

Exhibit L

Protected Areas

Carty Generating Station
October 2026

Prepared for



Portland General Electric Company

Prepared by



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Acronyms and Abbreviations

AC	alternating current
ACEC	Area of Critical Environmental Concern
ASC	Application for Site Certificate
BCP	Boardman Coal Plant
BESS	battery energy storage system
BLM	Bureau of Land Management
BMP	best management practice
Certificate Holder / PGE	Portland General Electric Company
CGS / Facility	Carty Generating Station
Council	Oregon Energy Facility Siting Council
dBA	decibels
kV	kilovolt
MW	megawatt
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
RFA	Request for Amendment
RNA	Research Natural Area
TNC	The Nature Conservancy
USFWS	U.S. Fish and Wildlife Service
WPCF	Water Pollution Control Facility
ZVI	zone of visual influence

1.0 Introduction

The Portland General Electric Company (PGE or Certificate Holder) is submitting a Request for Amendment (RFA) 4 to the Site Certificate for the Carty Generating Station (CGS or Facility). The Facility is located approximately 13 miles southwest of Boardman, in Morrow County, Oregon. As currently approved, the Facility is capable of generating up to 450 megawatts (MW) from the natural gas-fueled combined-cycle unit (Unit 1).

In RFA 4, the Certificate Holder is proposing photovoltaic solar energy generation with approximately 200 MW alternating current (AC) of nominal and average generating capacity and BESS with the capability of storing up to 200 MW AC. The overall CGS additions proposed with RFA 4 (including the BESS) are referred to throughout this request as the Carty Solar Farm with proposed RFA 4 changes. The solar generation is proposed in two separate solar areas referred to as the Northern Solar Area, located north of the Carty Reservoir, and the Southern Solar Area, located south of the reservoir [see Figure 2 in RFA 4's Division 27 document (Request for Amendment 4 for the Carty Generating Station)].

Exhibit L provides the information required by Oregon Administrative Rules (OAR) 345-021-0010(1)(L) in support of RFA 4. Analysis in this exhibit incorporates and/or relies on reference information, analysis, and findings found in the Application for Site Certificate (ASC), previous RFAs, and Oregon Department of Energy Final Orders to demonstrate that the Facility, as modified by RFA 4, continues to comply with applicable Site Certificate Conditions and the approval standard in OAR 345-022-0040, and addresses the protected areas outlined in the updated OAR 345-001-0010(26).

The Oregon Energy Facility Siting Council (Council) previously found in the Final Order on RFA 1 that the Carty Solar Farm complies with the Council's Protected Areas standard.¹ The Council reaffirmed that the Carty Solar Farm complies with the Council's Protected Areas standard in the Final Order on RFA 3.²

2.0 Analysis Area

In accordance with OAR 345-001-0010(35)(e), the analysis area for protected areas is the area within and extending 20 miles from the site boundary (Figure L-1). The Amended Site Boundary is defined in detail in Section 4.1.1.2 of the RFA 4's Division 27 document (Request for Amendment 4 for the Carty Generating Station). The Amended Site Boundary used for analysis in RFA 4 is almost identical to the Approved Site Boundary. The proposed modifications to the Approved Site Boundary as described in Section 4.1 of the RFA 4's Division 27 document (Request for Amendment

¹ Final Order on Request for Amendment 1, p. 80 (December 2018).

² Final Order on Request for Amendment 3, p. 42 (July 2022).

4 for the Carty Generating Station) do not result in an expansion of the Approved Site Boundary's outer limits, and in fact retract the site boundary in the northeast corner.

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

OAR 345-021-0010(1)(L) Information about the potential impacts of the proposed facility on protected areas in the analysis area, 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 all protected areas within the analysis area identifying:

(i) The distance and direction of the protected area from the proposed facility;

(ii) The basis for protection by reference to a specific subsection under OAR 345-001-0010(26); and

(iii) The name, mailing address, phone number, and email address of the land management agency or organization with jurisdiction over the protected area;

OAR 345-021-0010(1)(L)(B) A map showing the location of the proposed facility in relation to the protected areas;

Based on the proposed amendments to the Facility in RFA 4, there are no protected areas located within the Amended Site Boundary. Table L-1 provides an inventory of the eight protected areas^{3,4} within the analysis area and indicates the proximity and direction of each protected area relative to the Amended Site Boundary, the basis for protection under OAR 345-001-0010(26), and the contact information for the relevant land management agencies and organizations. As described in Section 2.0, RFA 4 does not result in an expansion of the Approved Site Boundary's outer limits, and in fact retracts the northeast corner of the currently Approved Site Boundary.

The inventory of protected areas was based on review of best available geographic information system data, maps, and the most current information for the categories of protected areas listed in OAR 345-001-0010(26).⁵ Figure L-1 shows the location of the protected areas identified in the analysis area.

³ Note that the previously identified Arlington Park/Wayside (in RFA 3) was found to not meet the definition of a protected area under the Protected Areas standard (per Final Order on RFA 3), and thus is not included in the RFA 4 protected areas analysis.

⁴ Note that the previously identified Irrigon Wildlife Area (in RFA 3) was found to no longer be within the 20-mile analysis area and thus is not included in the RFA 4 protected area analysis.

⁵ Sources: BLM 2023a, BLM 2023b, BLM 2023c, BLM 2023d, BLM 2023e, Google Earth 2022, NOAA 2023, NPS 2023a, NPS 2023b, National Wild and Scenic Rivers System 2023, ODFW 2023a, ODFW 2023b, ODFW 2023c, OPRD 2020, OPRD 2023a, OPRD 2023b, OPRD 2023c, OPRD 2023d, OSU 2022, OSU 2023, USFWS 2023a, USFWS 2023b, USFS 2023a, USFS 2023b, USFS 2023c, USGS 2023, Wilderness Connect 2023.

Table L-1. Protected Areas within the Analysis Area

Protected Areas within 20 Miles of the Amended Site Boundary			Distance to Facility (miles)			Cardinal Direction from Facility	Facility Potentially Visible? (Yes/No)		Visual Analysis Results	Operational Noise Analysis Results (worst-case modeled operational noise level [dBA L50] as applicable)
Applicable Protected Area Category	Land Management Agency Contact Information	Area Name	Amended Site Boundary	Solar Area (North and South)	Aboveground Collector Line		Solar Area (North and South)	Aboveground Collector Line		
National Parks OAR 345-001-0010(26)(a)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
National Monuments OAR 345-001-0010(26)(b)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wilderness Areas OAR 345-001-0010(26)(c)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
National Wild, Scenic, or Recreational Rivers OAR 345-001-0010(26)(d)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
National Wildlife Refuges OAR 345-001-0010(26)(e)	U.S. Fish and Wildlife Service (USFWS) 72650 Riverview Lane Irrigon, OR 97844 (509) 546-8300 No email listed	Umatilla National Wildlife Refuge	8.8	8.9	9.7	N	Yes	Yes	Negligible impact. Viewshed analysis indicates limited potential visibility from small portions of the Refuge. At a background viewing distance of 8.9 miles or greater, it is highly unlikely that the solar areas could be detected or identified by viewers. The aboveground collector line is highly unlikely to be visible or otherwise discernible at the background viewing distance of over 9.7 miles, and therefore will not contribute to visual contrast from this location. No management direction applicable to scenic qualities outside of the Refuge. Addition of the solar areas and associated infrastructure will not change the previous conclusion that views of the Facility, if any, will not compromise the purpose of the Refuge.	<26; Background (no increase from approved facility)
National Fish Hatcheries OAR 345-001-0010(26)(f)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
National Recreation Areas, Scenic Areas, or Special Resources Management Units OAR 345-001-0010(26)(g)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Protected Areas within 20 Miles of the Amended Site Boundary			Distance to Facility (miles)			Cardinal Direction from Facility	Facility Potentially Visible? (Yes/No)		Visual Analysis Results	Operational Noise Analysis Results (worst-case modeled operational noise level [dBA L50] as applicable)
Applicable Protected Area Category	Land Management Agency Contact Information	Area Name	Amended Site Boundary	Solar Area (North and South)	Aboveground Collector Line		Solar Area (North and South)	Aboveground Collector Line		
Wilderness Study Areas OAR 345-001-0010(26)(h)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Federal Land Management Plan Designated Lands OAR 345-001-0010(26)(i)	Bureau of Land Management (BLM) P.O. Box 2965 Portland, OR 97208 (503) 808-6001 Blm_or_so_land_office_mail@blm.gov	Boardman Research Natural Area (RNA)	2.6	2.6	2.8	E	Yes	Yes	Negligible impact. Viewshed analysis indicates potential, relatively close visibility of solar areas throughout most of the RNA. At a middleground viewing distance of 2.6 miles or greater, the solar modules will not create a prominent feature in the viewshed. The collector line is highly unlikely to be visible or otherwise discernible at the middleground viewing distance of over 2.8 miles, and therefore will not contribute to visual contrast from this location. If any solar facilities or collector line were visible, the additional visual contrast within an existing modified landscape that includes wind turbines, aboveground transmission lines, industrial structures, and agricultural irrigation equipment will be weak. The RNA is located within the Boardman Bombing Range and not accessible to the public, with occasional visits by The Nature Conservancy (TNC) staff for monitoring and maintenance. ¹ There is no management directive applicable to preservation of scenic qualities outside of or from the RNA. The addition of the solar areas and associated infrastructure will not change the previous conclusion that views of the Facility, if any, will not compromise the purpose of the RNA.	<26; Background (no increase from approved facility)
	BLM P.O. Box 2965 Portland, OR 97208 (503) 808-6001 Blm_or_so_land_office_mail@blm.gov	Horn Butte Area of Critical Environmental Concern (ACEC)	7.1	9.2	9.2	W	Yes	Yes	Negligible impact. Viewshed analysis indicates limited potential visibility from small portions of the ACEC. At a background viewing distance of 9.2 miles or greater, it is highly unlikely that solar areas could be detected or identified by viewers. The aboveground collector line is highly unlikely to be visible or otherwise discernible at the far background viewing distance of over 9.2 miles, and therefore will not contribute to visual contrast from this location. There is no management directive applicable to preservation of scenic qualities outside of or from the ACEC. Addition of the solar areas and associated infrastructure will not change the previous conclusion that views of the Facility, if any, will not compromise the purpose of the ACEC.	<26; Background (no increase from approved facility)
State Parks, Waysides, Corridors, Monuments, Historic, or Recreation Areas OAR 345-001-0010(26)(j)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Protected Areas within 20 Miles of the Amended Site Boundary			Distance to Facility (miles)			Cardinal Direction from Facility	Facility Potentially Visible? (Yes/No)		Visual Analysis Results	Operational Noise Analysis Results (worst-case modeled operational noise level [dBA L50] as applicable)
Applicable Protected Area Category	Land Management Agency Contact Information	Area Name	Amended Site Boundary	Solar Area (North and South)	Aboveground Collector Line		Solar Area (North and South)	Aboveground Collector Line		
Willamette River Greenway OAR 345-001-0010(26)(k)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oregon Register of Natural Areas Designated Natural Areas OAR 345-001-0010(26)(L)	The Nature Conservancy (TNC) 821 SE 14th Avenue Portland, OR 97214 (503) 802-8100 oregon@tnc.org	Lindsay Prairie Preserve / State Natural Heritage Area	7.4	7.4	8.2	SE	Yes	Yes	Negligible impact. Viewshed analysis indicates limited potential visibility from small portions of the Preserve. At a background viewing distance of 7.4 miles or greater, it is highly unlikely that the solar areas could be detected or identified by viewers. The aboveground collector line is highly unlikely to be visible or otherwise discernible at the background viewing distance of over 8.2 miles, and therefore will not contribute to visual contrast from this location. There is no management directive applicable to preservation of scenic qualities outside of or from the Preserve. Addition of the solar areas and associated infrastructure will not change the previous conclusion that views of the Facility, if any, will not compromise the purpose of the Preserve.	<26; Background (no increase from approved facility)
South Slough National Estuarine Research Reserve OAR 345-001-0010(26)(m)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Scenic Waterways OAR 345-001-0010(26)(n)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Wildlife Refuges or Management Areas OAR 345-001-0010(26)(o)	Oregon Department of Fish and Wildlife (ODFW) 73471 Mytinger Lane Pendleton, OR 97801 (541) 276-2344 odfw.info@odfw.oregon.gov	Columbia Basin - Willow Creek Wildlife Area	9.5	10.5	10.7	NW	No	No	No impact. Viewshed analysis indicates no visibility of the solar areas or aboveground collector line at the Willow Creek Wildlife Area. There is no management directive applicable to preservation of scenic qualities outside of or from the Willow Creek Wildlife Area. The Facility will not compromise the purpose of the Willow Creek Wildlife Area.	<26; Background (no increase from approved facility)
	ODFW 73471 Mytinger Lane Pendleton, OR 97801 (541) 276-2344 odfw.info@odfw.oregon.gov	Columbia Basin - Coyote Springs Wildlife Area	11.9	11.9	12.4	NE	No	No	No impact. Viewshed analysis indicates no visibility of the solar areas or aboveground collector line at the Coyote Springs Wildlife Area. There is no management directive applicable to preservation of scenic qualities outside of or from the Coyote Springs Wildlife Area. The Facility will not compromise the purpose of the Coyote Springs Wildlife Area.	<26; Background (no increase from approved facility)

Protected Areas within 20 Miles of the Amended Site Boundary			Distance to Facility (miles)			Cardinal Direction from Facility	Facility Potentially Visible? (Yes/No)		Visual Analysis Results	Operational Noise Analysis Results (worst-case modeled operational noise level [dBA L50] as applicable)
Applicable Protected Area Category	Land Management Agency Contact Information	Area Name	Amended Site Boundary	Solar Area (North and South)	Aboveground Collector Line		Solar Area (North and South)	Aboveground Collector Line		
State Fish Hatcheries OAR 345-001-0010(26)(p)	ODFW 74135 Riverview Lane Irrigon, OR 97844 (541) 922-5732 odfw.info@odfw.oregon.gov	Irrigon Hatchery	19.6	19.6	20.1	NE	No	No	No impact. Viewshed analysis indicates no visibility of the solar areas or aboveground collector line at the Irrigon Hatchery. There is no management directive applicable to preservation of scenic qualities outside of or from the Irrigon Hatchery. The Facility will not compromise the purpose of the Irrigon Hatchery.	<26; Background (no increase from approved facility)
	ODFW 73959 Riverview Lane Irrigon, OR 97844 (541) 922-5659 odfw.info@odfw.oregon.gov	Umatilla Fish Hatchery	18.5	18.5	19.0	NE	No	No	No impact. Viewshed analysis indicates no visibility of the solar areas or aboveground collector line at the Umatilla Hatchery. There is no management directive applicable to preservation of scenic qualities outside of or from the Umatilla Hatchery. The Facility will not compromise the purpose of the Umatilla Hatchery.	<26; Background (no increase from approved facility)
Oregon State University Designated Agricultural Experiment Stations, Experimental Areas, or Research Centers OAR 345-001-0010(26)(q)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oregon State University Designated Research Forests OAR 345-001-0010(26)(r)	N/A	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1. Information on access and use obtained through a personal communication from Kelly Wallis, TNC, July 18, 2022 (see Attachment L-1).										

4.0 Impact Assessment – OAR 345-021-0010(1)(I)(C)

OAR 340-021-0010(1)(I)(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:

The potential effects to protected areas in the analysis area were studied to determine whether the design, construction, and operation of the Carty Solar Farm with proposed RFA 4 changes, when taking into account mitigation, will be likely to result in any significant adverse impacts. The following sections summarize the types of potential adverse impacts evaluated and provide summaries of the analysis.

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

(i) Noise resulting from facility construction or operation;

Table L-1 provides a summary of operational noise levels from the Facility at protected areas within the analysis area. Exhibit Y provides an assessment of the existing acoustical environment and anticipated sound levels from the Carty Solar Farm with proposed RFA 4 changes; the methodology for noise modeling is detailed in that exhibit. Activities associated with construction of the proposed solar areas and related or supporting facilities will be limited to the temporary duration of construction and similar to the construction noise already reviewed by Council for the Facility.

Exhibit Y describes sound level thresholds derived from the Oregon Department of Environmental Quality (ODEQ) noise regulations (OAR 340-035-0035), which are used to assess the significance of impacts to noise sensitive properties. As defined in OAR 340-035-0035, “noise sensitive properties” are “real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries. Property used in industrial or agricultural activities is not Noise Sensitive Property unless it meets the above criteria in more than an incidental manner.” None of the protected areas within the analysis area are considered a noise sensitive property.

Based on the results of operations noise modeling, described in detail in Exhibit Y, operation of the Carty Solar Farm with proposed RFA 4 changes will not create new noise impacts to protected areas beyond those that were previously identified for the Facility. As detailed in Exhibit Y, the solar modules will create no significant operational noise, and operational noise from primarily cooling equipment associated with the BESS and electrical equipment will be similar to operational noise already reviewed by the Council for the Facility. Comprehensive Facility noise will attenuate to below 26 A-weighted decibels (dBA)⁶, or less than the background/ambient (nighttime) noise level, within approximately 3.3 miles from the Amended Site Boundary. All but one protected area is located more than 3.3 miles from the Amended Site Boundary, so will not be affected by operational

⁶ Note that the 26 dBA value was selected as representative because OAR 340-035-0035(1)(b)(B)(iii)(I) allows for an assumed ambient sound level of 26 dBA for wind energy facilities. Site-specific ambient sound data was not collected for the Facility, but 26 dBA is assumed to be a conservative estimate.

noise from the Carty Solar Farm with proposed RFA 4 changes. The closest protected area is the Boardman RNA, located directly east 2.6 miles from the Amended Site Boundary (and approximately 2.6 miles to the nearest solar area).

Modeled worst-case amended Facility operational noise levels at the Boardman RNA will be a maximum of 23 dBA, which is below rural nighttime ambient background noise levels. This level of noise is unlikely to substantively diminish the experience at the Boardman RNA, for both it is inaccessible to the public (restricted by federal ownership) and is managed as a natural area (see Section 4.4.2.1 below; personal communication between Kristen Gulick, Tetra Tech, and Kelly Wallis, TNC, July 18, 2022; correspondence records included in Attachment L-1). The resource is not considered a noise sensitive property.

The remainder of the identified protected areas in the analysis area will similarly be unaffected by operational noise from the Carty Solar Farm with proposed RFA 4 changes, due to their locations of over 7.1 miles from the Amended Site Boundary and the solar areas.

Noise from construction will similarly be less than 26 dBA⁹ within 12.2 miles from the Amended Site Boundary (daytime ambient sound level) and effectively inaudible at all but the closest protected area, the Boardman RNA. Pursuant to OAR 340-035-0035(5), noise from construction activities is exempt from the state noise standards. Construction activities associated with the Facility have the potential for localized noise on a temporary basis as construction activities progress through certain locations within the Amended Site Boundary. Noise-generating activities during construction could result from the use of heavy machinery, such as heavy trucks, bulldozers, graders, and cranes. Based on the estimated noise levels of construction equipment provided in Exhibit Y, construction noise levels at the Boardman RNA will peak at approximately 38 dBA; this noise level is comparable to a quiet library. This elevated noise level will occur sporadically while Facility infrastructure such as the amended solar area closest to the Boardman RNA is built. As construction progresses elsewhere in the Facility, noise levels will drop to background levels. Continued implementation of Site Certificate Condition 13.1 will help reduce construction noise impacts through the requirement of exhaust mufflers on combustion engine-powered equipment and establishment of a noise complaint response system. At this time, pending geotechnical investigation of the final layout, blasting is not anticipated to be required for Facility construction.

Facility noise from the amendments in RFA 4 will not result in a significant adverse impact to protected areas.

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

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

Traffic impacts in general are addressed in greater detail in Exhibit U, including information on anticipated traffic levels and typical travel routes for the Carty Solar Farm with proposed RFA 4 changes.

Traffic generated by construction and operation of the Carty Solar Farm with proposed RFA 4 changes is unlikely to result in significant adverse impacts to any of the protected areas. Based on

the analysis provided in Exhibit U, the primary traffic route used for construction of the Carty Solar Farm with proposed RFA 4 changes will be the same as what was already evaluated for the approved Facility. Four of the eight protected areas are located north of Interstate 84 (I-84) and will be virtually unaffected by traffic for the Carty Solar Farm with proposed RFA 4 changes, which will be concentrated on I-84 and Tower Road, which extends south to the Facility from an interchange with I-84 (Figure L-1). Nominal traffic associated with construction of the Carty Solar Farm with proposed RFA 4 changes could occur north of I-84, but this traffic will be dispersed on multiple roads throughout the area, rather than concentrated on any one road such that access to any protected area north of I-84 could be adversely affected. None of the four protected areas located south of I-84 are accessed by Tower Road or roads anticipated to carry traffic related to the Carty Solar Farm with proposed RFA 4 changes. Construction worker traffic may occur on roads providing access to these areas; however, construction worker traffic will be dispersed on multiple roads throughout the area, and the nominal level of worker traffic anticipated on roads other than I-84 and Tower Road will not adversely affect level of service on those roads (see Exhibit U).

Timing patterns for construction-related traffic and recreational traffic to protected areas will likely differ substantially. Construction traffic will primarily be dispersed throughout the business work week and primarily during commuter hours, whereas peak recreational traffic will be greatest during the weekend. Additionally, no roads providing access to protected areas within the analysis area are expected to be closed during construction or operation of the Carty Solar Farm with proposed RFA 4 changes.

The closest protected area to the south of I-84 is the Boardman RNA, located no less than 2.6 miles east from the Amended Site Boundary (and approximately 2.6 miles to the nearest solar area). The Boardman RNA is located within the Boardman Bombing Range, which is inaccessible to the public, with occasional visits by TNC staff for monitoring and maintenance (personal communication between Kristen Gulick, Tetra Tech, and Kelly Wallis, TNC, July 18, 2022; see Attachment L-1). Therefore, any construction traffic in the vicinity of the Boardman RNA will not disrupt visitors to this protected area.

The third closest protected area to the south of I-84 is the Lindsay Prairie Preserve/State Natural Heritage Area, located no less than 7.4 miles southeast from the Amended Site Boundary (and approximately 7.4 miles to the nearest solar area). The Lindsay Prairie Preserve/State Natural Heritage Area is accessed mainly via Bombing Range Road, which uses an exit approximately 8.7 miles east on I-84 from Tower Road.

Again, the eight protected areas are primarily accessed by roads that will not carry substantial amounts of construction traffic and are therefore unlikely to experience any traffic impacts. Temporary, short-term delays are most likely to occur only during deliveries of oversized loads, which will occur sporadically and will be accompanied by traffic control teams. Construction of the Carty Solar Farm with proposed RFA 4 changes in general will be short in duration (lasting approximately 24 months) and thus any construction traffic impacts will be temporary.

Although there will be no significant traffic impacts to protected areas, the Certificate Holder will continue to implement Site Certificate Condition 6.17 which requires adhering to various traffic

control measures and a Construction Traffic Management Plan. Site Certificate Condition 6.27 in turn requires that the plan be reviewed and approved by the Council and in consultation with Morrow County and requires that construction-related traffic will be evaluated to confirm whether a Traffic Impact Assessment will be required. Any damage or wear to county roads from Facility construction will be repaired and restored per Site Certificate Condition 6.19. Therefore, no significant adverse traffic impacts to protected areas are anticipated from construction of the Facility.

During operations, traffic will be minimal, as the Carty Solar Farm with proposed RFA 4 changes will permanently employ up to 12 personnel. Solar and BESS-related equipment will require periodic maintenance, but traffic associated with repair or maintenance visits will be low and daily traffic generated by operation of the Carty Solar Farm with proposed RFA 4 changes is not expected to affect operations of any of the state or local county roads used to access the protected areas within the analysis area.

Construction and operational traffic from the amendments in RFA 4 will not result in significant adverse impacts to protected areas within the analysis area.

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

(iii) Water use during facility construction or operation.

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

No significant water or wastewater impacts to protected areas are anticipated from the Carty Solar Farm with proposed RFA 4 changes.

During construction, non-potable water will be sourced from the Carty Reservoir, located within the Amended Site Boundary and directly adjacent to the solar areas, under the Certificate Holder's existing water right and obtained by a third-party contractor through a limited water use license (see Exhibit O). Potable water for use during construction will be obtained from a temporary tie-in with the existing Facility potable water system derived from the existing Boeing Well located within the Amended Site Boundary or provided by bottled water or water coolers. No construction water will be extracted from a protected area or be delivered in a fashion that generates significant impacts to a protected area.

During operation, the Carty Solar Farm with proposed RFA 4 changes will use non-potable water from the Carty Reservoir for solar panel washing under the Certificate Holder's existing water right, and potable water within the proposed operations and maintenance (O&M) building will come from the Facility's existing potable water system via the existing Boeing Well. No operational water will be extracted from a protected area or be delivered in a fashion that generates significant impacts to a protected area. Water used during construction and operation of the Carty Solar Farm with proposed RFA 4 changes will not impact water availability or use at protected areas.

Wastewater generated by the Carty Solar Farm with proposed RFA 4 changes during construction will be from the following construction activities: portable toilets, dust abatement, mixing of

concrete, concrete equipment washwater, and concrete washout water. Wastewater generated by the Carty Solar Farm with proposed RFA 4 changes during operation will be from the following activities: wastewater produced from the proposed O&M building and from periodic washing solar panels. The nature of the Facility is such that it will not produce industrial wastewater. Except for sanitary wastewater generated in portable toilets during construction, all other wastewater will remain within the Amended Site Boundary and none will be disposed of in protected areas within the analysis area. Again, the nearest protected area is the Boardman RNA, located at least 2.6 miles from the nearest solar area. Sanitary wastewater generated in portable toilets during the temporary construction phase will be disposed of in accordance with local jurisdictional regulations (Site Certificate Condition 6.2) and transportation of waste in accordance with Oregon Revised Statutes 466.005. The proposed O&M building will include toilets for use by maintenance staff during operations. The sanitary sewage will be collected and treated by the Facility's existing sanitary septic sewage system in compliance with county permit requirements (Site Certificate Conditions 6.22 and 10.24)

It is expected that any excess water used during construction and for solar panel washing during operations will be lost within the Amended Site Boundary through evaporation and infiltration. As described in Exhibit W, the disposition of construction wastewater and the disposal of solar panel washwater during operations are allowed under the terms and conditions of the Facility's Water Pollution Control Facility (WPCF) Permit.

During construction, stormwater runoff will continue to be managed on site according to the best management practices (BMPs) as described in the National Pollutant Discharge Elimination System (NPDES) 1200-C Permit and draft Erosion and Sediment Control Plan (see Exhibit I, Attachment I-1) such that no stormwater will leave the Amended Site Boundary. Stormwater discharges will be managed in accordance with the NPDES 1200-C permit, and appropriate control measures will be installed to ensure compliance with the discharge and water quality requirements of the permit. During operations, the Carty Solar Farm with proposed RFA 4 changes may result in some changes to the stormwater drainage as a result of new impervious surfaces (e.g., gravel roads, concrete foundations, battery storage container pads, pads for substation components, etc.). However, impervious surfaces will be a low percentage of the total area within the Amended Site Boundary. Again, the nearest protected area is at least 2.6 miles from the Carty Solar Farm with proposed RFA 4 changes.

Exhibit O provides additional information on water use and Exhibit W provides information on wastewater. Water use and wastewater discharge from the Carty Solar Farm will have no impact to protected areas within the analysis area.

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

(v) Visual impacts of facility structures or plumes, including, but not limited to, changes in landscape character or quality; and

(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.

The visual impacts of construction and operation of the Facility will not likely result in a significant adverse impact to any protected area due to the distance to the Facility, vegetation and topographical screening, low impact to users, no specified management of scenic or visual qualities beyond the boundaries of each protected area, and presence of similar structures within the existing viewshed. The solar modules and associated infrastructure at the Facility, as proposed in RFA 4, will result in a change to the existing viewshed, but this change will not result in a significant visual impact on any of the surrounding protected areas.

The Carty Solar Farm with proposed RFA 4 changes 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 Carty Solar Farm with proposed RFA 4 changes will be largely prevented by following BMPs for dust control as detailed in Exhibit I.

Class I areas consist of the 12 federally designated Wilderness Areas in Oregon defined in OAR 340-204-0050, none of which are located within the analysis area.

Existing Visual Character

Since the Final Order on RFA 1 was issued, there has been one change in conditions within the Facility: the demolition of the BCP. Commercial operation of the coal plant ceased in October 2020 and demolition was completed at the end of 2023. The Northern Solar Area, BESS, and collector substation are all proposed in former BCP areas. Other Facility conditions have not changed. The Facility includes numerous existing aboveground transmission lines including the existing 500-kV transmission line and dead-end structure where the proposed collector substation will connect. Other existing transmission lines that support the Facility include the 500-kV Grassland to Slatt transmission line (approximately 17 miles long) and 230-kV BCP to Dalreed transmission line (approximately 16 miles long). In addition, the CGS Unit 1 was constructed and placed into service in 2016. Unit 1 is located directly adjacent to the Northern Solar Area, BESS, and proposed collector substation. Adjacent lands outside the Facility continue under habitat conservation to the north, east, and south, and farm use to the west. The Boardman Bombing Range is also adjacent to the north and east.

4.4.1 Visual Impact Assessment Methodology

The potential for visual impacts from the Facility as amended by RFA 4 are primarily related to the components that will be the most prominent in terms of size and scale. The two most prominent components in terms of height off the ground and overall surface area include the Northern and Southern solar areas, and the 2-mile segment of aboveground 34.5-kV collector line proposed along the eastern and northern shores of the Carty Reservoir. Thus, these two components were the main focus of the visual impact assessment.

A zone of visual influence (ZVI) analysis, also known as a viewshed analysis, was performed using Esri geographic information system software and a bare-earth 30-meter digital elevation model to identify those areas from which the Northern and Southern solar areas and the 2-mile segment of

aboveground 34.5-kV collector line might be visible (Figures L-2 and L-3). The ZVI analysis assumed a maximum height of 12 feet for the solar modules and a maximum height of 70 feet for the aboveground collector line. All other components proposed with RFA 4 were deemed less visually impactful (due to height, being dispersed throughout the Amended Site Boundary, or adjacent to taller infrastructure, etc.) and addressed by the assessment of the solar areas and aboveground collector line. A typical viewing height of 1.8 meters (6 feet) was assumed. Visibility of the two components was defined by visible or not visible, indicated by color coding (see Figures L-2 and L-3), and by proximity, i.e., foreground (less than 0.5 mile), middleground (0.5 to 5 miles), or background distances (more than 5 miles).

It should be noted that this bare-earth modeling approach (based only on the effects of terrain on visibility) results in a highly conservative assessment of potential visibility for several reasons. First, a bare-earth analysis does not take into account the effects of vegetation or buildings, which will in practice block or screen views in some places. Finally, the model does not account for distance, lighting, weather, and atmospheric attenuation factors that diminish visibility under actual field conditions.

The solar modules will be the most visible components within the solar areas and will consist of solar module strings, the vast majority of which will be mounted on single-axis tracker systems. The visibility of the solar modules within the solar areas will depend primarily on topographic or other view obstructions and the distance from the viewer to the solar areas. With a maximum height of 12 feet to the top edge of the solar module when fully tilted, the modules will not be visible from sites lower in elevation than the area on which the solar modules are constructed. From sites that are similar in elevation to the solar modules, viewers will see only a line on the horizon and not individual solar panels. Depending on the viewing distance, viewers at sites higher in elevation may have views of the modules, especially if the view direction is toward the angle at which the module is tilted toward the sun. To the extent practicable, reflectivity of solar modules will be minimized. Antireflective coating will be used to reduce glare, and the surface of the modules will have high transmittance to increase the amount of light reaching the photovoltaic cells. With these methods, the modules will be less reflective than a natural water body or a coated glass surface that is not antireflective.

4.4.2 Visual Impact Assessment Results

Based on the results of the ZVI analysis, there is the potential for visibility of some portions of the Carty Solar Farm with proposed RFA 4 changes from four of the eight protected areas in the analysis area (see Figures L-2 and L-3, and Table L-1). The visibility of the solar areas and aboveground collector line are characterized as visible or not visible. The discussion below provides additional detail on the updated visual impact analysis that was conducted for RFA 4.

Potential visibility is one of several factors that comprise an assessment of visual impact to a protected area. Other factors to consider include the existing visual context, particularly other sources of visual contrast present 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 (see Exhibit R), either within the protected area or outside of it.

Table L-1, above, provides a summary of the visual impact assessment for each of the protected areas in the analysis area. Table L-1 also considers the visibility of the solar areas and aboveground collector line. Again, the proposed solar areas and aboveground collector line will potentially be visible from four protected areas. The visual impact is considered to be negligible for all of the protected areas, primarily due to their distance from the proposed infrastructure for the Carty Solar Farm with proposed RFA 4 changes, ranging from 2.6 to 19.6 miles. Views of the solar areas and aboveground collector line from most protected areas will therefore be at a background viewing distance where viewers will be highly unlikely to detect or identify the low-profile solar modules, and both the solar modules and aboveground collector line will occupy a limited portion of the total viewshed. Moreover, the four protected areas with potential views of the Carty Solar Farm with proposed RFA 4 changes, currently have views of other wind farms, transmission lines, industrial development, and agricultural irrigation equipment so the Carty Solar Farm with proposed RFA 4 changes will not introduce a new or unusual feature to the view. In addition, potential views from some of the protected areas will be partially to fully screened by vegetation, terrain, and man-made structures.

The protected area closest to the Facility, Boardman RNA, will have middleground views of the Carty Solar Farm with proposed RFA 4 changes. The following paragraphs provide a more in-depth visual impact assessment for this protected area.

4.4.2.1 Boardman RNA

From the Boardman RNA, the visual impact of the Carty Solar Farm with proposed RFA 4 changes is considered to be negligible. The visibility analysis indicates potential visibility of the solar modules at a middleground viewing distance of 2.6 miles or greater in portions of the RNA. Additionally, the visibility analysis indicates visibility of the aboveground collector line at a middleground viewing distance of at least 2.8 miles. However, views of the aboveground collector line (and in turn, the solar modules) will not present a new or unique feature as compared to the existing landscape modifications, including existing wind turbines, transmission lines, industrial development, and agricultural irrigation equipment. Because the solar modules will have a maximum height of 12 feet, they will not appear as a prominent feature to viewers at this distance. If they are visible, the modules will appear as a dark line on the horizon and will create minimal visual contrast.

The Boardman RNA is located within the Boardman Bombing Range, which is inaccessible to the public, with occasional visits by TNC staff for monitoring and maintenance (personal communication between Kristen Gulick, Tetra Tech, and Kelly Wallis, TNC, July 18, 2022; see Attachment L-1). Thus, views of the Facility will not compromise the purpose of the RNA and will essentially affect no users. Additionally, the site is not managed for its scenic qualities. Therefore, the Facility will not have a significant adverse visual impact on this protected area.

4.4.2.2 Visual Impact Summary

Based on this analysis, the Certificate Holder concludes that there will be no significant visual impacts to protected areas within the analysis area. While four of the eight protected areas will potentially have some level of visibility, for most protected areas the Carty Solar Farm with proposed RFA 4 changes will be in the background, and the solar modules and aboveground collector line will not represent a new or unusual features in the landscape because there are already wind turbines, transmission lines, and other utility infrastructure visible, as well as vegetative and topographical screening present. One protected area will have middleground views of the solar areas and aboveground collector line. However, these views will predominately be intermittent due to existing screening, and any views of the proposed infrastructure will not be dominant in the surrounding landscape. Only a few of the protected areas have any management direction related to scenic quality, and that direction does not apply to siting of the Facility *outside* of the protected areas themselves. Additionally, views from most of the protected areas already include wind turbines, transmission lines, and other industrial or agricultural infrastructure, indicating that viewers cannot reasonably expect pristine views free of developed infrastructure. Therefore, as modified by RFA 4, the solar areas, aboveground collector line, and other related or supporting facilities will not result in a significant adverse visual impact to protected areas.

The Carty Solar Farm with proposed RFA 4 changes and other related or supporting facilities will not cause significant visual impacts to protected areas.

5.0 Conclusions

The analysis area contains all or part of eight protected areas. The Certificate Holder analyzed potential impacts to these areas and concluded as follows:

- **Noise.** Based on the results of the noise modeling presented in Exhibit Y, operational noise was determined to likely be less than 26 dBA, which is consistent with a rural nighttime background ambient according to OAR 340-035-0035. The closest protected area is not considered to be noise-sensitive receptor under the ODEQ noise regulations and is anticipated to receive sounds levels that are less than rural nighttime ambient background levels. Construction noise may be audible at the same protected area nearest the Facility; however, construction noise will be short-term and intermittent, and will not be considered a significant impact to any protected area. Therefore, the Carty Solar Farm with proposed RFA 4 changes will result in no significant difference in operational or construction noise at the eight protected areas within the analysis area relative to the approved Facility.
- **Traffic.** Construction and operations traffic for the Carty Solar Farm with proposed RFA 4 changes will not be located to significantly impact any protected areas. Some short-term, intermittent, and temporary delays could be possible during construction by visitors, specifically at the four protected areas located south of I-84; however, these will be temporary and traffic conditions will return to typical low levels following construction.

Therefore, there will be no significant impact to protected areas resulting from the construction or operations traffic of the Carty Solar Farm with proposed RFA 4 changes.

- **Water.** The amended Facility will not use water in sufficient quantities or from sources that will significantly impact any protected areas. Therefore, there will be no significant impacts to protected areas by water use for the Carty Solar Farm with proposed RFA 4 changes.
- **Wastewater.** The Carty Solar Farm will not change the fact that the Facility will manage its wastewater almost exclusively within the Amended Site Boundary and will thus not significantly impact any protected areas. Therefore, there will be no significant impacts to protected areas due to wastewater generated by the Carty Solar Farm with proposed RFA 4 changes.
- **Visual.** No Class I areas are present within the analysis area. The Carty Solar Farm with proposed RFA 4 changes will potentially be visible from four of the eight protected areas in the analysis area, with one of the eight protected areas in the analysis area having middleground views as compared to background views. However, due to distance from the Facility, vegetative and topographic obstructions, other features within view (i.e. wind turbines and other utility infrastructure), low impact to users, and an overall lack of management direction applicable to scenic quality beyond the boundaries of each protected area, the solar areas, aboveground collector line, the Facility will not have a significant visual impact on any protected area.

6.0 References

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Figures

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Carty Generating Station Request for Amendment 4

**Figure L-1
Protected Areas within
the Analysis Area**

MORROW COUNTY, OR

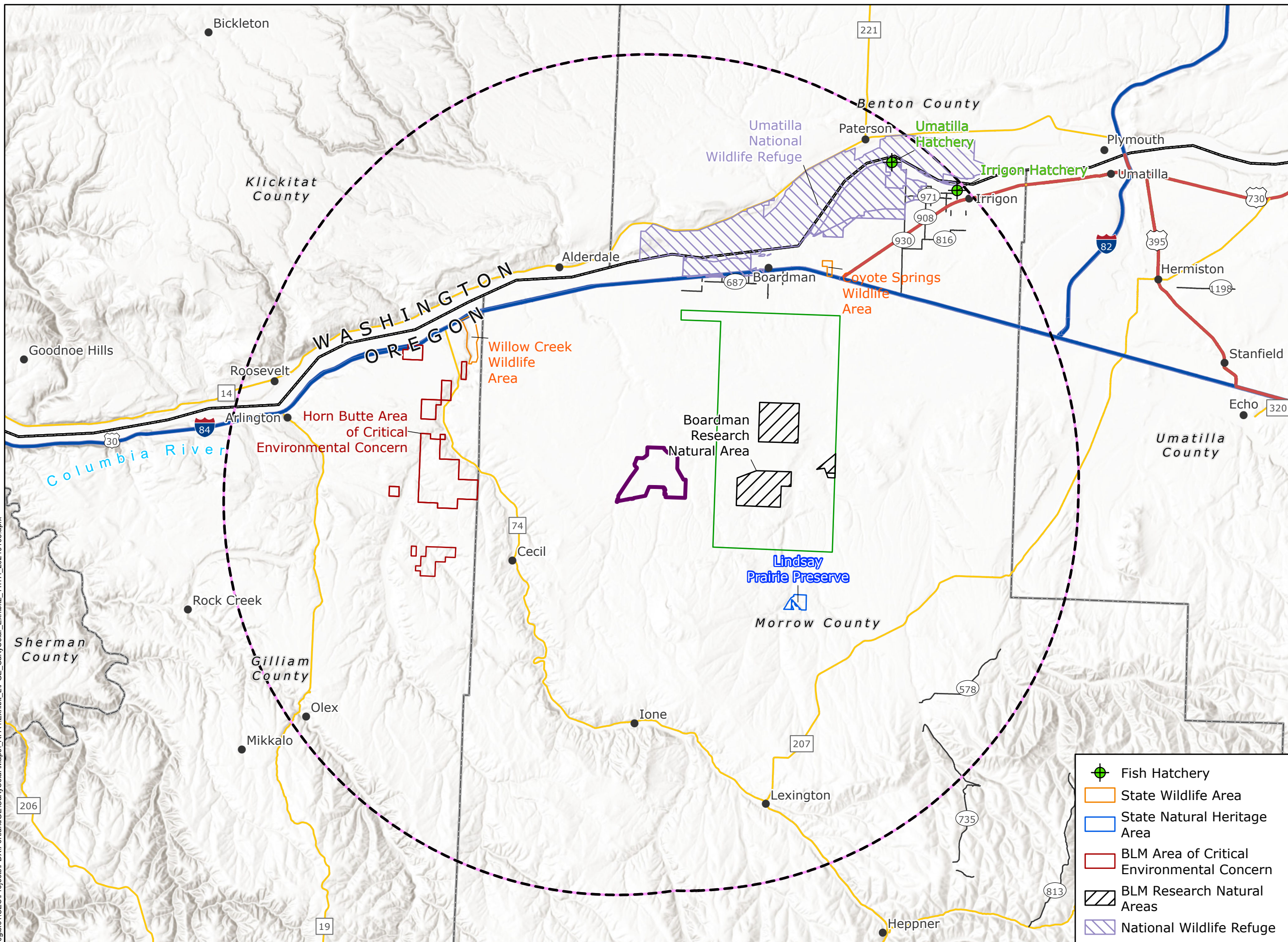
- Amended Site Boundary
- Analysis Area (20-mile Buffer)
- Boardman Bombing Range
- City/Town
- County Boundary
- State Boundary
- Interstate Highway
- US Highway
- State Highway
- County Highway



Reference Map



- Fish Hatchery
- State Wildlife Area
- State Natural Heritage Area
- BLM Area of Critical Environmental Concern
- BLM Research Natural Areas
- National Wildlife Refuge



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1:300,000

WGS 1984 UTM Zone 11N

0 3 6 12 18 24 Miles

NOT FOR CONSTRUCTION

Carty Generating Station Request for Amendment 4

**Figure L-2
Zone of Visual Influence
for Solar Areas**

MORROW COUNTY, OR

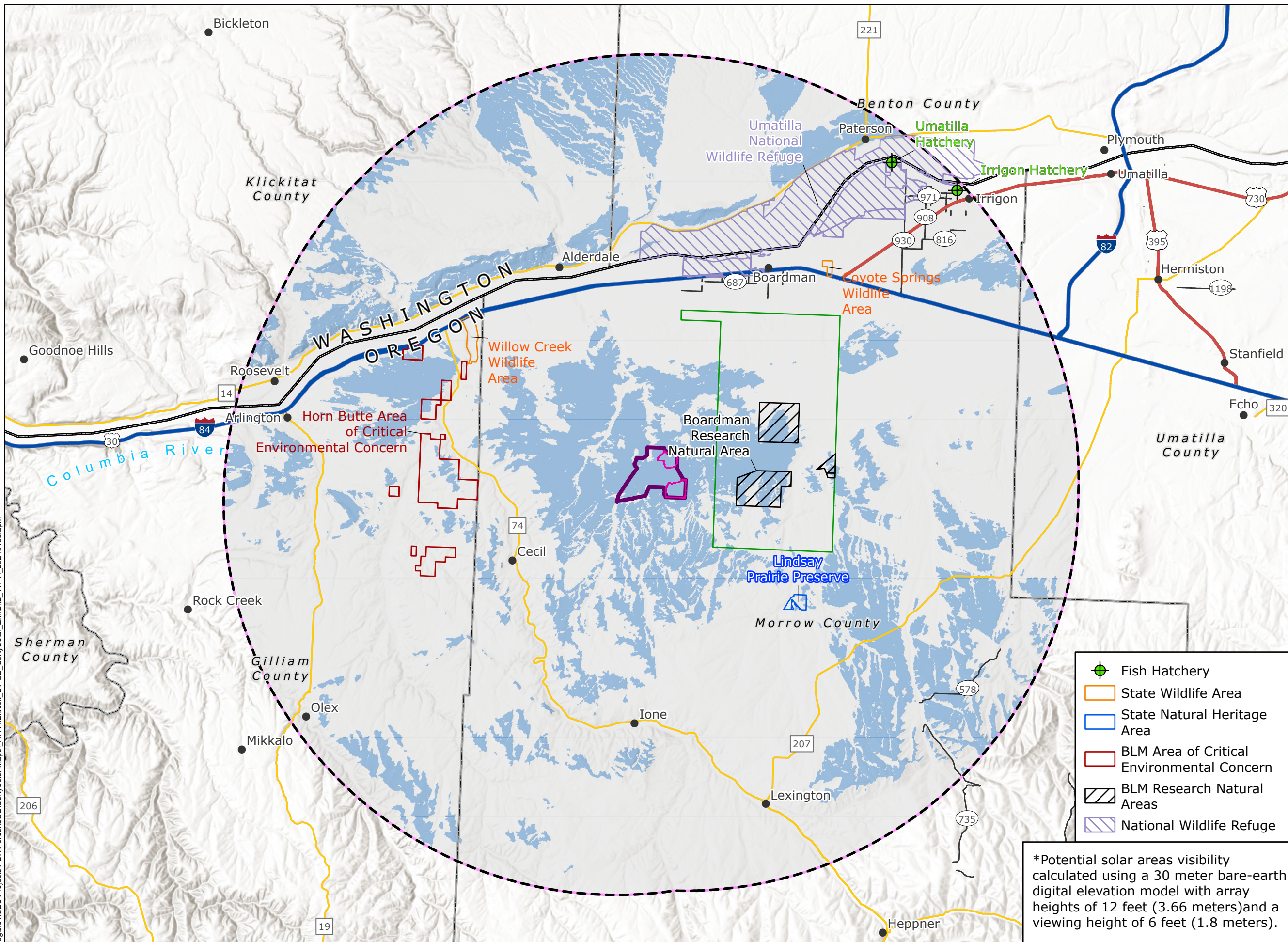
- Amended Site Boundary
- Analysis Area (20-mile Buffer)
- Boardman Bombing Range
- Solar Areas Fence Line
- City/Town
- County Boundary
- State Boundary
- Interstate Highway
- US Highway
- State Highway
- County Highway
- Viewshed Results
 - Solar Areas Not Visible
 - Solar Areas Potentially Visible

- Fish Hatchery
- State Wildlife Area
- State Natural Heritage Area
- BLM Area of Critical Environmental Concern
- BLM Research Natural Areas
- National Wildlife Refuge

*Potential solar areas visibility calculated using a 30 meter bare-earth digital elevation model with array heights of 12 feet (3.66 meters) and a viewing height of 6 feet (1.8 meters).



Reference Map



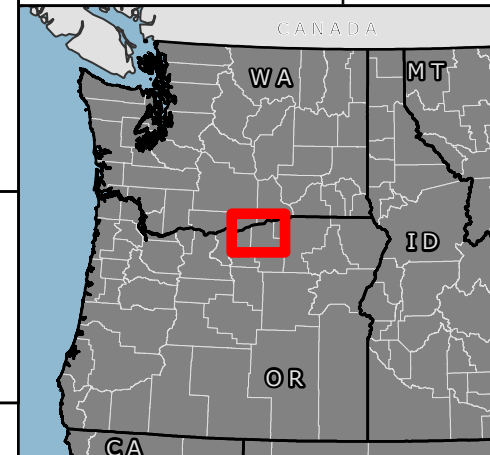
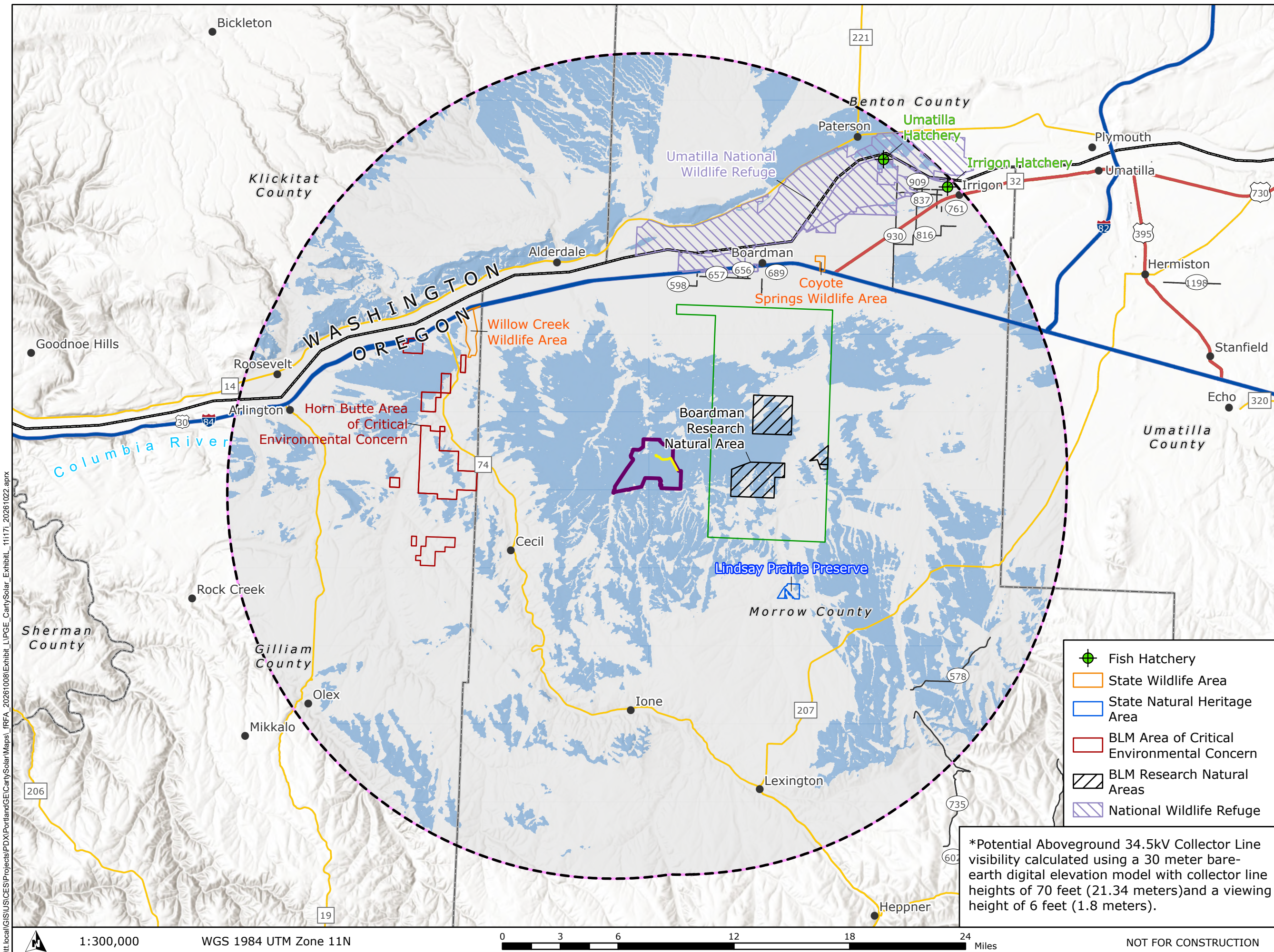
**Carty
Generating Station
Request for
Amendment 4
Figure L-3
Zone of Visual Influence
for Aboveground
34.5kV Collector Line**

MORROW COUNTY, OR

- Amended Site Boundary
 - Analysis Area (20-mile Buffer)
 - Boardman Bombing Range
 - Proposed Aboveground 34.5kV Collector Line
 - City/Town
 - County Boundary
 - State Boundary
 - Interstate Highway
 - US Highway
 - State Highway
 - County Highway
 - National Wildlife Refuge
- Viewshed Results
- Aboveground 34.5kV Collector Line Not Visible
 - Aboveground 34.5kV Collector Line Potentially Visible



Reference Map



- Fish Hatchery
- State Wildlife Area
- State Natural Heritage Area
- BLM Area of Critical Environmental Concern
- BLM Research Natural Areas
- National Wildlife Refuge

*Potential Aboveground 34.5kV Collector Line visibility calculated using a 30 meter bare-earth digital elevation model with collector line heights of 70 feet (21.34 meters) and a viewing height of 6 feet (1.8 meters).

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Attachment L-1. Correspondence Records

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From: [Kelly Wallis](#)
To: [Gulick, Kristen](#)
Subject: FW: RESPONSE REQUESTED: Boardman Research Natural Area
Date: Monday, July 18, 2022 7:12:32 AM
Attachments: [image001.png](#)

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Kristen,
That is correct. The RNA is still not accessible to the public.
Let me know if you have any further questions.
Thanks,
Kelly,

Kelly Wallis (she/her)
[The Nature Conservancy](#) | [Oregon Chapter](#)
Columbia Basin Preserves Manager
541-380-0925 (cell)
M-W 7:00 am to 4:00 pm; Th 7:00 am to 3:00 pm

From: "Gulick, Kristen" <Kristen.Gulick@tetratech.com>
Date: July 14, 2022 at 12:03:29 PM PDT
To: oregon@tnc.org
Cc: Jim Desmond <jim.desmond@tnc.org>
Subject: **RESPONSE REQUESTED: Boardman Research Natural Area**

Hello,
I was wondering if you could confirm that the Boardman Research Natural Area (within the Boardman Bombing Range, DoD managed area, located near Bombing Range Road in Morrow County, Oregon) is excluded from the public. We previously received correspondence from Jeff Rosier, TNC, back in 2015 that confirmed that the RNA is not accessible to the public, with occasional visits by TNC staff for monitoring and maintenance, but I just wanted to ensure that this information is still accurate. Please let me know as soon as you're able.

Thank you in advance!

Kristen Gulick (she/her) | Environmental Planner II | Tetra Tech
Mobile (541) 740-3316 | kristen.gulick@tetratech.com

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