Exhibit U

Availability of Public and Private Providers to Provide Services

Biglow Canyon Wind Farm
February 2025

Prepared for

Portland General Electric Company

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Acronyms and Abbreviations

AADT	average annual daily traffic
AC	alternating current
BCWF or Existing Facility	Biglow Canyon Wind Farm
BESS	battery energy storage system
BIGL or Project Developer	BIGL bn, LLC
Certificate Holder or PGE	Portland General Electric Company
CFR	Code of Federal Regulations
Council or EFSC	Oregon Energy Facility Siting Council
FAA	Federal Aviation Administration
I-84	Interstate 84
MW	megawatt
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODA	Oregon Department of Aviation
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OR-206	Oregon Route 206
RFA	Request for Amendment
RV	recreational vehicle
Site Certificate	Site Certificate on Amendment 3
Solar Components	photovoltaic solar energy generation and battery storage
US-97	United States Highway 97

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1.0 Introduction

The Portland General Electric Company (PGE or Certificate Holder) submits this Request for Amendment (RFA) 4 to the Site Certificate on Amendment 3, issued October 31, 2008 (Site Certificate), for the Biglow Canyon Wind Farm (BCWF or Existing Facility) to add photovoltaic solar energy generation and battery storage (Solar Components) to the operating BCWF.

BCWF, owned and operated by PGE, is located within an approved site boundary comprising approximately 25,000 acres, approximately 2.5 miles northeast of the town of Wasco in Sherman County, Oregon. The BCWF operates under the Site Certificate from the Oregon Energy Facility Siting Council (Council or EFSC) as administered by the Oregon Department of Energy (ODOE). BCWF currently consists of 217 wind turbines, with a maximum blade tip height of 445 feet, and a peak generating capacity of 450 megawatts (MW).

In RFA 4, PGE proposes to add up to 385 MW alternating current (AC) generating capacity from photovoltaic solar arrays and 375 MW in battery storage capacity. RFA 4 seeks to expand the BCWF site boundary to include the Solar Components in portions of the existing site boundary and in the proposed expanded site boundary (together, Solar Micrositing Area or RFA 4 Site Boundary[1]).

The Solar Micrositing Area is approximately 3,980 acres and provides a conservative estimate of the maximum area needed for development, micrositing, and temporary disturbances from the Solar Components during construction, rather than the anticipated disturbance footprint. Solar Components will include solar arrays, inverters, battery energy storage system (BESS) facilities and their subcomponents (i.e., inverters), two collector substations, a total of approximately 3 miles of 230-kilovolt generation tie transmission lines, medium voltage collector lines, operations and maintenance (O&M) structures, site access roads, internal roads, perimeter fencing, facility entry gates, and temporary laydown areas. The maximum generating capacity from the Solar Components will be 385 MW AC and construction may take place in phases.

PGE will own and operate the Solar Components as a part of the BCWF (together, Amended Facility or Facility), which, to date, have been developed by BIGL bn, LLC (BIGL or Project Developer). BIGL, in its capacity as the project developer, supports PGE in this RFA 4 and may construct and temporarily operate the Solar Components on behalf of PGE under a Build-Transfer Agreement.

The Council previously found in the Final Order on RFA 3 that the BCWF complies with the Council's Public Services standard.[2] Exhibit U provides the information required by Oregon Administrative Rules (OAR) 345-021-0010(1)(u) in support of RFA 4. The information summarized in this exhibit and described in RFA 4 demonstrate that the Facility, as proposed, can be designed, engineered, constructed, operated, and retired in a manner that satisfies the applicable Council

[1] Note, as described in further detail in Section 4.1.1.2 of the RFA 4 Division 27 document, the Solar Micrositing Area is the equivalent of the RFA 4 Site Boundary.
[2] Final Order on Request for Amendment 3, p. 36 (October 2008).

standards. The proposed changes in RFA 4 do not alter the Certificate Holder's ability to comply with applicable Site Certificate Conditions and the approval standard in OAR 345-022-0080.

2.0 Applicable Rules and Standards

Under OAR 345-022-0110, the Council must find through appropriate study that:

> *(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.*

To demonstrate compliance with this standard, and in accordance with OAR 345-021-0010(1)(u), Exhibit U must include information about significant potential adverse impacts resulting from the construction and operation of the Solar Components on the ability of public and private providers in the analysis area to provide the services listed in the standard. Exhibit U demonstrates that the Council may conclude that the construction and operation of the Solar Components, as modified by RFA 4, considering proposed mitigation, is not likely to result in significant adverse impacts to the provision of the public services listed in OAR 345-022-0110.

3.0 Analysis Area

Consistent with OAR 345-027-0360(3), ODOE concurred with the Certificate Holder's use of a defined portion of the approved BCWF site boundary and the proposed expanded site boundary (i.e., Solar Micrositing Area/RFA 4 Site Boundary) to establish study area boundaries for RFA 4 under OAR 345-001-0010(35). The RFA 4 Site Boundary reflects the Solar Micrositing Area, and all study areas within the meaning of ORS 345-001-0010(35) are measured from the RFA 4 Site Boundary. In accordance with OAR 345-001-0010(35)(b), the analysis area for public services is the area within and extending 10 miles from the Solar Micrositing Area[3] (Figure U-1).

4.0 Analysis

4.1 Methods

The following analysis incorporates information, analysis, and data from federal, state, and local government agencies, as well as updated information wherever available. Local public service

[3] ODOE concurred with excluding the remaining BCWF site boundary that does not overlap with the Solar Micrositing Area from analysis in RFA 4 because no changes are proposed to any BCWF components in the remaining BCWF site boundary as part of RFA 4.

providers were also contacted directly for data on potentially affected public services. The potential effects of the Solar Components were evaluated with respect to the ability of public and private providers within the analysis area to provide sewers and sewage treatment, water, stormwater drainage, solid waste management, housing, traffic safety, police and fire protection, health care, and schools.

4.2 Assumptions Used to Evaluate Potential Impacts – OAR 345-021-0010(1)(u)(A)

OAR 345-021-0010(1)(u) Information about significant potential adverse impacts of construction and operation of the proposed facility on the ability of public and private providers in the analysis area to provide the services listed in OAR 345-022-0110, providing evidence to support a finding by the Council as required by OAR 345-022-0110. The applicant must include:

OAR 345-021-0010(1)(u)(A) The important assumptions the applicant used to evaluate potential impacts;

Response: Exhibit U provides key assumptions and information used to evaluate potential impacts of the Solar Components on public and private providers.

Potential impacts were evaluated based on assumptions for the number of employees needed to construct and operate the Solar Components, population shifts, and use of transportation routes, as described in the following sections.

The analysis area includes Sherman County, a small portion of northwest Gilliam County in Oregon, and parts of southern Klickitat County in Washington (Figure U-1). Due to the location of the Solar Components, the Certificate Holder expects that most personnel will use public and private service providers in Sherman County (i.e., in Wasco or Moro). PGE expects some personnel to also use providers beyond the analysis area, including those in Klickitat County, Washington, and Gilliam, Wasco, and Hood River Counties, Oregon (e.g., housing in the Dalles or Hood River). This assumption is incorporated as applicable into the various public service provider analyses.

4.2.1 Construction

Construction will occur in two separate areas for the Solar Components; Construction of the Northern Solar Area is expected to begin in Q4 of 2026 (mobilization) and continue through Q4 of 2027 for a duration of approximately 12 months. The Southern Solar Area construction is expected to begin in Q3 of 2027 and continue through Q4 of 2028 for a duration of approximately 18 months.

During the Northern Solar Area construction, PGE expects a daily average of 165 workers on-site during the 12-month construction period, with a peak number of 350 workers while multiple disciplines of contractors complete their work simultaneously during periods of the highest activity (approximately 4 to 6 months during construction). During the Southern Solar Area construction, PGE expects an average of 200 workers on-site during the 18-month construction period, with a peak number of 550 workers while multiple disciplines of contractors complete their work

simultaneously during periods of the highest activity (approximately 6 to 9 months during construction). Most construction workers will be employees of construction and equipment manufacturing companies under contract to the Certificate Holder.

PGE anticipates that approximately 30 percent of the construction workforce will be local residents within a 1-hour commuting distance/duration to the Solar Components. Very few, if any, of the non-local workers employed during the construction phase of the Facility will be expected to permanently relocate to the area. The percentage of the construction workforce hired locally will depend on the availability of workers with appropriate skills. The size of the skilled local workforce is continually growing as more solar farms are built in eastern Oregon, so the percentage of local construction workers may be higher than estimated.

Workers in some positions, such as construction foremen and inspectors, will be employed for the entire duration of construction, but many workers will be employed for 4 to 9 months and therefore will not be expected to bring families with them. The Certificate Holder assumes very few workers will relocate their families.

As the Certificate Holder assumes that because most construction workers will not be in the area for more than 4 to 9 months, housing for most construction workers will primarily be provided by hotels, motels, temporary housing, and recreational vehicle (RV) parks within a commutable distance to the Solar Components (1-hour duration).

4.2.2 Operations

The Certificate Holder expects that the Solar Components will require up to seven personnel for daily maintenance activities during operations over its 40-year lifespan. The O&M staff will be hired locally, to the extent that skilled workers are available. Some outside contractors may be required from time to time for specialized maintenance tasks, such as solar array inspections or the repair of associated equipment. A household size of 3.0 is conservatively assumed per employee; thus, a total of 21 new permanent residents could be added to the local population. It is assumed that these workers will live locally. The Certificate Holder may also rely on O&M staff from its operating portion of the Existing Facility to provide operational support for the Solar Components.

4.2.3 Decommissioning

Decommissioning employment will be temporary and similar to the construction of the Solar Components. Decommissioning is estimated to require a similar duration as construction, i.e., up to 12 months for the Northern Solar Area and 18 months for Southern Solar Area.

4.3 Affected Public and Private Service Providers – OAR 345-021-0010(1)(u)(B)

OAR 345-021-0010(1)(u)(B) Identification of the public and private providers in the analysis area that would likely be affected;

Response:

4.3.1 Affected Counties, Cities, and Communities

Table U-1 presents historical population estimates for communities in Sherman, Gilliam, and Klickitat counties within the analysis area. Communities within 10 miles of the Solar Components were analyzed. The nearest city to the Solar Components, Wasco, Oregon, had a 2022 American Community Survey (ACS) population estimate of 482 people, 25 percent of Sherman County's total population.

Table U-1. Historical Population of Counties and Communities within the Analysis Area

Location	Population		2010 -2022		
	Census 2010	Census 2020	ACS 2022	Absolute Change	Percent Change
OREGON	3,831,074	4,237,256	4,229,374	398,300	10.4
Sherman County	**1,765**	**1,870**	**1,900**	135	7.6
Wasco	410	417	482	72	17.6
Moro	324	367	365	41	12.7
Rufus	249	268	220	-29	-11.6
Gilliam County	**1,871**	**1,995**	**1,983**	**112**	**6.0**
WASHINGTON	6,724,540	7,705,281	7,785,786	1,061,246	15.8
Klickitat County	**20,318**	**22,735**	**22,798**	**2,480**	**12.2%**
Source: U.S. Census Bureau 2010; U.S. Census Bureau 2020a; U.S. Census Bureau 2022					

All communities within a commutable distance (1-hour duration) are considered in the housing analysis (see Sections 4.3.7 and 4.4.5). According to the most recent available U.S. Census Bureau (2020b) residence to workplace data for 2016 to 2020, nearly 74 percent of Sherman County resident commuters work within Sherman County (562 commuters per day). From within Oregon, Sherman County receives 12 commuters per day from Hood River County, 11 from Morrow County, and 160 from Wasco County. From Washington, Sherman County receives 68 commuters per day from Klickitat County and 4 commuters from Whitman County.

4.3.2 Public and Private Service Providers

Table U-2 identifies the public and private service providers in and near the analysis area that may be affected by construction of the Solar Components. The analysis area includes Sherman County, a small portion of Gilliam County in Oregon and parts of southern Klickitat County in Washington. PGE does not expect any providers in the Gilliam County portion of the analysis area to be affected. PGE does expect that some providers in Wasco County in Oregon (outside of the analysis area) may be affected. An analysis of different services and providers necessary for construction and operation of the Solar Components are identified in the following sections.

Table U-2. Public and Private Service Providers

Service	Service Provider Detail	Location
Sewers and Sewage Treatment	Various licensed providers: portable toilets and sewage disposal	Sherman County, Wasco County, Gilliam County, Oregon
Water	City of Wasco	Wasco, Oregon
Stormwater Drainage	No service provider is required	N/A
Solid Waste Management	The Dalles Disposal	Sherman County, Oregon
	Wasco County Landfill: non-hazardous and some hazardous waste	The Dalles, Oregon
	Columbia Ridge Landfill: non-hazardous and some hazardous waste	Arlington, Oregon
Housing	Approximately 515 vacant rental units	Morrow County, Gilliam County, Hood River County, Wheeler County, Sherman County, Wasco County, Oregon; Klickitat County, Yakima County, Washington
	Over 65 hotels, motels, and recreation vehicle parks	Morrow County, Gilliam County, Hood River County, Sherman County, Wasco County, Oregon; Klickitat County, Washington
Traffic	Oregon Department of Transportation	Salem, Oregon
	Sherman County Planning and Road Departments	Moro, Oregon
Police and Fire Protection	Sherman County Sheriff's Office (primary law enforcement provider for the Facility location)	Moro, Oregon

Service	Service Provider Detail	Location
	Oregon State Police (secondary law enforcement provider for the Facility location)	The Dalles, Heppner, Hermiston, Oregon
	City of The Dalles Police Department, Gilliam County Sheriff's Office (backup law enforcement providers)	The Dalles, Condon, Oregon
	North Sherman County Rural Fire Protection District	Wasco, Oregon
Health Care	Sherman County Medical Clinic (not Trauma rated)	Moro, Oregon
	Mid-Columbia Medical Center (Level III Trauma Center)	The Dalles, Oregon
	Good Shepherd Medical Center (Level III Trauma Center)	Hermiston, Oregon
	Legacy Emanuel Medical Center (Level I Trauma Center)	Portland, Oregon
	Oregon Health and Science University Hospital (Level I Trauma Center)	Portland, Oregon
	Sherman County Ambulance (Emergency medical transport)	Moro, Oregon
Schools	Sherman County High School	Moro, Oregon
	Sherman Grade School	Moro, Oregon

4.3.3 Sewers and Sewage Treatment

In the rural area surrounding the Solar Components, no developed sewer systems will be impacted by construction or operation of the Solar Components. The nearest developed sewer systems are located approximately 2 miles away from the Solar Micrositing Area in the town of Wasco, Oregon; other cities' sewer systems are farther away. As explained in Exhibit W, portable toilets will be used during construction; these will be provided and serviced (including off-site disposal of waste) by a private sanitation service provider. During operation of the Solar Components, staff will make use of sanitary facilities at the proposed O&M buildings, which will drain into a new county-approved on-site septic systems; sanitary facilities will also be available at the existing O&M buildings/septic systems. During operations, if there are numerous workers at the Solar Components for multiple days in a row, a portable toilet may be temporarily installed.

4.3.4 Water

Water used during construction is anticipated to be obtained from an existing municipal water source with existing water rights, i.e., the City of Wasco. In the rural area surrounding the Solar

Components, no other developed water systems will be impacted by construction or operation of the Solar Components.

Approximately 81 million gallons of water will be required for construction of the Solar Components. For both the Northern and Southern Solar Areas, as discussed in Exhibit O, all non-potable water used for construction and operations is anticipated to be sourced from the City of Wasco (or other permitted source(s)). Potable water during construction may also be sourced from the Facility's existing well or bottled water. During operation, water will be obtained from a new or existing on-site exempt well or purchased bottled water PGE has provided a record of correspondence in Attachment U-1. For water rights information and other details, see Exhibit O of this RFA.

4.3.5 Stormwater Drainage

In the rural area surrounding the Solar Components, stormwater infrastructure is limited to minimal facilities associated with public roads maintained by Sherman County. Stormwater drainage basins will be incorporated into the Facility design and will be within the facility fence line. The nearest external developed stormwater drainage facilities in the vicinity of the Solar Components are located within the Wasco city limits; however, the Solar Micrositing Area is approximately 2 miles from Wasco and the Solar Components will not connect to or otherwise impact the city's stormwater system.

4.3.6 Solid Waste Management

Sherman County provides solid waste disposal services through agreements with a private provider, The Dalles Disposal. It is assumed that solid waste developed during construction, operation, and decommissioning of the Solar Components will be transported to landfills through agreements with local private disposal services. The closest landfills to the Solar Components are the Columbia Ridge Landfill (20 miles east of the Solar Micrositing Area) and the Wasco County Landfill (25 miles west of the Solar Micrositing Area; PGE will provide a record of correspondence in Attachment U-1 prior to the final RFA 4 being deemed complete). The Dalles Disposal manages the Sherman County Transfer Station on Welk Road near Biggs Junction, where non-hazardous municipal solid waste and recycling is unloaded from collection vehicles and briefly held while it is reloaded onto larger long-distance transport vehicles for shipment to landfills.

4.3.7 Housing

Construction of the Northern and Southern Solar Areas of the Solar Components is anticipated to last approximately 12 and 18 months, respectively. Based on PGE's experience during construction of other energy projects in the area, PGE anticipates that much of the construction personnel will be permanent residents or temporary residents who commute from within Sherman County, from Wasco County into Sherman County, or from Klickitat County, Washington into Sherman County. For construction in the Northern Solar Area, it is assumed that temporary housing could be

required for up to 245 new households during the peak construction period and about 116 new households on average during the construction period. For Southern Solar Area, it is assumed that temporary housing could be required for up to 385 new households during the peak construction period and about 140 new households on average during the construction period. This is assuming 70 percent of construction staff will not be existing residents and will migrate to the area during construction. Additionally, permanent housing for roughly seven new households, including workers and their families (based on a household size of 3.0), may be required during operations.

Varying degrees of housing options are provided in incorporated and unincorporated communities within the analysis area, and within a commutable distance from the Solar Components (1-hour duration) outside of the analysis area. Typical housing options for temporary workers include short-term rental housing, hotels or motels, RV parks, and public or private campgrounds. Note that no RV usage is proposed at the Solar Components themselves but rather at existing RV parks and campgrounds.

The Certificate Holder assumes that most construction workers will be in the area for approximately 4 to 9 months, and that the housing for those workers will primarily be provided by hotels and RV parks.

Rental Housing

Table U-3 summarizes the rental housing stock for the reasonable commuting area for the Facility. The data in this table are drawn from the U.S. Census Bureau survey data but, particularly in small communities, have high margins of error and may not accurately reflect actual availability at the time of the survey, and do not precisely reflect current availability. Rental housing in Yakima and Wheeler Counties, Washington, is particularly scarce, though rental housing units make up over half the housing stock in The Dalles and Goldendale, Oregon, for example.

Table U-3. Housing Supply in Counties and Communities within Commutable Distance/Duration

Geographic Area	Total Housing Units (Occupied or Vacant)	Vacant Housing Units	Of Occupied Housing, Percentage Occupied by Renter	Estimated Number of Vacant Rental Units	Rental Vacancy Percentage
OREGON	***1,818,599***	***137,799***	***36.8***	***50,710***	***3.7***
Morrow County	**4,724**	**523**	**30.2**	**158**	**3.7**
Boardman	1,182	63	46.7	29	4.4
Ione	***176***	10	27.7	3	0.0
Irrigon	727	61	22.4	14	0.0
Gilliam County	**1,081**	**219**	**25.4**	**56**	**5.2**
Arlington	252	22	33.9	7	0

Geographic Area	Total Housing Units (Occupied or Vacant)	Vacant Housing Units	Of Occupied Housing, Percentage Occupied by Renter	Estimated Number of Vacant Rental Units	Rental Vacancy Percentage
Condon	461	83	19.6	16	14.0
Lonerock	23	11	0	0	0.0
Hood River County	**10,210**	**1,189**	**31.9**	**130**	**4.0**
Hood River	4,037	481	46.6	114	6.1
Wheeler County	**930**	**306**	**30.9**	**95**	**10.6**
Fossil	268	26	20.7	5	0.0
Sherman County	**953**	**183**	**30.0**	**55**	**1.3**
Biggs Junction	0	0	0.0	0	0.0
Grass Valley	116	24	46.7	11	0.0
Moro	171	34	42.3	14	0.0
Wasco	226	25	21.9	5	0.0
Wasco County	**12,038**	**1,550**	**34.9**	**541**	**1.6**
Antelope	40	18	40.9	7	0.0
Dufur	398	47	33.0	16	0
Maupin	310	147	23.9	35	0.0
Shaniko	19	10	22.2	2	0.0
The Dalles	6,695	354	40.0	142	1.4
Tygh Valley	65	32	60.6	19	0.0
WASHINGTON	***3,216,243***	***236,971***	***36.2***	***85,784***	***4.0***
Benton County	**80,421**	**4,912**	**31.9**	**1,567**	**5.0**
Klickitat County	**10,602**	**984**	**25.0**	**246**	**1.5**
Bickleton	49	6	11.6	1	0.0
Goldendale	1,733	137	49.1	67	0.0
Yakima County	**90,660**	**5,102**	**37.7**	**1,923**	**2.9**
Toppenish	2,436	21	39.8	8	1.4

Geographic Area	Total Housing Units (Occupied or Vacant)	Vacant Housing Units	Of Occupied Housing, Percentage Occupied by Renter	Estimated Number of Vacant Rental Units	Rental Vacancy Percentage
Source: U.S. Census Bureau 2022					

Hotels/Motels

There are 44 hotels/motel accommodations within a commutable duration (1-hour duration) to the Facility (Table U-4 and U-5; STR 2024). Establishments are concentrated in The Dalles, Oregon (11 hotels), in Hood River, Oregon (10 hotels/motels), and in Boardman, Oregon (5 hotels/motels), ranging from 7 to 48 miles away from the Facility. There are 1,891 rooms in this area across the 44 included hotels and motels. Approximately 6 percent of the rooms are in Sherman County, while 42 percent of the rooms are in Wasco County and 30 percent are in Hood River County.

Table U-4. Regional Hotel/Motels by City and County Within Commutable Distance/Duration

Location	Total Hotel/Motels	Total Hotel Rooms	Percent of Total	Vacant Rooms at Peak Occupancy
Morrow County, OR	**5**	**234**	**12**	**40**
Boardman	5	234	–	–
Gilliam County, OR	**3**	**69**	**4**	**12**
Condon	2	36	–	–
Arlington	1	33	–	–
Hood River County, OR	**11**	**573**	**30**	**98**
Hood River	10	557	–	–
Mount Hood Parkdale	1	16	–	–
Sherman County, OR	**5**	**114**	**6**	**20**
Rufus	1	20	–	–
Moro	1	11	–	–
Wasco	3	83	–	–
Wasco County, OR	**15**	**787**	**42**	**135**
Dufur	1	20	–	–
Maupin	3	48	–	–
The Dalles	11	719	–	–
Klickitat County, WA	**5**	**114**	**6**	**20**
Bingen	1	12	–	–
Lyle	1	10	–	–
White Salmon	1	16	–	–
Goldendale	2	76	–	–
Total	**44**	**1,891**	**100%**	**325**

Source: STR 2024

Note: Numbers may not sum due to rounding.

Table U-5. Summary of Regional Hotels/Motels by Commuting by Duration

Drive Time to Facility	Number of Establishments	Number of Rooms
0 to 30 minutes	**5**	**114**
30 to 60 minutes	**39**	**1,777**
Total	**44**	**1,891**

Source: STR 2024, Google Earth 2024

Seasonal occupancy patterns are predicted, with lower demand in the winter months and higher demand in the summer months. In the calendar year from January to December 2023, the lowest

occupancy was 41.5 percent in December and the high was 79.6 percent in August, with an average annual vacancy rate of 37.2 percent (STR 2024). At the most recent peak occupancy of 82.8 percent in August 2024, there were approximately 325 rooms available in the region (STR 2024). Table U-6 shows occupancy rates from January to December 2023, along with the average occupancy rate for the 2016 through 2023 calendar years (STR 2024).

Table U-6. Monthly Hotel/Motel Occupancy Rates (percent)

Month	2023 Occupancy	2016-2023 Average Occupancy
January	45.6	44.1
February	52.0	52.6
March	57.7	57.8
April	64.9	63.4
May	69.8	67.0
June	78.4	77.7
July	79.6	81.4
August	75.2	80.3
September	75.2	75.1
October	63.2	66.7
November	50.5	52.1
December	41.5	44.4
Source: STR 2024		

RV Parks

In addition, at least 21 recreational vehicle parks are available within commutable duration (1-hour duration) of the Solar Components, predominately in northern Hood River and Wasco Counties, Oregon, and Klickitat County, Washington (Tables U-7 and U-8; Good Sam 2024, RV Life Campgrounds 2024). At least 976 RV sites are available within commutable duration from the Solar Components.

Based on a review of online sources, 5 RV parks are within Sherman County with 188 sites: 80 in Rufus, 32 in Moro, 63 in Wasco, and 13 in Grass Valley. Those RV parks closest to the Facility have a higher percent of hookups than those farther away, though around 43 percent of all RV sites in the region offer a full hookup (Table U-8).

Table U-7. Regional RV Park and RV Sites Within Commutable Duration

Location	Total RV Parks	Total RV Sites
Gilliam County, OR	**1**	**11**
Arlington	1	11
Hood River County, OR	**4**	**221**
Hood River	2	144
Mount Hood	1	64
Cascade Locks	1	13
Sherman County, OR	**5**	**188**
Rufus	2	80
Moro	1	32
Wasco	1	63
Grass Valley	1	13
Wasco County, OR	**4**	**221**
Tygh Valley	2	153
Maupin	1	25
The Dalles	1	43
Klickitat County, WA	**7**	**335**
Dallesport	2	60
White Salmon	1	35
Goldendale	4	240
Total	**21**	**976**

Source: Good Sam 2024, RV Life Campgrounds 2024
Note: Numbers may not sum due to rounding.

Table U-8. Regional RV Park Capacity and Amenities

Drive Time to Facility	Number of Sites	Percent of Sites with Full Hookups	Percent of Sites with Water and Electric Only
0 to 30 minutes	422	61	13
30 to 60 minutes	554	29	40
Total	**976**	**43**	**28**

Source: Good Sam 2024, RV Life Campgrounds 2024

4.3.8 Traffic

For this RFA 4, the primary and secondary transportation routes will be the same as previously approved for the Existing Facility. These routes will be used to bring in equipment, materials, and

workers from outside of the analysis area to the Solar Components site and will include state, county, and private roadways. Roads within the primary transportation route are serviced by the Oregon Department of Transportation (ODOT; Interstate 84 [I-84], United States Highway 97 [US-97]) and the Sherman County Road Department.

4.3.8.1 Primary Transportation Route

The primary transportation route used for construction of the Solar Components will be the same as what was previously evaluated for the BCWF. This route will carry all construction-related, heavy-duty, and light-duty delivery vehicles, as well as some workforce traffic. The route will start from either the west or east on I-84 to south on US-97 (from Biggs, Oregon) to Wasco, then southeast on Oregon Route 206 (OR-206), east on either Klondike Road or the Old Wasco Heppner Highway, and then onto various County roads.

4.3.8.2 Secondary Transportation Route

The secondary transportation route previously approved for strictly construction-related commuter traffic would route traffic originating from either east or west on I-84 to travel south on Scott Canyon Road to either Herin Lane or Medler Lane. Due to the physical terrain around Scott Canyon Road being unsuitable for large oversize or overweight trucks, this route is not suitable for any construction related material or equipment deliveries. All truck traffic will use the primary transportation route.

4.3.8.3 Traffic Volumes

Table U-9 provides traffic volumes for the expected transportation routes to the Solar Components. State highway volumes were published in the 2018 through 2022 Traffic Volume Tables (ODOT 2019, 2020, 2021, 2022a). Table U-9 shows the average annual daily traffic (AADT) volumes for the most recent 4 years of data available at various milepost locations along the transportation routes.

Table U-9. Transportation Route Average Annual Daily Traffic Volumes

Highway[1]	Location	Milepost	2019	2020	2021	2022	Average Percent Change 2019-2022
I-84							
I-84 (No. 2)	0.50 mile east of Rowena Interchange	77.15	24,700	22,270	25,518	24,970	1%
I-84 (No. 2)	At Hostetler Way Overcrossing	82.62	23,300	21,174	23,660	23,112	-1%
I-84 (No. 2)	At Webber Street Undercrossing	83.68	23,900	21,821	23,524	23,004	-4%

Highway[1]	Location	Milepost	2019	2020	2021	2022	Average Percent Change 2019-2022
I-84 (No. 2)	0.24 mile west of Brewery Grade Interchange	85.27	25,100	23,043	25,239	24,749	-1%
I-84 (No. 2)	0.30 mile east of Brewery Grade Interchange	85.81	25,000	23,072	24,421	23,944	-4%
I-84 (No. 2)	0.30 mile east of The Dalles-California Highway (US197)	87.31	19,500	18,268	18,067	17,608	-10%
I-84 (No. 2)	0.30 mile east of The Dalles Dam Interchange	89.13	19,200	17,980	17,772	17,317	-10%
I-84 (No. 2)	0.30 mile east of Celilo-Wasco Highway (OR206)	97.44	18,200	17,050	16,904	16,485	-9%
I-84 (No. 2)	0.44 mile southwest of Rufus/John Day Dam Interchange	109.51	13,000	12,708	14,630	14,294	10%
I-84 (No. 2)	0.30 mile east of Rufus Interchange	110.25	13,000	12,208	14,574	14,296	10%
I-84 (No. 2)	0.32 mile east of West John Day Interchange, Sherman-Gilliam County Line	114.55	12,900	12,129	14,525	14,253	10%
US-97							
US-97 (No. 42)	0.02 mile south of Celilo-Wasco Highway Spur	0.05	2,900	2,796	3126	3,651	26%
US-97 (No. 42)	0.30 mile south of Wasco-Heppner Highway (OR206)	7.8	2,400	2,321	2,595	3,543	48%
US-97 (No. 42)	0.40 mile south of Celilo-Wasco Highway (OR206)	9.22	2,400	2,294	2,565	3,208	34%
US-97 (No. 42)	Wasco Automatic Traffic Recorder, Sta.28-001, 0.83 mile northeast of 1st Street	17.36	3,100	2,829	3,273	3,232	4%
Celilo-Wasco Highway; OR-206 (No. 301)							
OR-206 (No. 301)	0.02 mile west of Van Gilder Road	12.45	470	445	498	578	23%
OR-206 (No. 301)	0.20 mile west of Sherman Highway (US-97)	14.53	300	283	316	312	4%
OR-206 (No. 301)	0.26 mile west of Church Street (west of Wasco city limits)	15.07	460	436	487	421	-8%
OR-206 (No. 301)	0.02 mile west of Wasco-Heppner Highway (OR-206)	15.55	490	468	523	465	-5%
Wasco-Heppner Highway; OR-206 (No. 300)							
OR-206 (No. 300)	East of Sherman Highway (US-97) (0.30 miles)	-1.67	580	549	501	483	-17%

Highway[1]	Location	Milepost	2019	2020	2021	2022	Average Percent Change 2019-2022
OR-206 (No. 300)	West of Clark Street (0.02 mile)	-0.28	590	562	548	528	-11%
OR-206 (No. 300)	North of CeliloWasco Highway (OR-206) (0.02 mile)	-0.11	1,000	990	1124	1,084	8%
OR-206 (No. 300)	South of CeliloWasco Highway (OR-206) (0.02 mile)	-0.07	1,200	1,172	1433	1,381	15%
OR-206 (No. 300)	East of Clark Street (0.02 mile)	0.02	650	617	765	737	13%
OR-206 (No. 300)	At east city limits of Wasco	0.58	570	537	590	569	0%
OR-206 (No. 300)	SE of Klondike Road (0.02 mile)	0.88	380	363	517	498	31%
OR-206 (No. 300)	At Hay Canyon Bridge	6.63	390	374	435	419	7%
OR-206 (No. 300)	West of Fairview Road (0.02 mile)	9.4	280	269	370	357	28%
OR-206 (No. 300)	East of Fairview Road (0.02 mile)	9.44	270	257	370	357	32%

The number in parenthesis is the internal ODOT number designation for each state highway.

Sources: ODOT 2019, 2020, 2021, 2022a

Table U-9 shows that, from 2019 to 2022, AADT volumes increased by up to 10 percent on I-84 but decreased at some areas as well. On US-97, AADT volumes have dramatically increased by as much as 48 percent around the OR-209 junction. For OR-206, traffic volumes have had some decreases but have at most increased by 31 percent near Klondike Road.

Due to the rural nature of the analysis area, recent traffic counts for county roads that are proposed as transportation routes are not available. County roadway volumes are assumed to be minimal, with some increase during the summer and early fall for harvest of various crops in the area.

4.3.8.4 Pavement Conditions

Pavement conditions can influence traffic safety issues. Poor pavement with potholes might cause vehicles to swerve, resulting in unsafe vehicle operation. ODOT's 2022 Pavement Condition data were reviewed for state highway transportation routes (ODOT 2022b). The conditions for state highways anticipated to be used as part of the transportation routes to the Solar Components range from fair to good along the entire haul route.

The majority of I-84 adjacent to Biggs, Oregon, is in good condition. There are some sections of US-97 directly off of I-84 that are in fair condition. A fair rating indicates minor or low severity pavement deficiencies that typically lead to treatment such as chip seal or light resurfacing (ODOT 2022b); however, fair conditions do not indicate a safety hazard. Around milepost 7, US-97 returns to good condition pavement. OR-206 is rated as good condition throughout the area being used by the project (ODOT 2022b).

The surface quality of Black Canyon Road, Klondike Road, and Old Wasco-Heppner Highway are not assessed by ODOT because they are local roadways. All three are two-lane asphalt roadways with striping. In street level imagery dated 2024, the road surface of Klondike Road and Old Wasco-Hepner Highway appeared to have recently been replaced, suggesting a good condition. Black Canyon Road appears to have intermittent transverse cracking, suggesting a fair condition (Google Earth 2024).

4.3.8.5 Air Transportation

There is one aviation facility within the analysis area, considering both public and private airports: Wasco State Airport (public; 0.0 miles southwest of the Solar Micrositing Area). There are no military facilities within the analysis area.

4.3.9 Police and Fire Protection

Police service in the analysis area is primarily provided by county police departments; some of the cities in the analysis area have a city police department that operates within their respective cities but do not cover the Facility. As necessary, PGE relies on assistance from the nearest Sherman County Sheriff's Office, located in Moro, Oregon. PGE will provide a record of correspondence in Attachment U-1 prior to the final RFA 4 being deemed complete (see Attachment U-1). Additional law enforcement service is available through the Oregon State Police, with offices in The Dalles, Heppner, and Hermiston, and through The Dalles Police Department. The small number of temporary construction workers and additional permanent-resident employees is not anticipated to place significant new demands on law enforcement agencies in the area.

Fire protection service in the analysis area is provided by the North Sherman County Rural Fire Protection District. The Certificate Holder will provide the fire department with construction plans, and locational information for Solar Components infrastructure, including access. PGE will provide a record of correspondence in Attachment U-1 prior to the final RFA 4 being deemed complete (see Attachment U-1).

4.3.10 Health Care

Because population density in the analysis area is relatively low, hospitals and health care services tend to be regional. The Sherman County Medical Clinic provides family medicine, urgent care, and minor surgery services, and is located approximately 10 miles from the Solar Components. There are two Level III Trauma centers within the vicinity of the Solar Components: Good Shepherd Medical Center (in Hermiston, Oregon) and Mid-Columbia Medical Center (in The Dalles, Oregon; Oregon Health Authority 2024). The closest Level I Trauma centers are the Legacy Emanuel Medical Center and Oregon Health and Science University Hospital, both located in Portland, Oregon. Sherman County has one Ambulance Service Area, which is served by Sherman County Ambulance (Sherman County 2024).

4.3.11 Schools

The analysis area is within the Sherman County School District. The nearest schools within the district are located in the town of Moro, Oregon, and include Sherman Grade School and Sherman County High School (both approximately 10 miles from the Solar Components). Although the analysis area (the area within and extending 10 miles from the Solar Micrositing Area) includes small portions of Gilliam County, Oregon and Klickitat County, Washington, no schools other than those within Sherman County School District are within the analysis area.

4.4 Potential Impacts on Public and Private Providers – OAR 345-021-0010(1)(u)(C)(D)

OAR 345-021-0010(1)(u)(C) A description of any likely adverse impact to the ability of the providers identified in (B) to provide the services listed in OAR 345-022-0110;

OAR 345-021-0010(1)(u)(D) Evidence that adverse impacts described in (C) are not likely to be significant, taking into account any measures the applicant proposes to avoid, reduce or otherwise mitigate the impacts; and

Response: The Solar Components are not expected to have any significant adverse impact on any public or private service providers in the analysis area during construction or operation. The Council previously found that the BCWF was not likely to result in significant adverse impacts to public services within the analysis area,[4] and the amendments in RFA 4 do not alter that conclusion. No amendments to relevant conditions listed in the Third Amended Site Certificate to the Biglow Canyon Wind Farm are proposed.

4.4.1 Sewer and Sewage Treatment

No adverse impacts to sewer services are expected as a result of construction, as the only sewage services required for construction will be related to portable toilets. During operations, PGE's staff will use the sanitary facilities at the proposed O&M buildings or the existing O&M buildings, which are not, and will not be, connected to public sewage infrastructure. The sanitary facilities used will drain into a new county-approved on-site septic system. PGE will follow Site Certificate Conditions 82 and 83 in the Third Amended Site Certificate related to portable toilets and sewage management (Council 2008).

4.4.2 Water

PGE does not expect adverse impacts to water services. During construction and operation water will be sourced from City of Wasco municipal water (or other permitted source(s)), from a new or existing on-site exempt well, or purchased bottled water. No other sources of water will be used, and no new water rights will be required (see Exhibit O). PGE will follow Site Certificate Conditions

[4] Final Order on Request for Amendment 3, p. 36 (October 2008).

74, 75, and 76 regarding water sourcing, and Site Certificate Conditions 83, 86, and 88 regarding wastewater discharges (Council 2008).

4.4.3 Stormwater Drainage

The Solar Components will not adversely impact public stormwater drainage facilities. Any construction-related stormwater will evaporate or infiltrate on site and no public stormwater facilities will be used. During construction, stormwater best management practices and monitoring will be implemented in accordance with the 1200-C National Pollutant Discharge Elimination System Storm Water Discharge General Permit and draft Erosion and Sediment Control Plan (see Exhibit I, Attachment I-1) (Site Certificate Condition 26). The Solar Components will be graded in a manner to encourage stormwater to infiltrate the ground to minimize the need for collection in stormwater swales or retention basins. During operation, PGE will 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 draft Erosion and Sediment Control Plan and the Amended Revegetation and Noxious Weed Control Plan (Site Certificate Condition 29). Stormwater management infrastructure installed during construction will, as needed, be left in place to continue functioning during operation. Such features may include roadside ditches, infiltration swales, or retention basins. These facilities will be located on private land and will not affect the provision of stormwater management services by any public agency. PGE will also follow wastewater discharge practices listed in Site Certificate Conditions 83, 86, and 88 (Council 2008).

4.4.4 Solid Waste Management

Construction and operation activities will not adversely impact solid waste management services. Solid waste will be disposed of through contracts with local waste disposal providers and will comply with all local, state, and federal laws and regulations (Site Certificate Condition 80). The Solar Components will implement a waste management plan during construction and operation, in accordance with Site Certificate Conditions 84 and 87 (Council 2008). Exhibit W includes detailed information about types and quantities of solid waste and disposal.

PGE will contract with a private disposal service to transport any solid waste that is not recycled to an approved landfill. Columbia Ridge Landfill (20 miles east of the Solar Micrositing Area) and the Wasco County Landfill (25 miles west of the Solar Micrositing Area) will be the most likely recipients for solid waste for the Solar Components. PGE expects construction waste to be within the handling capacities of the aforementioned landfills (PGE will provide a record of correspondence in Attachment U-1 prior to the final RFA 4 being deemed complete, see Attachment U-1; see Exhibit W).

4.4.5 Housing

PGE does not expect adverse impacts to housing as a result of constructing or operating the Solar Components. Potential impacts on housing could result if there were an inadequate supply of housing in relation to the demand from the new temporary and permanent residents associated

with the Solar Components; it is not yet known where the new temporary and permanent residents will settle and what type of housing they will select. However, based on the availability of housing options outlined in Section 4.3.7, adequate supply is available to accommodate the construction and operations employees.

The number of skilled local workforce is continuously growing as more renewable energy projects are built in eastern Oregon. As discussed below, additional workers are likely to commute daily from communities outside the analysis area (within a 1-hour commutable duration), which will lessen impacts to housing associated with the in-migration of outside workers.

Based on the projected employment and population amounts for the Solar Components, it is assumed that temporary housing could be required for up to 245 new households during the peak construction period and about 116 new households on average during construction of the Northern Solar Area. For construction of the Southern Solar Area, it is assumed that temporary housing could be required for up to 385 new households during the peak construction period and about 140 new households on average during the construction period. However, this is based on the conservative assumption that 30 percent of construction workers will be hired locally—and thus not require temporary housing—while the remainder will be from outside the 1-hour commuting duration. Additionally, it is assumed that most construction workers will be in the area for approximately 4 to 9 months as opposed to the full construction period. The actual number of temporary residents may be fewer if more locals are hired.

Hotels, motels, and trailer or RV parks will likely be the most viable available housing option for temporary residents. Publicly available hotel and motel occupancy data show an estimated statewide year-to-date occupancy rate of 73.7 percent in June 2024 (Travel Oregon 2024). Hotel and motel occupancy rates also vary by region, with occupancy rates in Oregon generally higher in the Portland Metro area. For new workers that migrate to the area, over 100 hotels, motels, and recreation vehicle parks are within commuting distance/duration to the Solar Components. Ample housing units will be available for longer-term workers (see Section 4.3.7). Additional rooms may be available in establishments that do not have information available online. Additional temporary housing will be available in overnight facilities located at private RV campgrounds or private, long-term rentals offered through companies like Airbnb. Consultation with cities will occur as necessary regarding temporary housing options prior to construction. Note that no RV usage is proposed at the Solar Components itself but rather at existing RV parks and campgrounds within a 1-hour commute distance/duration.

Even if all migrant (non-local) construction workers sought temporary housing within the 1-hour commutable distance/duration analysis area, there will be enough supply to meet that demand. Industry experience indicates that construction workers are unlikely to relocate if commuting to work is an option, and that commuting an hour, or more is common. Therefore, a 1-hour commute duration is certainly a conservative estimate based on keeping commute times to an hour or less. That distance/duration includes several communities that have sufficient housing availability (see Section 4.3.7), as well as other amenities, when compared to options within 10 miles, which will attract workers in need of temporary housing. Although it cannot be assumed that housing facilities

will have vacancies at any given time, adequate supplies are available within a commutable distance/duration in relation to the number of temporary workers. Additionally, experience with energy facility construction, for example during the peak of wind power construction in 2009 and 2010 near the community of Arlington, Oregon, demonstrates that multiple facilities can be built in an area comparable to the analysis area without creating local housing issues. Therefore, no significant adverse housing impacts from construction of the Solar Components are anticipated.

Permanent housing for about 7 new households (with up to 3.0 people per household) may be required starting at the beginning of operations. For the maximum 21 new permanent residents expected because of Solar Components operations, it is anticipated that adequate opportunities will be available to purchase housing or to construct new housing in the analysis area, or within a commutable distance/duration from the Solar Components outside of the analysis area. Given the reasoning described in this section as well as the general availability of housing opportunities, no significant adverse impacts on the ability of communities to provide housing are anticipated from construction or operations of the Solar Components.

4.4.6 Traffic

The Certificate Holder expects an average of up to 200 worker vehicles round trips generated per day during construction of the Solar Components, with a peak of 550 worker vehicle round trips per day; this peak would occur during construction of the Southern Solar Area and is assumed to be the worst-case scenario. The Certificate Holder expects a peak of 110 trucks per day or 220 truck trips per day by small and large trucks to deliver materials and equipment. Thus, during peak construction, it is possible the Solar Components could generate approximately 1,320 one-way trips per day. It is anticipated that up to 7 two-way vehicle trips per day will be required for maintenance personnel during operations. Transportation routes will be used to bring construction workers, equipment, and materials from outside of the analysis area to the Solar Components, and will include state and county roads. The primary and secondary transportation routes are depicted in Figure U-2.

Construction and operation of the Solar Components will temporarily increase the traffic volume within the primary transportation route. However, construction-related traffic typically occurs during off-peak hours. Construction workers generally start their days earlier than the surrounding residents and construction trucks typically use roads in the middle of the day during off-peak hours. The private vehicle traffic will also generally occur at different times than the truck traffic, as the workers report earlier and leave later than most of the truck traffic. The Certificate Holder will encourage carpooling for construction workers and include traffic safety as part of its safety training program.

As described in Section 4.3.8, I-84 carried an AADT volume of approximately 17,317 vehicles in 2022 on the road segments located east and west of US-97. Based on the above AADT estimates, for the construction period, construction vehicles could cause a peak increase to 18,637 if 100 percent of the average construction traffic uses this route, which is a total increase of about 7.6 percent. This increase is expected to be inconsequential.

Along US-97, just south of I-84, the 2022 AADT was found to be 3,651. With the addition of 100 percent of the average construction traffic, this will increase the anticipated vehicles per day to 4,971. This equates to a total increase in traffic of 36 percent. This increase may cause some additional traffic delay, particularly during the AM and PM Peak Hour, but it is unlikely to cause significant disruption. Due to the increase in traffic, the Level of Service (LOS) of the roadway was determined by comparing the traffic volume anticipated to the capacity of the roadway as designated by the Highway Capacity Manual 7th Edition (National Academies of Science, Engineering, and Medicine 2022). An estimated 365 passenger cars would be using the road during peak hour without construction traffic. Peak construction traffic would add an additional 550 trips during the peak commuting hour. With an ideal capacity of 2,800 passenger cars per hour, this would give us a Volume to Capacity ratio (V/C Ratio) of 0.33. Considering the availability of Passing Zones, the terrain, and the design speed of 60 miles-per-hour, this equates to a LOS C. LOS C represents average traffic delays, and typically an acceptable LOS.

OR-206 carried an AADT volume of approximately 578 vehicles in 2022. With the addition of 100 percent of the average construction traffic, this will increase the anticipated vehicles per day to 1,348. This equates to a total increase in traffic of 228 –percent, which represents a significant increase in traffic volume. OR-206 was further analyzed for the impact to LOS. With approximately 58 vehicles during the Peak AM and PM hour under existing conditions, the addition of 550 commuting workers during peak construction results in a V/C Ratio of 0.22. This equates to a LOS of B, which means minimal delays will be generated by the increase in traffic.

The Certificate Holder will coordinate with ODOT and Sherman County on any potential road closures, impacts, and permits needed for construction or movement of equipment and materials. The Applicant will implement all traffic-related Site Certificate Conditions (Conditions 17, 27, 60, 77, 78, and 79; Council 2008), including those related to oversize/overweight delivery timing, parking, road wear and repair, and signage. A Construction Traffic Management Plan will be developed prior to construction, in accordance with Site Certificate Condition 79, that will include traffic minimization measures at transportation route roads, which would be implemented as needed, staggering shift start times to reduce vehicle trips through the westbound I-84 ramp terminal at Biggs Junction, installation of temporary traffic controls during peak construction, and other mitigation measures, as applicable. Also, the Certificate Holder will ensure that any wear or damage to county roads as a result of the Solar Components is repaired, and that roads are restored to pre-construction condition or better.

4.4.6.1 Traffic and Design Standards

Traffic Standards

State highways are designed and constructed to handle legal loads of 80,000 pounds without a permit. During construction, it may be necessary for trucks exceeding the legal load limit to access the site via state highways. These trucks will potentially be used to deliver the substation transformers or heavy construction equipment. Before construction, the transportation contractor will consult with the Sherman County Road Department and ODOT to determine whether any

segments of roadways or bridges are restricted for travel, and to obtain any oversize/overweight permits required to allow transport of these loads (Site Certificate Conditions 15 and 77; Council 2008). There are no permanent restrictions on state highways proposed for transportation routes. Because the state highways are built to accommodate overweight vehicles with permits, impacts to safety or roadway pavement conditions are not expected. Vehicles up to 75 feet in length are allowed without special permitting on the construction transportation routes. There are requirements imposed by Sherman County and ODOT, such as the previously referenced Construction Traffic Management Plan (Site Certificate Condition 79; Council 2008), to promote traffic safety and prevent cumulative damage to the pavement along the primary transportation routes identified in this exhibit.

Design Standards

County and local roadways are expected to safely accommodate Solar Components construction traffic. Note that no county or local roadways are anticipated to require improvement prior to construction. Note that road conditions could change, thus the Construction Traffic Management Plan will reflect what is actually needed at the time of preconstruction compliance for the Solar Components (Site Certificate Conditions 17 and 77; Council 2008). To ensure the integrity of local roads, the Certificate Holder will coordinate with local transportation officials to make improvements where necessary to accommodate Solar Components construction traffic, and improvements will be restricted to areas within the respective rights-of-way per Site Certificate Condition 17 (Council 2008).

The Certificate Holder will work with ODOT and the Sherman County Road Department to ensure that any unusual damage or wear to state or county roads that is caused by Solar Components construction is monitored and repaired by the Certificate Holder as consistent with Site Certificate Conditions 77 and 78. All county roads on the primary transportation route will be evaluated prior to and after construction of the Solar Components to determine what, if any, degradation has occurred. Inspections will include monitoring of roadway conditions after the completion of construction activities. Monitoring may include the use of video footage, photographs, and engineer field notes to document road conditions. During construction of the Solar Components, the contractor will obtain authorization from ODOT and Sherman County before proceeding with overweight loads on state- or county-maintained roadways. The Certificate Holder will strictly abide to travel conditions and transportation equipment requirements enforced by either ODOT or Sherman County. Upon completion of construction, the Certificate Holder will restore county roads to their pre-construction condition or better, to the satisfaction of the County Road Department. Regardless of existing pavement conditions, roadway segments will be reviewed prior to any added construction traffic, and a system for monitoring safety or degradation to pavement will be developed for the necessary roadways prior to construction (Site Certificate Condition 77; Council 2008). The Certificate Holder will ensure that the construction and operation of the Solar Components will maintain ODOT's and Sherman County's Road systems in as good or better quality than prior to the Solar Components' construction.

4.4.6.2 Air Transportation

There is one aviation facility within the analysis area, Wasco State Airport (35S), located directly adjacent to the Solar Micrositing Area; this airport does meet the notice criteria based on Federal Aviation Administration (FAA)-identified impact areas (i.e., over 3.8 miles from the Solar Micrositing Area), and therefore formal submission of a Form 7460-1 to the FAA under Code of Federal Regulations (CFR) Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace) is anticipated. To confirm that a formal FAA notification was required for the Amended Biglow Canyon Wind Farm, PGE utilized the FAA Notice Criteria Tool, which identified requirements by CFR Title 14 77.9(b) by 31 feet; the nearest airport is 35S, and the nearest runway is 7F/25F (FAA 2024).

4.4.7 Police and Fire Protection

The relatively small number of new temporary and permanent residents is not expected to create significant new demands on the police or fire protection services for the area. Any impacts to police and fire services will be intermittent and temporary during construction, as construction workers will remain on-site for 24 months.

During construction and operation of the Solar Components, the Certificate Holder will provide for on-site security and maintain good communications between on-site security personnel and the Sherman County Sheriff's Office. During operation, the Certificate Holder will ensure that appropriate law enforcement agency personnel have an up-to-date list of the names and telephone numbers of Solar Components personnel available to respond on a 24-hour basis in case of an emergency on the site.

PGE has previously consulted with the Sherman County Sheriff's Office and the North Sherman County Rural Fire Protection District to address potential impacts and committed to coordinating with them regarding appropriate traffic safety measures. PGE will provide a record of correspondence specific to the Solar Components in Attachment U-1 prior to the final RFA 4 being deemed complete. PGE will provide the North Sherman County Rural Fire Protection District with construction plans, schedules, and locations prior to the start of construction.

Solar panels contain a number of safety features designed to provide increased fire protection. The BESS also introduces an element that could pose a fire hazard. Lithium-ion batteries must be kept in a temperature-controlled facility with individual battery modules isolated to prevent the spread of fire if it were to occur. The lithium-ion BESS will incorporate a fire response system as designed by the battery manufacturer. During the operational phase of the Solar Components, fire danger will be minimal.

The following measures could be implemented to minimize fire and safety risks:

- Conditions in Sections H and T of the Site Certificate (Public Health and Safety Standards for Wind Energy Facilities and Public Health and Safety, respectively) will be followed during construction and operation of the Solar Components, including conditions related to

implementing fire safety plans and health and safety plans, mitigating fire risk, and coordinating with the North Sherman County Rural Fire Protection District (Site Certificate Conditions 96, 97, and 98; Council 2008).

- All electrical equipment will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards.
- Adequate firefighting equipment and water supplies will be maintained and made available during operations that carry a high fire risk (e.g., metal cutting, welding, parking in high, dry grass).
- The solar array will have shielded electrical cabling to prevent electrical fires.
- The collector system and substation will have redundant surge arrestors to deactivate the Solar Components during unusual operational events that could start fires.
- Solar Components infrastructure will be spaced sufficiently (fire breaks) to prevent the spread of fire.
- A non-flammable gravel base will be installed around the solar inverters, substation, and BESS.
- Smoke/fire detectors, including wildfire detection cameras and other systems included in the PGE 2024 Wildfire Mitigation Plan (Attachment V-1), will be placed around the site that will be tied to the supervisory control and data acquisition system and will contact local firefighting services.
- Vehicles and equipment will drive and park on maintained graveled areas and roads to the extent practicable; roads will be established before accessing the site to keep vehicles away from grass (Site Certificate Conditions 97 and 98; Council 2008).
- Vehicles will avoid idling in grassy areas, and cutting torches and similar equipment will be kept away from grass (Site Certificate Conditions 95, 97, and 98; Council 2008).
- Diesel vehicles will be used whenever practicable to prevent potential ignition by catalytic converters.
- Roads will be sufficiently sized for emergency vehicle access.
- Fire prevention and response training will be administered annually to all on-site employees (Site Certificate Condition 97). Operations staff will be trained in the use of fire extinguishers for responding to incipient stage fires on site (Site Certificate Conditions 93 and 94; Council 2008).
- A Solar Components site plan will be submitted to fire protection officials including current contact information for personnel (Site Certificate Condition 96; Council 2008).
- Off-site, 24-hour monitoring of the BESS will be implemented and will include shutdown capabilities.

- The BESS will be stored in completely contained, leak-proof enclosures, and will be inspected regularly according to the manufacturer's recommendations.
- Transportation of lithium-ion batteries is subject to 49 CFR 173.185 – Department of Transportation Pipeline and Hazardous Material Administration. This regulation contains requirements for prevention of a dangerous evolution of heat; prevention of short circuits; prevention of damage to the terminals; and prevention of batteries coming into contact with other batteries or conductive materials. Adherence to the requirements and regulations, personnel training, safe interim storage, and segregation from other potential waste streams will minimize any public hazard related to transport, use, or disposal of batteries.
- Design of BESS will be in accordance with applicable Underwriters Laboratories (specifically, 1642, 1741, 1973, 9540A), National Electric Code, and National Fire Protection Association (specifically 855) standards, which require rigorous industry testing and certification related to fire safety and/or other regulatory requirements applicable to battery storage at the time of construction.
- The site will be mowed as needed for fire safety requirements and to keep vegetation from interfering with operation and maintenance activities, in accordance with the PGE 2024 Wildfire Mitigation Plan (Attachment V-1).
- Cyclical and routine vegetation inspections and maintenance will be carried out in accordance with the PGE 2024 Wildfire Mitigation Plan (Attachment V-1) to monitor for vegetation clearances, maintain fire breaks, as applicable, and monitor for wildfire hazards.
- The programs outlined in Exhibit V will be implemented to minimize fire risk during operations, including the PGE 2024 Wildfire Mitigation Plan (Attachment V-1).

4.4.8 Health Care

PGE does not expect construction or operation of the Solar Components to have adverse impacts on local and regional emergency health service providers, hospitals, or health clinics, considering the relatively small number of personnel that will be added for construction and operation of the Solar Components. Healthcare providers appear to have adequate capacity for potential patients associated with the Solar Components, and the need for healthcare services will be minimized through implementation of robust health and safety programs (Site Certificate Conditions 37 through 47 and 92 through 100; Council 2008). The Solar Components will also comply with all emergency planning and notification requirements of the Emergency Planning and Community Right-to-Know Act and will notify ODOE and Sherman County within 72 hours of any event that threatens public health and safety or the environment (Site Certificate Condition 37; Council 2008).

In an emergency, Sherman County Ambulance will likely provide emergency medical transportation to the Mid-Columbia Medical Center, a Level III Trauma Center, in The Dalles, Oregon (Sherman County 2024). If more advanced treatment is needed, patients may be flown via helicopter or fixed-wing aircraft to Level I Trauma centers in Portland, Oregon. Construction workers are expected to

adhere to contractor safety programs, which will prevent serious injuries and the need for ambulance or hospital services.

4.4.9 Schools

PGE does not expect construction or operation of the Solar Components to have adverse impacts on schools, considering the relatively small number of new students that will be enrolled. No schools are located within the Solar Micrositing Area or will be directly affected by the Solar Components construction or operations. During operations, up to seven new permanent households (assuming a household size of 3.0) may require school services, which should not adversely impact school operations. Impacts on school services will depend on the housing choices of new residents with children, which cannot be predicted; however, given the number of schools in the locations in which new residents are likely to settle, and the small number of new school children expected, it is unlikely that any one school will receive more new students than it can accommodate. To the extent possible, PGE will coordinate the timing of oversized/overweight vehicles and equipment deliveries to avoid peak school traffic times and bus routes. Note that truck traffic (inclusive of large component or equipment deliveries) will generally not coincide with morning and evening peak hours; rather, truck traffic will be dispersed throughout the working day. School buses are anticipated to be operational in the mornings and evenings, before and after schools are in session, and thus are not anticipated to coincide with the timing of construction truck traffic.

5.0 Proposed Monitoring Programs – OAR 345-021-0010(1)(u)(E)

OAR 345-021-0010(1)(u)(E) The applicant's proposed monitoring program, if any, for impacts to the ability of the providers identified in (B) to provide the services listed in OAR 345-022-0110.

Response: Because PGE does not anticipate the construction and operation of the Solar Components to have long-term significant adverse impacts on the ability of service providers in the analysis area to provide services, PGE does not plan any monitoring programs other than the monitoring efforts required under the National Pollutant Discharge Elimination System and the Traffic Management Plan. PGE will continue to communicate with the Sherman County Planning Department and local service providers to keep them informed of major developments at the Solar Components that could potentially affect public services.

6.0 Conclusion

The evidence provided in this exhibit demonstrate that the Solar Components will not result in a significant adverse impact on the ability of public and private entities in the analysis area to provide

the following services: sewers and sewage treatment, water, stormwater drainage, solid waste management, housing, transportation and traffic safety, police protection, fire protection and emergency response, health care, and schools.

7.0 References

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Figures

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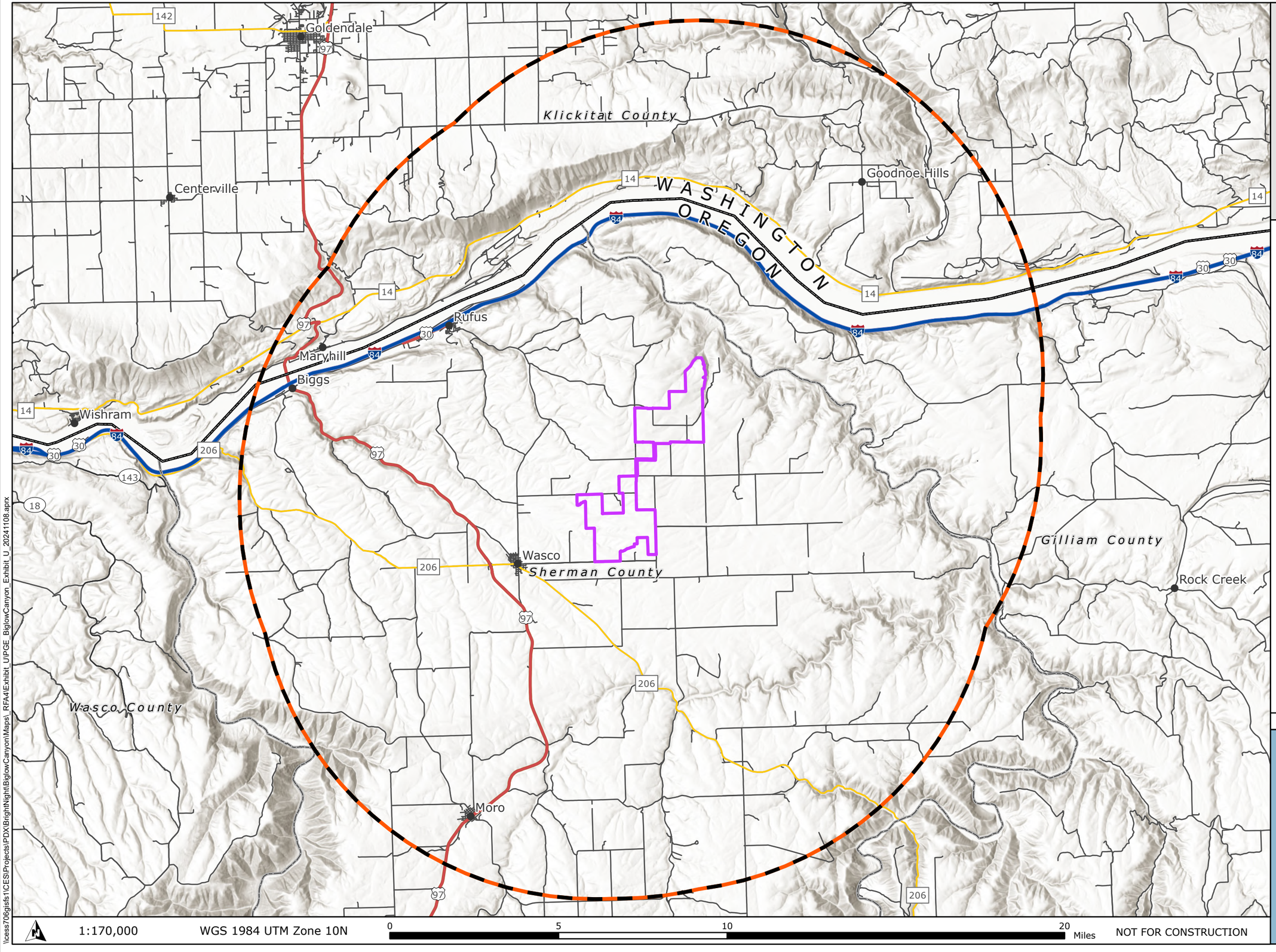
Biglow Canyon Wind Farm Request for Amendment #4

Figure U-1
Analysis Area and Primary Transportation Route

SHERMAN COUNTY, OR



- Solar Micrositing Area
- Analysis Area (10-mile Buffer)
- State Boundary
- County Boundary
- City/Town
- Interstate Highway
- US Highway
- State Highway
- County Highway
- Local Roads

TETRA TECH

PGE

Reference Map

1:170,000 WGS 1984 UTM Zone 10N 0 5 10 20 Miles

NOT FOR CONSTRUCTION

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Biglow Canyon Wind Farm Request for Amendment #4

Figure U-2
Primary Construction Transportation Routes

SHERMAN COUNTY, OR

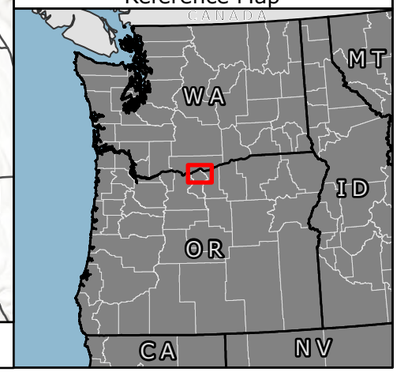
- Solar Micrositing Area
- Analysis Area (10-mile Buffer)
- State Boundary
- County Boundary
- City/Town
- Interstate Highway
- US Highway
- State Highway
- County Highway
- Local Roads
- Primary Transportation Route
- Secondary Transportation Route*

* Construction related commuter traffic only. Not suitable for oversize / overweight traffic conditions.

TETRA TECH

PGE

Reference Map



Goldendale
Centerville
Goodnoe Hills
Klickitat County
WASHINGTON
OREGON
Rufus
Maryhill
Biggs
Wishram
Scott Canyon Rd
Herin Ln
Medler Ln
Wasco
Old Wasco-Heppner Hwy
Klondike Rd
Sherman County
Gilliam County
Rock Creek
Wasco County
Moro
142
14
97
30
84
206
143
18

1:170,000 WGS 1984 UTM Zone 10N 0 5 10 20 Miles NOT FOR CONSTRUCTION

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Attachment U-1. Service Provider Letters

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From:	Krening, Mark
To:	Ziola, Kiana
Cc:	Swift, Megan
Subject:	RE: ATTENTION/RESPONSE REQUESTED: Columbia Ridge Landfill agreement with Biglow Canyon Wind Farm/Biglow Solar
Date:	Tuesday, October 1, 2024 2:05:28 PM
Attachments:	image006.png image007.png image008.png image009.png image010.png image011.png

Good afternoon, Kiana.

WM has two facilities located in Arlington, OR that are adjacent to each other. Columbia Ridge (Subtitle D) Landfill can accept Construction & Demolition Waste and non-hazardous "Special Waste" for disposal. Columbia Ridge has an expected life of more than 100 years. WM's Chemical Waste Management of the Northwest (Subtitle C) TSDF can accept hazardous waste for disposal. Chemical Waste Management of the Northwest has a life expectancy of at least 40 years.

Let me know if you need have any questions, or if you need any additional information. Thank you.

Mark Krening
Senior Industrial Account Executive
Pacific Northwest - Oregon

mkrening@wm.com

503.519.3959

Access WM 24/7 with MyWM

From: Swift, Megan <mswift3@wm.com>
Sent: Tuesday, October 1, 2024 12:14 PM

To: Krening, Mark <MKrening@wm.com>
Subject: FW: ATTENTION/RESPONSE REQUESTED: Columbia Ridge Landfill agreement with Biglow Canyon Wind Farm/Biglow Solar

Hello Mark,
Please see below and address with PGE.

Thank you,

Megan Swift
Industrial Technical Service Representative
Western US Technical Service Center
mswift3@wm.com

Desk: 503-331-2245
Office: 800-963-4776
Vancouver, Washington
TSCWestern@wm.com

From: Ziola, Kiana <KIANA.ZIOLA@tetratech.com>
Sent: Tuesday, October 1, 2024 12:01 PM
To: Swift, Megan <mswift3@wm.com>
Subject: [EXTERNAL] ATTENTION/RESPONSE REQUESTED: Columbia Ridge Landfill agreement with Biglow Canyon Wind Farm/Biglow Solar

Megan,

I am writing to you regarding Portland General Electric Company's proposed Biglow Solar Project (Biglow Solar). Biglow Solar is a planned 385-megawatt solar photovoltaic power generation facility in Sherman County, Oregon, which will be co-located with PGE's existing Biglow Canyon Wind Farm. Biglow Solar will also include a 375 MW Battery Energy Storage System (BESS). For more information on the existing Biglow Canyon Wind Farm, please visit the following link: https://www.oregon.gov/energy/facilities-safety/facilities/Pages/BCW.aspx.

Our current, conservative, estimate of non-hazardous waste anticipated for the facility's construction for an up to 30-month period is 24,000 cubic yards. Tetra Tech is under contract to BrightNight, LLC, which is collaborating with PGE to complete the required amendment of the Biglow Canyon Wind Farm's site certificate. The site certificate amendment request is reviewed by the Oregon Department of Energy (ODOE) and approved by the Energy Facility Siting Council (EFSC). As part of this process, we will provide ODOE with evidence of consultation with local municipalities whom we have been in contact with regarding waste services for the construction of Biglow Solar and that you are able to provide waste services, including any specific constraints you may have (e.g., available capacity). Any letter from you on this matter will not constitute a contract, nor does it obligate you to provide these services.

We would greatly appreciate it if you could provide a letter confirming the ability of your facility to provide waste services for Biglow Solar at your earliest convenience. This letter can be on your official letterhead with your signature, or you may simply reply to this email. Additionally, if possible, please include information on when the landfill is projected to reach capacity, as Biglow Solar has an anticipated lifespan of up to 40 years, including the period for retirement and decommissioning waste disposal.

Thank you in advance for your assistance. Please do not hesitate to contact me if you have any questions or require further information.

Sincerely,

Kiana

Kiana Ziola | Environmental Planner/Project Manager

Direct **+1 (208) 489-2872** | Mobile **+1 (970) 712-0183** | kiana.ziola@tetratech.com
Tetra Tech | *Leading with Science®* | Environmental Services Division
3380 Americana Terrace, Suite 201 | Boise, ID 83706 | tetratech.com

From: Jocelyn Jones
To: Ziola, Kiana
Subject: RE: ATTENTION/RESPONSE REQUESTED: Wasco County Landfill agreement with Biglow Canyon Wind Farm/Biglow Solar
Date: Wednesday, October 9, 2024 9:33:02 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

Good Morning Kiana,
Wasco's current footprint allows for approximately 26 years of capacity with the potential to develop adjacent property that could extend this by 20 plus years. Upon closer of the landfill there is a mandatory 30 year closure plan.

Thanks,

Jocelyn Jones | Oregon Landfills Business Development Manager
Wasco County Landfill and Finley Buttes Regional Landfill
Western Region – Waste Connections
808 Washington Street Suite 300 Vancouver, WA 98660
Mobile: 360.936.0386|jocelynr@wcnx.org

From: Ziola, Kiana <KIANA.ZIOLA@tetratech.com>
Sent: Friday, September 27, 2024 2:26 PM
To: Jocelyn Jones <Jocelyn.Jones@WasteConnections.com>; morgainer@co.wasco.or.us; kristinaf@co.wasco.or.us
Subject: ATTENTION/RESPONSE REQUESTED: Wasco County Landfill agreement with Biglow Canyon Wind Farm/Biglow Solar

Hello,

I am writing to you regarding Portland General Electric Company's proposed Biglow Solar Project (Biglow Solar). Biglow Solar is a planned 385-megawatt solar photovoltaic power generation facility in Sherman County, Oregon, which will be co-located with PGE's existing Biglow Canyon Wind Farm. Biglow Solar will also include a 375 MW Battery Energy Storage System (BESS). For more information on the existing Biglow Canyon Wind Farm, please visit the following link: https://www.oregon.gov/energy/facilities-safety/facilities/Pages/BCW.aspx.

City of Wasco

PO Box 26, 1017 Clark Street, Wasco, OR 97065
Phone: 541-442-5515 Fax: 541-442-5001
wascocity@gmail.com

August 12th, 2024

To Whom It May Concern:

This letter is to confirm that the City of Wasco currently estimates that the City has the capacity to provide the requested 81 million gallons of water during the 30-month construction period, at a maximum daily rate of 200,000 gallons, for the proposed PGE/BrightNight LLC electrical generation expansion project at Biglow Canyon Wind Farm. The City also estimates that it has the capacity during the operations phase for the annual 3 acre-feet (977,554 gallons) of water for washing panels after construction completion. These estimates are based on current conditions and operational capabilities of the City water system. This is not a guarantee to provide any specific quantity or quality of water; however, it may be considered a non-binding letter of intent to supply water in accordance with a water purchase agreement to be negotiated in the future.

Sincerely,

Ian Melzer

Ian Melzer
City Clerk/Recorder
Wasco City Hall

Our current, conservative, estimate of non-hazardous waste anticipated for the facility's construction for an up to 30-month period is 24,000 cubic yards. Tetra Tech is under contract to BrightNight, LLC, which is collaborating with PGE to complete the required amendment of the Biglow Canyon Wind Farm's site certificate. The site certificate amendment request is reviewed by the Oregon Department of Energy (ODOE) and approved by the Energy Facility Siting Council (EFSC). As part of this process, we will provide ODOE with evidence of consultation with local municipalities whom we have been in contact with regarding waste services for the construction of Biglow Solar and that you are able to provide waste services, including any specific constraints you may have (e.g., available capacity). Any letter from you on this matter will not constitute a contract, nor does it obligate you to provide these services.

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Thank you in advance for your assistance. Please do not hesitate to contact me if you have any questions or require further information.

Sincerely,

Kiana

Kiana Ziola | Environmental Planner/Project Manager

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