of these measures, additional avoidance measures currently being assessed, and continued consultation with the NYSOPRHP/SHPO, the proposed Facility is not anticipated to affect any potentially significant archaeological resources.

(2) Phase IA Archaeological Resources Study

The Phase IA Archaeological Survey (EDR, 2019a, Appendix 20-A) was submitted through the CRIS website on February 20, 2019. The subsequent Updated Phase IB Archaeological Scope of Work/Research Design was

submitted through the CRIS website on August 15, 2019 and approved by NYSOPRHP/SHPO on September 9, 2019 (Ferguson, 2019b). These documents are summarized below.

The purpose of the Phase IA archaeological resource survey was to:

- 1) Define the Facility's APE relative to archaeological resources (i.e., direct effects) based on the anticipated area of disturbance for Facility components;
- 2) Determine whether previously identified archaeological resources are located in the APE for Direct Effects; and,
- 3) Propose a methodology to identify archaeological resources within the APE for Direct Effects, evaluate their eligibility for the S/NRHP, and assess the potential effect of the Facility on those resources.

The Phase IA report was prepared in accordance with the *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work* (the *SHPO Wind Guidelines*; NYSOPRHP/SHPO, 2006) and applicable portions of NYSOPRHP/SHPO's *Phase I Archaeological Report Format Requirements* (NYSOPRHP/SHPO, 2005).

The results of the Phase IA archaeological resources survey for the proposed Facility are summarized below:

- Sixteen archaeological surveys/investigations were previously conducted within 1 mile (1.6 kilometers) of the Facility Site, eight of which occurred partially or wholly within the Facility Site.
- Thirty previously recorded archaeological sites are located within 1 mile (1.6 kilometers) of the Facility Site. Twelve of these sites occur within the Facility Site. They consist of 22 pre-contact Native American sites, seven historic-period sites, and one site with both pre-contact Native American and historic-period material.
- Due to previously recorded pre-contact Native American archaeological sites in the area, there is potential for the presence of pre-contact Native American archaeological resources to be located within portions of the Facility Site.
- There is also a potential for historic-period (i.e., nineteenth and/or twentieth century) archaeological resources to be located within the Facility Area. This potential is generally considered to be low throughout the Facility Area, except in areas located near the former locations of structures identified on historical maps. Archaeological resources associated with these sites could include foundations, structural remains, artifact scatters, and/or other features.

The Updated Phase IB Archaeological Scope of Work/Research Design (EDR, 2019b) indicated that no previously recorded archaeological sites are located within the APE for Direct Effects and only three previously recorded sites are located within 1,000 feet of the APE for Direct Effects.

The methodology for conducting a Phase IB archaeological survey for the Facility was proposed in the Updated Phase IB Archaeological Scope of Work/Research Design (EDR, 2019b), which was reviewed and approved by the NYSOPRHP/SHPO (Ferguson, 2019b). The methodology is consistent with 16 NYCRR § 1001.20 and the *SHPO Wind Guidelines*. The results of the Phase IB archaeological survey are described below.

(3) Phase IB Archaeological Resources Study

The Applicant conducted a Phase IB archaeological resources survey to identify archaeological sites within the Facility Site. The Phase IB survey and the Phase IB Archaeological Survey Summary Report (EDR 2020, Appendix 20-C) were completed under the supervision of Registered Professional Archaeologists (RPA) in a manner consistent with the New York Archaeological Council (NYAC) *Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State* (the *NYAC Standards*) (NYAC, 1994). Consistent with the procedure/schedule established by NYSOPRHP/SHPO, a Phase IB archaeological survey report is currently being prepared and will be submitted at a later date. This report is being prepared in accordance with NYSOPRHP/SHPO's *Phase I Archaeological Report Format Requirements* (NYSOPRHP/SHPO, 2005).

As described above, the scope and methodology for the Phase IB Archaeological Survey were proposed in the Phase IA Archaeological Resources Survey and subsequent Updated Phase IB Archaeological Scope of Work/Research Design, which were submitted to NYSOPRHP/SHPO on February 20, 2019 and August 15, 2019, respectively. The scope of work was approved by NYSOPRHP/SHPO on September 9, 2019. The *SHPO Wind Guidelines* (NYSOPRHP/SHPO, 2006) suggest following the approach detailed in *Archaeological Investigations in the Upper Susquehanna Valley, New York State* (Funk, 1993) in the design of archaeological surveys for wind projects. The approach involves the identification of broad environmental zones with local habitat (or landscape class) subdivisions. The archaeological survey subsequently includes intensive sampling of selected areas within each of the identified landscape classes, rather than undertaking an even distribution of sampling throughout the APE for Direct Effects. Following this approach, EDR used Geographic Information System (GIS) software to identify landscape classes within the Facility Site and proposed an archaeological sampling strategy in the Phase IA Archaeological Survey.

The Facility's APE for Direct Effects is a conservative representation of those areas where soil disturbance may occur during construction of the Facility and is currently estimated at 249.6 acres. The anticipated APE for Direct Effects was calculated based on the following conservative soil disturbance assumptions:⁴

- **Wind Turbines:** A 200-foot radius around each of the proposed wind turbine sites will be cleared of vegetation, temporarily stripped of topsoil, and graded to create a workspace for turbine assembly and erection. This will result in a temporary soil disturbance of approximately 2.9 acres per turbine.
- **Access Roads:** The width of temporary soil disturbance will be 60 feet.
- **Collection Lines:** The width of temporary soil disturbance is anticipated to be 15 feet.
- **Meteorological Tower:** Up to 0.1 acre of temporary soil disturbance will be necessary for each meteorological tower.
- **Laydown/Staging Area:** The Facility will require one temporary laydown/staging area (including a potential concrete batch plant), the construction of which is anticipated to disturb up to 15.6 acres.
- **O&M Facility:** The Facility will require one O&M facility, the construction of which is anticipated to disturb up to 5 acres.
- **Collection Substation:** The Facility will require one collection substation, the construction of which is anticipated to disturb up to 5.5 acres.
- **POI Substation:** The Facility will require one POI substation, the construction of which is anticipated to disturb up to 15.5 acres.

The Phase IB archaeological survey fieldwork was conducted within the APE for Direct Effects between July and December 2019 in accordance with the Phase IA research design and Updated Phase IB scope of work previously reviewed and approved by NYSOPRHP/SHPO (EDR, 2019a; EDR, 2019b; and Ferguson, 2019b). The locations of areas selected for intensive archaeological sampling within the APE for Direct Effects were determined in the field using professional judgment under the direction of an RPA. The areas selected for shovel testing and pedestrian survey, in accordance with the research design, prioritized areas of elevated sensitivity for historic or pre-contact archaeological sites within, or adjacent to, proposed Facility components. The Phase IB archaeological survey performed in 2019 involved a pedestrian survey of 64 acres and shovel testing of 248.5 acres within and adjacent to the APE for Direct Effects (comprised of 4,018 shovel tests) for a total of 312.5 tested acres. This represents a 126% level of effort over the 249.6 acres of the APE for Direct Effects that were proposed to be tested.

⁴ These assumptions reflect the most up-to-date disturbance for the current layout and may differ slightly from what was presented in the original Phase IA survey.

The Phase IB archaeological survey recorded six pre-contact Native American archaeological sites and five isolates, and three historic-period archaeological sites and one isolate. The resources identified during the Phase IB survey are summarized in Table 20-1 below, and further described in the Phase IB Archaeological Survey Summary Report (EDR 2020, Appendix 20-C). All potentially significant archaeological sites have been avoided by revisions to the Facility layout. No additional avoidance measures or additional archaeological investigation are recommended for the three historic-period archaeological sites or for all of the pre-contact Native American and historic-period isolated finds.

Table 20-1. Summary of Archaeological Sites Identified During the Phase IB Survey

Site Name	Artifacts Collected / Observed	Comments/Recommendations
Pre-Contact Native American Sites		
HW-T13-001	Low to moderate density scatter of lithic debitage recovered from the ground surface 2 chert biface fragments 8 chert flakes	Site is unevaluated for S/NRHP eligibility. Facility layout revised to avoid impacts to this site.
HW-T30-001	Low to moderate density scatter of lithic debitage and tool fragments recovered from the ground surface 15 chert flakes	Site is unevaluated for S/NRHP eligibility. Facility layout revised to avoid impacts to this site.
HW-T30-002	Moderate density scatter of lithic debitage and tool fragments recovered from the ground surface 1 chert biface fragment 9 chert flakes	Site is unevaluated for S/NRHP eligibility. Facility layout revised to avoid impacts to this site.
HW-T30-003	Moderate density scatter of lithic debitage and tool fragments recovered from the ground surface 16 chert flakes	Site is unevaluated for S/NRHP eligibility. Facility layout revised to avoid impacts to this site.
HW-T30-004	Moderate density scatter of lithic debitage recovered from the ground surface and shovel test pits 4 chert flakes	Site is unevaluated for S/NRHP eligibility. Facility layout revised to avoid impacts to this site.

Site Name	Artifacts Collected / Observed	Comments/Recommendations
HW-MS14-CULVER RD-001	Extremely low-density scatter of lithic debitage fragments recovered from a shovel test pit 1 possible chert biface fragment 1 chert flake	EDR recommends this site is not eligible for the S/NRHP. Facility layout revised to avoid impacts to this site.
HW-ISOLATE-001	A single fragment of lithic debitage recovered from the ground surface during pedestrian survey	Single isolated find. No avoidance or additional archaeological investigation is recommended
HW-ISOLATE-003	A single fragment of lithic debitage recovered from the ground surface during pedestrian survey	Single isolated find. No avoidance or additional archaeological investigation is recommended
HW-ISOLATE-004	A single fragment of lithic debitage recovered from the ground surface during pedestrian survey	Single isolated find. No avoidance or additional archaeological investigation is recommended
HW-ISOLATE-006	A single piece of lithic debitage recovered from a shovel test pit	Single isolated find. No avoidance or additional archaeological investigation is recommended
HW-ISOLATE-007	A single piece of lithic debitage recovered from a shovel test pit	Single isolated find. No avoidance or additional archaeological investigation is recommended
Historic-Period Sites		
W. Orivill Site	Highly-disturbed historic-period subsurface scatter of artifacts from residential structures and outbuildings. Material collected from shovel testing: 12 fragments whiteware 2 fragments glazed redware 4 fragments stoneware 11 fragments vessel glass 2 nails Brick Coal	The W. Orivill Site is a map-documented structure on the 1875 map of the Towns of Albion and Barre (Beers, 1875); no extant building or foundation was present at the time of survey EDR recommends this site is not eligible for the S/NRHP. No avoidance or additional archaeological investigation is recommended

Site Name	Artifacts Collected / Observed	Comments/Recommendations
W. Parmalee Site	<p>Highly-disturbed historic-period subsurface scatter of artifacts from residential structure and outbuildings. Material noted in shovel testing.</p> <p>3 fragments whiteware 1 fragment vessel glass</p>	<p>The W. Parmalee Site is a map-documented structure on the 1875 map of the Towns of Albion and Barre (Beers, 1875). Structure has since been razed or modified and the site subsequently reoccupied. The location was a residence at the time of survey.</p> <p>EDR recommends this site is not eligible for the S/NRHP.</p> <p>No avoidance or additional archaeological investigation is recommended</p>
A. Raymond Site	<p>Highly-disturbed historic-period subsurface scatter of artifacts from residential structure and outbuildings. Material noted from shovel testing.</p> <p>1 fragment whiteware 4 fragments vessel glass</p>	<p>The A. Raymond Site is a map-documented structure on the 1875 map of the Towns of Albion and Barre (Beers, 1875); no extant building or foundation present at the time of survey</p> <p>EDR recommends this site is not eligible for the S/NRHP.</p> <p>No avoidance or additional archaeological investigation is recommended</p>
Shovel Test T14.70	One 1853 Seated Liberty dime	<p>Isolated find of a single 1853 coin.</p> <p>No avoidance or additional archaeological investigation is recommended</p>

(4) Phase II Study

As described above, the Applicant has avoided and/or is continuing to assess measures to avoid the locations of all archaeological sites (see Table 9-1 in Exhibit 9 for additional information). The Applicant will continue to consult with NYSOPRHP/SHPO to determine if additional site avoidance measures are warranted. Because no archaeological sites are going to be impacted, the archaeological sites remain unevaluated for S/NRHP-eligibility, and no Phase II site investigations are anticipated to be necessary.

It should be noted that Phase II investigations are not warranted for archaeological sites that do not meet the criteria for listing on the S/NRHP. Although unevaluated sites have not been formally investigated and evaluated

with regard to the S/NRHP, they are being treated conservatively as potentially eligible for the purposes of site avoidance. However, if necessary, Phase II studies would be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential eligibility for listing on the S/NRHP.

(5) Archaeological Material Recovered During Cultural Resources Studies

As outlined in Table 20-1, a total of 57 pre-contact Native American and 34 historic-period artifacts were collected during the Phase IB archaeological survey. These collected artifacts were cleaned, catalogued, inventoried and curated in a manner consistent with professional standards, such as the New York Archaeological Council's (NYAC) *Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State* (NYAC, 1994; the "NYAC Standards"). When the artifacts were collected in the field, archaeologists recorded standard provenience information and collected each artifact in sealed plastic bags per standard archaeological field practices. All recovered materials were washed, dried, and cataloged per standard archaeological laboratory procedures. Following processing and analysis, artifacts were curated in 4-mil polyethylene bags. Recovered artifacts were described to a level of detail sufficient to prepare an artifact inventory for inclusion in the Phase IB Archaeological Resources Survey report, which includes descriptions of each artifact's material, temporal or cultural/chronological associations (when possible to ascertain), style, and function. In addition, a selection of representative artifacts was photographed for inclusion in the report. Complete photographic documentation of all collected artifacts was not conducted. The Applicant understands that all artifacts recovered are the property of the owner of the land from which the artifacts were recovered. If appropriate, the consultant may identify local repositories (such as local historical societies or archaeological museums) for disposition of recovered artifacts, with permission of landowner.

(6) Unanticipated Discovery Plan

An Unanticipated Discovery Plan is included as Appendix 20-D of this Application. The Unanticipated Discovery Plan identifies the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during Facility construction, including a provision for work stoppage upon the discovery of possible archaeological or human remains. Evaluation of such discoveries, if warranted, will be conducted by an RPA.

(b) Historic Resources

Historically significant resources are defined herein to include buildings, districts, objects, structures, and/or sites that have been listed on the S/NRHP, as well as those properties that NYSOPRHP/SHPO has formally determined are eligible for listing on the S/NRHP.

(1) Historic Resources Survey

Area of Potential Effect Relative to Aboveground Historic Resources

Construction and operation of the Facility will not require the demolition or physical alteration of any buildings or other potential historic resources. Therefore, the Facility will have no direct impact on aboveground historic resources. The Facility's potential effect on a given historic property will be limited to a change in the property's visual or auditory setting resulting from the introduction of wind turbines or other Facility components. Therefore, the APE for effects on historic resources includes those areas where Facility components will be visible or audible and where there is potential for a significant visual or auditory effect.

Per the *SHPO Wind Guidelines*, the APE for Indirect Effects on historic properties for wind projects is defined as those areas within five miles of proposed turbines which are within the potential viewshed (based on topography) of a given project (NYSOPRHP/SHPO, 2006).

Phase IA Historic Resources Survey

The purpose of the Phase IA Historic Resources Survey was to define the Facility's APE for Indirect Effects, determine whether previously identified historic resources are located in the APE for Indirect Effects, propose a methodology to survey historic resources within the APE for Indirect Effects, and evaluate their eligibility for the S/NRHP. EDR prepared a Phase IA Historic Architectural Resources Survey (Appendix 20-E), which was submitted through the CRIS website on January 16, 2019. On February 5, 2019, NYSOPRHP/SHPO provided a response via the CRIS website concurring with the Phase IA report's conclusions and recommendations.

Historic Resources Survey

The Applicant conducted a historic resources survey for the Facility in July and August 2019 in accordance with the methodology described in the Phase IA Historic Resources Survey (EDR, 2019c; Appendix 20-E). The results of this survey are presented in the Historic Resources Survey Report (Appendix 20-F). The historic resources survey included review of previous similar studies within the APE, a summary of consultation with NYSOPRHP/SHPO, site visits to identify and evaluate potential historic resources within the Historic Resources Study Area, and supplemental research on specific historic properties (as necessary). All cultural resource studies

undertaken by EDR in association with the Facility have been conducted by professionals who satisfy the qualifications criteria per the Secretary of the Interior's Standards for Historic Preservation (36 CFR Part 61).

Historic resources survey fieldwork included systematically walking and/or driving public roads and rights-of-way to photograph and evaluate the S/NRHP eligibility of previously surveyed structures and properties within the APE for Indirect Effects. The historic resources survey fieldwork was conducted in July and August of 2019. When properties that appeared to satisfy S/NRHP-eligibility criteria were identified, the existing conditions of the property were documented by EDR's architectural historians using the ArcGIS Online application software to collect geospatial location data. Photographs of the building(s) (and associated property when necessary) and field notes describing the style, physical characteristics and materials (e.g., number of stories, plan, external siding, roof, foundation, and sash), condition, physical integrity, and other noteworthy characteristics were recorded for each resource. EDR's evaluation of historic resources within the Historic Resources Study Area (the area within five miles of the Facility which is defined in the Historic Resources Survey Report as the appropriate study area for indirect [visual/auditory] effects on aboveground historic resources) focused on the physical condition and integrity (with respect to design, materials, feeling, and association) to assess the potential architectural significance of each resource.

All properties included in the historic resources survey were photographed and assessed from public rights-of-way. The condition and integrity of all resources were evaluated based solely on the visible exterior of the structures. No inspections or evaluations requiring access to the interior of buildings, or any portion of private property, were conducted as part of this assessment. In accordance with the *SHPO Wind Guidelines* and based on consultation with NYSOPRHP/SHPO, buildings that were not sufficiently old (i.e., are less than 50 years in age), that lacked architectural integrity, or have been evaluated by EDR's architectural historians as lacking historical or architectural significance were not included or documented during the survey.

Properties inventoried and evaluated as part of the historic resource survey included both previously and newly identified resources. A total of 522 resources were inventoried as part of the historic resources survey:

- 16 S/NRHP-listed properties, including four historic districts, are located within the APE: New York State Barge Canal Historic District (14NR06559), Bacon-Harding Farm (12NR06414), Orleans County Courthouse District (90NR02011), Mount Albion Cemetery (90NR02010), North Main & Bank Streets Historic District (94NR00745), United States Post Office at Albion (90NR02013), William V.N. Barlow House (90NR02012), Tousley-Church House (01NR01835), Gaines District #2 Cobblestone Schoolhouse (15NR00131), Benjamin Franklin Gates House (08NR05936), Skinner-Tinkham House

(02NR04919), Hillside Cemetery (13NR06427), Stevens-Sommerfeldt House (15NR00012), Holley Village Historic District (15NR00030), Butterfield Cobblestone House (09NR06021), and Millville Cemetery (07NR05716).

- A total of 254 properties are recommended by EDR to be S/NRHP-eligible.
- A total of 235 properties are recommended by EDR to be not S/NRHP-eligible.
- A total of 13 properties were found to be no longer extant.
- Two properties were not accessible or not visible from the public right-of-way, and therefore EDR did not make a recommendation concerning S/NRHP eligibility.
- Two properties were unable to be located due to a lack of information and were therefore not given S/NRHP eligibility recommendations.
- Three previously identified properties were determined to have duplicate USNs and are therefore not included in the survey results.

The complete results of the historic resources survey are listed in the Historic Resources Survey Report (Appendix 20-F). These results include updated recommendations of S/NRHP eligibility for previously identified historic resources, as well as recommendations of eligibility for newly surveyed properties. The locations and photographs of all resources surveyed are depicted on Figure 4 and Appendix C, respectively, of the Historic Resources Survey Report.

This Historic Resources Survey Report was submitted to NYSOPRHP/SHPO via the CRIS website on October 4, 2019. In addition to the documentation provided in this report, narrative descriptions and photographs for each historic property identified in the survey were entered into NYSOPRHP's on-line CRIS system for review by NYSOPRHP staff, along with a spreadsheet of all properties assessed as part of the survey.

On October 31, 2019, NYSOPRHP/SHPO provided a response (Bonafide, 2019) to the Historic Resources Survey Report. The response included a summary of the submitted report, as well as updated determinations of S/NRHP eligibility for the historic resources identified as part of the Historic Resources Survey Report. Of the 522 resources surveyed by EDR, NYSOPRHP/SHPO determined the following:

- Thirteen S/NRHP-listed properties, three S/NRHP-listed historic districts, and one National Historic Landmark Historic District were determined to have no change in status
- 176 properties were determined to be eligible for listing in the S/NRHP
- 303 properties were determined to be not eligible for listing in the S/NRHP
- 5 properties were assigned a status of "Undetermined"

- 16 properties were confirmed to be no longer extant
- Three properties with duplicate USNs were not evaluated

Regarding the potential impact to historic resources within the APE for Indirect Effects, NYSOPRHP/SHPO noted:

The next phase of the Section 14.09 review process is to determine whether the undertaking might have an impact, beneficial or adverse, on any of the identified resources...The proposed undertaking will install 33 new wind turbines into the landscape that surrounds and intervenes amongst the identified individual historic resources, districts and a National Historic Landmark. The turbines are stated to reach a maximum height of 676-feet from ground to blade tip (at full vertical extension), some of the tallest such structures in New York to date. This is the equivalent height of a 65-story building. These are massive industrial kinetic structures of unprecedented height that are being inserted into a largely rural agrarian landscape. It is the opinion of OPRHP that the construction of these turbines will have a significant *adverse impact* on the surrounding rural setting associated with the identified historic resources.

Our office believes that large alternative energy projects, such the Heritage Wind project, offer no feasible or prudent options that might avoid or minimize visual impacts associated with their scale and industrial character. Thus, we recommend that an appropriate mitigation package relating to Historic Preservation impacts be developed as part of the ongoing Section 14.09 consultation process. We recommend that the applicant actively seek input on historic preservation related mitigation proposals from a broad spectrum of history-based organizations in the impacted communities. Once a full list of projects is developed an appropriate mitigation funding plan should be developed. The plan should establish specific preservation/history projects and/or funding intended to offset what this office believes will be significant visual impacts associated with this undertaking. Once a mitigation plan is developed and agreed upon, it would then be memorialized in a Letter of Resolution as required by Section 14.09 and its implementing regulations (Bonafide, 2019).

(2) Historic Resources Impacts

Construction of the Facility will not require the demolition or physical alteration of any buildings or other potential historic resources. No direct physical impacts to historic architectural resources will occur because of the Facility, and no further historic resource surveys are recommended for the Facility. The Facility's potential effect on a given historic property is limited to a change in the property's visual or auditory setting resulting from the introduction of wind turbines and other Facility components.

As it pertains to historic properties, the National Park Service Bulletin Number 15 *How to Apply the National Register of Historic Places Criteria for Evaluation* defines *setting* as "the physical environment of a historic property." Setting is one of seven aspects of a property's *integrity*, which refers to the "ability of a property to convey its significance" (NPS, 1990:44-45). The other aspects of integrity include location, design, materials, workmanship, feeling, and association (NPS, 1990). The potential effect resulting from the introduction of wind turbines into the visual setting for any historic or architecturally significant property is dependent on a number of factors including distance, visual dominance, orientation of views, viewer context and activity, and the types and

density of modern features in the existing view (such as buildings, residences, overhead electrical transmission lines, cellular towers, billboards, highways, and silos).

The federal regulations entitled “Protection of Historic Resources” (36 CFR Part 800) include in Section 800.5(2) a discussion of potential adverse effects on historic resources. The following types of effects apply to the Facility:

Adverse effects on historic properties include but are not limited to: [items i-iii do not apply]; (iv) Change of the character of the property’s use or of physical features within the property’s setting that contribute to its historic significance; (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property’s significant historic features; [items vi-vii do not apply]” (CFR, 2004b).

The implementing regulations for New York State Parks, Recreation and Historic Preservation Law, Section 14.09 (9 NYCRR § 428.7) state:

In determining whether an undertaking will have an adverse impact on eligible or register property, the commissioner shall consider whether the undertaking is likely to cause:

1. destruction or alteration of all or part of the property;
2. isolation or alteration of the property’s environment;
3. introduction of visual, audible or atmospheric elements which are out of character with the property or alter its setting;
4. neglect of the property resulting in its deterioration or destruction.

According to the New York State Department of Environmental Conservation’s (NYSDEC) Visual Policy,

Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Significant aesthetic effects are those that may cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place...In this regard, staff must consider ‘magnitude’ and ‘importance’ in determining the significance of a visual impact. Magnitude assesses factors such as severity, size or extent of an action. Importance relates to how many people are going to be affected by the project; the geographic scope of the project; and any additional social or environmental consequences if the project proceeds (or doesn’t proceed). Each impact of an action must be judged by these two characteristics.” (NYSDEC, 2019:9)

Under this approach, the mere fact that the Facility may be visible from a particular historic resource does not, in itself, constitute a significant impact to that resource. Instead, the significance and magnitude of the impact as defined in the NYSDEC Visual Policy must be considered. A thorough analysis of potential visual impacts from the Facility is contained in Exhibit 24 and the *Visual Impact Assessment* for the Facility (Appendix 24-A).

The Applicant anticipates that ongoing consultation with NYSOPRHP/SHPO (and other applicable consulting parties) regarding potential visual impacts of the Facility on aboveground historic resources will continue through the Article 10 process and that NYSOPRHP/SHPO’s evaluation regarding potential effects and/or identification of any required mitigation will be determined as part of the U.S. Army Corps of Engineers review of the Facility under

Section 106 of the National Historic Preservation Act. Section 106 review will be triggered by submission of a Joint Application for Permit, which is anticipated to occur following the submission of the Article 10 Application.

Operational Noise/Vibration Impacts

The assessment of potential noise-related impacts from the Facility is discussed in detail in Exhibit 19. Potential operational sound/vibration impacts to S/NRHP-eligible historic properties within the Historic Resources Study Area and the APE for Indirect Effects are discussed below. Construction-related sound/vibration impacts are not considered because they will be short-term and temporary in nature.

As previously noted, in assessing adverse impacts to S/NRHP-eligible cultural resources under 9 NYCRR § 428.7 the State “shall consider whether the undertaking is likely to cause . . . *introduction of . . . audible or atmospheric elements which are out of character with the property or alter its setting.*” [emphasis added]. In addition, the federal regulations entitled “Protection of Historic Resources” identify as an adverse effect, the “[i]ntroduction . . . of . . . *atmospheric or audible elements that diminish the integrity of the property's significant historic features.* . . .” [emphasis added].

The potential effect resulting from the introduction of the sound of wind turbines into the setting for any historic or architecturally significant property is dependent on a number of factors including the proximal lineal distance of a historic property to a turbine, the perceived disruption to appreciation and enjoyment of the characteristics that contribute to the historic significance of the property, and the presence of existing noise levels from modern technology and machinery that is audible (such as highway traffic, industrial or agricultural activities, airports, railyards, or other sources of noise).

Potential noise and vibration impacts would be greatest at properties in closer proximity to turbines (i.e., properties closer than 0.5 mile⁵). One property listed on the S/NRHP is located within 0.5 mile of the nearest turbine; six properties determined by NYSOPRHP/SHPO to be S/NRHP-eligible are also located within 0.5 mile of the nearest turbine. The Applicant has sited turbines and related infrastructure in undeveloped areas away from population centers, such as villages and town centers, in order to minimize potential auditory impacts to area residences and historic properties, which are clustered in developed areas within the Historic Resources Study Area. Moreover, because existing ambient noise levels are expected to be slightly higher in these more developed areas (due to

⁵ The 2007 National Research Council of the National Academy of Sciences report *Environmental Impacts of Wind-Energy Projects* noted that “Noise produced by wind turbines generally is not a major concern for humans beyond a half mile or so because various measures to reduce noise have been implemented in the design of modern turbines. The mechanical sound emanating from rotating machinery can be controlled by sound-isolating techniques” (NAS, 2008). Therefore, any potential noise impacts to historic properties are anticipated to be greatest within 0.5 mile of proposed wind turbines.

increased vehicle traffic and other noises associated with greater population density), any potential noise impacts to historic properties from the proposed turbines and substations would not be significant.

Based on the above analysis, and that contained in Exhibit 19 of this Application, potential noise and/or vibrations caused by the operation of the proposed Facility are not expected to significantly alter the character or setting of S/NRHP-listed and eligible historic properties within the Historic Resources Study Area. Vibrations are not anticipated to impact any S/NRHP-listed or eligible properties and noise-related impacts are anticipated to be relatively minimal, due in large part to the Facility's siting in remote rural areas away from areas of higher historic and modern population density. Therefore, there will be no permanent noise-related adverse impacts to S/NRHP-listed or eligible properties.

The Applicant anticipates that ongoing consultation with NYSOPRHP/SHPO (and other applicable consulting parties) regarding potential auditory impacts of the Facility on above ground historic resources will continue through the Article 10 process and that NYSOPRHP/SHPO's evaluation regarding potential effects and/or identification of any required mitigation will be determined as part of the U.S. Army Corps of Engineers review of the Facility under Section 106 of the National Historic Preservation Act. Section 106 review will be triggered by submission of a Joint Application for Permit, which is anticipated to occur following the submission of the Article 10 Application.

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