

**Request for Amendment No. 2
to the Site Certificate for the
Carty Generating Station**

Submitted to:

Oregon Department of Energy

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Prepared by:

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Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
ASC	Application for Site Certificate
BCP	Boardman Coal Plant
CGS	Carty Generating Station
Council	Energy Facility Siting Council
CTG	combustion turbine generator
CUP	Conditional Use Permit
DEQ	Oregon Department of Environmental Quality
EFU	Exclusive Farm Use
gpd	gallons per day
HMA	habitat mitigation area
kV	kilovolt
kVA	kilovolt-ampere
LCC	land capability classification
MCZO	Morrow County Zoning Ordinance
MG	General Industrial
MSL	mean sea level
MW	megawatt
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OAR	Oregon Administrative Rule
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ORS	Oregon Revised Statutes
PGE	Portland General Electric Company
PV	photovoltaic
RFA1	Request for Amendment No. 1
RFA2	Request for Amendment No. 2
ROW	right-of-way
SAI	Space Age Industrial
SHPO	State Historic Preservation Office
WGS	Washington ground squirrel
WHMMP	Wildlife and Habitat Mitigation and Monitoring Plan
WPCF	Water Pollution Control Facility

1 Introduction

On June 29, 2012, the Energy Facility Siting Council (Council) issued a site certificate to Portland General Electric Company (PGE) for the Carty Generating Station (CGS, or “facility”).¹ The site certificate authorized the construction and operation of two natural gas combined-cycle generating units (Unit 1 and Unit 2) and related or supporting facilities. Unit 1 and its related or supporting facilities were constructed and placed in service in 2016.

PGE submitted a Request for Amendment No. 1 (RFA1) to the Council in 2018 to allow construction and operation of a photovoltaic (PV) solar generating unit and related or supporting facilities (together referred to as the Carty Solar Farm), and removal of site certificate conditions related to archaeological resource site 35MW19, based on recent cultural survey reports.² The First Amended Site Certificate for CGS was issued in December 2018.³ Because Unit 2 and other related or supporting facilities, including a new 18-mile-long, 500-kilovolt (kV) transmission line, were not constructed within 5 years of the effective date of the site certificate (per Condition 4.3 of the original Site Certificate for CGS), and because PGE did not request a construction timeline extension, PGE no longer has authorization for the construction and operation of facility components associated with Unit 2.

The 2012 Site Certificate for CGS authorized the shared use of several existing Boardman Coal Plant (BCP) facilities that are currently interconnected with CGS. These include sanitary waste infrastructure, Carty Reservoir (including raw water intake system), Water Discharge Channel, Boeing Well (potable water source), and the existing 17-mile-long, 500 kV Grassland to Slatt transmission line to connect to the grid.

The BCP will cease operations by December 31, 2020. After BCP ceases to operate, the shared facilities and other identified BCP facilities would exist only to serve CGS and therefore must be added to the Site Certificate for CGS as “related or supporting facilities” so they may continue to be used by CGS.

This Request for Amendment No. 2 (RFA2) evaluates the incorporation of the existing shared facilities and other existing components associated solely with BCP, and the construction and operation of new infrastructure. This RFA2 also assesses changes to the Site Boundary and provides an update to CGS’s facility description. Elements of this RFA2 are summarized as follows:

1. Incorporate existing common infrastructure shared by BCP and CGS into the Second Amended Site Certificate for CGS. These shared components include the following:

¹ Site certificate for the Carty Generating Station. 2012. Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/CGS_site_certificate_070212.pdf

² Request for Amendment No. 1. of the Site Certificate for Carty Generating Station. 2018. Available at: https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/CGS_site_certificate_070212.pdf

³ First Amended Site Certificate for the Carty Generating Station. 2018. Available at: <https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-12-14-CGS-AMD1-Amended-Site-Certificate.pdf>

- 500 kV Grassland to Slatt transmission line
 - Carty Reservoir, including portions of the raw water intake system and associated electrical connection
 - Water Discharge Channel
 - Sanitary sewer lagoons
 - Boeing Well and pump (potable water source)
2. Incorporate the following existing facilities currently authorized under the Site Certificate for BCP into the Second Amended Site Certificate for CGS. These components include the following:
- Construction substation
 - 300,000-gallon potable/fire water tank and associate existing water pipeline
 - 230 kV BCP to Dalreed transmission line
 - 34.5 kV BCP to railroad crossing at Tower Road transmission line.
 - 12.5 kV underground distribution line connecting the construction substation to the Boeing Well pump
 - 480-volt underground distribution line connecting the 34.5 kV transmission line to the Carty Reservoir seepage pumps
 - Two existing evaporation ponds located immediately northeast of CGS
 - Irrigation pump station on the shore of Carty Reservoir
 - 34.5 kV underground transmission line connecting the irrigation pump station to an existing PacifiCorp transmission line
3. Modify the Site Boundary to release approximately 378 acres of agricultural lands located within the western portion of the existing Site Boundary for CGS, add the necessary area required for the new Carty Substation, and incorporate the following existing facilities currently authorized under the Site Certificate for BCP:
- 500 kV Grassland to Slatt transmission line
 - 230 kV BCP to Dalreed transmission line
 - 34.5 kV BCP to railroad crossing at Tower Road transmission line
 - Carty Reservoir, the portions of the existing Water Discharge Channel not included in the site certificate for CGS, and the raw water intake structure
 - Sewage lagoons
 - Two existing evaporation ponds located immediately northeast of CGS
 - Irrigation pump station on the shore of Carty Reservoir

- 34.5 kV underground transmission line connecting the irrigation pump station to an existing PacifiCorp transmission line
4. Authorize construction and operation of the following new infrastructure for CGS:
 - Septic system
 - Water pipeline connecting BCP's 300,000-gallon water tank
 - Wastewater pipeline connecting CGS to BCP's two evaporation ponds
 - Security guard station
 - Office and warehouse building located within the existing fence line of CGS
 - A 230 kV substation, referred to herein as the Carty Substation, and associated distribution lines from the Carty Substation to the existing construction substation and CGS backup power
 5. Revise the existing Oregon Department of Environmental Quality (DEQ) Water Pollution Control Facility (WPCF) permit (Permit Number 100189) (Attachment 2). The modifications to the permit include minor changes in sampling frequency, updated naming conventions, permission to allow CGS to discharge to BCP lined evaporation ponds, permission to allow sewage from CGS to be disposed of in a new septic system under a construction permit for Umatilla County Public Health, permission to allow overland stormwater flow discharge to Carty Reservoir from the final cover system of the ash disposal landfill, permission to allow additional approved discharges from CGS to Carty Reservoir, and new groundwater monitoring requirements.
 6. Update the existing Site Certificate for CGS to include the correct location of the phone and data highway systems.
 7. Revise existing site certificate conditions where applicable.

2 Need for Amendment – OAR 345-027-0350

OAR 345-027-0350 – Changes requiring an amendment

Except for changes allowed under OAR 345-027-0353 of this rule, an amendment to a site certificate is required to:

(4) Design, construct or operate a facility in a manner different from the description in the site certificate if the proposed change:

(a) Could result in a significant adverse impact that the Council has not addressed in an earlier order and the impact affects a resource or interest protected by a Council standard;

(b) Could impair the certificate holder's ability to comply with a site certificate condition; or

(c) Could require a new condition or a change to a condition in the site certificate.

Response: PGE is submitting this RFA2 per Oregon Administrative Rule (OAR) 345-027-0350(4)(c) because PGE proposes to operate CGS in a manner different from the description in the current site certificate (i.e., the First Amended Site Certificate for CGS, December 14, 2018), because proposed changes would require new site certificate conditions and modifications to existing conditions. PGE has determined that the proposed activities included in this RFA2 will not result in a “significant adverse impact that the Council has not addressed in an earlier order” and will not “impair the certificate holder’s ability to comply with a site certificate condition.” PGE is proposing new and modified site certificate conditions in this RFA2 that will ensure the proposed activities considered in this RFA2 will not result in “significant adverse impacts.”

To support the Council’s evaluation, PGE has included proposed revisions to the Site Certificate for CGS in Attachment 1.

3 Certificate Holder Information

OAR 345-027-0360(1)(a) – Name of the facility; name and address of the certificate holder; name, mailing address and phone number of individual submitting request

3.1 Name of the Facility

Carty Generating Station

3.2 Name and Mailing Address of Certificate Holder

Portland General Electric Company
121 SW Salmon Street, 3WTC0403
Portland, OR 97204

3.3 Name and Address of Individual Responsible for Submitting Request

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4 Description of Facility

This section describes the location of CGS, the limits of the current Site Boundary, the major components at CGS (including related or supporting facilities), and the existing facilities currently shared by CGS and BCP. The CGS includes the authorized, but not yet constructed, Carty Solar Farm,

a 50-megawatt (MW) PV solar generating unit authorized by the Council in the First Amended Site Certificate for CGS issued on December 14, 2018 and executed on February 4, 2019. Per Condition 4.1(ii), PGE has until February 4, 2022, to begin construction of the Carty Solar Farm unless a request for extension is submitted.

4.1 Location and Current Site Boundary

The CGS is located in Morrow County, Oregon, southwest of the City of Boardman near the Carty Reservoir and adjacent to the existing BCP. Unit 1 and associated related or supporting facilities, including the 500 kV Unit 1 to Grassland Switchyard transmission line, the Grassland Switchyard, and permanent access roads, are located in Township 3 North, Range 24 East, Sections 32 and 33. The proposed Carty Solar Farm, if constructed, will be located south and southeast of the Carty Reservoir in Township 2 North, Range 24 East, Sections 2, 3, 10, and 11. Carty Solar Farm's related or supporting facilities, including transmission lines and temporary construction areas, will be located in the sections mentioned above and Township 3 North, Range 24 East, Sections 34 and 35.

As defined by OAR 345-001-0010, the Site Boundary is "...the perimeter of the site of the energy facility, its related or supporting facilities, all temporary staging areas, and all corridors and micro-siting corridors proposed by the applicant." The current Site Boundary for CGS encompasses approximately 1,581 acres and is shown in Figure 1.

4.2 Carty Generating Station

Unit 1 of CGS is a natural gas-fueled, combined-cycle, electric power generating plant capable of generating up to 450 MW of electrical power. The combined-cycle generating unit consists of one high-efficiency combustion turbine generator (CTG), a heat recovery steam generator, a steam turbine generator, and a cooling tower. A natural gas-fueled auxiliary boiler supplies steam when none is available from the heat recovery steam generator to start the CTG or to maintain the plant in a ready-to-start condition.

In addition to Unit 1, CGS also consists of a not-yet-constructed, 50 MW solar PV electrical power generating unit and associated transmission. The Carty Solar Farm would occupy a 315-acre site located south of the Carty Reservoir (Figure 2a). Electrical power produced by the Carty Solar Farm would be collected and routed via a new 34.5 kV transmission line to one of three interconnection options located north of the Carty Reservoir. Five potential transmission line routes from the Carty Solar Farm to the three interconnection options are currently permitted under the First Amended Site Certificate for CGS (*see* Figure 2a for interconnection options; *see* Figure B-4, Sheet 1 of RFA1 for transmission line routes⁴). Each route would be of the same approximate design and would be approximately 2 to 3 miles long, depending on the route selected. If an interconnection to the Grassland Switchyard is selected, the switchyard would be enlarged to 15 acres, as approved in the original Site Certificate and the First Amended Site Certificate for CGS.

The CGS currently includes the following related or supporting facilities:

⁴ Request for Amendment No. 1 of the Carty Generating Station. 2018. Available at: <https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2018-02-21-CGS-AMD1-ExAE.PDF>

- Grassland Switchyard
- 500 kV Unit 1 to Grassland Switchyard transmission line
- 34.5 kV backup transmission line
- 7.2 kV backup transmission line
- 4.2 kV station service line
- Interconnecting water pipelines
- Cooling tower
- Liquid storage facilities
- Accessory buildings
- Communication lines
- Access roads

A control and administrative building provides space for plant controls and offices for plant personnel for Unit 1 and the potential Carty Solar Farm.

CGS is interconnected with BCP for use of the following infrastructure permitted under the Site Certificate for BCP: Carty Reservoir, including intake and discharge facilities; sanitary waste infrastructure; potable water supply; and transmission infrastructure. Interconnected transmission infrastructure includes the 500 kV Grassland to Slatt transmission line, the 230 kV BCP to Dalreed transmission line, and the 34.5 kV BCP to railroad crossing at Tower Road transmission line; the 7.2 kV distribution line connecting the power block to the construction substation; the 12.5 kV distribution line connecting construction substation to the Boeing Well pump; and the 480-volt underground distribution line connecting the 34.5 kV transmission line to the Carty Reservoir seepage pumps.

A description of major components, structures, and systems of each related or supporting facility that is part of CGS per the Site Certificate for CGS is provided in the following subsections.

4.2.1 Grassland Switchyard

The Grassland Switchyard is a 500 kV, alternating current, open-air switchyard located west of CGS (Figure 2a). The switchyard consists of an 8.5-acre leveled and graveled area surrounded by a security fence. The switchyard was approved with a 15-acre permanent disturbance footprint in the original Site Certificate and may be expanded to that size depending on the interconnection needs of the Carty Solar Farm. The switchyard includes 500 kV circuit breakers and disconnect switches to allow for clearing faults on the connected transmission lines and for maintenance of the circuit breakers and transmission lines. An additional small building provides a controlled environment for protective relaying and communication equipment.

4.2.2 500 kV Unit 1 to Grassland Switchyard Transmission Line

Generator transformers at CGS step up the voltage produced by Unit 1 to 500 kV. An existing, approximately 1-mile-long 500 kV transmission line mounted on four steel lattice towers connects the generator transformers to the 500 kV Grassland Switchyard (Figure 2a). The towers are 100 to 150 feet tall and are spaced approximately 800 to 1,700 feet apart. Electricity from CGS is connected to the grid via the 17-mile-long, 500 kV Grassland to Slatt transmission line. The Grassland to Slatt transmission line is mounted on steel lattice towers for its entire length and is currently included in the Site Certificate for BCP, not the Site Certificate for CGS.

4.2.3 On-Site Power Transmission Lines

Three additional existing transmission lines provide backup and station service power to CGS (Figure 2a, b):

- A 4.2 kV station service line extends approximately 1 mile from CGS to the Grassland Switchyard. For most of its length, this line is mounted on wood poles. However, the line runs underground for approximately 750 feet prior to entering the Grassland Switchyard to avoid clearance conflicts with the 230 kV BCP to Dalreed transmission line. This line provides power to the Grassland Switchyard from CGS.
- A 7.2 kV backup power line extends approximately 0.5 mile from BCP to CGS. This line runs underground approximately 0.10 mile north of BCP; the remainder of the line is mounted on wood poles.
- A 34.5 kV line (referred to as the Grassland backup station service line) provides backup power to Grassland Switchyard via an approximately 800-foot underground line extending west and then north from the transformer within Grassland Switchyard, where it connects to the existing 34.5 kV line permitted under the Site Certificate for BCP.

4.2.4 Interconnecting Pipelines

Several pipelines connect CGS with BCP to access the following shared infrastructure: the Carty Reservoir raw water intake structure; the wastewater discharge structure for discharge to Carty Reservoir; and the sanitary sewer (Figure 2a, b). There are four categories of water sources and discharges that serve CGS: raw water/fire water, wastewater, potable water, and sanitary sewer.

Raw Water/Fire Water

Raw water from the Carty Reservoir is withdrawn via a single intake structure and is used for two purposes: recirculation water and service water (Figure 2a, b). Independent channels and pumps for recirculation water and service water are located inside the Raw Water Intake Building. Recirculation water is solely used by BCP and is not considered a shared facility for CGS. Service water is taken in through a separate channel with a traveling screen and enters a wet well. CGS's raw water intake is connected to this wet well. Raw water from this intake is also used at CGS for fire water. The CGS intake from the wet well is currently permitted under the Site Certificate for

CGS, but the raw water intake from the Carty Reservoir, traveling screen, and wet well are currently permitted under the Site Certificate for BCP.

Wastewater

CGS process wastewater and plant drainage wastewater flows are discharged into holding ponds, which can provide 7 days of holding capacity (if needed for discharge line maintenance or some other event preventing direct discharge). From the holding ponds, wastewater is discharged via an 8-inch-diameter pipeline into BCP's Water Discharge Channel prior to entering Carty Reservoir (Figure 2b). The holding ponds and 8-inch-diameter discharge pipe are currently permitted under the Site Certificate for CGS, but the Water Discharge Channel is currently permitted under the Site Certificate for BCP.

Potable Water

Potable water for drinking fountains, showers (emergency and lavatory), sinks, and flushing of lavatory fixtures comes from the Boeing Well. The Boeing Well is a groundwater extraction well located just south of CGS and northwest of BCP (Figure 2a, b). The well is 600 feet deep with a 30-horsepower pump hung at around 440 feet below ground surface. The well fills a holding tank within CGS prior to direct distribution to the plant services building. The CGS holding tank is piped directly from the Boeing Well discharge pipe and is only filled when the well is turned on to fill the BCP water tank. The CGS potable water system has a control valve to only allow water to flow in when needed. If water is needed by CGS, but not BCP, the well pump can be manually started and stopped via a hand control on the domestic water pump house control panel. The Boeing Well pump drive motor is powered from a 150-kilovolt-ampere (kVA) 12470-480/277-volt distribution transformer. This transformer is connected via a 12.5 kV underground distribution line to the construction substation (Figure 2a, b). The construction substation, in turn, derives power from a 7.2 kV underground power distribution line coming from BCP.

Sanitary Sewer

Sanitary sewer flows at CGS are solely from plant lavatories, sinks, and bathroom showers used by plant personnel and are directly discharged to the sewage lagoons that also serve BCP via an independent sewer lift station. There are three existing sewage lagoons: The South Lagoon and Middle Lagoon (both lined), and the North Lagoon (unlined) (Figure 2a, b). The South and Middle Lagoons can also be made common by a gated pipe through the separating dike. The only connection between the lined lagoons and the unlined lagoon is overflow through a chlorinating weir at the northeast corner of the Middle Lagoon. No overflow has occurred since BCP construction was completed in 1980. The original clay liners in the South and Middle Lagoons were replaced with new synthetic liners in the fall of 2014. The independent sewer lift station is permitted under the Site Certificate for CGS, but the sewage lagoons are permitted under the Site Certificate for BCP. Sanitary sewer discharges from CGS and BCP to the sewage lagoons are both permitted under WPCF permit number 100189.

4.3 Cooling Tower

The cooling tower at CGS exhausts excess heat from the power generation process (Figure 2a, b). The cooling tower consists of a structure to contain a water-cooling medium, with exhaust fans located within an open-top, bell-shaped housing that pulls air under and through the water-cooling medium. The cooling tower is approximately 50 feet tall. The mechanical-draft wet cooling tower serves the combined cycle unit of CGS.

4.4 Liquid Storage Facilities

Liquid fuel is not stored on CGS. Anhydrous ammonia, used for emissions control, is stored in steel storage tanks with secondary containment. Other liquid chemicals such as sulfuric acid (used for pH control) and sodium hypochlorite and sodium bromide (used as biocides in cooling tower water) are stored in tanks or totes with secondary containment. Small-quantity liquid chemicals such as cleaners and lubricants are stored within on-site accessory buildings.

4.5 Accessory Buildings

Accessory buildings on CGS house boiler feed pumps, chemical feed equipment, water treatment equipment, and other equipment requiring protection from weather or noise containment. Accessory buildings common to CGS and the proposed Carty Solar Farm include warehouse and administration areas.

4.6 Communication Lines

In the Application for Site Certificate (ASC), the communication lines supporting CGS were expected to originate from BCP and connect to CGS. During construction, the location of the lines was modified to originate from an existing Century Link vault near the northwest corner of the BCP lined evaporation ponds, run down the dirt access road, along Tower Road, and then into CGS.

4.7 Access Roads

A paved loop road, approximately 24 feet wide and 2,100 feet long, connects with Tower Road at both ends of the loop to serve normal truck and operator vehicle traffic for Unit 1. This loop road has spur roads leading to individual buildings and areas that require access.

5 Description of Proposed Change – OAR 345-027-0360(1)(b)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:

(b) A detailed description of the proposed change, including:

(A) a description of how the proposed change affects the facility,

(B) a description of how the proposed change affects those resources or interests protected by applicable laws and Council standards, and

(C) the specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change.

5.1 Analysis of Proposed Change

This RFA2 evaluates the incorporation of existing shared facilities and other existing components associated solely with BCP, and the construction and operation of new infrastructure, into the Second Amended Site Certificate for CGS. This RFA2 also assesses changes to the CGS Site Boundary and provides an update to CGS's facility description. A description of these proposed changes is provided in the following subsections.

5.1.1 Site Boundary

PGE is requesting an amendment to the CGS Site Boundary to incorporate related or supporting facilities that are currently located outside of the existing Site Boundary. These related or supporting facilities are currently authorized under the Site Certificate for BCP and include the following existing facilities: 500 kV Grassland to Slatt transmission line, 230 kV BCP to Dalreed transmission line, 34.5 kV BCP to the railroad crossing at Tower Road transmission line, Carty Reservoir (and associated pumping facilities and seepage collection systems), portions of the Water Discharge Channel, and raw water intake structure not already included in the CGS Site Boundary, sewage lagoons, evaporation ponds, irrigation pump station, and a 34.5 kV underground transmission line connecting an irrigation pump station on the shore of the Carty Reservoir to an existing PacifiCorp transmission line. The addition of the 500 kV Grassland to Slatt and the 230 kV BCP to Dalreed transmission lines would expand the CGS Site Boundary to also include Gilliam County. The Site Boundary would also be modified to include the land area occupied by the new Carty substation and associated distribution lines from the new substation to the existing construction substation and CGS back-up power; and remove agricultural lands from the western portion of the current Site Boundary because those areas are no longer being considered for future facility development related to CGS. The Site Boundary would encompass approximately 4,997 acres, an increase of 3,414 acres compared to the existing Site Boundary. To address this change, PGE proposes to modify Site Certificate Condition 2.1 to indicate the inclusion of Gilliam County. The proposed revised CGS Site Boundary is shown in Figure 1, and details on the proposed changes are listed in Table 1.

Modification of the CGS Site Boundary would alter the operations of CGS as defined in OAR 345-027-0350(c) because a site certificate condition would be modified.

Table 1. Proposed Changes to the CGS Site Boundary

Project Component	Total Acres
Existing Carty Site Boundary (RFA1)	1,582.8
Addition of 500 kV Grassland to Slatt transmission line	1,346.4
Addition of 230 kV BCP to Dalreed transmission line	245.5
Addition of 34.5 kV BCP to the railroad crossing at Tower Road transmission line	4.5
Addition of Carty Reservoir ¹	1,777.8
Addition of 7.2 kV transmission line, new Carty Substation, and associated distribution lines	22.9
Addition of sanitary sewer lagoons	9.7
Addition of evaporation ponds	17.6
Removal of agricultural lands	(378.0)
Addition of irrigation pump and associated 34.5 kV line	368.0
Total Proposed RFA2 Site Boundary	4,997.3¹

Key: BCP = Boardman Coal Plant; CGS = Carty Generating Station; kV = kilovolt; RFA1 = Request for Amendment No. 1; RFA2 = Request for Amendment No. 2

¹ Total may not reflect the addition of all values in the table due to rounding.

5.1.2 Carty Reservoir

PGE is requesting an amendment to transfer authorization of Carty Reservoir, including its operation and maintenance, into the Site Certificate for CGS (Figure 2a). This facility is currently permitted under the Site Certificate for BCP, but also receives wastewater from CGS. It also serves as the non-potable water source for both BCP and CGS and provides wildlife habitat and irrigation water for nearby farmland. Dams are assigned a hazard rating based on downstream hazard to people and property, not on the condition of the dam; the Carty Reservoir dam is classified as a significant hazard dam and as such is inspected by the Oregon Water Resources Department every three years.

All water for filling and maintaining the reservoir is pumped through a 60-inch pipe from the Columbia River, approximately 10 miles to the north. This pipe and associated pumps on the Columbia River are owned and operated by the neighboring Threemile Canyon Farms. Water is withdrawn from Carty Reservoir for irrigation by a 48-inch pipe, also operated by Threemile Canyon Farms. PGE is not requesting to add the pumps, associated piping and metering, and refill structure to the Site Certificate for CGS because they also serve as irrigation infrastructure for surrounding farmland and do not exist solely for the operation of CGS and therefore do not meet the definition of “related or supporting facilities” per OAR 345-001-0010(50). See Section 5.1.8 for information about the irrigation pump station, which PGE is proposing to add as a related or supporting facility.

The 60-inch intake pipe is connected to the BCP via a 36-inch pipe that extends across the reservoir bottom to the shoreline, then underground to where it enters a valve vault located by the Water Discharge Channel. Within the valve vault there are two valves: one sends water to the Service

Water Pump suction header servicing both CGS and BCP, and the second sends water directly to the Water Discharge Channel. The 36-inch pipe currently has a blank flange inserted at the origin; however, it is possible that the flange could be removed should CGS choose to have it operational in the future. PGE is also requesting that this 36-inch pipe be added to the CGS Site Certificate as a related or supporting facility.

PGE tests the dewatering gate at the West Dam periodically via a Dewatering Flowage Easement down Sixmile Canyon to verify that it is functional; there are no rules or regulations that require the testing, PGE conducts the tests as part of normal preventative maintenance of the facility. In incorporating Carty Reservoir into the Site Certificate as a related or supporting facility, CGS would not assume the current Water Quality Monitoring Program or Terrestrial Monitoring Program implemented as part of the Site Certificate for BCP. Modifications to the WPCF permit and the plans associated with the WPCF permit will incorporate applicable surface water and groundwater monitoring requirements for CGS (Attachment 2). A modified Wildlife and Habitat Mitigation and Monitoring Plan (WHMMP) will include any applicable monitoring requirements for Carty Reservoir. Over 40 years of monitoring of the reservoir has not shown any significant issues with fish and wildlife use; therefore, PGE proposes that waterfowl use, fish, amphibian, and riparian bird surveys can be discontinued. This determination was made by a PGE Senior Wildlife Biologist,⁵ with reference to annual reports submitted over the past 40 years and reviewed by Oregon Department of Energy (ODOE) and Oregon Department of Fish and Wildlife (ODFW). Although surveys have documented ongoing use of the reservoir and associated habitat by waterfowl, fish, amphibians, and riparian birds, there have been no negative impacts to those populations attributable to PGE activities or otherwise, or identification of protected species associated with those habitats, that would warrant ongoing monitoring. Ongoing raptor nest surveys will ensure the identification of raptor nests in riparian trees so they can be protected from any potential impacts from facility operation and maintenance.

ODFW provided comments to ODOE on the preliminary RFA2, recommending that as a condition of the proposed amendment that the “Applicant maintain Carty Reservoir as it has since 1990.” ODFW also recommended that if the Applicant desired to “change the operation or size of Carty Reservoir, that the certificate holder should work with ODOE and ODFW to mitigate for any loss in acres of wildlife habitat associated with the change in management.” In assuming operation of Carty Reservoir, PGE agrees to maintain the reservoir at a minimum annual average of a 665-foot elevation level (see Figure 3 and Site Certificate Condition 10.40, as modified in this RFA2). Incorporating Carty Reservoir into the Site Certificate for CGS would alter the operations of CGS in a manner different from the description in the current site certificate and could, as defined in OAR 345-027-0350(4)(c), require a new condition or a change to a condition in the site certificate.

Note that Carty Reservoir is a wastewater facility constructed for the BCP. The elevation of the reservoir has been maintained at a consistent elevation of about 667 to 668 feet mean sea level (MSL) due to operational needs of the BCP. With BCP ceasing operations, CGS does not have the same need to maintain the reservoir elevation at that level. To reduce operation and maintenance

⁵ The PGE Senior Wildlife Biologist has a Master of Science degree in Natural Resources Management and more than 20 years of professional experience in the natural resources field, including direct involvement in the BCP and CGS terrestrial monitoring programs.

cost associated with CGS and minimize impact to rate payers, PGE will be evaluating ways to lower the level of the pumps or other modifications to Carty Reservoir to operate the reservoir at lower water levels. In accordance with modified Condition 10.40, PGE will consult with ODOE and ODFW to determine whether an amendment would be required depending on the desired reduction in water levels. Future discussions will need to address the implications of requirements to maintain related or supporting facilities that would otherwise be required to be decommissioned when CGS is decommissioned.

5.1.3 Existing Transmission Infrastructure

PGE is proposing to transfer authorization of the following existing transmission infrastructure, currently permitted under the Site Certificate for BCP, into the Site Certificate for CGS (Figure 2a, b):

- 500 kV Grassland to Slatt transmission line
- 230 kV BCP to Dalreed transmission line
- 34.5 kV BCP to railroad crossing at Tower Road transmission line
- 12.5 kV underground distribution line from the construction substation to the Boeing Well
- 480-volt underground distribution line connecting the 34.5 kV transmission line to the Carty Reservoir seepage pumps
- 34.5 kV underground transmission line connecting the irrigation pump station on the shore of Carty Reservoir to an existing PacifiCorp transmission line

Operational access and maintenance would continue to occur using existing roads and occasional overland travel. These facilities comply with Site Certificate Condition 7.1, as evidenced by data provided in Attachment 7 (Electromagnetic Field Study for Carty Generating Station [PGE 2020]).

Incorporation of the existing transmission infrastructure into the Site Certificate for CGS would alter the operations of CGS as defined in OAR 345-027-0350(c) because site certificate conditions pertaining to the transmission lines would be modified in the Site Certificate for CGS and require the Site Boundary to extend into Gilliam County.

5.1.4 Construction Substation

The existing Construction Substation is located within a 40-foot by 80-foot fenced area that contains three wooden H-frame structures, transformers, and associated electrical equipment, including a 6-foot by 8-foot control house. It was built originally to provide construction power during construction of BCP and continues to be used as part of the onsite electrical distribution system. This facility is approximately 0.3 mile south of CGS within the existing CGS Site Boundary. Operational access and maintenance would continue to occur using existing roads.

Incorporation of the existing construction substation into the Site Certificate for CGS will not alter the operations of CGS as defined in OAR 345-027-0350(4) because this change would not result in a significant adverse impact that the Council has not addressed in an earlier order, impair PGE's

ability to comply with a site certificate condition, or require a new condition or a change to a condition in the site certificate.

5.1.5 Carty Substation

Currently, the 230 kV Boardman to Dalreed transmission line connects to the BCP by tying in directly to the BCP power block. Within the power block, the electricity is distributed throughout the BCP and distributed to provide backup power to CGS. Because the BCP power block will be demolished, the 230 kV Boardman to Dalreed line needs to be separated from the power block. A new 7.2 kV open box structure substation, control house for relay, supervisory control and data acquisition, communications, and DC system, dead-end structure for the existing 230 kV transmission line, and perimeter security fence would be constructed southeast of the construction substation, as shown in Figure 2a, Figure 2b, and Figure 4.

New equipment will include the following:

- **Box Structure:** The box frame structure is a metal frame structure (not enclosed) that will be approximately 16 feet wide by 36 feet long and 24 feet high.
- **230 kV Disconnect Switch:** The switch will be approximately 16 feet by 16 feet and 6 feet tall. It will be mounted on a 9-foot structure (overall height of about 15 feet).
- **Capacitive Voltage Transformer (CVT):** The transformers are a tall cylinder shape, similar in appearance to the insulators. The transformer at Carty Substation will be approximately 7-foot tall, mounted on an 8-foot structure, for an overall height of 15 feet.
- **Dead End Structure:** The dead-end structure will be one of the tallest features, measuring approximately 53 feet. Shield wires for lightning protection would add an additional 20 feet, resulting in an overall height of about 75 feet.
- **Lightning Mast:** Approximately two to four 75-foot-tall lightning masts will be mounted on the dead-end structure.
- **Circuit Switcher:** The circuit switcher will be 15.5 feet tall and will be mounted on a base measuring approximately 8 to 12 feet tall. The overall height would be 23.5 feet to 27.5 feet.
- **Circuit Breakers:** The circuit breakers will be located underneath the box structure; therefore, these components are considered part of the dimensions of the box structure.
- **Light poles:** Lights will be installed and will be approximately 35 feet tall.
- **Control House:** The control house will be approximately 15 feet by 35 feet and 12 feet tall.
- **Distribution line –** The distribution line from Carty Substation to the existing aboveground CGS backup power line will be mounted on single wood poles approximately 50 feet tall. PGE anticipates needing four to five poles, two of which will have down guys and anchors.

The substation will be contained within a fence line with dimensions of approximately 170 feet by 180 feet. The fence will be 8 feet tall with an additional 1 foot of barbed wire. Within the fence line

PGE will use the existing 27.5 megavolt-ampere power transformer and oil containment. The transformer contains a total of 13,995 gallons of mineral oil and the CGS Spill Prevention, Control, and Countermeasure Plan will be updated as required by condition 5.9 of the site certificate. The transformer is an existing noise source and is currently in operation at the location of the new substation (e.g., the new substation is being built around the existing transformer so that it can be reused). Because the transformer is the only noise-emitting component, the substation is not considered a new noise source.

The temporary disturbance footprint is estimated to be 0.6 acre, which assumes a 10-foot buffer around the fence line. New transmission infrastructure would relocate the existing 230 kV from the power block at BCP to a new dead-end structure. The new Carty Substation infrastructure would support the future abandonment of the existing 500 kV line connecting BCP to Grassland Substation, while maintaining optical ground wire for communication needs. New distribution lines would be constructed to (1) connect to the existing pump house and construction substation via an existing underground conduit, (2) connect to the existing intake structure via an existing underground conduit from CGS to the intake structure, and (3) connect to the existing H-frame to connect to CGS for backup power supply via a new overhead line.

Adding the new Carty Substation and associated distribution lines to the Site Certificate for CGS would alter the operations of CGS in a manner different from the description in the current site certificate; require modification of the current Site Boundary to include the new substation and associated distribution lines; and could, as defined in OAR 345-027-0350(4)(c), require a new condition or a change to a condition in the site certificate. The change in site certificate condition is considered minor in that Site Certificate Condition 7.2 was modified only to indicate that the substation would require fencing and locked gates.

5.1.6 Wastewater, Water, and Sewage Infrastructure

Wastewater

PGE is requesting that the Site Certificate for CGS be amended to incorporate the Recirculation Water Discharge Channel currently permitted under the Site Certificate for BCP (Figure 2a, b). For purposes of the Site Certificate for CGS, this feature is referred to as the Water Discharge Channel, since the Recirculation Water is only applicable to BCP. The Water Discharge Channel consists of a trapezoidal-shaped open channel formed with an earthen dike. The channel is approximately 750 feet long and 30 feet wide. The majority of the channel is lined with riprap, with a rock thickness of approximately 2 feet. A portion of the eastern side of the channel (an approximately 250-foot-long section) has been lined with concrete installed to manage erosion where the channel changes direction. This concrete was installed to protect the adjacent settling ponds. The Water Discharge Channel serves cooling water discharges from both the BCP and CGS and is equipped with a concrete structure near the Carty reservoir. The concrete structure serves to transition flows from the channel to a 96-inch-diameter pipe installed under the Carty Reservoir. The 96-inch-diameter pipe discharges combined BCP and CGS flows to Carty Reservoir immediately south of the divider dike.

CGS's existing wastewater holding ponds will continue to provide 7 days of holding capacity if needed for discharge line maintenance or some other event preventing direct discharge to Carty Reservoir.

Incorporation of the existing Water Discharge Channel into the Site Certificate for CGS will not alter the operations of CGS as defined in OAR 345-027-0350(4) because this change would not result in a significant adverse impact that the Council has not addressed in an earlier order, impair PGE's ability to comply with a site certificate condition, or require a new condition or a change to a condition in the site certificate.

Potable Water/Fire Water

PGE is requesting that the Site Certificate for CGS be amended to incorporate the existing 300,000-gallon, welded-steel water storage tank with adjacent pump house, 4-inch-diameter intake pipeline from Boeing Well, and new water pipeline connecting the CGS to the 300,000-gallon tank (Figure 2a, Figure 2b, and Figure 4). The 300,000-gallon water storage tank is currently permitted under the Site Certificate for BCP and is used solely by BCP to hold both potable water and fire water, with one-third of the storage volume dedicated to potable water use and the other two-thirds dedicated to backup fire water. Once the 300,000-gallon tank is connected to CGS, water may be used as a backup source for potable water or fire water. The Boeing Well would continue to be the primary source of potable water for CGS.

Incorporation of the existing 300,000-gallon, welded-steel water storage tank and associated facilities into the Site Certificate for CGS would alter the operations of CGS as defined in OAR 345-027-0350(4)(c) because a change to the site certificate conditions pertaining to the construction timeline would be added to the Site Certificate for CGS.

Raw Water

PGE is requesting that the Site Certificate for CGS be amended to include the raw water intake structure, including the 48-inch-diameter suction pipe, intake structure building, and support equipment (Figure 2a, b). This facility is currently permitted under the Site Certificate for BCP. CGS's fire water system would continue to be fed from the Carty Reservoir via two service water tanks that have two-thirds of each of their capacities reserved for fire water. The CGS fire water system would continue to be supplied from the CGS raw water pumps that draw from a pump pit that is supplied with reservoir water through the existing intake structure.

Incorporation of the existing intake structure and associated facilities into the Site Certificate for CGS will not alter the operations of CGS as defined in OAR 345-027-0350(4) because this change would not result in a significant adverse impact that the Council has not addressed in an earlier order, impair PGE's ability to comply with a site certificate condition, or require a new condition or a change to a condition in the site certificate.

Sanitary Sewer

PGE is requesting that the Site Certificate for CGS be amended to include the existing sanitary sewage lagoons and authorize construction of a new septic system. The septic system would be sized per state and county standards and the Umatilla County Public Health Department

requirements and in a location deemed acceptable for a standard, non-residential septic system. The facility will be constructed in accordance with OAR 340-071-022. Because the design flow of the system is less than 2,501 gallons per day (gpd), a permit from DEQ will not be required. The existing sewage lagoons would remain in place and would continue to be used by BCP and CGS until the new septic system is constructed and operational.

Construction and operation of a new septic system and incorporation of the existing sewage lagoons into the Site Certificate for CGS, would alter the operations of CGS as defined in OAR 345-027-0350(4)(c) because a change to the site certificate conditions pertaining to the construction timeline and discharge of sanitary wastewater would be added to the Site Certificate for CGS and conditions in the WPCF permit will be modified.

5.1.7 Existing Evaporation Ponds

PGE is requesting that the Site Certificate for CGS be amended to incorporate two existing evaporation ponds immediately northeast of CGS. These ponds are currently permitted under the Site Certificate for BCP and are used solely by BCP. The larger of the two ponds is approximately 10 acres and the smaller pond is approximately 1.5 acres.

Currently, CGS is approved to send the following wastes directly to Carty Reservoir (via existing wastewater holding ponds):

- Cooling water
- Water treatment wastewater
- Facility sumps and drains wastewater
- Laboratory and sampling wastewater
- Evaporative cooling wastewater
- Equipment cleaning wastewater
- Stormwater

In addition, PGE is requesting approval to add turbine rinse water to the list of approved discharges as part of the WPCF modification.

PGE is requesting approval to have the option to send this combined holding pond wastewater to the two existing BCP evaporation ponds. The evaporation ponds would be operated in compliance with Site Certificate Condition 9.8 (removed in Amendment 1 but restored in this RFA2).

Wastewater from the holding ponds would be conveyed to the evaporation ponds via a new approximately 1,000-foot-long underground wastewater pipeline. The temporary disturbance footprint for the new wastewater pipeline is estimated to be 0.1 acre, which assumes a 4-foot-wide trench.

Construction and operation of the new wastewater pipeline, incorporation of the existing BCP evaporation ponds into the Site Certificate for CGS, and modifications to WPCF permit number 100189 would alter the operations of CGS as defined in OAR 345-027-0350(4)(c) because a change

to the site certificate conditions pertaining to the construction timeline and processing of wastewater would be added to the Site Certificate for CGS and conditions in the WPCF permit will be modified.

5.1.8 Water Pollution Control Facilities Permit Modifications

PGE is also requesting that the Site Certificate for CGS be amended to include modifications to WPCF permit number 100189. The modifications to the permit include minor changes in sampling frequency, updated naming conventions, a request to allow CGS to discharge to Boardman lined evaporation ponds, a request to allow sewage from CGS to be disposed of in a septic system under a construction permit for Umatilla County Public Health, a request to allow overland stormwater flow discharge to Carty Reservoir from final cover system of the ash disposal landfill, a request to allow additional approved discharges from CGS to Carty Reservoir, and new groundwater monitoring requirements. Attachment 2 is the WPCF permit modification request and provides detailed information on the requested changes and the reasons for requesting the changes.

5.1.9 Existing Irrigation Pump Station

PGE is requesting that an existing irrigation pump station on the shore of Carty Reservoir and an approximately 2,600-foot-long, underground 34.5 kV transmission line that powers the pump station be added to the Site Certificate for CGS as related or supporting facilities. The pumps and associated equipment are located in the southwestern arm of Carty Reservoir within an approximately 0.2-acre fenced area. PGE owns and operates the pump station and the 34.5 kV transmission line, which extends south from a PacifiCorp transmission line along an existing access road to a transformer within the pump station.

Incorporation of the irrigation pump station into the Site Certificate for CGS will not alter the operations of CGS as defined in OAR 345-027-0350(4) because this change would not result in a significant adverse impact that the Council has not addressed in an earlier order, impair PGE's ability to comply with a site certificate condition, or require a new condition or a change to a condition in the site certificate.

5.1.10 Security Guard Station

PGE proposes to construct a new security guard station along Tower Road to the north of CGS. An entry gate and new fencing will connect to existing fencing on either side of Tower Road. New fencing will not exceed 200 linear feet. The security guard station will have a maximum footprint of 250 square feet and will include a single restroom. The proposed location for the security guard station and new fencing is on currently vegetated land. New potable water, wastewater, electricity, and communication lines for the new security guard station would need to be installed. These new lines will be placed underground and are anticipated to cross through existing paved, unpaved, and vegetated areas. The temporary disturbance footprint for these lines is estimated to be 0.26 acre, which assumes a 4-foot-wide trench for the plumbing and communication lines and a 10-foot disturbance buffer around the building. The permanent disturbance footprint will be approximately 250 square feet. Although the guard station will be built to support the BCP decommissioning

project; the guard station will continue to support CGS operations even when the BCP decommissioning project is complete; therefore, it is being included in the Site Certificate for CGS.

Incorporation of the security guard station into the Site Certificate for CGS would alter the operations of CGS as defined in OAR 345-027-0350(4)(c) because a change to site certificate conditions pertaining to the construction timeline would be added to the Site Certificate for CGS.

5.1.11 New Office and Warehouse Space for CGS

PGE proposes to construct a new building within the existing CGS fence line to provide additional office and warehouse space (Figure 2b, Figure 4). The building would be approximately 60 feet by 100 feet and approximately 20 feet tall. It will provide both office and warehouse space and be similar in appearance to the existing site buildings. Temporary disturbance is estimated at 0.2 acre and assumes a 10-foot disturbance buffer around the building.

Incorporation of the new office and warehouse space into the Site Certificate for CGS would alter the operations of CGS as defined in OAR 345-027-0350(4)(c) because a change to site certificate conditions pertaining to the construction timeline would be added to the Site Certificate for CGS.

5.1.12 Communication Lines

As stated in Section 4.6, per the ASC communication lines supporting CGS were expected to originate from BCP and connect to CGS. During construction of CGS, the location of the lines was modified to originate from an existing Century Link vault near the northwest corner of the BCP lined evaporation ponds, then run down the dirt access road, along Tower Road, and into CGS. PGE worked with the ODOE and ODFW to update the disturbance location at the time of the construction modification.

Updating the description of the communication lines in the Site Certificate for CGS will not alter the operations of CGS as defined in OAR 345-027-0350(4) because this change will not result in a significant adverse impact that the Council has not addressed in an earlier order, impair PGE's ability to comply with a site certificate condition, or require a new condition or a change to a condition in the site certificate.

5.1.13 Additional Temporary Construction Areas

Additional areas in the vicinity of the proposed CGS would be provided for construction staging and temporary storage of soil displaced during the construction process.

5.2 How Proposed Change Affects Protected Resources and Interests – OAR 345-027-0360(1)(b)(B)

OAR 345-027-0360(1)(b)(B) – Description of how proposed change affects resources or interests protected by applicable laws and Council standards

The changes proposed in this RFA2 will not create significant new impacts affecting those resources and interests protected by the Council's siting standards and will not alter the basis of the Council's

previous findings that the Facility complies with all applicable laws and standards. To the extent that the proposed changes could affect protected resources and interests, PGE demonstrates that the Facility will continue to comply with all applicable laws and Council standards in Sections 6 through 8 of this RFA2.

5.3 Location of Proposed Change – OAR 345-027-0360(1)(b)(C)

OAR 345-027-0360(1)(b)(C) – Description of the specific location of the proposed change, and any updated maps and/or geospatial data layers relevant to the proposed change.

Figure 1 shows the existing CGS Site Boundary and the RFA2 Site Boundary that would apply to the changes proposed in this RFA2, including construction and operation of proposed new facilities and incorporation of existing infrastructure currently authorized under the Site Certificate for BCP, shown in Figure 2a, Figure 2b, and Figure 4.

6 Applicable Division 21 Requirements – OAR 345-027-0360(1)(c)

OAR 345-027-0360 Preliminary Request for Amendment

(1) To request an amendment to the site certificate required by OAR 345-027-0350(3) and (4), the certificate holder shall submit a written preliminary request for amendment to the Department of Energy that includes the following:

(c) References to any specific Division 21 information that may be required for the Department to make its findings.

Response: PGE demonstrates compliance with applicable requirements of Division 21 per the original Site Certificate issued on June 29, 2012; First Amended Site Certificate for CGS issued December 14, 2018; and in Sections 6.1 through 6.4 of this RFA2.

6.1 OAR 345-021-0010(e) Permits Required and Applicable Requirements

(e) Exhibit E. Information about permits needed for construction and operation of the facility, including:

(A) Identification of all federal, state and local government permits related to the siting of the proposed facility, a legal citation of the statute, rule or ordinance governing each permit, and the name, mailing address, email address and telephone number of the agency or office responsible for each permit.

(B) A description of each permit, the reasons the permit is needed for construction or operation of the facility and the applicant's analysis of whether the permit should or should not be included in and governed by the site certificate.

(C) For any state or local government agency permits, licenses or certificates that are proposed to be included in and governed by the site certificate, evidence to support findings by the Council that construction and operation of the proposed facility will comply with the statutes, rules and standards applicable to the permit. The applicant may show this evidence:

(i) In Exhibit J for permits related to wetlands.

(ii) In Exhibit O for permits related to water rights.

(D) For federally-delegated permit applications, evidence that the responsible agency has received a permit application and the estimated date when the responsible agency will complete its review and issue a permit decision.

(E) If the applicant relies on a state or local government permit or approval issued to a third party, identification of any such third-party permit and for each:

(i) Evidence that the applicant has, or has a reasonable likelihood of entering into, a contract or other agreement with the third party for access to the resource or service to be secured by that permit.

(ii) Evidence that the third party has, or has a reasonable likelihood of obtaining, the necessary permit.

(iii) An assessment of the impact of the proposed facility on any permits that a third party has obtained and on which the applicant relies to comply with any applicable Council standard.

(F) If the applicant relies on a federally-delegated permit issued to a third party, identification of any such third-party permit and for each:

(i) Evidence that the applicant has, or has a reasonable likelihood of entering into, a contract or other agreement with the third party for access to the resource or service to be secured by that permit.

(ii) Evidence that the responsible agency has received a permit application.

(iii) The estimated the date when the responsible agency will complete its review and issue a permit decision.

(G) The applicant's proposed monitoring program, if any, for compliance with permit conditions.

Response: The ASC⁶ and subsequent RFA1 identified the federal, state, and local government permits related to the siting of the Facility, which were incorporated into site certificate conditions as necessary. The construction and operation of the proposed new facilities and infrastructure described in this RFA2 require new permits, permit modifications, or permit conditions not previously identified and considered by the Council. New or modified permits not previously addressed by the Council are listed in Table 2 and described in more detail after the table.

⁶ Application for Site Certificate for Carty Generating Station. 2011. Available at: <https://www.oregon.gov/energy/facilities-safety/facilities/Pages/CGS.aspx>

Table 2. List of New or Modified Permits for Related or Supporting Facilities Proposed under Request for Amendment No. 2

Permit Description	Agency	Rule or Statute	Applicability
Energy Facility Site Certificate, as amended	Oregon Department of Energy	ORS 469.300 et seq., 469.501, 469.503, and 469.504; OAR 345-001, 345-021, 345-022, 345-024, 345-026-0048, and 345-027-0210, 0350, and 0360	This RFA2 provides recommended changes to the language of the Site Certificate to reflect the modifications proposed by PGE in RFA2. The information in the RFA2 demonstrates that PGE has met applicable siting standards.
WPCF	Oregon Department of Environmental Quality	ORS 468B; OAR 340-071-0162; OAR Chapter 340, Division 45	Modification of the existing WPCF (Permit Number 100189) incorporate changes associated with ceasing operations at BCP as well as other changes unrelated to BCP.
Morrow County Building and Utility Permits	Morrow County Planning Department	Morrow County Zoning Ordinance, Article 9	PGE or PGE's contractors will obtain local building and utility permits as needed.
Construction Permit for On-site Sewage Treatment System	Umatilla County Public Health	OAR Chapter 340, Division 71; MCZO 9.060	A new permit will be required for on-site sewage disposal system with design flow less than 2,501 gpd.
Fire Protection Program	Oregon State Fire Marshall's Office	ORS 476, OAR Chapter 837, Divisions 40.	Construction and operation of the new security guard station and new office and warehouse building would be subject to the Fire Protection Program.

Key: BCP = Boardman Coal Plant; gpd = gallons per day; MCZO = Morrow County Zoning Ordinance; OAR = Oregon Administrative Rule; ORS = Oregon Revised Statutes; PGE = Portland General Electric Company; RFA2 = Request for Amendment No. 2; WPCF = Water Pollution Control Facility

Permit: Energy Facility Site Certificate

Agency: Energy Facility Siting Council, Oregon Department of Energy, 550 Capitol Street NE, First Floor, Salem, Oregon 97301, 503-378-4040

Standards: Oregon Revised Statutes (ORS) 469.300 et seq., 469.501, 469.503, and 469.504; OAR 345-001, 345-021, 345-022, 345-024, 345-026-0048, and 345-027-0020, 0023 and 0028

Response: This RFA2 provides recommended changes to the language of the site certificate to reflect the modifications proposed by PGE, as described in Section 7.0 of this RFA2. The information within Section 8.0 demonstrates that PGE has met applicable siting standards.

Permit: Water Pollution Control Facility Permit

Agency: Oregon Department of Environmental Quality, Administrative Office: 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232, 503-229-5696, The Dalles Administration Office: 400 E Scenic Drive, Suite 307, The Dalles, Oregon 97058, 541-298-7255

Standards: ORS 468B, OAR 340-071-0162, OAR 340, Division 45

Response: Changes are required to PGE's existing WPCF permit, including modifications associated with ceasing operations at BCP as well as other modifications unrelated to BCP, to better reflect current and desired future operations at CGS. The WPCF is included in and governed by the site certificate; the WPCF modification request is included as Attachment 2.

Permit: Morrow County Building and Utility Permits

Agency: Morrow County Planning Department, 205 3rd St NE, Irrigon, Oregon 97844, 541-922-4624

Standards: Morrow County Zoning Ordinance (MCZO), Article 9

Response: PGE or PGE's contractors will obtain local building and utility permits as needed. These permits are not included in or governed by the site certificate.

Permit: Construction Permit for On-site Sewage Treatment System

Agency: Umatilla County Public Health, 200 SE Third Street, Pendleton, Oregon 97801, 541-278-5432

Standards: OAR 340, Division 71; MCZO 9.060

Response: The septic system will require a new Construction Permit for On-site Sewage Treatment System issued from Umatilla County Public Health. As of May 3, 2019, all program responsibilities for on-site septic systems in Morrow County have transferred from DEQ to Umatilla County Public Health. On January 10, 2020, Umatilla County Public Health performed a site evaluation for the proposed location of the septic system at CGS. The County found the site to be acceptable for a standard system. The Construction Permit for On-site Sewage Treatment System is not included in or governed by the site certificate.

6.2 OAR 345-021-0010(1)(i) Information Regarding Soil Types

(i) Exhibit I. Information from reasonably available sources regarding soil conditions and uses in the analysis area, providing evidence to support findings by the Council as required by OAR 345-022-0022, including:

(A) Identification and description of the major soil types in the analysis area;

(B) Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils;

6.2.1 OAR 345-021-0010(1)(i)(A) Major Soil Types

Identification and description of the major soil types in the analysis area;

Response: The proposed modifications to the Site Boundary considered in this RFA2 would add major soil types not currently represented within the Site Boundary for CGS. These major soil types are associated with the Site Boundary for BCP but are provided in this response to establish a record for CGS.

There are 38 soil map units within the RFA2 Site Boundary (Table 3), 29 of which are not present in the existing Site Boundary. These additional soil types are located within the existing 500 kV and 230 kV transmission line rights-of-way (ROWs) currently authorized under the Site Certificate for BCP. A description of soil types that are not included in the existing Site Boundary but would be included in the RFA2 Site Boundary follows. Land capability classification (LCC) is included in the soil descriptions. LCC is a system of grouping soil map unit components primarily on their capability to produce common cultivated crops and pasture plants without causing soil deterioration over a long (though undefined) period of time (NRCS 2019⁷). There are eight classes, ranging from Class I, which denotes soils with slight limitations that restrict their use, to Class VIII, which denotes soils and miscellaneous areas that have limitations precluding their use for commercial plant production and thereby restricting them to recreation, wildlife, water supply, or aesthetic purposes. The two subclasses presented are “e,” which indicates susceptibility to erosion as the dominant problem affecting their use, and “s,” which indicates limitations within the rooting zone such as shallow rooting depth, abundance of stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium content.

Table 3. Soil Type by Acres within the Amended Site Boundary (Soil types associated with areas that would be added if RFA2 is approved indicated by grey shading.)

Map Unit	Soil Type	Total Acres within Amended Site Boundary	Acres within Addition to Site Boundary (New)
4C	Blalock loam, 2 to 12 percent slopes	258.9	258.9
13	Kimberly fine sandy loam	23.2	23.2
14B	Krebs silt loam, 2 to 5 percent slopes	44.9	44.9
14D	Krebs silt loam, 5 to 20 percent slopes	53.9	53.9
15E	Lickskillet very stony loam, 7 to 40 percent slopes	0.8	0.8
23B	Olex silt loam, 0 to 5 percent slopes	23.4	23.4
24D	Olex gravelly silt loam, 5 to 20 percent slopes	5.6	5.6
24E	Olex gravelly silt loam, 20 to 40 percent slopes	34.6	34.6
27B	Prosser-Rock outcrop complex, 1 to 5 percent slopes	12.0	12.0
40B	Sagehill fine sandy loam, 2 to 5 percent slopes	56.8	56.8
40C	Sagehill fine sandy loam, 5 to 12 percent slopes	31.2	31.2

⁷ Natural Resources Conservation Service Soils. Available at: <https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=OR>

Map Unit	Soil Type	Total Acres within Amended Site Boundary	Acres within Addition to Site Boundary (New)
40D	Sagehill fine sandy loam, 12 to 20 percent slopes	83.4	83.4
41B	Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes	13.7	13.7
41C	Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes	13.6	13.6
45B	Taunton loamy fine sand, 2 to 5 percent slopes	14.3	14.3
55B	Warden silt loam, 2 to 5 percent slopes	29.7	29.7
55D	Warden silt loam, 12 to 20 percent slopes	37.6	37.6
56B	Willis silt loam, 2 to 5 percent slopes	10.3	10.3
9	Dune land	57.6	3.9
13E	Gravden very gravelly loam, 20 to 40 percent slopes	0.7	0.7
26B	Koehler loamy fine sand, 2 to 5 percent slopes	76.5	76.5
26C	Koehler loamy fine sand, 5 to 12 percent slopes	3.3	3.3
37A	Prosser silt loam, 0 to 2 percent slopes	15.7	15.7
37B	Prosser silt loam, 2 to 7 percent slopes	10.4	10.4
38D	Prosser-Rock outcrop complex, 1 to 20 percent slopes	47.2	47.2
40C	Quincy loamy fine sand, 2 to 12 percent slopes	35.2	35.2
49F	Rock outcrop-Rubble land complex, very steep	1.7	1.7
53A	Royal silt loam, 0 to 3 percent slopes	106.2	49.6
54B	Sagehill fine sandy loam, 2 to 5 percent slopes	1,357.2	851.8
54C	Sagehill fine sandy loam, 5 to 12 percent slopes	29.0	29.0
54D	Sagehill fine sandy loam, 12 to 20 percent slopes	179.6	123.9
55B	Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes	599.4	338.5

Map Unit	Soil Type	Total Acres within Amended Site Boundary	Acres within Addition to Site Boundary (New)
55C	Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes	553.8	470.2
58B	Taunton fine sandy loam, 2 to 5 percent slopes	718.8	584.8
58C	Taunton fine sandy loam, 5 to 12 percent slopes	411.1	359.1
59B	Taunton fine sandy loam, hummocky, 0 to 5 percent slopes	6.6	6.6
71E	Warden silt loam, 20 to 40 percent slopes	1.9	1.9
78	Xeric Torriorthents, nearly level	19.0	16.4
93B	Taunton loamy fine sand, 2 to 5 percent slopes	2.0	2.0

Source: NRCS 2019

Blalock loam, 2 to 12 percent slopes (Map Unit 4C)

The Blalock component makes up 85 percent of the map unit. This component is on old river terraces in river valleys. The parent material consists of wind-worked old river alluvium over a silica-cemented duripan over weathered shale. Depth to a root restrictive layer (duripan) is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is very low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is VIe.

Kimberly fine sandy loam (Map Unit 13)

The Kimberly component makes up 85 percent of the map unit. This component is on stream terraces and in river valleys. The parent material consists of mixed alluvium, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is high, available water to a depth of 60 inches (or restricted depth) is moderate and shrink-swell potential is low. This soil is rarely flooded and is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is IIIe, and irrigated LCC is IIe.

Krebs silt loam, 2 to 5 percent slopes (Map Unit 14B)

The Krebs component makes up 85 percent of the map unit. Slopes are 2 to 5 percent. This component is on hillslopes. The parent material consists of loess over calcareous, diatomite residuum over partially decomposed diatomite. Depth to a root restrictive layer (bedrock, paralithic) is 40 to 60 inches, and the natural drainage class is well drained. Water movement in the most restrictive layer is very low, available water to a depth of 60 inches (or restricted depth) is

high and shrink-swell potential is moderate. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. LCC is VIe.

Krebs silt loam, 5 to 20 percent slopes (Map Unit 14D)

Soil characteristics are the same as for map unit 14B described above, except slopes are steeper.

Lickskillet very stony loam, 7 to 40 percent slopes (Map Unit 15E)

Lickskillet and similar soils make up 70 percent of the map unit. The parent material is loess mixed with colluvium from basalt. The depth to restrictive layer (bedrock) is 12 to 20 inches. The natural drainage class is well-drained, water movement in the most restrictive layer is moderately high to high, available water storage is low, and the depth to water table is more than 80 inches. This soil is not flooded or ponded. Non-irrigated LCC is VIIIs.

Olex silt loam, 0 to 5 percent slopes (Map Unit 23B)

The Olex component makes up 85 percent of the map unit. This component is on Columbia River Basalt plateaus. The parent material consists of loess over very gravelly alluvium, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is moderate and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is VIe.

Olex gravelly silt loam, 5 to 20 percent slopes (Map Unit 24D)

Soil characteristics are the same as map unit 23D described above, except slopes are steeper.

Olex gravelly silt loam, 20 to 40 percent slopes (Map Unit 24E)

Soil characteristics are the same as map unit 24D described above, except slopes are steeper.

Prosser-Rock outcrop complex, 1 to 5 percent slopes (Map Unit 27B)

The Prosser component makes up 60 percent of the map unit. This component is on outwash terraces, and the parent material consists of loess over basalt. Depth to a root restrictive layer (bedrock, lithic) is 20 to 40 inches. The natural drainage class is well drained, and water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. The non-irrigated LCC is IVe, the irrigated LCC is IIIe, and the soil is classified as farmland of statewide importance.

Sagehill fine sandy loam, 2 to 5 percent slopes (Map Unit 40B)

The Sagehill component makes up 85 percent of the map unit. This component is on terraces. The parent material consists of loess over calcareous, lacustrine deposits, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the

most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is high and shrink-swell potential is low. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Non-irrigated LCC is IVe, and irrigated LCC is IIe.

Sagehill fine sandy loam, 5 to 12 percent slopes (Map Unit 40C – Gilliam County / Map Unit 54C – Morrow County)

Soil characteristics are the same as map unit 40B described above, except slopes are steeper, non-irrigated LCC is IVe, and irrigated LCC is IIIe.

Sagehill fine sandy loam, 12 to 20 percent slopes (Map Unit 40D)

Soil characteristics are the same as map unit 40B described above, except slopes are steeper, non-irrigated LCC is IVe, and irrigated LCC is VIe.

Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes (Map Unit 41B)

The Sagehill hummocky component makes up 85 percent of the map unit. This component is on terraces. The parent material consists of loess over calcareous, lacustrine deposits, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is high and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Non-irrigated LCC is IVe, and irrigated LCC is IIe.

Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes (Map Unit 41C)

Soil characteristics are the same as map unit 41B described above, except slopes are steeper, and irrigated LCC is IIIe.

Taunton loamy fine sand, 2 to 5 percent slopes (Map Unit 45B)

The Taunton component makes up 85 percent of the map unit. This component is on Columbia River terraces, and the parent material consists of old alluvium reworked by wind. Depth to a root restrictive layer (duripan) is 20 to 40 inches. The natural drainage class is well drained, and water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded and or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. The non-irrigated LCC is VIIe, and irrigated LCC is IVe.

Warden silt loam, 2 to 5 percent slopes (Map Unit 55B)

The Warden component makes up 85 percent of the map unit. This component is on hillslopes. The parent material consists of loess over calcareous, silty lacustrine deposits, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is high and shrink-swell potential is low. This soil is not flooded or ponded,

and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is IVe, and irrigated LCC is IIe.

Warden silt loam, 12 to 20 percent slopes (Map Unit 55D)

Soil characteristics are the same as map unit 55B described above, except slopes are steeper, and irrigated LCC is VIe.

Willis silt loam, 2 to 5 percent slopes (Map Unit 56B)

The Willis component makes up 90 percent of the map unit. This component is on terraces. The parent material consists of loess over a cemented hardpan, and depth to a root restrictive layer is 20 to 40 inches. The natural drainage class is well drained, water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is IIIe, and irrigated LCC is IIe.

Gravden very gravelly loam, 20 to 40 percent slopes (Map Unit 13E)

The Gravden component makes up 85 percent of the map unit. This component is on south-facing hillslopes. The parent material consists of gravelly alluvium and colluvium, and depth to a root restrictive layer (duripan) is 20 to 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is very low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is VIIe.

Koehler loamy fine sand, 2 to 5 percent slopes (Map Unit 26B)

The Koehler component makes up 75 percent of the map unit. This component is on strath terraces in Columbia River valleys. The parent material consists of eolian sands over cemented alluvium, and the depth to a root restrictive layer (duripan) is 20 to 40 inches. The natural drainage class is somewhat excessively drained, water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is very low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Non-irrigated LCC is VIIe, and irrigated LCC is IVe.

Koehler loamy fine sand, 5 to 12 percent slopes (Map Unit 26C)

Soil characteristics are the same as map unit 26B described above, except slopes are steeper.

Prosser silt loam, 0 to 2 percent slopes (Map Unit 37A)

The Prosser component makes up 65 percent of the map unit. This component is on strath terraces in Columbia River valleys. The parent material consists of loess, depth to a root restrictive layer (bedrock, lithic) is 20 to 40 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted

depth) is low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. The non-irrigated LCC is IVe, irrigated LCC is IIIe, and the soil is classified as prime farmland if irrigated.

Prosser silt loam, 2 to 7 percent slopes (Map Unit 37B)

Soil characteristics are the same as map unit 37A described above, except slopes are steeper.

Prosser-Rock outcrop complex, 1 to 20 percent slopes (Map Unit 38D)

The Prosser component makes up 60 percent of the map unit. This component is on strath terraces and in Columbia River valleys. The parent material consists of loess, depth to a root restrictive layer (bedrock, lithic) is 20 to 40 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Non-irrigated and irrigated LCC is IVe, and the soil is classified as farmland of statewide importance.

Quincy loamy fine sand, 2 to 12 percent slopes (Map Unit 40C)

The Quincy component makes up 85 percent of the map unit. This component is on strath terraces and in Columbia River valleys. The parent material consists of eolian sands, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained, water movement in the most restrictive layer is high, available water to a depth of 60 inches (or restricted depth) is moderate and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Non-irrigated LCC is VIIe, and irrigated LCC is IVe.

Rock outcrop-Rubble land complex, very steep (Map Unit 49F)

Rock outcrop makes up 50 percent of the map unit and rubble land makes up 35 percent. This component is present on hillsides and consists of unweathered bedrock and fragmented material.

Taunton fine sandy loam, hummocky, 0 to 5 percent slopes (Map Unit 59B)

The Taunton, hummocky component makes up 85 percent of the map unit. This component is on strath terraces in Columbia River valleys. The parent material consists of eolian sands over strongly cemented alluvium, and the depth to a root restrictive layer (duripan) is 20 to 40 inches. The natural drainage class is well drained, water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Non-irrigated LCC is VIe, irrigated LCC is IVe, and the soil is classified as farmland of statewide importance.

Warden silt loam, 20 to 40 percent slopes (Map Unit 71E)

The Warden component makes up 85 percent of the map unit. This component is on strath terraces in Columbia River valleys. The parent material consists of loess over calcareous lacustrine deposits, and depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained, water movement in the most restrictive layer is moderately high, available water to a depth of 60 inches (or restricted depth) is high and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. The non-irrigated LCC is VIe, and the soil is classified as farmland of statewide importance.

Taunton loamy fine sand, 2 to 5 percent slopes (Map Unit 93B)

The Taunton component makes up 85 percent of the map unit. This component is on terraces in Columbia River valleys. The parent material consists of eolian sands over strongly cemented alluvium, and the depth to a root restrictive layer (duripan) is 20 to 40 inches. The natural drainage class is well drained, water movement in the most restrictive layer is low, available water to a depth of 60 inches (or restricted depth) is low and shrink-swell potential is low. This soil is not flooded or ponded, and there is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. The non-irrigated LCC is VIIe, the irrigated LCC is IVE, and the soil is classified as farmland of statewide importance.

6.2.2 OAR 345-021-0010(1)(i)(B) Current Land Uses

Identification and description of current land uses in the analysis area, such as growing crops, that require or depend on productive soils;

Response: The predominant land uses in the area added to the Site Boundary include open rangeland, cultivated cropland, and developed/industrial (Unit 1). The open rangeland and cultivated cropland added to the RFA2 Site Boundary is crossed by the existing 500 kV and 230 kV transmission lines; there will be no change to the uses of those lands as a result of the amended site certificate. The new Carty Substation and associated transmission/distribution lines, septic system, water line, and wastewater pipeline will be constructed in the developed/industrial area and will be consistent with those existing uses. The area of the existing Site Boundary that will be removed if RFA2 is approved is used for agriculture, and once the land is removed from the Site Boundary, it will remain zoned Exclusive Farm Use (EFU) by Morrow County.

6.3 OAR 345-021-0010(1)(j)(D) Explanation of Removal-Fill Determination

OAR 345-021-0010(1)(j)(D)

If the proposed facility would not need a removal-fill authorization as described under OAR 141-085-0018, an explanation of why no such authorization is required for the construction and operation of the proposed facility.

Response: A removal-fill permit will not be required because no impacts to waters of the state are expected. No proposed new project features occur in water features, and no removal-fill in waters of the state will be necessary to construct or operate new accessory uses to CGS (Carty Substation and associated transmission/distribution lines, septic system, water pipeline, wastewater pipeline, office/warehouse building, and security guard station).

This conclusion is based on extensive analysis of wetlands and other waters provided in Exhibit J of the 2011 ASC that covered areas within the vicinity of CGS where disturbance associated with new construction considered in RFA2 would occur. Consistent with Site Certificate Condition 10.27, PGE will provide to the Department of Energy a map showing the final design locations of all components of the facility, the areas that would be disturbed during construction, and the wetlands and stream channels delineated through field surveys conducted prior to construction.

Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure proposed in this RFA2 (see Section 5), in compliance with Site Certificate Conditions 10.26(a), and 10.27, will not alter the Council's basis for its previous findings that the Facility complies with this standard. The Facility will continue to comply with the standard if the Council approves the RFA2.

6.4 OAR 345-021-0010(1)(k)(C) Council Determination on Land Use

OAR 345-021-0010(1)(k)(C)

If the applicant elects to obtain a Council determination on land use:

1. *Identify the affected local government(s).*

Response: Morrow County and Gilliam County are the affected local governments for the proposal in this RFA2.

2. *Identify the applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and that are in effect on the date the application is submitted and describe how the proposed facility complies with those criteria.*

Response: RFA2 includes project components necessary for the continued operation of CGS that are permitted under Site Certificates for both CGS and BCP. The RFA2 Site Boundary also includes modification of the Site Boundary to remove approximately 378 acres of agricultural lands that are not under PGE's ownership and adjust the southern boundary to include Carty Reservoir (Figure 1). The RFA2 Site Boundary encompasses approximately 4,997 acres in the EFU, General Industrial (MG), and Space Age Industrial zones in Morrow County and the EFU zone in Gilliam County. Table 4 details the acreage by county and zone.

Table 4. Zoning by County for RFA2

County	Zone	Acres within Amended Site Boundary	Acres of New Disturbance
Morrow	EFU	3,892	1.0
	MG	348	1.1
	SAI	11	---
Gilliam	EFU	748	---
Total	---	4,997	2.1

Key: EFU = Exclusive Farm Use; MG = General Industrial; RFA2 = Request for Amendment No. 2; SAI = Space Age Industrial

Land use approvals have already been obtained for existing CGS infrastructure authorized under the Site Certificate for CGS and for those additional facilities included in this RFA2 that are authorized under the Site Certificate for BCP. Therefore, no additional applicable substantive criteria of the MCZO or the Gilliam County Zoning Ordinance apply to existing facilities.

The new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building are considered “accessory use or accessory structure” as defined in MCZO 1.030. Of those facilities, all but the Carty Substation and associated distribution lines and the security guard station will be constructed within the EFU zone. The following substantive criteria of the MCZO and Morrow County Comprehensive Plan are applicable to the septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building:

- MCZO 3.010.M4 Stream Setback
- MCZO 3.010.N Transportation Impacts
- MCZO 3.070.D1 Lot Size and Frontage
- MCZO 3.070.D2 Setbacks
- MCZO 3.070.D3 Stream Setback
- MCZO 3.070.E Transportation Impacts
- MCZO 1.050 Zoning Permit

3. *Identify all Land Conservation and Development Commission administrative rules, statewide planning goals and land use statutes directly applicable to the facility under ORS 197.646(3) and describe how the proposed facility complies with those rules, goals and statutes.*

Response: There are no new state statutes or Land Conservation and Development Commission administrative rules directly applicable to the facility, as new facilities that are not already considered in the First Amended Site Certificate for CGS are considered an “accessory use or accessory structure” as defined in MCZO 1.030.

4. *If the proposed facility might not comply with all applicable substantive criteria, identify the applicable statewide planning goals and describe how the proposed facility complies with those goals.*

Response: The facility, including proposed new infrastructure, will comply with all applicable substantive criteria.

6.5 Additional Statutes and Rules – OAR 345 - 021 - 0010(cc)

(cc) Exhibit CC. Identification, by legal citation, of all state statutes and administrative rules and local government ordinances containing standards or criteria that the proposed facility must meet for the Council to issue a site certificate, other than statutes, rules and ordinances identified in Exhibit E, and identification of the agencies administering those statutes, administrative rules and ordinances. The applicant shall identify all statutes, administrative rules and ordinances that the applicant knows to be applicable to the proposed facility, whether or not identified in the project order. To the extent not addressed by other materials in the application, the applicant shall include a discussion of how the proposed facility meets the requirements of the applicable statutes, administrative rules and ordinances.

Response: Additional statutes and rules that are applicable to the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (see Section 5), are summarized in Table 5.

Table 5. Applicable Statutes and Rules

State Statute/Administrative Rules	Administering Agency	Compliance Issue	Associated Section of this RFA2
Noise			
ORS 467.020 and ORS 467.030	DEQ	DEQ Noise Standard Compliance	Section 9.1
OAR 340-035-0035			
Fish and Wildlife			
ORS 496	ODFW	Oregon Habitat Conservation Compliance	Sections 8.7 and 8.8
OAR Chapter 635, Division 415		ODFW Habitat Mitigation Policy Compliance	
Threatened and Endangered Plant Species			
ORS 654	ODA	State and federal threatened and endangered species protection and compliance programs	Section 8.8
OAR Chapter 603, Division 73			
Historic Preservation			
ORS 97.745	SHPO; State Parks and Recreation Department	Historic, Cultural, or Archaeological Resources Site Assessment	Section 8.10
ORS 358.905 through 358.961			
ORS 390.235 through 390.240			
OAR Chapter 736, Division 51			
Land Use			
OAR 660-033-0120, Agricultural Lands	Department of Land Conservation and Development	Statewide Planning Goal 3	Sections 6.4 and 8.4

Key: DEQ = Oregon Department of Environmental Quality; OAR = Oregon Administrative Rule; ODA = Oregon Department of Agriculture; ODFW = Oregon Department of Fish and Wildlife; ORS = Oregon Revised Statutes; RFA2 = Request for Amendment No. 2; SHPO = State Historic Preservation Office

7 Site Certificate Revisions

OAR 345-027-0360(1)(d)

The specific language of the site certificate, including conditions, that the certificate holder proposes to change, add or delete through the amendment.

Attachment 1 provides a redlined version of the current Site Certificate for CGS. PGE has proposed modifications to the certificate to reflect the proposed changes described in this RFA2, as well as to update information that has changed since the First Amended Site Certificate for CGS.

8 Analysis of Council Standards and Other Laws

OAR 345-027-0360(1)(e)

A list of the Council standards and all other laws – including statutes, rules and ordinances – applicable to the proposed change, and an analysis of whether the facility, with the proposed change, would comply with those applicable laws and Council standards.

Council standards for siting energy facilities are intended to address three broad issues:

- The ability of the applicant to construct and operate the Facility
- The suitability of the site
- What adverse impacts the Facility could have on the environment and community

These same issues apply to the Council's evaluation of a request for amendment to a site certificate. The Council standards that would be relevant to the changes proposed in this RFA2 are presented in Table 6 together with a response from PGE that summarizes the analysis of compliance with those standards by the new and modified facilities proposed at CGS. Where applicable, supporting information from the original ASC, RFA1, the Final Order⁸, and the Final Order on Amendment 1 is provided.

⁸ https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/CGS_final_order_062912.pdf

Table 6. Summary of Analysis of Compliance with Applicable Standards

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0010 Organizational Expertise	Demonstrated ability to construct, operate, and retire facility	PGE has extensive experience in construction and operation of natural gas and transmission facilities and will provide financial security to ensure appropriate retirement.	Section 8.1 of this RFA2
OAR 345-022-0020 Structural Standard	Seismic and site-specific soil analysis to guide safe design	<p>Construction and operation of new components proposed in this RFA2 would occur in areas where potential geological and soils hazards can be characterized using information from the 2011 ASC and pre-construction geotechnical evaluation performed in 2013 (Terracon Consultants Inc. 2013). Therefore, no additional geotechnical investigations will be needed. Additionally, the new security guard station, and office/warehouse building are considered "light structures," similar in nature to the existing administrative/control building at Carty and there is no soil variation across the site; therefore, these structures would not require a geotechnical investigation. The new septic system, water pipeline, and wastewater pipeline would not require a geotechnical investigation, and percolation tests have already been performed satisfactorily for the septic system.</p> <p>Therefore, the continued operation of CGS in compliance with Site Certificate Conditions 5.4 (as modified), 6.6, 6.7, 6.8, 6.10, and 6.11 will not alter the Council's basis for its previous findings that the Facility complies with this standard. The Facility will continue to comply with the standard if the Council approves the RFA2.</p>	Analysis provided in Exhibits H and I of the ASC and RFA1; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; the First Amended Site Certificate for CGS; Site Certificate Conditions 5.4 (as modified by this RFA2), 6.6, 6.7, 6.8, 6.10, and 6.11 of the First Amended Site Certificate.
OAR 345-022-0022 Soil Protection	Impacts to soil from erosion, facility operations/discharge, or salt deposition from cooling towers	Impacts to soils could result from wind or water erosion; potential oil or other spills from stationary or power-driven equipment; soil compaction; septic system effluent; and, possibly, from construction debris and other construction pollutants. Where soil disturbance is anticipated from construction activities, the soil erosion potential within the facility site boundary is classified as "slight to moderate." PGE proposes to operate CGS in compliance with site certificate conditions listed in Section 9.0 of the First Amended Site Certificate (as modified by this RFA2) and the proposed modified site certificate conditions and therefore will not alter the Council's basis for its previous findings that the Facility complies with this standard.	NRCS soil survey data; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; the First Amended Site Certificate for CGS; site certificate conditions listed in Section 9.0 of the First Amended Site Certificate (as modified by this RFA2).

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0030 Land Use	Compliance with statewide planning goals	<p>In its evaluation of the Facility under the Land Use Standard (OAR 345-022-0030) in the ASC for CGS and in RFA1, the Council considered the applicable, substantive criteria. These include the comprehensive plans and zoning ordinances of both Morrow and Gilliam Counties. Findings of fact were provided in the Final Order and the Final Order on Amendment 1 of the CGS, documenting compliance with applicable substantive criteria. The original 1975 Site Certificate for BCP specifies the necessity to obtain a conditional use permit from Morrow County, as necessary. PGE assumes this documentation satisfies the Council’s consideration of applicable, substantive criteria for the Facility components associated with the operation of BCP (including those that are shared with CGS).</p> <p>The new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building are each an “accessory use or accessory structure” to the CGS as defined in MCZO 1.030 and will not require a land use approval. There will be no new off-site impacts that affect the surrounding land uses (agricultural and industrial).</p>	Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; First Amended Site Certificate for CGS; the Site Certificate for BCP; Section 8.4.2 of this RFA2.
OAR 345-022-0040 Protected Areas	Facility not located in listed Protected Areas, and no significant impacts to Protected Areas from Facility-related traffic, water use, and wastewater disposal	<p>The 2011 ASC identified 11 Protected Areas, and RFA1 identified nine Protected Areas (all of which were previously identified in the 2011 ASC) within the respective analysis areas. None of the identified Protected Areas within 20 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures would be significantly impacted by changes proposed in RFA2.</p> <p>The Protected Area closest to areas of proposed disturbance and new structures would be the Boardman Research Natural Area, approximately 4.0 miles southeast of the new substation and distribution lines. Because of the distance between these new facilities and the Boardman Research Natural Area, PGE does not anticipate significant adverse impacts to the Boardman Research Natural Area. PGE proposes to operate CGS in compliance with Site Certificate Conditions 6.12, 6.13, and 6.14 of the First Amended Site Certificate and therefore will not alter the Council’s basis for its previous findings that the Facility complies with this standard.</p>	Analysis provided in Exhibit L of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Site Certificate Conditions 6.12, 6.13, and 6.14 of the First Amended Site Certificate for CGS.

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0050 Retirement and Financial Assurance	Site can be restored following retirement and applicant is able to document financial assurance.	Exhibit W of the 2011 ASC and Exhibit W for RFA1 detail actions to restore CGS to a useful, non-hazardous condition upon retirement per OAR 345-027-0110. RFA2 would carry forward Site Certificate Conditions 15.1 through 15.7, including modified Condition 15.1 that commits PGE to providing a revised letter of credit to include CGS and all related or supporting facilities per this RFA2 within 60 days of execution of the Site Certificate on Amendment No. 2. Therefore, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Exhibit W of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Site Certificate Conditions 15.1 (as modified in this RFA2)-15.7 of the First Amended Site Certificate for CGS.
OAR 345-022-0060 Fish and Wildlife Habitat	Facility construction and operation consistent with mitigation goals and standards	<p>Habitat types have been mapped previously in areas where new construction is proposed as part of the RFA2. Construction and operation of the new septic system, water pipeline, Carty substation, wastewater pipeline, and security guard station would temporarily impact approximately 1.0 acre, and permanently displace approximately 0.6 acre, of Category 4 habitat. The mitigation ratio for temporary impacts to Category 4 habitat is 0.5:1; for permanent impacts the ratio is 1:1. The 78-acre HMA created to mitigate impacts associated with Unit 1 and supporting facilities is 5.25 acres larger than required for temporary and permanent impacts associated with Unit 1 and associated facilities. It is sufficient to cover Category 4 habitat mitigation requirements associated with construction activity described for this RFA2 (approximately 1.1 acres), as described in more detail in Attachment 5. Construction of the new Carty Substation and associated distribution lines would temporarily disturb approximately 1.2 acres, and permanently displace approximately 0.9 acre, of Category 6 habitat. Impacts on Category 6 habitat do not require compensatory mitigation under the Council's Fish and Wildlife Habitat standard.</p> <p>The changes included in this RFA2 would also require a new Site Certificate Condition committing PGE to operating Carty Reservoir at an elevation no lower than an annual average of 665 feet mean sea level (see Site Certificate Condition 10.40, as modified in this RFA2) (Figure 3). This new Site Certificate Condition and existing conditions 10.1-10.21 (with minor modifications) are detailed in Attachment 1. Per existing and modified Site Certificate Conditions 10.1-10.21 (with minor modifications), and consistent with the WHMMP, PGE proposes to incorporate new areas included in the RFA2 Site Boundary (currently authorized under the Site Certificate for BCP) into the 5-year interval surveys. Habitat mapping for the portion of the RFA2 Site Boundary that coincides with the existing 230 kV BCP to Dalreed transmission line would occur as part of this stipulation. Therefore, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.</p>	Biological and habitat surveys conducted for the ASC for CGS and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Site Certificate Conditions 10.1-10.21 (as modified by this RFA2) of the First Amended Site Certificate for CGS.

Council Standard	Description	Analysis	Supporting Information
<p>OAR 345-022-0070 Threatened and Endangered Species</p>	<p>Facility construction and operation will not cause significant reduction in likelihood of survival or recovery of species</p>	<p>The WGS is listed as endangered by the State of Oregon and is known to occur in the analysis area. Proposed ground disturbance associated with construction of the new security guard station and the new wastewater pipeline between CGS and the existing evaporation ponds would occur within approximately 0.3 to 0.5 mile of areas located within the existing CGS Site Boundary, east of the CGS, mapped as WGS habitat. Areas that would be disturbed during construction of other proposed new facilities or occupied by other new structures would be more than 0.5 mile from areas designated as WGS habitat. In this RFA2, PGE proposes to carry forward Site Certificate Conditions 10.1-10.21, with minor modifications. WGS surveys will be conducted within disturbance areas prior to construction of the new septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building to determine their occupied area. Consistent with Condition 10.21 of the First Amended Site Certificate and elements of the WHMMP, PGE proposes to incorporate new areas incorporated into the RFA2 Site Boundary that coincide with new and existing facilities into the 5-year interval surveys, extending for the life of the project. Therefore, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.</p>	<p>Surveys for state-listed species conducted for ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Site Certificate Conditions 10.1-10.21 (as modified by this RFA2) of the First Amended Site Certificate for CGS.</p>

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0080 Scenic Resources	No significant impacts to scenic resources	Exhibit R for the ASC and RFA1 documented existing conditions and potential project-related impacts to Scenic Resources within 10 miles of the original Site Boundary for CGS and the RFA1 Site Boundary. PGE has evaluated Scenic Resources within 10 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. The proposed septic system, water pipeline, wastewater pipeline, and most of the new distribution lines from the Carty Substation to the construction substation and intake structure would be constructed underground. The security guard station would be small in stature and located within the existing Site Boundary. The office/warehouse building would be located within the existing fence line and be similar in size and appearance to the existing administrative building. The new Carty Substation and short overhead segments of the associated distribution lines would be located within a developed portion of the site located outside the existing Carty RFA1 Site Boundary, but within the amended RFA2 Site Boundary. These new project features would be similar in size and appearance to the existing construction substation. All proposed new facilities will be constructed in or adjacent to previously areas or areas already characterized as industrial. The Council included Site Certificate Conditions 6.12, 6.13, and 6.14 to mitigate visibility impacts during construction and from larger infrastructure and facility lighting. With the continuation of the conditions above, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Analysis presented in Exhibit R of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Conditions 6.12-6.14 of the First Amended Site Certificate for CGS.
OAR 345-022-0090 Historic, Cultural, and Archaeological Resources	No significant impacts to cultural resources	Field surveys conducted in support of the 2011 ASC and RFA1 included the areas where ground disturbance would occur as a result of construction of the Carty Substation and associated transmission/distribution lines, water pipeline, wastewater pipeline, septic system, security guard station, and office/warehouse building. PGE proposed to carry forward the site certificate conditions listed in Section 11.0 of the First Amended Site Certificate for CGS, and as such, commits to pre-construction surveys in disturbance areas that have not been previously surveyed. Therefore, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Analysis provided in Exhibit S of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; site certificate conditions listed in Section 11.0 of the First Amended Site Certificate for CGS.

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0100 Recreation	No significant impact to recreational opportunities	As documented in Exhibit T for the 2011 ASC and 2018 RFA1, five recreational resources were identified within 5 miles of the original Site Boundary for CGS and RFA1, respectively. PGE evaluated recreation resources within 5 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. As described in Exhibit T for the 2011 ASC and the 2018 RFA1, the two recreational resources located nearest CGS include the Blue Mountain Scenic Byway (State Route 74), about 7 miles west of the CGS; and a portion of the Oregon Historic Trail, approximately 4 to 6 miles south of CGS (approximately 2 miles south of the RFA2 Site Boundary). PGE does not expect construction and operation of the Carty Substation and associated distribution lines, new septic system, water pipeline, wastewater pipeline, security guard station, or office/warehouse building to have substantial noise, visual, or traffic impacts on the Oregon Historic Trail because these new facilities would be located 4 to 6 miles from the trail, which is not accessed by roadways that would be used by construction and operations personnel travelling to and from CGS (i.e., via Tower Road from I-84). Consistent with these findings, PGE does not propose any new site certificate conditions specific to recreation resources. Changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Analysis provided in Exhibit T of the 2011 ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; and the First Amended Site Certificate for CGS.

Council Standard	Description	Analysis	Supporting Information
OAR 345-022-0110 Public Services	No significant impact to public and private service providers	Exhibit U of the 2011 ASC and RFA1 addressed the potential impacts of the Facility on public and private service providers. Following review of the 2011 ASC, the Council found that the Facility would not have significant adverse impacts to public and private service providers: however, the Council adopted conditions to ensure there would be no significant impacts to Public Services from construction and operation of CGS and related or supporting facilities. These included Site Certificate Conditions 6.3, 6.17 (as modified in this RFA2), 6.27, 8.1, 8.2, 8.3, 8.7, 9.1 (as modified in this RFA2), and 10.22 that address fire protection, health care, and traffic safety. Following review of RFA1, the Council found, considering modified and new site certificate conditions, that Carty Solar Farm would not have significant adverse impacts to public and private service providers. PGE evaluated potential impacts to public services within and extending 10 miles from areas that would be disturbed during construction of proposed new related and supporting facilities. The analysis determined that the continued operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would not result in significant adverse impacts on public or private stormwater drainage facilities; the ability of public or private providers of water to deliver services; solid waste management services; housing or health care to deliver services; fire and police protection services; or traffic-related impacts on surrounding roadways. With the continuation of the conditions identified above, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Analysis presented in Exhibit U of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Conditions 6.3, 6.17(modified as proposed in this RFA2), 6.27, 8.1, 8.2, 8.3, 8.7, 9.1 (modified as proposed in this RFA2), and 10.22 for the First Amended Site Certificate for CGS.
OAR 345-022-0120 Waste Minimization	Solid waste and wastewater plans to minimize waste and provide recycling/reuse to the extent reasonably practical	Exhibit V of the 2011 ASC and 2018 RFA1 addressed the potential for the Facility's solid waste and wastewater plans to minimize the generation of solid waste and wastewater during construction and operation and to recycle and reuse such wastes if generated. Following review of the 2011 ASC and Exhibit V, the Council adopted Conditions 6.2, 6.3, 6.24, 6.25, 10.22, 10.24, 10.30, 10.32, and 10.36 to address waste and wastewater minimization in the 2011 Site Certificate for CGS; these same conditions were carried forward in the First Amended Site Certificate. With the continuation of these conditions, changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.	Analysis provided in Exhibit V of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Conditions 6.2, 6.3, 6.24, 6.25, 10.22, 10.24, 10.30, 10.32, and 10.36 of the Site Certificate for CGS and First Amended Site Certificate for CGS.

Council Standard	Description	Analysis	Supporting Information
OAR 345-024-0090 Transmission Lines	Limits on electric fields and induced current	Analysis of the potential safety hazards associated with electric fields around existing and proposed transmission lines was documented in Exhibit AA of the ASC and RFA1. In the original Site Certificate and First Amended Site Certificate, the Council adopted Conditions 7.1 and 7.9. PGE proposes to continue operation of CGS consistent with Condition 7.1 (as modified in this RFA2) and Condition 7.9. Changes proposed in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard (see Attachment 7).	Analysis provided in Exhibit AA of the ASC and RFA1 for CGS; Findings of fact documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS; Site Certificate Conditions 7.1 (as modified in this RFA2) and 7.9.
Other Applicable Requirements – OAR 345-027-0360(1)(e)	Noise	Operation of the Carty Substation is not considered a new noise source because the only noise-emitting component, the transformer, is currently in operation at a location immediately adjacent to the proposed construction location and will be reused as part of this action. Therefore, DEQ's noise control standards are not applicable. Noise from construction activities associated with RFA2 will generally be of lesser magnitude and duration than construction of Unit 1 and similar magnitude and duration to existing related or supporting facilities.	Past findings in Exhibit X of the ASC and the First Amended Site Certificate for CGS.
	Wetlands	Except for the existing 230 kV BCP to Dalreed transmission line, PGE has determined wetland and water boundaries in the vicinity of existing facilities and proposed septic system, water pipeline, and wastewater pipeline to be included with this RFA2. No work is proposed in any of the identified wetlands or waters.	Wetland surveys conducted for the ASC and RFA1 for CGS.
	Water Pollution Control Facility Permit	The WPCF permit will be modified to better represent actual operating conditions at CGS.	Section 6.5 of this RFA2.
	Water rights	No change in water rights will occur as a result of this RFA2.	NA

Key: ASC = 2011 Application for Site Certificate for CGS; BCP = Boardman Coal Plant; CGS = Carty Generating Station; DEQ = Oregon Department of Environmental Quality; HMA = habitat mitigation area; kV = kilovolt; MCZO = Morrow County Zoning Ordinance; NRCS = Natural Resources Conservation Service; NWI = National Wetland Inventory; OAR = Oregon Administrative Rule; PGE = Portland General Electric Company; RFA1 = Request for Amendment No. 1; RFA2 = Request for Amendment No. 2; WGS = Washington ground squirrel; WHMMP = wildlife and habitat mitigation and monitoring plan; WPCF = Water Pollution Control Facility

8.1 OAR 345-022-0010 Organizational Expertise

OAR 345-022-0010 Organizational Expertise

(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

Response: CGS and applicable facilities shared with BCP are currently operated in compliance with their respective site certificate conditions and in a manner that protects public health and safety. PGE therefore demonstrates its ability to design, construct, and operate the amended facility and will provide financial security to ensure appropriate retirement. PGE will restore the site to a useful non-hazardous condition after retiring CGS. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) in compliance with existing, modified, or new site certificate conditions described in this RFA2 will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0010.

8.2 OAR 345-022-0020 Structural Standard

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that:

(a) The applicant, through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site; and

(b) The applicant can design, engineer, and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site, as identified in s[u]bsection (1)(a);

(c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and

(d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Response: The Council's finding of fact in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS concluded that with inclusion of site certificate conditions, PGE has the ability to design and construct the proposed facility in a manner that avoids danger to human safety presented by the non-seismic hazards identified at the site.

Construction and operation of the new Carty Substation and associated transmission/distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building proposed in this RFA2 will occur in areas where potential geological and soils hazards were characterized in the 2011 ASC and RFA1. However, the geotechnical investigations associated with those assessments, along with the pre-construction geotechnical evaluation performed at Carty in 2013 (Terracon Consultants, Inc. 2013), will be used and therefore no additional geotechnical investigations will be needed. Additionally, the new security guard station, and office/warehouse building are considered “light structures,” and therefore would not require a geotechnical investigation. The new septic system, water pipeline, and wastewater pipeline would not require a geotechnical investigation, and percolation test have already been performed satisfactorily for the septic system.

Therefore, PGE proposed to modify Condition 5.4 to specify that exploratory borings would not be required. Site certificate condition 5.4 (as modified in this RFA2) and Site Certificate Conditions 6.6, 6.7, 6.8, 6.10, and 6.11 will ensure continued compliance with the structural standard.

The proposed new related or supporting facilities to be constructed will also be located more than 200 miles from the Cascadia Subduction Zone and are in the light damage zone as defined in the Oregon Resiliency Plan (2013), making the new related or supporting facilities inherently resilient to region-wide seismic disaster. Local seismic resiliency will be provided by adhering to current seismic building codes, when building codes are applicable to the new construction. Construction of Carty substation will ensure that CGS continues to have a backup power supply, which directly helps maintain the resiliency of CGS as a whole.

Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) in compliance with existing and modified site certificate conditions will not alter the Council’s basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0020.

8.3 OAR 345-022-0022 Soil Protection

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.

Response: Construction and operation of CGS has the potential to adversely impact soils through erosion, compaction, chemical spills, salt deposition from cooling tower drift, and land application of liquid effluent. Adverse impacts to soils can affect crop production on adjacent agricultural lands, native vegetation, fish and wildlife habitat, and surface and groundwater quality.

Exhibit I and Z of the ASC assessed existing conditions and potential project-related impacts to soils from erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills. The soils analysis area was the Site Boundary. In issuing the 2012 Site Certificate for CGS, the Council found that, with Conditions 9.1 through 9.7 and 9.9 through 9.11, erosion and chemical factors such as salt deposition from cooling towers, land

application of liquid effluent, and chemical spills would not result in significant adverse impacts to soils.

Exhibit I of the RFA1 also assessed existing conditions and potential project-related impacts to soils within the RFA1 Site Boundary. In issuing the First Amended Site Certificate for CGS, the Council again determined that, in carrying forward Conditions 9.1 through 9.7 and 9.9 through 9.11, changes considered in RFA1 would not result in significant adverse impacts to soils.

This RFA2 assesses construction and operation of a new Carty Substation and associated transmission/distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building and associated utilities that have the potential to impact soils. Sections 6.2 and 6.3 in this RFA2 provide additional information regarding soils and land uses specific to the RFA2 Site Boundary that the Council requires to make its findings for compliance with OAR 345-022-0022.

The analysis area for the Soil Protection Standard in this RFA2 is the area that will be affected during construction and operation of the proposed new components, estimated at approximately 2.1 acre. Of this, 0.6 acre is associated with the new Carty Substation, which would be constructed in a previously disturbed gravel area. Potential adverse impacts to soils during construction would be similar to those evaluated in the 2011 ASC and 2018 RFA1, such as impacts caused by wind or water erosion; potential oil or other spills from stationary or power-driven equipment; soil compaction; and, possibly, construction debris and other construction pollutants. Construction activities would increase the risk of introducing or spreading invasive weeds in the RFA2 Site Boundary. The seeds or propagules of invasive weeds affixed to tires and undercarriages of construction equipment and vehicles could be transported onto the site or spread from one project location to another.

All areas temporarily disturbed will be reclaimed similar to existing conditions, either by re-paving in areas that are currently paved or re-seeding in areas that are currently vegetated. Soil classes, summarized in Table 3, were identified using the Natural Resources Conservation Service soil survey program (NRCS 2019⁹). PGE estimated that where soil disturbance is anticipated from construction activities, the soil erosion potential within the Site Boundary is slight to moderate, based on the gently sloping nature of the site and the soil types present, which are characterized by low to moderate wind and water erosion potentials. Construction activities would occur primarily in areas previously disturbed in soil map unit 54B and potentially a small area within soil map unit 54D.

A National Pollutant Discharge Elimination System (NPDES) 1200-C permit will not be required because stormwater associated with land disturbances for the proposed additional facilities at CGS will not reach waters of the state. CGS is in an area that receives low amounts of rainfall. According to the Western Region Climate Center, precipitation averages 8.55 inches annually in Boardman, with monthly average precipitation ranging from 0.22 inch in July to 1.32 inches in December. Topography in proposed disturbance areas is sloped away from Carty Reservoir, which is not a water of the state, toward a low area below the Carty Reservoir dam with an ephemeral drainage that potentially contains waters of the state (at the bottom of the Sixmile Canyon drainage,

⁹ Natural Resource Conservation Service: Soils. 2019. Available at:
<https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=OR>

ephemeral drainage is approximately 10 feet wide in this location). The closest land disturbance to Sixmile Canyon drainage is the planned septic drain field approximately 630 feet away, as shown in Figure 4. Figure 5 (Photographs 1 and 2) show that the area between the proposed disturbance area and Sixmile Canyon drainage is well vegetated and lacks significant rilling or other features that would suggest concentrated water flow, thereby indicating that soils are amenable to infiltration. These conditions and observations indicate that water primarily infiltrates locally and is not expected to reach areas that may contain potential waters of the state.

Due to the dry nature of the area and lack of surface waters immediately adjacent to the potential disturbance areas, stormwater would infiltrate. NPDES 1200-C permits regulate construction stormwater runoff to surface waters but do not regulate stormwater that would be infiltrated; therefore, no NPDES 1200-C permit would be necessary. Per Site Certificate Condition 5.5 (as modified for this RFA2), PGE will continue to follow the measures outlined in the Revegetation and Noxious Weed Control Plan to reduce the potential impacts of soil compaction during the restoration phase of construction (Attachment 3). Areas of temporary disturbance would be graded to be consistent with existing topography and drainage patterns as soon as possible after the final construction ground disturbance. If necessary, areas compacted by construction activities would be ripped to a depth of 12 inches, where feasible, and roughened to provide maximum surface area for seed-soil contact and to reduce the chance of seed loss due to wind.

During operations, potential adverse impacts on soils could result from septic system discharge. The system would be sized per state and county standards and the Umatilla County Public Health Department requirements. On January 10, 2020, the Umatilla County Public Health Department performed a site evaluation at the proposed septic system location and determined the site to be acceptable for a standard, non-residential septic system. The site evaluation result of “acceptable” demonstrates that the septic system will be constructed in a location that provides sufficient protection to nearby surface and groundwater resources and potable water lines per OAR 340-071-0220. Due to the design flow of the system (less than 2,501 gpd), a permit from DEQ will not be required. The Carty Substation and associated transmission/distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building will primarily be constructed in soil map unit 54B, although a small portion of the absorption facility may be constructed in soil map unit 54D.

PGE will continue to comply with all relevant conditions of the First Amended Site Certificate for CGS, including those pertinent to soil protection. It should be noted that although an NPDES 1200-C permit would not be triggered for the new facilities included in this RFA2, it would still be required for Carty Solar Farm if constructed. Therefore, PGE proposes to modify Condition 9.1 as specified in Attachment 1.

PGE proposes to operate CGS in compliance with site certificate conditions listed in Section 9.0 of the First Amended Site Certificate (as modified by this RFA2). Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council’s basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0022.

8.4 OAR 345-022-0030 Land Use

(1) To issue a site certificate, the Council must find that the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

(2) The Council shall find that a proposed facility complies with section (1) if:

(b) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:

(A) The proposed facility complies with applicable substantive criteria as described in section (3) and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);

(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or

(C) For a proposed facility that the Council decides, under sections (3) or (6), to evaluate against the statewide planning goals, the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under section (4).

Response: The following sections describe how existing project components and proposed new facilities are consistent with statewide planning goals and applicable comprehensive plans and zoning ordinances.

8.4.1 Land Use Consistency with Existing Components

Background – Carty Generating Station

Exhibit K of the 2011 CGS ASC included an analysis of the proposed Facility's compliance with statewide planning goals. The analysis area encompassed the Site Boundary (as proposed in the 2011 ASC) plus a half-mile buffer. In its evaluation of the Facility under the Land Use Standard (OAR 345-022-0030) in the 2011 ASC and in RFA1, the Council considered the applicable, substantive criteria, which are the comprehensive plans and zoning ordinances of both Morrow and Gilliam Counties. The 2011 ASC documented the Facility's consistency with statewide planning goals, as confirmed by the Council in the original 2011 Site Certificate for CGS.

Exhibit K prepared in support of RFA1 in 2018 included an analysis of the proposed Facility's compliance with statewide planning goals within the RFA1 Site Boundary to include the Carty Solar Farm, plus a half-mile buffer. RFA1 provided documentation that an exception to Statewide Planning Goal 3 needed for construction of the Carty Solar Farm was justified. Applicable sections of comprehensive plans and zoning ordinances have not changed in ways that would impact the Council's prior findings under the Land Use Standard documented in the First Amended Site Certificate for CGS. PGE holds a Conditional Use Permit (CUP) for CGS and proposed Carty Solar Farm from Morrow County.

Background – Boardman Coal Plant

Under the broad categories of “associated facilities,” the Site Certificate for BCP authorizes the following related or supporting facilities, some of which are shared with CGS:

- 500 kV Grassland to Slatt transmission line
- 230 kV BCP to Dalreed transmission line
- 34.5 kV BCP to railroad crossing at Tower Road transmission line
- 12.5 kV underground distribution line providing power to the Boeing Well pump from the construction substation
- Carty Reservoir, including portions of the raw water intake system
- Water Discharge Channel
- Sanitary sewer lagoons and sanitary sewer line
- Boeing Well (potable water source)
- Construction substation
- 300,000-gallon potable/fire water tank
- Evaporation ponds
- Irrigation pump station and 34.5 kV transmission line

The original 1975 Site Certificate for BCP documents the County’s preference to change the zoning from EFU to MG and to obtain a CUP for BCP. The County’s direction was followed. PGE considers this documentation sufficient to satisfy the Council’s consideration of applicable, substantive criteria for the Facility components associated with the operation of BCP (including those that will be transferred into the Site Certificate for CGS, as outlined in Section 5.0 of this RFA2).

Additionally, ORS 215.230(5) recognizes a right to continue a lawfully established use of land:

The lawful use of any building, structure or land at the time of the enactment or amendment of any zoning ordinance or regulation may be continued (emphasis added). Alteration of any such use may be permitted subject to subsection (9) of this section. Alteration of any such use shall be permitted when necessary to comply with any lawful requirement for alteration in the use. Except as provided in ORS 215.215, a county shall not place conditions upon the continuation or alteration of a use described under this subsection when necessary to comply with state or local health or safety requirements, or to maintain in good repair the existing structures associated with the use. A change of ownership or occupancy shall be permitted (emphasis added).

Therefore, the existing infrastructure included under either the CGS or BCP Site Certificate was lawfully established and, with respect to land use law, may continue to be used. Just as a “change in ownership or occupancy” is permitted for lawfully established facilities, the existing facilities under either the existing CGS or BCP Site Certificate do not require any discretionary land use review.

Analysis of Changes Proposed in RFA2

There would be no change in operation or maintenance of facilities currently authorized under the Site Certificate for CGS or BCP other than to transfer authorization of the components current authorized under the Site Certificate for BCP into the Site Certificate for CGS. Applicable sections of comprehensive plans and zoning ordinances have not changed in ways that would impact the Council's prior findings under the land use standard.

8.4.2 Land Use Consistency with Proposed New Facilities

This RFA2 includes the following new facilities:

- (i) Carty Substation and associated distribution lines
- (ii) Septic system
- (iii) Water pipeline connecting BCP's 300,000-gallon water tank
- (iv) Wastewater pipeline connecting CGS to BCP's two evaporation ponds
- (v) Security guard station
- (vi) Office/warehouse building

The following discussion documents how the new components listed above that are included in CGS per this RFA2 are consistent with the land use standard OAR 345-022-0030.

Applicable Substantive Criteria

Morrow County Ordinances

The proposed Carty Substation and associated distribution lines, septic system, water pipeline connecting BCP's 300,000-gallon water tank, wastewater pipeline connecting CGS to BCP's two evaporation ponds, security guard station, and office/warehouse building will be constructed entirely within the portion of the current Site Boundary located in Morrow County. The septic system and a portion of the water pipeline and wastewater pipeline connecting CGS to the evaporation ponds are within the EFU zone. The Carty Substation and associated distribution lines, security guard station, and portion of the wastewater pipeline connecting CGS to the evaporation ponds are within the MG zone. The office/warehouse building will likely be within the EFU zone, although depending on final design it could partially be within the MG zone; therefore, applicable ordinances for both the EFU and MG zone are evaluated for the office/warehouse building. The facilities would be constructed as private facilities solely to serve CGS and the BCP property after BCP ceases operation. As such, these facilities are not considered a "primary" use of land under the MCZO, but rather an "accessory use or accessory structure" as defined in MCZO 1.030: "*A use or structure incidental and subordinate to the main use of the property and located on the same lot as the main use.*"

Proposed new facilities therefore comply with the applicable substantive criteria as identified in Section 6.4 of the RFA2, as justified below.

MCZO 3.010 Exclusive Farm Use Zone

The septic system, a portion of the water pipeline and wastewater pipeline, and office/warehouse building will be constructed within the EFU zone. Consistency with applicable portions of the MCZO is discussed below.

MCZO 3.010.M Yards

In an EFU Zone, the minimum yard setback requirements shall be as follows:

- 1. The front yard setback from the property line shall be 20 feet for property fronting on a local minor collector or marginal access street ROW, 30 feet from a property line fronting on a major collector ROW, and 80 feet from an arterial ROW unless other provisions for combining accesses are provided and approved by the County.*
- 2. Each side yard shall be a minimum of 20 feet except that on corner lots or parcels the side yard on the street side shall be a minimum of 30 feet.*
- 3. Rear yards shall be a minimum of 25 feet.*
- 4. Stream Setback. All sewage disposal installations such as outhouses, septic tank and drainfield systems shall be set back from the high-water line or mark along all streams and lakes a minimum of 100 feet, measured at right angles to the high-water line or mark. All structures, buildings, or similar permanent fixtures shall be set back from the high-water line or mark along all streams or lakes a minimum of 100 feet measured at right angles to the high-water line or mark.*

Response: Condition 6.22.b of the First Amended Site Certificate for CGS requires compliance with the yard and stream setback requirements of MCZO 3.010.M. The new septic system, water pipeline, wastewater pipeline, and office/warehouse building considered in this RFA2 are consistent with these criteria based on planned setbacks because each are located a minimum of 100 feet from the high-water line or mark along all streams and lakes. PGE proposes in this RFA2 that Condition 6.22.b be carried forward as written.

MCZO 3.010.N Transportation Impacts

- 1. Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles – trucks, recreational vehicles and buses – will be defined as 2.2 passenger car equivalents. A TIA will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. If the corridor is a State Highway, use ODOT standards. (MC-C-8-98)*

Response: Section 8.12 of this RFA2 discusses potential traffic impacts for the construction and operation of the proposed septic system, water pipeline, wastewater pipeline, security guard station, and the office/warehouse building and the Council's previous findings of compatibility with OAR 345-022-0110 as documented in the Final Order and the Final Order on Amendment 1 of the Site Certificate for CGS and the First Amended Site Certificate for CGS. PGE assessment of potential impacts to public services from the proposed infrastructure isolation and separation activities at BCP and CGS and construction and operation of the septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building determined that, because these activities would require fewer construction workers, generate fewer peak construction trips, and require shorter construction durations than activities addressed in previous orders, actions

described in this RFA2 will not alter the Council's basis for its previous findings that the Facility complies with this standard.

PGE would continue to apply Condition 6.17 (as modified in this RFA2) for construction of new facilities proposed in this RFA2. See Table 7 for a full listing of construction workers, trips, and duration of construction activities.

MCZO 3.070 General Industrial Zone, MG

MCZO 3.070.D. Dimension Requirements.

The following Dimensional requirements apply to all buildings and structures constructed, placed or otherwise established in the MG zone.

- *Lot size and frontage: A minimum lot size has not been determined for this zone although the lot must be of a size necessary to accommodate the proposed use, however, it is anticipated that most, if not all uses will be sited on lots of at least two acres. The determination of lot size will be driven by the carrying capacity of the land given the proposed use. Minimum lot frontage shall be 300 feet on an arterial or collector; 200 feet on a local street.*

Response: The Carty Substation and associated distribution lines, water pipeline, portion of the wastewater pipeline, security guard station, and the office/warehouse building (if constructed within the MG zone) will be located on a lot larger than 2 acres that is large enough to accommodate the use.

- *Setbacks: No specific side or rear yard setbacks are identified within this zone, but may be dictated by provisions of the Building Code or other siting requirements. The minimum setback between a structure and the right-of-way of an arterial shall be 50 feet. The minimum setback of a structure from the right-of-way of a collector shall be 30 feet, and from all lower class streets the minimum setback shall be 20 feet. There shall be no setback requirement where a property abuts a railroad siding or spur if the siding or spur will be utilized by the permitted use.*

Response: Tower Road is a private road where the security guard station would be located; therefore, the road setback as identified in MCZO 3.070.D does not apply.

- *Stream Setback: All sewage disposal installations such as outhouses, septic tank and drainfield systems shall be set back from the high-water line or mark along all streams and lakes a minimum of 100 feet, measured at right angles to the high-water line or mark. All structures, buildings, or similar permanent fixtures shall be set back from the high-water line or mark along all streams or lakes a minimum of 10 feet measured at right angles to the high-water line or mark.*

Response: The septic system will not be constructed in the MG zone. The Carty Substation and associated distribution lines, water pipeline, portion of the wastewater pipeline, security guard station, and office/warehouse building will be located greater than 10 feet from the high-water line or mark along all streams and lakes.

MCZO 3.070.E. Transportation Impacts

- *Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles B trucks, recreational vehicles and buses B will be defined as 2.2 passenger car equivalents. A TIA will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. If the corridor is a State Highway, use ODOT standards. (MC-C-8-98)*

Response: This standard is the same as MCZO 3.010.N. Please see response above.

Conditional Uses

Article 6 of the MCZO addresses conditional uses. The proposed Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building are each an “accessory use or accessory structure” as defined in MCZO 1.030 and would not constitute an amendment to the existing CUP for CGS or have an effect on CGS’s compliance with Article 6 of the MCZO. The associated overhead distribution line from the Carty Substation to the backup 7.2 kV line would be mounted on towers less than 200 feet in height, thereby not requiring a CUP per MCZO 3.070A, B. Additionally, because the existing BCP components that are requested to be included in the Second Amended Site Certificate for CGS under this RFA2 do not constitute a change in use, they also do not require any new land use approvals or an amendment to the existing CUP.¹⁰ PGE will submit an updated facility layout map to the County as a courtesy, although there are no formal requirements by the County.¹¹

Other Applicable Zoning Provisions

MCZO 1.050 Zoning Permit

Prior to the construction, reconstruction, alteration, or change of use of any structure larger than 100 square feet or use for which a zoning permit is required, a zoning permit for such construction, reconstruction, alteration, or change of use or uses shall be obtained from the Planning Director or authorized agent thereof. A zoning permit shall become void after 1 year unless the development action has commenced. A 12-month extension may be granted when submitted to the Planning Department prior to the expiration of the approval period.

Response: Construction of the Carty Substation, security guard station, and office/warehouse building will require a Zoning Permit from Morrow County to comply with MCZO 1.050, as stated above; no zoning permit is required for the septic system, water pipeline, or wastewater pipeline.¹² Additionally, Condition 4.6 of the First Amended Site Certificate for CGS requires that the certificate holder obtain a Zoning Permit. PGE would comply with that requirement prior to construction of any elements of the proposed Carty Substation, security guard station, or office/warehouse building.

¹⁰ Personal communication between Emily Newell, AECOM, and Stephen Wrecsics and Stephanie Case, Morrow County Planning Department on February 3, 2020

¹¹ Personal communication between Emily Newell, AECOM, and Stephen Wrecsics, Morrow County Planning Department on January 14, 2020

¹² Ibid.

1. *The land use, building/yard setback, lot area, lot dimension, density, lot coverage, building height and other applicable standards of the underlying land use district and any sub-district(s) are met.*

Response: Condition 6.22.b of the First Amended Site Certificate for CGS requires compliance with the yard and stream setback requirements of MCZO 3.010.M. The septic system would be set back 100 feet from the high-water line of all nearby water sources. The Carty Substation, guard station, and office/warehouse building side and back yard setbacks would be over 100 feet from the adjacent lot.

2. *Development in flood plains shall comply with Section 3.100 Flood Hazard Overlay Zone of the Ordinance.*

Response: The development proposed in this RFA2 is not within a floodplain.

3. *Development in hazard areas identified in the Morrow County Comprehensive Plan shall safely accommodate and not exacerbate the hazard and shall not create new hazards.*

Response: Morrow County Comprehensive Plan, Natural Hazards Element states: "A natural hazard occurs when a natural hazard impacts people or property and creates adverse conditions with the community." The Natural Hazards Element and the Morrow County Natural Hazard Mitigation Plan updated in 2016 identify eight natural hazards of concern within some or all of Morrow County: drought, earthquake, flood, landslide, volcano, wildfire, windstorm, and winter storm.

The Natural Hazard Element indicates that only some natural hazards, "such as flooding and landslide hazard areas," can be mitigated through development standards, whereas "for other, more widespread or random hazards such as drought, wildfire, winter storm, or windstorms, effective mitigation must come in the form of public awareness, preparedness and participation."

As indicated in response to MCZO 4.165(D)(4), the new development proposed in this RFA2 is not within a floodplain. Section 6.2 of this RFA2 addresses soil conditions. Moreover, conditions of the First Amended Site Certificate for CGS address natural hazards. Condition 6.8 requires the certificate holder to "design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic hazards," including "settlement, landslides, flooding and erosion." Condition 6.7 requires the certificate holder to "design, engineer and construct the facility to avoid danger to human safety presented by seismic hazards affecting the area that are expected to result from all maximum probable seismic events." Other conditions (6.10 and 6.11) require notification to the ODOE, Department of Geology and Mineral Industries, and the State Building Codes Division if previously unknown conditions are identified at the energy facility site. PGE proposes to implement actions included in RFA2 in compliance with these standards.

4. *Off-street parking and loading-unloading facilities shall be provided as required in Section 4.040 and 4.050 of the Morrow County Zoning Ordinance. Safe and convenient pedestrian access to off-street parking areas also shall be provided as applicable.*

Response: Any permanent employees associated with CGS would park on-site, which has developed parking facilities.

5. *County transportation facilities shall be located, designed and constructed in accordance with the design and access standards in the Morrow County Transportation System Plan.*

Response: The facilities proposed in this RFA2 do not involve or require the development of new county transportation facilities or new access to existing county transportation facilities.

6. *Site planning, including the siting of structures, roadways and utility easements, shall provide, wherever practicable, for the protection of trees eight-inch caliper or greater measured four feet from ground level, with the exception of noxious or invasive species, such as Russian olive trees.*

Response: Development and operation of the Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, or office/warehouse building are not expected to require the removal of any trees 8 inches or more in diameter.

7. *Development shall comply with Section 3.200 Significant Resources Overlay Zone or 3.300 Historic Buildings and Sites protecting inventoried significant natural and historic resources.*

Response: There are no inventoried historic buildings or sites on the site.

8. *The applicant shall determine if compliance is required with Oregon Water Resources Department water quantity and/or Oregon Department of Environmental Quality water quality designations.*

Response: Water use and wastewater disposal are addressed in Section 8.13 of the RFA2.

9. *The applicant shall determine if previous Code Enforcement violations have been cleared as applicable.*

Response: PGE is not aware of any prior Code Enforcement violations.

10. *The applicant shall determine the method of disposal for solid waste, with staff providing information to the applicant about recycling opportunities.*

Response: Section 8.13 of the RFA2 addresses recycling and disposal of solid waste. In addition, Condition 6.3 of the First Amended Site Certificate for CGS requires the implementation of a waste management plan during construction, and Condition 10.22 requires a waste management plan during operation. PGE proposes to implement actions included in RFA2 in compliance with these site certificate conditions.

11. *The applicant shall obtain the necessary access permit through the Public Works Department as required by Morrow County Resolution R-29-2000.*

Response: PGE does not anticipate needing new access to county roads. If access is needed, Condition 4.5 of the First Amended Site Certificate for CGS requires that the certificate holder obtain the permit. PGE proposes to implement actions included in RFA2 in compliance with this site certificate condition.

MCZO 9.060. Sewage Disposal Approval

No zoning permit shall be issued for any use or structure which will have an individual sanitary subsurface disposal system until written approval is obtained by the applicant for said system.

Response: PGE will obtain a Construction Permit for On-site Sewage Treatment System from the Umatilla County Public Health Department for the septic system. Therefore, CGS will remain in compliance with its Zoning Permit.

Morrow County Comprehensive Plan

Agricultural Lands Element

Agricultural Policy 1: It shall be the policy of Morrow County, Oregon, to preserve agricultural lands, to protect agriculture as its main economic enterprise, to balance economic and environmental considerations, to limit non-compatible nonagricultural development, and to maintain a high level of livability in the County.

Response: The locations of the Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building were selected, in part, to minimize land disturbance and avoid critical resource areas. The sites selected do not impact any cultivated farmland and are sites currently owned by PGE.

Agricultural Policy 4: It shall be the policy of the County to develop and implement comprehensive and definitive criteria for the evaluation of all non-farm developments to ensure that all objectives and policies set forth herein are complied with to the maximum level possible.

Response: The new Carty Substation and associated distribution lines, septic system, water pipeline, and office/warehouse building will be constructed in the EFU zone in Morrow County and are considered an "accessory use or accessory structure" as defined in MCZO 1.030 and are therefore not considered a "primary" use under the MCZO.

Directly Applicable Statutes and Administrative Rules

ORS 215.296(1)

1. *In the Exclusive Farm Use zone a conditional use may be approved only when the County finds that the use will not:*
 1. *Force a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use; or*
 2. *Significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use.*

Response: The new Carty Substation and associated distribution lines, septic system, water pipeline, and office/warehouse building will each be an "accessory use or accessory structure" to CGS and will not force significant changes in farm practices or cause significant increases in the costs of accepted farm practices on surrounding lands devoted to farm use.

OAR 660-033-130(5)

Response: The criteria of OAR 660-033-130(5) are identical to ORS 215.296(1) and are addressed above.

Statewide Planning Goal 3–Agricultural Lands

As discussed in the sections above, the proposed isolation and separation of infrastructure currently shared by CGS and BCP and the construction and operation of the Carty Substation and associated distribution lines, septic system, water pipeline, and office/warehouse building described in this RFA2 will not alter the Council’s basis for its previous findings that an exception to the statewide planning goal for construction of the Carty Solar Farm is justified. These proposed changes do not require an exception to the goal; therefore, the Facility will continue to comply with the standard if the Council approves the proposed RFA2.

Statewide Planning Goal 6–Air, Water, and Land Resources Quality

Air Quality

The proposed isolation and separation of infrastructure currently shared by CGS and BCP and the construction and operation of the Carty Substation and distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building described in this RFA2 will not alter the Council’s basis for its previous findings that the Facility complies with this standard, and the Facility will continue to comply with the standard if the Council approves the proposed RFA2.

Water Quality

The proposed isolation and separation of infrastructure currently shared by CGS and BCP and the construction and operation of the Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building described in this RFA2 will not alter the quantity of water usage for CGS. Discharges to Carty Reservoir will also remain the same. Sanitary sewer waste from CGS will be managed by the existing BCP sewage lagoons until the new septic system is constructed, at which time sanitary waste from both CGS and the remaining administrative buildings after BCP ceases operations will be managed by the septic system. The existing sewage lagoons are covered under WPCF permit number 100189 issued by DEQ. PGE would continue to satisfy the conditions of the permit to ensure that waste and process discharges do not exceed the carrying capacity, degrade, or threaten the availability of water resources. Umatilla County Public Health will issue a Construction Permit for On-site Sewage Treatment System for construction and operation of the new septic system. On January 10, 2020, the Umatilla County Public Health Department performed a site evaluation and determined the site to be acceptable for a standard, non-residential septic system. The system will be sited with enough distance from groundwater and surface waters to prevent pollution to water resources and will be consistent with Goal 6.

Land Resources

Potential impacts to land resources are addressed above under the discussion of Statewide Planning Goal 3.

Conditions

The Site Certificate for CGS issued in 2012 included seven site certificate conditions for land use to ensure consistency with the land use standard. The Site Certificate on Amendment 1 for CGS did not alter the conditions applied to land use. Similarly, no modifications to existing conditions or new

conditions associated with land use are necessary for RFA2, except for clarifying the application of Condition 6.17 to pertain specifically to Carty Solar Farm. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (see Section 5) will not alter the Council's basis for its previous findings that an exception to the statewide planning goal is justified. The proposed changes in RFA2 do not require an exception to the goal, and therefore the Facility will continue to comply with this standard if the Council approves the proposed RFA2. The Council may conclude that CGS will continue to comply with OAR 345-022-0030.

8.5 OAR 345-022-0040 Protected Areas

(1) Except as provided in sections (2) and (3), the Council shall not issue a site certificate for a proposed facility located in the areas listed below. To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below. References in this rule to protected areas designated under federal or state statutes or regulations are to the designations in effect as of May 11, 2007:

(a) National parks, including but not limited to Crater Lake National Park and Fort Clatsop National Memorial;

(b) National monuments, including but not limited to John Day Fossil Bed National Monument, Newberry National Volcanic Monument and Oregon Caves National Monument;

(c) Wilderness areas established pursuant to The Wilderness Act, 16 U.S.C. 1131 et seq. and areas recommended for designation as wilderness areas pursuant to 43 U.S.C. 1782;

(d) National and state wildlife refuges, including but not limited to Ankeny, Bandon Marsh, Baskett Slough, Bear Valley, Cape Meares, Cold Springs, Deer Flat, Hart Mountain, Julia Butler Hansen, Klamath Forest, Lewis and Clark, Lower Klamath, Malheur, McKay Creek, Oregon Islands, Sheldon, Three Arch Rocks, Umatilla, Upper Klamath, and William L. Finley;

(e) National coordination areas, including but not limited to Government Island, Ochoco and Summer Lake;

(f) National and state fish hatcheries, including but not limited to Eagle Creek and Warm Springs;

(g) National recreation and scenic areas, including but not limited to Oregon Dunes National Recreation Area, Hell's Canyon National Recreation Area, and the Oregon Cascades Recreation Area, and Columbia River Gorge National Scenic Area;

(h) State parks and waysides as listed by the Oregon Department of Parks and Recreation and the Willamette River Greenway;

(i) State natural heritage areas listed in the Oregon Register of Natural Heritage Areas pursuant to ORS 273.581;

(j) State estuarine sanctuaries, including but not limited to South Slough Estuarine Sanctuary, OAR chapter 142;

(k) Scenic waterways designated pursuant to ORS 390.826, wild or scenic rivers designated pursuant to 16 U.S.C. 1271 et seq., and those waterways and rivers listed as potentials for designation;

(l) Experimental areas established by the Rangeland Resources Program, College of Agriculture, Oregon State University: the Prineville site, the Burns (Squaw Butte) site, the Starkey site and the Union site;

(m) Agricultural experimental stations established by the College of Agriculture, Oregon State University, including but not limited to:

Coastal Oregon Marine Experiment Station, Astoria.

Mid-Columbia Agriculture Research and Extension Center, Hood River.

Agriculture Research and Extension Center, Hermiston.

Columbia Basin Agriculture Research Center, Pendleton.

Columbia Basin Agriculture Research Center, Moro.

North Willamette Research and Extension Center, Aurora.

East Oregon Agriculture Research Center, Union.

Malheur Experiment Station, Ontario.

Eastern Oregon Agriculture Research Center, Burns.

Eastern Oregon Agriculture Research Center, Squaw Butte.

Central Oregon Experiment Station, Madras.

Central Oregon Experiment Station, Powell Butte.

Central Oregon Experiment Station, Redmond.

Central Station, Corvallis.

Coastal Oregon Marine Experiment Station, Newport.

Southern Oregon Experiment Station, Medford.

Klamath Experiment Station, Klamath Falls.

(n) Research forests established by the College of Forestry, Oregon State University, including but not limited to McDonald Forest, Paul M. Dunn Forest, the Blodgett Tract in Columbia County, the Spaulding Tract in the Mary's Peak area and the Marchel Tract;

(o) Bureau of Land Management areas of critical environmental concern, outstanding natural areas and research natural areas;

(p) State wildlife areas and management areas identified in OAR chapter 635, division 8.

Response:

Background

Exhibit L of the 2011 ASC included an analysis of potential impacts to Protected Areas within 20 miles of the proposed Site Boundary for CGS. The Site Boundary included the proposed Grassland Switchyard, a new 500 kV transmission line between CGS and the Grassland Switchyard, and a new approximately 17-mile 500 kV transmission line between the Grassland Switchyard and the Slatt Substation. Exhibit L prepared in support of RFA1 in 2018 included a similar analysis of potential impacts to Protected Areas within 20 miles of the RFA1 Site Boundary for the Carty Solar Farm.

As documented in Exhibit L for the ASC and RFA1, existing conditions and potential project-related impacts to Protected Areas from noise, visual changes, traffic, water use, and wastewater disposal were assessed. Exhibit L for the 2011 ACS identified 11 Protected Areas within 20 miles of the original Site Boundary, the closest of which was the Horn Butte Area of Critical Environmental Concern (ACEC) administered by the Bureau of Land Management. The Horn Butte ACEC is located approximately 800 feet south of the existing 500 kV Grassland to Slatt transmission line. Exhibit L of RFA1 identified nine Protected Areas within 20 miles of the RFA1 Site Boundary for the Carty Solar Farm, all of which were previously identified and analyzed in Exhibit L for the 2011 ASC. The closest protected area, the Boardman Research Natural Area, is approximately 2.7 miles east of the amended RFA1 Site Boundary. All other protected areas are at least 7.1 miles away.

Following review of the 2011 ASC and 2018 RFA1 and supporting Exhibit L, the Council found that noise, Facility-related traffic, water use, and wastewater disposal during construction and operation of the proposed Facility would not result in significant adverse impacts to Protected Areas. However, due to concerns of potential visual impacts, primarily associated with exhaust towers and Facility lighting, the Council included Conditions 6.12, 6.13, and 6.14 in the 2012 Site Certificate for the protection of scenic resources (*see* Section 8.9 in this RFA2). The same conditions to protect scenic resources were carried forward into the First Amended Site Certificate for CGS issued in 2018.

Evaluation of RFA2

The proposed RFA2 Site Boundary would reduce portions of the current Site Boundary (southwest of the Grassland Switchyard), but would add a new area that is currently within the BCP Site Boundary and authorized under the Site Certificate for BCP, including the Carty Reservoir (and associated intake and discharge structures), the 230 kV BCP to Dalreed transmission line, the 500 kV Grassland to Slatt transmission line, the two existing BCP evaporation ponds, and the irrigation pump station on the shore of Carty Reservoir and its associated 34.5 kV transmission line. No improvements or alterations are currently proposed for these existing and permitted facilities.

PGE evaluated Protected Areas within 20 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. PGE has determined that the Protected Area closest to areas of proposed disturbance and new structures would be the Boardman Research Natural Area, approximately 4.0 miles southeast of the new substation and distribution lines. Because of the distance between these new facilities and the Boardman Research Natural Area, the description of existing conditions and potential project-related noise, visual, traffic, water use, and wastewater disposal impacts on Protected Areas described in Exhibit L of RFA1 remain valid. PGE estimates that approximately 220,000 gallons of water would be used for

dust control during construction of the new related or supporting facilities. This estimate was calculated by determining the area of disturbance and depth of disturbance, then assuming 30 gallons of water use per cubic yard per day of disturbance. PGE does not anticipate significant adverse impacts on Protected Areas from construction and operation of proposed new facilities, including the new Carty Substation and associated distribution lines. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0040.

8.6 OAR 345-022-0050 Retirement and Financial Assurance

To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

Response: Exhibit W of the 2011 ASC and Exhibit W for RFA1 detail actions to restore CGS to a useful, non-hazardous condition upon retirement per OAR 345-027-0110. In the First Amended Site Certificate, the Council found that the site of the Facility, subject to compliance with Site Certificate Conditions 15.1 through 15.7, could be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the Facility.

In accordance with Condition 15.1, a letter of credit for CGS is currently maintained and updated annually for portions of CGS that have been constructed. In the most recent update (for 2020), the letter of credit stands at \$9,114,000. PGE will update this amount to include related or supporting facilities per this RFA2, per the proposed modified Site Certificate Condition 15.1:

15.1 Before beginning construction, the certificate holder shall submit to the State of Oregon through the Council a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount for Block 1 is \$7.884 million (in third quarter 2011 dollars), to be adjusted to the date of issuance, and adjusted on an annual basis, thereafter, as described in sub-paragraph (b) of this condition. The initial bond or letter of credit amount for the Carty Solar Farm and its supporting facilities is \$2.7 million (in third quarter 2016 dollars) to be adjusted to the date of issuance, and adjusted on an annual basis, thereafter, as described in sub-paragraph (b) of this condition. The initial bond or letter of credit amount for the related or supporting facilities associated with Amendment 2 is \$13.799 (in fourth quarter 2020 dollars) to be adjusted to the date of issuance and submitted within 60 days of execution of the Second Amended Site Certificate, and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this condition.

Final decommissioning costs associated with the related or supporting facilities that will be added to the site certificate, as described herein, are included as Attachment 4 of this RFA2¹³. In accordance with Site Certificate Condition 15.1(a), this cost may be adjusted to account for potential future decommissioning and demolition of shared facilities authorized under the Second Amended Site Certificate.

A letter of credit to the certificate holder will be provided within 60 days of execution of the Second Amended Site Certificate for CGS that will include all related or supporting facilities. Attachment 4 provides evidence that PGE has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The letter included in Attachment 4 applies to Unit 1 and the additional related or supporting facilities added as part of RFA2. The letter does not apply to the retirement costs for Carty Solar. The letter provided as part of RFA1 provides reasonable likelihood of obtaining a bond or letter of credit for the solar portion of the project.

PGE proposes to operate CGS, including new facilities described in this RFA2, in compliance with existing and Site Certificate Conditions 15.1 (as modified in this RFA2) through 15.7. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0050.

8.7 OAR 345-022-0060 Fish and Wildlife Habitat

To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with:

(1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017, and

(2) For energy facilities that impact sage-grouse habitat, the sage-grouse specific habitat mitigation requirements of the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-415-0025(7) and OAR 635-140-0000 through -0025 in effect as of February 24, 2017.

Response:

Background

Exhibit P for the 2011 ASC included an analysis of fish and wildlife habitats in the vicinity of CGS, the Grassland Switchyard, and the ROW of a new 500 kV transmission line between the Grassland Switchyard and the Slatt Substation proposed as part of the 2011 ASC. The analysis area for fish and wildlife habitat impacts was the area within the original Site Boundary and areas within 0.5 mile of all ground-disturbing activities that would occur during construction.

¹³ The cost to retire an 18-mile, 500 kV transmission line was included in the cost estimate approved in the Final Order on the Application for Site Certificate. Although PGE ultimately did not build the additional 500 kV transmission line as part of Unit 1, the retirement cost estimate was never revised; therefore, PGE's letter of credit issued to the State already includes the retirement cost of the 500 kV transmission being added to the CGS site certificate as part of RFA2.

As part of the ASC, PGE committed to developing a WHMMP to provide compensation for impacts that could not be avoided or minimized, in compliance with the ODFW habitat mitigation goals and standards (OAR 635-415-0025). PGE also provided additional habitat mitigation in the form of a permanent conservation easement on a habitat mitigation area (HMA) by creating a 78-acre HMA for Unit 1, located approximately 1 mile northeast of the CGS.

Council concluded that construction and operation of the CGS would comply with the Fish and Wildlife Habitat Standard (OAR 345-022-0060) with the adoption of Conditions 10.1-10.21 to ensure compliance with the general fish and wildlife habitat mitigation goals and standards OAR 635-415-0025(1) through (6).

Exhibit P prepared in support of RFA1 in 2018 included an analysis of fish and wildlife habitats within and 0.5 mile from the RFA1 Site Boundary. Habitat mapping, wetland and waterbody delineations, and species-specific Washington ground squirrel (*Urocitellus washingtoni*) (herein, WGS) surveys were completed in the relevant portions of analysis area as they related to RFA1. WGS surveys were conducted in 2016 and 2017 in portions of the analysis area within the CGS 78-acre HMA and WGS activity areas being monitored under the CGS WHMMP and within existing PGE conservation areas associated with BCP. Incidental wildlife and noxious weed observations were also recorded. The First Amended Site Certificate carried forward all site certificate conditions and amended the WHMMP and Revegetation and Noxious Weed Control Plan.

Evaluation of RFA2

The proposed RFA2 Site Boundary would reduce portions of the current Site Boundary (southwest of the Grassland Switchyard) but would add new area that is currently within the BCP Site Boundary and authorized under the Site Certificate for BCP, including the Carty Reservoir (and associated intake and discharge structures), the 230 kV BCP to Dalreed transmission line, the 500 kV Grassland to Slatt transmission line, the two existing BCP evaporation ponds, and the irrigation pump station on the shore of Carty Reservoir and its associated 34.5 kV transmission line. No improvements or alterations are currently proposed for these existing and permitted facilities.

The RFA2 analysis area for fish and wildlife habitat includes an analysis area within 0.5 mile of areas that would be disturbed during construction of the proposed new facilities or occupied by new structures. The disturbance areas associated with these new project features, with the exception of the Carty Substation and associated distribution lines, would occur in areas with shrub-steppe habitat (Habitat Category 4). Construction of the new Carty Substation and associated distribution lines would occur in developed areas designated as Habitat Category 6, which is defined as areas with existing infrastructure, roads, buildings, and nearby heavily disturbed vegetated areas with no potential to provide important wildlife habitat. PGE has determined that areas of proposed ground disturbance associated with construction of the new security guard station and the new wastewater pipeline between CGS and the existing evaporation ponds would occur within approximately 0.3 to 0.5 mile of areas east of the CGS mapped as Habitat Category 1, and Habitat Category 2 (see Figure P-1 of RFA1 and Final Order on Amendment 1 page 86). Areas that would be disturbed during construction of other proposed new facilities or occupied by other new structures would be more than 0.5 mile from areas designated as Habitat Category 1 and Habitat Category 2.

Construction and operation of the new septic system, water pipeline, Carty substation, wastewater pipeline, and security guard station would temporarily impact approximately 1.0 acre, and permanently displace approximately 0.6 acre, of Category 4 habitat. The mitigation goal for Category 4 habitat is no net loss of either habitat quantity or quality. The mitigation ratio for temporary impacts on Category 4 habitat is 0.5:1; for permanent impacts the ratio is 1:1. The 78-acre HMA created to mitigate impacts associated with Unit 1 and supporting facilities is 5.25 acres larger than required for temporary and permanent impacts associated with Unit 1 and associated facilities and is sufficient to cover Category 4 habitat mitigation requirements associated with construction activity described for this RFA2 (approximately 1.1 acres), as described in more detail in Attachment 5.

Construction of the new Carty Substation and associated distribution lines would temporarily impact approximately 1.2 acres, and permanently displace approximately 0.9 acre of Category 6 habitat. Impacts on Category 6 habitat do not require compensatory mitigation under the Council's Fish and Wildlife Habitat standard.

Construction of the new Carty Substation and distribution lines would occur within approximately 2,000 feet (less than 0.5 mile) of an active raptor nest (red-tailed hawk) identified on the north shore of the Carty Reservoir during field surveys conducted in 2016. Existing Site Certificate Condition 10.8 requires PGE to avoid all construction activities that would occur within 1,300 feet of active nests occupied by red-tailed hawks. PGE does not anticipate that construction and operation of the new Carty Substation and associated distribution lines would have significant adverse impacts on fish and wildlife habitats within 0.5 mile of ground-disturbing activities or known active raptor nests.

The changes included in this RFA2 would also require a new Site Certificate Condition committing PGE to operating Carty Reservoir at an elevation no lower than an annual average of 665 feet MSL (see Site Certificate Condition 10.40, as modified in this RFA2) (Figure 3). This new Site Certificate Condition and existing conditions 10.1-10.21 (with minor modifications) are detailed in Attachment 1. Collectively, these conditions are sufficient for continued protection of fish and wildlife habitat. PGE will continue to operate CGS, including the changes proposed in this RFA2, according to these existing conditions. Modifications to existing site certificate conditions include incorporating the portions of the RFA2 Site Boundary that coincide with new and existing facilities into the 5-year interval surveys, extending for the life of the project. In coordination with ODFW, species surveys would be targeted to focus on suitable habitat conditions for the BCP to Dalreed transmission line where no habitat characterization or survey records are available. Revisions to the existing mitigation and monitoring plan could occur depending on the survey results. This commitment is also detailed in the amended WHMMP is provided in Attachment 5 of this RFA2.

PGE proposes to operate CGS in compliance with existing and modified Site Certificate Conditions 10.1 through 10.21, and new Site Certificate Condition 10.40. Therefore, the continued operation of related or supporting facilities currently authorized under the site certificate for CGS or BCP and the construction and operation of new minor infrastructure (see Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0060.

8.8 OAR 345-022-0070 Threatened and Endangered Species

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.

Response:

Background

Exhibit Q of the 2011 ASC included an analysis of potential threatened and endangered species in the vicinity of CGS, the Grassland Substation, and the ROW of the 500 kV Grassland to Slatt transmission line proposed as part of the 2011 ASC (paralleling the existing BCP to Slatt transmission line between Grassland and Slatt).

Field investigations were conducted for raptor nests, WGS, special status plants and wildlife, wetlands and streams, and general wildlife occurrence and habitat in 2009 and 2010. During the 2009 surveys, biologists recorded numerous potential WGS burrows near the CGS, as well as along the 500 kV Grassland to Slatt transmission line route proposed as part of the 2011 ASC; however, no evidence of occupation was detected. Due to the suitability of the soils and abundance of potential burrows in these areas, portions of the transmission corridor located west of CGS were considered potential WGS habitat and were included in the 2010 surveys. No evidence of WGS was observed along the 500 kV Grassland to Slatt transmission line corridor proposed as part of the 2011 ASC during the 2010 surveys. However, these surveys verified the presence of WGS in two general areas outside of the CGS disturbance area proposed under the 2011 ASC, but within the original Site Boundary. A group of active WGS burrows was located approximately 705 feet north of where the current CGS facility is located.

No state or federally listed plant species were found during the 2009 or 2010 surveys near CGS or within the transmission line corridor. Habitat types present on-site are not ideal for the special status plant species potentially occurring in the area.

As documented in the Final Order and established in the Site Certificate for CGS, the Council concluded that construction and operation of the CGS as proposed as part of the 2011 ASC would comply with the Threatened and Endangered Species Standard (OAR 345-022-0070), with

inclusion of Site Certificate Conditions 10.1-10.21. Among other stipulations, these conditions required, in consultation with the ODFW, the development of WHMMP; creation, enhancement, and maintenance of a HMA, and post-construction surveys on known WGS colonies. The post-construction surveys are required on PGE-owned lands in the CGS area, both within the HMA and in areas where known active burrows were recorded during preconstruction field surveys. Post-construction surveys are required in year 1, year 3, and year 5 after operations have begun, and then at least every 5 years after that for the life of the project, in years divisible by five.

The RFA1 analysis area for threatened and endangered plant and animal species included all areas within the RFA1 Site Boundary and all areas within 5 miles from the RFA1 Site Boundary. Portions of the RFA1 Site Boundary most relevant to this RFA2 include areas located north of Carty Reservoir (*see* Figure 2a, Exhibit Q of RFA1). Survey data from 2013 showed active WGS sites in the analysis area north of BCP; however, four of these locations were spot checked in 2016, and no signs of WGS activity were found.

As documented in the Final Order on Amendment 1, the Council again concluded that, in carrying forward Site Certificate Conditions 10.1-10.21 (as modified), changes proposed in RFA1 would comply with the Threatened and Endangered Species Standard (OAR 345-022-0070).

Evaluation of RFA2

As described in Section 8.7, the proposed RFA2 Site Boundary would reduce portions of the current Site Boundary (southwest of the Grassland Switchyard), but would add new area that is currently within the BCP Site Boundary and authorized under the Site Certificate for BCP, including the Carty Reservoir (and associated intake and discharge structures), the 230 kV BCP to Dalreed transmission line, the 500 kV Grassland to Slatt transmission line, the two existing BCP evaporation ponds, and the irrigation pump station on the shore of Carty Reservoir and its associated 34.5 kV transmission line. No improvements or alterations are currently proposed for these existing and permitted facilities.

The RFA2 analysis area for threatened and endangered species includes an analysis area within 0.5 mile of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. Based on the available data, it was determined that the WGS is the only state-listed wildlife species that could occur in the analysis area. Previous surveys completed for the 2011 ASC and 2018 RFA1 did not detect presence of other special status plant and animal species within the RFA2 analysis area. PGE has determined that areas of proposed ground disturbance associated with construction of the new security guard station and the new wastewater pipeline between CGS and the existing evaporation ponds would occur within approximately 0.3 to 0.5 mile of areas located within the existing CGS Site Boundary, east of the CGS, mapped as Habitat Category 1 in Figure Q-1 of RFA1. WGS habitat is Category 1 habitat and includes the area within a 785-foot buffer of an active colony. Areas that would be disturbed during construction of other proposed new facilities or occupied by other new structures would be more than 0.5 mile from areas designated as Habitat Category 1.

The changes included in this RFA2 do not require any new site certificate conditions. Site Certificate Conditions 10.1-10.21 (with minor modifications) are detailed in Attachment 1. Collectively, these conditions will ensure continued protection of threatened and endangered species. PGE will continue to operate CGS, including the changes proposed in this RFA2, according to these

conditions. Accordingly, and consistent with Condition 10.14, surveys will be conducted for WGS within disturbance areas prior to planned construction activities associated with the new septic system, water pipeline, wastewater pipeline, and security guard station to determine their occupied area, surveys are not necessary for the Carty Substation and office/warehouse building because these new facilities would be built in a previously disturbed gravel area within the existing fence line.

As described in Section 8.7, PGE proposes to apply Condition 10.1 (as modified) of the First Amended Site Certificate and elements of the WHMMP to new areas incorporated into the RFA2 Site Boundary that coincide with new and existing facilities into the 5-year interval surveys, extending for the life of the project. In coordination with ODFW, species surveys would be targeted to focus on suitable habitat conditions for the BCP to Dalreed transmission line where no habitat characterization or survey records are available. Revisions to the existing mitigation and monitoring plan could occur depending on the survey results. Surveys conducted in 2010 yielded no evidence of WGS along the 500 kV Grassland to Slatt transmission line corridor proposed as part of the 2011 ASC. These findings are also assumed to apply to the *existing* 500 kV BCP to Slatt transmission line, since the existing line coincides with the survey area for the Grassland to Slatt transmission line proposed as part of the 2011 ASC. Mitigation measures and best management practices would be followed to reduce the potential for impacting WGS.

PGE proposes to operate CGS, including changes proposed in this RFA2, in compliance with existing Site Certificate Conditions 10.1 (as modified) through 10.21. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0070.

8.9 OAR 345-022-0080 Scenic Resources

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to scenic resources and values identified as significant or important in local land use plans, tribal land management plans and federal land management plans for any lands located within the analysis area described in the project order.

Response:

Background

As documented in Exhibit R for the ASC, project-related impacts to Scenic Resources within 10 miles of the original Site Boundary for CGS were assessed. Exhibit R for the ASC included an assessment of potential visual or aesthetic impacts from CGS, with focus on the Facility's most prominent features (exhaust stacks, large buildings [up to 100 feet in height], the Grassland Switchyard, and the 500 kV transmission line proposed as part of the 2011 ASC). The analysis concluded that visual impacts would be limited due to the existing industrial character of the site.

As documented in the Final Order, the Council found that the design, construction, and operation of CGS, considering mitigation, would comply with the Scenic Resources Standard (OAR

345-022-0080). The site certificate was conditioned to mitigate visual impacts during construction and to address concerns of potential operational visual impacts, primarily associated with exhaust towers and lighting (Conditions 6.12-6.14).

The analysis of changes proposed in RFA1 considered the same scenic resources present within 10 miles of the RFA1 Site Boundary for the Carty Solar Farm. Following review of the RFA1 and supporting Exhibit R, the Council again found, as documented in the Final Order on Amendment 1, the design, construction, and operation of the Carty Solar Farm and its supporting facilities would comply with the Scenic Resources Standard (OAR 345-022-0080). The Council carried forward the same conditions related to protecting Scenic Resources from the 2012 Site Certificate for CGS into the First Amended Site Certificate for CGS issued in 2018.

Evaluation of RFA2

PGE evaluated Scenic Resources within 10 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. The proposed septic system, water pipeline, wastewater pipeline, and most of the new distribution lines from the Carty Substation to the construction substation will be constructed underground. Following construction, disturbed areas will be reclaimed to appear similar to existing conditions and therefore would not impact scenic resources or values. The security guard station will be small in stature and located within the existing Site Boundary. The office/warehouse building will be located within the existing fence line and be similar in size and appearance to the existing administrative building. The new Carty Substation and short overhead segments of the associated distribution lines would be located within a developed portion of the site outside the existing Carty RFA1 Site Boundary, but within the amended RFA2 Site Boundary. These new project features will be similar in size and appearance to the existing construction substation. All proposed new facilities will be constructed in or adjacent to previously disturbed areas or areas already characterized as industrial.

PGE proposes to continue operation of CGS, including changes proposed in this RFA2, in compliance with existing Site Certificate Conditions 6.12-6.14. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0080.

8.10 OAR 345-022-0090 Historic, Cultural and Archaeological Resources

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:

(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;

(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in 358.905(1)(c); and

(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).

Response:

Background

Exhibit S of the 2011 ASC included an analysis of potential impacts to historic, cultural, and archaeological resources in the vicinity of the proposed CGS, including related or supporting facilities. The analysis area was approximately 780 acres and included portions of the Site Boundary that would be impacted by the construction and operation of the Grassland Switchyard, 500 kV transmission line between CGS and the Grassland Switchyard, and approximately 17-mile 500 kV transmission line between the Grassland Switchyard and the Slatt Substation as proposed as part of the 2011 ASC.

As documented in Exhibit S for the ASC, field surveys conducted in 2009 identified two prehistoric archaeological isolates and two historic period archaeological sites, none of which were considered eligible for the National Register of Historic Places (NRHP). One additional previously recorded site near Carty Reservoir originally recorded in the 1970s (35MW19) and identified during background research for the ASC could not be located during field surveys in 2009 and 2016. The site was subsequently determined by the Oregon State Historic Preservation Office (SHPO) to be ineligible for listing. A second recorded site (35MW15) was identified in 2016 during a records review for RFA1. The 2012 Site Certificate for CGS included six site certificate conditions for Historic, Cultural, and Archaeological Resources. The Council concluded that with the application of these conditions, CGS complied with Historic, Cultural and Archaeological Resources Standard (OAR 345-022-0090).

Exhibit S prepared in support of RFA1 in 2018 included a similar analysis of potential impacts to historic, cultural, and archaeological resources for an approximately 321.5-acre disturbance area within the RFA1 Site Boundary for the Carty Solar Farm. During the 2016 field survey for RFA1, two additional isolates (one a prehistoric artifact and the other a historic-period artifact) were identified. Neither isolate was recommended as eligible for listing in the NRHP.

These same conditions were carried forward to the First Amended Site Certificate, with the following changes: the Council deleted a condition related to site 35MW19 (Condition 11.1) and modified another (Condition 11.6) to remove Condition 11.6(i)(a) and add Condition 11.6(f)(ii) to require amendment of the Inadvertent Discovery Plan to include coordination with the Confederated Tribes of the Umatilla Indian Reservation during proposed ground-disturbing activities.

Evaluation of RFA2

The proposed project area has undergone extensive systematic surveys and testing of sites since the 1970s, with the most recent surveys completed by PGE in 2009 and 2016. Through these survey efforts, more than 120 shovel probes have been excavated within and in close proximity to the project area, rendering a complete understanding of landforms, resource types, and resource densities. Results of these various studies conducted at Carty suggest that precontact site 35MW15 is outside of areas identified for new construction as part of RFA2, and therefore will not be impacted by any actions proposed. Intensive survey-level work was conducted to identify and assess site 35MW19 in 2016 and no evidence of the site was found. SHPO concurred with this finding.

Despite these surveys, there remain areas within the proposed Site Boundary for this RFA2 that have not been recently surveyed for historic, cultural, and archaeological resources. These primarily include the ROW for the 230 kV BCP to Dalreed transmission line and areas along the western and southern shores of the Carty Reservoir and potentially the footprint of the proposed new septic and security guard station. The locations of the proposed new Carty Substation, septic system, security guard station, water pipeline, wastewater pipeline, and office/warehouse building have been previously surveyed. Based on the various studies, it is PGE's position that for precontact resources, although identification of archaeological sites would be rare, isolated finds are more likely. Moreover, most materials likely to be encountered would probably date to the Early and Middle Holocene and not be deeply buried. Sites would be more easily identifiable because they would likely be surface scatters. PGE proposes to carry forward the site certificate conditions listed in Section 11.0 of the First Amended Site Certificate for CGS, and as such, commits to pre-construction surveys in disturbance areas that have not been previously surveyed. PGE's combined approach of cultural resources awareness training and robust Inadvertent Discovery Protocol will guide PGE staff and contractors in conducting work in this area. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0090.

8.11 OAR 345-022-0100 Recreation

(1) Except for facilities described in section (2), to issue a site certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, are not likely to result in a significant adverse impact to important recreational opportunities in the analysis area as described in the project order. The Council shall consider the following factors in judging the importance of a recreational opportunity:

- (a) Any special designation or management of the location;*
- (b) The degree of demand;*
- (c) Outstanding or unusual qualities;*
- (d) Availability or rareness;*
- (e) Irreplaceability or irretrievability of the opportunity.*

Response: Exhibit T for the 2011 ASC and the 2018 RFA1 evaluated potential project-related impacts to recreational resources located within 5 miles of the original Site Boundary for CGS and the RFA1 Site Boundary for the Carty Solar Farm, respectively.

Exhibit T for the 2011 ASC identified five recreational resources within the analysis area that the Council also found to be important recreational resources as defined by OAR 345-022-0100(1). These included the Columbia River Waterfront, Lewis and Clark Historic Trail, the Port of Arlington RV park and marina, the Blue Mountain Scenic Byway (State Route 74), and a portion of the Oregon Historic Trail located approximately 4 to 6 miles south of CGS. The analysis concluded that noise, traffic, visual impacts, water usage, or wastewater management activities associated with

construction and operation of CGS and related or supporting facilities would not result in significant impacts to these important recreational resources. Following review of the ASC, the Council concurred with these findings and did not adopt any site certificate conditions specific to the Recreation Standard. The Council found that the design, construction, and operation of CGS and related or supporting facilities would comply with the Recreation Standard (OAR 345-022-0080).

In consideration of the Carty Solar Farm, the 2018 RFA1 addressed the same recreation resources that were evaluated in the 2011 ASC. The Council again concluded that changes considered in RFA1 would comply with the Recreation Standard (OAR 345-022-0080). No conditions specific to recreational resources were applied to the First Amended Site Certificate for CGS.

PGE evaluated recreation resources within 5 miles of areas that would be disturbed during construction of proposed new facilities or occupied by new structures. As described in Exhibit T for the 2011 ASC and the 2018 RFA1 (and subsequent documents), the Oregon Historic Trail is approximately 4 to 6 miles south of CGS (approximately 2 miles south of the RFA2 Site Boundary). PGE does not expect construction and operation of the Carty Substation and associated distribution lines, new septic system, water pipeline, wastewater pipeline, security guard station, or office/warehouse building to have substantial noise, visual, or traffic impacts on the Oregon Historic Trail because these new facilities would be located 4 to 6 miles from the trail and the trail is not accessed by roadways that would be used by construction and operations personnel travelling to and from CGS (i.e., via Tower Road from I-84).

Consistent with these findings, PGE does not propose any new site certificate conditions specific to recreational resources or opportunities. The continued operation of CGS, including related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (see Section 5), will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0100.

8.12 OAR 345-022-0110 Public Services

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.

Response:

Background

Exhibit U of the 2011 ASC addressed the potential impacts of the proposed CGS on public and private service providers within the Site Boundary and within 10 miles of the Site Boundary. Exhibit U prepared in support of RFA1 included a similar analysis of potential impacts to public services related to the Carty Solar Farm. Public services included sewers, sewage treatment, water, stormwater drainage, solid waste management, housing, traffic safety, police and fire protection, health care, and schools.

Following review of the 2011 ASC, the Council found, as documented in the Final Order, that the Facility would not have significant adverse impacts to sewers, sewage treatment, stormwater drainage, solid waste management, housing, police and fire protection, health care, or schools. These findings were predicated on Site Certificate Conditions 6.3, 6.17 (as modified in this RFA2), 6.27, 8.1, 8.2, 8.3, 8.7, 9.1 (as modified in this RFA2), and 10.22 that address fire protection, health care, and traffic safety to ensure there would be no significant impacts to these public services from construction and operation of CGS and related or supporting facilities. Following review of the 2018 RFA1, the Council again determined CGS complied with OAR 345-022-0110, carrying forward these site certificate conditions to the First Amended Site Certificate, with minor modifications.

Evaluation of RFA2

PGE has assessed the potential impacts to public services from transferring authorization of existing related or supporting facilities from the Site Certificate for BCP to the Site Certificate for CGS, and construction and operation of the proposed new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building described in this RFA2. PGE evaluated potential impacts on public services within and extending 10 miles from areas that would be disturbed during construction of proposed new related and supporting facilities. The results of this analysis are presented below.

Sewer and Sewage Treatment; Stormwater Drainage

The continued operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would generate sewage during construction and operation. During construction, portable toilets managed by a licensed third-party contractor would be used for sewage treatment. PGE is requesting that the Site Certificate for CGS be amended to include the existing sanitary sewage lagoons and authorize construction of a new septic system to treat sewage generated at the CGS during plant operations. The septic system would be sized in accordance with state and county standards and the Umatilla County Public Health Department requirements and in a location deemed acceptable for a standard, non-residential septic system. The facility will be constructed in accordance with OAR 340-071-022. Because the design flow of the system is less than 2,501 gpd, a permit from DEQ will not be required. The existing sewage lagoons would remain in place and would continue to be used by BCP and CGS until the new septic system is constructed and operational. Construction and operation of the CGS related and supporting facilities described in this RFA2 would not result in the use of or impacts on public or private sewage treatment providers.

The continued operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would generate stormwater during rain events. During construction, stormwater runoff would be minimized through implementation of best management practices.

During operation, stormwater would be minimized through site grading that would allow stormwater infiltration into the ground. Construction and operation of the CGS-related and supporting facilities described in this RFA2 would not result in the use of or impacts on public or private stormwater drainage facilities.

Water

The ongoing operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would result in continued water use. Water would continue to be pumped from the Columbia River to Carty Reservoir through the existing 60-inch pipe operated by Threemile Canyon Farms. Water from Carty Reservoir would continue to be used as the raw water source for service water and fire water at CGS and as the water source for the irrigation pump station serving nearby farmland. Potable water for drinking fountains, showers (emergency and lavatory), sinks, and flushing of lavatory fixtures would continue to come from Boeing Well just south of CGS (see Site Certificate Condition 10.23). PGE estimates that approximately 220,000 gallons of water would be used for dust control during construction of the new related or supporting facilities. This estimate was calculated by determining the area of disturbance and depth of disturbance, then assuming 30 gallons of water use per cubic yard per day of disturbance. The ongoing operation of CGS and the construction and operation of related and supporting facilities would not result in the use of or impacts on the ability of public or private providers of water to deliver services.

Solid Waste Management

Construction activities associated with the new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building are anticipated to generate small quantities of solid waste, including domestic refuse, office waste, packaging materials, and various types of common construction materials, such as concrete waste, wood, plastic, glass, and used erosion control materials. This waste may also include hazardous materials, such as oil rags and depleted batteries. PGE previously noted in RFA1, Exhibit U, that solid waste disposal needs would be “well within the handling capacities” of the Sanitary Disposal, Inc. and other waste management providers listed in Table U-1. PGE anticipates that the solid waste disposal needs associated with the construction of proposed new facilities would be adequately accommodated by these previously identified waste management providers.

During operation, PGE expects to generate “negligible” solid waste, consisting primarily of office and maintenance waste. Waste generated during operations would be disposed through its existing CGS plant services building. PGE anticipates being a “Conditionally Exempt Generator,” which is a classification reserved for organizations that generate less than 220 pounds of hazardous waste per month.

Council previously imposed Condition 6.3 and Condition 10.22, requiring that the certificate holder, during construction and operation, develop Waste Management Plans that would implement waste-reducing measures, including training employees to segregate and recycle recyclable materials. These conditions would continue to apply to the facility, with proposed changes. Therefore, waste generating during the ongoing operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would not result in significant adverse impacts on the ability of public or private providers to provide solid waste management services.

Housing, Health Care and Schools

The continued operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would not contribute substantial numbers of additional workers to the analysis area. Based on its experience during Unit 1 construction, PGE assumes that many

construction personnel will be either permanent residents of the Boardman area or temporary residents who commute from the Tri-Cities area in Washington.

If necessary, individuals would receive healthcare for Trauma III Level services in Hermiston. Individuals would receive Trauma I Level services in Portland. Emergency medical transport would be provided by the Morrow County Health District Emergency Medical Services, which maintains ambulances in Boardman and Irrigon. The continuation of previously imposed Conditions 8.2 and 8.3, requiring that PGE implement a site health and safety plan, would minimize potential onsite risks resulting in the use of local health care providers.

Based on the short-term duration of construction, relatively low number of workers (an average of 44 to 51 construction workers per day if all new construction occurred simultaneously), and the existing availability of health care facilities, PGE does not anticipate any significant adverse impact on the ability of public and private providers of health care to deliver services. Similarly, because the completed project would have an average of up to 20 employees per day on site during operations, no significant adverse impacts on housing, health care, and school providers in the analysis area are anticipated.

Traffic Safety

The construction of the new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building would require a limited number of daily vehicle and truck trips, as shown in Table 7. During ongoing operations, the average daily vehicle and truck traffic would be similar to the average number of daily vehicle and truck trips would be within the average number of daily vehicle trips analyzed in the 2011 ASC.

Table 7. Estimated Number of Workers, Vehicle Trips, and Truck Trips during Construction and Operation of Related and Supporting Facilities at CGS

Activity	Daily Workers (Average)	Daily Vehicle Trips (Average)	Daily Truck Trips (Average)	Duration (Months)
Construction				
Carty Substation and Associated Transmission/Distribution Lines	4 – 6	3 ^a	1 – 3	9 – 10
Water Pipeline	6	3 ^a	1 – 2	3
Septic System	8	4 ^a	2 – 4	2 – 3
Wastewater Pipeline	6	3 ^a	1 – 2	3
Security Guard Station	5 – 10	2 – 5 ^a	1 – 2	6
Office/Warehouse	15	8 ^a	1 – 4 ^b	10 – 12
Total	44 – 51	23 – 26^a	7 – 17	12^c
Operation				
Carty Generating Station – <i>Estimate from 2011 ASC</i>	20 – 30	31 – 32 ^d	1.3 ^e	Continuous
Carty Solar Farm (RFA1)	1 – 2	1	0	Continuous

Key: ASC = Application for Site Certificate; CGS = Carty Generating Station; RFA1 = Request for Amendment No. 1

Notes:

^a Assumes an average vehicle occupancy of two workers per vehicle (i.e., crew-sized pickup truck) traveling to and from the site each day.

^b An average of four truck trips per day for material deliveries are anticipated during the first 5 to 6 months of construction. During the last 5 to 6 months of construction, an average of one truck trip per day is anticipated.

^c Assumes that construction of the Carty Substation and associated transmission/distribution lines, water pipeline, septic system, wastewater pipeline, security guard station, and office/warehouse occur at the same time.

^d This includes 25 passenger car trips to and from the facility and six to seven delivery vehicles and visitor cars per day, as described on page 13 of Traffic Impact Analysis (Appendix U-1 to the 2011 ASC).

^e Daily truck trips calculated as follows: one semi-truck delivery per day + 0.29 tanker truck delivery per day (i.e., two tanker trucks per week divided by 7 days per week = 0.29 tanker truck per day) = 1.29 daily truck trips, which has been rounded to 1.3 daily truck trips.

Assumptions:

Carty Substation and Associated Transmission/Distribution Lines: An average of four to six workers per day would travel to and from the site for approximately 9 to 10 months during installation of the substation and associated transmission/distribution lines. Construction would require excavators, a backhoe, dump truck, compactor, and several pickup trucks. One to three truck trips per day on average would be required for material deliveries.

Water Pipeline: An average of six workers per day would travel to and from the site for approximately 3 months during installation of the water pipeline. Construction would require excavators, a backhoe, dump truck, compactor, possibly an asphalt paver, and several pickup trucks. One to two truck trips per day on average would be required for material deliveries.

Septic System: An average of eight workers per day would travel to and from the site for approximately 2 to 3 months during installation of the septic system. Construction would require excavators, a wheeled crane, backhoe, dump trucks, a compactor, and several pickup trucks. Two to four truck trips per day average would be required for material deliveries.

Wastewater Pipeline: An average of six workers per day would travel to and from the site for approximately 3 months during installation of the wastewater pipeline. Construction would require excavators, a backhoe, dump truck, compactor, possibly an asphalt paver, and several pickup trucks. One to two truck trips per day on average would be required for material deliveries.

Security Guard Station: An average of five to 10 workers per day would travel to and from the site for approximately 6 months during construction of the security guard station and perimeter fencing. Construction would require the use of a telehandler, backhoe, skid steer, triaxle dump truck, auger, small excavator, and several pickup trucks. One to two truck trips per day on average would be required for material deliveries.

Office/Warehouse: An average of 15 workers per day would travel to and from the site for approximately 10 to 12 months during construction of the office/warehouse. Construction would require the use of a small wheeled crane, excavator, front-end loader, compactor, aerial lifts, telehandler, triaxle dump truck, a skid steer, and pickup trucks. During peak activity, up to 20 to 25 workers could be on site at the same time. One to four truck trips per day on average would be required for material deliveries.

Carty Generating Station: The Traffic Impact Analysis prepared by Kittleson Associates in 2009 (Appendix U-1 to Exhibit U in the 2011 Application for Site Certification) assumed approximately 20 to 30 daily staff members (with an average day shift of about 20 staff and an average evening-shift staff of about five people) to perform general operation and maintenance duties. The traffic analysis assumed two tanker delivery trucks per week and one semi-truck delivery per day traveling to and from the facility. PGE estimates the number of daily vehicle trips and daily truck trips to and from CGS in 2019 ranged from six to seven vehicle trips and one to two truck trips per day.

Carty Solar Farm: The 2018 Request for Amendment 1 assumed that the Carty Solar Farm would require one to two personnel (one two-way vehicle trip per day) for daily maintenance activities during operation of the solar farm.

Potential traffic-related impacts on surrounding roadways would be limited to I-84 and Tower Road. Existing Conditions 6.17 and 6.27 require implementation of traffic control measures during construction, including a requirement that PGE implement a Construction Related Traffic Management Plan that limits construction traffic to no more than 400 passenger car equivalents per day. PGE proposes the continued operation of CGS, including changes proposed in this RFA2, in compliance with relevant existing Site Certificate Conditions in Sections 6.0 (as modified), 8.0, 9.0 (as modified), and 10.0 (as modified). Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0110.

Fire Services

Boardman Rural Fire Protection District provides fire protection services in the analysis area. Council previously imposed Condition 8.7, requiring that PGE, during construction and operation of the facility, develop and implement fire safety plans in consultation with the District. In developing the fire safety plans, PGE must consider the dry nature of the region and address risks on a seasonal basis. PGE must also meet annually with local fire protection agency personnel to discuss emergency planning and invite local fire protection agency personnel to observe any emergency drill conducted at the facility. Based on continued compliance with this existing condition, PGE anticipates that the continued operation of CGS and the construction and operation of related and supporting facilities described in this RFA2 would not result in a significant adverse impact on the ability of public or private fire service providers to provide services.

Police Protection

Law enforcement services in the analysis area are provided by Morrow County Sherriff's Office. Based on the relatively small number of new temporary and permanent workers associated with the ongoing operation of CGS and construction of the new Carty Substation and associated distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, and office/warehouse building, PGE does not anticipate significant demands on the providers of police protection in the analysis area. Existing Condition 8.1 requires PGE to provide for on-site security and establish good communication with Morrow County Sheriff's Office. Based on continued compliance with this existing condition, PGE anticipates that the continued operation of CGS and

the construction and operation of related and supporting facilities described in this RFA2 would not result in a significant adverse impact on the ability of public or private police protection service providers to provide services.

Therefore, based on the foregoing analysis and subject to the existing conditions, the continued operation of CGS and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0110.

8.13 OAR 345-022-0120 Waste Minimization

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that, to the extent reasonably practicable:

(a) The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;

(b) The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.

Response: Exhibit V of the 2011 ASC and 2018 RFA1 addressed the potential for the Facility's solid waste and wastewater plans to minimize the generation of solid waste and wastewater during construction and operation and to recycle and reuse such wastes if generated. Following review of the 2011 ASC, the Council adopted Conditions 6.2, 6.3, 6.24, 6.25, 10.22, 10.24, 10.30, 10.32, and 10.36 to address waste and wastewater minimization in the 2011 Site Certificate for CGS. As documented in the Final Order on Amendment 1, the Council again found that, with the inclusion of Conditions 6.3 and 10.22, CGS would continue to comply with OAR 345-022-0120. These conditions were carried forward in the First Amended Site Certificate.

PGE proposes to continue operation of CGS, including changes proposed in this RFA2, in compliance with existing site certificate Conditions 6.2, 6.3, 6.24, 6.25, 10.22, 10.24, 10.30, 10.32, and 10.36. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (*see* Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-022-0120.

8.14 OAR 345-024-0090 Transmission Lines

To issue a site certificate for a facility that includes any transmission line under Council jurisdiction, the Council must find that the applicant:

(1) Can design, construct and operate the proposed transmission line so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public;

(2) Can design, construct and operate the proposed transmission line so that induced currents resulting from the transmission line and related or supporting facilities will be as low as reasonably achievable.

Response: Exhibit AA of the 2011 ASC described the results of an analysis of the potential safety hazards associated with electric fields around existing and proposed transmission lines located within the same corridor as the existing 500 kV BCP to Slatt transmission line. Five different transmission line scenarios were analyzed, including one that analyzed existing conditions at the time (Case 1), which included the existing 500 kV BCP to Slatt transmission line with no other new parallel transmission lines. This scenario is consistent with the current existing condition. The electric field analysis for this scenario calculated the electric field assuming a maximum loading of the 500 kV transmission line and a minimum conductor clearance of 35 feet above the ground. The maximum electric field strength at 1 meter above the ground surface was calculated to be 7.695 kV per meter near BCP and 8.547 kV per meter near the existing Slatt substation where other existing lines are present.¹⁴ These calculated field strengths do not exceed the 9 kV per meter limit established in OAR 345-024-0090(1). Other scenarios that included construction and operation of new additional lines yielded similar results.

A related analysis of induced current described in Exhibit AA of the 2011 ASC determined that the potential risk for shock or injury from induced voltage from existing or proposed new transmission lines along the BCP to Slatt corridor would be significantly reduced because of the lack of existing structures within 200 feet of the corridor at the time the analysis was conducted.

In the 2011 Site Certificate for CGS, the Council included Conditions 7.1 and 7.9, which use standard condition language from OAR 345-027-0023(4) to address public safety for transmission lines, including the risk of shock or injury from induced current. With the implementation of these conditions, the Council found that the proposed Facility complied with the Siting Standard for Transmission Lines in OAR 345-024-0090.

Exhibit AA prepared in support of RFA1 in 2018 included a similar analysis of potential safety hazards associated with electric fields around the proposed 34.5 kV transmission lines proposed for the Carty Solar Farm. That analysis calculated that electric fields for the three transmission line route options being considered at the time would range from 0.01 to 8.83 kV per meter, which was also below the 9 kV per meter standard established in OAR 345-024-0090(1).

Following review of RFA1 and Exhibit AA, the Council found, as documented in the Final Order on Amendment 1 of the Site Certificate, that the 34.5 kV transmission lines proposed for the Carty Solar Farm would not exceed the 9 kV per meter limit at 1 meter above ground level. The Council carried forward to the First Amended Site Certificate, without amendments, the two standard conditions from the 2012 Site Certificate for CGS that address public safety for transmission lines and the risk of shock or injury from induced current.

Electric fields for the 500 kV BCP to Slatt transmission were modeled in Exhibit AA of the ASC as “Case 2” and indicated that electric fields do not exceed the Standard. Because previous information was not available for the 230 kV Boardman to Slatt transmission line or 34.5 kV Boardman to Rail Crossing transmission line, PGE collected field data to support conclusions presented in this RFA2

¹⁴ ASC Exhibit AA, Appendix AA-1, Figures 6 and 7 show the location of the 8.547 kV per meter calculation. The EMF cut is approximately 1,000 feet northeast of the Slatt substation.

(see Attachment 7). The data indicate that the highest electric field measurement was 1.36 kV per meter at a location where the 230-kV and 34.5-kV transmission lines are co-located. Note that the modeling conducted in the ASC for 500 kV BCP to Slatt transmission line predicted an electric field of 7.695 kV per meter near Grassland Switchyard. Measurements taken in the field from the same location were 1.22 kV per meter.

PGE proposes to incorporate existing transmission lines currently authorized under the site certificate for BCP into the site certificate for CGS in compliance with Site Certificate Condition 7.9. PGE would continue to operate CGS in compliance with existing Site Certificate Conditions 7.1 and 7.2, as modified to clarify its relevance to construction of the new substation and transmission lines constructed after June 29, 2012 (see Attachment 1), and Condition 7.9. Therefore, the continued operation of related or supporting facilities currently authorized under the Site Certificate for CGS or BCP and the construction and operation of new minor infrastructure (see Section 5) will not alter the Council's basis for its previous findings that CGS complies with this standard. The Council may conclude that CGS will continue to comply with OAR 345-024-0090.

9 Other Applicable Requirements – OAR 345-027-0360(1)(e)

9.1 Noise Control Regulations

OAR 340-035-0035 Noise Control Regulations for Industry and Commerce

(1) Standards and Regulations:

(b) New Noise Sources: (A) New Sources Located on Previously Used Sites. No person owning or controlling a new industrial or commercial noise source located on a previously used industrial or commercial site shall cause or permit the operation of that noise source if the statistical noise levels generated by that new source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 8, except as otherwise provided in these rules. For noise levels generated by a wind energy facility including wind turbines of any size and any associated equipment or machinery, subparagraph (1)(b)(B)(iii) applies.

Response: Construction of the Carty Substation and associated transmission/distribution lines, septic system, water pipeline, wastewater pipeline, security guard station, or office/warehouse building will not alter the Council's basis for its previous findings that the Facility complies with the standard, and the Facility will continue to comply with the standard if the Council approves RFA2. All new noise impacts will comply with DEQ's applicable noise control standards. Operation of the Carty Substation is not considered a new noise source because the only noise-emitting component, the transformer, is currently in operation at a location immediately adjacent to the proposed construction location and will be reused as part of this action. Noise from construction activities associated with RFA2 will generally be of lesser magnitude and duration than construction of Unit 1 and existing related or supporting facilities. Construction activities will be limited to daytime hours. In the event nighttime construction is required for specific activities, activities will be of limited duration.

9.2 Removal-Fill Law

A removal-fill permit will not be required because no impacts to waters of the state are expected. No project features occur in water features, and no removal-fill in waters of the state will be necessary to construct or operate CGS.

9.3 Water Pollution Control Facilities Permit

PGE is also requesting modifications to WPCF permit number 100189. The modifications to the permit include minor changes in sampling frequency, updated naming conventions, permission to allow CGS to discharge to BCP lined evaporation ponds, permission to allow sewage from CGS to be disposed of in a septic system under a construction permit for Umatilla County Public Health, permission to allow overland stormwater flow discharge to Carty Reservoir from final cover system of the ash disposal landfill, permission to allow additional approved discharges from CGS to Carty Reservoir, and new groundwater monitoring requirements. Attachment 2 is the WPCF permit modification request and it provides detailed information on the requested changes and the reasons for requesting the changes. Property Owners List

OAR 345-027-0360(1)(f) – An updated list of the owners of property located within or adjacent to the site of the facility, as described in OAR 345-021-0010(1)(f)

An updated list of property owners located within the proposed RFA2 Site Boundary or within 500-feet of the proposed RFA2 Site Boundary is provided in Attachment 6. The information is current as of August 6, 2020.

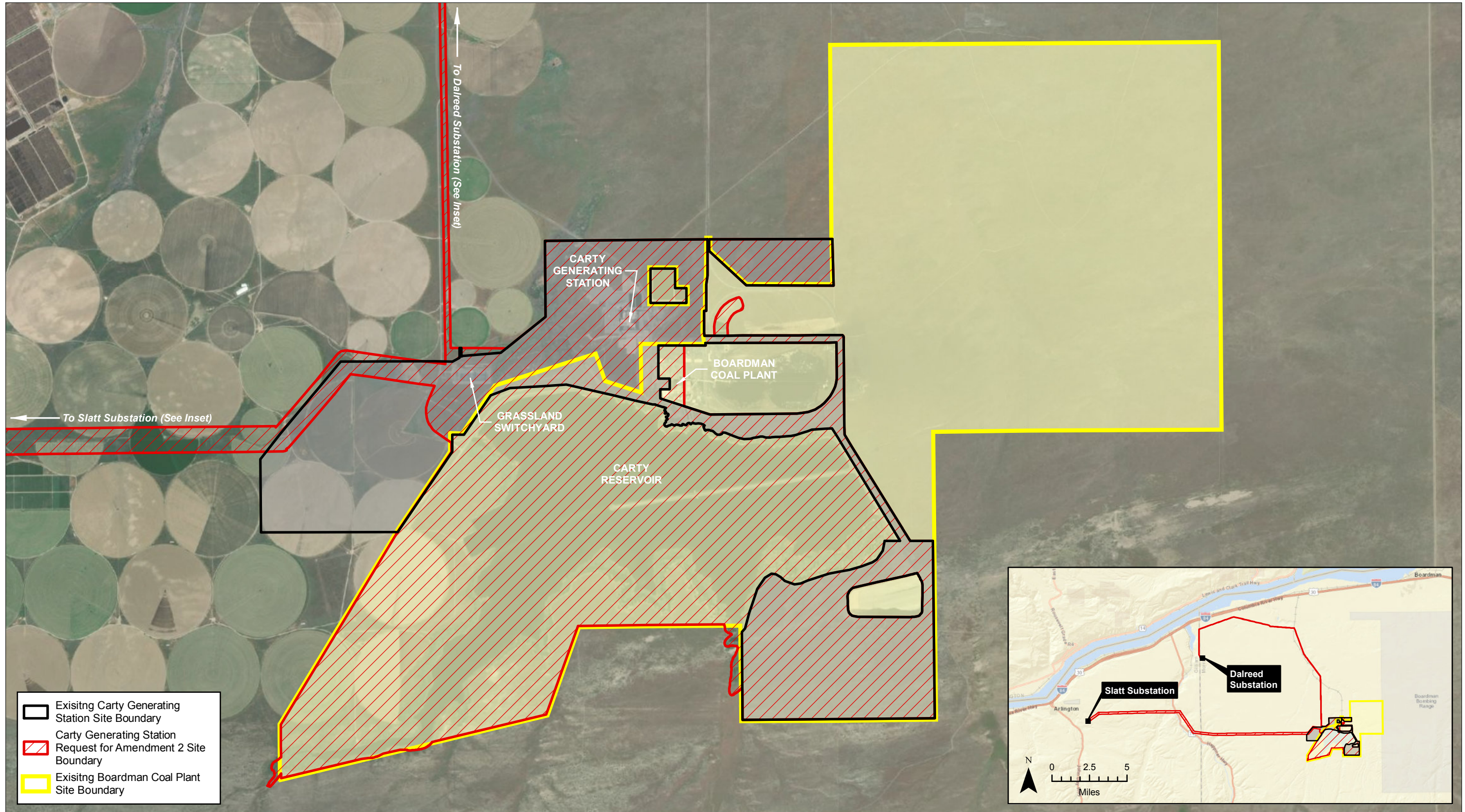
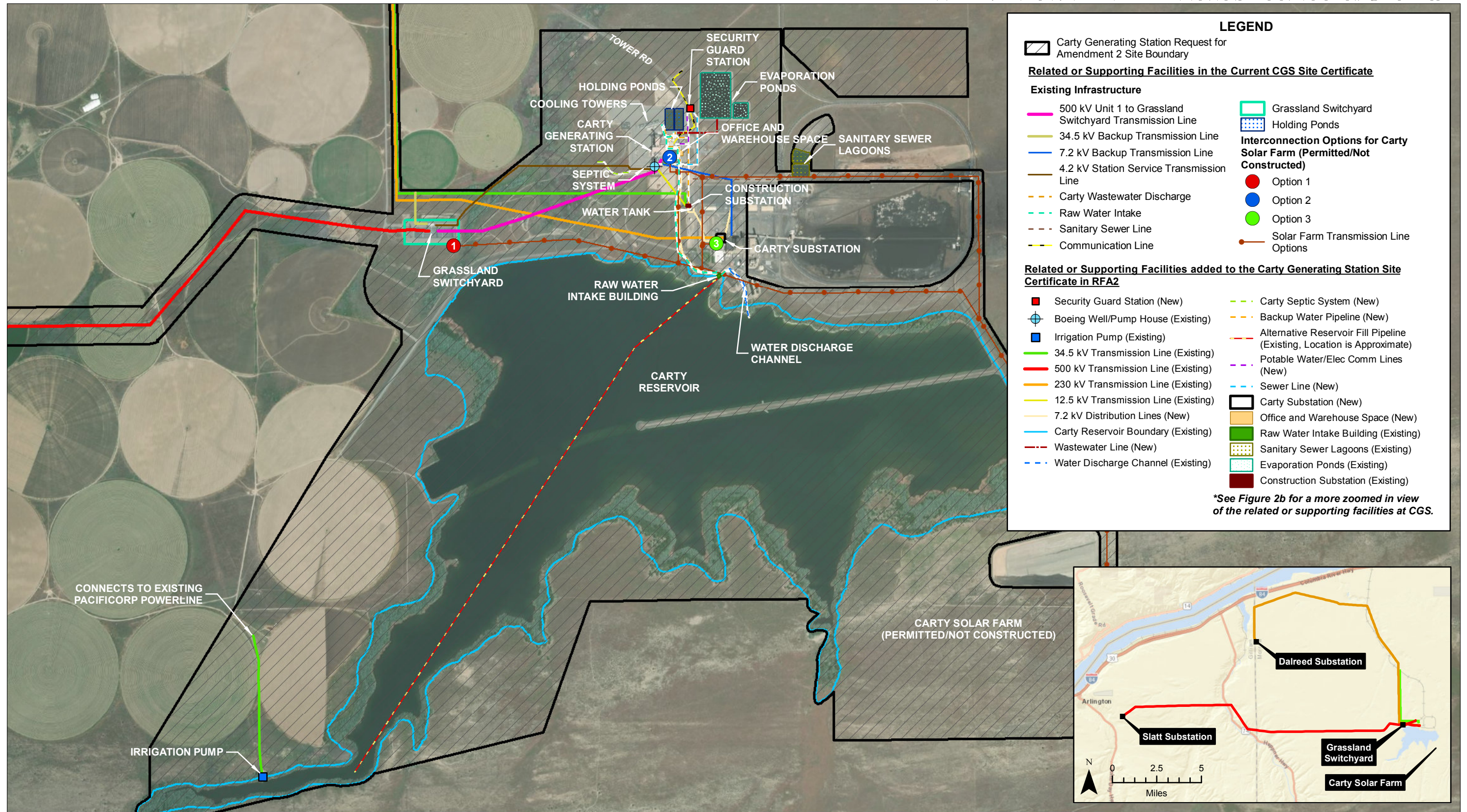


FIGURE 1 - CARTY GENERATING STATION - SITE BOUNDARY - REQUEST FOR AMENDMENT 2



LEGEND

Related or Supporting Facilities in the Current CGS Site Certificate

Existing Infrastructure

- 500 kV Unit 1 to Grassland Switchyard Transmission Line
- 34.5 kV Backup Transmission Line
- 7.2 kV Backup Transmission Line
- 4.2 kV Station Service Transmission Line
- Carty Wastewater Discharge
- Raw Water Intake
- Sanitary Sewer Line
- Communication Line

Interconnection Options for Carty Solar Farm (Permitted/Not Constructed)

- Option 1
- Option 2
- Option 3
- Solar Farm Transmission Line Options

Related or Supporting Facilities added to the Carty Generating Station Site Certificate in RFA2

- Security Guard Station (New)
- Boeing Well/Pump House (Existing)
- Irrigation Pump (Existing)
- 34.5 kV Transmission Line (Existing)
- 500 kV Transmission Line (Existing)
- 230 kV Transmission Line (Existing)
- 12.5 kV Transmission Line (Existing)
- 7.2 kV Distribution Lines (New)
- Carty Reservoir Boundary (Existing)
- Wastewater Line (New)
- Water Discharge Channel (Existing)
- Carty Septic System (New)
- Backup Water Pipeline (New)
- Alternative Reservoir Fill Pipeline (Existing, Location is Approximate)
- Potable Water/Elec Comm Lines (New)
- Sewer Line (New)
- Carty Substation (New)
- Office and Warehouse Space (New)
- Raw Water Intake Building (Existing)
- Sanitary Sewer Lagoons (Existing)
- Evaporation Ponds (Existing)
- Construction Substation (Existing)

**See Figure 2b for a more zoomed in view of the related or supporting facilities at CGS.*

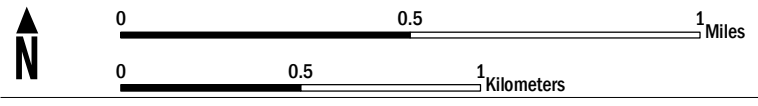
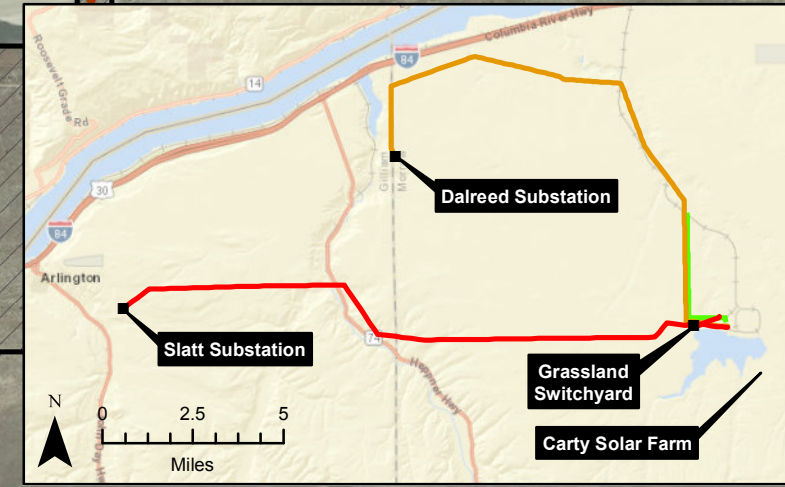


FIGURE 2A - CARTY GENERATING STATION - RELATED OR SUPPORTING FACILITIES - REQUEST FOR AMENDMENT 2

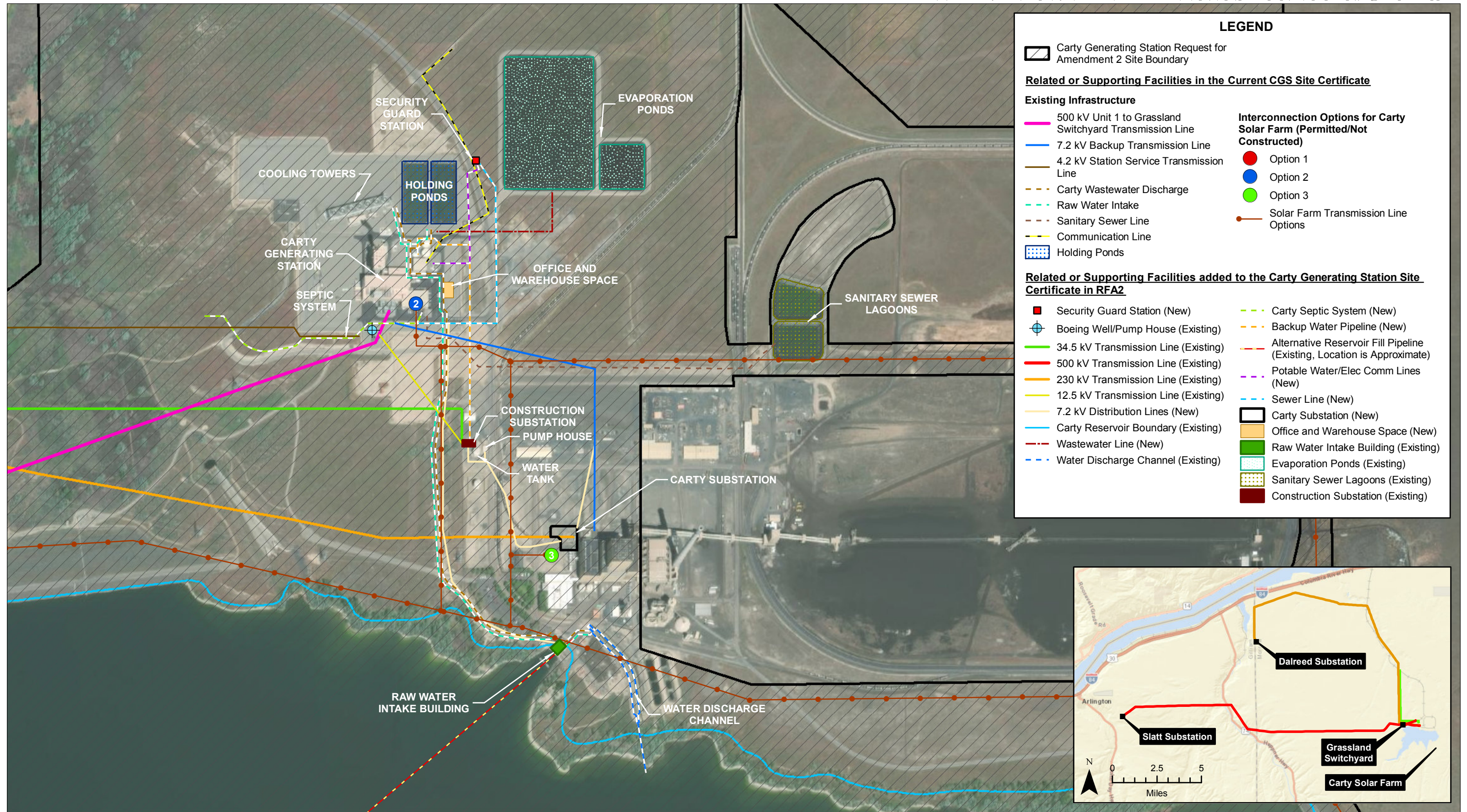


FIGURE 2B - CARTY GENERATING STATION - RELATED OR SUPPORTING FACILITIES - REQUEST FOR AMENDMENT 2

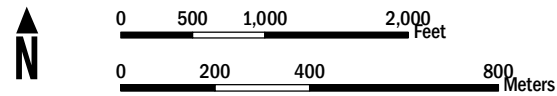
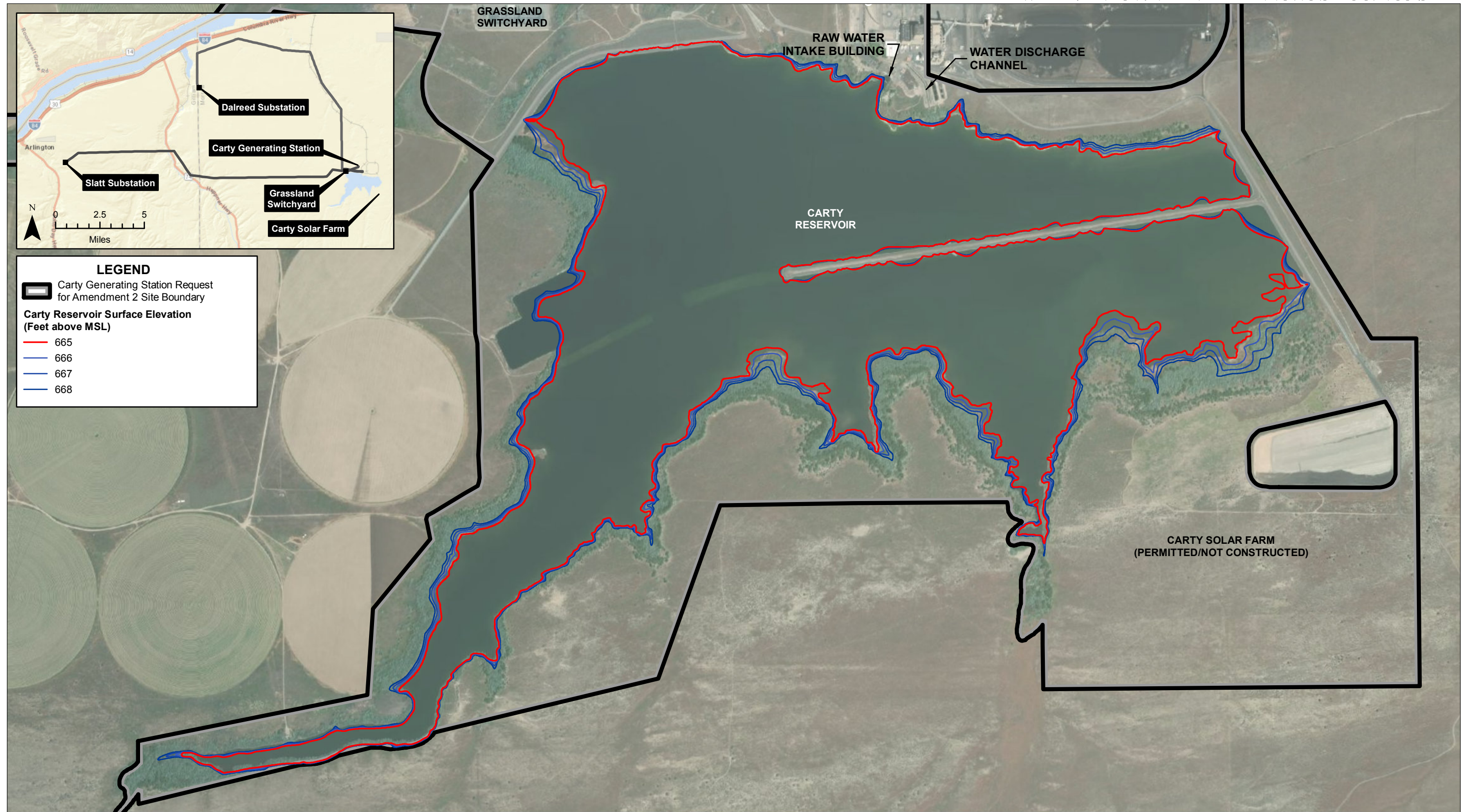
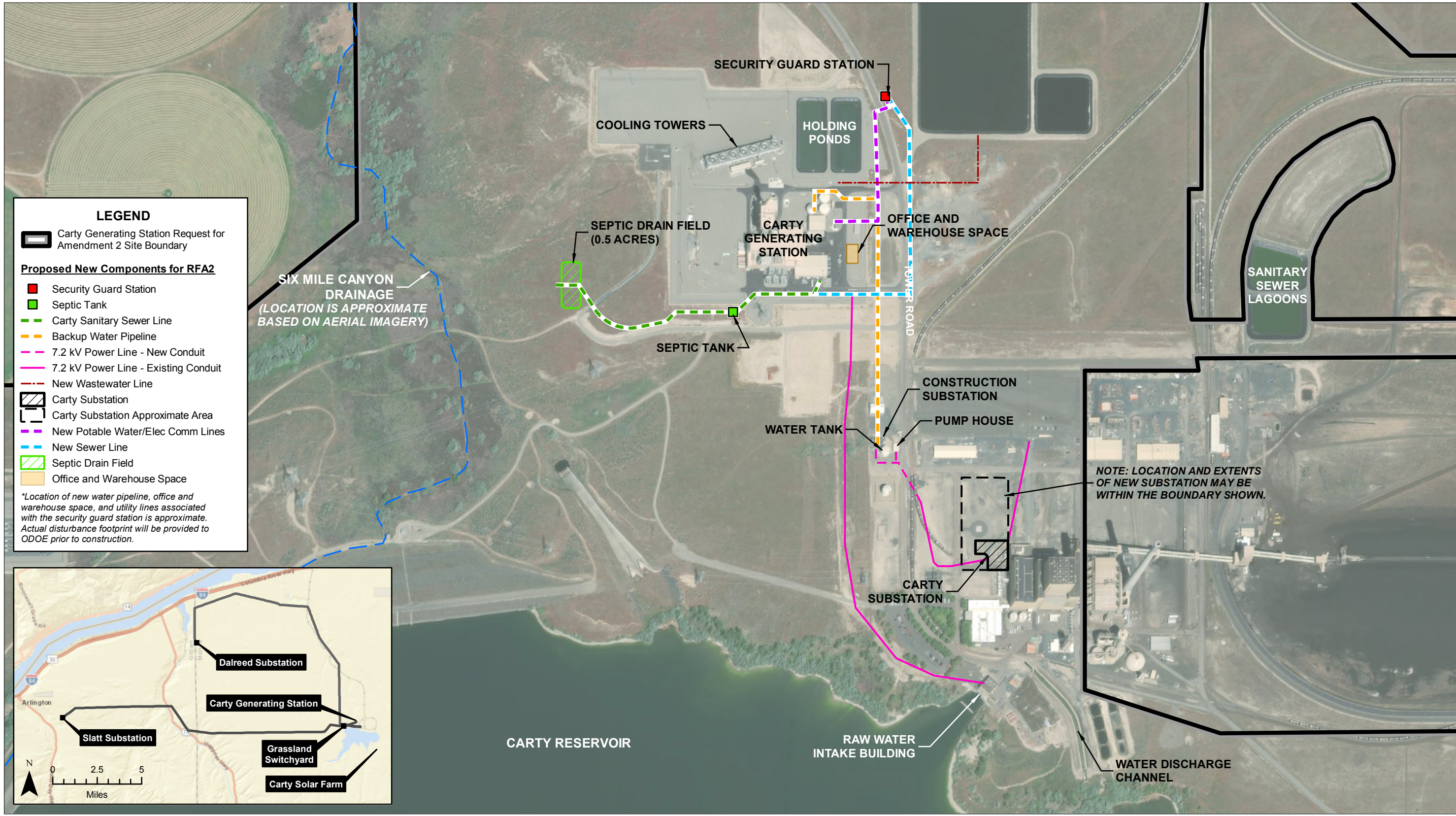


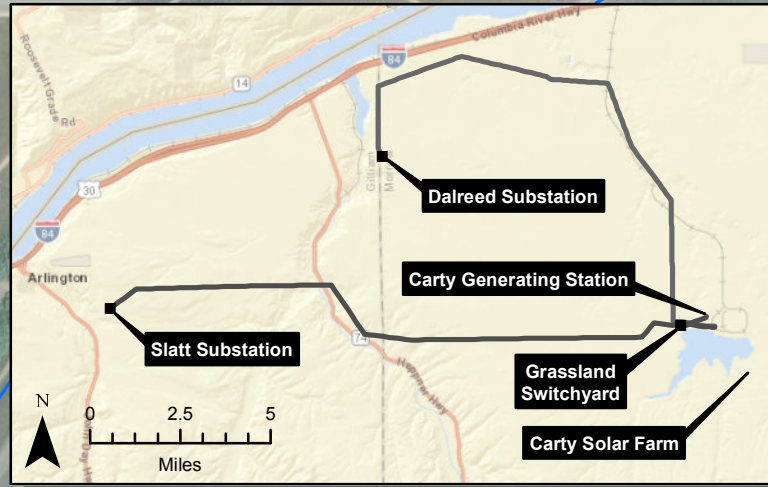
FIGURE 3 - CARTY GENERATING STATION - CARTY RESERVOIR SURFACE ELEVATION - REQUEST FOR AMENDMENT 2



LEGEND

- Carty Generating Station Request for Amendment 2 Site Boundary
- Proposed New Components for RFA2**
- Security Guard Station
- Septic Tank
- Carty Sanitary Sewer Line
- Backup Water Pipeline
- 7.2 kV Power Line - New Conduit
- 7.2 kV Power Line - Existing Conduit
- New Wastewater Line
- Carty Substation
- Carty Substation Approximate Area
- New Potable Water/Elec Comm Lines
- New Sewer Line
- Septic Drain Field
- Office and Warehouse Space

**Location of new water pipeline, office and warehouse space, and utility lines associated with the security guard station is approximate. Actual disturbance footprint will be provided to ODOE prior to construction.*



NOTE: LOCATION AND EXTENTS OF NEW SUBSTATION MAY BE WITHIN THE BOUNDARY SHOWN.

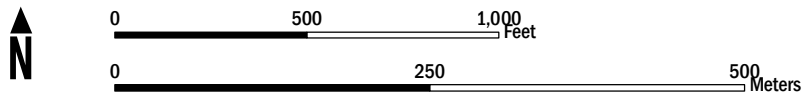


FIGURE 4 - CARTY GENERATING STATION - PROPOSED NEW RELATED OR SUPPORTING FACILITIES - REQUEST FOR AMENDMENT 2



Photograph 1 is taken from the bottom of the slope near Sixmile Canyon Drainage, looking upslope (east) toward the proposed septic drain field. The white truck in the photograph is in the approximate location of the proposed septic drain field.



Photograph 2 is taken from the approximate location of the proposed septic drain field looking west. The green vegetated area in the photograph is Sixmile Canyon Drainage.

**FIGURE 5: CARTY GENERATING STATION: AREA BETWEEN
THE PROPOSED DISTURBANCE AND SIXMILE CANYON DRAINAGE**
PORTLAND GENERAL ELECTRIC COMPANY

Attachment 1

Proposed Revisions to the Carty Generating Station
Site Certificate

**Second Amended Site Certificate
for the
Carty Generating Station**

Submitted to:
Oregon Department of Energy

October 01, 2020

Prepared by:
**Portland General Electric Company
121 SW Salmon St.
3WTC-0403
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**CARTY GENERATING STATION SITE CERTIFICATE
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ACRONYMS AND ABBREVIATIONS

<u>AC</u>	<u>alternating current</u>
ACEC	Area of Critical Environmental Concern
ADA	Americans with Disabilities Act
<u>AMD1</u>	<u>Final Order on Amendment No. 1</u>
<u>AMD2</u>	<u>Final Order on Amendment No. 2</u>
Btu	British Thermal Unit
Carty	Carty Generating Station
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
<u>CFR</u>	<u>Code of Federal Regulations</u>
Council	Oregon Energy Facility Siting Council
CTG	Combustion Turbine Generator <u>combustion turbine generator</u>
<u>CTUIR</u>	<u>Confederated Tribes of the Umatilla Indian Reservation</u>
Department	Oregon Department of Energy
<u>DC</u>	<u>direct current</u>
DEQ	Oregon Department of Environmental Quality
DOGAMI	Oregon Department of Geology and Mineral Industries
DPO	Draft Proposed Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESCP	Erosion and Sediment Control Plan
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
GTN	Gas Transmission Northwest LLC
HMA	Habitat Mitigation Area
HRSG	Heat Recovery Steam Generator <u>heat recovery steam generator</u>
kV	Kilovolt <u>kilovolt</u>
MCZO	Morrow County Zoning Ordinance
<u>MOU</u>	<u>Memorandum of Understanding</u>

<u>MSL</u>	<u>mean sea level</u>
<u>MW</u>	<u>megawatt</u>
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ORS	Oregon Revised Statutes
OSSC	Oregon Structural Specialty Code
PGE	Portland General Electric Company
<u>PV</u>	<u>photovoltaic</u>
SHPO	Oregon State Historic Preservation Office
<u>SPCC</u>	<u>Spill Prevention, Control and Countermeasure</u>
STG	Steam Turbine Generator <u>steam turbine generator</u>
USFWS	United States Fish and Wildlife Service
WGS	Washington Ground Squirrel <u>ground squirrel</u>
WPCF	Water Pollution Control Facilities

1 INTRODUCTION

The Oregon Energy Facility Siting Council (Council) issues this site certificate for the Carty Generating Station (~~Carty~~) in the manner authorized under the Oregon Revised Statutes (ORS) Chapter 469. This site certificate is a binding agreement between the State of Oregon (State), acting through the Council, and Portland General Electric Company (certificate holder) authorizing the certificate holder to construct and operate the facility in Morrow ~~and Gilliam County~~ Counties, Oregon.

The findings of fact, reasoning, and conclusions of law underlying the terms and conditions of this site certificate are set forth in the following documents, which by this reference are incorporated herein: (a) the Council's *Final Order in the Matter of the Application for a Site Certificate for the Carty Generating Station* (Final Order on the Application) issued on June 29, 2012, ~~and~~ (b) the Council's *Final Order in the Matter of the Site Certificate for the Carty Generating Station Request for Amendment No.1* (Final Order on Amendment No. 1 [AMD1]), ~~and~~ (c) the Council's Final Order in the Matter of the Site Certificate for the Carty Generating Station Request for Amendment No.2 (Final Order on Amendment No. 2 [AMD2]). In interpreting this site certificate, any ambiguity will be clarified by reference to the following, in order of priority: (1) this Site Certificate, (2) the Final Order on Amendment No. ~~12~~, (3) the record of the proceedings that led to the Final Order on Amendment No. ~~12~~, (4) the Final Order on Amendment No. 1, (5) the record of the proceedings that led to the Final Order on Amendment No. 1, (4)~~(6)~~ the Final Order on the Application, and (5)~~(7)~~ the record of the proceedings that led to the Final Order on the Application.

This Site Certificate does not address, and is not binding with respect to, matters that were not addressed in the Council's Final Order on the Application, ~~or~~ Final Order on Amendment No. 1, or Final Order on Amendment No. 12. Such matters include, but are not limited to: building code compliance; wage; hour; and other labor regulations; local government fees and charges; other design or operational issues that do not relate to siting the facility [ORS 469.401(4)]; and permits issued under statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council. ORS 469.503(3).

The obligation of the certificate holder to report information to the Department or the Council under the conditions listed in this site certificate is subject to the provisions of ORS 192.502 *et seq.* and ORS 469.560. To the extent permitted by law, the Department and the Council will not publicly disclose information that may be exempt from public disclosure if the certificate holder has clearly labeled such information and stated the basis for the exemption at the time of submitting the information to the Department or the Council. If the Council or the Department receives a request for the disclosure of the information, the Council or the Department, as appropriate, will make a reasonable attempt to notify the certificate holder and will refer the matter to the Attorney General for a determination of whether the exemption is applicable, pursuant to ORS 192.450.

The Council recognizes that many specific tasks related to the design, construction, operation and retirement of the facility will be undertaken by the certificate holder's agents or contractors. Nevertheless, the certificate holder is responsible for ensuring compliance with all provisions of the site certificate. The definitions in ORS 469.300 and Oregon Administrative Rule (OAR) 345-001-0010 apply to terms used in this site certificate, except where otherwise stated, or where the context clearly indicates otherwise.

2 SITE CERTIFICATION

- 2.1 To the extent authorized by state law and subject to the conditions set forth herein, the State authorizes the certificate holder to construct, operate, and retire a facility that includes a natural gas-fueled electrical generating unit and a photovoltaic (PV) solar electrical generating unit, together with certain related or supporting facilities, at the site in Morrow County and Gilliam County, Oregon, as described in Section 3.0 of this site certificate.
[ORS 469.401(1)] [AMD1] [AMD2]
- 2.2 This site certificate is effective until 1) it is terminated under OAR 345-027-0110 or the rules in effect on the date that termination is sought; or 2) until the site certificate is revoked under ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered.
[ORS 469.401(1)]
- 2.3 Both the State and the certificate holder shall abide by local ordinances, state law, and the rules of the Council in effect on the date this site certificate is executed. ORS 469.401(2). In addition, upon a clear showing of a significant threat to public health, safety, or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules.
[ORS 469.401(2)]
- 2.4 For a permit, license, or other approval addressed in and governed by this site certificate, the certificate holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules.
[ORS 469.401(2)]

- 2.5 Subject to the conditions herein, this site certificate binds the State and all counties, cities, and political subdivisions in Oregon as to the approval of the site and the construction, operation, and retirement of the facility as to matters that are addressed in and governed by this site certificate.
[ORS 469.401(3)]
- 2.6 Each affected state agency, county, city, and political subdivision in Oregon with authority to issue a permit, license, or other approval addressed in or governed by this site certificate shall, upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license, or other approval subject only to conditions set forth in this site certificate.
[ORS 469.401(3)]
- 2.7 After issuance of this site certificate, each state agency or local government agency that issues a permit, license, or other approval for the facility shall continue to exercise enforcement authority over such permit, license, or other approval.
[ORS 469.401(3)]
- 2.8 After issuance of this site certificate, the Council shall have continuing authority over the site and may inspect, or direct the Oregon Department of Energy (Department) to inspect, or request another state agency or local government to inspect, the site at any time in order to ensure that the facility is being operated consistently with the terms and conditions of this site certificate.
[ORS 469.430]
- 2.9 The certificate holder shall design, construct, operate and retire the facility:
- a. Substantially as described in the site certificate;
 - b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the site certificate is issued; and
 - c. In compliance with all applicable permit requirements of other state agencies.
- [Final Order III.D.2] [Mandatory Condition OAR 345-027-0020(3)]
- 2.10 Before any transfer of ownership of any unit of the facility or ownership of the site certificate holder, the certificate holder shall inform the Department of the proposed new owners. The requirements of ~~OAR 345-027-0100~~ OAR 345-027-0350(1) apply to any transfer of ownership that requires a transfer of the site certificate (per OAR 345-027-0400).
[Final Order IV.B.2.8] [Mandatory Condition OAR 345-027-0020(15)] [AMD1] [AMD2]

- 2.11 Any matter of non-compliance under the site certificate shall be the responsibility of the certificate holder. Any notice of violation issued under the site certificate shall be issued to the certificate holder. Any civil penalties assessed under the site certificate shall be levied on the certificate holder.
[Final Order IV.B.2.5]
- 2.12 Within 72 hours after discovery of conditions or circumstances that may violate the terms or conditions of the site certificate, the certificate holder shall report the conditions or circumstances to the Department.
[Final Order IV.B.2.7]
- 2.13 The Council shall not change the conditions of this site certificate except as provided for in OAR Chapter 345, Division 27.
[Final Order VI.1] [Mandatory Condition OAR 345-027-0020(1)]
- 2.14 The certificate holder must:
- a. Prior to construction of the Carty Solar Farm, provide evidence to the Department that a limited water use license from Oregon Department of Water Quality has been obtained by its third-party-contractor.
 - b. During construction of the Carty Solar Farm, provide to the Department in semi-annual reports, pursuant to OAR 345-026-0080, documentation of the record of all water use, as required by the third-party's limited water use license, demonstrating that the allowable total and per minute water use (total gallons and gallons per minute) have not been exceeded.
[AMD1]

3 DESCRIPTION OF FACILITY

Location and Site Boundary

The Carty Generating Station is located in Morrow ~~and Gilliam County~~Counties, Oregon, southwest of the City of Boardman and adjacent to the Carty Reservoir. ~~This location is also adjacent to the existing Boardman Coal Plant.~~

As defined by OAR 345-001-0010, the "site boundary" is the perimeter of the site of the energy facility, its related or supporting facilities, all temporary staging areas, and all corridors. The site boundary for the Carty Generating Station encompasses approximately ~~1,581~~4,997 acres.

The Energy Facility

Unit 1 of ~~CGS~~ Carty Generating Station is a natural gas-fueled, combined-cycle, electric power generating plant capable of generating up to 450 megawatt (MW) of electrical power. The

combined-cycle generating unit consists of one high efficiency combustion turbine generator (CTG), heat recovery steam generator (HRSG), and a steam turbine generator (STG). Within this unit, the natural gas CTG produces electricity, with the exhaust gases from the CTG supplying heat to the HRSG. Steam produced in the HRSG is used to power the STG to produce additional electricity. Duct burners fueled by natural gas in the HRSG allow for production of additional steam and additional electricity from the STG. Steam exhausted from the STG is condensed in a water-cooled condenser, with the resultant condensate returned to the HRSG to produce additional steam. Water used for cooling in the water-cooled condenser is routed to a cooling tower, where the water is cooled and then pumped back through the condenser. If required for starting the CTG or to maintain the plant in a ready-to-start condition, a natural gas-fueled auxiliary boiler will be used to supply steam when none is available from the HRSG. The CTG and STG are located within a generating building to control noise during operation and to allow a controlled atmosphere for maintenance activities. A separate water treatment building houses the equipment necessary to purify raw water, producing de-mineralized water for use in the steam cycle of the unit.

Generator transformers step up the voltage produced by the gas-fueled unit to 500 kilovolts (kV). A 500-kV transmission line connects the generator transformers to a 500-kV switchyard, the Grassland Switchyard. From the switchyard, the certificate holder utilizes the ~~existing~~ 500-kV Boardman to Slatt transmission line to connect to the Slatt Substation.

The Carty Generating Station will consume about 75 million cubic feet of natural gas per day during operation of the gas-fired generating unit. Natural gas is supplied to the facility through a lateral pipeline operated by Gas Transmission Northwest LLC (GTN). This lateral pipeline is owned and operated by GTN and is outside the jurisdiction of the Council. This natural gas pipeline was permitted by the Federal Energy Regulatory Commission (FERC). A control and administrative building provide space for plant controls and offices for plant personnel for all units.

In addition to Unit 1, Carty Generating Station also consists of a, 50 MW solar PV electrical power generating unit, the Carty Solar Farm, and associated transmission. As permitted through the First Amended Site Certificate, the Carty Solar Farm would occupy a 315-acre site located south of the Carty Reservoir. The facility would consist of multiple solar modules mounted on racking systems, connected in series strings, to produce direct current (DC) electricity from sunlight. The DC electricity is then routed to inverters and step-up transformers to be converted to alternating current (AC) electricity and voltage increased to the appropriate collector circuit potential. Electrical power produced by the Carty Solar Farm would be collected and routed via a new 34.5 kV transmission line to one of three interconnection options located north of the Carty Reservoir. Five potential transmission line routes from the Carty Solar Farm to the three interconnection options are currently permitted under the First Amended Site Certificate for Carty Generating Station. Each route would be of the same approximate design and would be approximately 2 to 3 miles long, depending on the route selected. If an interconnection to the Grassland Switchyard is selected, the

switchyard would be enlarged to 15 acres, as approved in the original Site Certificate and the First Amended Site Certificate for Carty Generating Station.

The Carty Generating Station includes the following related or supporting facilities:

- Carty Reservoir and portions of the raw water intake system and associated electrical connection
- Grassland Switchyard
- 500 kV Unit 1 to Grassland Switchyard transmission line
- 500 kV Grassland to Slatt substation transmission line
- 230 kV Boardman to Dalreed substation transmission line
- 34.5 kV Grassland backup station service line
- 34.5 kV construction substation to railroad crossing transmission line
- 34.5 kV solar farm transmission line
- 7.2 kV Carty Generating Station backup transmission line
- 4.2 kV Grassland station service line
- Interconnecting water pipelines
- Well (Boeing Well)/pump house and associated 12.5 kV power line
- Cooling tower
- Liquid storage facilities
- Sanitary sewer (sewage lagoons and septic system)
- Accessory buildings
- Utility and Communication lines
- Access roads
- Additional temporary construction areas
- Water Discharge Channel
- Construction Substation
- 300,000-gallon water storage tank, adjacent pumphouse, and associated water pipeline
- Evaporation Ponds
- Irrigation Pump Station and 34.5 kV transmission line
- Septic system
- Water pipeline connecting BCP's 300,000-gallon water tank
- Security guard station
- Office and warehouse building
- Carty Substation and associated distribution lines

Two control and administrative buildings provides space for plant controls and offices for plant personnel for Unit 1 and the Carty Solar Farm.

A description of major components, structures, and systems of each related or supporting facility that is part of Carty Generating Station per the Site Certificate for Carty Generating Station is provided in the following subsections.

Carty Reservoir

Carty Reservoir is a wastewater and cooling pond that provides service water to the Carty Generating Station and receives cooling tower blow down and wastewater from the wastewater collection sump. The reservoir also stores water used to irrigate nearby agricultural fields. Because the area is arid, all the water for filling and maintaining the reservoir is pumped through pipes from the Columbia River, approximately 10 miles to the north. When full, at a surface elevation of 677 feet above mean sea level (MSL), the reservoir has a capacity of 38,000-acre feet, a surface area of approximately 1,450 acres (2.3 square miles), and a maximum depth of 77 feet. The average pool elevation for the reservoir since 1990 has been approximately 667 to 668 feet above MSL. At this elevation, the reservoir surface area is approximately 1,100 acres and contains approximately 26,000-acre feet of water. The reservoir is not used for recreation, and there is no public access to it.

Water leaves Carty Reservoir through withdrawals for use at the Carty Generating Station, through evaporation from the surface of the reservoir, withdrawals for irrigation, and through underground seepage from the reservoir. A buried toe drain at the West Dam captures seepage to pump back into the reservoir, and there is a concrete emergency spillway adjacent to the West Dam. There is an irrigation pump station located on the southwest arm shore of Carty Reservoir within an approximately 0.2 acre fenced area; the irrigation pump station is used to pump water out of Carty Reservoir for irrigation of nearby agricultural fields. There is a 2,600 foot-long underground 34.5 kV transmission line that powers the pump station from a PacifiCorp transmission line.

Grassland Switchyard

The Grassland Switchyard is a 500 kV, alternating current, open-air switchyard located west of CGS Carty Generating Station. The switchyard consists of an 8.5-acre leveled and graveled area surrounded by a security fence. The switchyard was approved with a 15-acre permanent disturbance footprint in the original Site Certificate and may be expanded to that size depending on the interconnection needs of the Carty Solar Farm. The switchyard includes 500 kV circuit breakers and disconnect switches to allow for clearing faults on the connected transmission lines and for maintenance of the circuit breakers and transmission lines. An additional small building provides a controlled environment for protective relaying and communication equipment.

Carty Substation

Carty Substation is a 7.2 kV open box structure substation, with control house for relay, SCADA, communications, and DC system, dead-end structure for the existing 230 kV Boardman to Dalreed transmission line, and surrounding fence that would be located southeast of the construction substation. It will provide backup power to Carty Generating Station via an above ground distribution line that connects to the 7.2 kV Carty Generating Station backup transmission line, and power to the construction substation via an underground distribution line.

Construction Substation

The Construction Substation is located within a 40-foot by 80-foot fenced area that contains three wooden H-frame structures, transformers and associated electrical equipment, including a 6-foot by 8-foot control house. It was built originally to provide construction power during construction of BCP and continues to be used as part of the onsite electrical distribution system. This facility is located approximately 0.3 miles south of CGS. The construction substation is powered by an underground distribution line from Carty substation.

Offsite Transmission Lines

500 kV Grassland Switchyard to Slatt Transmission Line

To access the grid, ~~PGE~~ the certificate holder utilizes the ~~existing~~ 500-kV Boardman to Slatt transmission line, a 500-kV single circuit transmission line, to connect the Grassland Switchyard to the ~~existing~~ Slatt Substation. The transmission line is approximately 17 miles long from Grassland Switchyard to Slatt Substation.

230 kV BCP to Dalreed Transmission Line

The 230kV BCP to Dalreed transmission line connects the Dalreed substation to the power block at BCP or the Carty substation once built. It is used to provide power to Carty Generating Station via the 7.2 kV Carty Generating Station back up transmission line and provide power to the construction substation.

34.5 kV BCP to Railroad Crossing at Tower Road Transmission Line

The 34.5 kV BCP to Railroad Crossing at Tower Road Transmission Line provides power to the railroad crossing signal at Tower Road and power to the seepage pumps for Carty Reservoir. The power for this line is provided via the construction substation.

On-Site Power Transmission Lines

500 kV Unit 1 to Grassland Switchyard Transmission Line

Generator transformers at Carty Generating Station step up the voltage produced by Unit 1 to 500 kV. An ~~existing~~, approximately 1-mile-long 500 kV transmission line mounted on four steel lattice towers connects the generator transformers to the 500 kV Grassland Switchyard. These towers are between 100 and 150 feet tall and are spaced approximately between 800 feet and 1,700 feet apart.

4.2 kV Grassland Station Service Line

A 4.2 kV station service line extends approximately 1 mile from Carty Generating Station to the Grassland Switchyard. For most of its length, this line is mounted on wood poles. However, the line runs underground for approximately 750 feet prior to entering the Grassland Switchyard to avoid clearance conflicts with the 230 kV BCP to Dalreed transmission line. This line provides power to the Grassland Switchyard from Carty Generating Station.

7.2 kV Carty Generating Station Backup Power Line

A 7.2 kV above ground backup power line extends approximately 0.5 mile from BCP or the Carty substation once constructed to Carty Generating Station. This line runs underground approximately 0.10 mile north of BCP; the remainder of the line is mounted on wood poles. Once the Carty substation is constructed the line will be entirely above ground.

34.5 kV Grassland Backup Station Service Line

A 34.5 kV line (referred to as the Grassland backup station service line) provides backup power to Grassland Switchyard via an approximately 800-foot underground line extending west and then north from the transformer within Grassland Switchyard, connecting to the existing 34.5 kV BCP to Railroad Crossing at Tower Road Transmission Line described above.

34.5 Carty Solar Farm Transmission Line

A 34.5-kV transmission line from the Carty Solar Farm will route around the eastern end of Carty Reservoir and then follow one of five potential routes to the point of interconnection at the Grassland Switchyard, Unit 1, ~~or the Boardman Plant~~ to a new 500 kV substation located at the Boardman Plant.

Interconnecting Pipelines

~~Water pipelines connect the Carty Generating Station with the Boardman Coal Plant to access the raw Carty Reservoir water intake structure, wastewater discharge structure for discharge to Carty Reservoir, potable water system, and sanitary sewer. The pipes are installed either below grade, or above grade with trenches under road and railroad crossings.~~

~~Water from the Carty Reservoir passes into the existing intake structure and enters one of two separate water systems serving the Boardman Plant; a circulation water system and a service water system. This circulating water system is a 180,000-gpm withdrawal, supplied from a 96-inch pipe. The Boardman Plant service water system is a 14,000-gpm withdrawal supplied from a 48-inch pipe. The service water connection for the Carty Generating Station is connected to the intake structure at this 48-inch pipe. No changes were made to the in-water portion of the intake structure. From the intake structure, water passes through a 14 to 16-inch pipe approximately 5,000 feet to the Carty facility.~~

There are four categories of water sources and discharges that serve Carty Generating Station: raw water/fire water, wastewater, potable water, and sanitary sewer.

Raw Water/Fire Water

Raw water from the Carty Reservoir is used for service water and fire water. It is withdrawn via a single intake structure located inside the Raw Water Intake Building, from which it is taken in through a channel outfitted with a traveling screen and enters a wet well. Power is provided to the

intake building via an underground distribution line from Carty Generating Station to the intake building

Wastewater

Carty Generating Station process waste and plant drainage waste flows are discharged into holding ponds, which can provide 7 days of holding capacity (if needed for discharge line maintenance or some other event preventing direct discharge). From the holding ponds, wastewater is discharged via an 8-inch-diameter pipeline into Water Discharge Channel prior to entering Carty Reservoir or to evaporation ponds located northeast of Carty Generating Station (formerly Boardman Plant evaporation ponds).

Potable Water

Potable water for drinking fountains, showers (emergency and lavatory), sinks, and flushing of lavatory fixtures comes from the Boeing Well. The Boeing Well is a groundwater extraction well located just south of Carty Generating Station. The well is 600 feet deep with a 30-horsepower pump hung at around 440 feet below ground surface. The well fills a holding tank within Carty Generating Station prior to direct distribution to the plant services building. The Boeing Well pump drive motor is powered via a 12.5 kV underground distribution line to the construction substation.

Carty Generating Station also includes backup potable/firewater storage in a 300,000-gallon, welded-steel water storage tank with adjacent pump house. This facility is connected to Boeing well via a 4-inch-diameter intake pipeline and to Carty Generating Station via a water pipeline.

Sanitary Sewer

Sanitary sewer flows at Carty Generating Station are solely from plant lavatories, sinks, and bathroom showers used by plant personnel. These flows are directly discharged to the sewage lagoons via a sewer lift station, or an onsite septic system. There are three -sewage lagoons: the South Lagoon and Middle Lagoon (both lined), and the North Lagoon (unlined). The South and Middle Lagoons can also be made common by a gated pipe through the separating dike. The only connection between the lined lagoons and the unlined lagoon is overflow through a chlorinating weir at the northeast corner of the Middle Lagoon. The clay liners in the South and Middle Lagoons were replaced with new synthetic liners in the fall of 2014. The sewage lagoons are permitted under Water Pollution Control Facilities (WPCF) permit number 100189.

The septic system is sized per state and county standards and the Umatilla County Public Health Department requirements and is in an area deemed acceptable for a standard, non-residential septic system. Because the design flow of the system is less than 2,501 gallons per day, the facility is not governed by a permit from Oregon Department of Environmental Quality (DEQ).

Cooling Tower

The cooling tower at Carty Generating Station CGS exhausts excess heat from the power generation process. The cooling tower consists of a structure to contain a water-cooling medium, with exhaust fans located within an open-top, bell-shaped housing that pulls air under and through the water-cooling medium. The cooling tower is approximately 50 feet tall. The mechanical-draft wet cooling tower serves the combined cycle unit of CGS-Carty Generating Station.

Liquid Storage Facilities

Liquid fuel is not stored ~~on the Carty facility site at Carty Generating Station~~. Anhydrous ammonia, used for emissions control, is stored in steel storage tanks with secondary containment. Other liquid chemicals such as sulfuric acid (used for pH control) and sodium hypochlorite and sodium bromide (used as biocides in cooling tower water) are stored in tanks or totes with secondary containment. Small-quantity liquid chemicals such as cleaners and lubricants are stored within on-site accessory buildings.

Accessory Buildings

Accessory buildings ~~on~~ at the Carty Generation Station site house boiler feed pumps, chemical feed equipment, water treatment equipment, and other equipment requiring protection from weather or noise containment. Accessory buildings common to the gas-fired generating unit and solar unit include warehouse and office space, ~~and~~ administration areas, and security guard station.

Utility Communication Lines

~~An electrical raceway connects the Carty Generating Station to the Boardman Plant. The raceway contains communication cables to connect the Carty phone and data highway systems into the Boardman Plant communication and data highway systems. In addition, the raceway contains electric power cables that allow for transmission of auxiliary power from the existing Boardman Plant to the Carty Generating Station in emergency operating conditions. The raceway is installed in areas already disturbed by the Boardman Plant or areas within the Carty site. The Carty Generating Station also includes electric power cables that provide power from Carty Generating Station to Grassland Switchyard, and electric power cables that allow for auxiliary power from an existing 34.5 kV transmission line to Grassland Switchyard.~~

Communication lines supporting Carty Generating Station originate from a Century Link vault near the northwest corner of the BCP lined evaporation ponds, run down the dirt access road, along Tower Road, and then into Carty Generating Station.

Access Roads

A paved loop road, approximately 24 feet wide and 2,100 feet long, connects with Tower Road at both ends of the loop to serve normal truck and operator vehicle traffic for Unit 1. This loop road has spur roads leading to individual buildings and areas that require access. An existing paved and graveled road provides access to the permitted location of Carty Solar Farm. The Carty Solar Farm would contain unpaved on-site access roads.

Additional Temporary Construction Areas

Additional areas in the vicinity of the proposed Carty Generating Station are provided for construction offices, construction parking, construction staging, and temporary storage of soil displaced during the construction process. Similar temporary construction areas are provided in the vicinity of the Grassland Switchyard.

4 GENERAL ADMINISTRATIVE CONDITIONS

4.1 The certificate holder shall:

- i. Begin construction of Unit 1 within three years after the effective date of the site certificate. Under OAR 345-015-0085(9), a site certificate is effective upon execution by the Council Chair and the applicant. The Council may grant an extension of the deadline to begin construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted.
[Final Order III.D.3; Mandatory Condition OAR 345-027-0020(4)]
- ii. Begin construction of the Carty Solar Farm within three years after the effective date of the amended site certificate, or February 4, 2022. Under OAR 345-015-0085(8), the site certificate is effective upon execution by the Council Chair and the certificate holder.
[AMD1]
- iii. Begin construction of the new septic system, water pipeline, security guard station, warehouse, wastewater pipeline, new substation and related distribution lines within three years after the effective date of the amended site certificate, or XXXX XX, XXXX. Under OAR 345-015-0085(8), the site certificate is effective upon execution by the Council Chair and the certificate holder.
[AMD2]

4.2 The certificate holder must:

- i. Complete construction of Unit 1 of the facility within three years of beginning construction of Unit 1. Construction is complete when: 1) the facility is substantially complete as defined by the certificate holder's construction contract documents; 2) acceptance testing has been satisfactorily completed; and 3) the energy facility is ready to begin continuous operation consistent with the site certificate. The certificate holder shall promptly notify the Department of the date of completion of construction of Unit 1. The Council may grant an extension of the deadline for completing construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted.
[Final Order III.D.4] [Mandatory Condition OAR 345-027-0020(4)] [AMD1]
- ii. Complete construction of the Carty Solar Farm within six years of the effective date of the amended site certificate, or February 4, 2025. The certificate holder shall promptly notify the Department of the date of completion of construction of the Carty Solar Farm and its supporting facilities.
[AMD1]
- iii. Complete construction of the new septic system, water pipeline, security guard station, warehouse, wastewater pipeline, new substation and related distribution lines within six years of the effective date of the amended site certificate, or XXX, XX, XXXX. The certificate holder shall promptly notify the Department of the date of completion of construction of these supporting facilities.
[AMD2]

- 4.3 ~~[DELETED] The certificate holder must begin construction of Block 2 no later than five years after the effective date of the site certificate. The certificate holder shall complete construction of the facility within three years of beginning construction of Block 2. Construction is complete when: 1) Block 2 is substantially complete as defined by the certificate holder's construction contract documents; 2) acceptance testing has been satisfactorily completed; and 3) Block 2 is ready to begin continuous operation consistent with the site certificate. The certificate holder shall notify the Department when the construction of Block 2 begins, and notify the Department of the date of completion of Block 2 construction. The Council may grant an extension of the deadline for completing construction in accordance with OAR 345-027-0030 or any successor rule in effect at the time the request for extension is submitted [AMD1]~~
- 4.4. The certificate holder shall submit a legal description of the site to the Department of Energy within 90 days after beginning operation of the facility. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identifies the outer boundaries that contain all parts of the facility.
[Final Order III.D.1] [Mandatory Condition OAR 345-027-0020(2)] [AMD1]
- 4.5 The certificate holder shall obtain all necessary federal, state, and local permits or approvals required for construction, operation, and retirement of the facility or ensure that its contractors obtain the necessary federal, state, and local permits or approvals.
[Final Order IV.B.2.4]
- 4.6 The certificate holder must obtain, as required by ORS 469.401(3), all local permits, to include a Conditional Use Permit for the portion of the Carty Generating Station facility located on land zoned Exclusive Farm Use and a Zoning Permit for the entire facility located within Morrow County.
[Final Order IV.E.4.6][AMD2]
- 4.7 The certificate holder shall submit a legal description of the site to the Department of Energy within 90 days after execution of the second amended site certificate. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identifies the outer boundaries that contain all parts of the facility. [AMD2]

5 PRE-CONSTRUCTION REQUIREMENTS

In addition to pre-construction requirements contained elsewhere in this site certificate, the certificate holder must meet the following requirements:

- 5.1 Before beginning construction of each unit, the certificate holder must notify the Department of the identity and qualifications of the major design, engineering, and construction contractor(s) for the facility. The certificate holder must select contractors that have substantial experience in the design, engineering, and construction of similar facilities. The certificate holder must report to the Department any change of major contractors. [Final Order IV.B.2.1] [AMD1]
- 5.2 The certificate holder must contractually require all construction contractors and subcontractors involved in the construction of the facility to comply with all applicable laws and regulations and with the terms and conditions of the site certificate. Such contractual provisions do not relieve the certificate holder of responsibility under the site certificate. [Final Order IV.B.2.3] [AMD1]
- 5.3 Before beginning construction of the energy facility, the certificate holder shall submit a final parking lot plan to Morrow County for approval as part of the certificate holder's building permit application for the energy facility. This parking lot plan shall comply with Section 4.040 and 4.060 of the Morrow County Zoning Ordinance (MCZO) and with Americans with Disabilities Act (ADA) requirements. This plan shall provide a minimum of 22 parking spaces and one ADA-accessible space, or the minimum number of parking spaces required by MCZO Section 4.040 based on the number of employees on the largest shift, whichever is greater. The certificate holder shall construct on-site parking in conformance with the approved parking lot plan. [Final Order IV.E.4.2] [MCZO Section 4.040-4.060] [AMD2]
- 5.4 Before beginning construction, the certificate holder must:
 - i. Complete an investigation of subsurface soil and geologic conditions to identify geological or geotechnical hazards per Condition 5.4.a and obtain Department approval of the investigation report per Condition 5.4.b.
 - a. The investigation must include at least the following activities. This condition does not apply to new construction authorized as part of AMD2 because geotechnical information for those areas is available from initial construction of Unit 1:
 1. Drilling of six to eight exploratory borings up to a depth of 75 feet under proposed critical structure locations, including the gas turbine units, cooling tower, transmission structures, and switchyard. Standard penetration tests should be conducted at 2.5-foot and 5-foot intervals. Drilling of exploratory borings along transmission line corridor is not necessary if such information is available from the construction of the existing transmission line.
 2. Digging of test pits to assess the extent and thickness of any loose, surficial soil layers at the site. Key focus areas should include planned locations of critical structures, roadways, and landscaped areas where irrigation would occur.

3. Performing laboratory testing to evaluate the engineering properties of soils, including natural water contents on all samples collected, mechanical and hydrometer gradations, Atterberg limits, and collapsibility and consolidation tests on selected samples.
- b. The certificate holder must prepare a geotechnical report with final facility design recommendations based on the investigation conducted per the requirements of Condition 5.4.a. The geotechnical report must be submitted to the Oregon Department of Geology & Mineral Industries (DOGAMI) and the Department. The certificate holder may not commence construction of the facility prior to Department approval of this report.

[Final Order IV.C.2.1] [AMD2]

ii. Complete an investigation of subsurface soil and geologic conditions, based upon a protocol reviewed and approved by the Department in consultation with DOGAMI, to identify geological or geotechnical hazards ~~per Condition 5.4.a~~ and obtain Department approval of the investigation report per Condition 5.4.i.b.

a. The investigation must include at least the following activities:

1. Drilling of additional borings at scattered locations across the Carty Solar Farm and associated transmission lines and access roads, up to a depth of 50 feet.

[AMD1] [AMD2]

5.5. During construction and operation of the facility, the certificate holder must implement a revegetation and weed control plan. The certificate holder must comply with the applicable provisions of the Morrow County and Gilliam County Weed Control Ordinances, as determined by the Morrow County Weed Control Supervisor and the Gilliam County Weed Control Officer. Prior to beginning construction, the certificate holder must consult with the Morrow County Weed Control Supervisor and obtain approval of a Revegetation and Noxious Weed Control Plan. The final Revegetation and Noxious Weed Control Plan must be submitted to the Department of Energy, based upon the draft amended plan provided in as an attachment to the Final Order on Amendment ~~12~~, for approval prior to the start of construction.

[Final Order IV.D.2.6] [AMD1] [AMD2]

5.6. Before beginning construction, the certificate holder must submit a Notice of Proposed Construction or Alteration to the Federal Aviation Administration (FAA) and the Oregon Department of Aviation identifying the final location of the facility exhaust stack. The certificate holder must promptly notify the Department of the responses from the FAA and the Oregon Department of Aviation.

[Final Order V.D.2.5]

5.7. Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under OAR 345-027-0020, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any

part of the site until the certificate holder has construction rights on all parts of the site. For the purpose of this rule, “construction rights” means the legal right to engage in construction activities.

[Final Order III.D.6] [Mandatory Condition OAR 345-027-0020(5)]

- 5.8. Before beginning construction, the certificate holder must notify the Department in advance of any work on the site that does not meet the definition of “construction” in ORS 469.300 (excluding surveying, exploration, or other activities to define or characterize the site) and must provide to the Department a description of the work and evidence that its value is less than \$250,000.
[Final Order IV.B.2.6]
- 5.9. The certificate holder shall develop and implement a Spill Prevention, Control and Countermeasure (SPCC) Plan in accordance with 40 Code of Federal Regulations (CFR)112. A copy of this plan shall be provided to the Department prior to the commencement of operation of Carty Generating Station and shall be updated according to the timelines provided in 40 CFR 112.
[Final Order IV.G.2.1] [AMD1][AMD2]
- 5.10. Before beginning construction of the Carty Solar Farm, the certificate holder shall record in the deed records of Morrow County a document binding the certificate holder and its successors in interest, prohibiting them from pursuing a claim for relief or cause of action alleging injury from farming or forest practices as defined in ORS 30.930(2) and (4).

6 DESIGN, CONSTRUCTION AND OPERATIONS

- 6.1 During construction, the certificate holder must have a full-time, on-site manager who is qualified in environmental compliance to ensure compliance with all site certificate conditions. The certificate holder must notify the Department of the name, telephone number, and e-mail address of this person prior to the start of construction and immediately upon any change in the contact information.
[Final Order IV.B.2.2]
- 6.2 The certificate holder shall provide portable toilets for on-site sewage handling during construction and shall ensure that they are pumped and cleaned regularly by a licensed contractor who is qualified to pump and clean portable toilet facilities.
[Final Order IV.N.2.3]
- 6.3 The certificate holder shall implement a waste management plan during construction that includes but is not limited to the following measures:
- a. Recycling steel and other metal scrap.
 - b. Recycling wood waste.
 - c. Recycling packaging wastes such as paper and cardboard.

- d. Collecting non-recyclable waste for transport to a local landfill by a licensed waste hauler.
- e. Segregating all hazardous wastes such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes.
- f. Confining concrete delivery truck rinse-out to a designated wash-out area and burying other concrete waste as part of backfilling.

[Final Order IV.N.2.1]

- 6.4 In advance of, and during, preparation of detailed design drawings and specifications for the 500-kV transmission line, the certificate holder shall consult with the Utility Safety and Reliability Section of the Oregon Public Utility Commission to ensure that the designs and specifications are consistent with applicable codes and standards.
[Final Order V.D.2.3]
- 6.5 The certificate holder must design, construct and operate the transmission lines in accordance with the requirements of the National Electrical Safety Code (American National Standards Institute, Section C2, 1997 Edition, or its successor document).
[Final Order IV.O.2.1] [Mandatory Condition OAR 345-027-0023(4)].[AMD2]
- 6.6 The certificate holder must design and construct the facility in accordance with requirements of the current Oregon Structural Specialty Code and the International Building Code in effect at the time of the start of construction for each unit.
[Final Order IV.C.2.4] [AMD1]
- 6.7 The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. "Seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement and subsidence.
[Final Order IV.C.2.5] [Mandatory Condition OAR 345-027-0020(12)]
- 6.8 The certificate holder must design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic hazards. As used in this condition, "non-seismic hazards" include settlement, landslides, flooding and erosion.
[Final Order IV.C.2.6]
- 6.9 The certificate holder shall design and construct the facility using the minimum land area necessary for safe construction and operation. The certificate holder shall locate access roads and temporary construction laydown and staging areas to minimize disturbance of farming practices.
[Final Order IV.E.4.1] [MCZO Section 3.010.D]
- 6.10 The certificate holder must notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the application for a site certificate or requests for amendment. After the Department

receives the notice, the Council may require the certificate holder to consult with the DOGAMI and the Building Codes Division and to propose mitigation actions.

[Final Order IV.C.2.2] [Mandatory Condition OAR 345-027-0020(13)] [AMD1]

- 6.11 The certificate holder must notify the Department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site.

[Final Order IV.C.2.3] [Mandatory Condition OAR 345-027-0020(14)]

- 6.12 During construction of the facility, the certificate holder shall ensure that contractors move equipment out of the construction area when it is no longer expected to be used. To the extent practical, contractors shall lower equipment with long arms, such as cranes, bucket trucks, and backhoes when not in use, in order to minimize visibility.

[Final Order IV.J.2.1]

- 6.13 To reduce the visual impact of the facility, the certificate holder shall paint the buildings and structures in low-reflectivity neutral colors to blend with the surrounding landscape.

[Final Order IV.J.2.2]

- 6.14 The certificate holder shall not use exterior nighttime lighting except:

- a. The minimum exhaust stack lighting required or recommended by the Federal Aviation Administration.
- b. Safety and security lighting at the Carty Generating Station, provided that such lighting is shielded or downward-directed to reduce offsite glare.
- c. Minimum lighting necessary for repairs or emergencies.
- d. As required during construction.

[Final Order IV.J.2.3] [AMD1]

- 6.17 During construction of the facility:

- i. The certificate holder shall implement measures to reduce traffic impacts, as follows:
 - a. The certificate holder shall reduce peak hour volumes during construction by staggering shift start times or implementing other measures that would significantly reduce the total number of construction worker vehicle trips through the westbound I-84/Tower Road ramp terminal; or
 - b. The certificate holder shall install temporary traffic controls during peak construction to prioritize westbound left-turning vehicles at the westbound Tower Road ramp terminal during the weekday a.m. peak hour.

[Final Order IV.M.2.9]

- ii. For construction of Carty Solar Farm, ~~the~~ the certificate holder shall:

- a. Implement a final Construction Traffic Management Plan, as approved by the Department per Condition 6.26.

- b. Include the requirements of the Construction Traffic Management Plan in contract specifications for construction contractors, as applicable.
- c. Maintain a monthly log, to be submitted monthly to the Department for review and confirmation of compliance with the components of the Construction Traffic Management Plan.
- d. The Department, in consultation with the Morrow County Public Works Department, may require implementation of additional traffic management measures including a Traffic Impact Assessment per MCZO Section 3.010(N)(1) if any requirement of the Construction Traffic Management Plan is determined not adequately implemented, or if additional measures are deemed necessary based on actual passenger car equivalent trips per day during facility construction. Within 30-days of submittal of the monthly compliance report required under sub(c), the certificate holder shall obtain written confirmation from the Department on any additional construction traffic management measures required to be implemented.

[AMD1][AMD2]

- 6.18 Unless legally permissible, the certificate holder shall ensure that no equipment or machinery associated with the construction is parked or stored on any public road within Morrow or ~~Gilliam County Counties~~. The certificate holder may temporarily park equipment off the road but within County rights-of-way with the approval of the County Roadmaster.
[Final Order IV.M.2.10] [AMD1][AMD2]
- 6.19 The certificate holder shall cooperate with the Morrow County Public Works Department and the Gilliam County Road Department to ensure that any unusual damage or wear to county roads that is caused by construction of the facility is repaired by the certificate holder. Upon completion of construction, the certificate holder shall restore public roads to pre-construction condition or better to the satisfaction of applicable county departments.
[Final Order IV.M.2.11] [AMD1][AMD2]
- 6.20 ~~[Deleted]If improvements are needed to the I-84/Tower Road interchange to safely accommodate turning movements by a WB-67 design vehicle, the certificate holder shall work with The Oregon Department of Transportation and Morrow County to identify needed improvements and shall construct or install needed improvements prior to commencement of construction of the Carty facility.~~
[Final Order IV.M.2.12] [AMD1]
- 6.21 Oversize and overweight deliveries shall be made by rail and barge when feasible, to limit impacts to the I-84/Tower Road interchange.
[Final Order IV.M.2.13]
- 6.22 The certificate holder shall construct all facility components in compliance with the following setback requirements. The transmission lines connecting the Carty Generating Station and the Grassland Switchyard are exempt from this condition.

- a. For portions of the facility located in the Morrow County General Industrial Zoning District:
 - i. The minimum setback between a structure and the right-of-way of an arterial street shall be 50 feet. The minimum setback of a structure from the right-of-way of a collector shall be 30 feet, and from all lower class streets the minimum setback shall be 20 feet.
 - ii. Any sewage disposal installations such as outhouses, septic tank and drainfield systems shall be set back from the high-water line or mark along all streams and lakes a minimum of 100 feet, measured at right angles to the high-water line or mark. All structures, buildings, or similar permanent fixtures shall be set back from the high-water line or mark along all streams or lakes a minimum of 100 feet measured at right angles to the high-water line or mark.
- b. For portions of the facility located in the Morrow County Exclusive Farm Use Zoning District:
 - i. The front yard setback from the property line shall be a minimum of 100 feet if the property line is adjacent to an intensive agricultural use; otherwise, front yards shall be 20 feet for property fronting on a local minor collector or marginal access street right-of-way, 30 feet from a property line fronting on a major collector right-of-way, and 80 feet from an arterial right-of-way.
 - ii. Each side yard shall be a minimum of 20 feet except that for parcels or lots with side yards adjacent to an intensive agricultural use the adjacent side yard shall be a minimum of 100 feet.
 - iii. Rear yards shall be a minimum of 25 feet, except for parcels or lots with rear yards adjacent to an intensive agricultural use, where rear yards shall be a minimum of 100 feet.
 - iv. Any sewage disposal installations such as outhouses, septic tank and drainfield systems shall be set back from the high-water line or mark along all streams and lakes a minimum of 100 feet, measured at right angles to the high-water line or mark. All structures, buildings, or similar permanent fixtures shall be set back from the high-water line or mark along all streams or lakes a minimum of 100 feet measured at right angles to the high-water line or mark.

[Final Order IV.E.4.3] [MCZO Section 3.010(H)] [AMD1]

- 6.23 The certificate holder must limit signage to directional signs necessary for deliveries and general site circulation. No sign may be placed so as to interfere with visibility or effectiveness of any permanent traffic control device. No sign may be placed so as to impede the sight distance triangle at any access point or intersection as specified in Section 4.020 of the Morrow County Zoning Code. No sign shall cause glare, distraction or other driving hazards within a street or road right-of-way.
[Final Order IV.E.4.5] [MCZO Sections 4.020 and 4.070]
- 6.24 The certificate holder shall comply with Section 5, Public Responsibilities, of the Morrow County Solid Waste Management Ordinance. Any hauling of solid waste from the Carty

Generating Station facility during construction, operation, or retirement shall be performed by a franchised solid waste hauler or otherwise comply with the Morrow County Solid Waste Management Ordinance.

[Final Order IV.E.4.7] [Morrow County Waste Management Ordinance Section 5.000][AMD2]

- 6.25 Recycling by the certificate holder and certificate holder's contractors during construction, operation, and retirement of the Carty Generating Station facility shall be done in accordance with Oregon Department of Environmental Quality regulations and shall be reported as part of the Morrow County wasteshed.
[Final Order IV.E.4.7] [AMD2]
- 6.26 The certificate holder is authorized to construct approximately 3 miles of 34.5 kV transmission line anywhere within the approved corridors, subject to the conditions of the site certificate. The approved corridors are approximately 160-feet in width and extend between 2.25 and 3 miles of three routes as described in RFA1 Exhibit B and as presented on Figure 1 to the site certificate of the First Amended Site Certificate for Carty Generating Station.
[Site Specific Condition OAR 345-025-0010(5)] [AMD1] [AMD2]
- 6.27 Prior to beginning construction of the Carty Solar Farm, the certificate holder shall:
- a. Confirm whether, based on anticipated construction activities, peak construction traffic is anticipated to exceed 400 passenger car equivalent trips per day. If more than 400 passenger car equivalent trips per day is anticipated, the certificate holder shall prepare and submit to the Department and Morrow County Planning Department a Traffic Impact Assessment per MCZO Section 3.010(N) Transportation Impacts for review and approval. If a TIA is required, the certificate holder shall submit documentation to the Department in accordance with OAR 345-027-0057.
 - b. Prepare and submit to the Department a Construction Traffic Management Plan for review and approval. The certificate holder shall demonstrate that the Construction Traffic Management Plan, at a minimum, includes:
 1. Traffic management measures or other recommendations to minimize traffic impacts on Tower Road, as applicable, based upon consultation with Morrow County Public Works Department and Morrow County Sheriff's Office.
 2. Staggering shift start times or other measures that would significantly reduce the total number of construction worker vehicle trips through the westbound I-84/Tower Road ramp terminal; or
 3. Installation of temporary traffic controls during peak construction to prioritize westbound left-turning vehicles at the westbound Tower Road ramp terminal during the weekday a.m. peak hour.
- [AMD1]
- 6.28 Prior to construction of the Carty Solar Farm, the certificate holder shall record in the real property records of Morrow County a Covenant Not to Sue with regard to generally

accepted farming practices on adjacent farmland consistent with MCZO 3.010.K.3(i).
[AMD1][AMD2]

7 PUBLIC HEALTH AND SAFETY

7.1 The certificate holder shall take the following steps to reduce or manage human exposure to electromagnetic fields:-

- (a) Constructing all aboveground transmission lines at least 200 feet from any residence or other occupied structure, measured from the centerline of the transmission line.
- (b) For any transmission lines constructed after June 29, 2012; providing to landowners a map of underground and overhead transmission lines on their property and advising landowners of possible health risks from electric and magnetic fields.
- (c) Designing and maintaining all transmission lines so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public.
- (d) Designing and maintaining all transmission lines so that induced voltages during operation are as low as reasonably achievable.

[Final Order V.D.2.1] [AMD2]

7.2 To protect the public from electrical hazards, the certificate holder must enclose the facility switchyard or substations with appropriate fencing and locked gates.

[Final Order V.D.2.2][AMD2]

7.3 If the Council finds, at any time during facility operation, that cooling tower emissions are likely to contribute significantly to ground-level fogging or icing along public roads and to cause a significant threat to public safety, the certificate holder shall cooperate with appropriate local public safety authorities regarding implementation of reasonable safety measures, such as posting warning signs on affected roads. Cooperation may include, but is not necessarily limited to, the reimbursement of expenses for posting warning signs and implementing other safety measures.

[Final Order V.D.2.4]

7.4 The certificate holder must comply with all emergency planning and notification requirements of Emergency Planning and Community Right-to-Know Act (EPCRA) Section 302.

[Final Order V.D.2.6]

7.5 The certificate holder must comply with all reporting requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 304, including reporting of any chemical release in an amount equal to or greater than the EPCRA reportable quantity for that chemical.

[Final Order V.D.2.7]

- 7.6 ~~[Deleted] The certificate holder must report emissions, transfer, and waste management data for hydrazine and sodium nitrite as required by Section 313 of the Emergency Planning and Community Right to know Act (EPCRA) and Section 6607 of the Pollution Prevention Act.~~
[Final Order V.D.2.8][AMD1]
- 7.7 The certificate holder must comply with all reporting requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), including reporting of any chemical release in an amount equal to or greater than the CERCLA reportable quantity for that chemical.
[Final Order V.D.2.9]
- 7.8 The certificate holder shall notify the Department of Energy and Morrow County within 72 hours of any occurrence involving the facility if:
- a. There is an attempt by anyone to interfere with its safe operation;
 - b. A natural event such as an earthquake, flood, tsunami or tornado, or a human-caused event such as a fire or explosion affects or threatens to affect the public health and safety or the environment; or
 - c. There is any fatal injury at the facility.
- [Final Order V.D.2.10] [Mandatory Condition OAR 345-026-0170] [AMD1]
- 7.9 The certificate holder must develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the line. A current copy of the electrical protection plan must be available at the O&M building and provided upon request by ODOE staff.
[Final Order IV.O.2.2] [Mandatory Condition OAR 345-027-0023(4)]

8 ON-SITE SAFETY AND SECURITY

- 8.1 During construction and operation of the facility, the certificate holder shall provide for on-site security and shall establish good communications between on-site security personnel and the Morrow County Sheriff's Office. During operation, the certificate holder shall ensure that appropriate law enforcement agency personnel have an up-to-date list of the names and telephone numbers of facility personnel available to respond on a 24-hour basis in case of an emergency on the facility site.
[Final Order IV.M.2.1]
- 8.2 During construction, the certificate holder shall require that all on-site construction contractors develop and implement a site health and safety plan that informs workers and others on-site about first aid techniques and what to do in case of an emergency. The plan shall also include important telephone numbers and the locations of on-site fire extinguishers and nearby hospitals. The certificate holder shall ensure that construction contractors have personnel on-site who are first aid and CPR certified.
[Final Order IV.M.2.2]

- 8.3 During operation, the certificate holder shall develop and implement a site health and safety plan that informs employees and others on-site about first aid techniques and what to do in case of an emergency. The plan shall also include important telephone numbers and the locations of on-site fire extinguishers and nearby hospitals.
[Final Order IV.M.2.3]
- 8.4 During construction, the certificate holder shall ensure that construction vehicles and equipment are operated on graveled areas to the extent possible and that open flames, such as cutting torches, are kept away from dry grass areas.
[Final Order IV.M.2.4]
- 8.5 During operation, the certificate holder shall ensure that all on-site employees receive annual fire prevention and response training by qualified instructors or members of the local fire districts. The certificate holder shall ensure that all employees are instructed to keep vehicles on roads and off dry grassland, except when off-road operation is required for emergency purposes.
[Final Order IV.M.2.5]
- 8.6 During construction and operation of the facility, the certificate holder shall ensure that all service vehicles are equipped with shovels and portable fire extinguishers of a 4500BC or equivalent rating.
[Final Order IV.M.2.6]
- 8.7 During construction and operation of the facility, the certificate holder shall develop and implement fire safety plans in consultation with the Boardman Rural Fire Protection District to minimize the risk of fire and to respond appropriately to any fires that occur on the facility site. In developing the fire safety plans, the certificate holder shall take into account the dry nature of the region and shall address risks on a seasonal basis. The certificate holder shall meet annually with local fire protection agency personnel to discuss emergency planning and shall invite local fire protection agency personnel to observe any emergency drill conducted at the facility.
[Final Order IV.M.2.7]
- 8.8 Upon the beginning of operation of the facility, the certificate holder shall provide a site plan to the Boardman Rural Fire Protection District. The certificate holder shall indicate the actual location of all facility structures on the site plan. The certificate holder shall provide an updated site plan if additional structures are later added to the facility. During operation, the certificate holder shall ensure that appropriate fire protection agency personnel have an up-to-date list of the names and telephone numbers of facility personnel available to respond on a 24-hour basis in case of an emergency on the facility site.
[Final Order IV.M.2.8]

9 PROTECTION OF SOIL

- 9.1 If the applicability requirements of the National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge General Permit #1200-C are met, the certificate holder must conduct all construction work in compliance with an Erosion and Sediment Control Plan (ESCP) satisfactory to the Oregon Department of Environmental Quality and as

required under the NPDES Storm Water Discharge General Permit #1200-C. The certificate holder must include in the ESCP any procedures necessary to meet local erosion and sediment control requirements or storm water management requirements.

[Final Order IV.D.2.1] [AMD2]

- 9.2 During construction, the certificate holder, to the extent practicable, must limit truck traffic to improved road surfaces to avoid soil compaction.

[Final Order IV.D.2.2]

- 9.3 During construction, the certificate holder must implement best management practices to control any dust generated by construction activities, such as applying water to roads and disturbed soil areas.

[Final Order IV.D.2.3]

- 9.4 If the applicability requirements of the NPDES Storm Water Discharge General Permit #1200-C are met ~~During~~ during construction of the facility, the certificate holder must complete monitoring according to the NPDES Storm Water Discharge General Permit #1200-C issued to the certificate holder for construction of the unit to ensure that there are no significant potential adverse impacts to soils and: [AMD1] [AMD2]

- a. ~~[Deleted] During construction, monitor disturbed area erosion and sediment control measures at the active construction site on a weekly basis and every two weeks on inactive sites. Inspection of both active and inactive sites must occur at least daily during periods when 0.5 inches or more rain has fallen in a 24-hour period~~ [AMD1]
- b. ~~[Deleted]. The certificate holder must remove trapped sediment when storage capacity has been reduced by 50 percent. Sediments will be placed in an upland area certified by a qualified wetlands specialist~~ [AMD1]
- c. ~~[Deleted] Observe and record color and turbidity within 35 feet upstream and downstream of locations where surface waters from the construction site(s) enter a receiving stream. Observations shall note whether sheen and floating matter is present or absent. Any apparent color and turbidity of the discharge, as well as any observable difference in comparison with the receiving stream shall be described. If there are observable differences, or any sheen or floating matter is present, the certificate holder must take immediate steps to identify and rectify the cause of the run-off to the stream.~~ [AMD1]
- d. ~~[Deleted]. If the erosion and sediment control measures are deemed ineffective, different strategies and/or measures shall be implemented, maintained and monitored.~~ [AMD1]
- e. After completing construction in an area, the certificate holder must monitor the area until soils are stabilized and evaluate whether construction-related impacts to soils are being adequately addressed by the mitigation procedures described in the Erosion and Sediment Control Plan and the approved Revegetation and Noxious

Weed Control Plan. As necessary, the certificate holder must implement follow-up restoration measures such as scarification and reseedling to address those remaining impacts.

[Final Order IV.D.2.4] [AMD1]

- 9.5 During facility operation, the certificate holder shall routinely inspect and maintain all transmission line corridors, roads, pads and trenched areas and, as necessary, maintain or repair erosion and sediment control measures and control the introduction and spread of noxious weeds.
[Final Order IV.D.2.5]
- 9.6 Upon completion of construction, the certificate holder must restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use and in compliance with the Revegetation and Noxious Weed Control Plan. Upon completion of construction, the certificate holder must remove all temporary structures not required for facility operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility.
[Final Order IV.D.2.7] [Mandatory Condition OAR 345-027-0020(11)]
- 9.7 During operation of the facility, the certificate holder shall restore areas that are temporarily disturbed during facility maintenance or repair activities using the same methods and monitoring procedures described in the Revegetation and Noxious Weed Control Plan.
[Final Order IV.D.2.8]
- 9.8 [Deleted in AMD1, added in AMD2] The certificate holder must dispose of all accumulated evaporation pond solids, when removed, in a landfill approved for such waste material. All residual solids deposited in evaporation ponds must be removed to an appropriate disposal facility upon closure of the facility. The certificate holder shall include protocols for solids removal and soil restoration at the location of the evaporation ponds in the retirement plan.
[Final Order IV.D.2.9] [AMD1] [AMD2]
- 9.9 During operation, the certificate holder must minimize drift from the cooling towers through the use of high efficiency drift eliminators that allow no more than a 0.001% drift rate.
[Final Order IV.D.2.10]
- 9.10 The certificate holder must handle hazardous materials used on the site in a manner that protects public health, safety and the environment and shall comply with all applicable local, state and federal environmental laws and regulations. During operation, the certificate holder may not store gasoline that is intended for fueling vehicles on the facility site.
[Final Order IV.D.2.11]
- 9.11 If a reportable release of hazardous substance occurs during construction or operation of the facility, the certificate holder must notify the Department within 72 hours and must clean up the spill or release and dispose of any contaminated soil or other materials according to applicable regulations. The certificate holder must make sure that spill kits

containing items such as absorbent pads are located on equipment, near storage areas, and in the administrative or maintenance areas of the facility. The certificate holder must instruct employees about proper handling, storage and cleanup of hazardous materials. [Final Order IV.D.2.12]

10 PROTECTION OF NATURAL RESOURCES

10.1 Prior to construction, the certificate holder shall:

- i. Consult with the Oregon Department of Fish and Wildlife and prepare a final Wildlife and Habitat Monitoring Mitigation Plan and submit the plan to the Department for review and approval. The certificate holder must conduct all wildlife and habitat monitoring as described in the approved Wildlife and Habitat Monitoring and Mitigation Plan, as amended from time to time.

[Final Order IV.H.2.1] [Mandatory Condition OAR 345-027-0020(6)]

- ii. Submit for review and approval by the Department, in consultation with the Oregon Department of Fish and Wildlife, a final Wildlife and Habitat Monitoring Mitigation Plan based upon the mitigation methodology and enhancement actions in the draft amended plan ~~provided as Attachment D of the Final Order on Amendment 1~~ provided in the Final Order on Amendment 2. The certificate holder must conduct all wildlife and habitat monitoring as described in the approved Wildlife and Habitat Monitoring and Mitigation Plan, as amended from time to time.

[OAR 345-025-0016][AMD1] [AMD2]

10.2 The certificate holder shall:

- a. Prior to construction, acquire the legal right to create, enhance, maintain and protect a habitat mitigation area as long as the facility is in operation and the site certificate is in effect by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department.
- b. Prior to construction of the Carty Solar Farm and its supporting facilities, the certificate holder shall provide a habitat assessment of the habitat mitigation area, based on a protocol approved by the Department in consultation with ODFW, which includes methodology, habitat map, and available acres by habitat category and subtype in tabular format.
- c. During operations, the certificate holder shall improve and monitor the habitat quality within the habitat mitigation area, in accordance with the Wildlife and Habitat Monitoring and Mitigation Plan approved by the Department per Condition 10.1.

[Final Order IV.H.2.2] [AMD1]

- 10.3 The certificate holder shall consult with the Oregon Department of Fish and Wildlife prior to commencement of construction to determine the final acreage of habitat mitigation required. Mitigation shall be provided in accordance with this final acreage determination. [Final Order IV.H.2.3] [AMD1]
- 10.4 The certificate holder shall conduct noxious weed inventories within the Habitat Mitigation Area (HMA) to identify patches of weed infestation during year one, year three and year five after construction of Unit 1, and then continue once every 5 years for the life of the project, in years divisible by five. Weeds shall be controlled as needed to maintain and enhance habitat quality within the mitigation area, with the goal of working toward eradication of targeted noxious weeds or, if eradication is not practical, decreasing their abundance to minimize impacts to native plant communities. Weed management practices shall be consistent with the Revegetation and Noxious Weed Control Plan and shall include an integrated weed management approach, using an appropriate combination of prevention and control methods. The certificate holder shall obtain ODFW approval prior to the use of pesticides. If a substantial area of soil is left bare from weed control activities, the area shall be seeded using the appropriate methods as described in the Revegetation and Noxious Weed Control Plan. [Final Order IV.H.2.5] [AMD1][AMD2]
- 10.5 ~~The certificate holder shall implement a fire control plan for wildfire suppression within the HMA in accordance with the existing Boardman Wildfire Control Plan. A copy of the fire control plan shall be provided to the Department upon request.~~ If vegetation in the HMA is damaged from fire or from fire suppression efforts (e.g., vehicular disturbance), the area shall be seeded as necessary with the appropriate seed mix using the appropriate methods for the site, as described in the *Revegetation and Noxious Weed Control Plan*. [Final Order IV.H.2.6][AMD2]
- 10.6 The certificate holder shall monitor and control access to the HMA and shall post signs for the life of the facility designating the area as “protected” and including natural resources information. Access to the proposed area shall be limited to ~~Boardman Plant~~ operational needs, conservation area monitoring, and noxious weed control efforts. Any fences within or bordering the HMA shall be modified to wildlife-friendly specifications. Livestock grazing shall not be permitted within the HMA. Periodic monitoring (at least annually) shall be conducted to evaluate effectiveness of access control measures and signage maintenance needs. [Final Order IV.H.2.7]
- 10.7 The certificate holder must:
- i. Implement measures to avoid or minimize temporary and permanent impacts to high quality native habitat and to retain habitat cover in the general landscape, where practicable.
 - a. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.
 - b. Before beginning construction, the certificate holder shall provide to the Department a map showing the final design locations of all components of the

facility and the areas that would be disturbed during construction and identifying the survey areas for all plant and wildlife surveys conducted in 2010 or earlier as described in the *Final Order on the Application*. The certificate holder shall use a qualified professional biologist to conduct a pre-construction plant and wildlife investigation of all areas that would be disturbed during construction that lie outside of the previously surveyed areas. The certificate holder shall provide a written report of the investigation to the Department and to the Oregon Department of Fish and Wildlife. Based on consultation with the Department and ODFW, the certificate holder shall implement appropriate measures to avoid impacts to any Category 1, 2, or 3 habitat, to any State-listed threatened or endangered plant or wildlife species, and to any State Candidate plant species. If any Category 2 or 3 habitat is identified and will be impacted, the certificate holder shall work with the Department and ODFW to identify appropriate mitigation measures for such impacts.

- c. Before beginning construction, the certificate holder's qualified professional biologist shall survey the previously-identified Category 1 Washington ground squirrel habitat to ensure that the sensitive use area is correctly marked with exclusion flagging and avoided during construction. The certificate holder shall maintain the exclusion markings until construction has been completed.
- d. Before beginning construction, certificate holder's qualified professional biologist shall complete aerial raptor nest surveys within the raptor nest survey area as described in the *Final Order on the Application*. The purposes of the survey are to identify any sensitive raptor nests near construction areas and to provide baseline information on raptor nest use for analysis as described in the *Wildlife and Habitat Monitoring and Mitigation Plan* referenced in Condition 10.1. The certificate holder shall provide a written report on the raptor nest surveys to the Department and to ODFW.

[Final Order IV.H.2.9]

- ii. Implement measures to avoid or minimize temporary and permanent impacts to high quality native habitat and to retain habitat cover in the general landscape, where practicable.
 - a. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.
 - b. Before beginning construction, the certificate holder shall provide to the Department a map showing the final design locations of all components of the facility and the areas that would be disturbed during construction and identifying the survey areas for all plant and wildlife surveys conducted prior to construction. The certificate holder shall use a qualified professional biologist to conduct a pre-construction habitat assessment of all areas that would be disturbed during construction. The certificate holder shall provide a written

report of the habitat assessment to the Department and to the Oregon Department of Fish and Wildlife. Based on consultation with the Department and ODFW, the certificate holder shall implement appropriate measures to avoid impacts to any Category 1 habitat, to any State-listed threatened or endangered plant or wildlife species, and to any State Candidate plant species. [AMD1]

- 10.8 During construction, the certificate holder shall avoid all construction activities within one mile of golden eagle nests, and 0.6 miles of ferruginous hawk nests, and 1,300 feet of other potentially active sensitive raptor species nest sites for the following species during the sensitive period, as provided in this condition:

<u>Species</u>	<u>Sensitive Period</u>	<u>Early Release Date</u>
Swainson’s hawk	April 1 to August 15	May 31
Ferruginous hawk	March 15 to August 15	May 31
Bald Eagle	January 1 to August 15	May 31
Golden eagle	January 1 to July 15	May 31
Burrowing owl	April 1 to August 15	July 15
Long-billed curlew	March 8 to June 15	May 31

During all years in which construction occurs, the certificate holder shall use a protocol approved by the Oregon Department of Fish and Wildlife (ODFW) to determine whether there are any active nests of these species within 1,300 feet of any areas that would be disturbed during construction. Surveys shall be extended to one mile for golden eagle nests and 0.6 miles for ferruginous hawk nests. This construction buffer distance may be decreased with approval by ODFW and USFWS depending on the intensity of construction activity and whether there is an adequate physical barrier (i.e., vegetation, topography, etc.) between the nest site and the construction impacts or if consultation determines a lesser distance is feasible and appropriate. The certificate holder shall begin monitoring potential nest sites by the beginning of the sensitive period, as listed above, and shall continue monitoring until at least May 31 (July 15 for golden eagle nests) to determine whether any potentially-active nest sites become active during the sensitive period.

If any nest site is determined to be unoccupied by the early release date, then unrestricted construction activities may occur within 0.6 miles (one mile for golden eagle nests) of the nest site after that date. If a nest is occupied by any of these species after the beginning of the sensitive period, the certificate holder will flag the boundaries of a 1,300 foot (or 0.6 miles for ferruginous hawk nests, or one mile for golden eagle nests) buffer area around the nest site and shall instruct construction personnel to avoid disturbance of the buffer area. During the sensitive period, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading or other major ground disturbance) within the buffer area. The certificate holder shall restrict construction traffic within the buffer, except on public roads, to vehicles essential to the limited construction activities allowed within the buffer. If a golden eagle nest is identified, construction and maintenance activities between February 1 and July 15 (courtship and

nesting period) will be avoided within one mile of the active nest (or 0.5 miles if the active nest is not in line-of-sight of activities).

The certificate holder must use a qualified independent professional biologist to observe the active nest sites during the sensitive period for signs of disturbance and to notify the Department of any non-compliance with this condition. If the biologist observes nest site abandonment or other adverse impact to nesting activity, the certificate holder shall implement appropriate mitigation, in consultation with ODFW and subject to the approval of the Department, unless the adverse impact is clearly shown to have a cause other than construction activity.

The certificate holder may begin or resume construction activities within the buffer area before the ending day of the sensitive period with the approval of ODFW, after the young are fledged. The certificate holder shall use a protocol approved by ODFW to determine when the young are fledged (the young are independent of the core nest site).

[Final Order IV.H.2.10] [AMD1]

- 10.9 The certificate holder shall implement the following measures to avoid or mitigate impacts to sensitive wildlife habitat during construction:
- a. Preparing maps to show exclusion areas that are off-limits to construction personnel, such as nesting or denning areas for sensitive wildlife species.
 - b. Avoiding unnecessary road construction, temporary disturbance, and vehicle use.
 - c. Limiting construction work to approved and surveyed areas shown on facility constraints maps.
 - d. Ensuring that all construction personnel are instructed to avoid driving cross-country or taking short-cuts within the site boundary or otherwise disturbing areas outside of the approved and surveyed construction areas.

[Final Order IV.H.2.11]

- 10.10 The certificate holder shall reduce the risk of injuries to avian species by designing and installing all aboveground transmission line support structures following the most current suggested practices for avian protection on power lines published by the Avian Power Line Interaction Committee.

[Final Order IV.H.2.12]

- 10.11 Sensitive raptor nest monitoring shall be conducted by qualified biologists in year one, year three, and year five after operations of Unit 1 have begun and then at least every five years after that for the life of the project in years divisible by five. Results of the monitoring shall be included in an annual sensitive raptor nest monitoring report provided to the Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the Department. This report shall document the nest productivity of sensitive raptor species, including golden eagle (*Aquila chrysaetos*), occurring within one mile of the Carty Generating Station facility, the Ferruginous Hawk occurring within 0.6 miles, and other sensitive raptor species nests occurring within 1,300 feet of the facility site.

[Final Order IV.H.2.13] [AMD1][AMD2]

- 10.12 The certificate holder shall use a qualified environmental professional to provide environmental training during construction and operation. Environmental training includes information on the sensitive species present onsite, precautions to avoid injuring or destroying wildlife or sensitive wildlife habitat, exclusion areas, permit requirements, and other environmental issues. The certificate holder shall instruct construction and operations personnel to report any injured or dead wildlife detected while on the site to the appropriate onsite environmental manager.

[Final Order IV.H.2.14]

- 10.13 The certificate holder shall not place any structures in jurisdictional waters of Sixmile Canyon and shall avoid new impacts to Sixmile Canyon during construction by using the existing access road for vehicle crossing only during the dry season. Impacts to jurisdictional waters in Sixmile Canyon drainages shall be avoided.

[Final Order IV.H.2.15] [AMD1]

- 10.14 Prior to construction, the certificate holder shall conduct surveys for Washington ground squirrel (WGS) and Lawrence's milkvetch.
- i. The certificate holder shall determine the boundaries of Category 1 Washington ground squirrel (WGS) habitat based on the locations where the squirrels were found to be active in the most recent WGS surveys prior to the beginning of construction in habitat suitable for WGS foraging or burrow establishment ("suitable habitat"). The certificate holder shall use a qualified professional biologist who has experience in detection of WGS to conduct surveys within the site boundary using appropriate search protocols. Except as provided in (a), the biologist shall conduct surveys in the active squirrel season (February 1 to June 30) at least once every three years until the beginning of construction in suitable habitat. The biologist shall survey all areas of suitable habitat where permanent facility components would be located or where construction disturbance could occur. The certificate holder shall provide written reports of the surveys to the Department and to the Oregon Department of Fish and Wildlife (ODFW) and shall identify the boundaries of Category 1 WGS habitat. During each year in which construction will occur, the boundaries of Category 1 WGS habitat shall be marked by the biologist with high-visibility flagging or markers. The certificate holder shall not begin construction until the identified boundaries of Category 1 WGS habitat have been approved by the Department. Category 1 WGS habitat includes the areas described in (b) and (c) below.
 - a. The certificate holder may omit the WGS survey in any year if the certificate holder avoids all permanent and temporary disturbance within suitable habitat until a WGS survey has been completed in the following year and the boundaries of Category 1 habitat have been determined and approved based on that survey.
 - b. Category 1 WGS habitat includes the area within the perimeter of multiple active WGS burrows plus a 785-foot buffer, excluding areas of habitat types not suitable for WGS foraging or burrow establishment. If the multiple-burrow area was active in a prior survey year, and active burrows are still present, then Category 1 habitat

includes the largest extent of the active burrow area ever recorded (in the current or any prior-year survey), plus a 785-foot buffer. If no active burrows are still present, then it is no longer Category 1 habitat for WGS.

- c. Category 1 WGS habitat includes the area containing single active burrow detections plus a 785-foot buffer, excluding areas of habitat types not suitable for WGS foraging or burrow establishment. Category 1 habitat does not include single-burrow areas that were found active in a prior survey year but that are not active in the current survey year.
- ii. The certificate holder shall use a qualified professional biologist who has experience in detection of Lawrence's milkvetch to conduct plant surveys within the site boundary, using appropriate survey protocols, during the blooming season (May through August).
 - a. If the species is found to occur, the certificate holder must install protection flagging around the plant population and avoid any ground disturbance within this zone; and its location shall be presented on construction constraint maps showing restricted work areas.

[Final Order IV.I.2.1] [AMD1]

- 10.15 The certificate holder shall impose and enforce a construction and operation speed limit of 20 miles per hour throughout the facility site and, during the active squirrel season (February 1 to June 30), a speed limit of 10 miles per hour from one hour before sunset to one hour after sunrise on private roads near known Washington ground squirrel (WGS) colonies. The certificate holder shall ensure that all construction and operations personnel are instructed to watch out for and avoid WGS and other wildlife while driving through the facility site.

[Final Order IV.I.2.2]

- 10.16 The certificate holder shall use perch-preventing structures on Carty Generating Station components in areas identified as Category 1 habitat for Washington ground squirrels.

[Final Order IV.I.2.3]

- 10.17 The certificate holder shall provide environmental awareness training for all project personnel and construction contractors before such contractors or personnel enter the site to perform construction-related activities. The training program shall discuss Washington ground squirrel issues as well as other environmental issues related to the project, and include handouts with identification information and reporting procedures. Additional training sessions shall be conducted as needed for personnel that start after the beginning of construction.

[Final Order IV.I.2.4]

- 10.18 In order to discourage Washington ground squirrels from moving into planned construction areas the certificate holder may disc or till a minimum of an 800-ft. buffer within the perimeter of the site boundary, or implement other approved measures, in closest proximity to squirrel activity areas. Proposed measures and areas where measures will be implemented shall be reviewed by ODFW and shall be informed by the most recent Washington ground squirrel survey data.

[Final Order IV.I.2.5] [AMD1]

- 10.19 If the certificate holder discs or tills areas, the certificate holder shall plant dryland wheat or another cover crop in tilled areas within the site boundary. Crops to be planted shall be selected by the certificate holder in coordination with ODFW.
[Final Order IV.I.2.6] [AMD1]
- 10.20 Should new Washington ground squirrel burrows become established within 785 feet of the site boundary, the certificate holder shall immediately report to ODFW. The certificate holder shall coordinate with ODFW to establish additional mitigation measures or to obtain an Incidental Take Permit, as appropriate.
[Final Order IV.I.2.8] [AMD1]
- 10.21 The certificate holder shall conduct post-construction surveys on known Washington ground squirrel colonies in the Carty Generating Station facility area, on land owned by the certificate holder, both within the HMA and in areas where known active burrows were recorded during preconstruction field surveys. The Washington ground squirrel surveys shall be conducted by qualified biologists in year one, year three, and year five after operations of Unit 1 have begun, and then at least every five years after that for the life of the project in years divisible by five. Surveyors shall record evidence of Washington ground squirrel activity, current land use, and evidence of conditions caused by the project that might increase erosion or result in a decline in vegetation quality and adversely affect a Washington ground squirrel colony.
[Final Order IV.I.2.9] [AMD1][AMD2]
- 10.22 The certificate holder shall implement a waste management plan during operation that includes but is not limited to the following measures:
- a. Training employees to minimize and recycle solid waste.
 - b. Recycling paper products, metals, glass and plastics.
 - c. Recycling used oil and hydraulic fluid.
 - d. Collecting non-recyclable waste for transport to a local landfill by a licensed waste hauler.
 - e. Segregating all hazardous wastes such as used oil, oily rags and oil-absorbent materials, mercury-containing lights and lead-acid and nickel-cadmium batteries for disposal by a licensed firm specializing in the proper recycling or disposal of hazardous wastes.
- [Final Order IV.N.2.2]
- 10.23 During construction and operation of the Carty Generating Station, the certificate holder shall obtain potable water from the existing Boeing well ~~located approximately 750 feet northwest of the Boardman Plant~~ or from a bottled water vendor. Water for construction and process water shall be obtained from Carty Reservoir. The certificate holder may use other sources of water for on-site uses subject to prior approval by the Department.
[Final Order V.C.2.1] [AMD1][AMD2]
- 10.24 During operation, the certificate holder shall discharge sanitary wastewater generated at the facility to the Boardman Coal Plant and Carty Generating Station sanitary waste facility

(sewage lagoons) or the Carty septic system in compliance with DEQ or county permit requirements.

[Final Order IV.N.2.4] [AMD2]

- 10.25 Before beginning construction of Unit 1, the certificate holder shall receive approval of the wetlands delineation report by the Department of State Lands and provide an approval letter to the Department.

[Final Order V.B.2.1] [AMD2]

- 10.26 The certificate holder shall avoid impacts to waters of the state in the following manner:

- (a) The certificate holder shall avoid any disturbance to delineated wetlands.
- (b) The certificate holder shall construct stream crossings for transmission lines substantially as described in the *Final Order on the Application*. In particular, the certificate holder shall not remove material from waters of the State or add new fill material to waters of the State such that the total volume of removal and fill exceeds 50 cubic yards for the project as a whole.
- (c) The certificate holder shall construct support structures for aboveground lines outside of delineated stream channels and shall avoid in-channel impacts.

[Final Order V.B.2.2]

- 10.27 Before beginning construction, the certificate holder shall provide to the Department a map showing the final design locations of all components of the facility and the areas that would be disturbed during construction and showing the wetlands and stream channels delineated through field surveys conducted prior to construction. For areas to be disturbed during construction that lie outside of the previously-surveyed areas, the certificate holder shall hire qualified personnel to conduct a pre-construction investigation to determine whether any jurisdictional waters of the State exist in those locations. The certificate holder shall provide a written report on the pre-construction investigation to the Department and the Department of State Lands for approval before beginning construction. The certificate holder shall ensure that construction and operation of the facility will not impact any jurisdictional water identified in the pre-construction investigation in a manner that would require a Removal-Fill Permit.

[Final Order V.B.2.3] [AMD1]

- 10.28 Before beginning operation of the facility, the certificate holder shall demonstrate that the Oregon Department of Environmental Quality has issued to the certificate holder:

- i. A Water Pollution Control Facilities Permit substantially in the form of Exhibit 4 of the *Final Order on the Application*, allowing for wastewater discharge from the Carty Generating Station.

[Final Order V.E.2.1]

- ii. A modified Water Pollution Control Facilities Permit with the following additional condition, allowing discharge of solar panel washwater:

- a. Solar panel wash water is permitted to be discharged through evaporation or infiltration into the ground at the point of application. The use of chemicals, soaps, detergents and heated water is prohibited. Pressure washing is allowed, so long as it does not remove paint or other finishes. Soil erosion and runoff from the Carty Solar Farm is prohibited. Soil erosion must be repaired within 30 days of occurrence.

[AMD1]

- 10.29 The certificate holder shall comply with state laws and rules applicable to Water Pollution Control Facilities Permits that are adopted in the future to the extent that such compliance is required under the respective statutes and rules.
[Final Order V.E.2.2]
- 10.30 The certificate holder may not dispose of wastewater into the Boardman settling ponds, vehicle wash water pond or coal yard ponds unless the site certificate and the WPCF are amended to permit such use.
[Final Order V.E.2.3]
- 10.31 The site certificate holder must meet the compliance dates set out in the WPCF unless alternative compliance dates have been approved in advance in writing by DEQ. Either prior to or not later than 14 calendar days following any lapsed compliance date, the site certificate holder must submit a notice of noncompliance with the established schedule to the Department of Energy and DEQ. Any report of noncompliance must include the cause of noncompliance.
[Final Order V.E.2.4]
- 10.32 Prior to constructing or modifying wastewater management treatment and disposal facilities, detailed plans must be submitted to and approved by the Department of Environmental Quality.
[Final Order V.E.2.5]
- 10.34 ~~[Deleted] Prior to discharge of wastewater treatment system wastewater to lined evaporation ponds for the Carty Generating Station, the certificate holder shall submit a wastewater characterization to the Department of Environmental Quality for review and approval.~~
[Final Order V.E.2. [AMD1]
- 10.35 ~~[Deleted] Unless otherwise approved in writing by the Department of Environmental Quality, the site certificate holder is permitted to manage and dispose only of the following wastes from operation of the Carty Generating Station in lined ponds construction in accordance with the plans that are approved by the Department of Environmental Quality:~~
 - a. ~~Water treatment wastewater~~
 - b. ~~Facility sumps and drains wastewater~~
 - c. ~~Laboratory and sampling wastewater~~
 - d. ~~Evaporative cooling wastewater~~

~~e. Equipment cleaning wastewater~~

~~f. Storm water~~

[Final Order V.E.2.7] [AMD1]

10.36 Prior to discharge of Carty Generating Station sewage to the lagoons, the certificate holder must:

- a. Submit a work plan to remove vegetation from the Clay-lined cells and either leak test the cells or recondition them; and
- b. Submit a long-term plan to ensure the integrity of the clay lined cells. The plan may include evaluating system capacity requirements and modifying system capacity accordingly prior to discharge of Carty Generating Station sewage to lagoons.

[Final Order V.E.2.8]

10.37 The certificate holder must prepare and implement a Hazardous Materials Management and Monitoring plan approved by the Department. The plan(s) must address the handling of potentially hazardous substances (as defined by ORS 465.200) during construction and operation of the facility, measures to prevent on- and off-site contamination and documentation of plan implementation. Separate plans for the construction and operation phases are acceptable. The certificate holder must use hazardous materials in a manner that protects public health, safety and the environment and must comply with all applicable local, state and federal environmental laws and regulations.

The Hazardous Materials Management and Monitoring Plan shall contain the same information required for a Spill Prevention, Control and Countermeasure Plan (40 CFR 112). Whereas the SPCC Plan addresses spill prevention for oil products, the materials management and monitoring plan shall address hazardous substances. The Plan shall include operating procedures to prevent hazardous substances releases, control measures to contain hazardous substance releases, countermeasures to contain, cleanup, and mitigate hazardous substance releases, and procedures for required inspections and testing. This Plan must be submitted to the Department for review and approval prior to respective construction or operation phase of the Carty Generating Station Facility.

[Final Order IV.G.2.2] [AMD1][AMD2]

10.38 If any inspection performed in accordance with the Hazardous Materials Management and Monitoring Plan identifies improper handling or storage of hazardous substances (as defined by ORS 465.200) or improper record keeping procedures, the certificate holder must correct such deficiencies promptly and must report the corrective actions to the Department. If the certificate holder has not corrected such deficiencies within six months after the date of the inspection report, the certificate holder shall submit to the Council an independently prepared estimate of cost of correction. Upon approval of the estimate by the Council, the certificate holder shall increase the amount of the bond or letter of credit required under Condition IV.G.2.9 by the approved amount of the estimate. In no event, however, shall the certificate holder be relieved of its obligation to exercise all due diligence in correcting deficiencies identified in the course of a site inspection.

[Final Order IV.G.2.3]

- 10.39 The certificate holder shall report any release (as defined by ORS 465.200) of hazardous substances to the Department within 72 hours after the discovery of such release, in addition to any other reporting requirements under applicable law. If the certificate holder has not remedied a release consistent with applicable Oregon Department of Environmental Quality standards within six months after the date of the release, the certificate holder shall submit to the Council an independently prepared estimate of the cost to complete necessary remediation. Upon approval of the estimate by the Council, the certificate holder shall increase the amount of its bond or letter of credit by the approved amount of the estimate. In no event, however, shall the certificate holder be relieved of its obligation to exercise all due diligence in remedying a release of hazardous substances.
[Final Order IV.G.2.4] [AMD1]
- 10.40 The certificate holder shall maintain the reservoir at an elevation no lower than an annual average of 665 feet mean sea level (MSL). The certificate holder may operate the reservoir at a lower elevation without a site certificate amendment if the certificate holder consults with the Department and ODFW to determine that the lower elevation would not result in a net loss of habitat and, therefore, does not warrant further analysis and potential mitigation through a site certificate amendment process. The certificate holder shall submit an Amendment Determination Request supporting a conclusion that a site certificate amendment is not required and receive concurrence with the conclusions of the ADR prior to operating the reservoir at a lower elevation. [AMD2]

11 PROTECTION OF HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

- 11.1 ~~[Deleted] Before beginning construction, the certificate holder shall label Oregon State Historic Preservation Office (SHPO) archaeological resource site 35MW19 and a 100-foot buffer around site 35MW19 on construction maps and drawings as a “no entry” area. Site 35MW19 and its 100-foot buffer shall be marked with temporary fencing or stakes with rope and/or flagging to prevent inadvertent entry].~~
[Final Order IV.K.2.1] [AMD1]
- 11.2 Before beginning construction, the certificate holder shall provide to the Department a map showing the final design locations of all components of the facility, the areas that would be temporarily disturbed during construction, the areas that were surveyed in 2009 as described in the Draft Proposed Order or that have been subsequently surveyed.
[Final Order IV.K.2.2] [AMD1]
- 11.3 The certificate holder shall use qualified personnel to conduct field investigation of all areas to be disturbed during construction that lie outside the previously-surveyed areas. The certificate holder shall provide a written report of the field investigation to the Department and to the Oregon State Historic Preservation Office (SHPO). If any potentially significant historic, cultural, or archaeological resource sites are found during the field investigation, the certificate holder shall instruct all construction personnel to avoid the identified sites and shall implement appropriate measures to protect the sites, including the measures described in Condition 11.5.
[Final Order IV.K.2.3]

- 11.4 The certificate holder shall ensure that a qualified archaeologist, as defined in OAR 736-051-0070, develops a training program for cultural resources. The program will instruct construction personnel in the identification of cultural materials and avoidance of accidental damage to identified resource sites. Records of such training shall be maintained at the administration/control building and made available to authorized representatives of the Department upon request.
[Final Order IV.K.2.4] [AMD1]
- 11.5 The certificate holder shall ensure that construction personnel cease all ground-disturbing activities in the immediate area if any archaeological or cultural resources are found during construction of the facility until a qualified archeologist can evaluate the significance of the find. The certificate holder shall notify the Department and the SHPO of the find. If the SHPO determines that the resource is significant, the certificate holder shall make recommendations to the Council for mitigation, including avoidance, field documentation and data recovery, in consultation with the Department, SHPO, interested tribes and other appropriate parties. The certificate holder shall not restart work in the affected area until the certificate holder has demonstrated to the Department and the SHPO that it has complied with archaeological resource protection regulations.
[Final Order IV.K.2.5]
- 11.6 The certificate holder shall:
- i. Prepare and implement an Archaeological Monitoring Plan for construction activities to address and mitigate impacts from exposure of unanticipated or previously unidentified cultural resources that may be exposed during construction of the facility. A current copy of the plan must be maintained at the administration/control building and made available to authorized representatives of the Department upon request. The Archaeological Monitoring Plan, as proposed by the certificate holder, shall include the following requirements:
 - a. ~~[Deleted] The certificate holder will be responsible for providing a qualified archaeological monitor for any ground-disturbing project construction activity that occurs within the area between the shovel tests excavated in 2009 and the delineated 100-foot buffer around 35MW19. No ground disturbance is permitting within the site boundaries or the 100-foot buffer around the archaeological site~~
[AMD1].
 - b. A qualified archaeological monitor is a person who meets the “qualified archaeologist” standards defined by ORS 390.235(6)(b) or who is supervised by a “qualified archaeologist.” If the latter applies, the supervising qualified archaeologist must vouch for the work of the archaeological monitor and author or co-author the archaeological monitoring report provided at the end of construction monitoring.
 - c. The archaeological monitor will keep a daily log of construction and monitoring activities. If intact archaeological materials are encountered during the monitoring, the archaeological monitor will initiate procedures for inadvertent discovery of archaeological resources, as specified in ORS 358.920.

- d. Artifacts will be examined and documented in the field and will not be collected unless authorized under the provisions of a SHPO permit, if one is obtained in the inadvertent discovery of archaeological resources process.
- e. If human remains are identified during the course of construction monitoring, the monitor will initiate the procedures for Inadvertent Discovery of Human Remains, as specified in ORS 97.740-97.760.
- f. The certificate holder is responsible for providing an archaeological monitoring report to the Department and SHPO after construction work is completed. The report must detail the activities of the archaeological monitor and any inadvertent discoveries encountered, along with actions taken to address them.

[Final Order IV.K.2.6]

- ii. At least 45-days prior to construction of the Carty Solar Farm, provide to the Department for review and approval, in consultation with SHPO and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), an amended Archaeological Monitoring Plan for construction activities to address and mitigate impacts from exposure of unanticipated or previously unidentified cultural resources that may be exposed during construction of the Carty Solar Farm. The amended Archaeological Monitoring Plan shall include the following requirements:
 - a. The certificate holder shall coordinate with CTUIR prior to and during ground disturbing activities to determine if a tribal monitor should be onsite.
 - b. A qualified archeologist, as defined in 11.6(i)(b) of this condition, shall be mobilized to the site if unanticipated resources are discovered; in this event, Condition 11.6.ii(c) through (f) would then be applicable.
 - c. The archeological monitor will keep a daily log of construction and monitoring activities. If intact archaeological materials are encountered during the monitoring, the monitor will initiate procedures for inadvertent discovery of archaeological resources, as specified in ORS 358.920.
 - d. Artifacts will be examined and documented in the field and will not be collected unless authorized under the provisions of a SHPO permit, if one is obtained in the inadvertent discovery of archaeological resources process.
 - e. If human remains are identified during the course of construction monitoring, the monitor will initiate the procedures for Inadvertent Discovery of Human Remains, as specified in ORS 97.740-97.760.
 - f. The certificate holder is responsible for providing an archaeological monitoring report to the Department and SHPO after construction work is completed. The report must detail the activities of the monitor and any inadvertent discoveries encountered, along with actions taken to address them.

[AMD1]

12 CARBON DIOXIDE EMISSIONS

- 12.1 The net carbon dioxide emissions rate for the base load gas plant must not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as defined in OAR 345-001-0010.
[Final Order IV.P.2.1]
- 12.2 The net carbon dioxide emissions rate for incremental emissions for the facility operating with power augmentation must not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis at the site during the times of year when the facility is intended to operate with power augmentation, subject to modification under Condition 12.12.
[Final Order IV.P.2.2]
- 12.3 For the purposes of the site certificate, “monetary path payment requirement” means the amount of offset funds determined pursuant to OAR 345-024-0550, -0560, -0590 and -0600 and the amount of the selection and contracting funds that the certificate holder must disperse to The Climate Trust, as the qualified organization, pursuant to OAR 345-024-0710 and the site certificate. The certificate holder shall calculate the monetary path payment requirement using an offset fund rate of \$1.27 per ton of carbon dioxide in 2011 dollars.
- a. The certificate holder shall calculate 2011 dollars using the Index described in Condition 15.1.b.
 - b. The certificate holder shall increase the amount of the letter of credit described in Condition 12.9 by the percentage increase in the Index. The certificate holder shall index the funds from the date of the Council’s approval of the site certificate to the date of disbursement of funds to The Climate Trust.
- [Final Order IV.P.2.3]
- 12.4 Before beginning construction of the facility, the certificate holder shall submit to the Department information identifying its final selection of a gas turbine vendor, heat recovery steam generator vendor along with the following information, as appropriate:
- a. For the base load gas plant, the certificate holder shall submit written design information, based on its contracts with vendors, sufficient to verify the plant’s designed new and clean heat rate (higher heating value) and its net power output at the average annual site condition. The certificate holder shall submit an affidavit certifying the heat rate and capacity.
 - b. For the base load gas plant designed with power augmentation, the certificate holder shall submit written design information, based on its contracts with vendors, sufficient to verify the facility’s designed new and clean heat rate (higher heating value) and its net power output at the site during the times of year when is facility is intended to operate with power augmentation. The certificate holder shall submit an affidavit certifying the heat rate and capacity.

[Final Order IV.P.2.4] [AMD1]

- 12.5 Before beginning construction of the facility, the certificate holder shall specify to the Department the annual average hours and the times that it expects to operate with power augmentation.

[Final Order IV.P.2.5]

- 12.6 To calculate the initial monetary path payment requirement, the certificate holder shall use the contracted design parameters for capacities and heat rates submitted under Condition 12.4 and the annual average hours and times of operation with power augmentation specified under Condition 12.5.

[Final Order IV.P.2.6]

- 12.7 Before beginning construction of the facility, the certificate holder shall enter into a Memorandum of Understanding (MOU) with The Climate Trust that establishes the disbursement mechanism to transfer selection and contracting funds and offset funds to The Climate Trust.

- a. The MOU must be substantially in the form of Exhibit 3 to the *Final Order on the Application*. At the request of the certificate holder, the Council may approve a different form of a letter of credit and concurrent MOU without an amendment of the site certificate.
- b. Either the certificate holder or The Climate Trust may submit to the Council for the Council's resolution any dispute between the certificate holder and The Climate Trust concerning the terms of the letter of credit, the MOU or any other issues related to the monetary path payment requirement. The Council's decision shall be binding on all parties.

[Final Order IV.P.2.7] [AMD1]

- 12.8 The certificate holder shall submit all monetary path payment requirement calculations to the Department for verification in a timely manner before submitting a letter of credit for Council approval, before entering into an MOU with The Climate Trust as required by Condition 12.7, and before making disbursements to The Climate Trust.

[Final Order IV.P.2.8] [AMD1]

- 12.9 Before beginning construction of the facility, the certificate holder shall submit to The Climate Trust a letter of credit in the amount of the offset funds of the monetary path payment requirement as determined under Condition 12.3.

- a. The certificate holder shall use a form of letter of credit that is substantially in the form of Appendix B to the MOU described in Condition 12.7. At the request of the certificate holder, the Council may approve a different form of a letter of credit without an amendment of the site certificate.
- b. The certificate holder shall use an issuer of the letter of credit approved by the Council.
- c. The certificate holder shall maintain the letter of credit in effect until the certificate holder has disbursed the full amount of the offset funds to The Climate Trust. The

certificate holder may reduce the amount of the letter of credit commensurate with payments it makes to The Climate Trust. The letter of credit must not be subject to revocation before disbursement of the full amount of the offset funds.

[Final Order IV.P.2.9] [AMD1]

12.10 For any transfer of the site certificate approved under OAR 345-027-0100:

- a. If The Climate Trust has not yet fully withdrawn the amount of the letter of credit of the current certificate holder at the time of the transfer, the new certificate holder shall submit to The Climate Trust a pro-rated letter of credit, subject to the requirements of Condition 12.9. The new certificate holder shall submit to Council for the Council's approval the identity of the issuer of the letter of credit. The Council may approve a new letter of credit without a site certificate amendment.
- b. The new certificate holder shall enter into an MOU with The Climate Trust as described in Condition 12.7 unless the new certificate holder demonstrates to the satisfaction of the Department that there has been a valid assignment of the current certificate holder's MOU to the new certificate holder. The Council may approve a new MOU without a site certificate amendment.
- c. For resolution of any dispute between the new certificate holder and The Climate Trust concerning the disbursement mechanism for monetary path payments or any other issues related to the monetary path payment requirement, either party may submit the dispute to the Council as provided in Condition 12.7.b.

[Final Order IV.P.2.10]

12.11 The certificate holder shall disburse to The Climate Trust offset funds and selection and contracting funds when requested by The Climate Trust in accordance with Conditions 12.13 and 12.14 and the following requirements:

- a. The certificate holder shall disburse selection and contracting funds to The Climate Trust before beginning construction and as appropriate when additional offset funds are required under Conditions 12.13 and 12.14.
- b. Upon notice pursuant to subsection (c), The Climate Trust may request from the issuer of the letter of credit the full amount of all offset funds available or it may request partial payment of offset funds at its sole discretion. Notwithstanding the specific amount of any contract to implement an offset project, The Climate Trust may request up to the full amount of offset funds the certificate holder is required to provide to meet the monetary path payment requirement.
- c. The Climate Trust may request disbursement of offset funds pursuant to paragraph (b) by providing notice to the issuer of the letter of credit that The Climate Trust has executed a letter of intent to acquire an offset project. The certificate holder shall require that the issuer of the letter of credit disburse offset funds to The Climate Trust within three business days of a request by The Climate Trust for the offset funds in accordance with the terms of the letter of credit.

[Final Order IV.P.2.11]

- 12.12 Within the first 12 months of commercial operation of the facility, the certificate holder shall conduct a 100-hour test at full power without power augmentation (Year One Test-1) and a test at full power with power augmentation (Year One Test-2). Tests performed for purposes of the certificate holder's commercial acceptance of the facility may suffice to satisfy this condition in lieu of testing after beginning commercial operation.
- a. The certificate holder shall conduct the Year One Test-1 to determine the actual heat rate (Year One Heat Rate-1) and the net electric power output (Year One Capacity-1) on a new and clean basis, without degradation, with the results adjusted for the average annual site condition for temperature, barometric pressure and relative humidity. The certificate holder shall calculate carbon dioxide emissions using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel.
 - b. The certificate holder shall conduct the Year One Test-2 to determine the actual heat rate (Year One Heat Rate-2) and net electric power output (Year One Capacity-2) for the facility operating with power augmentation, without degradation, with the results adjusted for the site condition for temperature, barometric pressure and relative humidity at the site during the times of year when the power augmentation is intended to operate. The certificate holder shall calculate carbon dioxide emissions using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel.
 - c. The certificate holder shall notify the Department at least 60 days before conducting the tests required in subsections (a) and (b) unless the certificate holder and the Department have mutually agreed that less notice will suffice.
 - d. Before conducting the tests required in subsections (a) and (b), the certificate holder shall, in a timely manner, provide to the Department for its approval a copy of the protocol for conducting the tests. The Department may approve modified parameters for testing power augmentation on a new and clean basis and pursuant to OAR 345-024-0590(1) without a site certificate amendment. The certificate holder shall not conduct the tests until the Department has approved the testing protocols.
 - e. Within two months after completing the Year One Tests, the certificate holder shall provide to the Council reports of the results of the Year One Tests.

[Final Order IV.P.2.12]

- 12.13 Based on the data from the Year One Tests described in Condition 12.12, the certificate holder shall calculate an adjusted monetary path payment. The certificate holder shall submit its calculations to the Department for verification. If the adjusted amount exceeds the amount of the letter of credit provided according to Condition 12.9 before beginning construction, the certificate holder shall fully disburse the excess amount directly to The Climate Trust within 30 days of the Department's verification of the calculations.
- a. The certificate holder shall include the appropriate calculations of the adjusted monetary path payment with its reports of the results of the Year One Tests required under Condition 12.12.

- b. For calculating the adjusted monetary path payment, the certificate holder shall use an offset fund rate of \$1.27 per ton of carbon dioxide (in 2011 dollars) and shall calculate contracting and selecting funds based on 10 percent of the first \$500,000 in offset funds and 4.286 percent of any offset funds in excess of \$500,000 (in 2011 dollars).
- c. In no case shall the certificate holder diminish the value of the letter of credit it provided before beginning construction or receive a refund from The Climate Trust based on the calculations made using the Year One Capacities and the Year One Heat Rates.

[Final Order IV.P.2.13]

12.14 The certificate holder shall use the Year One Capacity-2 and Year One Heat Rate-2 that it reports for the facility, as described in Condition 12.12.b, to calculate whether it owes supplemental monetary path payments due to increased hours that it uses power augmentation.

- a. Each five years after beginning commercial operation of the facility (five-year reporting period), the certificate holder shall report to the Department the annual average hours the facility operated with power augmentation during that five-year reporting period, as required under OAR 345-024-0590(6). The certificate holder shall submit five-year reports to the Department within 30 days after the anniversary date of beginning commercial operation of the facility.
- b. If the Department determines that the facility exceeded the projected net total carbon dioxide emissions calculated under Conditions 12.4, 12.5 and 12.12, prorated for five years, during any five-year reporting period described in subsection (a), the certificate holder shall offset excess emissions for the specific reporting period according to paragraph (i) and shall offset the estimated future excess emissions according to paragraph (ii), as follows:
 - i. In determining whether there have been excess carbon dioxide emissions that the certificate holder must offset for a five-year reporting period, the Department shall apply OAR 345-024-0600(4)(a). The certificate holder shall pay for the excess emissions at \$1.27 per ton of carbon dioxide emissions (in 2011 dollars). The Department shall notify the certificate holder and The Climate Trust of the amount of supplemental payment required to offset excess emissions.
 - ii. The Department shall calculate estimated future excess emissions for the remaining period of the deemed 30-year life of the facility using the parameters specified in OAR 345-024-0600(4)(b). The certificate holder shall pay for the estimated excess emissions at \$1.27 per ton of carbon dioxide (in 2011 dollars). The Department shall notify the certificate holder of the amount of supplemental payment required to offset future excess emissions.
 - iii. The certificate holder shall offset excess emissions identified in paragraphs (i) and (ii) using the monetary path as described in OAR 345-024-0710. The certificate holder shall pay selection and contracting funds of 10 percent of the

first \$500,000 in offset funds and 4.286 percent of any offset funds in excess of \$500,000 (in 2010 dollars).

- c. The certificate holder shall disburse the supplemental selection and contracting funds and supplemental offset funds to The Climate Trust within 30 days after notification by the Department of the amount that the certificate holder owes.

[Final Order IV.P.2.14]

- 12.15 The certificate holder shall use only pipeline quality natural gas or shall use synthetic gas with a carbon content per million Btu no greater than pipeline-quality natural gas to fuel the combustion turbines and the power augmentation.

[Final Order IV.P.2.15] [AMD1]

- 12.16 After the certificate holder has complied with the conditions relating to the carbon dioxide standard before beginning construction, incremental increases in capacity and heat rate that otherwise fall within the limits specified in OAR 345-027-0050(2) do not require an amendment of the site certificate if the certificate holder complies substantially with Conditions 12.1 through 12.15, except as modified below, and if:

- a. The Department or the Council determines, as described in OAR 345-027-0050(5), that the proposed change in the facility does not otherwise require an amendment; and
- b. The certificate holder complies with the appropriate carbon dioxide emissions standard and monetary offset rate in effect at the time the Department or the Council makes its determination under this condition.

[Final Order IV.P.2.16]

- 12.17 ~~[Deleted]If the certificate holder begins construction of the first generator block but not the second block, the certificate holder shall comply with Conditions 12.1 through 12.15 for the first block. If the certificate holder later begins construction of the second generator block, the certificate holder shall comply with Conditions 12.1 through 12.15 for the second block.~~

[Final Order IV.P.2.17] [AMD1]

13 NOISE CONTROL AND NOISE COMPLAINT RESPONSE

- 13.1 To reduce construction noise impacts at nearby residences, the certificate holder shall:
 - a. Confine the noisiest operation of heavy construction equipment to the daylight hours.
 - b. Require contractors to install and maintain exhaust mufflers on all combustion engine-powered equipment; and
 - c. Establish a complaint response system at the construction manager's office to address noise complaints. Records of noise complaints during construction must be made available to authorized representatives of the Department of Energy upon request.

[Final Order V.A.2.1]

- 13.2 During operation, the certificate holder shall maintain a complaint response system to address noise complaints. The certificate holder shall notify the Department within 15 days of receiving a complaint about noise from the facility. The notification should include the date the complaint was received, the nature of the complaint, the complainant's contact information, the location of the affected property, and any actions taken, or planned to be taken, by the certificate holder to address the complaint.
[Final Order V.A.2.2]
- 13.3 Upon written notification from the Department, the certificate holder will monitor and record the actual statistical noise levels during operations to verify that the certificate holder is operating the facility in compliance with the noise control regulations. The monitoring plan must be reviewed and approved by the Department prior to implementation. The cost of such monitoring, if required, will be borne by the certificate holder.
[Final Order V.A.2.3]

14 MONITORING AND REPORTING REQUIREMENTS - GENERAL

- 14.1 The following general monitoring conditions apply:
- a. The certificate holder shall consult with affected state agencies, local governments and tribes and shall develop specific monitoring programs for impacts to resources protected by the standards of divisions 22 and 24 of OAR Chapter 345 and resources addressed by applicable statutes, administrative rules and local ordinances. The certificate holder must submit the monitoring programs to the Department of Energy and receive Department approval before beginning construction or, as appropriate, operation of the facility.
 - b. The certificate holder shall implement the approved monitoring programs described in OAR 345-027-0028(1) and monitoring programs required by permitting agencies and local governments.
 - c. For each monitoring program described in OAR 345-027-0028(1) and (2), the certificate holder shall have quality assurance measures approved by the Department before beginning construction or, as appropriate, before beginning commercial operation.
 - d. If the certificate holder becomes aware of a significant environmental change or impact attributable to the facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and any affected site certificate conditions.

[Final Order VI.2] [Mandatory Condition OAR 345-027-0028]

- 14.2 The certificate holder shall report according to the following requirements:
- a. General reporting obligation for energy facilities under construction or operating:

- i. Within six months after beginning construction, and every six months thereafter during construction of the energy facility and related or supporting facilities, the certificate holder shall submit a semiannual construction progress report to the Department of Energy as described in OAR 345-026-0080(1)(a). [AMD1]
- ii. By April 30 of each year after beginning operation, the certificate holder shall submit an annual report to the Department addressing the subjects listed in OAR 345-026-0080 (1)(b). The Council Secretary and the certificate holder may, by mutual agreement, change the reporting date. [Amendment No. 1]
- iii. To the extent that information required by OAR 345-026-0080 is contained in reports the certificate holder submits to other state, federal or local agencies, the certificate holder may submit excerpts from such other reports to satisfy this rule. The Council reserves the right to request full copies of such excerpted reports.

[Final Order VI.4] [Mandatory Condition OAR 345-026-0080] [AMD1]

- 14.3 The certificate holder and the Department of Energy shall exchange copies of all correspondence or summaries of correspondence related to compliance with statutes, rules and local ordinances on which the Council determined compliance, except for material withheld from public disclosure under state or federal law or under Council rules. The certificate holder may submit abstracts of reports in place of full reports; however, the certificate holder shall provide full copies of abstracted reports and any summarized correspondence at the request of the Department.
[Final Order VI.5] [Mandatory Condition OAR 345-026-0105]

15 RETIREMENT AND FINANCIAL ASSURANCE

- 15.1 Before beginning construction, the certificate holder shall submit to the State of Oregon through the Council a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount for Block 1 is \$7.884 million (in 3rd Quarter 2011 dollars), to be adjusted to the date of issuance, and adjusted on an annual basis thereafter, as described in sub-paragraph (a**b**) of this condition. The initial bond or letter of credit amount for the Carty Solar Farm and its supporting facilities is \$2.7 million (in 3rd Quarter 2016 dollars) to be adjusted to the date of issuance, and adjusted on an annual basis thereafter, as described in sub-paragraph (a**b**) of this condition. The initial bond or letter of credit amount for the related or supporting facilities associated with Amendment 2 is \$13.799 million (in fourth Quarter 2020 dollars) to be adjusted to the date of issuance and submitted within 60 days of execution of the Second Amended Site Certificate, and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this condition.
- a. The certificate holder may adjust the amount of the bond or letter of credit based on the final design configuration of the facility and turbine types selected. Any revision to the restoration costs should be adjusted to the date of issuance as described in (b), and is subject to review and approval by the Department.

- b. The certificate holder shall adjust the amount of the bond or letter of credit, using the following calculation and subject to approval by the Department.
 - i. Adjust the amount of the bond or letter of credit amount for Unit 1 (expressed in 3rd Quarter 2011 dollars) and Carty Solar Farm (expressed in 3rd Quarter 2016 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency (the "Index") and using the index value and the quarterly index value applicable for Unit 1 and Carty Solar Farm for the date of issuance of the new bond or letter of credit. If at any time the Index is no longer published, the Council shall select a comparable calculation to adjust the bond or letter of credit to present value.
 - ii. Round the resulting total to the nearest \$1,000 to determine the financial assurance amount.
- c. The certificate holder shall use a form of bond or letter of credit approved by the Council.
- d. The certificate holder shall use an issuer of the bond or letter of credit approved by the Council.
- e. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under Condition VI.4.
- f. The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility site.

[Final Order IV.G.2.9] [Mandatory Condition OAR 345-025-0006(8)] [AMD1][AMD2]

- 15.2 If the certificate holder elects to use a bond to meet the requirements of Condition 15.1, the certificate holder shall ensure that the surety is obligated to comply with the requirements of applicable statutes, Council rules and this site certificate when the surety exercises any legal or contractual right it may have to assume construction, operation or retirement of the energy facility. The certificate holder shall also ensure that the surety is obligated to notify the Council that it is exercising such rights and to obtain any Council approvals required by applicable statutes, Council rules and this site certificate before the surety commences any activity to complete construction, operate or retire the energy facility.

[Final Order IV.G.2.10]

- 15.3 The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

[Final Order IV.G.2.5] [Mandatory Condition OAR 345-025-0006(7)]

- 15.4 The certificate holder must retire the facility in accordance with a retirement plan approved by the Council if the certificate holder permanently ceases construction or operation of the facility. The retirement plan must describe the activities necessary to restore the site to a useful, non-hazardous condition, as described in OAR 345-027-0110(5). After Council approval of the plan, the certificate holder must obtain the necessary authorization from the

appropriate regulatory agencies to proceed with restoration of the site.
[Final Order IV.G.2.6] [Mandatory Condition OAR 345-025-0006(9)]

- 15.5 The certificate holder is obligated to retire the facility upon permanent cessation of construction or operation. If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed final retirement plan for the Council's approval.
[Final Order IV.G.2.7] [Mandatory Condition OAR 345-025-0006(16)]
- 15.6 Upon the Council's approval of a final retirement plan prepared per Condition 15.5, the Council may draw on the bond or letter of credit submitted per the requirements of Condition 15.1 to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan.
[Final Order IV.G.2.8] [Mandatory Condition OAR 345-027-0020(16)]
- 15.7 Following receipt of the site certificate or an amended site certificate, the certificate holder shall implement a plan that verifies compliance with all site certificate terms and conditions and applicable statutes and rules. As a part of the compliance plan, to verify compliance with the requirement to begin construction by the date specified in the site certificate, the certificate holder shall report promptly to the Department of Energy when construction begins. Construction is defined in OAR 345-001-0010. In reporting the beginning of construction, the certificate holder shall describe all work on the site performed before beginning construction, including work performed before the Council issued the site certificate, and shall state the cost of that work. For the purpose of this exhibit, "work on the site" means any work within a site or corridor, other than surveying, exploration or other activities to define or characterize the site or corridor. The certificate holder shall document the compliance plan and maintain it for inspection by the Department or the Council.
[Final Order VI.3] [Mandatory Condition OAR 345-026-0048]

Successors and Assigns

To transfer this site certificate or any portion thereof or to assign or dispose of it in any other manner, directly or indirectly, the certificate holder shall comply with OAR 345-027-0100.

Severability and Construction

If any provision of this agreement and certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement and certificate did not contain the particular provision held to be invalid.

Governing Law and Forum

This site certificate shall be governed by the laws of the State of Oregon. Any litigation or arbitration arising out of this agreement shall be conducted in an appropriate forum in Oregon.

Execution

This site certificate may be executed in counterparts and will become effective upon signature by the Chair of the Energy Facility Siting Council and the authorized representative of the certificate holder.

IN WITNESS THEREOF, this site certificate has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and by Portland General Electric Company.

ENERGY FACILITY SITING COUNCIL

**PORTLAND GENERAL ELECTRIC
COMPANY**

By: _____

By: _____

Hanley Jenkins II, Chair
Oregon Energy Facility Siting Council

Print: _____

Date: _____

Date: _____

Attachment 2

Water Pollution Control Facility Permit



Portland General Electric
121 SW Salmon Street • Portland, Ore. 97204
PortlandGeneral.com

August 17, 2020
Carty Generating Station

Patty Isaak
Permit Coordinator
Oregon Department of Environmental Quality
800 SE Emigrant Avenue, Suite 330
Pendleton, OR 97801

Subject: WPCF 100189 Proposed Modifications

Dear Patty Isaak,

Portland General Electric (PGE) has submitted a preliminary Request for Amendment 2 (pRFA2) to the Carty Generating Station (CGS) site certificate to the Oregon Department of Energy (ODOE) and will soon be submitting a revised pRFA2 to ODOE. As part of pRFA2, PGE is requesting modifications to Water Pollution Control Facility (WPCF) permit 100189 which is governed by the site certificate. This cover letter and attachments will also be submitted to ODOE as Attachment 2 to the revised pRFA2.

Attached is a redline of WPCF permit 100189 showing the proposed modifications PGE is requesting the Oregon Department of Environment Quality (DEQ) approve. Justification for the proposed modifications are provided as inserted comments for each redline change. Additional information supporting the proposed modification of Schedule A, Condition 6 is provided below. PGE understands that DEQ will review the proposed modifications and then provide ODOE a copy of the resulting Addendum No. 2 to the WPCF permit to be incorporated into the Draft Proposed Order that will be prepared by ODOE. The requested modifications are considered a major modification prior to expiration; therefore, PGE has included the required fee of \$7,686.

PGE is requesting that Schedule A, Condition 6 of the WPCF be modified to add turbine rinse water as an allowed discharge. Approximately twice a year PGE washes the combustion turbine generator compressor blades to remove fouling. A detergent is used to aid in the cleaning; it is a non-phosphate biodegradable detergent, and between 500 mL and 1,000 mL is used during cleaning. The safety data sheet for the detergent is attached. No more than 800 gallons of wastewater results from each cleaning. The combustion turbine is a steam turbine and oil and grease are not present on the compressor blades; consequently, the wash water does not contain any oil and grease particles. Since operations of CGS began in 2016 until February 2020, PGE has been pumping this rinse water into a tank and disposing of the water at an offsite treatment facility. In February 2020 and again in August 2020 PGE requested written approval from DEQ to dispose of the turbine wash water into Carty Reservoir via the CGS holding ponds; both of those requests were approved. PGE has now tested four batches of the rinse water for the parameters listed in Schedule A, Condition 7 of the WPCF permit and compared those results to the 2019 average results for Carty Reservoir and the WPCF limits in Schedule A, Condition 7 in Table 1 below. If approved, turbine wash water would be pumped to the holding ponds located at CGS which then directly discharged to Carty Reservoir.

If you have any questions about the proposed modifications or supporting information, please call or email me (503-464-2634 or Lenna.Cope@pgn.com).

Table 1. Turbine wash water and the average concentration at the Carty Reservoir intake structure in 2019 compared to the limits in Schedule A, Condition 7 of the WPCF permit. All units are in mg/L except for pH.

Sample Date	Turbine Wash Water Results				Carty Res. 2019 Average Concentration	WPCF Limit
	12/11/2018	6/6/2019	12/10/2019	6/17/2020		
Bicarb Alk	ND	ND	ND	20.50	126	500
Arsenic	ND	ND	ND	ND	0.002	0.01
Boron	0.037	ND	ND	ND	0.2	0.5
Cadmium	ND	ND	ND	ND	<0.0002	0.005
Calcium	3.14	2.6	2.33	4.21	40	500
Chloride	26.7	1.38	1.81	1.82	18	100
Chromium	ND	ND	ND	0.00398	<0.001	0.05
Copper	ND	0.00316	0.0023	0.00468	0.01	0.1
Fluoride	0.12	ND	ND	ND	0.5	1
pH	3.74	6.76	7.31	7.64	8.3	9.4
Magnesium	1.02	1.69	1.2	1.38	18	250
Mercury	ND	ND	ND	ND	<0.00008	0.002
Nitrate	ND	ND	ND	0.0536	0.2	10
Sodium	6.09	7.3	7.33	4.84	29	150
Sulfate	26.7	24.1	13	7.11	75	200
TDS	ND	55	50	22	272	500
Zinc	0.026	0.0122	0.0429	0.0321	0.007	0.1

Sincerely,



Lenna Cope, P.E.
Environmental Engineer
Portland General Electric

Cc: Justin Sterger (DEQ)
Chase McVeigh-Walker (ODOE)

Attachments (2)
Redline WPCF permit
Safety Data Sheet

Expiration Date: April 30, 2023
Permit Number: 100189
File Number: 70795
Page 1 of 20 Pages

WATER POLLUTION CONTROL FACILITIES PERMIT

Department of Environmental Quality
Eastern Region
700 S.E. Emigrant Avenue, Suite 330, Pendleton, OR 97801
Telephone: (541) 276-4063

Issued pursuant to ORS 468B.050

FACILITY:

Portland General Electric Co.
121 SW Salmon St.
Portland, OR 97204

SOURCES COVERED BY THIS PERMIT:

<u>Type of Waste</u>	<u>Method of Disposal</u>
Industrial Wastewater	Seepage and Evaporation
Domestic Wastewater	Seepage and Evaporation
Coal Ash	Land Disposal

PLANT TYPE AND LOCATION:

Boardman Power Plant
(Coal-fired electricity generation)
Carty Generating Station
(Gas-powered electricity generation)

RIVER BASIN INFORMATION:

Basin: Umatilla
Sub-Basin: Middle Columbia / Lake Wallula
LLID: 1198031456823 RM 10
County: Morrow

Tower Road
Boardman, Oregon

Nearest surface stream which would receive
wastewater if it were to discharge: Sixmile Canyon

Treatment System Class: Level I

Issued in response to Carty Generating Station and Boardman Power Plant Application No. 971051 received September 11, 2009.

Pursuant to ORS 469.378, a land use compatibility determination is not required for this permit and the permit is conditioned on a land use determination by the Energy Facility Siting Council.

Cheryll Hutchens-Woods, Water Quality Manager
Eastern Region

May 2, 2013
Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the Permittee is authorized to construct, install, modify, or operate a wastewater collection, treatment, control and disposal system in conformance with all the requirements, limitations, and conditions set forth in the attached schedules as follows:

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Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon Administrative Rule, any other direct or indirect discharge to waters of the state is prohibited, including discharge to an underground injection control system.

SCHEDULE A

Waste Disposal Limitations

1. Direct discharge to surface waters is not permitted.
2. The Permittee must manage all wastewater in a manner that will prevent:
 - a. The creation of odors, fly and mosquito breeding or other nuisance conditions;
 - b. A violation of the Department's Groundwater Quality Protection Rules (Oregon Administrative Rules (OAR) Chapter 340, Division 40); and,
 - c. A violation of any permit-specific groundwater concentration limits, established pursuant to OAR 340-040-0030, which will be incorporated into this permit by modification.
3. All activities pertaining to the management, treatment, and disposal of the authorized wastes¹, as well as wastewater-derived solids from ponds, sumps and settling basins, must be conducted in accordance with the approved Operations, Monitoring and Maintenance (OM&M) Plan (see Schedule C, Condition 3), and any amendments to the plan approved in writing by the Department. No changes may be made in the approved OM&M Plan without written approval from the Department.
4. The Permittee must not exceed the minimum freeboard established by design specifications for all ponds and sewage lagoons.
5. Unless otherwise approved in writing by the Department, the Permittee is permitted to manage and dispose only the following wastes from operation of the Boardman Power Plant in Carty Reservoir:
 - a. Cooling water
 - b. Water treatment wastewater
 - c. Facility sumps and drains wastewater
 - d. Laboratory and sampling wastewater
 - e. Condensate and steam system blowdown
 - f. Equipment cleaning wastewater (excluding boiler cleaning wastewater until after submittal of a waste characterization and written approval from the Department)
 - g. Ash transport wastewater
 - h. Storm water (excluding storm water from the coal yard)
6. Unless otherwise approved in writing by the Department, the Permittee is permitted to manage and dispose only the following wastes from operation of the Carty Generating Station in Carty Reservoir:
 - a. Cooling water
 - b. Water treatment wastewater
 - c. Facility sumps and drains wastewater
 - d. Laboratory and sampling wastewater
 - e. Evaporative cooling wastewater
 - f. Equipment cleaning wastewater
 - g. Storm water
 - h. Turbine rinse water

Commented [LC1]: PGE proposes to add turbine rinse water as an authorized waste, based on the sample results of three batches of turbine rinse water. Sample results and information about frequency and volume of rinse water is provided in the cover letter for these proposed revisions.

¹ Excluding Boardman Power Plant coal ash, which must be managed in accordance with the Ash Disposal Plan.

7. The following limitations² must not be exceeded in Carty Reservoir at the intake structure of the recirculation line from Carty Reservoir to the Boardman Power Plant and Carty Generating Station:

Parameter	Limitations (Sample Maximum)
Chloride	100 mg/L
Sulfate	200 mg/L
Sodium	150 mg/L
Arsenic	0.01 mg/L
Boron	0.5 mg/L
Copper	0.1 mg/L
Cadmium	0.005 mg/L
Calcium	500 mg/L
Chromium	0.05 mg/L
Magnesium	250 mg/L
Bicarbonate Alkalinity	500 mg/L
Fluoride	1 mg/L
Nitrate	10 mg/L
Total Dissolved Solids (TDS)	500 mg/L
Mercury	0.002 mg/L
Zinc	0.1 mg/L
pH	9.4 s.u.
Oil sheen	No visible

Commented [LC2]: PGE proposes to modify the footnote to reflect that Hydrogeologic Characterization Report has been submitted per Schedule C, Condition 5.

Commented [LC3]: PGE proposes to modify the terminology to use language more general to both Carty Generating Station and Boardman Power Plant, as currently written "recirculation line" is specific to only Boardman.

8. The following limitations must not be exceeded in Carty Reservoir at the intake of the irrigation withdrawal pump, during withdrawal for irrigation:

Parameter	Limitations (Sample Maximum)
Total Dissolved Solids	320 mg/L
Arsenic	0.0063 mg/L
Chromium	0.0025 mg/L
pH	9.4 s.u.
Sodium Adsorption Ratio	1.66

9. Unless otherwise approved in writing by the Department, the Permittee is permitted to manage and dispose only the following wastes from operation of the Boardman Power Plant in the Boardman Lined Ponds, if disposal of such wastewater into Carty Reservoir would impair the use of the reservoir water for plant operation or it is required to maintain reservoir constituent concentrations below permit limitations after implementation of irrigation withdrawal action requirements that are required by Schedule B, Condition 2:
- Water treatment wastewater
 - Facility sumps and drains wastewater
 - Laboratory and sampling wastewater
 - Condensate and steam system blowdown
 - Equipment cleaning wastewater (excluding boiler cleaning wastewater until after submittal of a waste characterization and written approval from the Department)
 - Ash transport wastewater
 - Storm water

² Limitations are based on protection of wildlife and groundwater and may be modified after submittal of a Hydrogeologic Characterization Report (see Schedule C, Condition 5) and/or exceedance of a groundwater concentration limit (see Schedule A, Condition 2.c).

10. Unless otherwise approved in writing by the Department, the Permittee is permitted to manage and dispose only the following wastes from operation of the Carty Generating Station in the lined evaporation ponds originally built to serve Boardman Coal Plant or in new lined evaporation ponds constructed in accordance with plans that are approved by the Department (see Schedule C, Condition 2):
- Water treatment wastewater
 - Facility sumps and drains wastewater
 - Laboratory and sampling wastewater
 - Evaporative cooling wastewater
 - Equipment cleaning wastewater
 - Storm water
 - Turbine rinse water
11. Equipment and vehicle wash water and storm water from the vehicle fueling and maintenance areas from the Boardman Power Plant must be disposed in the Boardman Power Plant's lined pond adjacent to the vehicle wash and fueling area. However, wash water derived from washing exterior surfaces only of vehicles and equipment may be disposed in storm water swales provided chemicals, soaps, and detergents are not used and washing is restricted to the exterior of the vehicle or equipment. Disposal of engine, transmission or undercarriage wash water is not permitted in storm water swales.
12. Vehicle wash water from the Carty Generating Station must be disposed in a lined pond constructed in accordance with plans that are approved by the Department (see Schedule C, Condition 2). However, wash water derived from washing exterior surfaces only of vehicles and equipment may be disposed in storm water swales provided chemicals, soaps, and detergents are not used and washing is restricted to the exterior of the vehicle or equipment. Disposal of engine, transmission or undercarriage wash water is not permitted in storm water swales.
13. The Permittee is permitted to manage and dispose of fire protection system wastewater and facility construction and commissioning wastewater in storm water swales or Carty Reservoir, provided chemicals, soaps, and detergents are not used.
14. Disposal of rinse water from concrete mixer trucks chutes and exteriors is permitted on site. Disposal of concrete mixer washout is not authorized by this permit.
15. Boardman Power Plant and Carty Generating Station domestic wastewater (sewage) ~~must~~ may be disposed of in the Boardman Power Plant sewage lagoons or to a septic system constructed in accordance with a construction permit from Umatilla County Public Health department. Carty Generating Station sewage is permitted to be disposed in the Boardman Power Plant sewage lagoons after reconditioning the clay liners or demonstrating clay liner integrity by conducting a leak test and submitting a long term plan to the Department to ensure the integrity of the clay lined cells (see Schedule C, Condition 2). The approved average dry weather design flow for the facility is 10,500 GPD.

Commented [LC4]: PGE proposes this change to add the word "evaporation" to align with the terminology in Schedule B and Schedule C.

Commented [LC5]: PGE proposes these modifications to reflect that the previous clay lined sewage lagoons have been relined with a synthetic liner in the fall of 2014 and to reflect the option of disposal to a septic system if permitted through the appropriate agency (in this case the Umatilla County Public health department because the flow rate does not trigger WPCF requirements).

16. Prior to overflow into the unlined evaporation/seepage cell, sanitary sewage must receive at least the equivalent of secondary treatment and disinfection and meet the following limitations:

Parameter	Limitations	
<i>E. coli</i> bacteria	Must not exceed 126 organisms per 100 ml monthly geometric mean. A single sample must not exceed 406 organisms per 100 ml ³	
	Annual Average (mg/L)	Maximum (mg/L)
NO ₃ -N	7	10
Total Nitrogen ⁴	10	15

17. Wash water from coal yard operations must be collected for treatment in the Boardman Power Plant coal yard ponds and reused in the coal yard. Wash water that floods sumps or basements in the coal yard buildings due to equipment failure and must be removed to repair the equipment may be pumped out of the basements or sumps and onto the coal pile or into storm water swales that remain inside the coal yard boundaries and do not discharge to Carty Reservoir.
18. Air pollution control wastewater may be approved for disposal in lined evaporation ponds, coal yard or ash disposal area after submittal of a waste characterization and written approval from the Department.
19. Storm water from the coal yard and ash disposal landfill must not be discharged to Carty Reservoir. Once a final cover system has been installed on the ash disposal landfill, storm water run-off from the final cover system will be routed off the ash disposal landfill area and discharge to surrounding natural terrain, which ultimately discharges toward Carty Reservoir.
20. Management and disposal of Boardman Power Plant ash must be conducted in accordance with this permit and the Boardman Power Plant Ash Disposal Plan. Except as provided for in the Boardman Power Plant Ash Disposal Plan, disposal of wastes other than coal ash is prohibited in the ash disposal landfill. If management and disposal of coal ash becomes subject to requirements established by the Environmental Protection Agency or the Department during the term of this permit, or any administrative extension of the term of the permit, the new regulatory requirements control over any inconsistent provisions in the Boardman Power Plant Ash Disposal Plan and this permit. ~~At that time, the Permittee will be required to apply for a permit from the Department's Land Quality Division. If the Land Quality Division issues a permit, the ash disposal requirements in this permit will no longer apply.~~
21. ~~[Addendum No. 1, effective date 1/24/2019, already added a condition regarding disposal of solar panel wash water. This condition would remain in effect and is not impacted by the requested Addendum No. 2.]~~
22. The limitations established in the Groundwater Monitoring Plan must not be exceeded at the compliance points established in the Groundwater Monitoring Plan.

Commented [LC6]: PGE proposes this modification because the ash disposal landfill will be closed starting in 2021. Storm water from the final cover system will be collected and dissipated to sheet flow in the direction of Carty Reservoir following natural terrain. It is unlikely that sheet flow would reach the reservoir as it will be roughly 800 feet from the discharge point to the reservoir.

Commented [LC7]: This provision is already removed from the permit via a permit action letter dated 11/4/2015 from Don Butcher. The permit action letter was issued after the Federal Coal Combustion Residual (CCR) rules were issued and did not require PGE to have a solid waste permit. The change is shown here so that this redline version reflects previous permit actions and addendums.

Commented [LC8]: PGE proposes this new condition to require PGE to meet the groundwater limitations determined using sampling data presented in the 2018 Water Quality Analysis Report and any subsequent sampling data. As discussed with DEQ this requirement could be implemented as a new condition (as presented here) or may be incorporated into existing Condition 2.c.

³ If a single sample exceeds 406 organisms per 100 ml, then five consecutive re-samples may be taken at intervals no greater than four-hours beginning within twenty-eight (28) hours after the original sample was taken. If the log mean of the five re-samples is less than or equal to 126 organisms per 100 ml, a violation will not be triggered.

⁴ Total Nitrogen in this permit limitation equals Total Kjeldahl Nitrogen (TKN) + Nitrate Nitrogen (NO₃-N).

SCHEDULE B

Minimum Monitoring and Reporting Requirements (unless otherwise approved in writing by the Department).

1. Facilities Monitoring

The Permittee must monitor the facilities in accordance with the following Department approved plans: OM&M Plan, Groundwater Monitoring Plan, Ash Disposal Plan and ~~Boardman Power Plant Wastewater Water~~-Quality Management Program, and any amendments to the plans and program approved in writing by the Department. Monitoring must include the following items and parameters:

a. ~~Boardman Power Plant~~ Sanitary Lagoons

Items and Parameters	Minimum Frequency	Sample Type/Action
Influent ⁵		
Total flow (MGD)	Daily	Record
Flow meter calibration	Annually	Written verification
pH	2/week	Grab/field measurement
BOD ₅	Quarterly	Composite ⁶ or Grab⁶
TSS	Quarterly	Composite ⁶ or Grab⁶
Overflow to seepage cell ⁷		
Total flow (MGD)	Daily	Record
Flow meter calibration	Annually	Written verification
Quantity chlorine used	Daily	Measurement
Chlorine residual	Daily	Grab
pH	2/week	Grab/field measurement
<i>E. coli</i> bacteria	Monthly	Grab
BOD ₅	Quarterly	Composite ⁶
TSS	Quarterly	Composite ⁶
TKN	Quarterly	Grab
NO ₃ -N	Quarterly	Grab
Lagoon Site		
Freeboard ⁸	Weekly	Measure and record
Perimeter inspection ⁹	Daily Weekly	Observation

Commented [LC9]: PGE proposes to rename the Boardman Power Plant Water Quality Management Program to be applicable to both the Boardman Plant (while it continues to operate) and the Carty Generating Station.

Commented [LC10]: PGE proposes this language change to make the terminology more general.

Commented [LC11]: PGE proposes this change to allow for grab samples to be collected at Carty Generating Station, while composite samples will continue to be collected at Boardman until Boardman no longer discharges to the sanitary lagoons. Carty discharges to the sanitary lagoons through a lift station that effectively creates its own composite sample; therefore, a grab sample out of the lift station will result in similar results as a composite sample. The Boardman sample is collected from a manhole; therefore, composite samplings is still appropriate. Footnote 6 has been updated.

Commented [LC12]: PGE proposes to change the frequency of monitoring to align with the frequency of freeboard measurements. Since daily monitoring started in 2013, there have been no issues identified during perimeter inspections and weekly inspections would be sufficient to identify any future issues before the function of the lagoons would be compromised. Overflow is not a concern because PGE has to pump extra water to the lagoons to keep a minimum amount of water in the lagoons.

⁵ Sample point is in discharge to lagoons, except that flow from Boardman Power Plant coal yard sewage collection system may be measured by monitoring domestic water usage of facilities that discharge wastes to the coal yard sewage collection system. And, except that BOD₅, TSS and pH monitoring results of domestic sewage from Boardman Power Plant power block may be deemed representative of BOD₅, TSS and pH from Boardman Power Plant coal yard sewage collection system.

⁶ Composite samples must consist of no less than 6 samples collected over a 24-hour period and apportioned according to the volume of flow at the time of sampling. Samples for Boardman Power Plant must be composite samples, samples for Carty Generating Station collected from the lift station may be either composite or grab.

⁷ Required only when overflow occurs. Sample point is at overflow to seepage cell

⁸ Freeboard is measured from lowest point on containment structure

⁹ A perimeter inspection is a sight surveillance of the lagoon dikes looking for the presence of badgers, muskrats, ground hogs or other rodents whose burrowing activities could threaten the structural integrity of a dike.

b. Lined Evaporation Ponds (Boardman Power Plant and Carty Generating Station)

Items and Parameters	Minimum Frequency	Sample Type/Action
Each Pond ¹⁰		
Total Flow to pond (MG)	Quarterly	Record
Flow meter calibration	Annually	Written verification
As, Cd, Cr, Hg, TDS, Oil & Grease, TTHMs ¹¹ , pH	Quarterly	Grab
Freeboard	Weekly	Measure and record
Perimeter inspection	Daily Weekly	Observation

Commented [LC13]: PGE proposes to change the frequency of monitoring to align with the frequency of freeboard measurements. Since daily monitoring started in 2013, there have been no issues identified during perimeter inspections and weekly inspections would be sufficient to identify any future issues before the function of the lagoons would be compromised. In addition, once Boardman ceases operations daily inspections would not be warranted since there will no longer be discharges to the lined evaporation ponds and the volume of water in the ponds will only decrease. Weekly inspection would be sufficient until all the liquid evaporates or is removed and disposed of offsite.

c. Carty Reservoir

Items and Parameters	Minimum Frequency	Sample Type/Action
Effluent ¹²		
Total flow (MG)	Monthly	Record
Flow meter calibration	Annually	Written verification
As, B, Cd, Ca, Cr, Cu, Fe, Mg, Hg, K, Na, V, Se, Zn, Bicarb Alk, Total Alk, Cl, F, NO ₃ , SiO ₂ , SO ₄ , TDS, Cond, pH, TTHMs	Monthly	Grab
Make-up water		
Total flow (MG)	Monthly	Record
Flow meter calibration	Annually	Written verification
Irrigation withdrawal ¹³		
Total flow (MG)	Monthly	Record
Flow meter calibration	Annually	Written verification
TDS, As, Cr, pH, SAR	Twice Monthly, except as required by Schedule B, Condition 2	Grab
Carty Reservoir		
Water elevation	Monthly	Measure and record

Commented [LC14]: PGE proposes this change to reflect discussions with DEQ regarding where flow meters are located for Boardman. Previously total flow and flow meter calibration were under the "effluent" heading; when they should have been under the "Irrigation withdrawal" heading.

d. Coal Ash

Items and Parameters	Minimum Frequency	Sample Type/Action
Ash transferred off site Bottom Economizer Fly	Annual	Record volumes and recipients
Ash disposed on site Bottom Economizer	Annual	Record volumes

¹⁰ The Permittee must designate and maintain a sampling station at each pond from which representative samples may be collected, except that flow to Boardman Power Plant's two lined evaporation ponds may be measured at a single location downstream of all possible flow additions.

¹¹ Total trihalomethanes

¹² Sample point is ~~in the recirculation line (at the intake)- structure~~ from Carty Reservoir to the Boardman Power Plant ~~and Carty Generating Station~~

¹³ Sample point is at intake to irrigation withdrawal pump

Fly		
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2. Irrigation Withdrawal Action Requirements

If irrigation withdrawal monitoring results indicate that a trigger level in the following table has been exceeded, the Permittee must:

- a. Report the results to the Department within ten (10) calendar days of receipt of the laboratory data;
- b. Immediately implement Operations, Monitoring and Management (OM&M) Plan (see Schedule C, Condition 3) procedures to decrease parameter concentrations in Carty Reservoir; and,
- c. Immediately begin monitoring the exceeded parameter(s) in accordance with the approved OM&M Plan until concentrations return to below trigger level(s).

Parameter	Trigger Level
Total Dissolved Solids	280 mg/L
Arsenic	0.0055mg/L
Chromium	0.0022mg/L
pH	9.0 s.u.
Sodium Adsorption Ratio	1.44

3. Groundwater Monitoring

The Permittee must monitor groundwater in accordance with a Department-approved Groundwater Monitoring Plan and any amendments to the plan approved in writing by the Department.

4. Groundwater Monitoring Resampling Requirements¹⁴

- a. If monitoring indicates that a concentration limit has been exceeded at a compliance point, the Permittee must immediately resample the monitoring well, unless otherwise approved in writing by the Department. The results of both sampling events must be reported to the Department within 10 calendar days of receipt of the laboratory data.
- b. If monitoring indicates a significant increase (increase or decrease for pH), as defined in the Groundwater Monitoring Plan, in the value of a parameter monitored, the Permittee must immediately resample unless otherwise approved in writing by the Department. If the re-sampling confirms a change in water quality, the Permittee must:
 - 1. Report the results to the Department within ten (10) calendar days of receipt of the laboratory data; and
 - 2. Prepare and submit to the Department within thirty (30) calendar days a plan for developing a preliminary assessment unless another time schedule is approved by the Department.

Commented [LC15]: PGE proposes this modification to allow the resampling to occur within the timeframe that supports the statistical analysis. In some cases, it will not be immediately. This would also allow for flexibility in deploying sampling crews to the remote location.

5. Monthly Reporting Procedures – Boardman Power Plant Sanitary Lagoons

Monitoring results must be reported on approved forms. The reporting period is the calendar month. Reports must be submitted to the Department's Eastern Region Pendleton Office by the 15th day of the following month.

¹⁴ OAR 340-040-0030(5) requires resampling after a significant increase (increase or decrease for pH). In addition, resampling is appropriate after a concentration limit exceedance and prior to a remedial investigation and feasibility study, which is required by OAR 340-040-0030(6).

Monitoring reports must identify the name, certificate classification and grade level of each principal operator designated by the Permittee as responsible for supervising the wastewater treatment system during the reporting period. Monitoring reports must also identify the treatment system classification as found on page one of this permit.

Monitoring reports must include a record of all applicable equipment breakdowns and bypassing.

6. **Annual Reporting Requirements**

On or before March 1 of each calendar year, the Permittee must submit an annual facility monitoring report to the Department that summarizes all wastewater and ash facilities operations and monitoring results for the preceding year. Following approval, annual reporting and data analyses must be in accordance with the approved OM&M Plan, Groundwater Monitoring Plan, Ash Disposal Plan and ~~Boardman Power Plant~~ Wastewater Water Quality Management Program, and any amendments to the plans and program approved in writing by the Department.

SCHEDULE C

Compliance Conditions and Schedules

1. Boardman Power Plant Sewage Lagoons

Prior to discharge of sanitary sewage from Carty Generating Station to the Boardman Power Plant sewage lagoons, the Permittee must submit a work plan to the Department to remove vegetation from the clay lined cells and either leak test the clay-lined cells¹⁵ or recondition them.

The leak test plan must be implemented in accordance with Department approval and the results must be submitted to the Department. If the Department gives written notification to the Permittee that reconditioning of the clay liners is required, the Permittee must submit a clay liner reconditioning work plan to the Department. The reconditioning plan must be implemented in accordance with Department approval.

In addition, prior to discharge of sanitary sewage from Carty Generating Station to the Boardman Power Plant sewage lagoons, the Permittee must submit a long term plan to the Department to ensure the integrity of the clay-lined cells. The plan may include evaluating system capacity requirements and modifying the system accordingly. The plan must be implemented in accordance with Department approval.

2. Wastewater Treatment System Wastewater - Carty Generating Station

Prior to discharge of wastewater treatment system wastewater to lined evaporation ponds that are proposed to be constructed for Carty Generating Station, a wastewater characterization must be submitted for Department review and approval.

3. Operations, Monitoring and Management Plan

Not later than 90 days after permit issuance, the Permittee must submit a facility Operations, Monitoring and Management (OM&M) Plan to the Department for review and approval. The plan must include, but is not limited to, management and disposal of wastewater-derived solids from ponds, sumps and settling basins, as well as procedures to decrease parameter concentrations in Carty Reservoir in the event of an irrigation withdrawal limit exceedance (see Schedule B, Condition 2).

The Permittee must review the OM&M Plan annually and submit a revised plan, whenever it is revised, to the Department for review and approval.

Following submittal of the plan or a revised plan, the Department will approve it, approve it with conditions, or disapprove it. If approved, the plan must be implemented in accordance with the Department approval. If disapproved, the Department will provide an approved plan or a minimum of 30 days to submit a revised plan.

¹⁵ Guidelines for estimating pond leakage are available from the Department at: <http://www.deq.state.or.us/wq/rules/div052/guidelines/estleak.pdf>. For ponds less than two acres, the following guidelines may be used: <http://www.deq.state.or.us/wq/rules/div052/guidelines/altestleak.pdf>. Use of the guidelines is recommended to expedite Department review and approval of the work plan.

4. **Biosolids Management Plan**

Prior to removal and beneficial reuse of accumulated sewage sludge, the Permittee must submit a Biosolids Management Plan to the Department and receive Department approval of the plan. The plan must be developed in accordance with Oregon Administrative Rule 340, Division 50, "Land Application of Domestic Wastewater Treatment Facility Biosolids, Biosolids Derived Products, and Domestic Septage". The plan must be implemented in accordance with the approval.

5. **Hydrogeologic Characterization**

Not later than 120 calendar days after permit issuance, unless otherwise approved in writing by the Department, the Permittee must submit to the Department, for review and approval, a work plan for completing a Hydrogeologic Characterization at the Boardman Power Plant/Carty Reservoir site. The work plan must address evaluation of conditions up- and down-gradient of each and every wastewater impoundment (including lined ponds, unlined settling basins and coal yard wastewater basins). The work plan must also address evaluation of Carty Reservoir as a source of potential impacts to groundwater from arsenic, vanadium and alkalinity in the immediate vicinity of the reservoir. The Permittee must implement the work plan as approved.

Prior to construction of any wastewater impoundment specifically for the Carty Generating Station, the Permittee must submit to the Department, for review and approval, a work plan for completing a Hydrogeologic Characterization in the vicinity of the proposed wastewater impoundment. The Permittee must implement the work plan as approved.

6. **Groundwater Monitoring Plan**

- a. Not later than ninety (90) days from Department approval of the Hydrogeologic Characterization, unless otherwise approved in writing by the Department, the Permittee must submit a Groundwater Monitoring Plan to the Department for review and approval. Upon Department approval, the Groundwater Monitoring Plan must be implemented.
- b. In conjunction with submittal of the Groundwater Monitoring Plan, the Permittee must propose a submittal date for a Water Quality Analysis Report. The proposed date for report submittal must be the earliest practicable date after completion of nine (9) quarters of groundwater monitoring (to enable the Permittee to establish background groundwater conditions).

7. **Water Quality Analysis Report**

Not later than the date approved by the Department under Schedule C, Condition 6.b., the Permittee must submit to the Department for review and approval a Water Quality Analysis Report. The Water Quality Analysis Report must include, but not be limited to identification of background and compliance wells, determinations of background groundwater quality, analyses of existing water quality data and existing impacts, and analyses of potential impacts from facility activities. Concurrent with submittal of the Water Quality Analysis Report, the Permittee must:

- a. Propose site-specific concentration limits pursuant to OAR 340-040-0030(3) for the Department's consideration; and,
- b. Apply for any concentration limit variances proposed pursuant to OAR 340-040-0030(4).

8. Not later than 90 days after burning coal from any new source other than western sub-bituminous, the Permittee shall submit a waste characterization of the resulting ash to the Department. The characterization must include: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, and zinc.
9. The Permittee is required to meet the compliance dates that have been established in this schedule, unless alternative compliance dates have been approved in advance in writing by the Department. Either prior to or not later than 14 calendar days following any lapsed compliance date, the Permittee must submit to the Department a notice of noncompliance with the established schedule. Any reports of noncompliance must include the cause of noncompliance.

10. Compliance for Closure of Sanitary Lagoons and Evaporation Ponds

- a. The Permittee must submit a closure plan to DEQ to document proper closure of the sanitary lagoons and Boardman evaporation ponds. The plan must include at a minimum:
 - i. Characterization describing the size and contents (liquids and solids) of the lagoons/ponds to be decommissioned.
 - ii. How residual wastewater in the lagoons/ponds will be managed, stored, and disposed.
 - iii. Detail on how lagoon solids will be disposed (landfill or land application).
 1. If land application of solids will be utilized, see Schedule C, Condition 4.
 2. Odor control mitigation plan if biosolids will be dried in place prior to removal.
 - iv. Detail on long term stabilization of lagoons/ponds.
 - v. How pipes will be abandoned or removed.
 - vi. Final stabilization/revegetation
- a-b. Closure of the lagoons must be completed by the schedule outlined in the closure plan.

Commented [LC16]: At the request of DEQ, PGE has added language to address future closure of sanitary lagoons or evaporation ponds regulated by this permit.

SCHEDULE D

Special Conditions

1. Prior to constructing or modifying wastewater management, treatment and disposal facilities, detailed plans and specifications must be submitted to, and approved in writing by, the Department.
2. All biosolids must be managed in accordance with the Department-approved biosolids management plan and the site authorization letters issued by the Department. Any changes in solids management activities that significantly differ from the operations specified under the approved plan require the prior written approval of the Department.

There are no approved sites for application of the Permittee's biosolids as of the date of permit issuance. All new biosolids application sites must meet the site selection criteria set forth in OAR 340-050-0070 and must be located within Morrow County. Property owners adjacent to any newly approved application sites must be notified, in writing or by any method approved by the Department, of the proposed activity prior to the start of application. For proposed new application sites that are deemed by the Department to be sensitive with respect to residential housing, runoff potential or threat to groundwater, an opportunity for public comment must be provided in accordance with OAR 340-050-0030.

This permit may be modified to incorporate any applicable standard for biosolids use or disposal promulgated under section 405(d) of the Clean Water Act, if the standard for biosolids use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or controls a pollutant or practice not limited in this permit.

3. For the sanitary lagoons, ~~the~~ Permittee must comply with Oregon Administrative Rules (OAR), Chapter 340, Division 49, "Regulations Pertaining To Certification of Wastewater System Operator Personnel" and accordingly:
 - a. The Permittee must have its wastewater system supervised by one or more operators who are certified in treatment system operation at grade level I or higher.

Commented [LC17]: PGE proposes this change to clarify that these requirements would not apply to a septic system installed under a county construction permit. Once the sanitary lagoons are removed this condition would no longer be applicable.

Note: A "supervisor" is defined as the person exercising authority for establishing and executing the specific practice and procedures of operating the system in accordance with the policies of the Permittee and requirements of the waste discharge permit. "Supervise" means responsible for the technical operation of a system, which may affect its performance or the quality of the effluent produced. Supervisors are not required to be on-site at all times.

- b. The Permittee's wastewater system may not be without supervision (as required by Special Condition 3.a. above) for more than thirty (30) days. During this period, and at any time that the supervisor is not available to respond on-site (i.e. vacation, sick leave or off-call), the Permittee must make available another person who is certified treatment system operation at grade level I or higher.
- c. The Permittee is responsible for ensuring the wastewater system has a properly certified supervisor available at all times to respond on-site at the request of the Permittee and to any other operator.
- d. The Permittee must notify the Department of Environmental Quality in writing within thirty (30) days of replacement or redesignation of certified operators responsible for supervising

wastewater system operation. The notice must be filed with the Water Quality Division, Operator Certification Program (811 SW Sixth, Portland, OR 97204). This requirement is in addition to the reporting requirements contained under Schedule B of this permit

- e. Upon written request, the Department may grant the Permittee reasonable time, not to exceed 120 days, to obtain the services of a qualified person to supervise the wastewater system. The written request must include justification for the time needed, a schedule for recruiting and hiring, the date the system supervisor availability ceased and the name of the alternate system supervisor(s) as required by 3.b. above.
4. An adequate contingency plan for prevention and handling of spills and unplanned discharges must be in force at all times. A continuing program of employee orientation and education must be maintained to ensure awareness of the necessity for good in-plant control and proper action in the event of a spill or accident.
5. An environmental supervisor must be designated to coordinate and implement all necessary functions related to maintenance and operation of waste management, treatment, and disposal facilities. This person must have access to all information pertaining to the generation of wastes in the various process areas.
6. The Permittee must notify the Department's Eastern Region office at (541) 276-4063 in accordance with the response times contained in the General Conditions of this permit in the event of any malfunction of the wastewater system to enable coordination of corrective action between the Permittee and the Department.
7. **Monitoring Well Management/Maintenance**
 - a. The Permittee must protect and maintain each groundwater monitoring well identified in the Groundwater Monitoring Plan so that samples can be collected that are representative of actual conditions.
 - b. All monitoring well abandonment, replacement and installation must be conducted to comply with the Water Resources Department Rules (OAR Chapter 690, Division 240) and with the Department of Environmental Quality's Guidelines for Groundwater Monitoring Well Drilling, Construction, and Decommissioning. All monitoring well repairs, abandonments, replacements and installations must be documented in a report prepared by an Oregon-registered geologist.
 - c. If a monitoring well identified in the Groundwater Monitoring Plan becomes damaged or inoperable, the Permittee must notify the Department in writing within 14 days. The written notification must describe the problem that occurred and the remedial measures that have been taken to date to correct the problem. In addition, the Permittee must submit a written final report within 60 days following the notification, unless otherwise approved in writing by the Department, which must include a description of the problem, the remedial measures taken to correct the problem, and the measures taken to prevent recurrence. The Department can require the replacement of inoperable monitoring wells.¹⁶
 - d. All new and replacement monitoring well locations and designs related to the Groundwater Monitoring Plan must be approved in writing by the Department prior to well installation.

¹⁶ Monitoring well operability will be determined by the Department on a case-by-case basis.

Well logs and well completion reports must be submitted to the Department within thirty (30) days of well installation. Reports must include land survey drawings that depict actual location of all monitoring wells, land application areas, and surface waters.

- e. Modification and/or abandonment plans for any wells identified in the Groundwater Monitoring Plan must be submitted to and approved in writing by the Department prior to modification and/or abandonment of any existing monitoring well.

8. **Definitions**

Water treatment wastewater means wastewater derived from the Boardman Power Plant water treatment system, including wastewater from demineralization and regeneration of the demineralization media, make-up water demineralization (including regeneration) and condensate polishing (including regeneration), the raw water filter and activated carbon filter. It also includes Carty Generating Station neutralization tank wastewater and multi-media filtration wastewater.

Facility sumps and drains wastewater means wastewater from Boardman Power Plant and Carty Generating Station sumps and drains. Wastewater from the Boardman Power Plant pretreatment area sump, water treatment area sump, liquid waste sump, water treatment area floor drains and system shut-down drains are included in this category. An oil water separator provides treatment for wastewater from selected Boardman Power Plant facility sumps and drains.

Laboratory and sampling wastewater means wastewater from chemical waste drains and laboratory/sample room sink drains and includes discarded water samples, lab equipment wash water and spent reagents. The pH is approximately 9 s.u. and the volume is approximately 200 to 300 gallons per day.

Condensate and steam system blowdown means Boardman Power Plant boiler blowdown.

Equipment cleaning wastewater means wash water from cleaning the coal gallery and ash transport system, as well as boiler cleaning wash water, boiler acid cleaning wastewater and chemical cleaning wastewaters.

Equipment and vehicle cleaning wastewater means wastewater from cleaning heavy construction equipment, landscape maintenance equipment and on-road vehicles.

Ash transport wastewater means wastewater that overflows from the ash transport system to the settling ponds, including wastewater from the bottom ash handling system surge tank.

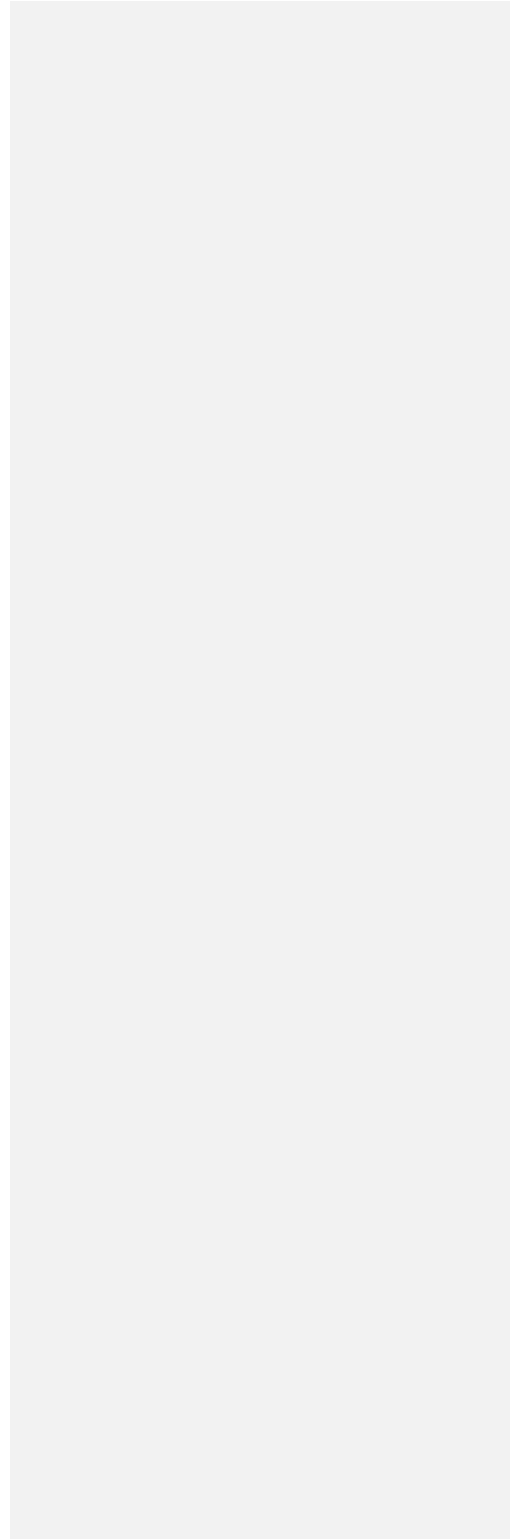
Evaporative cooling wastewater means Carty Generating Station cooling tower blowdown.

Fire protection system wastewater means fire suppression system test water that is sourced from the domestic water supply or Carty Reservoir.

Facility construction and commissioning wastewater means the following wastes from the construction of Carty Generating Station: water supply system testing and commissioning wastewater, hydrostatic testing wastewater, and water supply lines flushing wastewater.

Air pollution control wastewater means baking soda grinding wash water from the Boardman Power Plant. Volume is estimated to be between 50 to 200 gallons per day.

9. The Department may reopen the permit at any time to include new or revised waste disposal limitations, monitoring and reporting requirements, compliance conditions and schedules, and special conditions.



SCHEDULE F

WPCF GENERAL CONDITIONS – INDUSTRIAL FACILITIES

SECTION A. STANDARD CONDITIONS

1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and grounds for an enforcement action. Failure to comply is also grounds for the Department to modify, revoke, or deny renewal of a permit.

2. Property Rights and Other Legal Requirements

Issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other rights, or any infringement of federal, tribal, state, or local laws or regulations.

3. Liability

The Department of Environmental Quality or its officers, agents, or employees may not sustain any liability on account of the issuance of this permit or on account of the construction or maintenance of facilities or systems because of this permit.

4. Permit Actions

After notice by the Department, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including but not limited to the following:

- a. Violation of any term or condition of this permit, any applicable rule or statute, or any order of the Commission;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.

5. Transfer of Permit

This permit may not be transferred to a third party without prior written approval from the Department. The Department may approve transfers where the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of this permit and the rules of the Commission. A transfer application and filing fee must be submitted to the Department.

6. Permit Fees

The permittee must pay the fees required by Oregon Administrative Rules.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

At all times the permittee must maintain in good working order and properly operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to comply with the terms and conditions of this permit.

2. Standard Operation and Maintenance

All waste collection, control, treatment, and disposal facilities or systems must be operated in a manner consistent with the following:

- a. At all times, all facilities or systems must be operated as efficiently as possible in a manner that will prevent discharges, health hazards, and nuisance conditions.
- b. All screenings, grit, and sludge must be disposed of in a manner approved by the Department to prevent any pollutant from the materials from reaching waters of the state, creating a public health hazard, or causing a nuisance condition.
- c. Bypassing untreated waste is generally prohibited. Bypassing may not occur without prior written permission from the Department except where unavoidable to prevent loss of life, personal injury, or severe property damage.

3. Noncompliance and Notification Procedures

If the permittee is unable to comply with conditions of this permit because of surfacing sewage; a breakdown of equipment, facilities or systems; an accident caused by human error or negligence; or any other cause such as an act of nature, the permittee must:

- a. Immediately take action to stop, contain, and clean up the unauthorized discharges and correct the problem.
- b. Immediately notify the Department's Regional office so that an investigation can be made to evaluate the impact and the corrective actions taken, and to determine any additional action that must be taken.
- c. Within 5 days of the time the permittee becomes aware of the circumstances, the permittee must submit to the Department a detailed written report describing the breakdown, the actual quantity and quality of waste discharged, corrective action taken, steps taken to prevent a recurrence, and any other pertinent information.

Compliance with these requirements does not relieve the permittee from responsibility to maintain continuous compliance with the conditions of this permit or liability for failure to comply.

4. Wastewater System Personnel

The permittee must provide an adequate operating staff that is duly qualified to carry out the operation, maintenance, and monitoring requirements to assure continuous compliance with the conditions of this permit.

5. Public Notification of Effluent Violation

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (e.g., public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed in accordance with General Condition B.6. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

6. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from bypasses or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

- a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
- b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
- c. Ensure immediate notification to the public, health agencies, and other affected entities (including public water systems). The response plan must identify the public health and other officials who will receive immediate notification;
- d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
- e. Provide emergency operations; and
- f. Ensure that DEQ is notified of the public notification steps taken.

SECTION C. MONITORING AND RECORDS

1. Inspection and Entry

The permittee must at all reasonable times allow authorized representatives of the Department to:

- a. Enter upon the permittee's premises where a waste source or disposal system is located or where any records are required to be kept under the terms and conditions of this permit;
- b. Have access to and copy any records required by this permit;
- c. Inspect any treatment or disposal system, practices, operations, monitoring equipment, or monitoring method regulated or required by this permit; or
- d. Sample or monitor any substances or permit parameters at any location at reasonable times for the purpose of assuring permit compliance or as otherwise authorized by state law...

2. Averaging of Measurements

Calculations of averages of measurements required for all parameters except bacteria must use an arithmetic mean; bacteria must be averaged as specified in the permit.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures specified in the most recent edition of **Standard Methods for the Examination of Water and Wastewater**, unless other test procedures have been approved in writing by the Department and specified in this permit.

4. Retention of Records

The permittee must retain records of all monitoring and maintenance information, including all calibrations, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. The Department may extend this period at any time.

SECTION D. REPORTING REQUIREMENTS

1. Plan Submittal

Pursuant to Oregon Revised Statute 468B.055, unless specifically exempted by rule, construction, installation, or modification of disposal systems, treatment works, or sewerage systems may not commence until plans and specifications are submitted to and approved in writing by the Department. All construction, installation, or modification shall be in strict conformance with the Department's written approval of the plans.

2. Change in Discharge

Whenever a facility expansion, production increase, or process modification is expected to result in a change in the character of pollutants to be discharged or in a new or increased discharge that will exceed the conditions of this permit, a new application must be submitted together with the necessary reports, plans, and specifications for the proposed changes. A change may not be made until plans have been approved and a new permit or permit modification has been issued.

3. Signatory Requirements

All applications, reports, or information submitted to the Department must be signed and certified by the official applicant of record (owner) or authorized designee.

4. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours from the time the permittee becomes aware of the circumstances, unless a shorter time is specified in the permit. During normal business hours, the Department's Regional office must be called. Outside of normal business hours, the Department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

The following must be included as information that must be reported within 24 hours under this paragraph:

- a. Any unanticipated bypass that exceeds any effluent limitation in this permit;
- b. Any upset that exceeds any effluent limitation in this permit;
- c. Violation of maximum daily discharge limitation for any of the pollutants listed by the Department in this permit; and
- d. Any noncompliance that may endanger human health or the environment.

A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:

- e. A description of noncompliance and its cause;
- f. The period of noncompliance, including exact dates and times;
- g. The estimated time noncompliance is expected to continue if it has not been corrected;
- h. Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and
- i. Public notification steps taken, pursuant to General Condition B.6.

The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

SECTION E. DEFINITIONS

1. *BOD₅* means five-day biochemical oxygen demand.
2. *TSS* means total suspended solids.
3. *FC* means fecal coliform bacteria.
4. *NH₃-N* means Ammonia Nitrogen.
5. *NO₃-N* means Nitrate Nitrogen.
6. *NO₂-N* means Nitrite Nitrogen.
7. *TKN* means Total Kjeldahl Nitrogen.
8. *Cl* means Chloride.
9. *TN* means Total Nitrogen.
10. "*Bacteria*" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and *E. coli* bacteria.
11. *Total residual chlorine* means combined chlorine forms plus free residual chlorine.
12. *mg/l* means milligrams per liter.
13. *ug/l* means micrograms per liter.
14. *kg* means kilograms.
15. *GPD* means gallons per day.
16. *MGD* means million gallons per day.
17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
18. *Composite sample* means a combination of samples collected, generally at equal intervals over a 24-hour period, and based on either time or flow.
19. *Week* means a calendar week of Sunday through Saturday.
20. *Month* means a calendar month.
21. *Quarter* means January through March, April through June, July through September, or October through December.

SAFETY DATA SHEET

ZOK 27

1. Identification

Product identifier

Product name ZOK 27

Recommended use of the chemical and restrictions on use

Application Cleaning compound, turbine engine gas path. Corrosion inhibitor.

Details of the supplier of the safety data sheet

Supplier Zokman Products Inc.
1220 E. Gump Road
Fort Wayne
IN 46845
USA
+1 800 727 6027
+1 260 637 4038
+1 800 844 3227
+1 260 637 5031
zzokman@aol.com

Manufacturer ZOK International Group
Airworthy House
Elsted Marsh
Midhurst
West Sussex
GU29 0JT
+44 (0) 333 700 2727
+44 (0) 333 700 2728
zok@zok.com

Emergency telephone number

Emergency telephone CHEMTREC; 24 Hours. (800) 424-9300

National emergency telephone number CHEMTREC; 24 Hours. (800) 424-9300

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Eye Irrit. 2A - H319

Label elements

Pictogram



Signal word Warning

Hazard statements H319 Causes serious eye irritation.

ZOK 27

Precautionary statements

P264 Wash contaminated skin thoroughly after handling.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 If eye irritation persists: Get medical advice/ attention.

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Isotridecylalcohol, ethoxylated	10-30%
CAS number: 9043-30-5	
Classification Eye Dam. 1 - H318	
3-butoxypropan-2-ol	1-5%
CAS number: 5131-66-8	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319	
Oleoyl Sarcosinic Acid	1-5%
CAS number: 110-25-8	
Classification Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Not relevant.	
Ethanol,2,2'-[[[(methyl-1H-benzotriazol-1-yl)methyl]imino]bis-(9CI)]	<1%
CAS number: 80584-88-9	
Classification Acute Tox. 4 - H302 Eye Dam. 1 - H318 Skin Sens. 1B - H317	

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

Inhalation Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

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Ingestion	Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.
Skin Contact	Remove affected person from source of contamination. Take off immediately all contaminated clothing and wash it before reuse. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Remove affected person from source of contamination. Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

Most important symptoms and effects, both acute and delayed

Inhalation	Vapors may irritate throat/respiratory system. Symptoms following overexposure to vapor may include the following: Coughing, chest tightness, feeling of chest pressure.
Ingestion	May cause stomach pain or vomiting.
Skin contact	Prolonged contact may cause redness, irritation and dry skin.
Eye contact	Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

Indication of immediate medical attention and special treatment needed

Specific treatments	Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
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Special hazards arising from the substance or mixture

Specific hazards	None known.
Hazardous combustion products	Carbon monoxide (CO). Carbon dioxide (CO ₂).

Advice for firefighters

Protective actions during firefighting	No specific firefighting precautions known.
Special protective equipment for firefighters	Use air-supplied respirator, gloves and protective goggles.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.
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Environmental precautions

Environmental precautions	Avoid discharge to the aquatic environment. Collect and dispose of spillage as indicated in Section 13.
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Methods and material for containment and cleaning up

ZOK 27

Methods for cleaning up Stop leak if safe to do so. Small Spillages: Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Collect and dispose of spillage as indicated in Section 13. Large Spillages: Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Collect and dispose of spillage as indicated in Section 13.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

Storage precautions Store at temperatures between 4°C and 50°C. Store in tightly-closed, original container. Store in a dry place.

Storage class Chemical storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Triethanolamine (CAS: 102-71-6)

Ingredient comments No exposure limits known for ingredient(s).

Exposure controls

Protective equipment



Appropriate engineering controls Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Avoid inhalation of vapors and spray/mists.

Eye/face protection Wear chemical splash goggles.

Hand protection Wear protective gloves made of the following material: Nitrile rubber.

Other skin and body protection Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap and water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate hand lotion to prevent defatting and cracking of skin. When using do not eat, drink or smoke.

Respiratory protection Respiratory protection may be required if excessive airborne contamination occurs. Use approved respirator if air contamination is above an acceptable level. Wear a respirator fitted with the following cartridge: Organic vapor filter.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

ZOK 27

Appearance	Liquid.
Color	Colorless to pale yellow.
Odor	Characteristic.
Odor threshold	Not applicable.
pH	pH (concentrated solution): 7.2-7.5
Melting point	0°C
Initial boiling point and range	100°C @ 760 mm Hg
Flash point	> 100°C PMCC (Pensky-Martens closed cup).
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not relevant.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: Not applicable. Upper flammable/explosive limit: Not applicable.
Vapor pressure	Not relevant.
Vapor density	Not relevant.
Relative density	1.01 @ 20°C
Solubility(ies)	Miscible with water.
Partition coefficient	log Pow: < 3
Auto-ignition temperature	Not relevant.
Decomposition Temperature	Not applicable.
Viscosity	22.26 cSt @ 20°C
Explosive properties	Not considered to be explosive.
Oxidizing properties	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidizing.
Volatile organic compound	This product contains a maximum VOC content of <50 g/l.

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Avoid excessive heat for prolonged periods of time.
Materials to avoid	Strong oxidizing agents. Strong reducing agents.
Hazardous decomposition products	Heating may generate the following products: Carbon monoxide (CO). Carbon dioxide (CO ₂).

11. Toxicological information**Information on toxicological effects**

ZOK 27**Acute toxicity - inhalation**

ATE inhalation (dusts/mists mg/l) 84.05

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Skin sensitization

Skin sensitization May cause sensitisation by skin contact.

Germ cell mutagenicity

Genotoxicity - in vitro Does not contain any substances known to be mutagenic.

Genotoxicity - in vivo Does not contain any substances known to be mutagenic.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - fertility Does not contain any substances known to be toxic to reproduction.

Reproductive toxicity - development Does not contain any substances known to be toxic to reproduction.

Specific target organ toxicity - single exposure

Target organs No specific target organs known.

Specific target organ toxicity - repeated exposure

Target organs No specific target organs known.

Toxicological information on ingredients.**Isotridecylalcohol, ethoxylated****Serious eye damage/irritation**

Serious eye damage/irritation Irritation of eyes is assumed.

Respiratory sensitization

Respiratory sensitization Not known.

Skin sensitization

Skin sensitization Not known.

3-butoxypropan-2-ol**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 2,100.0

Species Rat

ATE oral (mg/kg) 2,100.0

Oleoyl Sarcosinic Acid**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 9,200.0

ZOK 27

Species	Rat
ATE oral (mg/kg)	9,200.0
<u>Acute toxicity - inhalation</u>	
Acute toxicity inhalation (LC₅₀ dust/mist mg/l)	1.37
Species	Rat
ATE inhalation (dusts/mists mg/l)	1.37

12. Ecological Information

Ecotoxicity	Not regarded as dangerous for the environment.
Acute toxicity - fish	LC ₅₀ , 96 hours: 33 mg/l, Marinewater fish EC ₅₀ , 96 hours: >0.02 %, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >0.01 %, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 8.1 mg/l, Marinewater algae
Acute toxicity - microorganisms	LC ₅₀ , 10 days: 1267 mg/kg, Activated sludge
<u>Persistence and degradability</u>	
Persistence and degradability	The product is readily biodegradable.
Biodegradation	Water - Degradation 57.4%: 28 days
Biological oxygen demand	< 0.1 g O ₂ /g substance
Chemical oxygen demand	< 8.5 g O ₂ /g substance
<u>Bioaccumulative potential</u>	
Bio-Accumulative Potential	The product does not contain any substances expected to be bioaccumulating.
Partition coefficient	log Pow: < 3
<u>Mobility in soil</u>	
Mobility	The product is miscible with water and may spread in water systems.
<u>Other adverse effects</u>	
Other adverse effects	None known.

13. Disposal considerations

Waste treatment methods

General information	Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Disposal methods	Collect and place in suitable waste disposal containers and seal securely. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. Transport information

ZOK 27

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

No transport warning sign required.

Packing group

Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

Not listed.

SARA 313 Emission Reporting

Not listed.

CAA Accidental Release Prevention

Not listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

This product does not contain any substances known to the State of California to cause cancer, birth defects or other reproductive harm.

California Air Toxics "Hot Spots" (A-I)

Not listed.

California Air Toxics "Hot Spots" (A-II)

Not listed.

Rhode Island "Right To Know" List

Not listed.

New Jersey "Right To Know" List

Not listed.

Inventories

ZOK 27

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - MITI

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines - PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

16. Other information

General information	Only trained personnel should use this material.
Issued by	Mike Hale Chemist
Revision date	3/22/2018
Revision	1022
Supersedes date	8/16/2017
SDS No.	4524
SDS status	Approved.
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled.
Signature	Mike Hale
NFPA - instability hazard	Normally stable. (0)
ACA HMIS Health rating.	Slight hazard. (1)
NFPA - health hazard	Irritation, minor residual injury. (1)
NFPA - flammability hazard	Will not burn. (0)
ACA HMIS Flammability rating.	Will not burn. (0)

ZOK 27

ACA HMIS Physical hazard rating. Normally stable. (0)

ACA HMIS Personal protection rating. A

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

Attachment 3

Revegetation and Noxious Weed Control Plan

Carty Generating Station: Draft Amended Revegetation and Noxious Weed Control Plan¹

July 2, 2014², December 14, 2018³, ~~February 17~~ July 13, 2020⁴

1 INTRODUCTION

Portland General Electric (PGE or certificate holder) received a site certificate from the Energy Facility Siting Council (Council) in June 2012 authorizing the construction and operation of a 900 megawatt (MW) combined-cycle natural gas-fueled energy generating facility in Boardman, Oregon in Morrow County (Carty Generating Station). The Council's 2012 approval authorized construction and operation of two 450-MW combined-cycle natural gas-fueled turbine generators (Unit 1 and Unit 2). PGE commenced Unit 1 construction on January 9, 2014; PGE completed Unit 1 construction on December 26, 2016; Unit 1 began operation on July 29, 2016. The construction commencement deadline for Unit 2 expired in June 2017 and therefore the certificate holder no longer has the authority to construct or operate Unit 2.

The Council issued the First Amended site certificate on ~~DATE~~ December 14, 2018, authorizing a site boundary change and the construction and operation of a 50 MW photovoltaic solar unit, five 34.5 kilovolt (kV) interconnecting transmission line routing options, and temporary construction and laydown areas (Carty Solar Farm). The construction commencement and completion deadlines for the components authorized in the First Amended site certificate ~~is~~ are February 4, 2022, and February 4, 2025, respectively. The Council issued the Second Amended site certificate on **DATE** authorizing a boundary change; construction and operation of a new substation and associated distribution lines, septic system, backup water pipeline, wastewater pipeline, office/warehouse building, and security guard station; and incorporation of existing facilities that had been permitted under the Boardman Coal Plant site certificate including Carty Reservoir, existing transmission infrastructure, and interconnecting water pipelines. The construction commencement and completion deadlines for the components authorized in the Second Amended site certificate is **DATES**.

The site certificate for the facility requires restoration of disturbed areas to satisfy the requirements of the Fish and Wildlife Habitat standard (OAR 345-022-0060), which aligns with the mitigation goals and policies within the ODFW Fish and Wildlife Habitat Mitigation Policy (OAR 635 Division 415). In order to meet the 'no net loss of habitat quality' goal of the mitigation policy, the certificate holder shall revegetate disturbed areas according to a set of agreed-upon success criteria that return the site to pre-disturbance condition. In addition, the certificate holder shall mitigate for permanent habitat impacts and temporal habitat loss in temporary disturbance areas by creating, enhancing, and monitoring a habitat mitigation area as detailed in the Wildlife Habitat Monitoring and Mitigation Plan (WHMMP). See the

¹ This Plan is incorporated by reference in the Site Certificate for the Carty Generating Station and must be understood in that context. It is not a "stand-alone" document. This Plan does not contain all revegetation and weed control measures required of the certificate holder.

² A draft version of this Plan was included as Exhibit 1 to the Energy Facility Siting Council's Final Order on the Carty Generating Station Application for Site Certificate (June 29, 2012). In accordance with Site Certificate Condition 5.5 the certificate holder consulted with the Morrow County Weed Control Supervisor and obtained Oregon Department of Energy (ODOE) approval of the Plan prior to the start of construction (December 2013). As allowed by Section IX of the Plan, ODOE reviewed and approved the amended Plan on July 7, 2014.

³ Minor Plan updates were made to reference additional facilities within Morrow County included in the First Amended Site Certificate, and the updated Plan was reviewed and approved by the Morrow County Weed Control Supervisor in December 2017 (see Section 7, References). Subsequent edits were made in February 2017 to remove references to the unbuilt transmission line between Grassland Switchyard and Slatt substation and remove references to Gilliam County. Finally, revisions to the agency consultation procedures, revegetation monitoring protocol, and success criteria were made in consultation with ODOE and ODFW in June 2018.

⁴ Minor Plan updates were made to reference additional facilities within Morrow and Gilliam Counties included in the Second Amended site certificate.

Carty Generating Station
Revegetation and Noxious Weed Control Plan

WHMMP for more detail on mitigation measures and mitigation acreages by disturbance type and habitat category.

This Amended Revegetation and Noxious Weed Control Plan (Amended Plan) outlines the goals, methods, and success criteria that will be used for revegetation of areas temporarily disturbed during construction of the Carty Generating Station, including: the already-constructed Carty Unit 1; Grassland Switchyard; the transmission line segment connecting Unit 1 to the switchyard; laydown and parking lot areas; water pipeline area; wastewater pipeline area, sewer line area; and, areas temporarily disturbed during construction of additional components approved under the First and Second Amended Site Certificate. The new substation and associated distribution lines are not included because they will be constructed in developed graveled areas and therefore re-vegetation and weed management is not required.

This Amended Plan has been developed in consultation with the Oregon Department of Energy (ODOE), Oregon Department of Fish and Wildlife (ODFW), ~~and~~ the Morrow County Weed Control Supervisor, and the Gilliam County Weed Officer, and utilizes restoration, revegetation, and weed control methods developed by other energy projects in this region of Oregon that were approved by Oregon Energy Facility Siting Council (2007). The objective of this Amended Plan is to minimize and mitigate potential impacts to the site, help bolster the native plant community, and provide clear guidelines for the revegetation and weed control of all areas disturbed by facility-related activities that are not occupied by permanent structures or facilities.

It is estimated that temporary impacts will occur on up to ~~163~~ 164.3 acres within the amended site boundary (Table 1). In general, the intensity of construction impacts on vegetation and habitat in temporary disturbance areas will be low and will often be limited to the flattening of vegetation by rubber-tired vehicles. Such low impact areas will not require the revegetation or soil management measures (such as topsoil salvage) described below, but may require noxious weed prevention best management practices (BMPs) as appropriate (such as washing vehicles arriving from outside Morrow County or Gilliam County). In some instances, however, the intensity of impacts in temporary disturbance areas will be higher and will involve the removal of topsoil and vegetation through grading, excavation, or drilling activities.

The certificate holder will implement revegetation and weed control measures in all temporary construction disturbance areas where soil is disturbed. Such soil disturbance sites will require active measures to restore vegetation cover in a timely manner, control erosion, and prevent the establishment and spread of noxious weeds (plant species listed as noxious under the Oregon Department of Agriculture [ODA] Noxious Weed Control Program, and the Morrow County and Gilliam County weed lists).

Table 1. Estimated acreage of areas temporarily disturbed during Carty Generating Station Construction

Habitat Type by Project Area	Temporary Impact Areas to be Revegetated (acres)
Unit 1 and Supporting Facilities	55.4
Carty Solar Farm and Supporting Facilities	107.43
<u>New septic system, water pipeline, wastewater pipeline, office/warehouse building, security guard station, and associated plumbing and communication lines.</u>	1.4

2 GOALS AND OBJECTIVES

The overall goal of this Amended Plan is to return the facility site to pre-construction (or better) conditions. The Amended Plan has the following objectives:

- Promote recovery of disturbed areas;
- Re-establish native plant communities;
- Control the introduction and spread of undesirable plants;
- Protect the site from erosion; and
- Support existing wildlife habitat.

These objectives will be achieved by a combination of techniques, including, but not limited to, the following:

- Installing and maintaining appropriate erosion control BMPs and construction limit staking per the Oregon Department of Environmental Quality (ODEQ) 1200-C permit;
- Revegetating disturbed areas with native grasses⁵ (See Table 2 in Section 5 for species list);
- Controlling weed germination and growth for the life of the facility including facility pre-construction, construction and operation; and
- Establishing a regular monitoring program prior to and after construction to ensure the continued successful development of restored areas, and to quickly identify new populations of weeds.

3 SITE DESCRIPTION

The facility site is located in Morrow and Gilliam Counties, Oregon, approximately 13 miles southwest of the town of Boardman. The Carty Generating Station facility area is situated approximately 7–10 miles south of the Columbia River within the Columbia Plateau physiographic region. The facility includes two transmission lines: one 500 kV line that extends west from the Grassland Switchyard 17 miles to the Slatt Substation and one 230 kV line that extends northwest to the Dalreed Substation. There is no proposed disturbance associated with the existing transmission lines. All proposed new areas of disturbance are within Morrow County. The facility is located on an upland plateau at an elevation of approximately 650 feet above sea level.

Habitat Types and Subtypes within Facility Site

The facility area is composed primarily of shrub-steppe and grassland habitat subtypes or agricultural cropland. The agricultural lands are typically used for rotating crop production, including potatoes, onions, and corn. The Shrub-steppe habitat subtype located toward the eastern end of the facility, including areas near Unit 1, is rangeland that is no longer being grazed. There are some riparian and wetlands habitats present within the amended site boundary; however, all facility components - including transmission line towers – have been sited to avoid impacts on these habitats. Soil types in the area consist primarily of sandy loam, silt loam, and very stony loam.

Much of the native Shrub-steppe vegetation within the site boundary has been modified by livestock grazing and past wildfires. Functional mature shrub-steppe habitat is patchy and is dominated by big sagebrush (*Artemisia tridentata*), broom snakeweed (*Gutierrezia sarothrae*), bluebunch wheatgrass (*Pseudoroegneria spicata*), cheatgrass (*Bromus tectorum*), gray rabbitbrush (*Ericameria nauseosus*), needle-and-thread grass (*Hesperostipa comata*), and Sandberg's bluegrass (*Poa secunda*). Grasslands consist of cheatgrass, crested wheatgrass (*Agropyron cristatum*), bluebunch wheatgrass, needle-and -

⁵ The Plan approved in the Council's Final Order included forbs and sagebrush as part of the seed mix, but forbs and shrubs were removed from the initial seed mix after consultation with local weed control staff. Sites may require seeding or planting of native shrubs if monitoring indicates that success criteria for shrub cover are not being met.

threadgrass, Sandberg's bluegrass, redstem filaree (*Erodium cicutarium*), and mouse-ear chickweed (*Cerastium* sp.).

Weed Types within Facility Site

The ODA has identified noxious weeds occurring in Morrow and Gilliam Counties. ODA has designated two categories of noxious weeds, "A" list species and "B" list species. Weeds designated on the "A" list are species of known economic importance which occur in the state in small enough infestations to make eradication or containment possible or are rare species not known to occur in the state but which have a presence in neighboring states, making future occurrence seem possible. Weeds on the "B" list are weeds of economic importance which are regionally abundant but may have limited distribution in some areas. Listed species identified during recent-site surveys (2010–2017) within the amended site boundary area have not included any ODA "A" list species, but have included the ODA "B" list species diffuse knapweed (*Centaurea diffusa*), yellow star-thistle (*Centaurea solstitialis*), Canada thistle (*Cirsium arvense*), and bull thistle (*Cirsium vulgare*), perennial pepperweed (*Lepidium latifolium*), Scotch thistle (*Onopordum acanthium*), and alkali swainsonpea (*Sphaerophysa salsula*). The Morrow County weed list classifies yellow star-thistle as an "A" list species at the county level. Rush skeletonweed (*Chondrilla juncea*) is another county "A" list species that is present in the area and has high potential to occur on the site. Morrow County considers both yellow starthistle and rush skeletonweed as high priority for treatment. Gilliam County follows ODA regulations and does not have a separate weed list.

4 PRE-CONSTRUCTION AGENCY CONSULTATION

This section of the Amended Plan was incorporated on ~~DATE~~ December 14, 2018, and does not apply to activities already completed, including construction of Unit 1 and its associated components. Therefore, this section applies to components approved in the First Amended site certificate and any subsequent site certificate amendments.

Prior to construction, the certificate holder shall consult with ODFW, ODOE, and Morrow and/or Gilliam County ~~Weed Control Authority~~ Weed Departments to discuss: habitat category and habitat subtype conditions; monitoring site locations and conditions; reference site (as needed, see Section 6) locations and conditions; revegetation methods; erosion and sediment control measures; weed inventory and control methods; monitoring methods; and implementation schedule.

Prior to facility construction, the certificate holder shall identify monitoring sites and reference sites (as needed) in consultation with ODFW and ODOE. If reference sites are needed, they should closely resemble the pre-disturbance characteristics of the revegetation area monitoring sites as indicated by site conditions, including vegetation density and relative proportions of desirable vegetation and species diversity (see discussions of monitoring protocol and success criteria in Section 6). The certificate holder shall consider land use patterns, soil type, local terrain and noxious weed densities in selecting monitoring and reference sites. See Section 6 for a more detailed discussion of monitoring site selection and protocol.

Once monitoring and reference sites are selected by the certificate holder and approved by ODOE and ODFW, the monitoring and reference sites shall remain in the same location unless approval for use of a differing reference site is obtained from ODOE and ODFW.

5 REVEGETATION AND WEED CONTROL METHODS

Soil preservation and preparation techniques that are essential to a successful revegetation program, including topsoil segregation, erosion control, and noxious weed control, will begin prior to, or at the start of, construction. Other restoration and revegetation measures will be initiated immediately after construction and other disturbances to project areas are completed. Re-seeding activities may need to be delayed, depending on the season or on weather condition, but will always occur as soon as appropriate after construction.

The certificate holder will employ the following general restoration and revegetation steps to meet short- and long-term goals:

- Re-seed construction soil disturbance areas to restore vegetation;
- Prior to construction, pre-treat state-designated noxious weeds, as appropriate and practical, in temporary soil disturbance areas, with an emphasis on treatment of roadsides that will be used frequently throughout project construction;
- Prevent introduction of seeds and minimize dispersal of state-designated noxious weeds by following appropriate and standard methods of abatement, including BMPs for washing project-related vehicles and equipment, especially for vehicles newly arriving at the project site. Implement documentation procedure for ensuring that applicable vehicles are washed before use on site;
- Use proper soil management techniques, including stripping, stockpiling, and reapplying topsoil (generally defined as the upper 6 to 12 inches of soil where biological activity is concentrated) to establish surface conditions that will enhance development of diverse, stable, and self-generating plant communities. Topsoil management will apply to all areas of the project where excavation, grading, or other construction activities could result in mixing of soil layers;
- Establish stable surface and drainage conditions and use standard erosion control devices and techniques to minimize soil erosion and sedimentation, including the installation of silt fencing, straw bales, mulch, straw wattle, erosion control fabric, and slope breakers, as appropriate.
- If the applicability requirements of the NPDES Stormwater discharge permit #1200-c are met, maintain compliance with the Erosion and Sediment Control Plan (ESCP) requirements of the National Pollution Discharge Elimination System (NPDES) 1200-C permit. Maintain the ESCP drawings onsite during construction.
- Use certified weed-free straw bales, straw mulch, hydromulch, and/or other appropriate weed-free mulch materials for soil erosion and sediment control measures;
- Prevent introduction of seeds from plants that are listed by Oregon or on the U.S. Department of Agriculture federal list (PLANTS website) as noxious or invasive weeds;
- Establish terrain compatible with the surrounding landscape (recontouring) that emphasizes restoration of existing drainage and landform patterns, to the extent practical; and
- Minimize construction impacts in the project area by, where practical and safe, limiting grading and clearing to avoid impacts to native vegetation and wildlife habitat.

5.1 Revegetation of Shrub-Steppe and Grassland

Shrub-steppe and Grassland habitat subtypes are the primary non-agricultural vegetation type present in the facility area. Much of these habitat subtypes are considered marginal in quality due the presence of invasive weeds and past fires.

Seed Mix

The certificate holder will use a seed mixture consisting of native grass species known to provide erosion control and wildlife forage benefits. Seed mixture selection was based on consultation with ODFW (2010b), online guidance provided by ODFW for the restoration of burned areas in northeastern Oregon (ODFW 2010a), and consultation with County weed control staff (2013). The current seed mix (Table 2) may be altered at the request of landowners, ODOE, and ODFW.

Plant materials (seed and nursery stock) used in revegetation must be adapted to the conditions of the site in order to have the best chance of germinating and long-term survival. All plant materials shall

meet the following requirements, pending approval by ODFW and the Morrow and Gilliam County Weed Departments:

- Seed and nursery stock shall be “source identified.” The original source for the plant material should be Columbia Plateau Ecoregion (north-central Oregon State). The seed should be a locally adapted biotype, adapted to conditions similar to the project site.
- Seed shall be certified “weed free”, indicating there are no noxious weeds in the seed.
- Seed application rates shall be based on pure live seed per pound, which is passed upon purity and germination testing.
- Seed shall be tested within 120 days of application for purity, germination, and noxious weed content. Inert matter should not exceed 10%. A tetrazolium test may be performed on forb species, which are limited in availability in order to assess viability of the seed before it is used.

Table 2. Seed Mix for Temporarily Disturbed Project Areas in Shrub-Steppe and Grassland Habitat Types (Habitat Category 2, 3 and 4)

Common Name	Scientific Name	PLS lbs/Acre ^{1,2}	Description/ Purpose
Secar bluebunch wheatgrass	<i>Pseudoregneria spicata</i>	7	(N) (EC) (F)
Sherman big bluegrass	<i>Poa ampla</i>	2	(N) (F)
Great Basin wildrye *	<i>Elymus cinereus</i>	1.5	(N) (EC) (F)
Needle and thread grass*	<i>Hesperostipa comata</i>	1.5	(N) (EC) (F)
Sandberg bluegrass*	<i>Poa secunda</i>	1.5	(N) (EC) (F)

(N) = Native, (EC) = Erosion Control, (F) = Forage

* Optional species depending on site and availability

¹ PLS= pure live seed

² Final lbs/acre may change at the request of the landowner or ODFW

Areas of temporary disturbance will be graded to be consistent with existing topography and drainage patterns as soon as possible after the final construction ground disturbance and, if necessary, areas compacted by construction activities shall be ripped to a depth of 12” where feasible and roughened to provide maximum seed-soil contact. Re-seeding may not be necessary or appropriate in some areas, including places where vegetation has been flattened but not crushed and those where little or no vegetation was present prior to construction. Areas will be evaluated to determine whether re-seeding or other revegetation techniques are required to return the area to preconstruction vegetation conditions (as further described in Section 6, *Monitoring Program*, of the Amended Plan).

5.2 Seed Planting Methods and Schedule

Re-seeding of temporary disturbance areas will be conducted during the appropriate season and as weather conditions allow. The recommended seed mixture (Table 2) will be applied at an approximate rate of at least 8 to 12 pounds/acre and will be dependent on the method of seeding used. Seeds will be applied using either manual or mechanical methods, depending on factors such as the size of the area to be re-seeded and risk for further disturbance due to the use of planting equipment (e.g., tractor or all-terrain vehicle). Straw mulch, hydromulch, and/or other appropriate weed-free mulch material may be applied as needed immediately after seeding. The certificate holder anticipates using the restoration and

re-seeding guidelines provided in this Amended Plan; however, the methods and timing could be altered at the request of landowners, ODOE, or ODFW.

Disturbed areas will be re-seeded as soon as possible after final construction disturbance in each area. Crews will attempt to conduct all re-seeding during the period from February through early April for construction disturbances that occurred during the winter and early spring. For areas where construction is completed outside of the winter or spring periods, re-seeding will be delayed until the months of October or November. If final construction and soil restoration is not completed at a time that allows immediate re-seeding during one of the two periods listed above (winter/spring or fall), the areas will be mulched or otherwise treated to minimize erosion, if necessary, until seeding can be conducted.

The certificate holder may employ broadcast seeding, drill seeding, and/or hydroseeding to apply the seed as appropriate and feasible; the choice of method will depend on slope and other site conditions. For example, drill seeding and broadcast seeding could be used as appropriate on areas with a slope of less than 3:1, and hydroseeding should be used on areas with a slope of greater than 3:1. Seeding rates (pounds of pure live seed per acre) must be adjusted according to the seeding method used. For hydroseeding, green-dyed, wood-fiber mulch shall be added to the slurry mixture at a rate of 1,000 pounds per acre. In addition to serving as a carrying agent for the seed, the biodegradable green mulch serves as a tracer for visually checking distribution to ensure complete and uniform coverage of the disturbed areas.

5.3 Weed Control Strategies

Weed control will be a priority for the life of the facility including pre-construction, construction and on-going operation and should begin early to prevent infestations and development of substantial weed seed reservoirs in the soil. Emphasis will be placed on avoiding infestations and controlling populations of state-listed and county-listed noxious weeds known to occur on the site.

The certificate holder shall conduct long-term weed surveys following the initial five years (or more) of annual surveys required to document revegetation success criteria under this amended plan. Once revegetation success has been documented, long term surveys of the revegetation areas will be conducted and reported consistent with the schedule for noxious weed monitoring of the Habitat Mitigation Area as described in the WHMMP. Comprehensive surveys will occur every five years (in years divisible by five) for the life of the facility. Weed control and monitoring activities will be conducted more frequently (at least every two years), in areas prioritized based on the results of the comprehensive surveys, and reported to ODOE and ODFW as part of WHMMP reporting. Weeds will be controlled as needed to maintain and enhance habitat quality within the revegetation areas, with the goal of working toward eradication of targeted noxious weeds or, if eradication is not practical, decreasing their abundance to minimize impacts on native plant communities.

6 MONITORING PROGRAM

The certificate holder will monitor the revegetated areas according to the protocol and schedule described below. For revegetation of minor acreage associated with Amendment 2 site improvements, the certificate holder will use pre-construction consultation with ODFW, ODOE, and the Morrow and/or Gilliam County Weed Departments to determine the appropriate mix of monitoring methods, schedule, and success criteria appropriate to the scale and location of small revegetation areas. The purpose of monitoring is to evaluate long-term soil stability, vegetation composition and cover, and occurrence of noxious and invasive weeds within areas disturbed during construction. In order to properly assess the progress of vegetation establishment, the certificate holder shall maintain a record of revegetation work. In the record, the certificate holder shall include the date that construction activity was completed in the area to be restored, a description of the affected area (location, acres affected and pre-disturbances condition) and supporting figures representing the revegetated area, the date that revegetation work began and a description of the work done within the affected area. The certificate holder shall update the revegetation records as revegetation work occurs.

The certificate holder shall use experienced and properly trained personnel (“investigators”) to conduct the monitoring required under this Amended Plan. The professional qualifications of the investigators are subject to approval by ODOE; the qualifications of the investigators shall be provided to ODOE prior to pre-construction monitoring (see Section 6) and ODOE shall be notified if changes in investigator occur.

It should be noted that post-construction annual monitoring for Unit 1 and its associated components commenced in 2017 and will continue through 2021, or until ODOE, in consultation with ODFW, concludes that success criteria have been met, or that a less frequent revegetation monitoring schedule may be implemented.

Post-construction annual monitoring for the new components approved in the Second Amended site certificate and the Carty Solar Farm and its associated facilities may be conducted in coordination with monitoring for Unit 1 and its associated components, if the timing aligns; however, revegetation records and reporting should be maintained and submitted to ODOE separately (either as separate reports or clearly delineated sections of the same report) since the impacts, revegetation status, and activities may differ for the previously approved operating facility components compared to the facility components approved in the First and Second Amended site certificates.

6.1 Pre-Construction Vegetation and Weed Survey

Revegetation success shall be measured at approved, fixed-point monitoring sites within the disturbed area and compared to pre-disturbance habitat conditions as documented by pre-disturbance vegetation monitoring at the same site. If pre-disturbance monitoring data is not available for a particular site, revegetation monitoring data will be compared to a reference site approved by ODFW. Pre-disturbance monitoring will be conducted using the same protocol described below for post-construction monitoring, which will allow comparison of revegetated condition to pre-disturbance condition. The pre-disturbance vegetation and weed survey plan shall be submitted for review and approval by ODOE, in consultation with ODFW, as part of the agency consultation described in Section 4 of this plan.

6.2 Monitoring Procedures

Annual post-construction vegetation and weed surveys will be conducted for a period of at least five years to monitor revegetation success and invasive species control needs at construction disturbance areas. A representative sample (at least 50%) of all disturbance sites will be monitored for revegetation success. As described above in Section 4, *Pre-Construction Agency Consultation*, monitoring sites and reference sites (as needed) shall be identified by the certificate holder and approved by ODOE, in consultation with ODFW, prior to construction. Reference sites (as needed) should be identified that closely resemble the pre-disturbance characteristics of the revegetation area monitoring site as indicated by site conditions, including vegetation density, relative proportion of desirable vegetation and species diversity of desirable vegetation.

Revegetation monitoring will begin in the first year following initial revegetation of temporary disturbance areas and continue annually for five years or until monitored sites are successfully revegetated according to the success criteria described below. All soil disturbance sites will be visited at least once within the first year following revegetation, and annual surveys will be conducted for five years, or until ODOE, in consultation with ODFW, determines the success criteria to be achieved.

To select quantitative monitoring sites, the certificate holder will divide the total disturbance area into multiple monitoring sites, each of which is predominately of one habitat type (grassland or shrub steppe) and no larger than five acres. After dividing the area into such sites, a subset of sites (comprising at least 50% of each habitat type’s total temporary disturbance acreage) will be randomly selected to be quantitative monitoring sites. Pre-disturbance vegetation data will be collected at each quantitative monitoring site using a systematic sampling method that can be repeated for post-construction monitoring. For example, a minimum of one, randomly-located 100-meter long by 5-meter wide belt transect could be used for documenting shrub and bunchgrass density, within which a point-intercept method or sampling

quadrats could be used for collection of percent cover data. All sites not selected for quantitative monitoring would be qualitatively monitored using photo points and visual surveys. During revegetation surveys, a qualified biologist shall inspect all areas of revegetation, including each revegetation area monitoring site, to assess revegetation success based on the success criteria and to recommend remedial actions, if needed. The qualified biologist will collect the following information within the general revegetation area, revegetation monitoring sites, and within the reference sites (if needed), as appropriate:

Quantitative monitoring will include a systematic monitoring protocol conducted at each monitoring site.). The following data will be collected at quantitative monitoring sites (both pre-disturbance and post-construction) and reference sites (if needed, just once):

- The habitat type of the area to be disturbed;
- Photo(s) representing the habitat (from documented location and direction so they are repeatable for post-disturbance revegetation monitoring);
- Density and percent cover of vegetation by plant species (determined through a quantitative sampling design such as randomly-located quadrats, belt transects, or other monitoring design approved by ODFW);
- Percent cover bare ground within the same sampling plots, and also estimated for the entire monitoring site, noting any large areas (>100ft²) of bare ground and estimated area;
- Percent cover of “other” ground cover by category (i.e., rock, gravel, hydro-mulch, vegetation litter, etc.)
- Percent cover estimate and species list of noxious weeds on the entire monitoring site in addition to sampling plot data;
- Vegetation structural stage, slope, soil type;

The following qualitative monitoring data will be collected both pre-disturbance and post-construction at all disturbance sites that are not quantitatively monitored:

- Photo(s) representing the habitat (from documented location and direction so they are repeatable for post-disturbance revegetation monitoring);
- List of noxious weed species present and estimated percent cover
- Note any erosion issues that need remedial action or any large areas of bare soil (>100ft²) that may require additional seeding.

6.3 Remedial Action and Maintenance

Following each of the surveys described above, the site certificate holder will consult with ODOE and ODFW to determine need for remedial measures to address remaining soil impacts and revegetation requirements not achieved through initial plantings. The nature of the remedial actions will depend on the problems that arise. ODOE may require reseeding or other remedial measures in those areas that do not meet the success criteria.

Common remediation measures will include:

- Reseeding of select areas where significant areas of bare soil remain after establishment of initial seeding;
- Determining the cause of low plant survival and implementation of actions appropriate to the cause of mortality (this may include selection of an alternate species better adapted to conditions at the site);
- Control of noxious weed/invasive plant species by qualified personnel using appropriate methods

for the target species (e.g., herbicides applied according to label requirements if herbicides required);

- Repair of erosion control structures; and
- Soil decompaction.

The certificate holder will make every attempt to implement the recommended remedial actions as soon as possible, considering the season, weather conditions, and other site-dependent constraints.

The certificate holder will document revegetation progress and remedial actions in an annual Revegetation and Noxious Weed Control Monitoring Report to ODFW and ODOE (see section 5.4 below).

If a wildlife habitat area is damaged by fire during the first five years following initial seeding, the certificate holder shall work with the landowner to restore the damaged area. The certificate holder shall continue to report on revegetation progress during the remainder of the five-year period. The certificate holder shall report to ODOE the damage caused by fire and the cause of the fire, if known.

If an area is not trending toward meeting the success criteria at Year 5, the certificate holder may propose and ODOE may require remedial action and additional monitoring based on an evaluation of site capability. As an alternative, the certificate holder or ODOE, in consultation with ODFW, may conclude that revegetation of the area was unsuccessful and propose appropriate mitigation for the permanent loss of habitat quality and quantity. The certificate holder shall implement a remedial action plan, subject to the approval of ODOE in consultation with ODFW.

6.4 Revegetation Success Criteria

Revegetation will generally be considered successful when the revegetated areas support non-noxious plant communities that are similar in vegetation percent cover and erosion potential comparable to pre-disturbance condition or surrounding undisturbed areas. While the certificate holder shall evaluate whether all previously-disturbed wildlife habitat areas are trending towards revegetation success, the success criteria are evaluated based on the revegetation success of the approved revegetated monitoring sites compared to either pre-disturbance condition or reference sites, as appropriate. A wildlife habitat area is successfully revegetated when the habitat quality is equal to, or better than, the habitat quality of the pre-construction condition of the monitoring site itself or of an appropriate reference site selected in consultation with ODFW.

When the site certificate holder determines that an area of the project has been successfully restored by satisfying all success criteria, this will be stated in the annual revegetation report. If ODFW and ODOE concur, the site certificate holder will conclude that it has no further obligation to perform revegetation activities in that area of the facility. Reseeding or replanting efforts will occur, in consultation with ODFW, in any area where monitoring identifies a restoration failure.

The following criteria will be used to determine success of revegetation efforts related to construction of facilities authorized under Amendment 1:

1. Native Shrubs: The average density of the shrub component should be at least 50 % of the pre-disturbance or reference site density within 5 years. At least 15 % of the shrub density should be the dominant species found during pre-disturbance monitoring or on the reference site. The diversity of shrub species within the revegetated areas should at least equal the shrub species diversity measured during pre-disturbance monitoring or on the reference site.
2. Native Grasses: Revegetated sites should maintain grass species diversity and density that is at least 85% similar to pre-disturbance or reference sites diversity and density. Native bunchgrasses should be given preference. Native grasses are to be planted at rates sufficient to achieve abundance and diversity characteristics of the grass component compared to pre-disturbance or reference site conditions.

3. **Non-Native Weeds:** Every attempt should be made to prevent and control all species listed on county, state, and federal noxious weed lists. Revegetation sites should not contain a higher percentage of non-native weed cover than the pre-disturbance or reference site condition. All state and federal laws pertaining to noxious weeds must be followed. Highly competitive invasive species such as cheatgrass and other weedy brome grasses are prohibited in seed mixtures and should be actively controlled if any are found in the reclaimed areas.

The following success criteria from the original plan apply to temporary disturbance areas associated with Unit 1 construction. For those areas, PGE may either continue to use the criteria below, or follow the newer success criteria above using a reference site (approved by ODFW) for comparison.

1. The vegetation percent cover by native species and desirable non-native species (both seeded and naturally recruited) is 40 percent or more, or not significantly less than the percent vegetation cover of surrounding undisturbed areas.
2. Noxious weeds are absent or constitute only a small percentage (<5%) of vegetation otherwise dominated by native or desirable non-native species.
3. The percentage of bare soil (excluding rocky areas) in the sample plot is not significantly greater than the percentage of bare soil in surrounding undisturbed areas.

When ODOE, in consultation with ODFW, finds that the conditions of the wildlife habitat area revegetation monitoring sites satisfy the criteria for revegetation success, ODOE shall conclude that the certificate holder has met the restoration obligations for that area.

6.5 Reporting

The certificate holder will provide an annual Revegetation and Noxious Weed Control Monitoring Report for five years or until success criteria are achieved following initial revegetation of construction disturbance areas. In addition to the annual reports, PGE will share preliminary monitoring results with ODFW/ODOE as soon as possible following monitoring fieldwork to allow consultation regarding planning necessary remedial measures such as erosion control, reseeding, and weed control. Such consultation will allow more timely coordination and response to habitat management needs than may occur under the annual reporting process. This additional consultation is required for revegetation monitoring associated with facilities authorized under Amendment 1 and is recommended as a best management practice for Unit 1 revegetation areas.

Each annual report will contain a summary of field data collected during field visits and include: an assessment of whether revegetation area monitoring sites are trending toward meeting the success criteria; assessment of factors impacting the ability of the revegetated area monitoring sites to trend towards meeting the success criteria; a summary of consultation with ODOE, ODFW, and Morrow and Gilliam Counties County and remedial measures (e.g., seeding, noxious weed control, and repair of erosion control structures) taken since the last annual report; any additional remedial measures planned; and the anticipated dates of completion of additional remedial measures.

6.6 Amendment of Plan

This Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council (Council). Such amendments may be made without amendment of the site certificate. The Council authorizes ODOE to agree to amendments to this Plan. ODOE shall notify the Council of all amendments, and the Council retains the authority to approve, reject, or modify any amendment of this Plan agreed to by ODOE.

7 REFERENCES

- Oregon Department of Fish and Wildlife. 2010a. Rehabilitating Habitat. ODFW website: http://www.dfw.state.or.us/fire/fire_rehab.asp. Accessed on December 15, 2010.
- _____. 2010b. Personal communication between Lucas Meek of Ecology and Environment, Inc. and Travis Schultz of ODFW. Email correspondence dated December 8, 2010.
- Oregon Energy Facility Siting Council. 2007. Biglow Canyon Wind Farm: Revegetation Plan. March 10, 2007. <http://www.oregon.gov/ENERGY/SITING/docs/BCWOa2B.pdf>
- _____. 2013. Carty Generating Station project site field visit with Dave Pranger (Morrow County) and Don Farrar (Gilliam County), October 2, 2013.
- _____. 2017. Personal communication between Andy Bidwell of PGE and Dave Pranger, Morrow County Weed Coordinator/Inspector. Email correspondence dated December 21, 2017.
- _____. 2018. Conference call attended by PGE, ODFW, and ODOE to discuss revisions to the Carty Generating Station Revegetation and Noxious Weed Control Plan, June 12, 2018.

DRAFT

Attachment 4
Cost Estimate and Bank Letter
for Decommissioning Carty Generating Station

Facilities Added to Carty Generating Station in RFA2

TASK DESCRIPTION	Unit	RFA2 Qty	Unit Cost (2020)	RFA2 Total	Methods/Assumptions
1. INTAKE STRUCTURE AND CARTY RESERVOIR					
Development of Reservoir Decommissioning Work Plan	EA	1	\$75,000	\$75,000	Development of draining and breaching implementation plan defining methods, rates, monitoring provisions, etc.
Draining of reservoir	Days	308	\$5,000	\$1,540,000	Draining of reservoir over scheduled period using existing outlet works at a rate to minimize downstream flooding. For the purposes of this estimate, it is assumed that rate will be 1/2 the typical maximum rapid drawdown rate of 6-inches per day. Unit costs based on 24-hour oversight of drain process and flowrate management, inspections, monitoring and reporting.
Excavate breach in West Dam	CY	205,000	\$10.00	\$2,050,000	Assumes excavation of a 200-foot wide breach of West Dam at lowest point. Assumes dam is 75 feet high with 20 foot wide crest and 3:1 sideslopes. Breach tapers back into existing dam structure at 3:1 sideslope.
Haul excavated soil to center of reservoir area	CY	205,000	\$2.00	\$410,000	Assumes material is loaded onto trucks and hauled approximately 2000 feet to low point in center of reservoir.
Spread and grade hauled soil	CY	205,000	\$2.00	\$410,000	Assumes spreading of removed material to promote drainage.
Seed and mulch disturbed area	SY	44,444	\$1.00	\$44,444	Includes seeding and mulching the area of the breach plus area of spread soil (assuming soil spread to 2 foot depth)
Remove West Dam concrete spillway	CY	3,765	\$100.00	\$376,500	Assumes demolition of West Dam concrete spillway including breaking up and stockpiling of concrete. Area of spillway in plan is 50,822 SF.
Remove intake structure, concrete wall and foundations, wet well, equipment and demolish building	LS	1	\$350,000	\$350,000	Includes removal of intake structure including concrete wall and screen equipment. Also includes removal of slab, wet well area, and inlet water channel concrete. Assumes concrete will be used onsite for fill. Assumes work will be performed after reservoir drained and will not require cofferdam/dewatering. Includes removal of pumps and other equipment materials and disposal of these materials. Includes demolition of intake building and circulating water pumphouse.
Fill wet well and inlet water channel with self-compacting fill	CY	1,000	\$30	\$30,000	Volume for filling based on available drawings. Assumes use of self-compacting stone.
Intake building asbestos abatement	EA	1	\$25,000	\$25,000	Assumed 70% Chrysotile. No distinct quantity since SF given in report includes other facilities to be demo' d with Boardman
			Total	\$5,310,944	Assumes piping dedicated to each facility will be addressed as part of each respect facility demolition estimate.
2. DISCHARGE STRUCTURE AND CHANNEL					
Demolition of existing rock channel	CY	1,667	\$50.00	\$83,350	Based on area in plan of 750'x30'. Assume average rock depth of 2 feet. Assumes work will be performed after reservoir drained. Therefore, no dewatering required. Assumes rock can be used elsewhere in project as fill.
Demolition of outlet structure and discharge apron	CY	245	\$150.00	\$36,750	Estimate of structure concrete volume
Remove and dispose of 2,200 lf of 90-inch FRP discharge pipe from discharge channel to outlet structure	EA	1	\$12,500.00	\$12,500	Est to be 90"dia x 20' long section at 50 psi with 3/4" to 1" wall thickness pipe is 6,000 lbs./3tons per 20' Ross at ross@diamondseervices.com = 330 tons of FRP. Finley Buttes Landfill at 73221 Bombing Range Rd; Boardman, Oregon 97818 \$16.50 ton dump fee x 330 tons = \$5,500 and EOE Trucking @ 541-571-3530 Dave Ammons \$130/hr side dump = 60CY each/ 120LF of FRP pipe = 19 loads = \$2,500 and 300 Excavator with grapple and 1 laborer for three days for \$4,500
Fill former channel with soil or fill	CY	4,500	\$10.00	\$45,000	Estimate for brining fill to grade to fill former channel.
Seed and mulch disturbed area	SY	2,500	\$1.00	\$2,500	Assumes overall channel area of 750x30.
			Total	\$180,100	Assumes piping dedicated to each facility will be addressed as part of each respect facility demolition estimate. This estimate addresses common features of discharge structure and channel
3. SANITARY SEWER LAGOONS					
Stabilization of lagoon solids (North, Middle and South)	CY	6,023	\$25.00	\$150,575	Assumes 6-inch layer will require stabilization with fly ash or lime prior to disposal.
Excavation of solids, liner, and underlying soils	CY	12,047	\$8.00	\$96,376	Assumes 1-foot thick layer will require excavation and disposal
Disposal of soils, liner and underlying soils	Ton	14,456	\$40.00	\$578,240	Assume 1.2 tons/CY, \$40/ton for transport/disposal at Columbia Ridge Landfill (35 miles one way)
Grading of berms and lagoon area	SY	36,142	\$2.00	\$72,284	Fine grading of entire area.
Placement of onsite fill	CY	161,000	\$10.00	\$1,610,000	Assumes 10 foot thickness of soil placed in 10 acre percolation pond to bring area to grade. It is assumed that the other active lagoons can be filled using current berm materials.
Seeding and mulching of area	SY	36,142	\$1.00	\$36,142	Assumes stabilization of surface with seeding and mulch.
			Total	\$2,543,617	Assumes lift stations and piping to lagoon will be addressed as part of respective facility demolition.
4. EVAPORATION PONDS AND WASTEWATER LINE					
Remove and Disposal Residual Solids and Liner System	EA	1	\$725,000.00	\$725,000	Assumes water removed prior to scope implementation and material dry and able to be excavated when contractor arrives at site. Scope includes removal and disposal of solids in base of ponds (assumed 6-inch thickness) and liner system (assumed 1-inch thickness). No removal of soils underlying the liner is included. Assumes 1.2 tons/CY, \$6/CY for excavation, and \$40/ton for transport and disposal at Columbia Ridge Landfill (Subtitle D)
Regrading of Berms and Evaporation Pond Area	SY	67,150	\$2.00	\$134,300	Assumes knockdown of berms and fine grading of remaining area to match surrounding countours and drain. Does not include import of fill to area.
Decommissioning of Wastewater Line	EA	1	\$7,200.00	\$7,200	Includes grouting of existng line in place (no excavation or removal). Assumes 984ft pipe length, 1ft pipe diameter, and \$250/CY of grout
			Total	\$866,500	

TASK DESCRIPTION	Unit	RFA2 Qty	Unit Cost (2020)	RFA2 Total	Methods/Assumptions
5. OTHER STRUCTURES¹					
New Office and Warehouse Building Demo CGS (60' x 100')	SF	6,000	\$6.00	\$36,000	Assumes 1-foot thick layer will require excavation and disposal Utilizing a 300 Excavator with Sheer and 2 laborer wreck in one week including sorting, loading and hauling costs. Does not include removal of any subsurface foundations.
Remove Carty Substation	EA	1	\$72,000.00	\$72,000	Based on this very short section and that this work can be performed during other activities and will not require a separate mobilization.
Remove 7.2kV distributor lines from new Carty Substation to raw water intake building	EA	1	\$5,000.00	\$5,000	One pump station with three individual pumps. Cost assumes pumps will be removed and sold for reuse. No scrap value included for metals. Wet well concrete slab will be removed and wetwell will be filled with soil or flowable fill. Intake line from reservoir to wetwell will be grouted in place.
Decommission/remove irrigation pump stations	EA	1	\$30,000.00	\$30,000	Based on approx. half mile no more than 2' deep that can be excavated and backfilled to 90% compaction at the same time with the existing soil by using a backhoe. Trucking and disposal of conduits, concrete encasement, wire and the wire insulation. Assume 1.2 tons/CY, \$40/ton for transport/disposal at Columbia Ridge Landfill (35 miles one-way)
Remove 34.5 kV (existing, buried) leading from the irrigation pump Boeing Well and pump associate existing water pipeline to Boeing Well	EA	1	\$28,000.00	\$28,000	Utilizing a 300 Excavator and 1 laborer wreck in one week.
300,000-gallon carbon steel potable /fire water tank	EA	1	\$19,500.00	\$19,500	
12.5kV transmission from construction sub to Boeing Well	EA	1	\$20,000.00	\$20,000	Based on a very short run and this work can be performed during other activities
7.2 kV transmission from BCP to CGS	EA	1	\$20,000.00	\$20,000	Based on a very short run and this work can be performed during other activities
230 kV from BCP to Dalreed 16 miles					See Detail Below
Remove and reel up 3 phase transmission line 16 miles x 3 wires = 48 miles (253,440ft) of wire	MI	48	\$1,500.00	\$72,000	Utilizing a line truck, driver and spotter, remove and reel up transmission line wire, Assume crew production rate 0.5 mile/hour. 40 ft long, 6 ft in ground w/ creosote, est. 1,000lbs pole. Supports w/2 vertical, cross brace & top horizontal = 4,000lbs ea.
Towers @ 80' apart = 1,048 supports x 2,096 tons . Disposal \$16 a ton special waste Finley Buttes Marrow County landfill	TN	2,096	\$16.00	\$33,536	Method includes (4) four hours load/unload time, (8) eight hour round trip, Unit cost \$1,500.00/trip. Assume a load is 20 tons
18 wheel tractor and flat-bed trailer, 80,000 pound capacity that co HR Backfill qty 2 pole holes with self compacting gravel and 12" topsoil	EA	1,048	\$50.00	\$52,400	10CF of gravel and 1.5 CF of soil placed in each hole
Sanitary Drainage System					
Pump out & dispose sewer system	EA	1	\$4,500.00	\$4,500	This BOE is from the qty provided in DESIGN BASIS DOCUMENT 2/19/2020 rev. 2 Approach 1: Construction of a New Septic System for the Alternative 1c: Septic System Receiving Flows from CGS Only. BCP is not included
3,000 gallon septic tank remove and dispose	EA	1	\$3,500.00	\$3,500	3,000 gallon septic tank and 2,374LF of Sewer lines
Large Manholes and medium Distribution Drop Boxes	EA	7	\$350.00	\$2,450	Includes backfilling and compacting with clean soil
Excavate Sewer lines and dispose of PVC	LF	2,374	\$3.00	\$7,122	Includes backfilling and compacting with clean soil
Separate and dispose of Filter Fabric	SY	222	\$5.00	\$1,110	4" PVC Gravity Sewer In 569LF, Out 873LF & 932LF of 3" PVC Pressure wQty 4 cleanouts under 2' soil and in 1' of gravel SY Placed
Load and dispose of trench fill drain media/gravel	CY	148	\$38.00	\$5,624	approx.. 1' deep x 2' wide w/ ¼" to 2½" in distribution of effluent
Replace gravel with clean fill	CY	148	\$15.00	\$2,220	Place and compact to 90%
Replace removed fill that was over gravel	CY	296	\$15.00	\$4,440	Averages soil two feet deep and two feet wide
Seed and mulch disturbed area	SY	500	\$1.00	\$500	Address all distributed areas in additional to trench's and tank
Remove and Dispose Electrical Equipment	EA	1	\$5,500.00	\$5,500	1 Transformer, 200LF of 2" and 4" = 400 of Conduit & Cable, 1 Sensor and 1 controller
				Total	\$583,902
6. SUBTOTAL				\$9,485,063.44	
OVERHEAD @ SUBTOTAL	7.0%			\$663,954	Home office overhead and support.
PROFIT @ SUBTOTAL	10.0%			\$1,014,902	Contractor Fee.
INSURANCE @ SUBTOTAL	2.0%			\$223,278	Industrial Insurance.
Totals Overhead, Profit, Insurance				\$1,902,135	
				\$11,387,198	
7. TOTAL SUBCONTRACT					
TOTAL ALL WORK				\$11,387,198	
BOND ²	1.0%			\$113,872	Performance/Payment Bond Premium.
CONTINGENCY - GENERAL ²	10.0%			\$1,138,720	Applies to Sections 1-6
CONTINGENCY - ADMINISTRATION AND PROJECT MANAGEMENT BY ODOE ²	10.0%			\$1,138,720	Applies to Sections 1-6
ESCALATION				\$0	
TOTAL ESTIMATED COST ^{3,4}				\$13,778,510	

¹The cost to retire an 18-mile, 500 kV transmission line was included in the cost estimate approved in the Final Order on the Application for Site Certificate. Although PGE ultimately did not build the additional 500 kV transmission line as part of Unit 1, the retirement cost estimate was never revised; therefore, PGE's letter of credit issued to the State already includes the retirement cost of the 500 kV transmission being added to the CGS site certificate as part of RFA2.

²Contingency applied to the subtotal along with OH, profit, and insurance.

³Additional Mobilization & Management, and Project Management costs were not included because the added related or supporting facilities will be decommissioned at the same time as Unit 1 or the Carty Solar; therefore, there is no additional mobilizations or project management. These costs were included for both Unit 1 and Carty Solar because those two units of the facility could be retired separate from each other; therefore, there is the potential for multiple mobilizations and project management needs.

⁴Fourth Quarter 2020 dollars

Sept 14th, 2020

Oregon Department of Energy:

Bank of the West has a long standing business relationship with Portland General Electric Company. PGE has always managed its credit relationship with Bank of the West in a satisfactory manner and is considered to be a client in good standing. Based upon the Company's current credit profile, and subject to acceptable pricing, terms and requisite internal and credit approvals, Bank of the West would be willing to furnish or arrange a letter of credit in an amount up to \$25 million for the purpose of ensuring the Company's obligation that the site of the Carty Generating Station can be restored to a useful non-hazardous condition.

Please feel free to reach out directly to me with any questions.



John DeLaitre

John DeLaitre | Director & Sr. Relationship Manager | Corporate Banking Group

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BANK OF THE WEST
COMMERCIAL BANKING

BNP PARIBAS GROUP

Attachment 5

Wildlife and Habitat Mitigation and Monitoring Plan

Carty Generating Station: Draft Amended Wildlife and Habitat Monitoring and Mitigation Plan¹ December 14, 2018², August 17, 2020³

I. INTRODUCTION

The Carty Generating Station includes existing generating components (Unit 1 and its associated components and existing components originally approved under the Boardman Coal Plant site certificate) and approved, but not yet constructed generating components (Carty Solar Farm and its associated components and new components proposed in the Second Amended site certificate). Portland General Electric (PGE or certificate holder) received a site certificate from the Energy Facility Siting Council (Council) in June 2012 authorizing the construction and operation of a 900 megawatt (MW) combined-cycle natural gas-fueled energy generating facility in Boardman, Oregon in Morrow County (Carty Generating Station). The Council's 2012 approval authorized construction and operation of two 450-MW combined-cycle natural gas-fueled turbine generators (Unit 1 and Unit 2). PGE commenced Unit 1 construction on January 9, 2014; PGE completed Unit 1 construction on December 26, 2016; Unit 1 began operation on July 29, 2016. The construction commencement deadline for Unit 2 expired in June 2017 and therefore the certificate holder no longer has the authority to construct or operate Unit 2.

The Council issued the First Amended site certificate on ~~DATE~~ December 14, 2018, authorizing a site boundary change and the construction and operation of a 50 MW photovoltaic solar unit, five 34.5 kilovolt (kV) interconnecting transmission line routing options, and temporary construction and laydown areas (Carty Solar Farm). The construction commencement and completion deadlines for the components authorized in the First Amended site certificate ~~is~~ DATES are February 4, 2022, and February 4, 2025, respectively. The Council issued the Second Amended site certificate on DATE authorizing a boundary change; construction and operation of a new substation and associated distribution lines, septic system, backup water pipeline, wastewater pipeline, office/warehouse building, and security guard station; and incorporation of existing facilities that had been permitted under the Boardman Coal Plant site certificate including Carty Reservoir, existing transmission infrastructure, and interconnecting water pipelines. The construction commencement and completion deadlines for the components authorized in the Second Amended site certificate are DATES.

This Amended Wildlife and Habitat Monitoring and Mitigation Plan (Amended Plan) describes wildlife monitoring that the certificate holder shall conduct during construction and operation of the Carty Generating Station (facility), including the already constructed Carty Unit 1; Grassland Switchyard; the transmission line segment connecting Unit 1 to the switchyard; additional facilities as approved under Site Certificate Amendment 1, including the Carty Solar Farm site just southeast of Carty Reservoir and the associated interconnection transmission line; and additional facilities as approved under the Second

¹ This Amended Plan is incorporated by reference in the site certificate for the Carty Generating Station and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

² A draft version of this plan was included as Exhibit 1 to the Energy Facility Siting Council's *Final Order on the Carty Generating Station Application for Site Certificate* (June 29, 2012). In accordance with Site Certificate Condition 10.1, the certificate holder consulted with the Oregon Department of Fish and Wildlife (ODFW) and obtained Department approval of the Plan prior to the start of construction (December, 2013). As allowed by Section IX of the Plan, ODOE reviewed and approved an amended Plan on July 7, 2014. This February 2018 amended plan is being submitted as part of the Request for Amendment No. 1 of the Carty Generating Station Site Certificate.

³ Minor Plan updates were made to reference additional facilities within Morrow and Gilliam Counties included in the Second Amended site certificate.

Carty Generating Station
Wildlife and Habitat Monitoring and Mitigation Plan
(August 2020+8)

Amended site certificate. The monitoring objectives are to determine whether the facility causes significant fatalities of wildlife species or results in a loss of habitat quality.

This Amended Plan also describes methods and standards for preservation and enhancement of land near the Carty Generating Station to mitigate for impacts of the facility on wildlife habitat and addresses mitigation for both the permanent impacts of facility components and the temporal impacts of facility construction. The certificate holder shall protect and enhance the mitigation area(s) as described herein. This Amended Plan specifies habitat enhancement actions and monitoring procedures to evaluate the success of those actions. Remedial action may be necessary if the mitigation area(s) do not demonstrate progress toward habitat enhancement success.

II. DESCRIPTION OF THE FACILITY

The Carty Generating Station Site is located in Morrow and Gilliam Counties, Oregon, approximately 13 miles southwest of the town of Boardman, Oregon. The facility includes two transmission lines: one 500 kV line that extends west from the Grassland Switchyard 17 miles to the Slatt Substation and one 230 kV line that extends northwest to the Dalreed Substation. There is no proposed disturbance associated with the existing transmission lines. All proposed disturbance is within Morrow County. The facility would be located on an upland plateau at an elevation of approximately 650 feet above sea level. The facility components would be located entirely on private lands that are mostly characterized as shrub-steppe, grassland, or agricultural areas. There are some riparian and wetlands habitats present within the amended site boundary; however, all facility components—~~including transmission line towers~~—will be sited to avoid impacts on these habitats. Soil types in the area consist primarily of sandy loam, silt loam, and very stony loam.

Much of the native shrub-steppe vegetation within the site boundary has been modified by livestock grazing and past wildfires. Functional mature shrub-steppe habitat is patchy and is dominated by big sagebrush (*Artemisia tridentata*), broom snakeweed (*Gutierrezia sarothrae*), bluebunch wheatgrass (*Pseudoroegneria spicata*), cheatgrass (*Bromus tectorum*), gray rabbitbrush (*Ericameria nauseosus*), needle-and-thread grass (*Hesperostipa comata*), and Sandberg's bluegrass (*Poa secunda*). Grasslands consist of cheatgrass, crested wheatgrass (*Agropyron cristatum*), bluebunch wheatgrass, needle-and-threadgrass, Sandberg's bluegrass, redstem filaree (*Erodium cicutarium*), and mouse-ear chickweed (*Cerastium* sp.). Riparian forests are dominated by Russian olive (*Elaeagnus angustifolia*), Pacific willow (*Salix lucida* ssp.), Canada goldenrod (*Solidago canadensis*), amaranth (*Amaranthus* sp.), and broadleaf cattail (*typha latifolia*).

Carty Generating Station
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The Oregon Department of Fish and Wildlife (ODFW) describes habitat categories in its Wildlife Habitat Mitigation Policy (Oregon Administrative Rules [OAR] 635-415-0025). The facility will be constructed in two phases, with the generating components referred to as Unit 1 and the Carty Solar Farm. Unit 1 (generating unit and a portion of the switchyard), completed in 2016, occupies approximately 45 acres of Category 4 shrub-steppe habitat, and temporary construction-related impacts occurred on approximately 55.4 acres of Category 4 shrub-steppe habitat. Portland General Electric Company (PGE) established a Habitat Mitigation Area (HMA) of 78 acres (the HMA for Unit 1) to mitigate these permanent and temporal impacts.

PGE will establish the HMA for the Carty Solar Farm to mitigate permanent and temporal impacts that result from construction of the Carty Solar Farm. The overall HMA for the Carty Generating Station (the Carty Generating Station HMA, or just HMA in this document) will consist of the combined areas of the HMA for Unit 1 and the HMA for the Carty Solar Farm. Disturbance and mitigation acreage for the Carty Solar Farm will be finalized and updated in this Amended Plan in consultation with ODFW and the Oregon Department of Energy (ODOE) prior to construction of each phase of the project (see Section IV for HMA acreage calculation).

In addition to these two construction phases, minor construction activities will occur as a result of the Second Amended site certificate, which includes a new substation and associated distribution lines, septic system, new back up water pipeline, wastewater pipeline, new security guard station and associated plumbing and communication lines, and new office/warehouse building. Only the new septic system, new wastewater pipeline, and new security guard station and associated plumbing and communication lines would be constructed in vegetated areas with a total temporary disturbance of approximately 2.13 acres and permanent disturbance of 1.45 acre. The existing habitat management area (HMA) is large enough to accommodate this additional disturbance; therefore, no new HMA is proposed.

III. WILDLIFE MITIGATION AND MONITORING MEASURES

The certificate holder shall use a qualified investigator (wildlife biologist) to conduct monitoring for Washington ground squirrel (WGS; *Spermophilus washingtoni*), post-construction avian and bat mortality study, raptor nest surveys, and avian use of the facility area. Specific monitoring and mitigation measures for these species are described below (also see Section VII for HMA monitoring requirements):

A. Washington Ground Squirrel

Best Management Practices

- The certificate holder shall impose and enforce a construction and operation speed limit of 20 miles-per-hour throughout the facility site and, during the active squirrel season (February 1 through June 30) a speed limit of 10 miles-per-hour on private roads near known WGS colonies.
- Conduct Environmental Awareness Training for all facility personnel and construction contractors prior to the beginning of construction or before entering the Project right-of-way (ROW). The training program shall discuss WGS and all other environmental issues related to the facility, and include handouts with WGS identification information and reporting procedures. Smaller training sessions shall be conducted as needed for personnel that start after the beginning of construction.
- In order to discourage WGS from moving into planned construction areas that are currently not within 785 feet of a known WGS colony the certificate holder may disc or till a minimum of an 800-foot buffer within the perimeter of the planned ground disturbance areas in closest

Carty Generating Station
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(August 2020+8)

proximity to squirrel activity areas. Proposed measures and areas where measures will be implemented shall be reviewed by ODOE, in consultation with ODFW, and shall be informed by the most recent WGS survey data. If the certificate holder discs or tills areas, the certificate holder shall plant dryland wheat or another cover crop approved by ODFW in tilled areas. Such areas shall be tilled annually until construction begins to maintain a soil disturbance regime that is unsuitable for use by WGS. Other potential measures for deterring WGS movement into planned construction areas, such as installation of perimeter silt fences, will be planned in coordination with and approved by ODFW. In addition to preventing WGS from moving into the planned construction areas, discing or tilling the planned construction area, and/or implementing other approved deterrence measures, means the area will no longer be considered WGS habitat and would not be included in the no-impact buffer area for any new WGS burrows that are established within 785 feet of the Facility Site Boundary. (Note, an approximately 45-acre portion of the Energy Facility Site was tilled and planted with winter wheat in December 2012 following coordination with ODFW and USFWS).

- If pre-construction surveys determine that WGS burrows have been established in previously inactive areas, the certificate holder shall immediately report to ODOE and ODFW. The certificate holder shall coordinate with ODOE and ODFW to establish additional mitigation measures or to obtain an Incidental Take Permit, as appropriate.
- The certificate holder will consult with ODOE and ODFW to discuss the situation and potential additional avoidance measures should WGS establish burrows within 785 feet of existing facilities, construction activity, or planned construction disturbance areas. If there is concern that, despite reasonable avoidance measures, WGS may accidentally be killed or injured by construction activities, then the certificate holder shall work with ODFW to obtain an Incidental Take permit, as appropriate.

WGS Monitoring

The certificate holder shall conduct post-construction surveys on known colonies within the amended Site Boundary, on land owned by the certificate holder, and within the HMA where known active burrows were recorded during pre-construction field surveys. The surveys shall be conducted by qualified biologists in year one, year three, and year five after operation of Unit 1 has begun (i.e., 2017, 2019, and 2021), and in year one, year three, and year five after Carty Solar Farm operation has begun (years tbd), and otherwise at least every five years (in years divisible by five) for the life of the facility. The existing 500 kV Grassland to Slatt and 230 kV Boardman Coal Plant to Dalreed transmission lines incorporated into the Second Amended site certificate will be included in the every five year WGS surveys. Surveyors shall record evidence of WGS activity, current land use, and any conditions caused by the facility that might increase erosion or result in a decline in vegetation quality and adversely affect a WGS colony. Unit 1, portions of the potential Carty Solar Farm transmission line, and portions of new components proposed as part of the second amended site certificate are located on the southwest side of Tower Road. In consultation with ODFW, it was determined that Tower Road is a significant boundary to WGS habitat. Therefore, for active burrows located on the northeast side of Tower Road, the 785-foot buffer will not extend across Tower Road.

B. Raptor Nest Monitoring

During the year in which any phase of construction occurs, the certificate holder shall use a protocol approved by ODFW to conduct raptor nest surveys to determine whether there are any active nests that would potentially be disturbed during construction. Surveys will consist of ground-based and/or helicopter aerial searches, as appropriate to the construction activity

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locations planned for a given year. Surveys will be carried out to one mile from the amended site boundary.

If a nest is occupied by any of these sensitive raptor species, the certificate holder shall not engage in high-impact construction activities (activities that involve blasting, grading, or other major ground disturbance) or allow high levels of construction traffic within designated buffer distances for each species (Table 1). Buffer distances may be decreased with approval by ODFW and USFWS depending on the intensity of construction activity and whether sufficient barriers (e.g., vegetation, topography) are present to shelter a particular nest site from construction disturbance or if consultation determines a lesser distance is feasible and appropriate. The certificate holder also will instruct construction personnel to avoid any unnecessary activity within the buffer area.

Table 1. Critical Nesting Periods for Sensitive Raptors

Species	Disturbance Buffer Distance (line of sight)	Critical Nesting Period	Early Release Date
Ferruginous Hawk	0.6 mile	March 15 to August 15	May 31
Bald Eagle	0.5 mile	January 1 to August 15	May 31
Swainson’s Hawk	0.25 mile	April 1 to August 15	May 31
Golden Eagle	1 mile	January 1 to August 15	May 31
Burrowing Owl	0.25 mile	April 1 to August 15	July 15
Long-billed Curlew*	0.5 mile	March 8 to June 15	May 31

*Although not a raptor species, a critical nesting period and buffer of 0.5 mile for active long-billed curlew nests were included in the Site Certificate. While not actively surveyed for, any curlew nests that are incidentally found will be protected with the stipulated nest buffer.

The certificate holder will direct a qualified biological monitor, as approved by ODOE, to observe the active nest sites during the sensitive period for signs of disturbance. The qualifications of the biological monitor shall be provided to ODOE in the annual report; the certificate holder shall provide notification to ODOE if changes in biological monitor occur. If an active State-sensitive raptor nest is found during construction that is for a species not currently identified in Table 1, the certificate holder will consult with ODFW and USFWS and institute buffer distances and monitoring as appropriate.

The certificate holder may begin or resume high-impact construction activities before the ending day of the sensitive period if any known nest site is not occupied by the early release date (Table 1). If a nest site is occupied, the certificate holder may begin or resume high-impact construction before the ending day of the sensitive period, with the approval of ODFW and USFWS, after the young are fledged. The certificate holder would use, and shall provide a copy to ODOE, of a protocol approved by ODFW and USFWS to determine when the young are fledged (that is, when the young are independent of the core nest site).

Annually during construction and in year one, year three, and year five after operations of Unit 1 have begun (i.e., 2017, 2019, and 2021) and year one, year three and year five after operations of Carty Solar Farm have begun (years tbd) and otherwise at least every five years (in years divisible by five) for the life of the facility, the certificate holder shall provide an ~~annual~~

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sensitive species raptor nest monitoring report to ODOE, ODFW and USFWS. The report will document the locations and nest productivity of sensitive raptor species nests one mile of the amended site boundary. The existing 500 kV Grassland to Slatt and 230 kV Boardman Coal Plant to Dalreed transmission lines incorporated into the Second Amended site certificate will be included in the every five year raptor nest surveys. The certificate holder shall consult with USFWS and ODFW regarding any active protected bird nests found within the construction disturbance area or within the disturbance buffer distances (Table 1) of facility construction or operational activities.

If nest monitoring detects nest site abandonment or other adverse impact to nesting activity caused by facility activity, the certificate holder shall implement appropriate mitigation, in consultation with ODFW and subject to the approval of ODOE. The certificate holder shall propose and implement mitigation for the affected species in consultation with ODOE, ODFW, and USFWS. Mitigation shall be designed to benefit the affected species or contribute to overall scientific knowledge and understanding of what causes nest abandonment or nest failure. Mitigation may be designed to proceed in phases over several years. It may include, but will not be limited to, additional raptor nest monitoring, protection of natural nest sites from human disturbance or cattle activity (preferably within the general area of the facility), or participation in research projects designed to improve scientific understanding of the needs of the affected species.

All bird mortalities and active nests of all other protected bird species found in association with facility components shall be documented and reported consistent with PGE's adopted Avian Protection Plan. All eagle and other sensitive raptor species mortalities shall be reported immediately to USFWS and ODFW.

C. Avian Protection

The certificate holder maintains a company-wide Avian Protection Plan (APP) to reduce impacts to avian species from electrocutions and collisions with electric utility power lines and equipment. The APP is hereby adopted by reference. The APP includes the following three-phased approach to address avian risks that will be applied to the development of the Carty Generating Station:

- Preventive – Emphasize compliance with applicable laws, regulations, and permits. Use avian-safe standards in areas identified as having high avian risk;
- Reactive – Implement the Avian Reporting System (report bird mortalities and conduct remedial measures as appropriate); and
- Proactive – Conduct employee training and risk assessments of existing lines, modify lines when necessary, and contribute to research of avian/electrical equipment interactions.

Electrocution from high-voltage transmission lines is very rare because the distances between conductors, and between conductors and grounded hardware, are greater than the wingspan of any raptor (APLIC 2006).⁴ However, transmission lines do present a collision risk for birds. Consistent with the APP, the certificate holder shall employ pre-construction measures to protect raptors in the design and construction of transmission lines. Protection measures to

⁴ APLIC (Avian Power Line Interaction Committee). 2006. Suggested Practices for Avian Protection On Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington D.C. and Sacramento, CA. [http://www.aplic.org/uploads/files/2643/SuggestedPractices2006\(LR-2\).pdf](http://www.aplic.org/uploads/files/2643/SuggestedPractices2006(LR-2).pdf). Accessed August 23, 2016.

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reduce the potential risks to raptors and other birds will include the following:

- Design and construct all above-ground transmission line support structures following the practices suggested by the Avian Powerline Interaction Committee (APLIC), including a minimum separation of 9 feet between all energized transmission conductors;
- Install perch guards or other deterrents as needed and safe alternative perching or nesting locations, as appropriate; and
- Install bird flight diverters and line marking devices where necessary to minimize areas of bird collision risk, such as bird concentration areas (wetland/riparian areas) and known flight routes.

A nest management procedure, which identifies steps facility employees must take when a nest is encountered on utility structures, is also included in the APP. As described in the APP, the certificate holder will track avian mortalities, nest management issues, and remedial actions taken using an internal reporting system and database, the Avian Reporting System. This reporting database allows: (1) tracking of incidents and remedial actions to ensure that all measures are completed and documented, (2) accumulation of a long-term data set, and (3) compliance with the reporting requirements of the USFWS Special Purpose Permit currently held by the certificate holder. The reporting system also provides data on the location and frequency of bird mortalities and problem nests.

Where feasible, the certificate holder shall conduct site preparation for construction of the Carty Generating Station and transmission line in a manner that minimizes potential for impacting nesting native birds protected by the Migratory Bird Treaty Act, such as conducting initial site clearing outside of the typical bird breeding season (generally March to July). Prior to commencement of construction activity during the breeding season, a qualified biologist shall survey the construction site to determine the presence of any active protected bird nests. Construction personnel shall be trained in avian awareness, reporting of protected bird nests, and the proper procedures if dead birds are found at the construction site.

D. Post-construction Avian and Bat Mortality Monitoring (Carty Solar Farm)

Monitoring Goals

The monitoring program will involve surveys designed to estimate bird and bat fatality rates at the Carty Solar Farm in the year following start of Carty Solar Farm operation. The certificate holder will analyze bird and bat carcass monitoring data to accomplish the following goals:

- Detect carcasses and estimate bird and bat fatality rates for the Carty Solar Farm;
- Estimate fatality rates for species of concern, if practicable; and
- Determine whether additional conservation measures are needed to reduce impacts to birds and bats at the Carty Solar Farm.

Monitoring Methods

i) Study Design

The avian and bat mortality monitoring study is designed to maximize the accuracy of the fatality estimates and to correct for the following sources of field-sampling error: (1) carcasses that occur on a highly periodic basis, (2) carcass removal by scavengers, (3) searcher efficiency, and (4) carcasses or injured birds or bats that may land or move to areas not included in the search transects (Kunz et al. 2007). Post-construction monitoring at the Carty Solar Farm will involve standardized distance-sampling based carcass searches, searcher efficiency trials, and carcass persistence trials, consistent with recommendations from Huso et.al (2016b) and accepted monitoring designs at other utility-scale solar facilities (WEST 2016a-c). Surveys of the PV panel area will be conducted using a distance-sampling based methodology. The layout

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of PV facilities is often well-suited to a distance-sampling approach. Distance sampling involves searching a transect line and assumes that searcher efficiency decreases (possibly dramatically) as a function of distance from the observer, and is ideally suited to situations in which animals (or carcasses) are sparsely distributed across a landscape (Buckland et al. 1993). As the landscape at the Carty Solar Farm would be flat and relatively clear of vegetation, a distance sampling design is well supported, as demonstrated at other PV solar facilities (WEST 2016a; Huso et. al 2016b).

Distance sampling adjusts carcass counts for variable searcher efficiency by calculating the *effective* searcher efficiency along a transect. Effective searcher efficiency is the average probability of detection in the searched area, derived from the detection function. As a highly simplified example, if a searcher walks a 10-m (33-ft) long transect line and detects 90% of all carcasses within 10-m of the line, and 60% of carcasses that are 10 to 30 m (33 to 99 ft) from the line, then the effective searcher efficiency between zero and 10 m would be 0.9 and the effective searcher efficiency between 10 and 30 m would be 0.6. For the total 10 by 30-m area, the effective searcher efficiency would be $\frac{0.9+0.6}{100m^2+200m^2} = 0.5$.

In practice, searcher efficiency is modeled as a continuous function of distance, and the detection function is estimated from bias trial data. An advantage to the use of data from bias trials is that the assumption that carcasses are randomly distributed within the search area (typical of most distance sampling designs) becomes unnecessary. Furthermore, having a sufficient sample size to fit the detection function is no longer dependent on what is observed, as in most distance sampling studies, and trials can be placed to measure potential covariates such as carcass size and ground cover. The fitted detection function is used to determine the overall probability of detection as well as to inform the approximate effective view shed of non-zero detection probability for observers.

Final study design will depend on actual as-built configuration of the Carty Solar Farm and post-construction site conditions, and current knowledge of avian mortality at PV solar farms and will be determined in coordination with ODFW. One potential design, if compatible with site design and conditions such as vegetation height, would be for surveyors to walk or drive an ATV along the facility's access roads, perpendicular to panel rows, and scan 90 meters (295 ft) along the PV array rows (Figure 1). Surveys will include a 50% sample of the blocks in the PV panel area. Study design may be refined, scaled down, or systematic study eliminated entirely if results from other PV solar farm systematic studies to date at the time of project construction indicate a low expected risk of bird mortality at Carty Solar Farm.

ii) Search Interval and Search Period

Surveys will be conducted once every three weeks November through February, and once every two weeks from March through October in the year following start of Carty Solar Farm operation; this period includes spring and fall migration and summer nesting/maternity seasons for birds and bats, respectively. Carcass persistence trials will be conducted concurrently with carcasses searches, and if documented scavenger rates indicate that shorter or longer search intervals are needed, the search intervals may be modified to improve carcass detection rates. Guidance from Huso et. al (2016b) suggests determining search intervals such that the average probability a carcass is available to be found is at least 50%. Since carcass persistence may vary by carcass size, search intervals should be determined based on the size or sizes of principal species of interest; for example, if impacts to water-associated birds are a focus, then search intervals can be adjusted based on persistence times for large and medium-sized birds, such as grebes, ducks, and loons.

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iii) Searcher Qualifications

Searchers will be trained to conduct carcass searches and will be familiar with and able to accurately identify bird and bat species likely to be found in the Carty Solar Farm area. Any unknown birds and bats or suspected state or ESA-listed species discovered during carcass searches will reported to a qualified biologist for positive identification.

iv) Data Collection

For each carcass or injured bird found, data recorded will include the following:

- Photos of the carcass from different angles and including a size-referencing object
- Date and time
- Initial species identification
- Sex, age, and reproductive condition (when possible)
- GPS location
- Nearest CARTY SOLAR FARM component (PV array, control house/storage facility, equipment, or other)
- Distance to the nearest PV panel
- Distance from observer when carcass first observed
- Substrate/ground cover conditions
- Condition of specimen
 - Dead and intact
 - Fresh or Dry
 - Dismembered
 - Feather spot (at least two or more primary feathers, five or more tail feathers, or ten or more feathers)
 - Other evidence of scavenging
 - Injured (note apparent injuries)

Bird and bat carcasses found in non-search areas (i.e., outside of the sampled areas described in Section i) will be coded as incidental finds and documented in a similar fashion to those found during standard searches. Incidental finds will be included in the raw survey summary totals but will not be included in the estimated fatality calculations. Carcasses be collected and disposed of consistent with PGE's Avian Protection Program and existing federal Migratory Bird Special Purpose Utility permit. Injured birds will be transferred to a licensed rehabilitator.

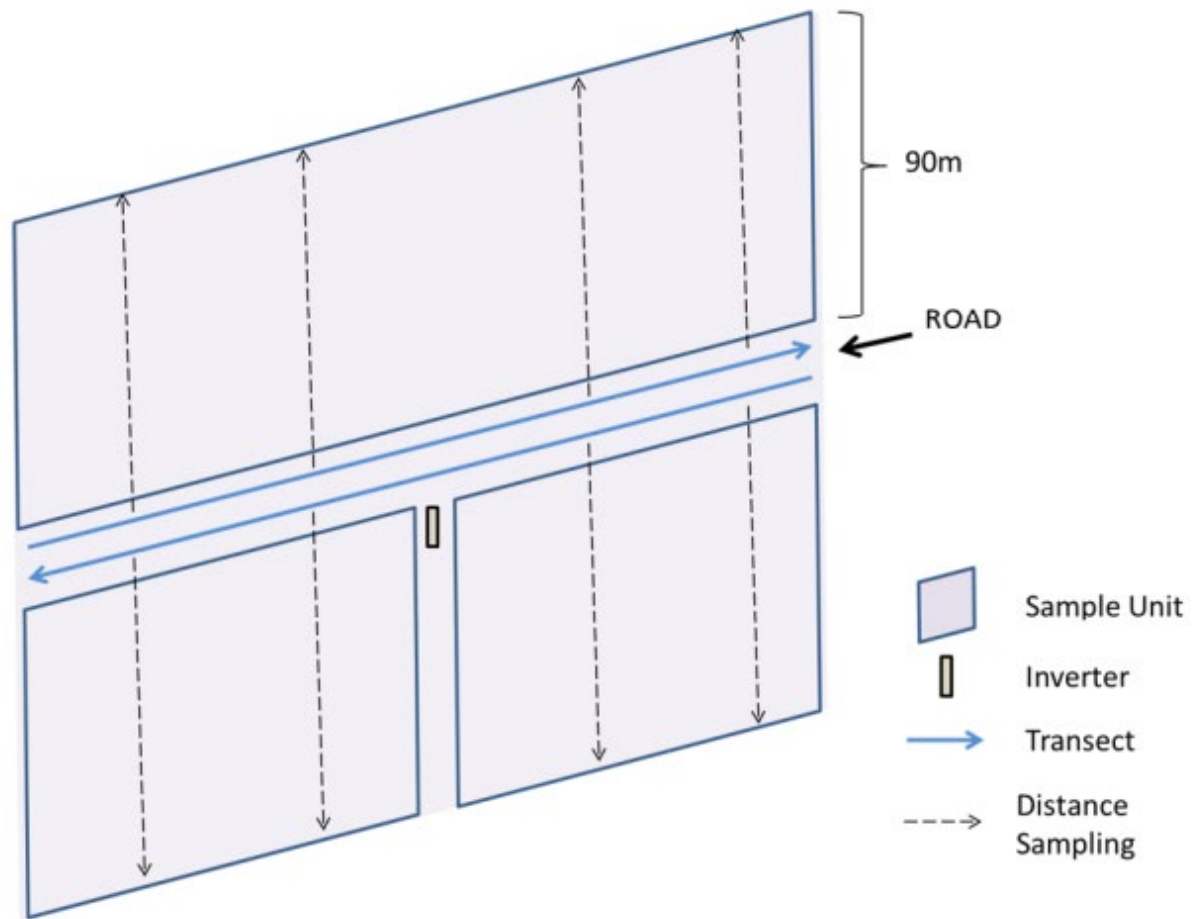


Figure 1. Example illustration of generic PV sampling unit with travel routes and searches using distance sampling (‘observation perspectives’).

(1) Searcher Efficiency and Carcass Persistence Trials

Searcher efficiency and carcass persistence trials will be conducted in conjunction with standard carcass surveys. Searcher efficiency trials will be placed throughout each season on scheduled search days to ensure trials are representative of search conditions throughout each season. Trials will be placed on at least five different days throughout each season. Searcher efficiency trials will be used to estimate the percentage of bird and bat carcasses that are detected during the carcass searches. Using the detection function fit from searcher efficiency trial data, the average probability of detecting a carcass along a specified length of panel rows can be calculated and used to adjust discovered carcasses for detection bias. Similarly, carcass persistence trials will be used to estimate the percentage of bird and bat carcasses that persist (i.e. are not removed by scavengers) long enough to be located by searchers. When considered together, the results of searcher efficiency and carcass persistence trials will inform the likelihood that a bird or bat carcass that falls within the searched area will be recorded. These correction factors will be incorporated into a fatality estimate model to estimate fatality rates.

The bias-trial sample sizes required to produce precise, adjusted fatality estimates are not well established, in part because needs may vary substantially depending on actual project-specific searcher efficiency, carcass persistence, and fatality rates. However, using searcher-efficiency trials to help evaluate the efficacy of the distance-sampling approach used in this investigation will require larger

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sample sizes to produce a sampling design that effectively accounts for distance as a key covariate of interest. A minimum of 25 carcass samples per small size class, 15 for medium, and 10 for large is anticipated within the solar array per season (Table 2). Searcher efficiency will be summarized for each individual searcher, but to avoid needlessly inflating the variance of the estimate, individual searcher effects will not be included in the fatality estimation model.

Table 2. Approximate Searcher efficiency trial sample sizes per season.

Facility component	Size	Sample size
solar arrays	Small	25
	Medium	15
	Large	10
Totals		50

Carcasses of bird or bat species recovered during the study that are not listed under the Migratory Birds Species Act or state or federal endangered species regulations may be re-used in the searcher efficiency trials, as carcass condition allows. Species such as house sparrows (*Passer domesticus*) and European starlings (*Sturnus vulgaris*) may be used to represent small-sized birds; rock doves (*Columba livia*) and commercially raised hen mallards (*Anas platyrhynchos*) or hen pheasants (*Phasianus colchicus*) may be used to represent medium to large-sized birds. If visibility classes are established, to account for differences in vegetation, trial carcasses will be placed in a variety of vegetation types so that searcher efficiency rates can be determined for each visibility class. The number of carcasses used will be limited to ensure that a scavenger swamping does not occur. Searcher efficiency trials will be conducted blindly; the searchers will not know when trials are occurring, within which transects the trial carcasses are placed, or where trial carcasses are located within the project.

The number and location of trial carcasses found by searchers will be recorded and compared to the total number placed in the transects. Searchers will be instructed prior to the initial search effort to leave carcasses, once discovered to be trial carcasses (by inconspicuous ID tags), in place (these carcasses will also be used to calculate carcass persistence). The number of trial carcasses available for detection (non-scavenged) will be determined immediately after the conclusion of the trial. Searcher efficiency of the surveyors will generate the estimate of searcher bias for input into the fatality estimate models.

Carcass persistence trials will be conducted concurrently with searcher efficiency trials and, to the extent possible, using the same carcasses from the searcher efficiency trials. In total, 30 small, 20 medium, and 10 large carcasses will be randomly placed and monitored within the solar arrays, each season (Table 3). Carcass persistence trials in the solar arrays will be monitored, using motion-triggered, digital trail cameras (e.g., see Smallwood et al. 2010). The status of each trial carcass (e.g. gone/present, fresh/desiccated, whole/partial) will be recorded throughout the trial. The length of time carcasses persist on the ground will be used to generate the estimate of carcass persistence for input into the fatality estimate models.

It may not be necessary to use cameras to monitor every carcass, as carcass persistence can also be conservatively estimated by frequent field visits and using the last date a carcass was observed as its removal date. However, at least a subset of carcasses will be monitored with cameras to help determine fate of scavenged carcasses. Cameras may also be useful for other purposes. For example, if trained on solar arrays and facility fences, motion-activated cameras could help to document cause of avian and bat fatalities, which is often undetermined at solar farms. The number and purpose of cameras used will be determined along with final study protocol in consultation with ODFW and ODOE.

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Table 3. Approximate Carcass Persistence Trail Sample Sizes Per Season.

Facility component	Size	Sample size
solar arrays	Small	30
	Medium	20
	Large	10
Totals		60

Fake cameras or cameras without bias trial carcasses may also be placed to avoid training ravens to recognize cameras as “feeding stations”. Periodic ground-based checking of carcasses also will occur to guard against misleading indicators of carcass removal, such as wind blowing the carcass out of the camera’s field of view. To minimize potential bias caused by scavenger swamping (Smallwood 2007, Smallwood et al. 2010), carcass-persistence specimens will be distributed across the entire Facility, not just in areas subject to standard surveys, and new specimens will be placed every two to three weeks in small numbers.

(2) Data Analysis and Modeling

Because the detectability of carcasses during field surveys can be imperfect, raw carcass counts generally underestimate actual mortality. Therefore, the Huso fatality estimator (Huso 2011; Huso et al. 2012, Huso et. al 2016a), modified to account for distance sampling (WEST 2016a, Huso et. al 2016b), will be applied to generate corrected fatality rate estimates for the Carty Solar Farm.

The Huso fatality estimator (Huso 2011; Huso et al. 2012) allows the user to model categorical covariates that may affect searcher efficiency and carcass persistence. AICc scores are used to evaluate the effectiveness of candidate models before generating final fatality estimates. Because the underlying assumption that searchers have a single opportunity to discover a carcass, only those carcasses determined to have occurred within the previous search interval will be used to generate adjusted fatality estimates. In addition, the model does not produce reliable estimates when there are few carcasses included in analysis.

When fewer than five carcasses belonging to a group of interest (e.g. small birds) are found and included in analysis, estimates will not be provided. Corrected fatality estimates will be reported for the solar Facility (PV panel area). Estimated mortalities will be expressed in terms of carcasses/MW/season and in other metrics appropriate for a solar facility to facilitate comparison with other studies. Analysis of data collected during the post-construction study will include seasonal fatality estimates for all birds and bats to the taxonomic level where fatality estimates can be calculated. Fatality estimates and confidence intervals will be compared to determine if differences in fatality estimates between taxa or group (e.g. birds compared to bats, large birds compared to small birds), or season. Because representative fatality estimates are more challenging to develop for small (i.e. <5) numbers of carcasses, appropriate taxonomic level fatality estimates will only be calculated if the number of carcasses is sufficient.

Reporting

The Certificate Holder will document the results of the monitoring in a summary report following the completion of the post-construction monitoring. The certificate holder may include this summary report of bird and bat fatality monitoring data and analysis in the annual report required under OAR 345-026-0080 or submit this information as a separate document at the same time the annual report is submitted.

The summary report will include fatality estimates and data summaries. The report will include all data analyses, including correlation analyses and overall fatality estimates, and a discussion of monitoring

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results and their implications. The certificate holder shall notify the appropriate agency immediately upon the discovery of a carcass of any state-listed, ESA-listed species or eagle on the Facility site.

Adaptive Management

i. Adaptive Management Goals

Adaptive management will allow the Certificate Holder to meet the goals of avoiding and minimizing impacts to birds and bats. After the end of the first year of post-construction monitoring, if the fatality rates do not exceed any thresholds of concern identified in Section 3.2, no additional monitoring will be conducted. However, if the fatality rates do exceed any of the thresholds of concern in Section 3.2, ODOE, in consultation with ODFW and the Certificate Holder, will determine if additional monitoring is warranted based on the number of observed carcasses and estimated fatality rates and consideration of any other significant information available at the time.

ii. Adaptive Management Process

To enable new information, including the results of post-construction monitoring, to influence and improve avoidance and minimization measures, certain trigger events and the subsequent changes or actions have been established. The events that would trigger need to consider the additional avoidance and minimization measures presented herein would be:

- Discovery of an eagle carcass
- New ESA-listing of a bird or bat species
- Discovery of an ESA-listed species carcass
- New state-listing of a bird or bat species
- Discovery of a state-listed species carcass
- The total number of observed bird and bat mortalities is higher than expected and likely to be significant, as defined in Section 3.2.6.

1) Discovery of an Eagle or ESA-listed Species Carcass

If an eagle or ESA-listed species carcass is discovered within the Carty Solar Farm, the following actions will be taken:

- Certificate Holder will, working with a qualified wildlife biologist, promptly identify and secure the carcass at the place of its discovery in the field until USFWS personnel can be reached and provide the further instruction for the storage of the carcass.
- Certificate Holder will notify USFWS, ODFW, and ODOE within one business day after discovery and positive identification of the carcass.
- Certificate Holder will work with the USFWS to evaluate available data concerning the find and, as appropriate, identify and implement avoidance and minimization measures to reduce the risk of future carcasses. Potential adaptive management approaches are presented in Section 3.2.7 below.
- Certificate Holder will assess the need to obtain additional authorizations in view of the new information.

2) New ESA-listing of a Bird or Bat Species

If a bird or bat species, known to occur or that has a high likelihood to occur within the Carty Solar Farm area, becomes listed under the ESA during the life of the facility, Certificate Holder will coordinate with USFWS. If this trigger is met, Certificate Holder will work with USFWS to assess the potential for the facility to impact the species and subsequently to determine the appropriate action(s), if any.

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3) New State-listing of a New Bird or Bat Species

If a bird or bat species, known to occur or that has a high likelihood to occur within the Carty Solar Farm area, becomes listed by ODFW during the life of the facility, Certificate Holder will coordinate with ODFW and ODOE. If this trigger is met, Certificate Holder will work with ODFW and ODOE to assess the potential for the facility to impact the species and subsequently to determine the appropriate action(s).

4) Discovery of a State-listed Species Carcass

- Certificate Holder will, working with a qualified wildlife biologist, promptly identify and secure the carcass at the place of its discovery in the field until ODFW personnel can be reached and provide the further instruction for the storage of the carcass.
- Certificate Holder will notify ODFW and ODOE within one business day after the discovery and positive identification of the carcass.
- Certificate Holder will work with the ODFW and ODOE to evaluate available data concerning the discovery and, as appropriate, identify and implement avoidance and minimization measures to reduce the risk of future mortalities.
- Certificate Holder will assess the need to obtain additional authorizations in view of the new information.

5) Total Number of Observed Bird and Bat Mortalities is Higher than Expected and Likely to be Significant

Mortalities to birds and bats during operations are expected to be low. Significance of the levels of mortality of any bird or bat species would be determined in coordination with USFWS, ODFW and ODOE based on the best available information, including the most recent data on species' population sizes and trends and fatality rates at technologically and geographically similar facilities if available. At this time, there is no publicly available avian fatality data at PV facilities in Oregon, but there may be in the future. This approach recognizes that higher levels of mortality of common species may not be significant. Conversely, lower levels of mortalities of less common species may be of more concern, particularly if these species appear to be at risk (e.g., Oregon sensitive-critical species). Given the assessment and prediction that impacts are likely to be low, the following actions are suggested in response to monitoring outcomes:

- If documented fatalities are low and not considered significant for the species involved, no mitigation will be conducted.
- If fatalities are high enough that they could be considered significant for the species involved, Certificate Holder will meet and confer with the ODFW and ODOE and the applicable actions presented below will be carried out. If a particular cause can be identified, Certificate Holder will develop specific mitigation measures in consultation with ODFW and ODOE to address the occurrence.

6) Potential Adaptive Management Approaches

Circumstances that trigger the need for adaptive management will be investigated such that the Certificate Holder can, in consultation with ODFW and ODOE, implement avoidance, minimization, and mitigation measures designed and implemented to reduce impacts to birds and/or bats while maintaining Facility viability. If ODOE determines that additional avoidance, minimization or mitigation measures are appropriate based on analysis of the data, consultation with ODFW, and consideration of other significant information available at the time, the Certificate Holder, in consultation with ODOE and ODFW, shall propose and implement measures to address the concern, subject to the approval of ODOE. Avoidance, minimization, and mitigation actions that may be taken

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under adaptive management include, but are not limited to, the following:

- Remove or modify any identified sources of bird or bat attraction to the extent practicable.
- If more than one eagle carcass is discovered in a 5-year time period, Certificate Holder will develop and implement a roadkill removal program on roads within or near the Carty Solar Farm, as appropriate, to offset Carty Solar Farm impacts to eagles.
- Implement technological solutions. If bird and/or bat carcass discoveries exceed the above-defined adaptive management triggers and new techniques or technology become available, the Certificate Holder, ODOE, and/or ODFW shall propose new approaches, techniques or technology designed to avoid and/or minimize impacts to the affected species, taking into consideration factors including but not limited to cost effectiveness and feasibility to implement, subject to the approval of ODOE. At this time, there are no technological solutions available. If ODOE determines that additional monitoring is appropriate based on analysis of the data, consultation with ODFW and Certificate Holder, and consideration of any other significant information available at the time, the Certificate Holder shall conduct additional specific, targeted monitoring to determine if adaptive management measures are effective.

IV. CALCULATION OF THE SIZE OF THE MITIGATION AREA

The HMA must be large enough and have characteristics that meet the standards set by ODFW's Wildlife Habitat Mitigation Policy. These standards include: no net loss of habitat quantity or quality and to provide a net benefit of habitat quantity or quality for Category 2 habitat; no net loss of habitat quantity or quality for Category 3 habitat (in-kind, in-proximity mitigation); no net loss of habitat quantity or quality for Category 4 habitat; net benefit in habitat quantity or quality for Category 5 habitat (i.e., actions that improve habitat conditions); and minimize impacts for Category 6 habitat.

Unit 1 permanent impacts and estimated acreage permanent impacts for the Carty Solar Farm are shown in Table 4. For permanent impacts, the mitigation area shall include 2 acres for every acre of impacts to Category 2 habitat (a 2:1 ratio to provide no net loss and a net benefit of habitat quantity) and 1 acre for every acre of permanent impacts to Category 3 and 4 habitats (a 1:1 ratio to provide no net loss). Mitigation for temporary impacts shall include 1 acre for every acre of impacts to Category 2 habitat (a 1:1 ratio) and 0.5 acre for every acre of temporary impacts to Category 3 and 4 habitat (a 0.5:1 ratio) that have not previously been mitigated for temporary impacts (e.g., areas of temporary impacts that are mitigated as part of construction for Unit 1 that are reused for subsequent units will not result in additional mitigation acreage). Temporary impacts on grasslands typically do not require mitigation in the form of land acquisition and/or conservation.

The acreages of impact in this Amended Plan for Unit 1 are based on the final design layout of the facility submitted to ODOE and ODFW prior to beginning of Unit 1 construction and the revised final design layout of the facility and the associated impact acreages provided to ODOE and ODFW during construction. The construction of Unit 1 resulted in 45 acres of permanent disturbance and 55.4 acres of temporary disturbance, resulting in a total required mitigation area of 72.7 acres.

The acreages of impact for the Carty Solar Farm are based on preliminary design and will be updated based on final design layout of the amended facility. The acreages of impact will be submitted for approval to ODOE and ODFW prior to beginning construction to demonstrate that the HMA is appropriately sized. The calculated maximum habitat impact estimates of the Carty Generating Station construction associated with each unit are shown in the table below (Table 4).

The acreages of impact for the septic system and security guard station including associated plumbing and communication lines are based on preliminary design and will be updated based on the final design layout of the amended facility. The acreages of impact will be submitted for approval to ODOE and ODFW prior to beginning construction to demonstrate that no new HMA is needed. The calculated maximum habitat impact

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estimates associated with the Second Amended site certificate are shown in the table below (Table 4).

Table 4. Estimated Habitat Impacts of the Carty Generating Station by Habitat Category

Habitat Type by Project Area	Temporary Impacts (acres) ¹	Permanent Impacts (acres) ²	Calculated Mitigation Area (acres) ^{1,2}
Unit 1 and Supporting Facilities³			
Category 4	55.4	45	72.75
Total Area	55.4	45	
Total Unit 1 Mitigation ^{1,2}	27.75	45	72.75
<u>New Septic System, Water Pipeline, Wastewater Pipeline, Carty Substation, and Security Guard Station Associated with the Second Amended Site Certificate</u>			
<u>Category 4</u>	<u>1.0</u>	<u>0.6</u>	<u>1.10</u>
<u>Category 6</u>	<u>1.15</u>	<u>0.85</u>	<u>0.0</u>
<u>Total Area</u>	<u>2.13</u>	<u>1.45</u>	
<u>Total New RFA2 Facilities Mitigation</u>	<u>0.50</u>	<u>0.6</u>	<u>1.10</u>
Carty Solar Farm and Supporting Facilities⁴			
Category 2			
Category 3	14.05	302.16	309.19
Category 4	90.57	18.79	64.08
Category 6	2.81	0.19	0
Total Area	107.43	321.14	
Total Solar Farm Mitigation ^{1,2}	53.72	321.14	373.27
Total Mitigation for Amended Project			<u>446.02447.12</u>
Mitigation Required to date (Unit 1)			72.75
Additional Mitigation Required under RFA1 (Carty Solar Farm)			373.27
<u>Additional Mitigation Required (Septic System/Water Pipeline/Wastewater Pipeline/Carty Substation/Security Guard Station)</u>			<u>1.10</u>

Notes:

In all cases, impacts in a given project area will only be mitigated once.

¹Temporary impact mitigation is based on a 1:1 ratio for Category 2, a 0.5:1 acre ratio of Category 3 and 4, and zero for Category 6.

²Permanent impact mitigation is based on a 2:1 ratio for Category 2, a 1:1 acre ratio of Category 3 and 4 and zero for Category 6.

³Unit 1 includes Unit 1 and all related or supporting facilities constructed as part of Unit 1.

⁴The Carty Solar Farm includes the Carty Solar Farm energy facility site, the potential route for the Carty Solar Farm interconnection transmission line that would require the most mitigation acres (Route 1), the Grassland Switchyard buildout area if interconnection Option 1 is selected (along with potential interconnection Route 1), and temporary construction laydown and parking areas.

V. DESCRIPTION OF THE MITIGATION AREA

To comply with the mitigation criteria outlined in OAR 635-415-0025, the certificate holder shall mitigate for impacts to Category 2, 3, 4, and 5 habitat in a manner consistent with the ODFW habitat

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mitigation policy and subject to the approval of ODFW. The certificate holder will establish a HMA (or areas) that will be maintained, enhanced, and monitored throughout the life of the facility⁵ through implementation of the habitat enhancement actions described in this Amended Plan. The certificate holder shall provide appropriate legal documentation to ODOE showing the legal right to create, maintain, and protect the HMA for the life of the facility. The certificate holder shall not undertake any development activities within the HMA throughout the life of the facility.

The 78-acre HMA for Unit 1 is located immediately east of the Site Boundary and adjacent to existing conservation areas, and comprises all or portions of map T3N R24E, tax lots 101, 113, and 116. The parcel is owned and has been placed under conservation easement by the certificate holder. It is adjacent to the existing PGE Conservation Area on the north and east sides, and a conservation area maintained by The Nature Conservancy along part of the west boundary. The vegetation in the HMA is dominated by Sandberg's bluegrass, bluebunch wheatgrass, and intermittent areas of needle-and-thread grass, as well as cheatgrass. There are also occasional green rabbitbrush (*Chrysothamnus viscidiflorus*) and gray rabbitbrush, big sagebrush, fiddleneck (*Amsinckia menziesii*), and yarrow (*Achillea millefolium*). WGS burrows were identified within the HMA for Unit 1 in 2006. As of 2010, approximately 80 percent of the HMA for Unit 1 area was located within 785 feet of identified WGS burrows, and was therefore considered Category 1 habitat. The remainder of the HMA for Unit 1 was included in the buffer area for previously occupied WGS habitat and was therefore designated as Category 2 habitat. Based on 2016–2017 WGS surveys, the majority of the HMA for the Carty Solar Farm (see below) would be located on Category 2 or Category 3 habitat based on the current habitat categorization for Amendment 1. The 78-acre HMA is 5.25 acres larger than required for temporary and permanent impacts associated with Unit 1 and supporting facilities. Therefore, the additional 1.10 acres of mitigation required for the septic system and security guard station included in the Second Amended Site Certificate are covered by this HMA.

~~The proposed HMA for the Carty Solar Farm and supporting facilities (the HMA for the Carty Solar Farm), estimated at approximately 373 acres per Table 4, would be located within a portion of the certificate holder's Multi-Species Candidate Conservation Agreement with Assurances (MSCCAA) Conservation Area that contains remnant stands of sagebrush. The MSCCAA area adjoins the HMA for Unit 1 to the north and east and is located in Section 26, T3N R24E tax lot 101 and the eastern half of Section 35, T3N R24E, tax lot 113). The certificate holder plans to mitigate for the habitats impacted by placing a conservation easement on a portion of the MSCCAA area and by providing habitat uplift through the habitat enhancement and monitoring activities described below. Final location of the HMA for the Carty Solar Farm within the MSCCAA area will be delineated in coordination with ODFW prior to construction once final design layout and mitigation acreage is determined.~~

VI. HABITAT ENHANCEMENT ACTIONS

The objectives of habitat enhancement and restoration are to protect habitat within the mitigation area from degradation and improve the habitat quality of the mitigation area. The certificate holder shall initiate the habitat enhancement actions for the facility before beginning operation. The certificate holder shall restrict uses of the mitigation area that are inconsistent with the goal of no net loss and net benefit of Category 2 habitat and no net loss of Category 3 and 4 habitats. The certificate holder shall implement habitat enhancement actions as described in this Amended Plan and as specified in the amended Site Certificate.

A. Noxious Weed Prevention, Inventory, and Control within the Habitat Management Area

⁴ As used in this plan, "life of the facility" means continuously until the facility site is restored and the site certificate is terminated in accordance with OAR 345-027-0110.

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The certificate holder shall conduct comprehensive noxious weed inventories to identify patches of weed infestation within the HMA during year one, year three, and year five after construction of Unit 1 (i.e., 2017, 2019, and 2021), and then continue once every five years (in years divisible by five) for the life of the facility. Weed control and monitoring activities will be conducted more frequently (at least every two years), in areas prioritized based on the results of the comprehensive surveys, and reported to ODOE and ODFW. Weeds will be controlled as needed to maintain and enhance habitat quality within the mitigation area, with the goal of working toward eradication of targeted noxious weeds or, if eradication is not practical, decreasing their abundance to minimize impacts on native plant communities. Weed management practices will be consistent with an integrated weed management approach, using an appropriate combination of inventory; prevention (such as best management practices to prevent weed establishment); and control methods (such as hand pulling, mowing, biological control, and/or herbicides). The certificate holder shall obtain ODFW's approval prior to the use of pesticides. Controlling weeds in the HMA should promote growth of native vegetation. If a substantial area of soil is left bare from weed control activities, the area will be seeded using the appropriate methods (as described in the Revegetation and Noxious Weed Control Plan) during the appropriate time of year and using an appropriate mixture of native grass and/or shrub seeds.

B. Fire Control Plan

The certificate holder shall implement a fire control plan for wildfire suppression within the HMA according to the existing Boardman Wildfire Control Plan. A copy of the fire control plan will be provided to ODOE upon request. If vegetation in the HMA is damaged from fire or from fire suppression efforts (e.g., vehicular disturbance), the area would be seeded as necessary with the appropriate seed mix using the appropriate methods, as described in the Revegetation and Noxious Weed Control Plan.

C. Access Control and Wildlife-Compatible Fencing

The certificate holder will monitor and control access to the HMA and will post informative signs depicting the area(s) as "protected" and including natural resources information as appropriate for the life of the facility. Primary access to the PGE property is controlled by a gate off Tower Road northwest of PGE's Boardman Plant (currently used by PGE and The Nature Conservancy [TNC]), the gated entrance to the Boardman Plant, and a gated road from Ione to the south. TNC and Three Mile Canyon Farms may occasionally use the two track access crossing PGE's property to access the Farm's conservation area. Approved access to the site is currently limited to such occasional approved use of access roads, ~~and Boardman Plant operational needs, and MSCCAA monitoring and noxious weed control efforts.~~ Any fences within or bordering the mitigation area(s) will be removed or modified to wildlife-friendly specifications as appropriate. No livestock grazing is currently occurring on the site, and grazing would not be allowed in the future. Periodic monitoring (at least annually but typically more frequently concurrent with other site activities) will be conducted to evaluate effectiveness of access control measures and signage maintenance needs.

D. Enhancement and Sagebrush Habitat

To mitigate for permanent impacts to Category 2, 3, and 4 sagebrush habitat affected at the Carty Solar Farm (see acreage in Table 4), the certificate holder will plant sagebrush and/or bitterbrush seedlings in the HMA for the Carty Solar Farm, focusing on enhancing and expanding remnant stands of shrubs that were impacted by past wildfires. Sagebrush and/or bitterbrush seedlings will be planted at a density of 450 plants per acre (approximately 10 feet on center). Planted shrubs will be monitored annually for a period of five years, with a performance goal of 60% survival at the end of the five-year monitoring period. Methods and performance criteria to be finalized through consultation with ODFW.

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E. Provide Additional Raptor Nesting Opportunities

As recommended by ODFW, to mitigate for removal of juniper trees and potential raptor nesting sites in the Carty Solar Farm permanent footprint, the certificate holder will plant up to one tree per 10 acres (roughly 660-foot spacing on center) based on the final size of the HMA for the Carty Solar Farm. Initial planting will be conducted in the October/November or February/March time period during the first year following start of construction. Planted juniper trees will be monitored annually for a period of five years, with a performance goal of 60% survival at the end of the five-year monitoring period. Methods and performance criteria to be finalized through consultation with ODFW.

VII. MITIGATION AREA MONITORING

The certificate holder shall use a qualified investigator (botanist, wildlife biologist, or revegetation specialist) to conduct a comprehensive monitoring program for the HMA. The purpose of this monitoring is to evaluate on an ongoing basis the protection of habitat quality, the results of enhancement actions, and the use of the area by avian and mammal species, especially during the wildlife breeding season.

The investigator shall visit the HMA as necessary to complete the required monitoring during the first, third, and fifth year after Unit 1, and the Carty Solar Farm construction (i.e., 2017, 2019, 2021) and every fifth year thereafter (in years divisible by five, unless otherwise specified for specific measures) for the life of the Project. Monitoring activity shall include an assessment of the following:

General quality of vegetation cover (dominant species, structural age, etc.), as determined by ocular estimates and photo points (see below);

- 1) Success of weed control efforts;
- 2) Success of remedial actions to restore habitat quality in damaged areas (such as managed weed infestations and any necessary seeding/planting areas), as determined by vegetation cover (ocular estimate) and photo points (see below). Areas where remedial actions involve soil disturbance and reseeded would be monitored consistent with the revegetation monitoring methods and schedule as described in the Amended Carty Generating Station Revegetation and Noxious Weed Plan. See Section VI for schedule and performance criteria for habitat enhancements involving shrub and juniper plantings.
- 3) Photos taken from established photo points within the HMA, including 1) a minimum of five permanent photo points distributed to show general vegetation status throughout the HMA, and 2) additional photo points as needed to monitor success of significant enhancement activities, such as managed weed infestations and/or any necessary seeding/planting areas;
- 4) Incidental wildlife occurring within the HMA (counts concurrent with all other monitoring work);
- 5) Environmental factors found on site during monitoring activities and annual summary records (such as precipitation);
- 6) Surveys of resident special status wildlife species (WGS) that have been documented during previous monitoring or survey efforts within the HMA, using existing protocols approved by ODFW; and
- 7) Avian point counts during the breeding season ~~conducted annually as part of the~~ at existing point count stations, formerly monitored under the Boardman Plant Ecological Monitoring Program, in the vicinity of the HMA(s) existing Boardman Plant Ecological Monitoring Program (four existing point count stations are located in the immediate vicinity of the HMA for Unit 1, and an additional four sites are located in the immediate vicinity of the proposed HMA for the Carty Solar Farm.

VIII. DATA REPORTING

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The certificate holder shall submit a report including wildlife and habitat monitoring data and analysis to ODOE and ODFW during each monitoring year according to the Table 5 as shown below. The certificate holder shall notify USFWS and ODFW within one business day if any federal or state endangered or threatened species are killed or injured on the facility site or within the HMA. The certificate holder may include the reporting of wildlife monitoring data and analysis in the report required under OAR 345-026-0080, or submit this information as a separate document concurrent with the submittal of the report. In addition, the certificate holder shall provide ODOE with any data or record generated by the investigators in carrying out this Amended Plan upon request by ODOE.

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Table 5. Schedule of Wildlife Mitigation and Monitoring Programs

Task	Schedule
Post-construction Washington Ground Squirrel Survey Monitoring	Year one, three and five after operation of Unit 1 has begun and in year one, three and five after operation of Carty Solar Farm has begun, and otherwise at least every five years (in years divisible by five) for the life of the facility.
Raptor Nest Monitoring	
Post-construction Avian and Bat Mortality Monitoring	A full year of formal post construction avian and bat monitoring in the year following start of Carty Solar Farm operation. N/A for Unit 1.
General HMA Monitoring	During the first, third, and fifth year after Unit 1 HMA, (i.e., 2017, 2019, 2021) and during the first, third, and fifth years after Carty Solar Farm construction for Carty Solar Farm HMA, and otherwise every fifth year thereafter for the life of the facility for entire applicable HMA.
Noxious Weed Inventory for HMA	
General Weed Control and Monitoring Activity for HMA	At least every two years (in priority areas based every-five-year comprehensive inventory results) starting from the completion of construction.
HMA Sagebrush Habitat Monitoring	Annually for a period of five years, with a performance goal of 60% survival at the end of the five-year monitoring period, for the Carty Solar Farm. N/A for Unit 1.
Additional Raptor Nest Opportunities (juniper plantings) Monitoring for HMA	Annually for a period of five years, with a performance goal of 60% survival at the end of the five-year monitoring period for Carty Solar Farm. N/A for Unit 1.

IX. AMENDMENT OF THE PLAN

This Wildlife and Habitat Monitoring and Mitigation Plan may be periodically amended by agreement of the certificate holder and ODOE. Such amendments may be made without amendment of the Site Certificate. The Energy Facility Siting Council (Council) authorizes ODOE to agree to amendments to this plan and to mitigation actions that may be required under this Plan. ODOE shall notify the Council of all amendments and mitigation actions, and the Council retains the authority to approve, reject, or modify any amendment of this plan or mitigation action agreed to by ODOE.

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X. LITERATURE CITED

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Attachment 6
Property Owners List

Property Owners of Tax Lots that Intersect the RFA2 Site Boundary

Map Tax Lot	First Name	Last Name	Name 2	Company	C/O-Attn.	Street	City	State	Zipcode
02N22E0000-00100	KIP H	KREBS	SARAH M KREBS			75398 HWY 74	IONE	OR	97843
02N22E0000-00200	KIP H	KREBS	SARAH M KREBS			75398 HWY 74	IONE	OR	97843
02N22E0000-00300				STATE OF OREGON		UNDETERMINED PARTY_ADDRESS	SALEM	OR	98310
02N22E0000-03800	JENNIFER	TURNER	RICKY TURNER			76768 HWY 74	IONE	OR	97843
02N23E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000101				THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000102				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000103				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N21E0000-00500	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N24E000000105				PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000106				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000107	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N21E0000-00503	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
03N21E0000-00506				BONNEVILLE POWER ADMINISTRATION		PO BOX 3621	PORTLAND	OR	97208
03N22E0000-00100	MARTIN	MYERS				75906 THREEMILE ROAD	BOARDMAN	OR	97818
03N22E0000-00700	SKYE H	KREBS	PENNY M KREBS			73654 HIGHWAY 74	IONE	OR	97843
03N22E0000-00702	SKYE H	KREBS	PENNY M KREBS			73654 HIGHWAY 74	IONE	OR	97843
03N22E0000-02100	MARTIN	MYERS				75906 THREEMILE ROAD	BOARDMAN	OR	97818
03N22E0000-02201				PACIFIC POWER & LIGHT CO.		825 N.E. MULTNOMAH SUITE 1900	PORTLAND	OR	97232- 4107
03N22E0000-02202	JARROD	OGDEN	ALISON OGDEN			74475 HIGHWAY 74	IONE	OR	97843
03N22E0000-02203	BRIAN	SULLIVAN	LORI SULLIVAN			75181 SULLIVAN RD.	IONE	OR	97843
03N22E0000-03601				PORTLAND GENERAL ELECTRIC CO.		121 SW SALMON ST	PORTLAND	OR	97204
03N23E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N23E000000100				OFFUTT, R D, COMPANY		75906 THREEMILE RD	BOARDMAN	OR	97818
03N23E000000100				COLUMBIA RIVER DAIRY		75906 THREEMILE RD	BOARDMAN	OR	97818
03N23E000000100				COMMERCIAL EQUIPMENT LEASE	BEEF NORTHWEST BOARDMAN, II	66407 TAGGARES LN	BOARDMAN	OR	97818
03N24E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000100				INSITU INC	MARVIN F POER & COMPANY, SP	PO BOX 52427	ATLANTA	GA	30355
03N24E000000100				BOEING CO	MARVIN F POER & COMPANY, SP	PO BOX 52427	ATLANTA	GA	30355
03N24E000000101				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000102				PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000104				PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000112	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000113				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204

Property Owners of Tax Lots that Intersect the RFA2 Site Boundary

03N24E000000114			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
			BOARDMAN RURAL FIRE PROTECTION DISTRICT		300 SW WILSON LN	BOARDMAN	OR	97818
03N24E000000115			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000116			PORTLAND GENERAL ELECTRIC COMPAN	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000117			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000121			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000122			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
04N22E0000-00200	MARTIN	MYERS			75906 THREEMILE ROAD	BOARDMAN	OR	97818
04N23E000000110	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110	DANIELS	MICHELLE	NORTHWEST PASTURE BEEF, LLC		66407 TAGGARES LN	BOARDMAN	OR	97818
04N23E000000110			DOUBLE T FARMING		77458 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110			R D OFFUTT COMPANY		75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110			THREEMILE CANYON FARMS, LLC	SIMTAG FARMS	75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110			THREEMILE CANYON FARMS, LLC	TAGGARES FARMS, INC	75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110			BEEF NORTHWEST BOARDMAN, INC		66407 TAGGARES LN	BOARDMAN	OR	97818
04N24E000000121	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818

*Note: Taxlots for roads, rails, and water are excluded from this table

Property Owners within 500-feet of Tax Lots that Intersect the RFA2 Site Boundary

Map Tax Lot	First Name	Last Name	Name 2	Company/Organization	C/O-Attn.	Address	City	State	Zipcode
02N21E0000-00100	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N21E0000-00101	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N22E0000-00100	KIP H	KREBS	SARAH M KREBS			75398 HWY 74	IONE	OR	97843
02N22E0000-00200	KIP H	KREBS	SARAH M KREBS			75398 HWY 74	IONE	OR	97843
02N22E0000-00200	KIP H	KREBS	SARAH M KREBS			75398 HWY 74	IONE	OR	97843
02N22E0000-00300				OREGON DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY		355 CAPITOL STREET NE	SALEM	OR	97310
02N22E0000-00400			KREBS KIP H & SARAH M			75398 HWY 74	IONE	OR	97844
02N22E0000-00500				USA		3050 NE 3RD STREET	PRINEVILLE	OR	97754
02N22E0000-00600	SKYE H	KREBS	PENNY M KREBS			73654 HIGHWAY 74	IONE	OR	97843
02N22E0000-00601	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N22E0000-00700	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N22E0000-00800	J.R.	KREBS				PO BOX 8	ARLINGTON	OR	97812
02N22E0000-03800				GEORGE G GRIFFITH TRUSTEE		68498 HWY 74	IONE	OR	97843
02N23E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N23E000000100	MICHAEL	EATON	SHERRY EATON			72396 HWY 74	IONE	OR	97843
02N23E000000102	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N23E000000700	KURTIS C	STRZELEWICZ				72782 HWY 74	IONE	OR	97843
02N23E000000800	AMBROSE	CALCAGNO		CAL HOLDINGS, LLC		17031 S CLACKAMAS RIVER DR	OREGON CITY	OR	97045
02N23E000000900	JANETTE	BURGESS		DUELING J'S LIGHTNING BAR, LLC		72512 HIGHWAY 74	IONE	OR	97843
02N23E000001000	MICHAEL	EATON	SHERRY EATON			72396 HWY 74	IONE	OR	97843
02N23E000001001	RODERICK H	TAYLOR	GLENDIA S TAYLOR			72447 HWY 74	IONE	OR	97843
02N23E000001100				STATE OF OREGON		417 TRANSPORTATION BLDG	SALEM	OR	97310
02N23E000001200	DANIEL L	PERRY	BETSY JEFFRIES			PO BOX 126	ARLINGTON	OR	97812
02N23E000001202	DANIEL L	PERRY	BETSY JEFFRIES			72097 HWY 74	IONE	OR	97843
02N23E000002101	AMBROSE	CALCAGNO		CAL HOLDINGS, LLC		17031 S CLACKAMAS RIVER DR	OREGON CITY	OR	97045
02N23E000002900	APRIL	MILLER	LORI MILLER	C/O PDS TAX SERVICES		PO BOX 13519	ARLINGTON	TX	76094
02N23E000004400				MORROW COUNTY		PO BOX 788	HEPPNER	OR	97836
02N24E000000100	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000101				THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000102				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000103				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000105				PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000106				PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
02N24E000000107	MARTIN	MYERS		THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
02N24E000000200	RICHARD	DOHERTY		ELLA RANCH, LLC		3588 NW LEHMAN PL	BEAVERTON	OR	97006
02N24E000000300	KENNETH MICHAEL	KLINGER				68280 IMMIGRANT LN	IONE	OR	97843
02N24E000000302	MARILYN	PECK	GARY MORGAN			13606 NE SISKIYOU CT	PORTLAND	OR	97230
02N24E000000600	KYLE	CRAWFORD				5645 HWY 201	ONTARIO	OR	97914
02N24E000000700	RICHARD	DOHERTY		ELLA RANCH, LLC		3588 NW LEHMAN PL	BEAVERTON	OR	97006
02N24E000000701	RICHARD	DOHERTY		ELLA RANCH, LLC		3588 NW LEHMAN PL	BEAVERTON	OR	97006
02N24E000001100	TIM	HOLTZ	DEBBIE HOLTZ			65151 TEWS LN	IONE	OR	97843
02N24E000001300	CATHERINE M	NUFERROUS				65444 IMMIGRANT LN	IONE	OR	97843
02N24E000001400				IMMIGRANT LANE, LLC		64982 BAKER LN	IONE	OR	97843
02N25E000000200				USA (BOMBING RANGE)					
02N25E000000701	RICHARD	DOHERTY		ELLA RANCH, LLC		3588 NW LEHMAN PL	BEAVERTON	OR	97006
03N21E0000-00200	BEN A	HAMMELMAN	KATIE L HAMMELMAN			PO BOX 65	FOSSIL	OR	97830
03N21E0000-00300				USA		3050 NE 3RD STREET	PRINEVILLE	OR	97754

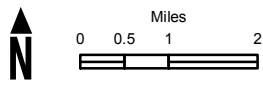
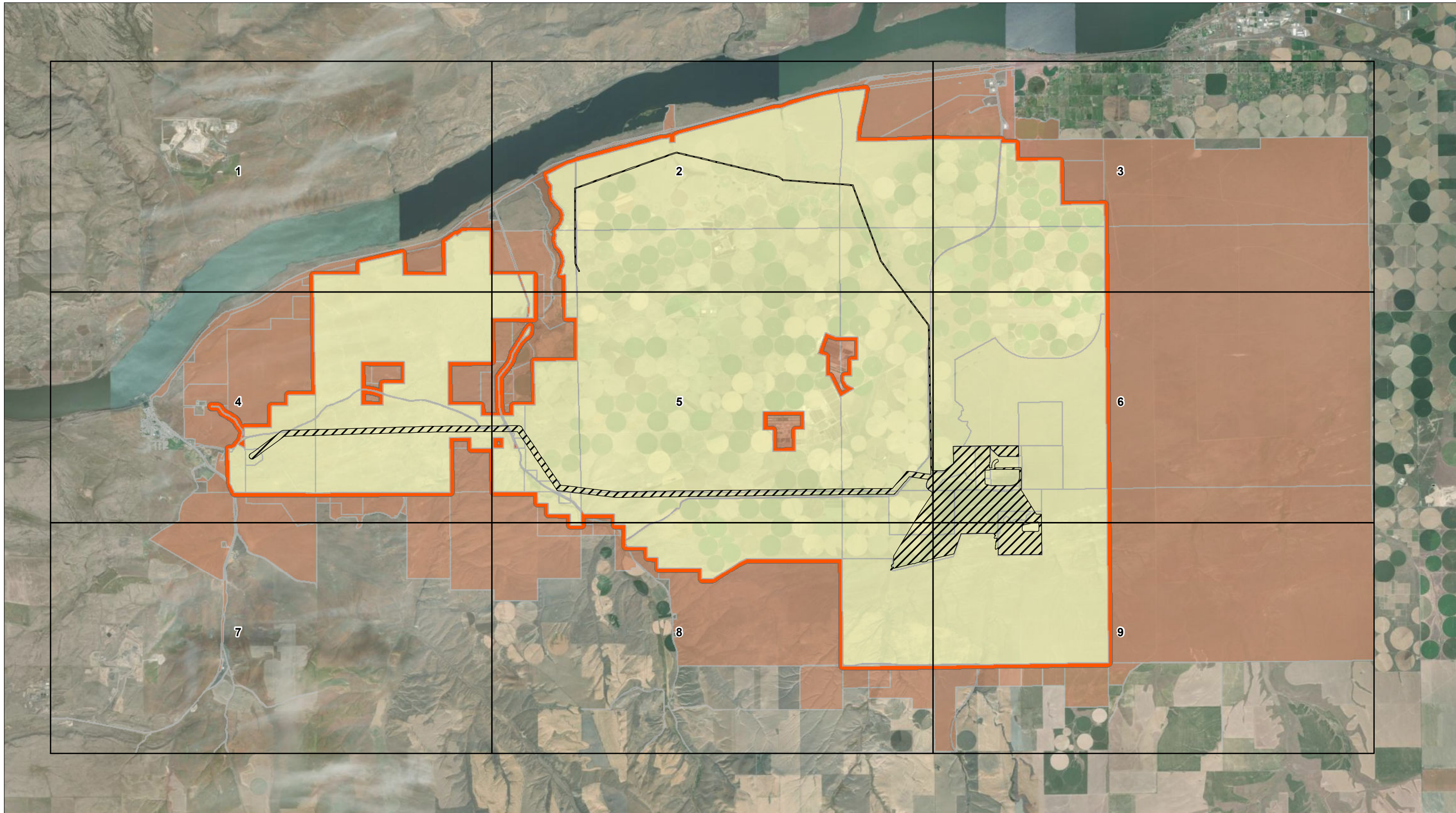
Property Owners within 500-feet of Tax Lots that Intersect the RFA2 Site Boundary

03N21E0000-00400				USA	UNDETERMINED	PARTY_ADDRESS	UNDETERMINED C		
03N21E0000-00500			KREBS J.R.		PO BOX 8		ARLINGTON	OR	97812
03N21E0000-00501				CITY OF ARLINGTON	PO BOX 68		ARLINGTON	OR	97812
03N21E0000-00503	J.R.		KREBS		PO BOX 8		ARLINGTON	OR	97812
03N21E0000-00506				BONNEVILLE POWER ADMINISTRATION	PO BOX 3621		PORTLAND	OR	97208
03N21E0000-00599	J.R.		KREBS		PO BOX 8		ARLINGTON	OR	97812
03N21E0000-00700				CITY OF ARLINGTON	PO BOX 68		ARLINGTON	OR	97812
03N21E3400-00100	WILLIAM C	MCKINNEY	BARBARA J MCKINNEY		PO BOX 272		ARLINGTON	OR	97812
03N21E3400-00106	J.R.		KREBS		PO BOX 8		ARLINGTON	OR	97812
03N21E3400-00122	WILLIAM C	MCKINNEY			PO BOX 272		ARLINGTON	OR	97812
03N22E0000-00100	MARTIN		MYERS		75906 THREEMILE ROAD		BOARDMAN	OR	97818
03N22E0000-00200	JENNIFER	TURNER	RICKY TURNER		76768 HWY 74		IONE	OR	97843
03N22E0000-00201				USA	UNDETERMINED	PARTY_ADDRESS	UNDETERMINED C		
03N22E0000-00202				THREEMILE CANYON FARMS LLC	75906 THREEMILE ROAD		BOARDMAN	OR	97818
03N22E0000-00400				USA	UNDETERMINED	PARTY_ADDRESS	UNDETERMINED C		
03N22E0000-00600				USA	UNDETERMINED	PARTY_ADDRESS	UNDETERMINED C		
03N22E0000-00700	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-00702	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01200				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-01300				KERR CONTRACTORS OREGON INC	395 SHENANDOAH LN		WOODBURN	OR	97071
03N22E0000-01301	BRIAN L	SULLIVAN	LORENCE L SULLIVAN		75181 SULLIVAN RD.		IONE	OR	97843
03N22E0000-01302	JUDITH A	HARRIS			76044 SULLIVAN ROAD		IONE	OR	97843
03N22E0000-01303				SPK LLC	73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01304	JUDY	HARRIS			76044 SULLIVAN ROAD		IONE	OR	97843
03N22E0000-01305	BRIAN L	SULLIVAN	LORENCE L SULLIVAN		75181 SULLIVAN RD.		IONE	OR	97843
03N22E0000-01400				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-01600	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01700	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01800	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01900				SPCH LLC	73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-01901				SHEPHERDS FLAT LAND HOLDINGS LLC	565 5TH AVE 29TH FLOOR		NEW YORK	NY	10017
03N22E0000-01902	DAVID S	CARPENTER	GERALDINE A CARPENTER		PO BOX 1420		BOARDMAN	OR	97818
03N22E0000-01903	RAYMOND	TREVINO	NAWARAT TREVINO		735 E. VIEW DRIVE		HERMISTON	OR	97838
03N22E0000-02000				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-02100	MARTIN		MYERS		75906 THREEMILE ROAD		BOARDMAN	OR	97818
03N22E0000-02200	SKYE H	KREBS	PENNY M KREBS		73654 HIGHWAY 74		IONE	OR	97843
03N22E0000-02201				PACIFIC POWER & LIGHT CO.	825 N.E. MULTNOMAH SUITE 1900		PORTLAND	OR	97232-4107
03N22E0000-02202	JARROD	OGDEN	ALISON OGDEN		74475 HIGHWAY 74		IONE	OR	97843
03N22E0000-02203	BRIAN	SULLIVAN	LORI SULLIVAN		75181 SULLIVAN RD.		IONE	OR	97843
03N22E0000-02300	MARTIN		MYERS		75906 THREEMILE ROAD		BOARDMAN	OR	97818
03N22E0000-02501				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-02502				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-03000				USA	3050 NE 3RD STREET		PRINEVILLE	OR	97754
03N22E0000-03601				PORTLAND GENERAL ELECTRIC CO.	121 SW SALMON ST		PORTLAND	OR	97204
03N22E0000-03604	JUDITH A	HARRIS			76044 SULLIVAN ROAD		IONE	OR	97843

Property Owners within 500-feet of Tax Lots that Intersect the RFA2 Site Boundary






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03N23E000000100	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N23E000000111	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N23E000000112	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000100	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000101			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000102			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000104			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000112	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000113			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000114			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000115			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000116			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000117			PORTLAND GENERAL ELECTRIC COMPANY ETAL	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000120	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
03N24E000000121			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N24E000000122			PORTLAND GENERAL ELECTRIC	CORPORATE TAX DEPARTMENT	121 SW SALMON ST	PORTLAND	OR	97204
03N25E000000100			USA (BOMBING RANGE)					
04N22E0000-00200	MARTIN	MYERS			75906 THREEMILE ROAD	BOARDMAN	OR	97818
04N22E0000-00305			RENEWABLE WIND ENERGY LLC		PO BOX 1136	NEWBERG	OR	97132
04N22E0000-00400			USA		PARTY_ADDRESS	UNDETERMINED C		
04N23E000000100	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000110	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N23E000000200			USA					
04N24E000000100	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N24E000000110			PORT OF MORROW		PO BOX 200	BOARDMAN	OR	97818
04N24E000000110			J R ZUKIN CORP, DBA	MEADOW OUTDOOR ADVERTISING	PO BOX 331	THE DALLES	OR	97058
04N24E000000120	MARTIN	MYERS	THREEMILE CANYON FARMS, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N24E000000121	DAVID R	JENSEN	INLAND LAND CO, LLC		75906 THREEMILE RD	BOARDMAN	OR	97818
04N24E000000130			PORT OF MORROW		PO BOX 200	BOARDMAN	OR	97818
04N24E000000130			J R ZUKIN CORP, DBA	MEADOW OUTDOOR ADVERTISING	PO BOX 331	THE DALLES	OR	97058
04N24E000000131	NANCY	ANDERSON			PO BOX 34	CHEHALIS	WA	98532
04N24E000000131	HOPKINS	JOE			PO BOX 622	BOARDMAN	OR	97818
04N24E000000131			PORT OF MORROW		PO BOX 200	BOARDMAN	OR	97818
04N24E000000134			CITY OF BOARDMAN		PO BOX 229	BOARDMAN	OR	97818
04N24E000005600			USA (BOMBING RANGE)					
04N24E230000901			FRANK TIEGS, LLC		PO BOX 3110	PASCO	WA	99302
04N25E000001600			USA (DEPT OF NAVY)	ATTN: RANGE MANAGEMENT, NC3730 N CHARLES PORTER AVE		OAK HARBOR	WA	98278

*Note: Taxlots for roads, rails, and water are excluded from this table

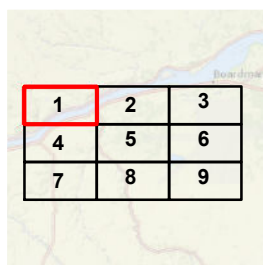
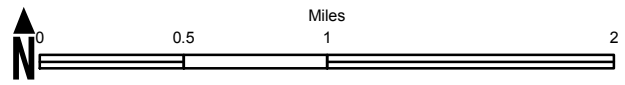
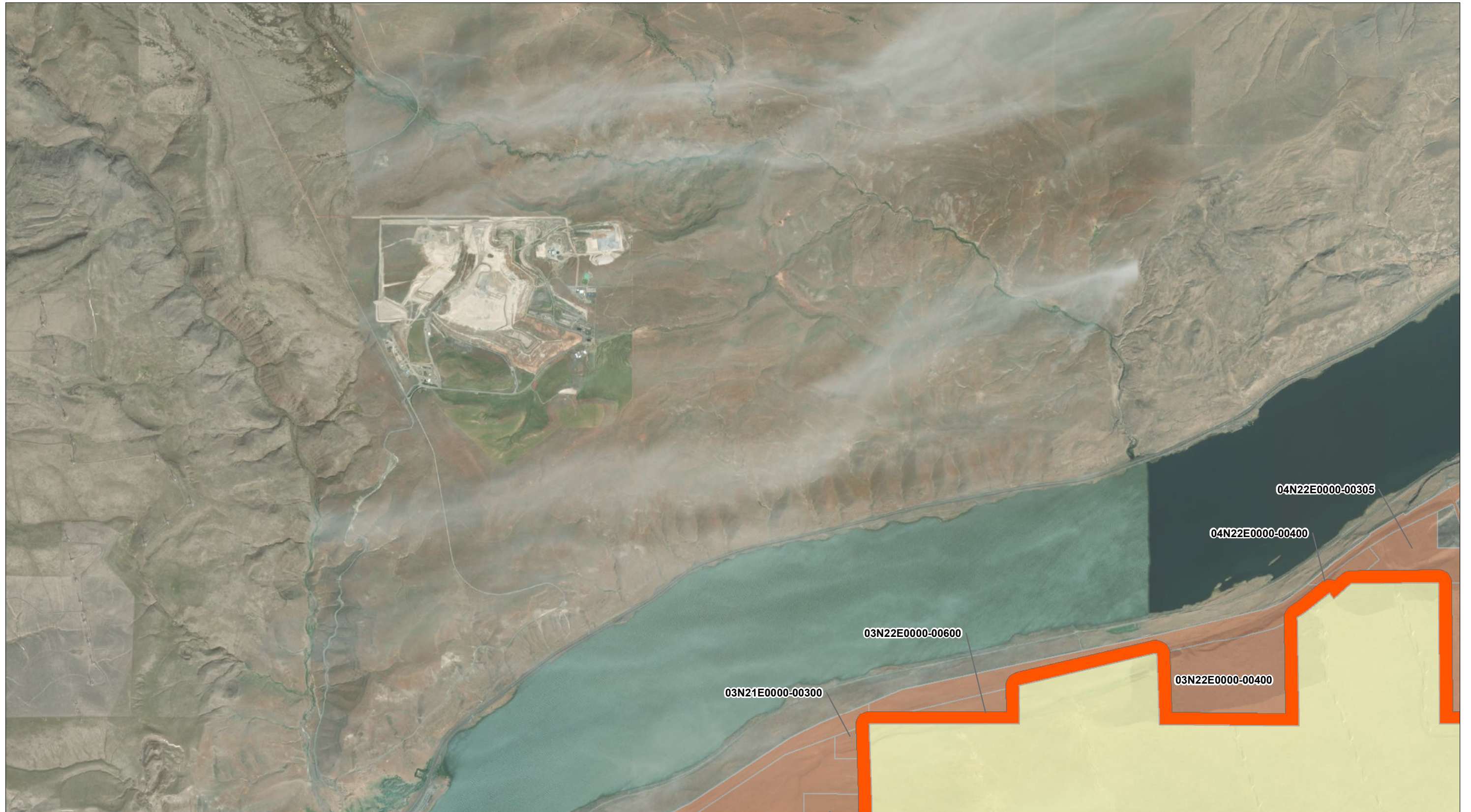






AECOM

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

-  Overview Grid
-  Carty Generating Station (CGS) Amended Site Boundary for RFA2
-  500 ft Buffer of Taxlots that intersect the CGS
-  Taxlots that intersect the CGS Amended Site Boundary for RFA2
-  Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
PORTLAND GENERAL ELECTRIC



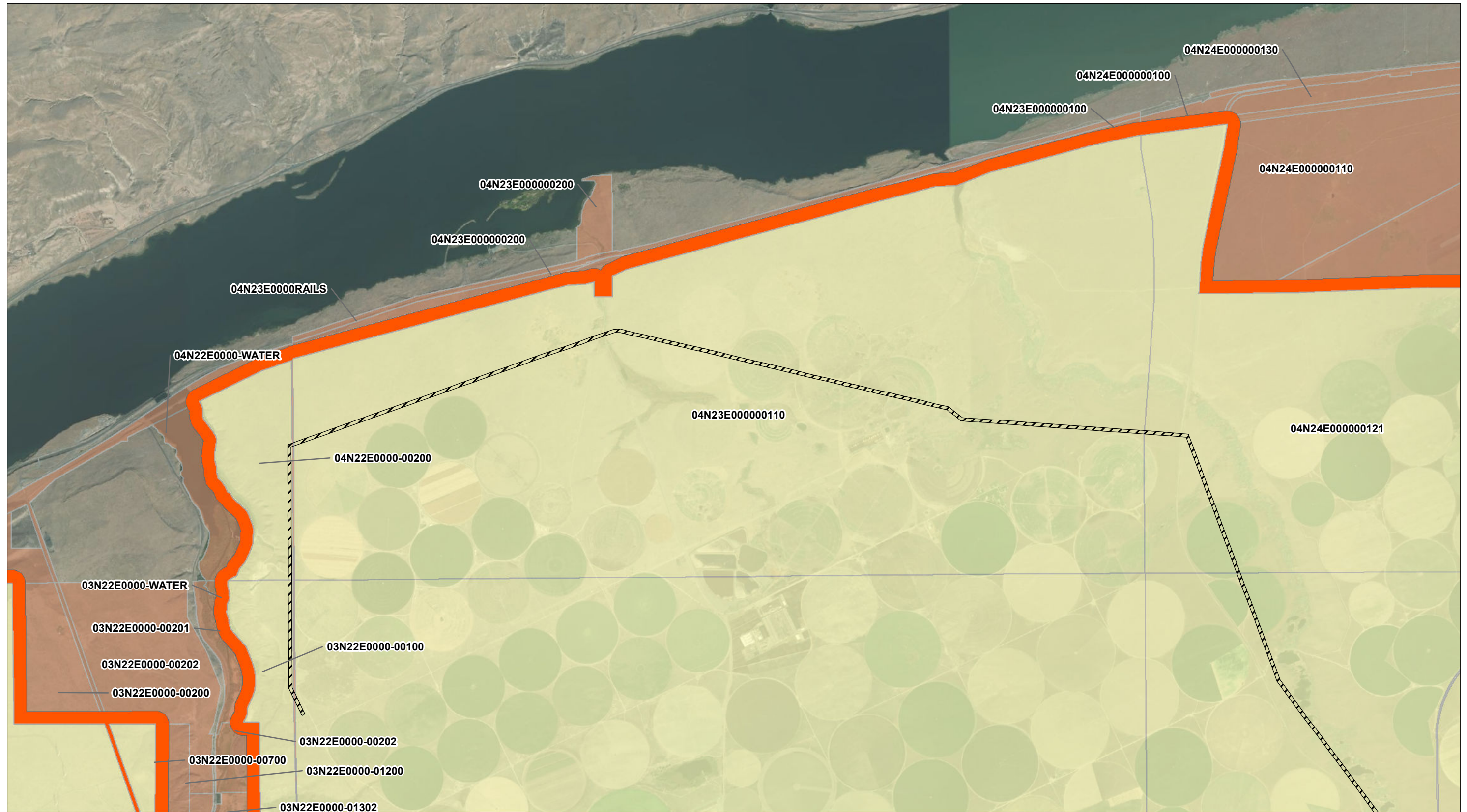
-  Cartwright Generating Station (CGS) Amended Site Boundary for RFA2
-  Taxlots that intersect the CGS Amended Site Boundary for RFA2
-  500 ft Buffer of Taxlots that intersect the CGS
-  Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

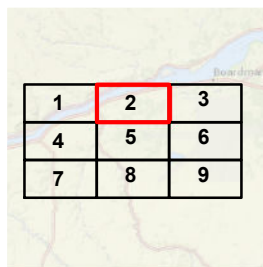
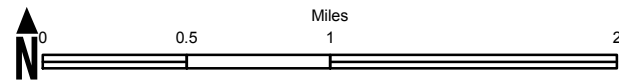


CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2

PORTLAND GENERAL ELECTRIC

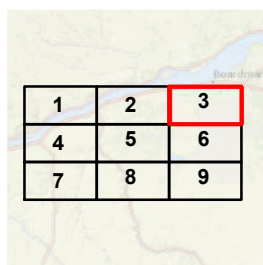
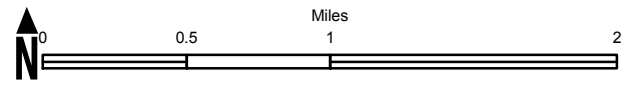
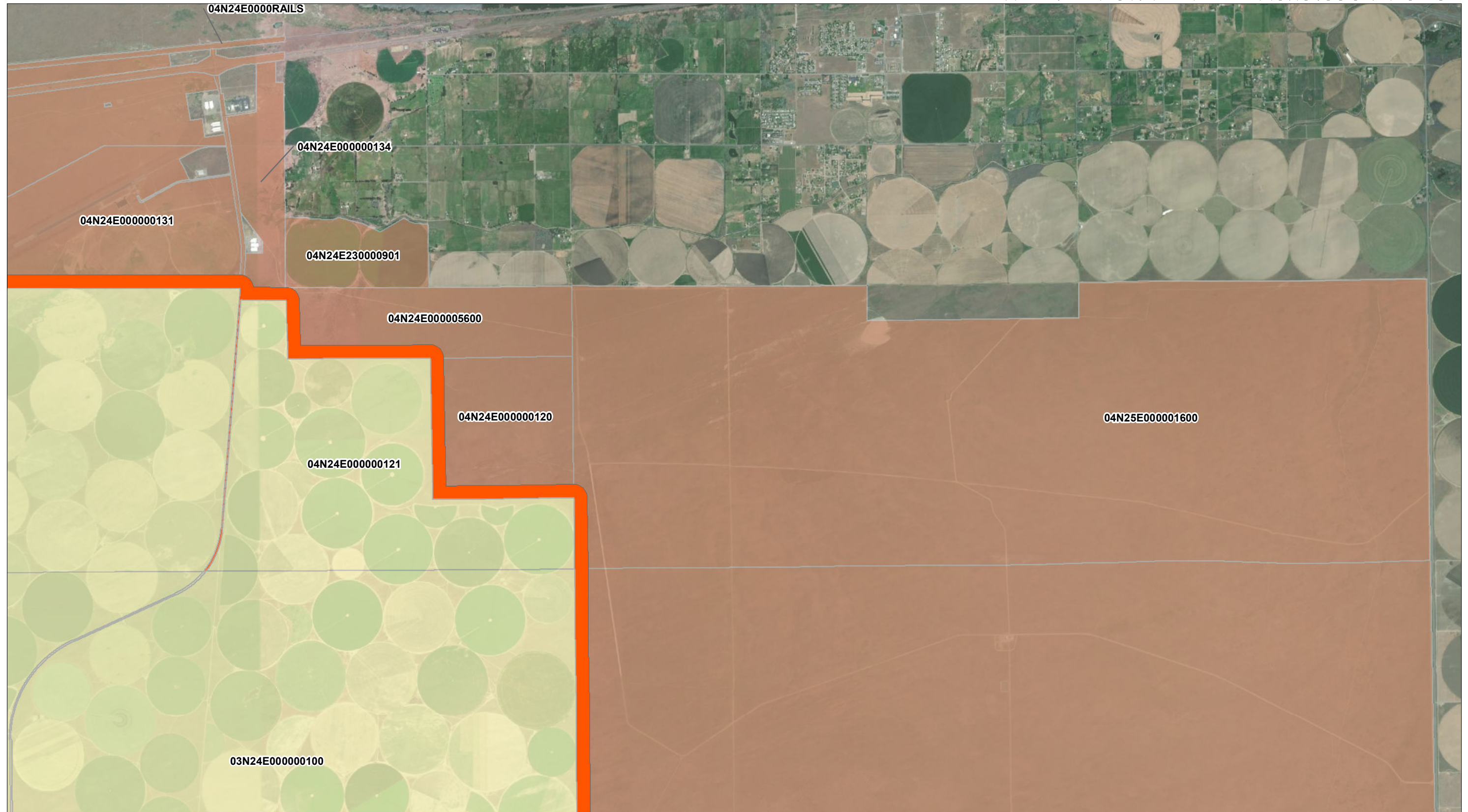


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



- Cartwright Generating Station (CGS) Amended Site Boundary for RFA2
- Taxlots that intersect the CGS Amended Site Boundary for RFA2
- 500 ft Buffer of Taxlots that intersect the CGS Amended Site boundary for RFA2

CARTWRIGHT GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
 PORTLAND GENERAL ELECTRIC

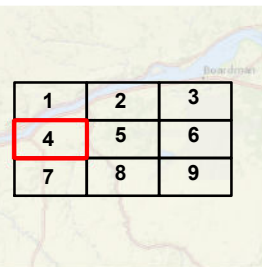
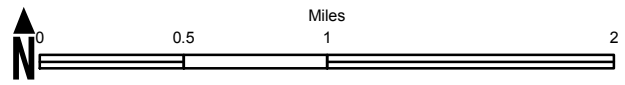
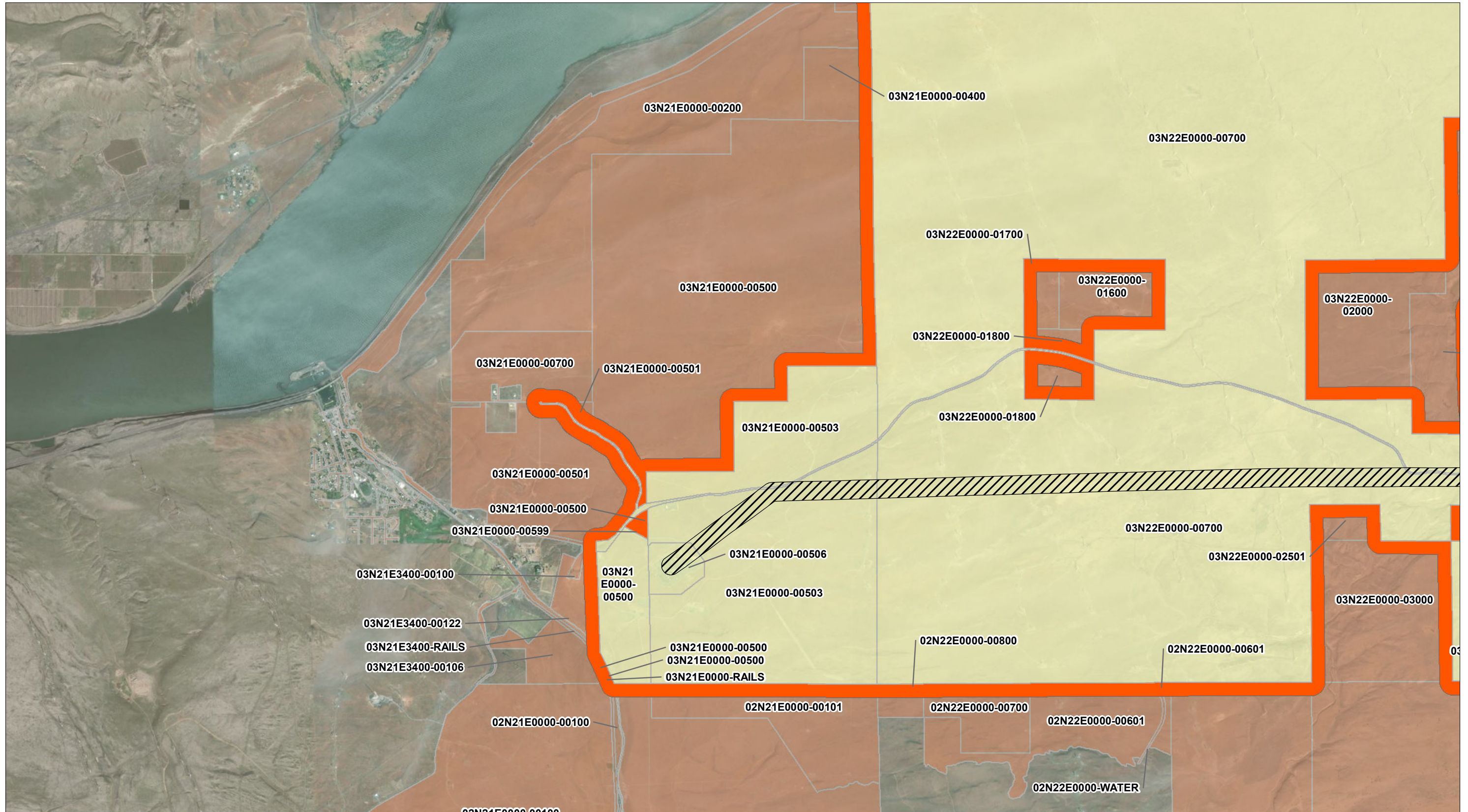






- Carty Generating Station (CGS) Amended Site Boundary for RFA2
- Taxlots that intersect the CGS Amended Site Boundary for RFA2
- 500 ft Buffer of Taxlots that intersect the CGS
- Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
 PORTLAND GENERAL ELECTRIC



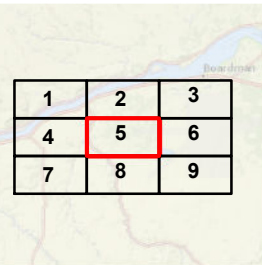
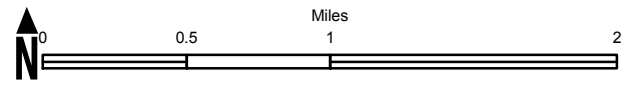
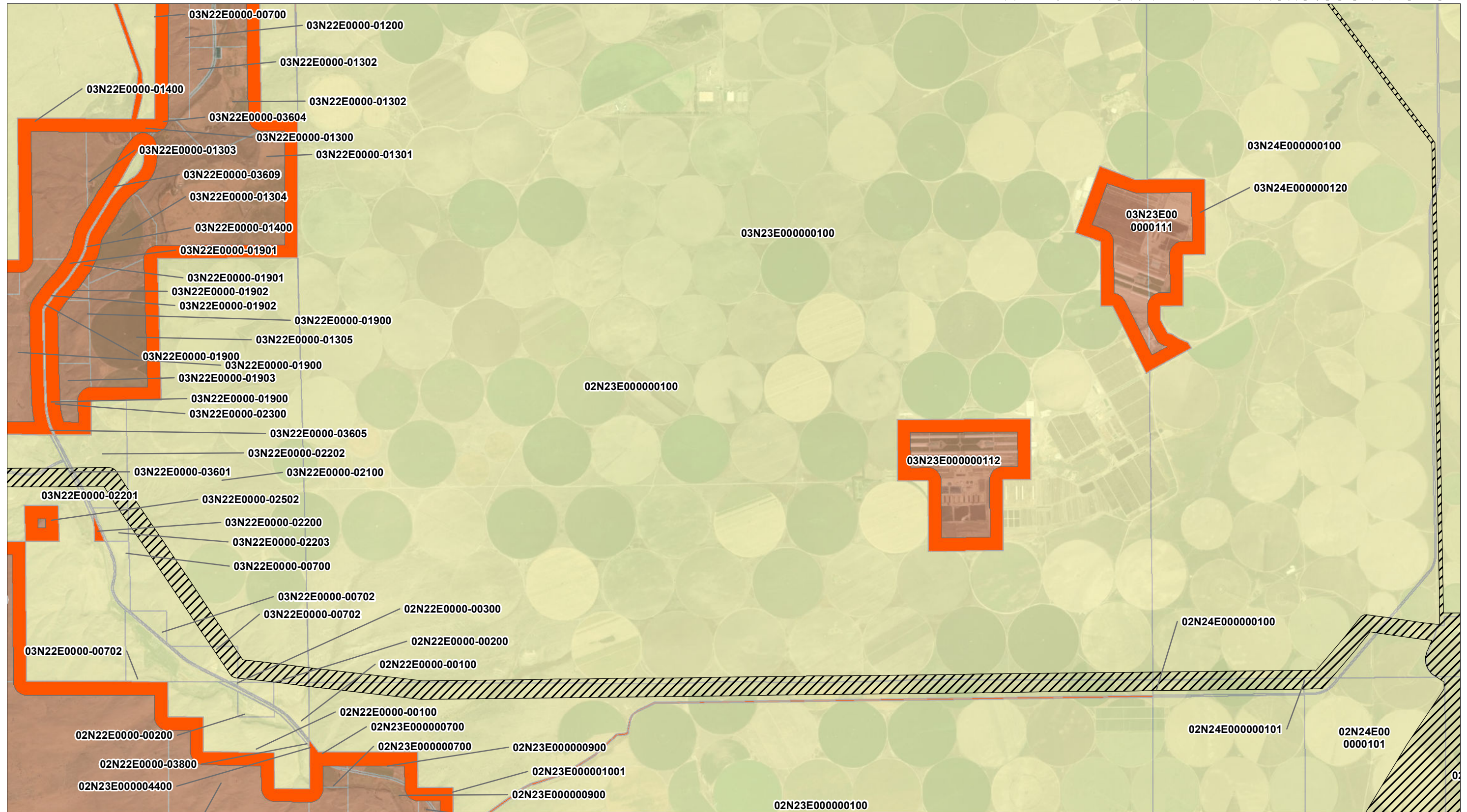
-  Cartwright Generating Station (CGS) Amended Site Boundary for RFA2
-  Taxlots that intersect the CGS Amended Site Boundary for RFA2
-  500 ft Buffer of Taxlots that intersect the CGS
-  Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2

PORTLAND GENERAL ELECTRIC

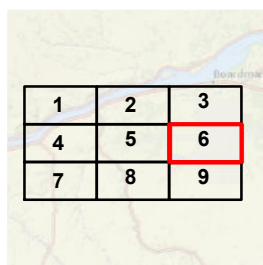
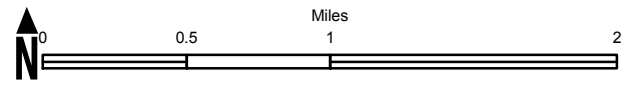
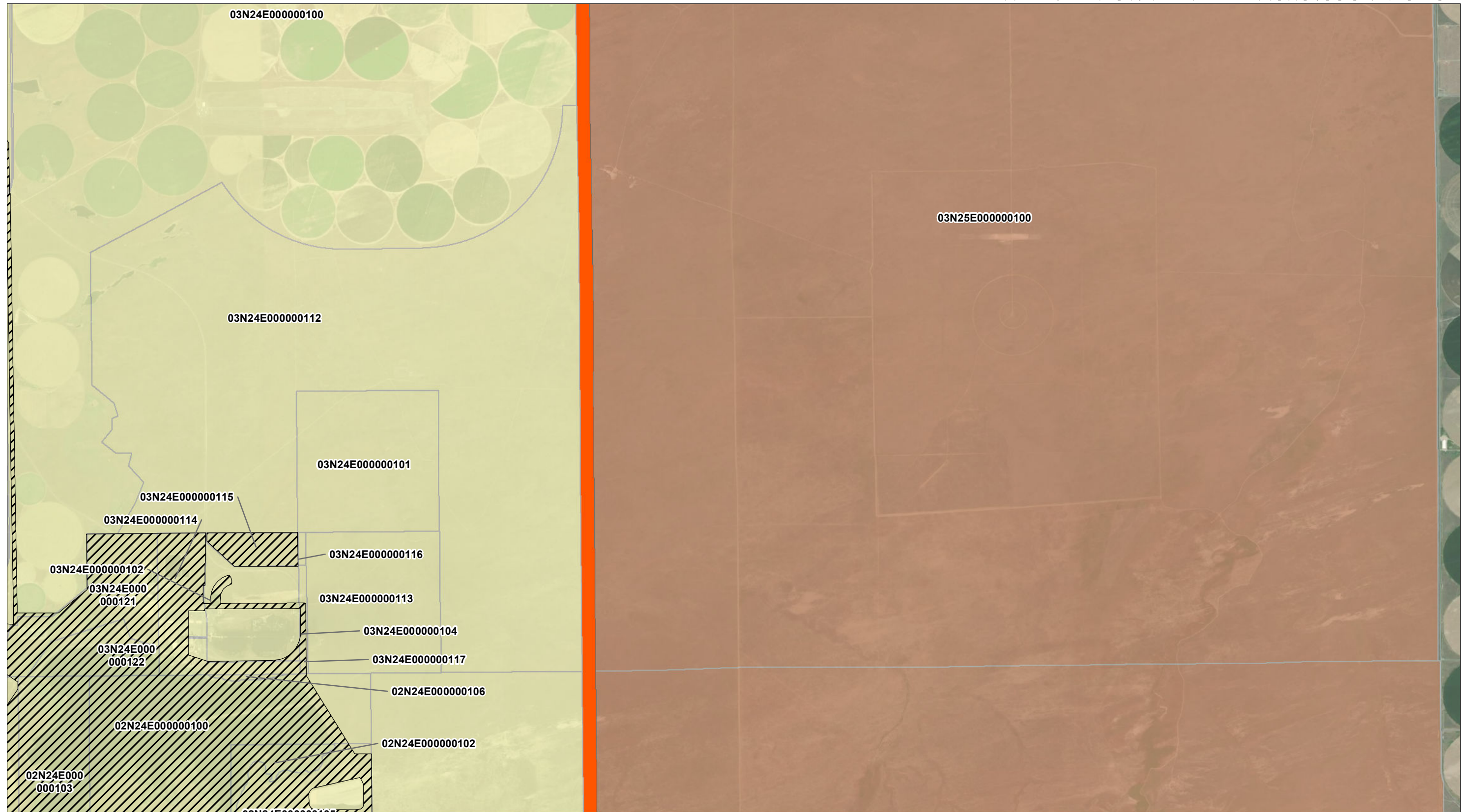






- Carty Generating Station (CGS) Amended Site Boundary for RFA2
- Taxlots that intersect the CGS Amended Site Boundary for RFA2
- 500 ft Buffer of Taxlots that intersect the CGS
- Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
 PORTLAND GENERAL ELECTRIC

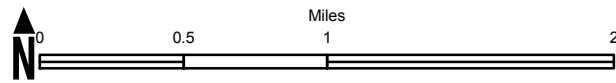
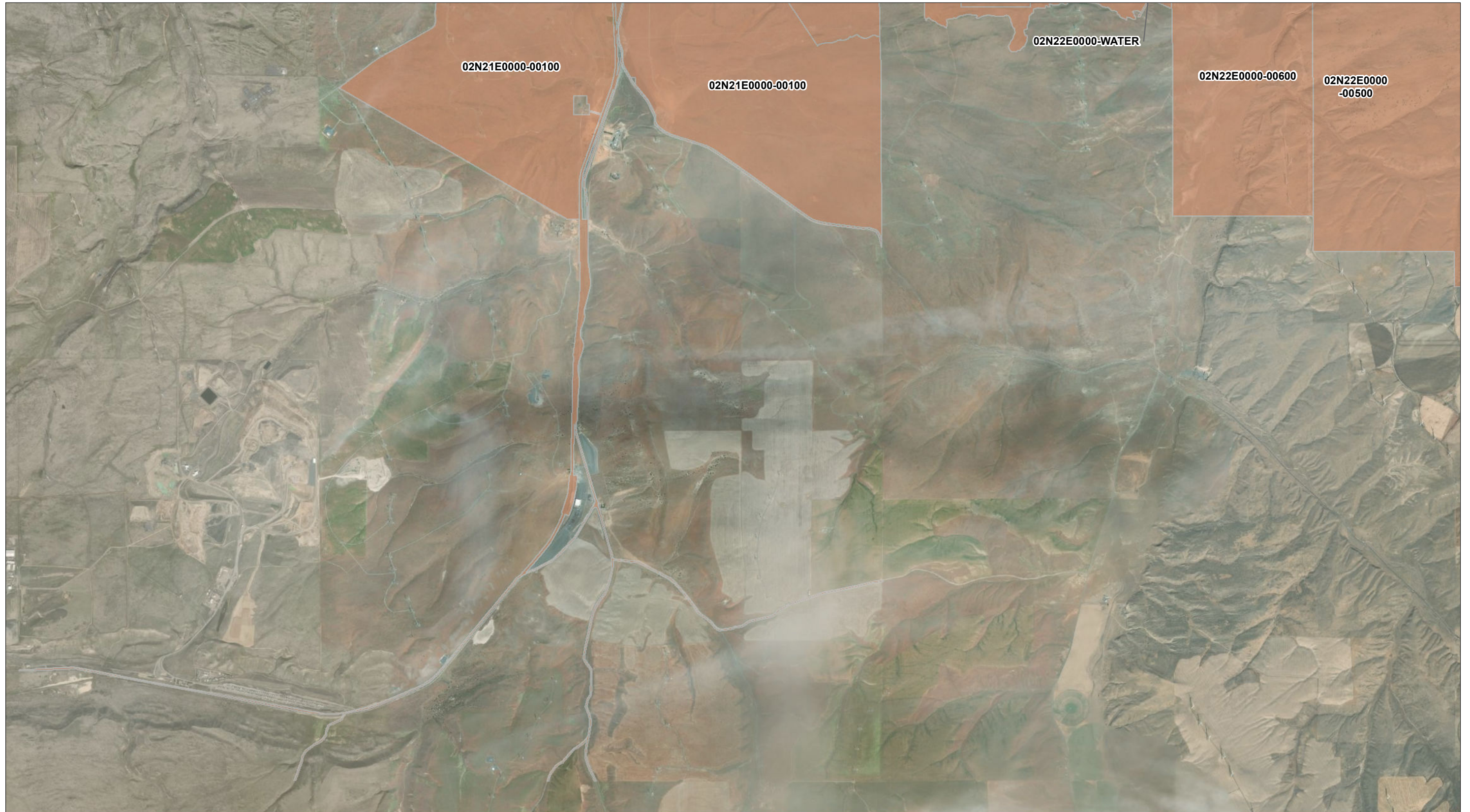


-  Cartwright Generating Station (CGS) Amended Site Boundary for RFA2
-  Taxlots that intersect the CGS Amended Site Boundary for RFA2
-  500 ft Buffer of Taxlots that intersect the CGS
-  Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

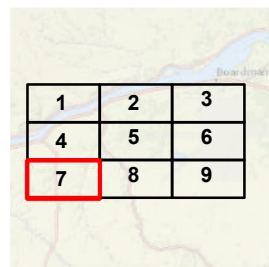
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community







CARTWRIGHT GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
 PORTLAND GENERAL ELECTRIC



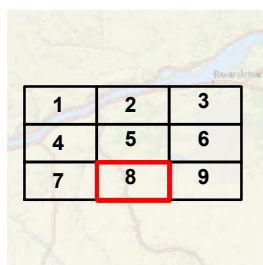
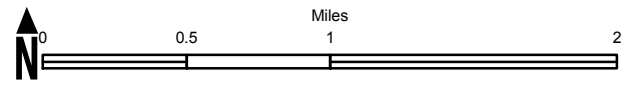
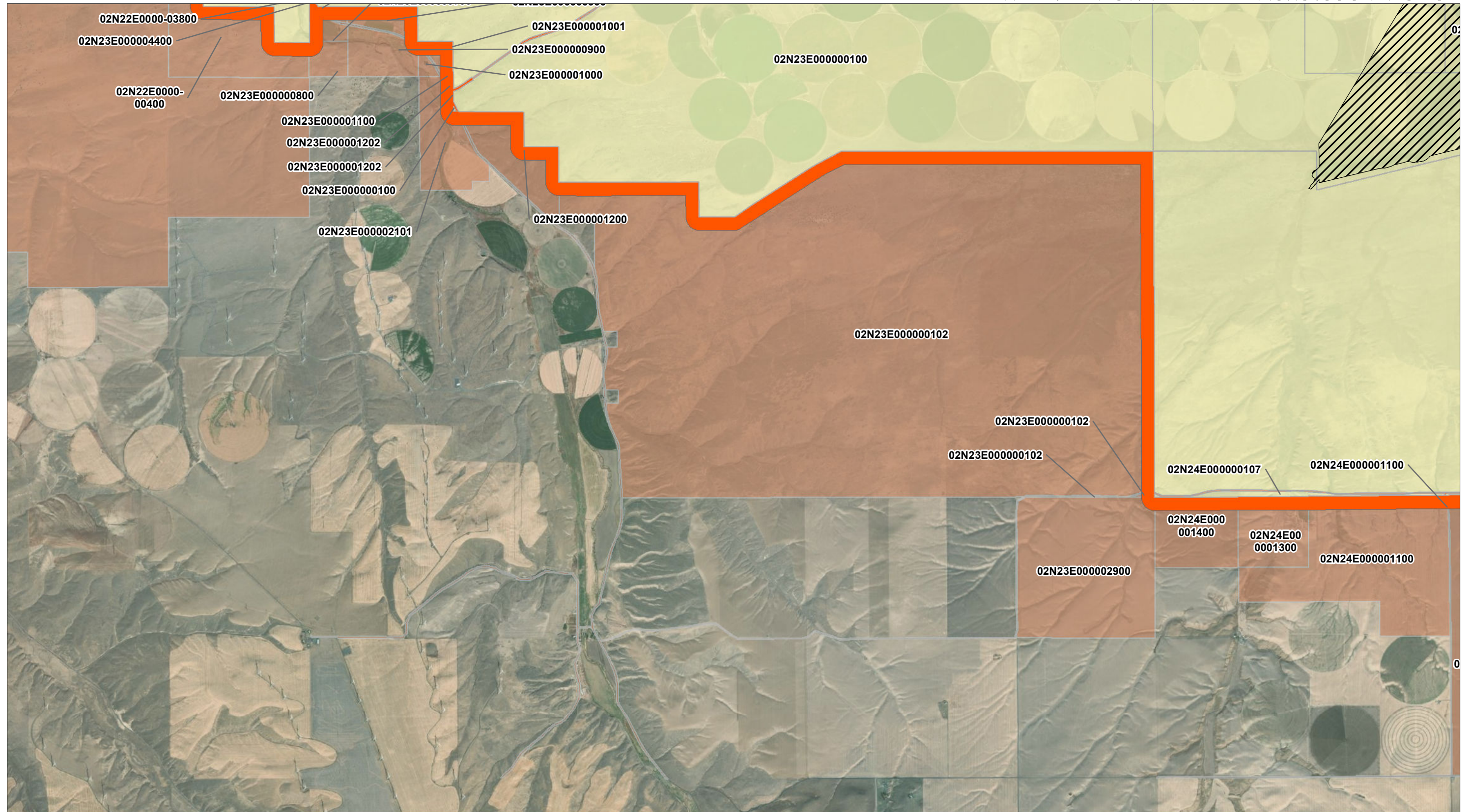
AECOM







-  Carty Generating Station (CGS) Amended Site Boundary for RFA2
-  Taxlots that intersect the CGS Amended Site Boundary for RFA2
-  500 ft Buffer of Taxlots that intersect the CGS
-  Taxlots located within 500 ft of taxlots that intersect the CGS Amended Site boundary for RFA2

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**CARTY GENERATING STATION – PROPERTIES ADJACENT
TO THE AMENDED SITE BOUNDARY FOR RFA2**
PORTLAND GENERAL ELECTRIC

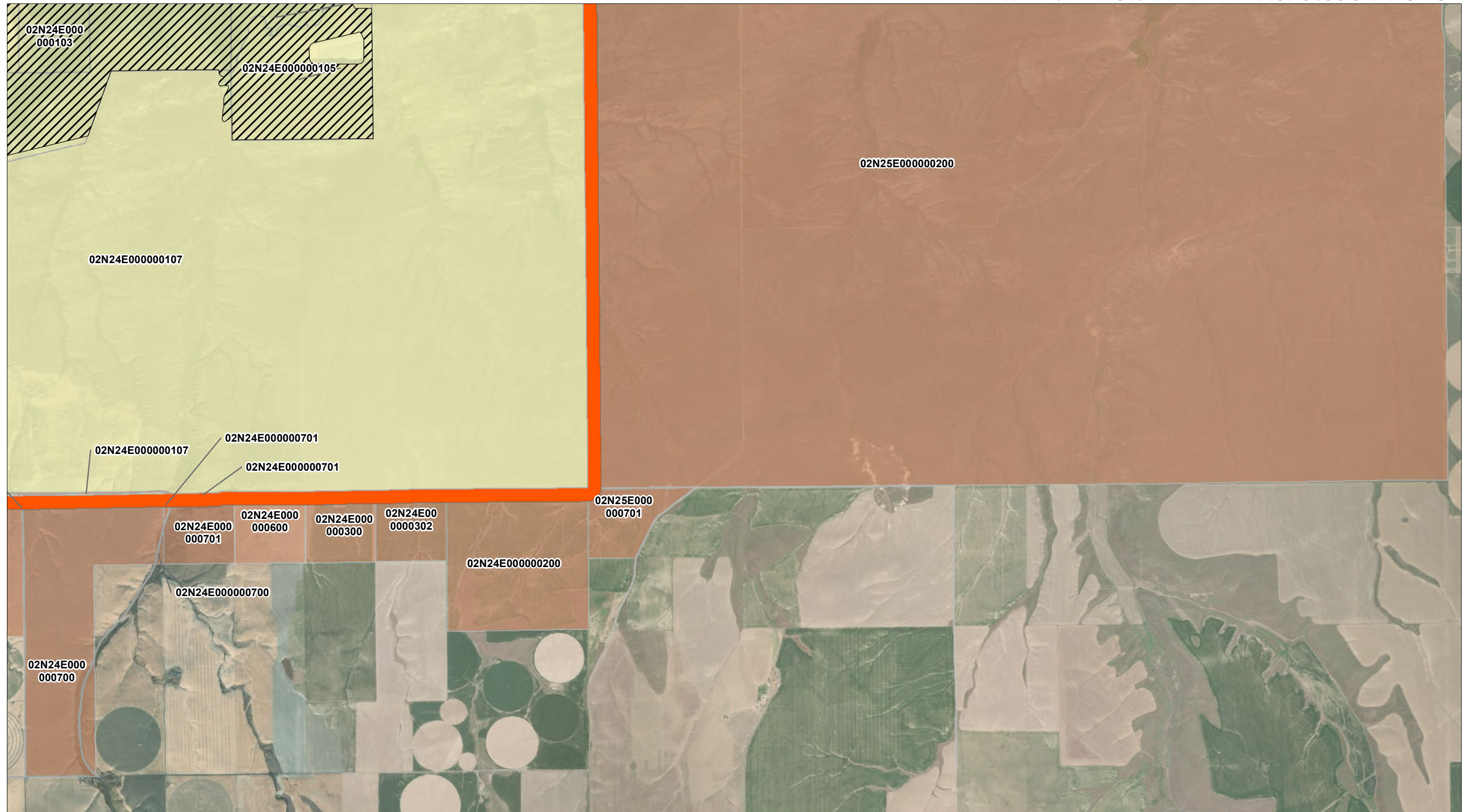


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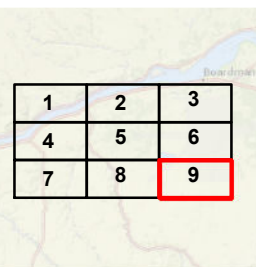
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CARTY GENERATING STATION – PROPERTIES ADJACENT TO THE AMENDED SITE BOUNDARY FOR RFA2
 PORTLAND GENERAL ELECTRIC

Attachment 7
Electromagnetic Field Study

Electromagnetic Field Study
Carty Generating Station
Request for Amendment #2
September 10, 2020

This attachment addresses the estimated maximum possible EMF strengths that would be produced by distributing energy and power flow from and/or to the Carty Generating Station (CGS) through the existing transmission lines. This memo documents that existing transmission lines currently authorized under the Site Certificate for Boardman Coal Plant (BCP) and proposed for inclusion in the Site Certificate for CGS under Request for Amendment No.2 (RFA2) would be operated in compliance with Site Certificate Condition 7.1, as amended.

Site Certificate Condition 7.1 (as amended) states:

The certificate holder shall take the following steps to reduce or manage human exposure to electromagnetic fields:

- (a) Constructing all aboveground transmission lines at least 200 feet from any residence or other occupied structure, measured from the centerline of the transmission line.
- (b) For any transmission lines constructed after June 29, 2012; providing to landowners a map of underground and overhead transmission lines on their property and advising landowners of possible health risks from electric and magnetic fields.
- (c) Designing and maintaining all transmission lines so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public.
- (d) Designing and maintaining all transmission lines so that induced voltages during operation are as low as reasonably achievable.

[Final Order V.D.2.1] [AMD2]

To confirm that EMF generated from existing transmission lines included in RFA2 does “not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public”, field measurements of applicable existing transmission lines were recorded. Measurements were recorded on August 27 and September 2, 2020 at locations aligned with the 230 kV BCP to Dalreed transmission line, the 34.5 kV BCP to railroad crossing at Tower Road transmission line, and the 500 kV Grassland to Slatt transmission line (see Figure A7-1). Measurement locations were selected as representative examples of locations where maximum transmission line sag coincided with areas accessible to the public. At each EMF data recording location, measurements were taken using the following procedure:

- Set up EMF device (EHP-50F) under middle wire at lowest point of sag, where feasible
- Orient the EMF device facing north using a hand-held compass
- Record survey location using a handheld GPS

- Lay the fiber optic cable to nearly its full extent (approx. 25-30 feet) and attach the USB end to laptop. Park the car at least 10 feet beyond this distance and turn off engine while recording data.
- Turn on EMF device to begin recording.
- Open Narda software (EHP50-TS):
 - Set Span tab to 1kHz
 - In Data tab, start a new Waterfall, exit waterfall window, collect screenshot of data window, save as bitmap image, save as text, wait 15 minutes and then open waterfall, save waterfall image and export waterfall
- Close Narda software, turn off EMF device, unplug USB for transport to next location

The EMF recorder was calibrated as documented in Attachment A7-1. The resulting EMF measurements did not exceed the “9 kV per meter at one meter above the ground surface” threshold, as indicated in Table 1, below.

Table 1. Results of Electromagnetic Surveys for Carty Generating Station

Location Notation	Max EMF (kV/m)	Magnetic Field (G)	Associated Transmission Line
EMF1	0.18	6.10E-03	230 kV BCP to Dalreed
EMF2b	0.96	3.21E-02	500 kV BCP to Slatt east of Grassland Switchyard ¹
EMF3	0.76	2.55E-02	34.5 kV/230 kV BCP to Dalreed Colocate
EMF4	1.36	4.55E-02	34.5 kV/230 kV BCP to Dalreed Colocate
EMF5	0.14	4.64E-03	230 kV BCP to Dalreed
EMF6	0.63	2.10E-02	230 kV BCP to Dalreed
EMF7	0.87	2.90E-02	230 kV BCP to Dalreed
EMF8	0.54	1.79E-02	230 kV BCP to Dalreed
EMF9	0.49	1.66E-02	34.5 kV between BCP and Grassland Switchyard
EMF10	1.22	4.09E-02	500 kV BCP to Slatt west of Grassland Switchyard
EMF11	0.17	5.78E-03	34.5 kV/230 kV BCP to Dalreed Colocate northwest of Grassland Switchyard
Control	0.01	3.35E-04	N/A

¹Measurement included; however, this transmission line segment is not included in RFA2

In addition to the field measurements documented in this memo the 500 kV BCP to Slatt transmission line was also previously modeled in Exhibit AA of the Application for Site Certificate (ASC) for the CGS as “Case 2”. Note that the modeling conducted in the ASC for the 500 kV BCP to Slatt transmission line predicted an electric field of 7.695 kV/m near Grassland Switchyard. Actual measurements taken in the field from the same location were 1.22 kV/m. The highest predicted EMF based on the modeling conducted in the ASC predicted 8.547 kV/m approximately 1,000 feet northeast of the Slatt substation (ASC Exhibit AA, Appendix AA-1 Figure 6 and 7).

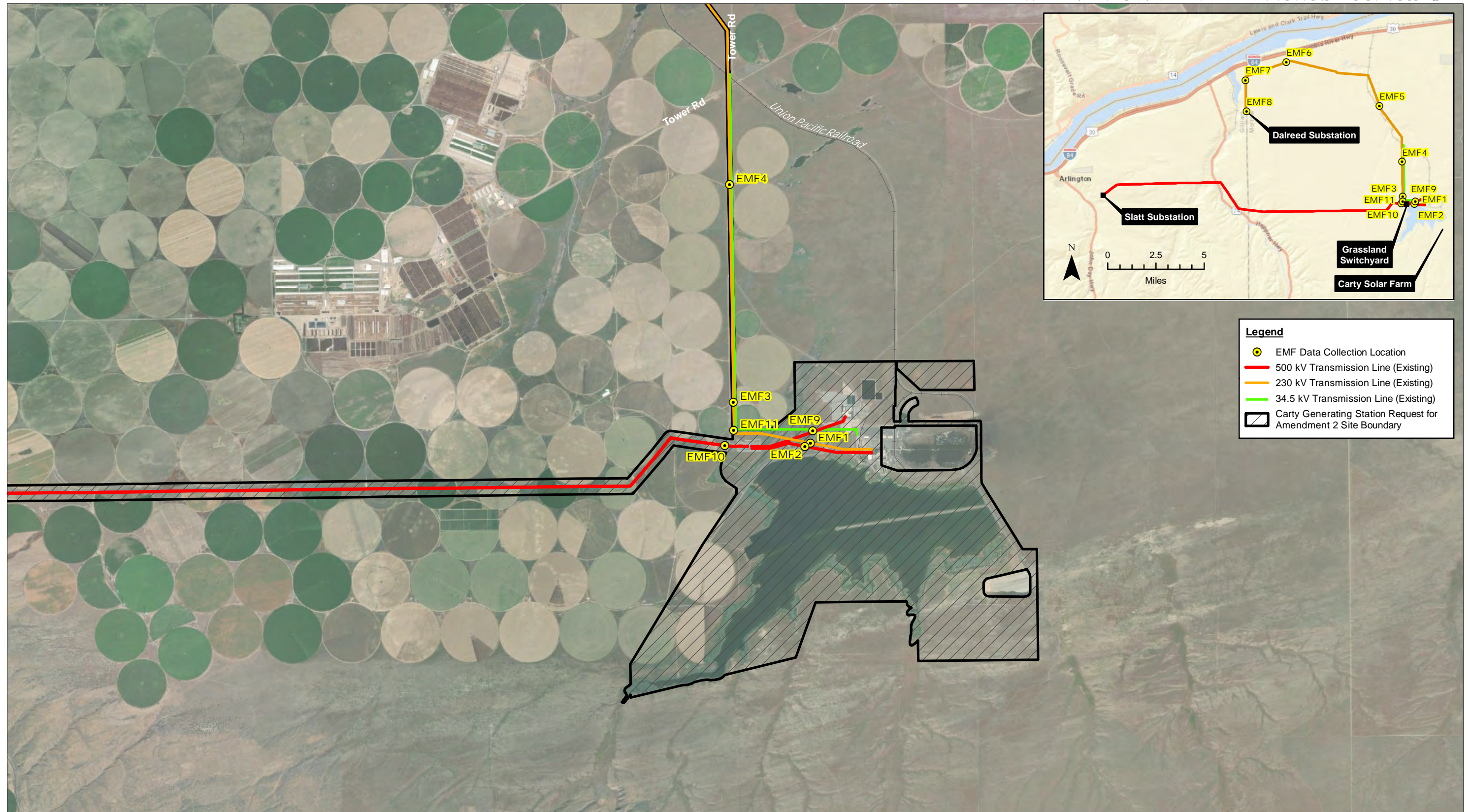


FIGURE A7-1: EXISTING ELECTROMAGNETIC FIELD - CARTY GENERATING STATION- REQUEST FOR AMENDMENT 2

CALIBRATION CERTIFICATE

ATEC Asset ID

 29953

Work Order


 202008032

Certificate Number: 202008032

Asset ID 29953
Manufacturer Narda
Model Number NARD-EHP-50F
Serial Number 510WY91152
Description 1Hz-400kHz Electric & Magnetic
 Analyzer RF Field Probe

Calibration Date 7/7/2020
Due Date 7/7/2021
Temperature C° 24.34
Humidity 48.2
Procedure Narda Internal Procedure PTP 09-31

Rev. Revision

Customer Name: Advanced Test Equipment Corporation
Customer Address: 10401 Roselle St San Diego, CA 92121
Comments: Calibration performed by an Authorized Subcontractor.

This Calibration is traceable to the International System of Units (SI), through National Metrology Institutes (NIST, PTB, NRC, NPL, etc.), radiometric techniques, or natural physical constants. This certificate applies only to the item identified and shall not be reproduced other than in full, without the specific written approval of Advanced Test Equipment Corporation (ATEC). The calibration has been completed in accordance with ATEC's Active Use Calibration System. This calibration conforms to the requirements of ISO/IEC 17025:2017 and ANSI/NCSL Z540-1-1994 (R2002). In the attached measurement results, deviation may be expressed with units, Measured Value (MV) - Nominal Value (NV) or as a proportion of the nominal value ((MV-NV)/NV), expressed without units with a scalar multiplier such as % (0.01), or as a ratio of the units (mA/A, $\hat{\mu}$ V/V, etc.) Descriptions such as $\hat{\mu}$ A/A, $\hat{\mu}$ V/V, and others, where used to annotate results or column headings are the preferred replacements for what was historically labeled as ppm or parts-per-million and described the results in that column, unless otherwise noted by units symbols. Where applicable, the expanded uncertainty of measurement at time of test is given in the following pages. They are calculated in accordance with the method described in the ISO Guide to the Expression of Uncertainty in Measurement (GUM). The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k, such that the confidence level approximates 95%. This Calibration certificate may contain data that is not covered by the A2LA Scope of Accreditation. Unaccredited material, where applicable is indicated by an asterisk (*) or confined to clearly marked sections. A binary decision rule, utilizing simple acceptance, and simple rejection criteria is used for the determination of compliance. When compliance statements are present, they are reported without factoring in the effects of uncertainty and comply with the guidelines established by ASME B89.7.3.1-2001 (R2011) as follows: The acceptance zone is defined as: less than or equal to the high limit, and/or greater than or equal to the low limit. The rejection zones are defined as greater than the high limit and/or less than the low limit. Single Measurement results in the acceptance zone are identified as in-tolerance. Single measurement results in the rejection zone are identified as out-of-tolerance (OOT). When all measurement results are in the acceptance zone for repeated measurements, for the same characteristic, the test is identified as in-tolerance. For repeated characteristic measurements, a single measurement result in the rejection zone, will cause the test to be identified as out-of-tolerance (OOT).

Standards Used

Model	Manufacturer	Serial	Asset ID	Due Date
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No standards recorded

Calibrated by: William Swann

Approved by: Keo Nueca

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8/24/2020