

**Management Summary for:**  
**Glacier Ridge Wind Farm**  
**Glacier Ridge Wind Farm, LLC**  
**Barnes County, North Dakota**

**Class III Cultural Resource Inventory**  
**for Architectural Resources**



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**PREPARED FOR**

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## MANAGEMENT SUMMARY

Glacier Ridge Wind Farm, LLC (Glacier Ridge), a subsidiary of Renewable Energy Systems Americas Inc. (RES Americas), proposes to construct the Glacier Ridge Wind Farm (the Project), located in a primarily rural agricultural region approximately 5 miles (mi) northeast of Valley City in northeastern Barnes County, North Dakota (Appendix A, Figure 1). The proposed Project will have a nameplate capacity of approximately 300 megawatts (MW), consisting of up to 87 wind turbines using Vestas 3.45 MW wind turbine generators. Additional facilities will include service roads, electrical collection systems and cabling, a collection substation, an operation and maintenance (O&M) building, and a temporary meteorological tower. A proposed interconnect has not yet been determined for the Project.

The Project will require a Certificate of Site Compatibility from the North Dakota Public Service Commission (PSC) (Case No.: PU-16-539); therefore, the Project is subject to review by the State Historical Society of North Dakota (SHSND) under North Dakota Century Code (NDCC) **49-22-09 – Factors to be considered in evaluating application and designations of sites, corridors, and routes.**

The purpose of this investigation is to provide the SHSND with sufficient information to assess the impact of the Project on the historic built environment. The research design was created with three goals. The first was to locate previously recorded architectural resources within the visual area of potential effect (APE) to determine if they were still extant, and to update the documentation of these resources to reflect their current condition. The second was to identify above ground resources within the visual APE that were style-dated in the field to be 50 years old or older and retained sufficient integrity and significance to be recorded in the North Dakota Cultural Resources Survey. Finally, Tetra Tech used the information gathered during the file search and field survey to assess the potential effect of the Project on all the NRHP-eligible resources. For the purposes of this investigation, the SHSND indicated that the visual APE is a 2-mile buffer located around the proposed turbine layout. For this investigation, the proposed turbine layout is dated June 29, 2016.

Tetra Tech's literature review identified 29 previous Class III Cultural Resource Inventories from 1990 to the present that have been conducted in and immediately adjacent to the visual APE. However, these investigations focused on the identification and evaluation of the archaeological resources, or in a few occasions, direct effects to architectural resources. The only assessment of visual effects to an architectural resource was noted in the Class III Cultural Resource Inventory for the Ashtabula III Wind Energy Center located west of the visual APE (Burns 2010). Four previously recorded resources are located in the visual APE. These include 32BA00207 (Minnie Lake Church [razed]), 32BA00208 (Salem Church), 32BA00281 (Camp Arnold Graves), and 32BAx0089 (Scandinavian Methodist Church [razed] and Minnie Lake Cemetery). All resources are unevaluated for listing in National Register of Historic Places (NRHP). However, the Camp Arnold Graves does have a consultant recommendation from 2015 as eligible for listing in the NRHP under Criteria A and B (Mortensen 2015).

Tetra Tech's field survey included a visual reconnaissance of 112 resources including 108 identified through a desktop analysis that had the potential to be 50 years old or older, and the 4 previously recorded resources. These resources were reviewed and photographed from the public road rights-of-way (ROW), and on occasion, from within the property. Based on a preliminary field assessment, 72 of

the 112 resources retained some level of integrity and significance allowing for possible formal evaluation on North Dakota Cultural Resources Survey Architectural or Historical Archaeological Site forms. Upon further examination of these 72 resources, only 8 of these resources merited formal evaluation on North Dakota Cultural Resources Survey Architectural or Historical Archaeological Site forms. Evaluation of these eight resources (F10, F30, F31, F48, F131, F191, F250, and F567) resulted in the determination that Feature 2 at F30; Feature 2 at F31; Features 2 through 7 at F131; and Feature 2 at F191 are recommended eligible for listing in the NRHP. Tetra Tech also re-evaluated the Camp Arnold Graves (32BA00281) and concurred with the previous eligibility determination.

Feature 2 at F30 and Feature 2 at F31 are recommended eligible for listing in the NRHP under Criterion C, as well-preserved examples of Adolph Casmir Ochs (A.C.O.)-constructed silos common during the early to mid-20th century. Although these silos were common in Minnesota from the 1910s to the 1940s, examples of this type are not prevalent in Barnes County, as many historic-age silos were removed from farmsteads and replaced by modern steel corrugated grain bins. These features do not derive their significance from their location on well-preserved farmsteads; rather, the farmsteads have lost their integrity, and the silos are significant for their property type. Features 2 through 7 at F131 are recommended eligible for listing in the NRHP as components to a historic site or landscape under Criterion C, as well preserved examples of a barn, storage buildings, and a chicken coop constructed between 1930 and 1945 that retain a high degree of integrity. Feature 2 at F191 is recommended eligible for listing in the NRHP under Criterion A, for its association with trends in the development of barns in ranches throughout the state of North Dakota, and under Criterion C, as an example of a multi-level barn with gable roof types retaining a high level of integrity. Although this barn style was common throughout North Dakota, there are now few multi-level barns with gable roof types that retain a high level of integrity in Barnes County.

The individual features at F30, F31, F131, and F191, and the Camp Arnold Graves comprise the NRHP recommended eligible features and site for this survey. The resources (i.e., farmsteads F30, F31, F131, and F191) at which the features are located were assessed for effects from the proposed Project. As the Project has been designed to avoid all direct effects on the properties, only indirect visual effects were considered. Since resources F30, F31, F131, and F191 are located on private property, the SHSND has indicated that Project visual effects on resources should be based on the view from the primary access point, usually the intersection of the driveway and the public road ROW. The Camp Arnolds Graves is a publically accessible cemetery; therefore, Project visual effects were based on the view looking toward and from the cemetery in order to analyze the impacts for viewers looking toward and from the graves. Based on the views from primary access point for resources F30, F31, F131, F191, and the Camp Arnold Graves, the proposed turbines would likely be visible in the background.

The Camp Arnold Graves was recommended eligible for listing in the NRHP under Criteria A and B. Proposed turbines 1.1 miles northwest of the cemetery would be visible from the cemetery, and when looking toward the cemetery from the south. However, the cemetery does not derive its significance from the setting, rather, it is significant for its association with an event and people in history, and this would not be diminished with the introduction of modern features.

Feature 2 at F30 is recommended eligible for listing in the NRHP under Criterion C. As such, the introduction of proposed turbines approximately 0.6 miles south (to the nearest proposed turbine) would

introduce a new the visual element when viewing the silo, but it would not adversely affect the historic significance of the silo. Since the setting is not the element that makes the silo eligible for the NRHP, a reduction in the value of the setting does not diminish the silo's importance as a property type.

Feature 2 at F31 is recommended eligible for listing in the NRHP under Criterion C. As such, the introduction of proposed turbines approximately 0.5 miles northeast (to the nearest proposed turbine) would introduce a new the visual element when viewing the silo, but it would not adversely affect the historic significance of the silo. Since the setting is not the element that makes the silo eligible for the NRHP, a reduction in the value of the setting does not diminish the silo's importance as a property type.

Features 2 through 7 at F131 are recommended eligible for listing in the NRHP under Criterion C. A mature shelter belt surrounds the farmstead on the north, east, and west sides of the farmstead, providing a visual barrier from elements beyond the farmstead. As such, the introduction of the proposed turbines approximately 0.49 miles southwest (to the nearest purposed turbine) would not introduce a new visual element when viewing Features 2 through 7, because the turbines would not be visible through the shelter belt. Due to the immediate setting of the Features 2 through 7 within a mature shelter belt – a setting that contributes to these features' eligibility for listing in the NRHP, a reduction in the value of the distant setting does not diminish the importance of these features as a property type.

Feature 2 at F191 is recommended eligible for listing in the NRHP under Criteria A and C. As such, the introduction of proposed turbines approximately 1.3 miles southeast (to the nearest proposed turbine) would introduce a new the visual element when viewing the barn, but it would not adversely affect the historic significance of the barn. Since the setting is not the element that makes the barn eligible for the NRHP, a reduction in the value of the setting does not diminish the barn's importance as a property type.

The eligibility of the individual features at Feature 2 at F30; Feature 2 at F31; Features 2 through 7 at F131; and Feature 2 at F191 is based on being well-preserved examples of their property type and the proposed introduction of turbines within their setting will not diminish their ability to convey their significant character defining elements. Similarly, the proposed introduction of turbines within the viewshed of the Camp Arnold Graves will not diminish the site's ability to convey its association with events and people important in history. Therefore, Tetra Tech recommends a finding of No Adverse Effect for these Properties.

If the turbine layout changes, which results in an expansion of the visual APE, then Tetra Tech recommends that these expanded areas be reviewed for the presence of potential historic resources. If present, Tetra Tech recommends an addendum Class III Cultural Resources Inventory for Architectural Resources be conducted.