Exhibit L

Protected Areas

Nolin Hills Wind Power Project
~~February~~ November 2020

Prepared for

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

d/b/a Nolin Hills Wind, LLC

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Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
Applicant	Nolin Hills Wind, LLC
BESS	battery energy storage system
BLM	U.S. Bureau of Land Management
BMP	best management practice
EFSC	Energy Facility Siting Council
GIS	Geographic Information System
I-84	Interstate 84
kV	kilovolt
MBTH	maximum blade tip height
NWR	National Wildlife Refuge
O&M	Operations and Maintenance
OAR	Oregon Administrative Rule
Project	Nolin Hills Wind Power Project
UEC	Umatilla Electric Cooperative
VRM	Visual Resource Management
ZVI	zone of visual influence

1.0 Introduction

Exhibit L addresses potential impacts of the Nolin Hills Wind Power Project (Project) to protected areas, in compliance with Oregon Administrative Rules (OAR) 345-021-0010 (1)(l) and OAR 345-022-0040. OAR 345-022-0040 requires that the Project address impacts to protected areas, as defined in OAR 345-022-0040(1)(a)–(p). While the Project is not located in a protected area (see Figure L-1), the Energy Facility Siting Council (EFSC) must find that, taking into account mitigation, the design, construction, and operation of the Project are not likely to result in significant adverse impacts to protected areas.

2.0 Analysis Area

The Analysis Area for protected areas includes the area within the Site Boundary, as well as 20 miles from the Site Boundary, as defined in OAR 345-001-0010(58)(e). The Site Boundary is described in detail in Exhibits B and C. The Analysis Area is shown on Figure L-1.

3.0 Protected Areas Inventory – OAR 345-021-0010(1)(l)(A)(B)

OAR 345-021-0010(1)(l) Information about the proposed facility's impact on protected areas, providing evidence to support a finding by the Council as required by OAR 345-022-0040, including:

OAR 345-021-0010(1)(l)(A) A list of the protected areas within the analysis area showing the distance and direction from the proposed facility and the basis for protection by reference to a specific subsection under OAR 345-022-0040(1);

OAR 345-021-0010(1)(l)(B) A map showing the location of the proposed facility in relation to the protected areas listed in OAR 345-022-0040 located within the analysis area;

Table L-1 provides a description of protected areas as defined under OAR 345-022-0040 along with an inventory of the 18 protected areas within the Analysis Area. The table also indicates the proximity and direction of each protected area relative to the Site Boundary. No protected areas are located within the Site Boundary; however, the Umatilla Electric Cooperative (UEC) transmission line corridor is within approximately 0.2 mile of the southeast corner of one protected area, the Echo Meadows site of the Oregon Trail Area of Critical Environmental Concern (ACEC). The inventory of protected areas was based on review of available Geographic Information System (GIS) data, maps, and other available information for the categories of protected areas listed in OAR 345-022-0040(1)(a)–(p). These protected areas are identified by name on Figure L-1.

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Table L-1. Protected Areas Inventory and Visual Assessment Results

Protected Areas within Analysis Area		Closest Distance to Transmission Line or Turbines (miles)	Direction from Project	Project Potentially Visible? [1]	Visual Analysis Results
Type (as defined under OAR 345-022-0040)	**Area Name**				
National Parks OAR 345-022-0040(1)(a)	None	N/A	N/A	N/A	N/A
National Monuments OAR 345-022-0040(1)(b)	None	N/A	N/A	N/A	N/A
Wilderness Areas OAR 345-022-0040(1)(c)	None	N/A	N/A	N/A	N/A
National & State Wildlife Refuges (NWR) OAR 345-022-0040(1)(d)	Cold Springs NWR	9.2 (UEC Cottonwood Route)/ 12.0 (Turbines ~~Option 2~~)	N	Yes	Low Impact. Viewshed analysis indicates good potential Project visibility in NWR for turbines, the UEC Cottonwood route, and the internal transmission line. The NWR is closest to the UEC Cottonwood route but at a background distance of 9+ miles. Turbines will be at a background distance of at least 12 miles. Vegetative screening in portions of the NWR and views across developed areas and highways indicate that the turbines will not be a prominent feature in the viewshed. Views of the Project will not interfere with designated wildlife viewing locations. No management direction applicable to preservation of scenic qualities within or outside of Refuge; views of the Project will not compromise the purpose of the Refuge.
	McNary NWR	14.7 (UEC Cottonwood Route)/ 17.6 (Turbines ~~Option 2~~)	N	Yes	Negligible Impact. Viewshed analysis indicates very limited Project visibility in the NWR at a distance of 14+ miles. If Project is visible, the far background viewing distance, vegetative screening within the NWR, and views across developed land uses and highways indicate that the turbines would not be a prominent feature in the viewshed. Views of the Project will not interfere with designated wildlife viewing locations. No management direction applicable to preservation of scenic qualities within or outside of Refuge; views of the Project will not compromise the purpose of the Refuge.
	Umatilla NWR	9.5 (UEC Cottonwood Route)/ 22.4 (Turbines ~~Option 2~~)	NW	Yes	Negligible Impact. Viewshed analysis indicates good potential Project visibility for turbines and the internal transmission line; limited areas of potential visibility for the UEC Cottonwood route, at a background distance of 9+ miles. A background viewing distance of over 22 miles, vegetative screening within the NWR that limits Project visibility, and views across developed industrial uses and highways indicate that the turbines would not be a prominent feature in the viewshed. Views of the Project will not interfere with designated wildlife viewing locations. No management direction applicable to preservation of scenic qualities within or outside of Refuge; views of the Project will not compromise the purpose of the Refuge.
	McKay Creek NWR	14.9 (UEC Cottonwood Route)/9.7 (Turbines ~~Option 2~~)	E	Yes	Negligible Impact. Viewshed analysis indicates limited potential visibility of Project turbines in portions of the NWR at a distance of 9.7+ miles. No visibility for any of the transmission routes. If Project is visible, the far background viewing distance, vegetative screening within the NWR, and views across developed industrial uses and highways indicate that the turbines would not be a prominent feature in the viewshed. Views of the Project will not interfere with designated wildlife viewing locations. No management direction applicable to preservation of scenic qualities within or outside of Refuge; views of the Project will not compromise the purpose of the Refuge.
National Coordination Areas OAR 345-022-0040(1)(e)	None	N/A	N/A	N/A	N/A
National & State Fish Hatcheries OAR 345-022-0040(1)(f)	Three Mile Adult Holding (Umatilla Fish Hatchery Satellite Facility)	6.2 (UEC Cottonwood Route)/ 16.4 (Turbines ~~Option 2~~)	N	Yes	Negligible Impact. Viewshed analysis indicates generally good potential visibility of Project turbines and transmission lines, but all at background distance. This site is closest to the UEC Cottonwood route, at a distance of 6.2 miles, and is more than 16miles from the closest turbines. Existing views include transmission lines, roads, and urban areas. Where turbines or transmission lines will be visible, long viewing distance and views across an urbanized area and highways would result in very limited change to the landscape. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of facility.
	Irrigon Fish Hatchery	9.6 (UEC Cottonwood Route)/ 22.6 (Turbines ~~Option 2~~)	NW	Yes	Negligible Impact. Viewshed analysis indicates good potential visibility for Project turbines but not transmission lines. Based on a long viewing distance of over 22 miles and existing views that include roads, transmission lines and urbanized development, the turbines will have very limited effect on the viewshed. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of facility.

Protected Areas within Analysis Area		Closest Distance to Transmission Line or Turbines (miles)	Direction from Project	Project Potentially Visible? [1]	Visual Analysis Results
Type (as defined under OAR 345-022-0040)	**Area Name**				
	Umatilla Fish Hatchery	12.9 (UEC Cottonwood Route)/ 25.9 (Turbines ~~Option 2~~)	NW	No	Negligible Impact. Viewshed analysis indicates good potential visibility for Project turbines and possibly the internal transmission line, but at background distances. Based on a long viewing distance of 26 miles or more and existing views that include roads, transmission lines and urbanized development, the turbines will have very limited or no effect on the viewshed. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of the facility.
	Pendleton Juvenile Acclimation (Umatilla Fish Hatchery Satellite Facility)	18.9 (BPA Stanfield Route)/14.8 (Turbines ~~Option 2~~)	E	No	Negligible or No Impact. Viewshed analysis indicates that the Project transmission lines would not be visible from the Pendleton Juvenile Acclimation facility due to intervening topography. The site is just on the edge of an area of potential visibility for Turbine Options 1 and 2, at a background distance of 14.8 or 14.9 miles. If Project is visible, the far background viewing distance and views across developed urban and industrial uses indicate that the turbines would not be a prominent feature in the viewshed. Views of the Project will not compromise the purpose of the facility.
	Minthorn Ponds (Umatilla Fish Hatchery Satellite Facility)	24.0 (BPA Stanfield Route)/19.7 (Turbines ~~Option 2~~)	E	Yes	Negligible Impact. Viewshed analysis indicates potential visibility of Project turbines at a far background viewing distance of nearly 20 miles, and no visibility of transmission lines. Views toward the Project include highways, transmission lines, the city of Pendleton, and other industrial uses, and turbines would not be a prominent feature in the viewshed, if visible at all. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of the facility.
National Recreation and Scenic Areas OAR 345-022-0040(1)(g)	None	N/A	N/A	N/A	N/A
State Parks & Waysides OAR 345-022-0040(1)(h)	Hat Rock State Park	12.2 (UEC Cottonwood Route)/ 16.6 (Turbines ~~Option 2~~)	N	Yes	Low Impact. Viewshed analysis indicates limited Project visibility ranging from none to good depending on location/elevation, at a background viewing distance of 12+ miles to the UEC Cottonwood route and 16.6 miles to the closest turbines. Because views toward the Project include existing transmission lines, highways and urbanized areas, the turbines and/or transmission line would not be prominent features in the viewshed, if visible at all. The turbines may be visible only from high ground in the park and would not be visible from developed use areas. The direction of the Project from the park indicates that the turbines are unlikely to feature in views of Hat Rock from common vantage points in the park.
	Battle Mountain Forest State Scenic Corridor	25.6 (UEC Cottonwood or BPA Stanfield Route)/16.4 (Turbines ~~Option 1 or 2~~)	SE	Yes	Negligible Impact. Viewshed analysis indicates at most spotty potential Project visibility, with the Project screened by topography along much of the corridor. A far background viewing distance of over 16 miles to the closest turbines, and views toward the Project that include existing transmission lines, highways, and other developed uses, indicates that the turbines would not be an unusual or prominent feature in the viewshed, if visible at all. Distant, intermittent views of the Project will not compromise the scenic nature of this roadway corridor.
State Natural Heritage Areas OAR 345-022-0040(1)(i)	Lindsay Prairie Preserve	16.1 (UEC Cottonwood Route)/23.0 (Turbines ~~Option 2~~)	W	Yes	Negligible Impact. Viewshed analysis indicates potential visibility of Project turbines and the internal transmission line, at far background distance of 23 miles or more. Existing views include developed uses, transmission lines, highways, and wind turbines, indicating that the Project turbines would not be a prominent feature in the viewshed. The Preserve is fenced, gated and locked and has no developed facilities; although it is publicly accessible, it receives very little public use. The site is protected for preservation of native vegetation and wildlife, and there is no management direction related to scenic quality except as related to vegetation within the site; distant views of the turbines will not compromise the purpose of the Preserve.[2]
State Estuarine Sanctuaries OAR 345-022-0040(1)(j)	None	N/A	N/A	N/A	N/A
Scenic Waterways/ Wild & Scenic Rivers OAR 345-022-0040(1)(k)	None	N/A	N/A	N/A	N/A
Experimental Areas (Rangeland Resources Program) OAR 345-022-0040(1)(l)	None	N/A	N/A	N/A	N/A

Protected Areas within Analysis Area		Closest Distance to Transmission Line or Turbines (miles)	Direction from Project	Project Potentially Visible? [1]	Visual Analysis Results
Type (as defined under OAR 345-022-0040)	**Area Name**				
Agricultural Experimental Stations OAR 345-022-0040(1)(m)	Oregon State University Agriculture Research and Extension Center, Hermiston	4.4 (UEC Cottonwood Route)/ 12.4 (Turbines ~~Option 2~~)	N	Yes	Low Impact. Viewshed analysis indicates potential visibility of the UEC Cottonwood route, at a distance of 4.4 miles, and unlikely visibility of Project turbines. If visible, the turbines would be at a background distance of over 12 miles. Existing views include urban/industrial development, highways, transmission lines, and an existing wind farm, indicating that neither the Project transmission line or turbines will be prominent features in the viewshed. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of facility.
	Columbia Basin Agricultural Research Center, Pendleton	23.1 (BPA Stanfield Route)/19.6 (Turbines ~~Option 2~~)	E	Yes	Negligible Impact. Viewshed analysis indicates potential visibility of Project turbines and the internal transmission line at a far background viewing distance of over more than 19 miles. Views toward the Project include highways, transmission lines, the City of Pendleton, and other developed uses, and turbines will not be a prominent feature in the viewshed, if visible at all. No management direction applicable to scenic quality, and views of the Project will not compromise the purpose of the facility.
Research Forests OAR 345-022-0040(1)(n)	None	N/A	N/A	N/A	N/A
BLM Areas of Critical Environmental Concern OAR 345-022-0040(1)(o)	Echo Meadows Site, Oregon Trail ACEC	0.2 (UEC Cottonwood Route)/ 6.4 (Turbines ~~Option 2~~)	N	Yes	Low to Moderate ~~I~~impact. ~~Viewshed~~ ZVI analysis indicates good potential visibility of the Project turbines and UEC Cottonwood line route. The turbines would be at a background distance of over 6 miles. The UEC Cottonwood route would be in the foreground (less than 0.5 mile) from the southeast corner of the site, but in the middleground (0.5-1 mile) from where visitors are present in Echo Meadows. Views toward the Project include existing wind turbines (in the southwest/west direction toward the UEC Cottonwood route), power lines, agricultural structures and center-pivot agricultural irrigation systems. Views of the remnant Oregon Trail ruts are toward the north, ~~in the opposite direction~~away from the Project; however, Project turbines could be in visitors' peripheral view as they look eastward along the Oregon Trail ruts, though still at a background distance where they would not be a dominant landscape feature. This site receives fairly low levels of public use, up to a maximum of about 850 visitors per year.[3] When not focused on the Oregon Trail and where not screened by topography, visitors would have ~~Distant~~ background views of turbines and middleground views of the UEC Cottonwood route that create moderate contrast in the viewshed. The Project will not compromise the integrity of the remaining evidence of the Oregon Trail at this site. Further, given existing modifications to the natural landscape visible from Echo Meadows and visitors' primary orientation away from the Project, the Project will not ~~or~~ significantly impact the user experience.
BLM Research Natural Areas and Outstanding Natural Areas OAR 345-022-0040(1)(o)	None	N/A	N/A	N/A	N/A
State Wildlife Areas and Management Areas OAR 345-022-0040(1)(p)	Irrigon Wildlife Area	7.9 (UEC Cottonwood Route)/ 19.2 (Turbines ~~Option 2~~)	NW	No	No ~~I~~impact. Viewshed analysis indicates that none of the Project facilities will be visible from the Irrigon Wildlife Area due to intervening topography.
	Power City Wildlife Area	7.5 (UEC Cottonwood Route)/ 16.6 (Turbines ~~Option 2~~)	N	Yes	Negligible Impact. Viewshed analysis indicates potential visibility of Project turbines and possibly the internal transmission line, at background viewing distances of 16 miles and 19 miles, respectively. Because existing views include industrial/urbanized areas, highways and transmission lines, the turbines would not represent an unusual feature in the viewshed and would not be prominent. No management direction applicable to scenic quality; views of the Project will not interfere with wildlife viewing or compromise the purpose of the WMA.
	Coyote Springs Wildlife Area	12.9 (UEC Cottonwood Route)/ 24.8 (Turbines ~~Option 2~~)	NW	Yes	Negligible Impact. Viewshed analysis indicates potential visibility of Project turbines in a portion of the Wildlife Area. Given the far background viewing distance of nearly 25 miles and views in context with existing urban/industrial development, highway and an existing wind farm, the turbines would not represent an unusual feature in the viewshed and would not be prominent. No management direction applicable to scenic quality; views of the Project will not interfere with wildlife viewing or compromise the purpose of the Wildlife Area.

BPA = Bonneville Power Administration; N/A = not applicable; UEC = Umatilla Electric Cooperative

1. Indicates potential visibility of any part of wind turbines or 230-kV transmission lines as determined through viewshed analysis. ~~Applicable to both Option 1 and Option 2 turbine layouts; limited substantive differences found.~~

2. Information on access and use obtained through a personal communication between Thomas Kruger, Tetra Tech and Jeff Rosier, The Nature Conservancy, on March 9, 2015.

3. Use data for the Oregon Trail Echo Meadows ACEC obtained through a personal communication between Rachael Katz, Tetra Tech, and Brian Woolf, BLM Vale District, Baker Office, on August 6, 2018.

4.0 Potential Impacts – OAR 345-021-0010(1)(l)(C)

OAR 3450-021-0010(1)(l)(C) A description of significant potential impacts of the proposed facility, if any, on the protected areas including, but not limited to, potential impacts such as:

4.1 Noise Impacts – OAR 345-021-0010(1)(l)(C)(i)

(i) Noise resulting from facility construction or operation;

Exhibit X provides an assessment of the existing acoustical environment and anticipated Project sound levels, and the methodology for noise modeling is discussed in detail in that exhibit. As noted in Exhibit X, sound generated by an operating turbine includes both mechanical sound and aerodynamic sound. The dominant noise component for wind farms is aerodynamic sound, which refers to the sound produced by air flow around the turbine blades and the tower. Some noise will also be generated by construction and operation of the 230-kV transmission line, as well as the solar array and battery energy storage system (BESS).

Based on the results of acoustic modeling, described in detail in Exhibit X and shown on Figures X-2 and X-3, Project noise from operation of the turbines ~~noise~~, solar array (i.e., sound associated with transformers, inverters, and direct current converters), and BESS would attenuate to a level indistinguishable from the background noise level before reaching any of the protected areas. All protected areas are located more than 5 miles from the primary turbine Site Boundary where noise from Project ~~turbine~~ operations would be effectively inaudible.

One protected area, the Echo Meadows site, part of the Oregon Trail ACEC, would be within 0.2 mile of the UEC Cottonwood route Site Boundary. Potential noise impacts from Project construction on the Echo Meadows site are reviewed below, per the January 2018 EFSC Project Order. However, Echo Meadows is not considered a noise sensitive property in Oregon Department of Environmental Quality noise regulations (OAR 340-035-0035), as the site is not used for sleeping or as a school, church, hospital, or public library; in addition, OAR 340-035-0035(5)(g) specifically exempts construction noise. This site was therefore not addressed specifically in Exhibit X; however, the Exhibit X results are still applicable as a basis for evaluation.

The Echo Meadows site includes 320 acres managed by the U.S. Bureau of Land Management (BLM) for preservation and enjoyment of the remaining evidence of the Oregon Trail. Visitors can hike along a paved trail to see nearly one mile of intact wagon ruts and read interpretive signs about the area and its history. This site receives fairly low levels of public use, up to an estimated maximum of about 850 visitors per year (personal communication between Rachael Katz, Tetra Tech, and Brian Woolf, BLM Vale District, Baker Office, August 6, 2018). Although sound from transmission line construction would be audible within the Echo Meadows ACEC site if the UEC Cottonwood route is selected, it would be ~~the~~ short~~-~~ term and~~,~~ temporary in nature~~. of any noise~~ While dependent on the final design and construction planning, the total construction time in the vicinity of Echo Meadows may be approximately three weeks, spread out in intermittent shorter periods, all during daytime

hours. ~~and relatively low use of the area indicates that it would not be considered a significant noise impact.~~ The level of noise would also be similar to existing maintenance noise that occurs occasionally for the existing distribution line along the nearby Oregon Trail Road (OR-320). As modeled in Exhibit X, the composite construction equipment sound level from a distance of 2,000 feet would be 48 A-weighted decibels, which is below the industrial limits listed in Section 2.2 of Exhibit X. The closest portion of the Echo Meadows site to the transmission line route is just over 1,000 feet away; however, this is from the southeast corner of the site where visitors would not typically be present. The parking area and first set of interpretive signs are over 2,000 feet from the UEC Cottonwood route, with visitors moving farther away and construction noise attenuating as they hike northeast to see the remnant portion of the Oregon Trail. For these reasons, Project transmission line construction noise would neither interfere with the enjoyment nor compromise the integrity of the remaining evidence of the Oregon Trail at this site. ~~As described in Exhibit X, the construction engineer normally notifies the community via public notice or alternative method of the expected Project construction commencement and duration to help minimize the effects of construction noise. Overall, Project construction noise would neither interfere with the enjoyment of nor compromise the integrity of the remaining evidence of the Oregon Trail at this site.~~

4.2 Traffic Impacts – OAR 345-021-0010(1)(l)(C)(ii)

(ii) Increased traffic resulting from facility construction or operation;

Potential traffic impacts are addressed in greater detail in Exhibit U, which provides additional information on anticipated traffic volumes, peak construction traffic times, potential delays and temporary road closures, and mitigation measures.

No significant traffic impacts to protected areas are anticipated from the Project. All but four of the protected areas are located north of Interstate 84 (I-84) and would be generally unaffected by Project traffic, which would be concentrated on a small number of roads south of I-84. If the UEC Cottonwood route alternative is chosen, there ~~may~~ would be short-term, temporary disruption to traffic where the route would cross I-84. To construct the line across I-84, structures would be placed on either side of I-84 and a helicopter would be used to fly the lines across. There would be five lines including the grounding wire, each flown over and secured individually. During construction, flaggers would bring traffic to a momentary stop when each line is flown across, then allow traffic to slowly proceed. No lanes would be closed, and the process would occur over a few hours in one day. As such, this would be a short-term, temporary disruption to the normal flow of traffic along I-84. ~~; a~~Although I-84 is the most heavily used highway in the region surrounding the Project, temporary impacts on access to protected areas are not expected because of the overall minor disruption to traffic on I-84 and alternative access routes are available. As detailed in Exhibit U, implementing best management practices (BMPs) will ensure access restrictions to any highways that may serve protected areas will be timed to avoid peak traffic flow. Construction worker traffic will be dispersed on many roads in the area, rather than concentrated on any one road such that access to any protected area north of the interstate could be adversely affected.

South of I-84, the Echo Meadows ACEC site is accessed via a gravel road extending north from Oregon Trail Road (OR-320) that connects the town of Echo and OR-207. If the UEC Cottonwood route alternative is chosen, it is not expected that the gravel road going north from OR-320 to Echo Meadows would be closed by construction; however, if the need arises, the temporary closure would be less than 15 minutes. The transmission line would be located on the northern or southern side of OR-320 and closure of OR-320 is unlikely. However, for the purposes of analysis, it is possible portions of OR-320 would be closed for one or two days. As visitors can approach the turnoff to Echo Meadows from either east- or west-bound OR-320, and therefore could drive around via OR-207, I-84, and Thielsen Road, access would not be blocked. There is a residence adjacent to OR-320 whose access also depends on the gravel road going north toward Echo Meadows, so local and visitor access would be maintained at the intersection. Given the short-term, temporary nature of potential traffic disruption described above, the Project will not have a significant impact on access to Echo Meadows. ~~there may be short-term disruption to traffic on this road and therefore access to the Echo Meadows site while the line is constructed. Any disruption or delay from construction traffic will be temporary and have a minor effect on access to the site.~~ Furthermore, ~~A~~as noted ~~above~~earlier, use of the Echo Meadows site is relatively low and few users are likely to be affected by potential construction delays.

The Project's primary transportation route includes US-395 to County Road 1350 (Coombs Canyon Road), at which point vehicles would turn west to the Project site. This turnoff from US-395 is directly opposite the entrance leading east into the McKay Creek National Wildlife Refuge (NWR); there is no traffic light or stop sign at the intersection. Similar to the Echo Meadows site, there could be short-term delays due to increased traffic on US-395 and therefore access to the McKay Creek NWR during the peak construction period. However, the direction of Project traffic vis-à-vis the opposite NWR entrance would inherently reduce the likelihood of delay, because Project-related traffic would either be heading south and turning right with no required stop from US-395, or turning left onto US-395 where visitors seeking to turn from US-395 into the NWR would have the right-of-way. Furthermore, existing excess daily trip capacity along this rural segment of US-395 (see Exhibit U) would indicate the added volume from the Project is unlikely to cause any significant slowdown. For these reasons, Project traffic will not adversely impact the McKay Creek NWR.

Construction ~~worker~~ traffic may occur on local county roads providing access to the other areas south of I-84 as well; however, ~~construction worker traffic will be dispersed on many roads in the area, and~~ the level of worker traffic anticipated will not adversely affect Level of Service on those roads and thus will not adversely affect access to other protected areas (see Exhibit U).

Project operations will not generate amounts of traffic that could adversely impact protected areas. Operation of the Project is expected to employ from 10 to 15 individuals (see Exhibit U). Therefore, there will be no significant impacts to protected areas due to Project operations traffic.

4.3 Water Use and Wastewater – OAR 345-021-0010(1)(l)(C)(iii)(iv)

(iii) Water use during facility construction or operation;

No significant water-related impacts to protected areas are anticipated from the Project. Water used in construction processes will be obtained from nearby locations with adequate water rights, such as the City of Hermiston, City of Echo, or City of Pendleton ~~or from local landowners with existing, upgraded existing or newly constructed wells permitted under a limited water use license~~. Therefore, construction of the Project will not have any adverse effect on the availability of water in any protected areas. Water acquired from such sources near the Project will be transported to construction areas, which represents a component of the traffic impact analysis discussed above and in Exhibit U. No ground or surface water withdrawals will take place for construction of the Project beyond those already permitted for existing water suppliers. During operation, the Project will have minimal water needs that would be fulfilled through the use of an exempt well at the Operations and Maintenance (O&M) Building. In addition, solar modules will be washed once per year and washwater will be applied via robotic panel cleaners; this water will be obtained from the City of Hermiston, the City of Pendleton, and/or the City of Echo under an existing municipal water right. Water used during Project construction and operation will not impact water availability or use at protected areas.

(iv) Wastewater disposal resulting from facility construction or operation;

Wastewater, in this context, refers to stormwater runoff and to sanitation wastewater; no industrial wastewater would be produced during construction or operation of the Project. Stormwater runoff will be managed on-site according to the BMPs as described in the National Pollutant Discharge Elimination System 1200-C Erosion and Sediment Control Plan (Exhibit I), such that no stormwater will leave the Site Boundary. Therefore, no protected area will be affected by stormwater runoff from the Project.

Sanitation wastewater during construction will be contained in portable toilets, to be provided and maintained by a licensed contractor. Wastewater generated at the O&M Building during Project operation will be handled by an on-site septic system, to be permitted prior to construction. No protected area would be impacted by sanitation wastewater related to the Project. Exhibit O provides additional information on water use, and Exhibit V provides information on wastewater.

4.4 Visual Impacts – OAR 345-021-0010(1)(l)(C)(v)(vi)

(v) Visual impacts of facility structures or plumes.

Visual impacts of the Project are primarily related to views of the turbines, and to a lesser degree, other facilities such as the ~~up to 24.9-mile UEC Cottonwood or Bonneville Power Administration Stanfield~~ 230-kV transmission lines, ~~internal transmission lines~~solar array and BESS, site access roads, O&M Building, and substations. The Project will not generate emissions plumes; therefore, no visual impacts from plumes are expected.

In evaluating the visual impacts, Nolin Hills Wind, LLC (the Applicant) first determined whether the Project would be visible from each protected area using digital bare earth modeling. The analysis began with a zone of visual influence (ZVI) analysis (also known as a viewshed or visibility analysis), using Environmental Systems Research Institute ArcGIS software to identify the areas

from which the proposed Project turbines might be visible. To assess the potential visibility of the structures, the ZVI analysis was performed for the ~~Option 1 (Figure L-2) and Option 2 (Figure L-3)~~ turbine layout~~s~~ assuming 100 percent maximum blade tip height (MBTH), which is 496 feet (Figure L-2). ~~This resulted in an assumed turbine MBTH of 656 feet for the Option 1 (Siemens-Gamesa 6.0 MW) turbines and 496 feet for the Option 2 (General Electric 3.03 MW) turbines.~~ The ZVI analysis also addressed potential visibility of the 230-kV transmission lines; Figures L-3, L-4, and L-5 show the range of visibility for the UEC Cottonwood, BPA Stanfield, and internal transmission line routes, respectively. Similar to the O&M Building and substations, the proposed solar array and BESS will not represent significant visual structures within the Site Boundary in the context of taller transmission lines and substantially taller and more visible wind turbines. Therefore, additional ZVI analysis was not conducted for these Project components.

It should be noted that this "bare-earth" modeling approach, based only on the effects of terrain on visibility, results in a conservative assessment of potential visibility for several reasons. First, in some areas where the analysis indicates Project structures would be visible, the only visible components might be the tips of the turbine blades at MBTH, which would likely be noticeable only at relatively close viewing distances. In addition, the model does not account for the effects of distance, lighting, weather, and atmospheric attenuation factors that diminish visibility under actual field conditions. A bare-earth analysis also does not account for the effects of vegetation or buildings, which can in practice block or screen views in some places. Figures L-2 through L-5 ~~and L-3~~ show the areas from which ~~the turbines~~ Project structures will likely be visible~~, for the turbine Option 1 and turbine Option 2 layouts, respectively~~; potential visibility (yes/no) is indicated by color-coding on those figures.

Based on the results of the ZVI analysis, there will be potential visibility of some portions of the Project from 15 of the 18 protected areas in the Analysis Area (see Table L-1). In some of these protected areas, visibility is characterized as limited, meaning that there will be no views of the Project from a substantial portion of the protected area.

Potential visibility is but one of several factors that comprise an assessment of visual impact to a protected area. Other factors to consider include the viewing distance; other natural and manmade features visible within the view; the likely number and nature of visitors to a protected area; and whether there is any management direction related to preservation of scenic quality, either within the protected area or outside of it. Table L-1 provides a summary of the visual impact assessment for each of the 18 protected areas~~, for turbine Option 1 and Option 2~~. ~~There were limited differences in potential visibility between the two layouts at this level of analysis; see Exhibit R for additional details regarding differences in the number of turbines visible for scenic areas.~~

The visual impact is negligible for most protected areas, primarily due to their distance of 6 to 20 miles from the Site Boundary (and over 20 miles for some protected areas to the portion of the Site Boundary encompassing the wind turbines). Views of the Project turbines for most protected areas would therefore be at a background viewing distance where the apparent size of the turbines is greatly diminished, and the turbines would occupy a limited portion of the total viewshed. Many of the protected areas currently have views of other wind farms, transmission lines, and urban and industrial development so the Project will

not introduce a new or unusual feature to the view. In addition, potential Project views from some of the protected areas will be partially to fully screened by vegetation.

Only two of the protected areas will have foreground to middleground views of Project facilities (from a distance of up to 0.5 mile for foreground, and 0.5 to 5 miles for middleground). These are the Echo Meadows site of the Oregon Trail ACEC and the Hermiston Agricultural Research Center. In both cases, the foreground to middleground viewing distance is to the UEC Cottonwood route; views of Project turbines will be at a background distance of over 6 miles. The following paragraphs provide a more in-depth visual impact assessment for these protected areas.

4.4.1 Echo Meadows Site, Oregon Trail ACEC

The Echo Meadows site of the Oregon Trail ACEC is located just north of the Site Boundary along the UEC Cottonwood route that follows Oregon Trail Road (OR-320). It is a 320-acre parcel managed by the BLM for preservation and enjoyment of the remaining evidence of the Oregon Trail. Visitors can hike along a quarter-mile paved trail to see nearly one mile of intact wagon ruts and read interpretive signs about the area and its history.

The ~~visibility~~ ZVI analysis indicates good Project visibility at a foreground viewing distance for the UEC Cottonwood route (0.2 mile), and variable visibility at a background viewing distance (6.4 miles or more) for the turbines. Views from the site ~~will~~ include existing wind turbines, power lines, agricultural structures and multiple center-pivot agricultural irrigation systems. This site receives fairly low levels of public use, estimated at 850 visitors per year (personal communication between Rachael Katz, Tetra Tech, and Brian Woolf, BLM Vale District, Baker Office, August 6, 2018). Visual conditions at the site are managed under the BLM Visual Resource Management (VRM) system; however, it is not classified by the BLM as an important scenic resource (i.e., VRM Class I or II). While the VRM system applies only to actions that occur within the boundaries of the site, the current Resource Management Plan for the area includes management direction that "new uses incompatible with maintaining visual qualities or providing public interpretation will be excluded in a ½ mile corridor," from the ACEC (BLM 1989). For this reason, it was included for purposes of EFSC analysis as an important scenic resource in Exhibit R. The evaluation in Exhibit R, including a photo simulation from a key viewpoint within Echo Meadows, indicates that the Project will not generally be in view when visitors are oriented toward the remnant Oregon Trail ruts. However, where not screened by topography, the Project will introduce new, moderately contrasting middleground and background features in the viewshed of Echo Meadows (see Exhibit R for additional discussion and related figures). ~~views of the transmission line, and Project wind turbines at a distance, will not represent a significant change from existing conditions.~~Overall, Project facilities will not dominate the landscape and will be similar to current modifications visible from Echo Meadows. ~~Therefore~~For these reasons, and given the primary view orientation for visitors away from the Project, the Project will neither interfere with the enjoyment of nor compromise the integrity of the remaining evidence of the Oregon Trail at this site.

4.4.2 Hermiston Agricultural Research Center

The Hermiston Agricultural Research Center is an extension of Oregon State University, providing expertise to serve users of nearly 500,000 acres of irrigated agriculture in Oregon and Washington's Columbia Basin. Occupying approximately 15 acres just outside the incorporated City of Hermiston, the center conducts research on identification of new crops and production practices, plant breeding and varietal evaluation, as well as stream ecology topics related to salmon (OSU Extension Service 2018).

The visibility analysis indicates potential visibility of the UEC Cottonwood route, at a distance of 4.4 miles, and unlikely visibility of Project turbines. If visible, the turbines will be at a background distance of over 12 miles. As the research center is just outside of a more urbanized area and among industrial agriculture, views of the Project will be in context with existing urban/industrial development, nearby highways, transmission lines, and existing wind turbines. The Project transmission line and wind turbines will not be prominent features in the viewshed. In addition, there is no management or other research direction applicable to scenic quality. Users of the center are engaged in focused activities that do not typically involve viewing scenery, and any views of the Project will not compromise the purpose of the facility. Therefore, the Project will not have a significant visual impact on the Hermiston Agricultural Research Center.

Based on this analysis, the Applicant concludes that there will be no significant visual impacts to protected areas within the Analysis Area. While most of the protected areas will have some level of Project visibility, the Project will be in the distant background except for the two sites assessed above, which will not be significantly impacted. Additionally, views from most of the protected areas already include wind turbines, transmission lines, and other industrial infrastructure or urbanized areas, indicating that the Project will not represent a new or unusual feature in the landscape.

> *(vi) Visual impacts from air emissions resulting from facility construction or operation, including, but not limited to, impacts on Class 1 Areas as described in OAR 340-204-0050.*

Class I areas, as defined in OAR 340-204-0050, consist of the 12 federally-designated Wilderness Areas in Oregon. None of these wilderness areas are located within the Analysis Area. The Project will not generate any emissions plumes, so will not cause any visual impacts from air emissions. Potential visual impacts due to dust created during construction of the Project will be minimized by following BMPs for dust control as detailed in Exhibit O.

4.5 Other Impacts

No other impacts to protected areas are anticipated.

5.0 Conclusions

The Project Analysis Area contains all or part of 18 protected areas. The Applicant analyzed potential impacts to these areas and concluded as follows:

- **Noise.** Based on the results of the noise modeling presented in Exhibit X, operational noise was determined to attenuate to background ambient noise levels at all 18 protected areas within the Analysis Area. Construction noise for the transmission line may be audible in one protected area, nearest the Project; however, construction noise will be short-term and intermittent, and will not be considered a significant impact to any protected area.
- **Traffic.** Project-related traffic will not be sufficiently high, nor located so as to significantly impact any protected areas. Some short-term, intermittent and temporary delays may be experienced by visitors attempting to reach some of the protected areas during Project construction; however, these will be temporary and traffic conditions will return to typical low levels following construction. Therefore, there will be no significant impact to traffic resulting from the operation of the Project.
- **Water.** The Project will not use water in sufficient quantities or from sources that would significantly impact any protected areas. Therefore, there will be no significant impacts to protected areas by water use at the Project.
- **Wastewater.** The Project will manage its very limited quantities of wastewater on-site. Therefore, there will be no significant impacts to protected areas due to wastewater generated at the Project.
- **Visual.** The Project will potentially be visible from 15 of the 18 protected areas in the Analysis Area~~, for both the Option 1 and Option 2 turbine layouts~~. However, due to distance from the Project, existing industrial, urban and agricultural features within view, relatively low user numbers at the nearest sites, and general lack of management direction applicable to scenic quality beyond the boundaries of each protected area, the Project will not have a significant visual impact on any protected area. ~~The visual impact assessment results are not substantively different for the two turbine layout scenarios.~~

For these reasons, the Council may conclude that the design, construction, and operation of the Project will not result in significant adverse impacts to protected areas and therefore complies with the protected areas standard under OAR 345-022-0040.

6.0 References

BLM (Bureau of Land Management). 1989. Baker Resource Management Plan Record of Decision, Rangeland Program Summary (RPS). BLM Vale District Office, Baker Resource Area. July. Available online at: https://www.blm.gov/or/plans/files/Baker_RMP.pdf

OSU Extension Service. 2018. Hermiston Agricultural Research and Extension Center. Oregon State University. Website accessed August 16, 2018: https://extension.oregonstate.edu/harec

Figures

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Nolin Hills Wind Power Project

Figure L-1
Protected Areas

UMATILLA COUNTY, OREGON

Yakima County
Klickitat County
Benton County
Walla Walla County
Washington
Oregon
Umatilla County
Morrow County
Gilliam County
Union County

UMATILLA NATIONAL WILDLIFE REFUGE
MCNARY NATIONAL WILDLIFE REFUGE
Umatilla
Irrigon
Irrigon Wildlife Area
Power City Wildlife Area
Hat Rock State Park
Cold Springs National Wildlife Refuge
Three Mile Adult Holding
Coyote Springs Wildlife Area
Boardman
Hermiston
Hermiston Agricultural Research Center
Stanfield
Echo
Oregon Trail Area of Critical Environmental Concern
Columbia Basin Agricultural Research Center
Minthorn Ponds
Pendleton
Pendleton Juvenile Acclim
MCKAY CREEK NATIONAL WILDLIFE REFUGE
Pilot Rock
Lindsay Prairie Preserve
Battle Mountain Forest State Scenic Corridor

82 730 12 37 30 84 395

Proposed Site Boundary
Analysis Area (20-mile buffer)
Research Center (OSU)
Fish Hatchery (ODFW)
The Nature Conservancy (TNC)
Oregon Parks and Recreation Department Site (OPRD)
US Fish and Wildlife Service Refuge (USFWS)
Oregon Department of Fish and Wildlife Wildlife Area (ODFW)
Areas of Critical Environmental Concern (BLM)
City/Town
Interstate Highway
Secondary Highway
State Boundary
County Boundary

TETRA TECH

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

1:400,000 WGS 1984 UTM Zone 11N

0 5 10 20 30 40 Miles

NOT FOR CONSTRUCTION

Data Sources

Capital Power-Project Infrastructure; ESRI-Roads, Hillshade; Enterprise-County and State Boundaries

Reference Map

Canada
MT
WA
ID
OR
CA
NV

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Nolin Hills Wind Power Project

Figure L-2
Zone of Visual Influence for Turbine Layout (112 GE 3.03MW Turbines)

UMATILLA COUNTY, OREGON

Yakima County
Klickitat County
Benton County
Walla Walla County
Washington
Oregon
Umatilla County
Morrow County
Union County

Potential turbine visibility calculated using a 10 meter bare-earth digital elevation model with turbine heights of 496 feet (151.2 meters) representing 100% Maximum Blade Tip Height and a viewing height of 6 feet (1.8 meters).

- Proposed Site Boundary
- Analysis Area (20-mile buffer)
- Proposed Turbine
- Turbine Not Visible
- Turbine Potentially Visible
- Research Center (OSU)
- Fish Hatchery (ODFW)
- The Nature Conservancy (TNC)
- Oregon Parks and Recreation Department Site (OPRD)
- US Fish and Wildlife Service Refuge (USFWS)
- Oregon Department of Fish and Wildlife Wildlife Area (ODFW)
- Areas of Critical Environmental Concern (BLM)
- Interstate Highway
- Secondary Highway
- Secondary Road
- State Boundary
- County Boundary

TETRA TECH

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

1:400,000 WGS 1984 UTM Zone 11N

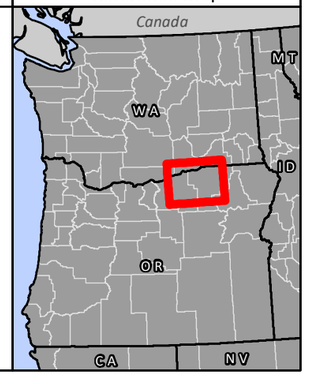
0 2.5 5 10 15 20 Miles

NOT FOR CONSTRUCTION

Data Sources

Capital Power-Project Infrastructure; ESRI-Roads, Hillshade; Enterprise-County and State Boundaries

Reference Map



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Nolin Hills Wind Power Project

Figure L-3
Zone of Visual Influence for the UEC Cottonwood Transmission Line Route (230-kV)

UMATILLA COUNTY, OREGON

Yakima County
Klickitat County
Benton County
Walla Walla County
Washington
Oregon
Umatilla County
Morrow County
Union County

Potential transmission line visibility calculated using a 10 meter bare-earth digital elevation model with transmission line height of 100 feet (30.48 meters), and 140 feet (42.67 meters) where transmission line crosses I-84, and a viewing height of 6 feet (1.8 meters).

- Proposed Site Boundary
- Analysis Area (20-mile buffer)
- Proposed UEC Transmission Line Route, 230-kV
- Transmission Line Not Visible
- Transmission Line Potentially Visible
- Research Center (OSU)
- Fish Hatchery (ODFW)
- The Nature Conservancy (TNC)
- Oregon Parks and Recreation Department Site (OPRD)
- US Fish and Wildlife Service Refuge (USFWS)
- Oregon Department of Fish and Wildlife Wildlife Area (ODFW)
- Areas of Critical Environmental Concern (BLM)
- Interstate Highway
- Secondary Highway
- Secondary Road
- State Boundary
- County Boundary

TETRA TECH

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

1:400,000 WGS 1984 UTM Zone 11N

0 2.5 5 10 15 20 Miles

NOT FOR CONSTRUCTION

Data Sources

Capital Power-Project Infrastructure; ESRI-Roads, Hillshade; Enterprise-County and State Boundaries

Reference Map

Canada
MT
WA
ID
OR
CA
NV

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Nolin Hills Wind Power Project

Figure L-4
Zone of Visual Influence for the BPA Stanfield Transmission Line Route (230-kV)

UMATILLA COUNTY, OREGON

Yakima County
Klickitat County
Benton County
Walla Walla County
Washington
Oregon
Umatilla County
Morrow County
Union County

Potential transmission line visibility calculated using a 10 meter bare-earth digital elevation model with transmission line height of 100 feet (30.48 meters) and a viewing height of 6 feet (1.8 meters).

- Proposed Site Boundary
- Analysis Area (20-mile buffer)
- Proposed BPA Stanfield Transmission Line Route, 230-kV
- Transmission Line Not Visible
- Transmission Line Potentially Visible
- Research Center (OSU)
- Fish Hatchery (ODFW)
- The Nature Conservancy (TNC)
- Oregon Parks and Recreation Department Site (OPRD)
- US Fish and Wildlife Service Refuge (USFWS)
- Oregon Department of Fish and Wildlife Wildlife Area (ODFW)
- Areas of Critical Environmental Concern (BLM)
- Interstate Highway
- Secondary Highway
- Secondary Road
- State Boundary
- County Boundary

TETRA TECH

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

1:400,000 WGS 1984 UTM Zone 11N

0 2.5 5 10 15 20 Miles

NOT FOR CONSTRUCTION

Data Sources

Capital Power-Project Infrastructure; ESRI-Roads, Hillshade; Enterprise-County and State Boundaries

Reference Map

Canada
MT
WA
ID
OR
CA
NV

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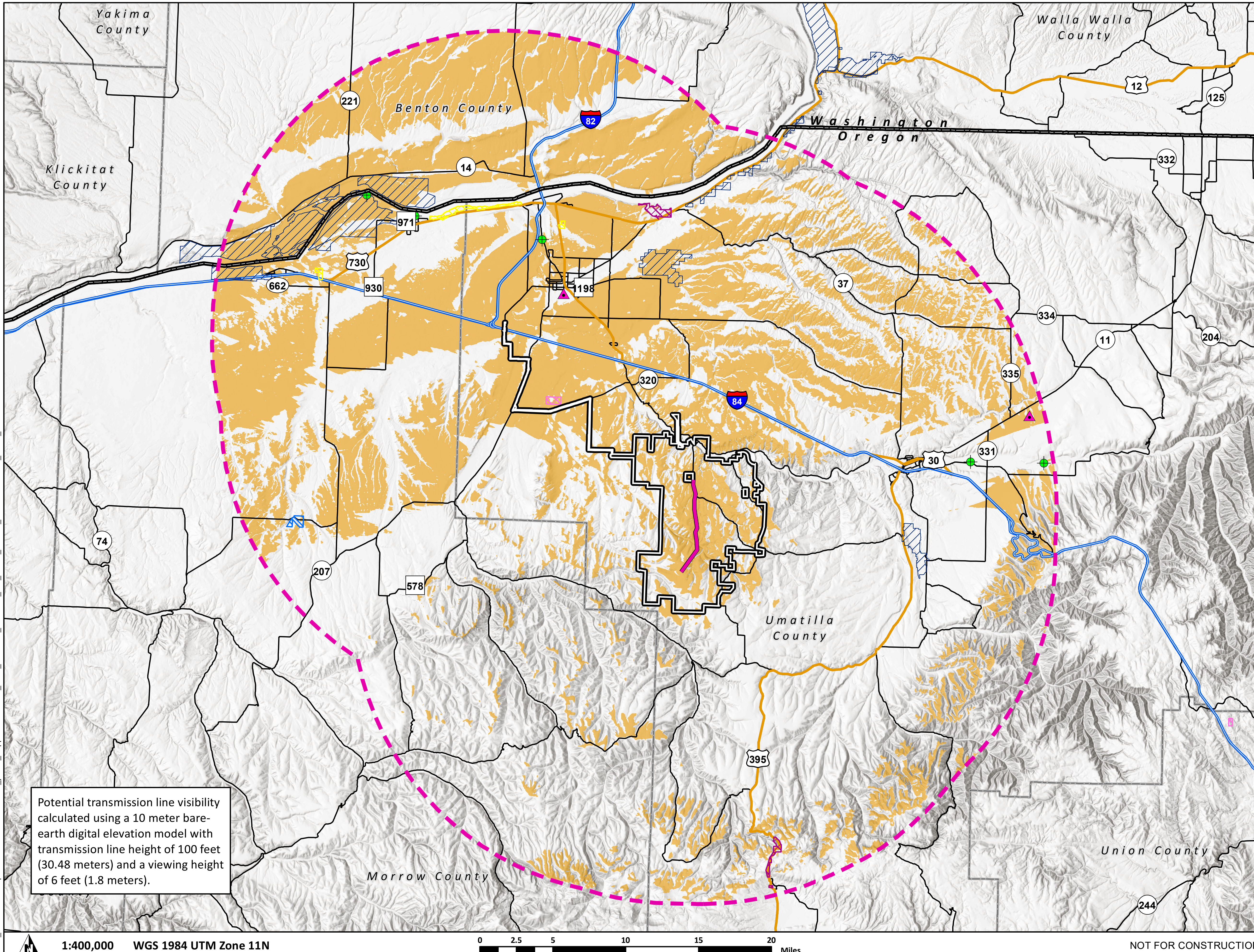

Nolin Hills Wind Power Project

Figure L-5
Zone of Visual Influence for the Internal Transmission Line Route (230-kV)

UMATILLA COUNTY, OREGON

- Proposed Site Boundary
- Analysis Area (20-mile buffer)
- Proposed Project Substation Connector, 230-kV
- Transmission Line Not Visible
- Transmission Line Potentially Visible
- Research Center (OSU)
- Fish Hatchery (ODFW)
- The Nature Conservancy (TNC)
- Oregon Parks and Recreation Department Site (OPRD)
- US Fish and Wildlife Service Refuge (USFWS)
- Oregon Department of Fish and Wildlife Wildlife Area (ODFW)
- Areas of Critical Environmental Concern (BLM)
- Interstate Highway
- Secondary Highway
- Secondary Road
- State Boundary
- County Boundary

TETRA TECH

Capital Power
RESPONSIBLE ENERGY FOR TOMORROW

Data Sources

Capital Power-Project Infrastructure; ESRI-Roads, Hillshade; Enterprise-County and State Boundaries

Reference Map