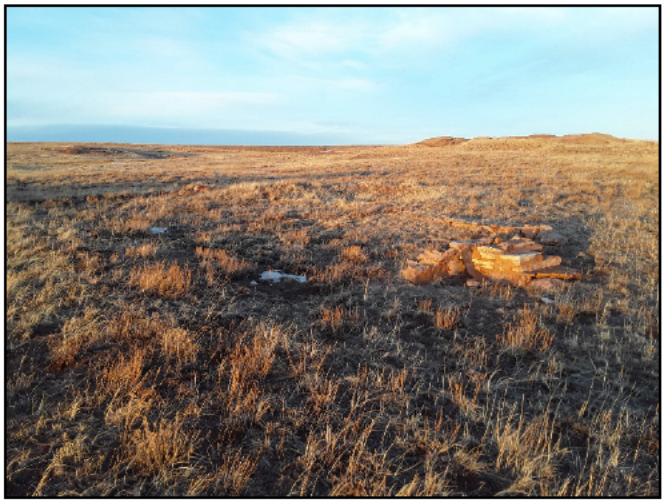
Cultural Resources Evaluation Technical Report

Rail Tie Wind Project
Albany County, Wyoming



Prepared for:

ConnectGen Albany County LLC

April 2020

Disclosure of site locations prohibited (43 CFR 7.18) Information contained in this report is confidential and access to this information is restricted by the National Historic Preservation Act of 1966 (as amended), the Archaeological Resources Protection Act of 1979 (as amended).

TETRA TECH

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1 INTRODUCTION

At the request of ConnectGen Albany County LLC (ConnectGen), Tetra Tech, Inc. (Tetra Tech) has prepared this Cultural Resources Evaluation for the Rail Tie Wind Project (Project). This document is intended to provide reviewing regulatory agencies with information on potential impacts to cultural resources resulting from development of the Project. This report provides information on the range of cultural resources and regulatory guidelines that the Project may encounter.

1.1 Project Background

The Project is located in southeastern Albany County, Wyoming, and encompasses approximately 26,000 acres of ranchland on private and state lands near Tie Siding, Wyoming (Project Area; Figure 1). The Project would include up to 149 wind turbine generators, each ranging between 3.0 to 6.0 megawatts (MW) in size, with a combined maximum generating capacity rating of 504 MW. The Project proposes to interconnect to the existing transmission system of the WAPA via the Ault-Craig 345-kilovolt (kV) transmission line, which runs through the Project Area.

For construction planning and site optimization, the Project consists of two separate phases, each approximately 252 MW. Construction of the Project is expected to begin in 2021, and both phases could be fully operational by the end of 2022. As is common with large wind projects, the Project may require 2 years to fully construct. If additional time is required to facilitate construction, it is anticipated that the first 252 MW phase would be completed and fully operational by the end of 2022, and second phase operational in 2023.

In order to inform the location where more detailed study and data collection efforts may be necessary for the Project, ConnectGen has developed a spatial corridor (Siting Corridor) around all potential Project features (turbines, access roads, collector lines, substation, etc.) along with an appropriate buffer to allow for siting flexibility and to capture areas where potential temporary or permanent disturbance may occur (Figure 1).

1.2 Research Area and Visual Analysis Area

For the Cultural Resources Evaluation, the Research Area for assessment of impacts to archaeological resources that may be directly or indirectly impacted by the Project is defined as follows:

- The Research Area includes the 26,000-acre Project Area and a 1-mile buffer around it
- The Siting Corridor within the Project Area that includes all potential Project features with an appropriate buffer to capture areas where potential ground disturbance may occur.

The Visual Analysis Area for the assessment of potential indirect visual impacts to National Register of Historic Places (NRHP)-listed properties is a 10-mile buffer around the Project Area (i.e., limit of visual preeminence; see Section 3.1.1).

Should additional archeological sites be identified, or revisions to the Research Area and/or Visual Analysis Area be made at a later date through coordination with WAPA or other agencies or stakeholders, an addendum to the Cultural Resources Evaluation Technical Report may be developed.

2 REGULATORY FRAMEWORK

This section outlines the regulatory compliance issues and related permits and approvals that may be required for development of the Project. This assessment is preliminary and may change based on the final Project design and the results of resource surveys.

2.1 Federal Regulations

2.1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires the disclosure of potential environmental impacts for projects with a federal action, through either a Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement (EIS), as well as a process of public and agency review and comment.

WAPA's action on the interconnection request is considered a major federal action subject to NEPA, in accordance with Council on Environmental Quality (CEQ) regulations for implementing NEPA, and DOE NEPA Implementing Procedures (40 CFR Parts 1500−1508, 10 CFR Part 1021). This technical report provides information to assist WAPA in analysis of the potential effects to the natural and human environments associated with approving or denying the interconnection request.

2.1.2 National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act (NHPA; 16 United States Code [USC] § 40 et seq.) requires federal agencies to take into account the effects of their proposed actions on properties eligible for inclusion in the NRHP. In practice, any project which requires review under NEPA will require concurrent review under Section 106. This process involves surveys for historic, archaeological and paleontological resources, and consultations with federal agencies, the State Historic Preservation Office (SHPO), and interested Native American tribes to identify potential adverse impacts to archaeological, architectural, and historic resources that are listed on or potentially eligible for listing on the NRHP.

2.2 State Regulations

2.2.1 Wyoming Industrial Development Information and Siting Act

The Wyoming Department of Environmental Quality (WDEQ) Industrial Siting Division (ISD) administers the Wyoming Industrial Development Information and Siting Act (Act; Wyoming Statute § 35-12-101:119) and the Rules and Regulations of the Industrial Siting Council (ISC), Chapters 1 and 2. The Act is designed to protect Wyoming's environmental, social and economic fabric of communities from unregulated large-scale industrial development. By consolidating the review of 19 independent state agencies into one comprehensive permitting process, the Act offers a thorough analysis of the development's impacts to the public and affected agencies.

Pursuant to the Act, all wind energy projects consisting of 30 or more turbines (in all planned phases of the installation) and/or exceeding the statutory threshold construction cost amount of $222.8 million are subject to review and approval by the ISC. For facilities permitted under Wyoming Statute (W.S.) § 35-12-102(a)(vii)(E) and (F), a site reclamation and decommissioning plan and a financial assurance plan are required pursuant to W.S. § 35-12-105(d) and (e).

As part of the review and approval process, the ISC requires submittal of an application outlining the evaluation of potential project impacts and mitigation measures related to environmental, social and economic resources.

2.2.2 Wyoming Antiquities Act

The Wyoming Antiquities Act prohibits removal from State Land of any part of such prehistoric ruins or deposit as described in § 36-1-114 except with the consent of the Board. The Act declares that any person violating any provisions of § 36-1-114 or § 36-1-115 shall be guilty of a misdemeanor and shall be fined not less than $25 or more than $100 or imprisoned in the county jail not more than six months, or by both fine and imprisonment, and shall forfeit to the state all articles and materials discovered by or through such violations. No person holding a permit or lease on State Lands may sublease or subcontract archeological or paleontological removal without prior written approval of the State Board of Land Commissioners (Board), as administered by the Wyoming Office of State Lands and Investments (OSLI). Two types of permits are issued by the OSLI: a survey and limited testing permit, and a permit to conduct archaeological data recovery or extensive testing.

2.3 Local Regulations

2.3.1 Wind Energy Conversion System Permit

The Albany County Wind Energy Siting Regulations require all facilities with an aggregate generating capacity greater than 25 kW to apply for a Wind Energy Conversion System (WECS) Use Permit (Albany County 2017). The application process involves the review and recommendation of the Planning and Zoning Commission and the approval of the Board of County Commissioners, as well as community input during a defined and requisite public hearing and

comment period (§§ 18-5-502(a)). The WECS permit applicants must certify that the Project will comply with all applicable state and county zoning and land use regulations. As part of the application, potential impacts to resources such as economic, air quality, water quality, general nuisances, soil disturbance, wildlife, and cultural resources must be addressed.

3 METHODOLOGY

3.1 Desktop Review

A qualified professional archaeologist from Tetra Tech reviewed both confidential and publicly available information contained on websites, databases, maps, and scientific literature to identify cultural resources within the Research Area and Visual Analysis Area, including:

- Wyoming SHPO WyoTrack database, a web application that provides access to the Wyoming Cultural Records Office geographic information system (GIS) and non-spatial data and allows tracking of projects through the NHPA Section 106 process (Wyoming SHPO 2019).
- Colorado Historic Society Office of Archaeology and Historical Preservation (OAHP) Colorado Cultural Resource On-line Database (Compass) (OAHP 2020).
- Bureau of Land Management (BLM) General Land Office (GLO) Records website (BLM 2019).
- National Park Service list of NRHP properties (NPS 2019a, 2019b).
- Available data and analyses completed as part of the 2012 Draft EIS for the Hermosa West Wind Energy Project (WAPA 2012).

Data from these sources provide the basis for an assessment of the range of cultural resources and issues that the Project may encounter. The cultural resources data presented herein are based on a review of available desktop sources and prior completed field surveys in the Project Area. Future field surveys, as well as further coordination and consultation with agencies, tribes, stakeholders, and local experts, may reveal additional information. It is important to note that per instructions from WAPA, this report does not address Native American interests or TCPs as WAPA will engage directly with the Tribes in that regard.

3.1.1 Visual Impacts Assessment

Visual impacts to inventoried cultural resources in the Project vicinity that have been listed on the NRHP were assessed through a generalized consideration of the BLM's visual contrast rating protocol (BLM 1986). NRHP-listed properties were analyzed using the "limit of visual preeminence" for the Project, based on guidance outlined in Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes (Sullivan et al. 2012). The limit of visual preeminence is defined as "the distance at which a facility becomes a major focus of visual attention, tending to attract and hold visual attention because of strong contrast in form, line, texture, color, or motion" (Sullivan et al. 2012). In this guidance, a 10-mile buffer is suggested as a reasonable but general guideline for visual impact assessments for moderate-sized utility-scale

wind energy facilities in regions of the western U.S. with unobstructed views of the facilities (Sullivan et al. 2012).

The visual impact assessment was completed for NRHP-listed properties within the Visual Analysis Area, as well as all cultural resources identified by WyoTrack and Compass as NRHP-listed, NRHP-eligible, or recommended for further study (unevaluated) within the Research Area (Wyoming SHPO 2019; OAHP 2020). The methodology for the viewshed analysis and impact assessment is discussed in Tetra Tech's Visual Impact Analysis (in preparation).

3.2 Definition of Cultural Resources

Cultural resources include archaeological sites, historic standing structures, objects, districts, traditional cultural properties (TCPs) and other properties that illustrate important aspects of prehistory or history or have important and long-standing cultural associations with established communities or social groups. Significant archaeological and architectural properties are usually defined by eligibility criteria for listing in the NRHP, and in consultation with the SHPO. Eligibility significance criteria are codified in the Code of Federal Regulations (36 CFR 60.4) and are specified below:

> *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> *A. that are associated with events that have made a significant contribution to the broad patterns of our history; or*
> *B. that are associated with the lives of persons significant in the past; or*
> *C. that embody the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic value, or that represent a significant or distinguishable entity whose components may lack individual distinction; or*
> *D. that have yielded, or are likely to yield, information important in prehistory or history.*

Eligible sites are those that display one or more of the criteria for eligibility. In addition, sites evaluated as eligible must retain physical integrity. Eroded or otherwise heavily disturbed sites are generally not considered eligible. Sites evaluated as needing data are those sites that may conform to the eligibility criteria but require further work to determine NRHP status. In most cases, these sites are prehistoric or historic sites with suspected buried materials or historic sites where additional research is necessary to determine historical importance. Sites that are evaluated as not eligible do not meet any of the eligibility criteria and/or have lost physical integrity.

4 EXISTING ENVIRONMENT

This section describes the existing cultural environment within the Research Area, including definitions of various types of cultural resources and an overview of regional prehistory and history.

4.1 Overview of Regional Cultural History

The following brief overview provides a regional context for cultural developments in the general Project Area vicinity.

4.1.1 Prehistory

4.1.1.1 Paleoindian Period

The Paleoindian period (12,000 to 8500 B.P.) is the earliest known period of human occupation in Wyoming (Thompson and Pastor 1995). Paleoindian groups apparently colonized North America at the close of the last glaciations. These groups are typically associated with subsistence strategies that placed emphasis on big game hunting. The late Pleistocene period exhibited both cooler and wetter climatic conditions than those of the present day, which supported a more diverse environment of savanna and grasslands in the Wyoming area. Animal resources available at this time included camel, horse, mammoth, and a now-extinct bison species.

Paleoindian bands were highly mobile hunter and gatherers, and their food economy was based on the availability of big game that ranged across the landscape (Simms 2008:133). Archaeological evidence for the Paleoindian period is closely tied to the associated hunting tools utilized throughout the tradition, namely the distinctive fluted spear point variations. In Wyoming, the Paleoindian period is subdivided into several traditions, or sub-periods based on changes in distinctive spear point technology and associated with direct or relative dating of sites (Frison 1991: 22–32). These sub-periods include, but are not limited to Clovis (12,000 to 11,000 B.P.), Folsom (11,000 to 10,000 B.P.), and Plano (10,500 to 10,000 B.P.) Much of the information about the Paleoindian period in the region comes from data collected during excavation at kill sites and game processing sites.

4.1.1.2 Archaic Period

The Archaic period (8500 to 1800 B.P.) is marked by an apparent change in material culture and subsistence practices from the preceding Paleoindian period. During this period, the climate became progressively warmer and drier as glacial conditions completely dissipated. Most megafauna species became extinct at the beginning of this period and bison diminished in size. In response to changing climatic and ecological conditions native groups switched to an emphasis on smaller game animals and plant resources. This shift is most obvious archaeologically due to the vast increase in the number of ground stone artifacts compared to earlier periods (Thompson and Pastor 1995).

The Archaic period in southwestern Wyoming is typically divided into Early and Late stages. The Early Archaic is further subdivided into Great Divide and Opal phases, while the Late Archaic is subdivided into the Pine Spring and Deadman Wash phases. This chronology differs from the Northwestern Plains chronology, wherein a separate Middle Archaic taxon is defined almost exclusively based on the stemmed, indented base projectile points associated with the McKean Complex. Based on the presence of stemmed, indented base projectile points within the current study area, associations with McKean Complex groups and/or Great Basin groups seem likely. Thus, the following narrative acknowledges both the southwestern Wyoming chronology proposed by Metcalf (1987; Thompson and Pastor 1995) and that of the Northwestern Plains presented by Frison (1991).

Projectile points of the Early Archaic tend to be large corner- and side-notched forms similar to those found in the Great Plains. However, versions of the Elko series from the Great Basin are also found in this region of Wyoming. Compared to the earlier Paleoindian period and the following periods, bison hunting appears to have formed a relatively minor portion of the subsistence base. Hunting activities seem to have emphasized small- and medium- sized game. In the Great Plains region, the Early Archaic dates from approximately 8000 to 5000 B.P. and is marked by the appearance of basin houses, a phenomenon that is very rare in earlier Paleoindian occupations (Frison 1991). The southwestern Wyoming Early Archaic is divided into the Great Divide phase (8,500 to 6,500 B.P.) and Opal phase (6,500 to 4,300 B.P.).

The Great Divide Phase is defined more by its lack of diagnostic Paleoindian and later Archaic artifacts than any intrinsic characteristics. Projectile points of this phase consist of a variety of side-notched and stemmed varieties. Jackrabbit, cottontail, and ground squirrel dominate the faunal assemblages of these sites. The only large mammal consistently found at these sites is mule deer. It also seems that seeds formed only a minor component of the human diet (Thompson and Pastor 1995). No identified structures have been recorded at Great Divide sites, but since evidence of habitation structures has been found in both the preceding Paleoindian period and the subsequent Opal phase, they most likely were constructed during this phase as well.

The Opal Phase is marked by the appearance in the archaeological record of habitation structures and an increase in the occurrence of slab-lined hearths and storage pits. The lithic tools found in sites attributed to this phase include large corner- and side-notched projectile points and large side-notched knives. Small game animals, such as rabbits and squirrels, dominate the faunal assemblages at Opal phase sites with rare occurrences of large game including deer and antelope. Evidence of bison hunting is very rare in this phase (Thompson and Pastor 1995).

The transition to the Late Archaic is marked by a shift to the exploitation of larger game animals. The climate also changed from the earlier Altithermal conditions to conditions more like those of today. The percentage of bison found in Late Archaic faunal assemblages is higher than in the preceding Early Archaic, probably indicating better grazing conditions. Projectile point styles during this period include a greater percentage of large corner-notched dart points. The corner-notched points are often called Elko/Pelican Lake points due to morphological similarities with the

points found in both the Great Basin and Great Plains regions, respectively. The southwestern Wyoming Late Archaic is divided into the Pine Spring phase (4300 to 2800 B.P.) and Deadman Wash phase (2,800 to 1,800 B.P.) (Thompson and Pastor 1995). In the Northwestern Plains chronology, the Late Archaic period goes from 3,000 to 1,500 BP and is marked by the Pelican Lake, Yonkee, and Besant projectile point styles (Frison 1991).

The climate during the latter half of the Neoglacial episode experienced a return to Pleistocene-like conditions except with modern flora and fauna. The winter months were wetter and the summers were cooler (Simms 2008). The presence of ground stone and a variety of stone tools persisted into the Late Archaic, while projectile point morphology tended towards large, side- and corner-notched points, many of which had serrated edges (Gilmore et al. 1999:95). Hunting was still the primary means of subsistence, but strategies changed to incorporate buffalo jumps and game drives and a heavier reliance on smaller game and fish to support the needs of increasing populations.

The Pine Spring phase marks the transition from the Early to the Late Archaic and is identified by the appearance of the previously mentioned stemmed, indented base projectile points and medium-sized corner-notched points. No major changes in subsistence patterns are visible from the Early Archaic, but larger mammals such as deer, elk, antelope, mountain sheep and bison were exploited in greater quantities with a corresponding decline in the use of smaller game. There are indications of a possible McKean presence in southwestern Wyoming based on similarities in point types (Davis and Keyser 1999). However, these points also resemble Pinto/Gatecliff split-stem points from the Great Basin that are contemporaneous with the McKean complex of the Great Plains. This, combined with the presence of Elko-like points that also have their origin in the Great Basin, makes it difficult to conclusively determine distinct cultural affiliations for the region (Thompson and Pastor 1995).

The Deadman Wash Phase occurred during the height of neoglacial conditions, at which time the local climate was wetter than at present. Large game animals form an increasing proportion of the faunal assemblage at sites dating to this phase, but smaller game animals were also exploited. Plant (seed) remains are increasingly common in sites dating to this period and may indicate an increased emphasis on seed processing that would characterize the following Late Prehistoric period. The projectile points of this phase are triangular corner-notched types that resemble Pelican Lake points found further to the east (Thompson and Pastor 1995).

4.1.1.3 Late Prehistoric Period

The Late Prehistoric period (1,800 B.P. to 250 B.P.) is divided into the Uinta and Firehole phases. The Uinta phase covers the period from 2,000 B.P. to ~650 B.P. The following Firehole phase is short (650 to 250 B.P.) and ends with the introduction of European traders and trade goods into the region. The transition from the Archaic to the Late Prehistoric period is marked by the development of pottery and the introduction of the bow and arrow. This period also demonstrates a continuation of the increased exploitation of plant foods seen in the Deadman Wash phase and the use of structures. The projectile points of the Late Prehistoric are smaller than those of earlier

periods due to the technological transition from the atlatl/dart to the bow and arrow. The Uinta phase is dominated by Rose Spring points, which are replaced by side- and tri-notched points during the Firehole phase. The Rose Spring point is considered characteristic of the Fremont groups of Colorado and Utah, while the tri-notched points are thought to indicate the presence of Shoshonean groups. This period appears to mark the highest population of southwestern Wyoming seen at any time in prehistory (Thompson and Pastor 1995). In the Northwestern Plains the Late Prehistoric period is largely identical to Metcalf's definition (dating from 1,500 BP to 250 BP) (Metcalf 1987) but is not broken into phases. A number of bison jumps are dated to this period (Frison 1991).

The Uinta phase is the best-known taxon in the Wyoming Basin cultural sequence and is seen in a great number of sites found in a broad range of ecological zones. As previously mentioned, projectile point size is reduced from earlier periods due to the shift to archery. The ceramics found at these sites are generally crude and include both locally manufactured and imported wares. Basin houses are a common trait in this phase, as are abundant hearths and other thermal features. It appears that Fremont groups entered the Wyoming Basin from the southwest during this phase, although there is no evidence of the sedentary settlements typical of Fremont sites in the eastern Great Basin (Thompson and Pastor 1995).

During the Firehole phase, population densities in the area appear to have declined and the Rose Spring projectile point style fades from use. Firehole-phase projectile points consist mainly of Desert side-notched, Cottonwood triangular, and tri-notched points. Pottery continues to be manufactured, and most of the steatite artifacts found archaeologically were constructed during this phase. This is the first prehistoric phase that can be strongly correlated with Shoshonean populations (Thompson and Pastor 1995).

4.1.2 Protohistoric Period

The Protohistoric period dates from approximately A.D. 1540 until Euro-American occupation and settlement in the area and subsequent relocation of Native Americans onto reservations in the late 1800s (Gilmore et al. 1999:5, 309). The Protohistoric period is characterized by a major shift in Native American technology and subsistence practices, as well as dramatic changes in demographics. The arrival of Europeans on the North American continent changed many aspects of Native American life. Subsistence technologies shifted as firearms became available and metal and glass implements were introduced for food gathering, storage, and cooking (West 1998). A shift in environmental conditions also occurred during this time. A long drought ended and climate conditions on the high plains became more hospitable and similar to those of today (Gilmore et al. 1999:309). Perhaps the greatest changes observed in Native American populations during the Protohistoric period involved a dramatic reduction in their numbers caused by the introduction of European diseases and increased competition for resources between Native American groups and new Euro-American settlers (West 1998).

Several tribes inhabited the region during this time including the Cheyenne, Arapaho, Shoshoni, Comanche, Kiowas, and Ute (Gilmore et al. 1999:310). Protohistoric sites are predominantly open

camps and lithic scatters, but other site types include peeled trees, architectural sites, sheltered camps, sheltered lithic scatters, rock art, battle locations, and trails.

During the Protohistoric period, the acquisition of the horse changed subsistence patterns from localized pedestrian hunting and gathering to long-distance hunting on horseback. The horse greatly increased the mobility and range of the Shoshonean groups. Bison hunting and some horticulture were the primary means of subsistence (Gilmore et al. 1999:313; Zier and Kalasz 1999:257). Artifact assemblages from this period are often quite diverse with a mix of stone and metal projectile points, knives, copper trade goods and glass beads. Unfortunately, few Protohistoric sites have been adequately excavated, limiting the information available on the material culture of this period (Thompson and Pastor 1995).

4.1.3 Historic Period

The State of Wyoming uses seven historical divisions in the 19th and 20th centuries for archaeological recording of historic sites. These are the Early Historic, Pre-territorial, Territorial, Expansion, Depression, Word War II (WWII) era, and Post-WWII periods. The Early Historic period dates from 1801 to 1842 and represents the period when Anglo presence in Wyoming was largely limited to trappers and mountain men. The following Pre-territorial period (1843 to 1867) covers the era from the start of the Oregon Trail to the organization of the territory. The Territorial period (1868 to 1889) marks a gradual increase in the population of the state and ends with President Benjamin Harrison signing the statehood bill in 1890 (Larson 1965). The Expansion period (1890to 1919) marks the early development of the state and ends after the First World War. The Depression period (1930 to 1939) covers the depressed conditions of the 1920s and 1930s and ends with the start of the Second World War. The WWII era (1940 to 1946) covers the period of the war and its immediate aftermath. The Post-WWII period covers the end of WWII until 1970, the 50-year cut-off for historic artifacts. Sites and artifacts more recent than 1970 are classified as modern.

The first non-Native visitors to the region were French and Spanish trappers and traders who arrived in the area as early as the late 17th century. Although the Spanish had made incursions into the Kansas plains as early as the 1540s, it was more than 150 years before the European presence on the plains became commonplace. The French began exploring North America's interior from both the north and south via the Mississippi and Missouri river drainages beginning in the early years of the 18th century (Creigh 1977:21). French influence began to decline after the signing of the Treaty of Paris in 1763 and the French, by the time of the Louisiana Purchase in 1803, had all but disappeared from the plains.

The focus of western exploration and commerce during the early 1800s began with the Lewis and Clark Expedition of between 1803 and 1806 as the explorers made their way west along the Missouri River. Soon after, French trappers arrived to trap beaver along the western rivers and tributaries. By the early 1820s, trappers working for the Rocky Mountain Fur Company traveled along the Sweetwater and Platte rivers in Wyoming and Nebraska along what was soon to become the Oregon Trail (Hafen and Young 1938:21). Shortly thereafter, a military expedition led

by Major Stephen H. Long traversed the South Platte River to the Rocky Mountains (Gregg 1954). Trading posts and military outposts were established in the vicinity to facilitate the fur trade. These forts included Fort William in southeastern Wyoming.

Early exploration of southern Wyoming was undertaken informally by fur traders and trappers during the Early Historic period, especially after the mid-1820s (Hill 1992). Scientific mapping and description of the area began in the early 1840s with the expeditions of John C. Fremont. The first travel across the route of the Oregon Trail occurred between 1812 and 1813 with John Astor returning from Oregon to St. Louis. Use of the Oregon trail increased through the 1840s and 1850s as Euro-American emigration intensified throughout the western United States. Eventually more than 500,000 would-be settlers traveled over the Oregon, Overland, and Mormon trails to western states, accompanied by more than 1.5 million animals (Madsen 1980:27; Creigh 1977:33). Use of the Oregon Trail declined during the Civil War, and dropped dramatically with the completion of the transcontinental railroad during the Territorial period in the late 1860s (Hill 1992).

While the Oregon Trail passed some 95 to 120 miles north of the Project Area, the Overland Trail and Stage Route and its predecessor, the Cherokee Trail, are significant historic routes in the Project Area vicinity. The Cherokee Trail was established in 1849 as a shortcut to the gold fields of California (Weimer 2019). The portion of the Cherokee Trail that overlaps with the Overland Trail begins in Colorado and continues northwest through Tie Siding, where the trail splits into the North Branch, which continues to follow the Overland Trail, and the South Branch (North Park Road; Site Number 48AB1447).

The Overland Trail, established in the 1850s (Mehls 1984), is one of three major east-to-west oriented 19th century transcontinental wagon roads across Wyoming. The Overland Trail followed preexisting Native American trails in many areas, following the Oregon Trail across Nebraska, veering southwest into Colorado at Julesburg, passing through Sterling, Fort Morgan, Denver, and Fort Collins, and rejoining the main Oregon Trail south of Laramie, Wyoming (Weimer 2019). The Overland Trail began to be developed as a major transportation route following the end of the Utah War (1857 to 1858) and was designated as a military road to supply Fort Bridger in 1858. U.S. Army troops began to upgrade the route to make it suitable for wagon traffic from 1858 to 1859. The greatest use of the Overland Trail was in the 1860s when it became the principal wagon road, mail route, stagecoach route, and telegraph line route from the eastern U.S. to the west coast. Following the completion of the Union Pacific Railroad in 1869, the importance of the Overland Trail waned; however, emigrant wagon traffic continued along the route through the 1880s (Scott and Shwayder 1993).

The Pacific Railway Acts of 1862 and 1864 authorized land grants to encourage the construction of the transcontinental railroad. In southern Wyoming, the Union Pacific Railroad generally followed the route of the Overland Trail with the construction passing westward out of the state in 1869 (Ireland 1986). The Union Pacific Railroad rapidly rendered the Overland Trail obsolete, as well. The first coal mines of Wyoming were opened in the southwestern part of the state by the

Union Pacific Railroad in 1867. Railroad construction and coal mining brought diverse ethnic groups to the area including people of Celtic, Mediterranean, Chinese, and Slavic origins. The development of the Transcontinental Railroad across the Great Plains eventually superseded the need for the emigrant and freight trails. The transcontinental railroad crossed the Great Plains through Nebraska and Wyoming in 1868 and was completed the following year as the Central Pacific Railroad and Union Pacific Railroad companies met at Promontory Point, Utah, north of the Great Salt Lake (Ambrose 2000).

Prior to the railroad, Wyoming was a vastly unpopulated place with few towns. With the exception of a few military outposts and the forts at Bridger Valley and Laramie there were no substantial settlements. Trappers, traders, and a few stage coach operators were the only inhabitants of the region. Because of the low population, outside workers were brought in to construct the newly proposed railroad. As the railroad moved westward, new settlements opened up along the frontier. Coal mines were constructed, along with blacksmith shops, butcher markets, saloons, bakeries, and mercantile shops to serve the railroad workers. Settlements grew out of the sage land all along the stretches of the railroad mainline.

By the early 1860s homesteading, farming, and ranching took over as the principal economic themes of the region (Gregg 1954). The livestock industry is considered to have originated during the heyday of the Oregon Trail in the 1840s to 1860 with tens of thousands of cattle, sheep, and horses being herded across the area (Gregg 1954). With the completion of the transcontinental railroad the stock ranching industry boomed due to access to the large markets of the East and West coasts. Cattle ranching was well established in the 1860s and the sheep industry by the 1870s. The first permanent ranches in southern Wyoming formed in the early 1870s, with many of these becoming large by the 1880s. Trends in homesteading followed those of the cattle industry, reaching a peak in the 1920s and then ending abruptly with the onset of the Great Depression in the 1930s (Gregg 1954).

Oil and mineral exploration is another significant theme in Wyoming history. Native Americans probably knew about oil seeps and springs for centuries, and oil was used both for medicine and as liniment for horses. Emigrants traveling the Oregon Trail used a mixture of this oil and flour to form axle grease for their wagons. According to Mackey (1997), the oil industry in Wyoming got its start during the Territorial period in 1883 when Mike Murphy dug the state's first oil well near Lander. However, the distance between Wyoming and the refineries and markets in the east made development extremely difficult and significant exploration did not occur until the Expansion period. Oil activities across the state increased in the early 1900s, and many of the fields that are still in production today were located by the 1910s. Oil prices declined in the 1920s and the Great Depression; prices did not rebound to 1920 levels until 1950. World War II brought a new boom to the Wyoming oil industry with the construction of a 100-octane aviation fuel plant in Cheyenne and a vastly increased demand for fuel oil by the U.S. Navy. Wyoming reached its highest level of production in 1970 (155.7 million barrels) but has declined since that time (Mackey 1997).

Uranium production in the United States peaked in 1980, when Wyoming produced a total of 12 million pounds of U3O8 (yellow cake). Since one pound of U3O8 produces the energy equivalent of 31 barrels of oil or 10 tons of coal, the total uranium production of Wyoming is the equivalent of 5.9 billion barrels of oil or 1.9 billion tons of coal (Wyoming Mining Association 2007). The first uranium mill constructed in Wyoming, the Western Nuclear Splitrock Mill, was built near Jeffrey City in 1957 (Lageson and Spearing 1988). While Wyoming had nine uranium mills in 1980, only one remains. The Kennecott Energy Sweetwater Uranium Mill (located just south of the Lost Creek block) is maintained on a standby status without actual production (Wyoming Mining Association 2007). Uranium exploration in the Lost Creek block has continued periodically since the late 1960s with a hiatus between 1983 and 1986 (Wallis 2006).

Coal may have been an important source of fuel for Wyoming natives much earlier than expected. Although no conclusive evidence exists, it is believed that Native American populations may have used coal for fire and possibly sweat lodges on the Great Plains. Archaeologists have unearthed coal remnants from fire pits and sweat lodges in the Native American villages in North Dakota (Gardner and Flores 1989:3). Early fur trappers and settlers used coal as a source for heating and cooking. As more people moved through Wyoming in the 1840s and 50s, reports of coal sources were passed along by parties along the Oregon and Overland Trails. Blacksmiths used local coal for operating their shops because of its high British Thermal Unit (BTU) count. Coal seams of high quality bituminous coal could be located all along the westward routes in great supply. The U.S. military began mining coal for consumption as early as 1859 just 10 miles east of present-day Evanston and worked up until the abandoning of Fort Bridger, Wyoming in 1890. The Overland Stage Company mined coal to heat their stations and fuel for the blacksmith shops. These early discoveries of coal played an important part in the decision-making process of the Union Pacific Railroad when establishing an overland route westward.

5 DESKTOP REVIEW RESULTS

The regional cultural-historical context, as well as information from available online sources and previous reports, indicates that the Research Area has witnessed both prehistoric and historic activity. Potential resources in the Research Area include prehistoric Native American sites, roads, bridges, railroads, homesteads, worked agricultural fields, windmills, and ditches. The roads, although likely maintained and without historic integrity, represent historic transportation corridors and may include significant features such as bridges. There may be historic farms still in operation, or archaeological sites representing the remnants of buildings and/or farms, within the Research Area.

5.1 Archaeological Resources within the Research Area

Using the Wyoming SHPO WyoTrack database and Colorado OAHP Compass database, a record search was conducted for the Research Area to identify previously recorded archaeological resources that may be directly or indirectly impacted by the Project. The results of the Wyoming SHPO WyoTrack database search (Wyoming SHPO 2019) indicated that 23

archaeological sites have been identified within the Research Area. The results of the Colorado OAHP Compass database search identified no archaeological sites within the Colorado portion of the Research Area (OAHP 2020). As shown in Table 1, the majority of sites are historic, including two listed on the NRHP (48AB97 and 48AB145). NRHP eligibility for these 23 sites is as follows: 10 recommended Not Eligible, eight recommended Eligible, two Listed on NRHP, two Unevaluated, and one Unknown (included, for the purposes of this report, as unevaluated). Eligible sites have been evaluated by the documenting individual and/or Wyoming SHPO as potentially eligible for listing on the NRHP under one or more of the criteria in Section 3.2. Unevaluated sites require more information to determine NRHP eligibility and are treated as eligible sites for management purposes until such information is obtained.

Two of the sites within the Research Area fall within the Project Area but outside of the Siting Corridor. These are the NRHP-listed historic Dale Creek Railroad Bridge (Reference No. 86001027; 48AB145) and the NRHP-ineligible Knight Homestead (48AB456). Three resources, an NRHP-eligible segment of the historic Lincoln Highway (48AB152_31), an NRHP-eligible segment of the historic Overland Trail (48AB157), and an NRHP-ineligible historic debris scatter (48AB1861) are located within both the Project Area and the Siting Corridor.

In addition to the archaeological sites discussed above, Class III pedestrian surveys for portions of the Project Area completed for the Hermosa West Wind Energy Project in 2009 (WAPA 2012) identified six archaeological sites (three prehistoric and three historic sites; see Table 1). Two of the sites were sites were not evaluated for the NRHP and should be treated as eligible pending further study. These are 48AB1932, consisting of the remnants of an abandoned farmstead or ranch house complex dating to the Territorial Period of Wyoming history or later (post-1867) and 48AB1933, a prehistoric Native American site containing stone tools and abundant tool debris. Neither site is within the Siting Corridor. The remaining four sites are recommended not eligible. The Wyoming SHPO has not yet commented upon or concurred with the consultant recommendations about NRHP eligibility and GIS data for these sites are not on file in WyoTrack.

Confidential Appendix A shows the locations of archaeological sites in the Research Area (with respect to the Project Area and Siting Corridor) that are listed or recommended eligible for listing on the NRHP as well as sites that are recommended for further study (unevaluated) for the NRHP.

An assessment of previous survey coverage, site locations, and regional environmental information indicates that the Project exhibits moderate to high sensitivity for the presence of undocumented cultural resources in the Project Area. The region contains several freshwater sources (e.g., Dale Creek, Boulder Creek, and Johnson Creek) and may contain springs. The availability of water may have provided an attractive setting for living, hunting, fishing, and collecting natural resources by Native Americans and later settlement and agricultural use by European immigrants. Several major historic trails and railroad lines passed through or near the Research Area. The limited historic activities and lack of modern development in the Project Area have likely contributed to the preservation of archaeological resources. The same 19th and early

20th century activities likely also left archaeological or built environment (i.e., historic buildings and structures) indicators in the Project Area.

Table 1: Previously Recorded Cultural Resources within the Research Area

Site Number	Time Period	Site Type	NRHP Eligibility	In Project Area	In Siting Corridor
48AB42	Historic	Sherman Townsite	Eligible	No	No
48AB97	Historic	Ames Monument	Listed on NRHP	No	No
48AB130	Prehistoric	Bison Kill Site	Eligible	No	No
48AB145	Historic	Dale Creek Railroad Bridge	Listed on NRHP	Yes	No
48AB152_31	Historic	Lincoln Highway Segment	Eligible	Yes	Yes
48AB152_34	Historic	Lincoln Highway Segment	Eligible	No	No
48AB157	Historic	Overland Trail Segment	Eligible	Yes	Yes
48AB157_1	Historic	Overland Trail Segment	Eligible	No	No
48AB157_34	Historic	Overland Trail Segment	Eligible	No	No
48AB160	Historic	Tie Siding Town Site	Not Eligible	No	No
48AB298	Historic	Children's Cemetery	Unevaluated	No	No
48AB302	Multicomponent	Willow Springs Campsite	Unevaluated	No	No
48AB359	Historic	Depressions (Willow Springs Stage Station)	Unevaluated	No	No
48AB456	Historic	Knight Homestead	Not Eligible	Yes	No
48AB467	Historic	Ranch Camp	Not Eligible	No	No
48AB543_4	Historic	Cheyenne Pass Road Segment	Eligible	No	No
48AB1068	Historic	Copper Float Mine Group	Not Eligible	No	No
48AB1452	Historic	Foundations	Not Eligible	No	No
48AB1453	Historic	Road Segment	Not Eligible	No	No
48AB1762	Historic	Road Segment	Not Eligible	No	No
48AB1861	Historic	Debris Scatter	Not Eligible	Yes	Yes
48AB1889	Historic	Beacon Hill	Not Eligible	No	No
48AB2479	Historic	Trash Dump	Not Eligible	No	No
Archaeological Sites Recorded for Hermosa West Wind Energy Project					
48AB1932	Historic Euroamerican (post-1867)	Farmstead/Ranch	Unevaluated[1]	Yes	No
48AB1933	Prehistoric Native American	Lithic Cluster	Unevaluated[1]	Yes	No
48AB1934	Historic Euroamerican	Possible Exploratory Mine	Not Eligible[1]	Yes	No
48AB1935	Prehistoric Native American (unknown period)	Lithic Scatter	Not Eligible[1]	Yes	Yes
48AB1936	Prehistoric Native American (unknown period)	Lithic Scatter	Not Eligible[1]	Yes	Yes
48AB1937	Historic Euroamerican	Quarry or Exploratory Mine	Not Eligible[1]	Yes	Yes

1 Pending Wyoming SHPO concurrence

It should be noted that additional in-field investigations may provide more complete information on cultural resources in the Project Area. For this reason, preconstruction efforts will include expanded background research and the completion of a Class III pedestrian survey, as recommended by the SHPO (Joseph 2019). Further, as part of the NEPA process, WAPA will initiate consultation with SHPO and interested Tribal representatives, as well as other interested parties, as part of Section 106 of the NHPA compliance.

5.2 NRHP Resources within the Visual Analysis Area

The Wyoming SHPO WyoTrack database search (Wyoming SHPO 2019) and Colorado OAHP Compass database search (OAHP 2020), as well as spatial data published by NPS for NRHP properties (NPS 2019a, 2019b) were reviewed to determine the presence or absence of NRHP-listed properties within the Visual Analysis Area.

As noted above in Table 1, the search results from the Wyoming SHPO Wyotrack database and Colorado OAHP Compass database indicate that there are currently two NRHP-listed properties in the Research Area (Figure 1). The Ames Monument (Reference No. 72001296; 48AB97) is located approximately 0.3 mile northeast of the northeastern portion of the Project Area and is listed as a National Historic Landmark. The massive pyramidal stone monument was constructed in 1882 and was erected by the Union Pacific Railroad Company to honor the contributions of financiers Oakes and Oliver Ames of Massachusetts for the construction of Transcontinental Railroad, whose original location runs along the northern portion of the Project Area on the east side of U.S. 287.

The Dale Creek Railroad Bridge (Reference No. 86001027; 48AB145) is located adjacent to and just within the northern portion of the Project Area. The bridge was constructed between 1868 and 1885 and consists of a set of stone piers and abutments that supported the Dale Creek Bridge (removed after 1901), which carried the Union Pacific Railroad's original transcontinental line over a deep gorge along Dale Creek.

In addition to the two properties listed above, NPS spatial data identified four other NRHP-listed properties present within the Visual Analysis Area (Figure 1). They include:

- Hynds Lodge at Curt Gowdy State Park (Reference No. 84003685; 48LA392), located approximately 9.2 miles northeast of the Project Area. Construction of Hynds Lodge was funded in 1922 by Wyoming pioneer businessman Harry P. Hynds. It was used mainly as a Boy Scout camp.
- Remount Ranch (Reference No. 90001389; 48LA406), located approximately 7.2 miles east of the Project Area. The Remount Ranch complex consists of eight buildings, including the granite stone main house constructed in 1886.
- Virginia Dale Stage Station (Reference No. 85002562), located approximately 5.8 miles southeast of the Project Area. This log structure was built in 1862 and is associated with the Overland Mail Route.

- Barn at Oxford Horse Ranch (Reference No. 86001398; 48AB527), located approximately 7 miles northwest of the Project Area. Constructed in 1887, this log structure is one of the oldest and largest existing barns in Albany County, WY.

5.3 Potential Cultural Resources Identified from Historic Maps and Other Sources

Review of historic BLM GLO maps for the Project Area indicates that approximately 10 miles of the first transcontinental railroad route passes through the northeastern portion of the Project Area, crossing the Siting Corridor in several locations. A number of cultural resources, including the NRHP-listed Ames Monument (48AB97) and the Dale Creek Railroad Crossing (48AB145), are associated with the historic railroad route.

In addition, discussion with local residents identified the presence of the Tie Siding Cemetery within the Research Area. The cemetery is located just north of the central portion of the Project Area off Hermosa Road (CR 222) outside of the Siting Corridor. The cemetery does not appear in either the WyoTrack or NRHP databases, but could potentially be eligible for listing on the NRHP due to age and potential historic significance. Therefore, for the purposes of this evaluation, the Tie Siding Cemetery is considered a potential historic cultural resource recommended for further study (unevaluated) with respect to the NRHP. Further evaluation by a qualified archaeologist would be necessary to determine whether this resource would be eligible for listing on the NRHP.

6 POTENTIAL EFFECTS ANALYSIS

This section discusses potential impacts to cultural resources associated with the proposed Project. In the context of NHPA and the Section 106 process of the NHPA (36 CFR 800.16[d]), the Area of Potential Effects (APE) refers to the geographic area or areas within which an undertaking may cause alterations in the character or use of historic properties. Historic properties are defined as prehistoric sites, historic districts, sites, buildings, structures, and prehistoric or historic objects included in, or eligible for inclusion in, the NRHP. The APE is determined by the scale and nature of an undertaking and may be different for different kinds of effects, i.e., “direct” or “indirect” effects. Under NEPA, project effects on historic properties are classified as “no adverse effect” or “adverse effect.” Significant impacts to cultural resources may occur if a site of archaeological, tribal, or historical value that is NRHP-listed or NRHP-eligible cannot be avoided by Project activities and is not appropriately mitigated during Project construction or operation. Therefore, avoidance or mitigation of historic properties can ensure that historic properties are not adversely impacted (in accordance with NHPA) and that there are no significant impacts (in accordance with NEPA). It is important to note that the APE for the Project has not yet been determined by WAPA in consultation with Wyoming SHPO.

6.1 Direct Effects

Wind energy projects have the potential to affect different kinds of cultural resources in different ways. The potential for direct effects to archaeological sites, historic trails, historic roads, historic architectural resources, or TCPs is greatest where Project construction requires ground disturbing activities. Such activities might include installation of turbines and transmission poles, trenching for below-ground electrical collection lines and control system cables, construction of or improvements to access roads, heavy equipment movement over open ground, use of temporary laydown and staging areas, and construction of substations and other permanent facilities. Because archaeological sites may lie both on the ground surface and below ground, ground-disturbing activities have the potential to disturb such sites. In addition, some archaeological sites may have no surface indications that would allow them to be identified prior to construction, and thus may be inadvertently disturbed during Project activities. Ground-disturbing activities and other construction activities might result in alteration of, damage to, or demolition of prehistoric sites and historic resources, including architectural resources. Project construction also has the potential to physically damage or destroy areas of landscape containing TCPs.

Of the 29 inventoried cultural resources in the Research Area, 7 are located within the Project Area. Of these 7 resources, 5 are either listed on the NRHP, have been evaluated as eligible for the NRHP or remain unevaluated for NRHP listing. They are the historic Dale Creek Railroad Bridge (48AB145), a segment of the historic Lincoln Highway (48AB152_31), a segment of the historic Overland Trail (48AB157), a historic farmstead or ranch (48AB1932), and a prehistoric Native American lithic scatter (48AB1933). In addition, approximately 10 miles of the Transcontinental Railroad route passes through the northeastern portion of the Project Area, crossing the Siting Corridor in several locations. The railroad route has not been formally documented or evaluated for NRHP eligibility. However, several cultural resources, including the NRHP-listed Ames Monument (48AB97) and the Dale Creek Railroad Crossing (48AB145), are associated with the historic railroad route. Table 2 outlines the potential impacts for cultural resources within the Project Area that are either listed on the NRHP, have been evaluated as eligible for the NRHP or remain unevaluated for NRHP listing.

Both the NRHP-eligible segment of the historic Lincoln Highway (48AB152_31) and the NRHP-eligible segment of the historic Overland Trail (48AB157) are also located within the Siting Corridor. These sites could potentially be adversely affected by construction of the proposed Project (Table 2). Further micrositing of Project features may be necessary to avoid potential impacts to these sites.

The remaining previously recorded cultural resources discussed in Section 5 are located outside the Project Area and are not anticipated to be directly impacted by Project development It is important to note that per instructions from WAPA, this report does not address Native American interests or TCPs as WAPA will engage directly with the Tribes in that regard.

Table 2: Assessment of Potential for Direct Impacts

Site Number	Description	NRHP Eligibility	Potential Impacts/Effects
48AB145	Historic Dale Creek Railroad Bridge	Listed on NRHP	No direct impact/adverse effects. Outside Siting Corridor.
48AB152_31	Historic Lincoln Highway Segment	Eligible	Potential direct impact/adverse effects. Crosses Siting Corridor in several locations.
48AB157	Historic Overland Trail Segment	Eligible	Potential direct impact/adverse effects. Crosses Siting Corridor.
48AB1932	Historic Farmstead/Ranch	Unevaluated	No direct impact/adverse effects. Outside Siting Corridor.
48AB1933	Prehistoric Lithic Cluster	Unevaluated	No direct impact/adverse effects. Outside Siting Corridor.
None	Route of First Transcontinental Railroad	Unevaluated	Potential direct impact/adverse effects. Crosses Siting Corridor

Confidential Appendix A shows the locations of previously identified cultural resources in the Research Area (with respect to the Project Area and Siting Corridor) that are listed or recommended eligible for listing on the NRHP, as well as sites that are recommended for further study (unevaluated) for the NRHP.

6.2 Indirect Effects

Wind energy projects have the potential to indirectly impact historic properties (as in eligible or listed sites); or sites of potential religious or traditional significance to Native American tribes, regardless of NRHP eligibility by introducing new visual, auditory, or atmospheric elements into a resource's environment. Project development might also produce changes in land use, such as increases in traffic or visitation, that are incompatible with a given cultural resource.

6.2.1 Visual Impacts Analysis

Indirect visual impacts to previously recorded cultural resources in the Visual Analysis Area that have been listed on the NRHP were assessed through a generalized consideration of the BLM's visual contrast rating protocol (BLM 1986). As noted above in Section 3.1.1, the Visual Analysis Area used for review of NRHP-listed properties was a 10-mile buffer, or the "limit of visual preeminence" for the Project (Sullivan et al. 2012).

As outlined in Table 3, the visual assessment includes all 6 NRHP-listed properties within the Visual Analysis Area (including the 2 properties within the Research Area), as well as cultural resources identified by WyoTrack as NRHP-eligible or recommended for further study (unevaluated) within the Research Area (Table 1). The assessment also includes two resources within the Research Area (Tie Siding Cemetery and the first Transcontinental Railroad route) that are not listed within WyoTrack but were identified by local residents as potential historic resources, and are therefore considered unevaluated resources.

The assessment of potential visual impacts assumes that sites that are sufficiently distant from the Project site or significant/potentially significant only under NRHP Criterion D would not be subject to visual or other indirect impacts.

The results of the assessment found 17 properties within the Research Area that are NRHP-listed, NRHP-eligible, or recommended for further study (unevaluated) and four additional NRHP-listed properties within the Visual Analysis Area. Table 3 summarizes the potential for indirect visual impacts for each of these 21 properties based on these assumptions.

Table 3: Assessment of Potential for Indirect Visual Impacts

Site Number	Description	NRHP Eligibility	Potential Impacts/Effects
Resources within Research Area			
48AB42	Historic Sherman Townsite	Consultant recommended NRHP eligible under Criterion D and SHPO concurred.	Not subject to visual impacts because likely significant under Criterion D only.
48AB97	Historic Ames Monument	NRHP listed under Criterion A.	Possible visual impacts – turbines may be visible from this location.
48AB130	Prehistoric Bison Kill Site	Consultant recommended NRHP eligible. Criteria not specified but likely Criterion D. No SHPO concurrence to date.	Not subject to visual impacts because likely significant under Criterion D only.
48AB145	Historic Dale Creek Railroad Bridge	NRHP listed. Criteria not specified, but statement of significance implies Criterion A.	Possible visual impacts – turbines may be visible from this location.
48AB152_31	Historic Lincoln Highway Segment	Consultant recommended as NRHP eligible under Criterion A. Has SHPO concurrence.	Possible visual impacts – turbines may be visible from this location.
48AB152_34	Historic Lincoln Highway Segment	Consultant recommended as NRHP eligible under Criterion A. Has SHPO concurrence.	Possible visual impacts – turbines may be visible from this location.
48AB157	Historic Overland Trail Segment	Consultant recommended as NRHP eligible; criteria not specified. Has SHPO concurrence.	Possible visual impacts – turbines may be visible from this location.
48AB157_1	Historic Overland Trail Segment	Consultant recommended as NRHP eligible; criteria not specified. Has SHPO concurrence.	Possible visual impacts – turbines may be visible from this location.
48AB157_34	Historic Overland Trail Segment	Consultant recommended as NRHP eligible; criteria not specified. Has SHPO concurrence.	Possible visual impacts – turbines may be visible from this location.
48AB298	Historic Children's Cemetery	Unevaluated	Possible visual impacts – turbines may be visible from this location.
48AB302	Willow Springs Campsite	Unevaluated	Possible visual impacts – turbines may be visible from this location.
48AB359	Historic Willow Springs Station	Consultant recommended as NRHP eligible. Criteria not specified but recommendation comments imply Criterion D. No SHPO comment to date.	Not subject to visual impacts because likely significant under Criterion D only.

Site Number	Description	NRHP Eligibility	Potential Impacts/Effects
48AB543_4	Cheyenne Pass Road Historic Segment	Consultant recommended as NRHP eligible and SHPO concurred. Criteria not specified, but statement of significance implies Criterion A.	Possible visual impacts – turbines may be visible from this location.
48AB1932	Historic Farmstead/ Ranch	Unevaluated	Not subject to visual impacts because if eligible it would likely be based on Criterion D only.
48AB1933	Prehistoric Lithic Cluster	Unevaluated	Not subject to visual impacts because if eligible it would likely be based on Criterion D only.
NA[1]	Tie Siding Cemetery	Unevaluated	Possible visual impacts—turbines may be visible from this location.
NA[1]	First Transcontinental Railroad Route	Unevaluated	Possible visual impacts—turbines may be visible from this location.
Additional NRHP-Listed Resources within Visual Analysis Area			
48LA392	Historic Hynds Lodge	NRHP listed. Criteria not specified, but statement of significance implies Criteria A, B, and/or C.	Not subject to visual impacts because screened by intervening terrain.
48LA406	Historic Remount Ranch	NRHP listed under Criteria A and B.	Possible visual impacts – turbines may be visible from portions of this location.
5LR698	Historic Virginia Dale Stage Station	NRHP listed. Criteria not specified, but statement of significance implies Criteria A and C.	Possible visual impacts – turbines may be visible from portions of this location.
48AB527	Historic Barn at Oxford Horse Ranch	NRHP listed under Criterion A.	Possible visual impacts – turbines may be visible from this location.

1 This location is not listed in either the WyoTrack or NRHP databases but may be considered potentially eligible for listing on the NRHP and is therefore considered Unevaluated for the purposes of this assessment.

The results of the visual impact assessment for cultural resources indicate that of the 21 properties reviewed, 5 are not anticipated to be subject to visual impacts because they are significant/potentially significant only under NRHP Criterion D (Table 3). Another property is not anticipated to be subject to visual impacts due to intervening terrain and its location outside the current viewshed for the Project.

The remaining 15 properties are located in areas where Project turbines may be visible, and thus could have the potential for indirect visual impacts from the Project (Table 3). In particular, two NRHP-listed sites, the Ames Monument (Reference No. 72001296; 48AB97) and the Dale Creek Railroad Bridge (Reference No. 86001027; 48AB145), are located within close proximity (i.e., less than 0.3 mile) to the Project Area and/or Siting Corridor, and may have unavoidable visual impacts from development of the Project.

It is important to note that per instructions from WAPA, this report does not address Native American interests or TCPs as WAPA will engage directly with the Tribes in that regard.

6.3 Applicant-Proposed Environmental Protection Measures

ConnectGen has developed EPMs that when implemented would avoid or minimize adverse effects to environmental resources from construction, operations and maintenance, and decommissioning of the Project. The EPMs listed in Table 4 below would both directly and indirectly avoid or reduce potential effects to cultural resources.

Table 4: Proposed Environmental Protection Measures Related to Cultural Resources for the Rail Tie Wind Project

Resource Category	Measure	Implementation			
		Preconstruction	Construction	Operations	Decommissioning
General					
GEN-1	The Project will be designed, constructed, and operated in compliance with Albany County Zoning Regulations (as amended) and Albany County Wind Energy Siting Regulations. Construction and operations activities will comply with all federal, state, and county environmental regulations, as applicable.	X	X	X	X
GEN-2	The Project will delineate environmentally sensitive areas (e.g. wetlands, waters, habitats) located within or adjacent to the Project Area and will identify those locations in construction planning documents. Construction and operations personnel will be informed of the appropriate practices that may be applicable to avoid or minimize impacts to these areas.	X	X	X	X
GEN-3	Construction travel will be restricted to existing roads and permanent or temporary access roads identified in the final Project Site Plan.		X		
Cultural Resources					
CR-1	Develop an Unanticipated Discoveries Plan that describes procedures for responding to the discovery of archaeological or other cultural resources, including unmarked graves, during construction.	X	X		
CR-2	Conduct appropriate worker education concerning the recognition and protection of cultural resources.	X	X	X	X
CR-3	Conduct a new Class I records search for the Project and Class III cultural resources inventory for all work areas where ground disturbance may occur to comply with Section 106 of the NHPA. The Class III inventory should be performed subsequent to the Draft EIS and after the Project design is finalized. The survey results will be shared with the Wyoming SHPO to identify and avoid resources eligible for the National Register of Historic Places.	X			

Resource Category	Measure	Implementation			
		Preconstruction	Construction	Operations	Decommissioning
CR-4	Construction activities will avoid impacts to cultural resource sites that may be identified within the Project Area. Appropriate buffers around cultural resource sites will be delineated on construction drawings and will be flagged in the field with signage to prevent unauthorized entry.		X		X
CR-5	Conduct a systematic architectural inventory of the Project Area and use setbacks to avoid direct impacts to historic architectural resources.	X			

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FIGURES

ConnectGEN

Rail Tie Wind Project

Figure 1
NRHP-listed Resources
within the 10-Mile Buffer

Albany County, WY

Barn at Oxford Horse Ranch
Hynds Lodge
Ames Monument
Dale Creek Crossing (48AB145)
Tie Siding
Remount Ranch
Virginia Dale Stage Station
Albany County
Laramie County
Larimer County
Wyoming
Colorado
230
287
80
210
80C
103
162
179

- Project Area
- 10-Mile Visual Buffer
- Research Area
- Siting Corridor
- NRHP-listed Site
- State Boundary
- County Boundary
- Highways

N

0 1.25 2.5 5
Miles

NOT FOR CONSTRUCTION

MT
SD
ID
WY
NE
UT
CO

TETRA TECH

R:\PROJECTS\CONNECTGEN_ALBANY_66841TECH_REPORTS\MAPS\CULTURAL\Rail Tie_Figure 1_Project Area.mxd

APPENDIX A:
NRHP-Listed, Eligible, or Unevaluated Sites within the Research Area—REDACTED