

3.6 CULTURAL RESOURCES

Section 3.6 describes the potential impacts on archaeological and historic resources (hereafter referred to as cultural resources) from the proposed project. **Section 3.6.1** describes the affected environment of the proposed action, including summary discussions of the local landscape, prehistory, ethnography and history. Subsequent sections discuss the various kinds of impacts that would occur as a result of carrying out the proposed project (**Section 3.6.2**), impacts associated with alternatives (**Section 3.6.3**), and long-term, cumulative impacts (**Section 3.6.4**). **Section 3.6.5** lists mitigation measures that can be employed to alleviate, reduce, or eliminate potential impacts to cultural resources, and **Section 3.6.6** summarizes significant unavoidable adverse impacts.

3.6.1 Affected Environment

This section summarizes information on the landscape setting and cultural resources of the proposed Desert Claim Wind Power Project area. A more detailed account of the studies completed appears in the technical report included as **Appendix D**.

3.6.1.1 Landscape Setting

The Desert Claim Wind Power Project is located at the western margin of the Columbia Basin physiographic province on portions of two large Plio-Pleistocene alluvial fans in northwest Kittitas Valley. The valley is the topographic expression of a broad synclinal warp formed by deformation and compression of Miocene-aged volcanic rocks of the Columbia River Basalt Group and the sedimentary rocks of the Ellensburg Formation. The surface geology in the project vicinity is composed of Pliocene and Pleistocene gravels underlying large alluvial fans and terraces skirting the base of the Wenatchee Mountains. Small outcrops of the underlying basalt rise up through these alluvial gravels and the older gravels have been prograded by younger Holocene fans and colluvium (Waitt 1979; Walsh et al. 1987).

During the last maximum glacial advance in the Pacific Northwest, the Cordilleran ice sheet advanced south from British Columbia in the northwest portion of the Columbia Basin as far as the Waterville Plateau. Although the glaciers temporarily diverted the Columbia River and impounded glacial meltwater, the ice sheet exerted minimal influence in the Kittitas Valley. Instead, the basin experienced accumulations of glacial till and outwash when alpine glaciers in the Cascades descended to elevations of 2700 to 3000 feet in the Yakima and Naches River basins. Glaciers originating near Snoqualmie Pass advanced eastward through the upper Yakima River basin to about 7 miles beyond the town of Cle Elum.

The alluvial fan surfaces are relatively even and open and are expressed as long slope segments that have an overall dip to the south. The older and higher fan segment is located in the eastern portion of the project and is underlain by the Thorp gravels (deposited about 3.8 to 4.4 million years ago). The surface of this inactive fan has been presumably lowered and smoothed by the small streams that now traverse its surface. Surface soils are mostly shallow and stony but small areas of relatively stone-free loamy soils, sometimes formed into "mima mounds" or "biscuits", occur on interfluvial ridges and isolated, topographically elevated areas. The western portion of the Project is underlain by the glacially derived gravels of the Kittitas Drift, which were deposited between 130,000 and 140,000 years ago during a period of Cascades alpine glaciation. The surface of this fan is lower in elevation than the Thorp fan and is inset against the western shoulder of the older fan. Shallow stony soils are also predominant on this surface, but surface topography tends to be overall smoother than on the Thorp surface.

3.6.1.2 Cultural Setting

The project area falls within the southern portion of the Plateau culture area, which encompasses the drainage basins of the Columbia and Fraser Rivers. Most of the native peoples who live in the area belong to Interior Salish or Sahaptin-speaking groups. General elements of Plateau cultural patterns include alignment of settlement along rivers, reliance on a diverse resource base that included anadromous fish and extensive game and root resources, and a complex fishing technology similar to the one employed on the Northwest Coast (Walker 1998).

The earliest inhabitants of North America, known as Paleoindians, are believed to have arrived between 13,000 and 12,000 years ago. Their presence is marked by the appearance of a distinctive fluted spear point called Clovis. The earliest radiocarbon ages associated with these types of points in the West date to about 11,500 years ago and the closest known occurrence of Clovis points is north of the project area near the town of Wenatchee (Mehring 1989). Clovis points at this site were found in direct association with Glacier Peak volcanic ash dating to 11,250 Before Present (B.P.) (Mehring 1989). The Clovis people are believed to have been highly mobile hunters whose economy was primarily focused on hunting megafauna species (such as the mammoth) that became extinct soon after the end of the last glaciation. Other projectile points, such as large stemmed, shouldered, and lanceolate styles, also are found in western North America and closely follow, or are contemporaneous with, the fluted points. In the Plateau, stemmed and lanceolate projectile points known as Windust or Western-stemmed have been found in sites and dated between 11,000 and 8,000 years ago.

Life during the Vantage Phase, between 8,000 and 4,500 B.P., appears to have been focused on the major river valleys with few sites found in the surrounding uplands. However, between 4,500 and 2,500 B.P., the following Frenchman Springs Phase saw a shift in land use patterns denoted by the appearance of small, semi-permanent winter pithouse villages in the valleys and an increase in the number of sites containing plant processing tools in upland areas. Cultural change is also marked by increased population levels, aggregation in villages, greater reliance on stored foods, and dispersion from winter villages to small camps or residential groups during the spring, summer, and fall. The Cayuse Phase began about 1,000 B.P. and represents a pattern of life that began emerging during the preceding Frenchman Springs Phase. This pattern was similar to that recorded in early historic accounts and by ethnographers. Sites assigned to this period are found in a broad array of environmental settings and landforms and the phase as a whole is marked by increasing population levels, larger nucleated villages along the Columbia and Snake Rivers, increased emphasis on fishing and ongoing use of upland resources. The Cayuse phase ends with the introduction of the horse about 200 years ago near the end of the phase (Galm et al. 1981).

There is some uncertainty regarding the distribution and identity of peoples occupying the upper Yakima River basin. The Kittitas Valley lies on the boundary between the two major linguistic groups of the Interior Salish speakers to the north and Sahaptin speakers to the south. The Sahaptin-speaking Kittitas were most closely related linguistically to the Yakima to the south but maintained close ties with the Interior Salish-speaking Wentachi to the north. During the ethnohistoric period the Kittitas occupied permanent winter villages in the vicinity of the project area. There was a village on the Yakima River upstream from Thorp and another below it. Other villages were located at the mouth of Swauk Creek, at the mouth of the Teanaway River, and on Naneum Creek seven miles northeast of Ellensburg (DePuydt 1990; Ray 1936).

Euroamerican settlement in the Kittitas Valley began with the arrival of ranchers from Oregon in the 1860s. Cattle were raised for miners working the Colville, Cariboo, and Idaho mines, and were also sent over Snoqualmie Pass to Puget Sound (Meinig 1968). In 1887, the Northern Pacific Railroad completed its transcontinental line to Tacoma and was followed by the Chicago, Milwaukee, and St. Paul in 1909. The arrival of the railroads allowed the relatively cheap transport of resources from eastern Washington to more distant markets and spurred the development of the logging and wheat industries. The fertile but arid Columbia basin had fostered the development of a number of private irrigation networks in the Yakima Basin, which were consolidated under the U.S. Bureau of Reclamation in 1906 as the Yakima Project. Reservoirs were constructed in the upper Yakima basin at Lakes Keechelus, Kachess, and Cle Elum to supply water for irrigation districts in the Kittitas and Yakima Valleys. The Kittitas Project was the last irrigation system to be built in the late 1920s.

3.6.1.3 Previously Documented Cultural Resources

Prehistoric archaeological materials have been found in Caribou and Little Caribou Creeks draining the foothills north of Kittitas Valley, in the Trail Creek system, and at Grissom's Ranch within the valley proper. The limited amount of excavation in the upper Yakima River valley currently precludes a complete understanding of prehistoric land use systems in the valley, but a Clovis point found near Lake Cle Elum and later-period Cascade-like points (Vantage phase) found in the Keechelus-Cle Elum area indicates use of the upper basin beginning soon after deglaciation and persisting to at least the mid-Holocene (summarized in DePuydt 1990). Cultural resources investigations passing through the valley have also identified archaeological and historical sites related to settlement, mining in the Cle Elum vicinity, stock raising, logging, railroads, and the development of irrigation.

3.6.1.4 Traditional Cultural Properties

Traditional Cultural Properties (TCPs) are places associated with cultural practices or beliefs of a living community that are (a) rooted in that community's history, and (b) important in maintaining the continuing cultural identity of the community (Parker and King 1998). NWAA contacted the Yakama Nation Cultural Resources Program office when the archaeological field investigations commenced to seek information regarding TCPs within the bounds of the Project, based on the inclusion of the Kittitas band in the Yakama Nation and the location of the Kittitas Valley relative to the ceded lands of the Yakama. Although the Yakama Nation Cultural Resources Program office has not responded yet and did not comment on the Draft EIS, local residents informed NWAA field personnel that individuals were known to still exercise their reserved treaty hunting rights within the vicinity of the project area and groups still gathered to harvest roots on the fan where Naneum Creek emerges from the Wenatchee Mountains northeast of the Project. The lands within the project area are privately owned, however, and reserved treaty rights for off-reservation activities apply only to open and unclaimed lands. Therefore, use of TCPs within the project area could occur legally only with permission from the respective landowner(s).

Archival research revealed that no TCPs have yet been documented within the project boundaries. The eight landowners with whom Desert Claim Wind Power LLC have signed lease agreements report that they are unaware of any resources of cultural value on their properties, have not been contacted for permission to access property for TCP use, and are not aware of any unauthorized use of the property.

3.6.1.5 Field Survey Methods

Archival research preceded the field effort and included review of previous surveys in the vicinity, and of archaeological, ethnographic, historical, and environmental literature related to the Kittitas Valley. The entire 5,237 acres of the Project was surveyed for cultural resources from June 23, 2003 to July 16, 2003. Teams of archaeologist spaced at 30 m. (100 ft.) intervals systematically walked the area and recorded prehistoric locations and historic sites, structures, and buildings. Sites were defined as a feature or five or more artifacts within 30 m. (100 ft.) of one another. Locations with fewer than five artifacts were classified as *isolates*. Descriptive information and location were entered on standard forms completed for each discovery.

3.6.1.6 Field Survey Results

Thirteen prehistoric sites, 19 historic sites, 28 historic isolates, and 48 prehistoric isolates were documented during the field survey (see **Table 3.6-1**). All 13 of the prehistoric sites are newly recorded, while 18 of the 19 historic sites are newly recorded. A previously recorded historic site, the Springfield Farm (45KT513) was revisited and site information updated. Two lithic scatters produced by rockhound testing for agate-bearing nodules were also identified, but are not considered historic because they were created less than 50 years ago.

Just over two-thirds of the prehistoric isolates (37 sites, or 77 percent) consist of one or two flakes; of the remaining 11 isolates, 5 were bifaces, 4 were cores, 1 was a projectile point and 1 utilized flakes. Historic isolates included a wide array of artifacts such as metal blasting cans, food tins, ceramic and glass fragments, and agriculture equipment. Most of the prehistoric sites are lithic scatters representing manufacture and sharpening of stone tools or activities associated with short-term camps. However, the presence of fire-cracked rock at one site indicates the fan complex was occasionally the focus of longer residential stays. A large, complex lithic procurement site indicates the landform was also an important source of toolstone. Historic sites include farmsteads related to the earliest homesteading in the area as well as subsequent agricultural development. Debris scatters that may be related to sheep trails that crossed the project area when livestock were herded to the free pastures of the national forest in the first half of the 20th century; and features related to irrigation including stock ponds and the North Branch Canal of the Kittitas Reclamation District completed in 1930.

**Table 3.6-1
Heritage Resources Newly Recorded or Revisited
in the Desert Claim Wind Power Project Area**

FIELD NO.	COM-PONENT	DESCRIPTION	AGE	THEME	SIGNI-FICANCE
DC-03-					
Sites:					
1	H	Historic debris scatter near cattle track	1900 - 1940	Stock Raising	N
2	H	Historical debris scatter and depression	1900 - 1930	Agriculture / Settlement	N
3*	H	Morrison Homestead	1880 - 1940	Agriculture / Settlement	Y
4	H	Historic can dump	1940s	Agriculture	N
5	H/P	Lithic Scatter and historic bridge	Late Prehistoric / Early 20 th C	Prehistoric / Settlement	N
6	H/P	Historic debris and prehistoric lithic scatter	Prehistoric/ 1900 - 1950	Prehistoric / Stock Raising	N
7	H	Small historic scatter	1940 - 1955	Agriculture	N
8	P	Lithic scatter	Prehistoric	Prehistoric	Y
9	H	Historic debris scatter	1940 - 1960	Agriculture	N
10	P	Lithic scatter	Prehistoric	Prehistoric	N
11	P	Lithic scatter	Prehistoric	Prehistoric	N
14*	H	Historic debris	1880 - 1930	Agriculture / Settlement	Y
15*	H	Historic structures and historic debris	1900 - 1940	Agriculture / Settlement	Y
16	H	Historic debris scatter	1920 - 1945	Agriculture	N
17*	P	Lithic scatter	Late Prehistoric	Prehistoric	Y
18	H	Historic debris scatter	1900 - 1940	Agriculture	N
19	P	Lithic scatter	Prehistoric	Prehistoric	N
20	H	Historic cabin and historic debris scatter	1880 - 1930	Agriculture / Settlement	Y
21	P	Lithic scatter	Prehistoric	Prehistoric	Y
22	H/P	Springfield Farm (45-KT-513h update) / prehistoric lithic scatter	1880 – 1950 / Prehistoric	Agriculture / Settlement Prehistoric	Y
23	H	Historic debris scatter	1925 – 1950	Agriculture	N
24	P	Lithic scatter	Prehistoric	Prehistoric	N
25	H	Roan Farm	1900 – Modern	Agriculture / Settlement	Y
26	H	Historic farm (White Ranch)	1900 – Modern	Agriculture / Settlement	Y
27*	P	Lithic scatter / procurement site	Prehistoric	Prehistoric	Y
28	H	Residence	1925 - Modern	Agriculture / Suburban Development	Y
29	P	Lithic scatter	Prehistoric	Prehistoric	N
30	P	Lithic scatter	Prehistoric	Prehistoric	N
31	H	North Branch Canal	1926 - Modern	Irrigation Development	Y

* Sites that would be disturbed under the current project design (refer to **Table 3.6-2**).

3.6.1.7 Resource Significance

Laws and review processes at the federal, state, and local level provide a framework for evaluating the significance of archaeological, cultural, and historic resources and for listing them in the National Register of Historic Places or the State Heritage Register. The National Historic Preservation Act (NHPA, which applies to federal actions) and the State Environmental Policy Act (SEPA) require that consideration be given to protecting significant historic, archaeological, and traditional cultural sites from damage or loss during development, and provide that impacts to cultural resources be considered during the public environmental review process. Other Washington state laws addressing cultural resources include the Indian Sites and Resources Act (RCW 27.53) and the Indian Graves and Records Act (RCW 27.44). The first Act prohibits disturbance or excavation of historic or prehistoric archaeological

resources on state or private land without a permit from the state. The second Act prohibits knowingly disturbing a Native American or historic grave.

Although state laws provide no criteria for determining significance of sites and seek to prevent damage to all resources, some properties have greater scientific or historic value than others. In the absence of state criteria, federal criteria for significance provide a useful way to measure this value. Properties eligible for the National Register of Historic Places generally must be at least 50 years old, possess integrity of physical characteristics, and meet at least one of four criteria of significance. Significance is present for properties that are A) associated with events that have made a significant contribution to the broad patterns of our history; B) that are associated with the lives of persons significant in our past; C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or D) that have yielded, or are likely to yield, information important in prehistory or history.

Table 3.6-1 includes preliminary assessments of eligibility for the surveyed resources, based on these criteria. Prehistoric and historic archaeological sites are generally evaluated using criterion D. The lithic scatters can provide information on prehistoric lithic technology and land use. Extremely small sites with low artifact counts and little diversity in tool types are viewed as having exhausted their data potential and are therefore of less importance than other prehistoric sites. Historical properties with standing structures or buildings are most often evaluated using criteria A or C. For this project certain features and the farmsteads provide a good representation of lifeways of the late 19th/early 20th century when settlement was new and agriculture developed in the Kittitas Valley. Isolates are unlikely to meet any of the criteria.

3.6.1.8 Wild Horse Site Cultural Resources

Lithic Analysts, a cultural resources firm under contract to Zilkha Renewable Energy, conducted a baseline cultural resources inventory of the Wild Horse site in 2003. The inventory included a full search of records archived at the Washington Office of Archaeology and Historic Preservation (OAHP) and a field survey using 30-meter transects along locations for turbine strings, existing and proposed access roads, electrical lines and substations within the 5,000-acre site during the spring of 2003.

The cultural setting described for the Desert Claim project area (**Section 3.6.1.2**) also generally applies to the Wild Horse site. The archival search for the Wild Horse site indicated six previously recorded archaeological and historical sites were located within approximately one-half mile of the project area (personal communication, P. Trautman, Lithic Analysts, Olympia, Washington, October 22, 2003). Some of the records document trails that led from the Columbia River to the Kittitas Valley, and others address archaeological sites at some of the springs near Whiskey Dick Mountain. The sites at Pine Spring and Government Spring are currently listed as one site on the National Register. The on-site inventory of the Wild Horse project area identified three previously unrecorded archaeological sites, including a lithic scatter and two rock features. The field survey also recorded an abandoned section of the Old Vantage Highway (an historical feature) crossed by the route of the possible transmission interconnection to an existing PSE transmission line.

3.6.1.9 Springwood Ranch Site Cultural Resources

As reported in the MountainStar Master Planned Resort Draft EIS, Volume IV, Appendix H (Kittitas County, 1999) four previous cultural resource surveys (Boas, Inc., 1989; DePuydt, 1990; Para, 1990; and Nelson, et al., 1996) have been conducted within the boundaries of the Springwood Ranch. These surveys identified six cultural resources (two prehistoric and four historic) and one potential trail. Both of the identified prehistoric cultural resources include talus rock features and pits that may be associated with burial activities in the area. In addition, the reported prehistoric/historic trail, identified from old historic maps, is purported to have crossed through the center of the property. Identified historic resources include two sites associated with railroad activities, one historic burial area and one area associated with early irrigation activities. Portions of the area surrounding the site have been surveyed, resulting in the discovery of 14 prehistoric cultural resources, 16 historic cultural resources and the documentation of two ethnographic villages (Boas, Inc., 1989; DePuydt, 1990; Nelson, et al., 1996; Goetz, 1996; Miller, 1996).

3.6.2 Environmental Impacts of the Proposed Action

3.6.2.1 Direct Impacts

The modified proposed action includes a number of ground-disturbing activities that have the potential to result in direct impacts to cultural resources within the project area. Ground disturbance destroys the relationships among artifacts and features and their contexts, and could cause the destruction of historic structures or buildings. Ground-disturbing activities would occur at most stages of project development, e.g., construction of the roads and tower foundations (including staging areas and work zones), installation of the power collection system, the substation and O&M facility, and the meteorological towers. Depending on site conditions, construction of turbine foundations would create areas of surface and subsurface disturbance to a depth of from 8 to 35 feet deep and from 18 to 42 feet in diameter. The power collection system would also disturb surface and subsurface sediments. Installation of underground cable by trenching would require excavating an open trench 2 to 4 feet deep, laying cables in the trench, and then backfilling the trench; installation by plowing involves directly plowing the cable into the ground. Overhead connection cables and the construction of the transmission line require construction along a corridor 8 to 12 feet wide, plus possible disturbance in temporary laydown and work areas around the base of each pole. The poles would be placed in holes drilled by an auger and construction procedures would entail drilling holes for the transmission structures, construction of the structures on site, and preparation of staging and work areas. The combined substation and O&M facility requires approximately 4 acres that would have to be cleared and graded (2 acres each for the substation and the O&M facility).

Potential direct impacts to documented cultural resources have been identified based on the proposed layout of project facilities, as shown in **Section 2.2**, relative to the locations of the resources. Any cultural resources within or very close to the area of temporary construction disturbance around the various project facilities would presumably be subject to direct impacts.

The map analysis (which is not documented in the EIS because the locations of the cultural sites are confidential and not appropriate for disclosure) indicates that five identified cultural resource sites would experience unavoidable adverse impacts associated with turbine, access road and power collection system construction if the project facilities were sited according to the modified design (**Table 3.6-2**). Three of these five sites (DC-03-3, -14, and -15) are historic sites with either standing structures or structural remains. The two remaining sites (DC-03-17 and -27) are prehistoric sites. Site DC-03-17 is a large and complex lithic scatter; DC-03-27 is a large prehistoric lithic procurement site located at the northwest

periphery of the project. Based on the preliminary evaluation discussed in **Section 3.6.1.7**, destruction or damage of these resources would represent a significant adverse impact, for which appropriate mitigation would be required (see **Section 3.6.5**).

**Table 3.6-2
Significant Prehistoric and Historic Sites Affected by Project Construction Elements**

Site (DC-03-)	Component	Project Element(s) Creating Impact		
		Turbine	Road Access System	Electrical Collection System
03	H	X	X	X
14	H	X	X	
15	H	X	X	X
17	P		X	X
27	P	X	X	X

3.6.2.2 Indirect Impacts

Potential indirect impacts from development activities typically include increased opportunities for removal of prehistoric or historic artifacts due to increased visibility of the artifacts or awareness of their existence. Increased visibility and potential for exposure by personnel associated with the project could occur during clearing and grading in the construction phase, during heavy equipment transport, during maintenance (such as turbine adjustments, larger repairs to, or replacement of, equipment), or from additional surface and subsurface disturbance during clean-up efforts in the aftermath of inadvertent hazardous waste spills. Decommissioning the project at the end of its useful life also poses the potential for further impacts if decommissioning activities stray beyond the perimeters of the pre-existing disturbance zones used during construction. Measures such as clearly marking areas that need to be avoided to protect sensitive resources, and ensuring that project personnel observe those markings and their associated restrictions, can minimize the potential for these types of indirect impacts.

Indirect impacts to cultural resources can also occur if an action provides increased public access to the area in which the resources are located. This can occur through physical means, such as building or improving roads, or through operational measures that allow public visitors to move about more freely within an area. The proposed project is not expected to cause access-related indirect impacts to cultural resources. The parcels that are within the project area are all privately owned and are not open to general public access. The roads that would be constructed or improved to provide access to project facilities would be controlled by locked gates, public access to the project area would be restricted, and the project area would be patrolled on a regular basis. Therefore, the degree of public accessibility to cultural resources within the project area would be less with the project than it is at present.

The lands within the project area are privately owned, and the existence or use of traditional cultural properties within the project area has not been identified. Development of the Desert Claim project would not change the existing access conditions for the lands within the project area or the ability to use or visit resources of traditional cultural value within the area.

Existing historic sites in and near the project area would be subject to possible ongoing indirect impacts, however, primarily through changes to the visual environment around the sites. Although the existing landscape in the vicinity of the project has been subject to substantial modification from agriculture,

residential development, road construction, high voltage electrical transmission lines, and construction of irrigation canals, the effect from construction of the Desert Claim facilities would represent a noticeable additional modification to the setting of historical resources within the project and to additional resources at some distance outside the project area. The introduction of these incompatible elements could create an indirect impact by altering the setting of an historic site, and thereby possibly diminish the integrity of the resource's historic significance.

Research at OAHF revealed that approximately 25 properties and two historic districts have been identified to date within an 8- to 10-mile radius around the project. Seven buildings and structures have been inventoried within a 1-mile radius of the project boundaries. Within 5 miles there are approximately 10 buildings or structures including several in the vicinity of the town of Thorp. A 10-mile radius would include the town of Ellensburg and vicinity, where at least 10 properties and two historic districts have been recorded. The historic structures and buildings newly recorded by NWAA within the project boundary, and most properties located adjacent the project boundaries, fall within the Northwest Valley Visual Assessment Unit, where visual impacts would vary from low to high depending on the position of the viewer (see **Section 3.10, Aesthetics/Light and Glare**). Visual impacts attenuate with distance and landscape position, so views in visual assessment units farther removed from the project, such as Southwest Valley, tend to receive lower impact ratings.

NWAA used digital elevation models to illustrate the extent of potential visual impacts to the setting of selected historic sites. These examples rely on construction of line-of-sight viewsheds based on a viewer stationed at the site with a 360-degree view unobstructed by vegetation or buildings; the viewshed range is 8,000 meters (about 5 miles). In **Figures 3.6-1** through **3.6-3** the portions of the landscape visible from a historic site or reference location are represented by solid lines radiating from the reference location; the blanked-out segments of the lines represent portions of the landscape not visible from the reference location.

The first two figures show viewsheds from two historical sites within the project boundaries and within the Northwest Valley visual assessment unit. **Figure 3.6-1** shows the number of turbines that would be visible from the newly recorded Morrison Homestead in the northeast corner of the project on the Thorp surface. **Figure 3.6-2** shows the number of turbines that could be seen within the Springfield Ranch viewshed on the Kittitas surface. Finally, **Figure 3.6-3** shows the number of turbines potentially visible within the viewshed of a historical site located some distance from the project, in this case, Thorp Cemetery near the Yakima River. These figures indicate that indirect adverse effects from modifications in the visual setting of the historic sites would likely be greatest among historic sites located on the higher elevations of the Thorp and Kittitas surfaces within the Northwest Valley unit. This line-of-sight analysis indicates the range at which historic sites might be subject to indirect impacts, based on topography. The actual influence on the setting of historic sites would depend upon the conditions specific to each site, primarily whether and to what extent views of wind turbines would typically intrude on scenes viewed at each site. Modifications to the visual environment are discussed in detail in **Section 3.10**.

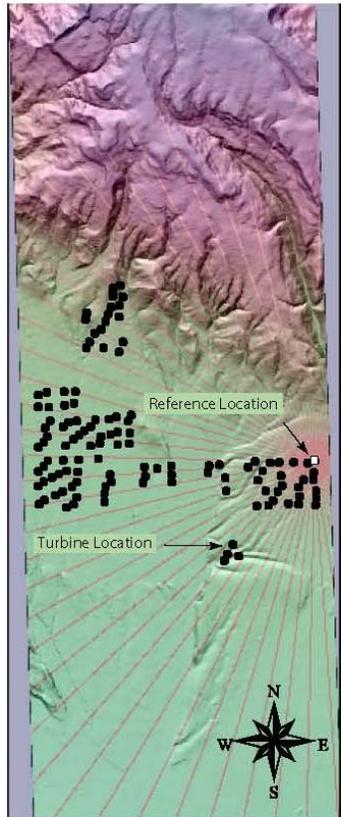


Figure 3.6-1
Viewshed from Morrison Homestead

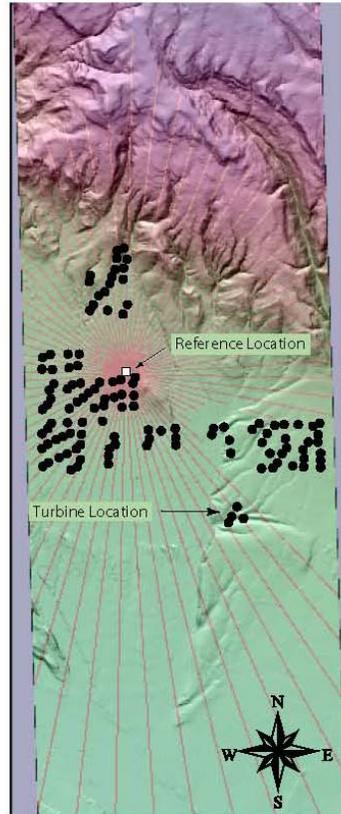


Figure 3.6-2
Viewshed from Springfield Ranch

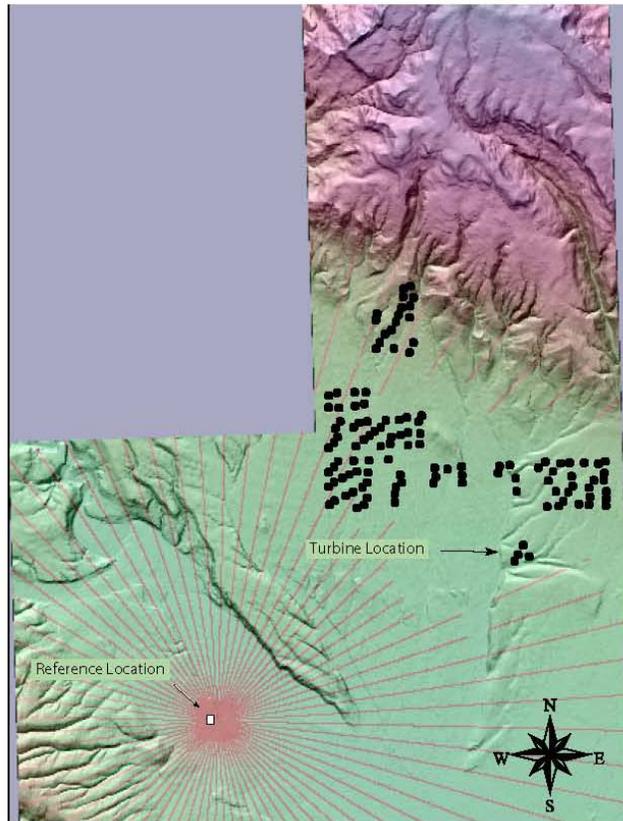
Solid Lines Show Visible Portion of Landscape

Source: Ecology & Environment, 2004



**Kittitas County
Desert Claim Wind Power
Project EIS**

**Figure 3.6-1 & 2
Viewshed from Morrison
Homestead & Springfield Ranch**



2 0 2 4 Miles

Solid Lines Show Visible Portion of Landscape

Source: Ecology & Environment, 2004



**Kittitas County
Desert Claim Wind Power
Project EIS**

**Figure 3.6-3
Viewshed from Thorp Cemetery**

Similar to the above discussion of historic sites, TCPs that might exist within viewing range of the project could also be subject to the same type of indirect effect. Although SEPA does not address TCPs specifically, it does direct lead agencies to identify places or objects of archaeological, scientific or cultural importance, and recommends that provisions for meeting tribal needs for the sanctity of a location be included in mitigation. At this time, no TCPs in the vicinity of the project have yet been identified, and specific adverse impacts to such cultural resources have likewise not been identified. If there are TCPs in the general area from which project facilities would be visible, tribal users of those resources would likely consider that to be an adverse effect on the resource. Given the degree of existing visual modification to the surrounding landscape, it would be highly subjective and difficult to assess the significance of such indirect impacts.

3.6.3 Impacts of the Alternatives

3.6.3.1 Alternative 1: Wild Horse Site

Evaluation of the wind energy project configuration for Alternative 1 relative to identified cultural resources in the project area indicates that expected construction impacts on cultural resources would likely be minimal or non-existent. None of the planned locations for wind turbines, access roads, power collection cables, met towers, the substation, the transmission interconnection or other project facilities coincides with the locations of inventoried cultural sites. Therefore, it is assumed that construction (or decommissioning) activities for this alternative would not result in the physical disturbance or destruction of any cultural resources.

Operations and maintenance activities under Alternative 1 would not likely result in direct impacts to cultural resources, as no resources would be located within the permanent footprint of the project. Existing cultural sites in and near the project area would be subject to possible ongoing indirect impacts, however, primarily through changes to the visual environment around the sites. Two of the known cultural sites would be within approximately ¼ mile of wind turbines or other project facilities, and views of project features would presumably alter the historic setting of the sites to some degree. The Pine Spring and Government Spring site would also be within view of Alternative 1 project facilities. Public access to the project area would be controlled, as for the proposed action; therefore, Alternative 1 would not be likely to increase the potential for disturbance and/or removal of artifacts from cultural resource sites.

3.6.3.2 Alternative 2: Springwood Ranch Site

The types of potential impacts under Alternative 2 would be similar to those identified for the proposed action. Construction activities could destroy artifacts or structures, or disturb relationships among artifacts and their context. A detailed evaluation of the relationship between the Alternative 2 project layout and the location of the identified cultural resources on the Springwood Ranch site has not been conducted, so it is not known how many of the seven identified resources would be subject to direct impacts from project construction. Because one of the resources is a prehistoric trail that reportedly crossed through the middle of the property, however, it is quite possible the trail route would intersect multiple elements of a wind energy project on this site. Conversely, the two prehistoric resources (both talus rock features) and the historic resources associated with railroad and irrigation activities are likely to be located near the Yakima River and would not likely be subject to direct impacts.

Indirect impacts to cultural resources under Alternative 2 would likely be similar in nature to those discussed for the proposed action, and would primarily involve changes to the visual context of the resources. This type of indirect effect could also apply to a number of the 30 cultural resources that have been identified in the area surrounding the Springwood Ranch.

3.6.3.3 No-Action Alternative

Under the No-Action Alternative, cultural resources in the project vicinity would continue to physically deteriorate naturally, primarily as a result of low-level ongoing surface erosion and weathering. Sites would also experience other forms of degradation at the current level of land use, including trampling by livestock and shifts in the focus of ranching activities (such as construction of new irrigation ditches and stock ponds). Under current Kittitas County zoning provisions, the project area could be segregated into as many as 400 residential lots with no discretionary action required by the County. Adverse impacts to cultural resources could vary from potentially severe to moderate, depending on the degree of environmental review and discretionary approval exercised by the County.

3.6.4 Cumulative Impacts

Cumulative impacts for all elements of the environment are addressed in **Chapter 4**.

3.6.5 Mitigation Measures

For wind energy projects in general and the Desert Claim project specifically, the prospects for avoiding cultural sites would be addressed in the final micro-siting of wind turbines and other project facilities, which would occur during final design and prior to construction. For facility locations identified as in conflict with cultural sites, project engineers would evaluate data on site-specific structural and wind characteristics to determine whether it would be feasible to relocate the facilities in question, and thereby avoid direct impact to cultural resources.

No additional mitigation would be necessary for identified cultural resource sites avoided in the final layout and construction of project facilities. If final placement of the project elements results in unavoidable adverse impacts to a significant resource, then mitigation would be required to retrieve the scientific and historical information that makes each site significant.

In such cases, the applicant would retain a qualified cultural resource specialist to develop a cultural resource mitigation plan in consultation with the State Office of Archaeology and Historic Preservation (OAHP) and affected Native American tribes. This plan would include mitigation measures tailored to the specific circumstances of each resource and consistent with applicable national, state and local regulations. Mitigation measures would include provisions for working with affected tribes regarding traditional cultural properties, recovery of resource data potentials, and public interpretation of the resources.

Project construction would potentially demolish or alter the setting and character of existing historic resources. Construction impacts would include out-of-character visual elements, change in use, structural vibration, and dust. Project operation would also change the historic character of the surrounding area. Historic buildings and structures subject to unavoidable adverse impacts would be documented in accordance with HABS/HAER guidelines and in consultation with OAHP.

At the larger landscape scale, the project would have a visual impact that could be mitigated by producing a cultural landscape history of the footslope region of the Kittitas Valley below the Wenatchee Mountains. As is typical of such studies, the historical narrative could be accompanied by photos showing the character of the historical landscape and how it has evolved into the existing landscape, so that the historical narrative and the photos would serve as a source for comparative historical studies after the project is completed.

The project cultural resources mitigation plan would also need to provide for monitoring of construction activities and evaluation and treatment of unanticipated archaeological resources that might be discovered during construction. In the event of an unanticipated discovery, ground-disturbing activity in the immediate area would cease and the resources discovered would be tested for significance, following protocols developed in coordination with OAHP and affected tribes. State regulations require permits from OAHP for any excavation of archaeological sites.

3.6.6 Significant Unavoidable Adverse Impacts

If the Desert Claim project were developed according to the current layout, five identified cultural resource sites would experience unavoidable adverse impacts associated with turbine, access road, and electrical collection system construction (see Table 3.6-2). Three of those sites are historic sites with structural remains and extensive debris scatters and concentrations and two are prehistoric sites that include high-density artifact concentrations and tools that provide valuable evidence for land use on the higher-elevation footslopes in the Yakima River basin. As indicated above, it might be possible to avoid the potential direct impacts to these sites through relocation of project facilities during final micro-siting; the applicant, in consultation with OAHP, has agreed to perform such micro-siting to eliminate these impacts. Any remaining direct impacts to significant cultural resources that cannot feasibly be avoided could be mitigated through a mitigation plan developed in consultation with the Washington SHPO. Significant indirect impacts to cultural resources in the project vicinity are not anticipated, although there could be changes in the visual setting associated with some of these sites. A cultural landscape history review could be implemented as mitigation for these changes. Because the potential significant adverse impacts that have been identified could be avoided or otherwise mitigated through data recovery and archiving, no significant unavoidable adverse impacts to cultural resources have been identified.