

# Exhibit V

## Wildfire Prevention and Risk Mitigation

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Wagon Trail Solar Project  
December 2023

Prepared for



Prepared by



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## Acronyms and Abbreviations

Applicant	Wagon Trail Energy Center, LLC c/o NextEra Energy Resources, LLC
CWPP	Oregon Community Wildfire Protection Plan
Facility	Wagon Trail Solar Project
NHMP	Natural Hazards Mitigation Plan
OAR	Oregon Administrative Rules
WMP	Wildfire Mitigation Plan

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## 1.0 Introduction

Wagon Trail Energy Center, LLC c/o NextEra Energy Resources, LLC (Applicant) proposes to construct and operate the Wagon Trail Solar Project (Facility), a solar energy generation facility and related or supporting facilities on approximately 7,450 acres (Site Boundary) in Morrow County, Oregon. This Exhibit V was prepared to meet the submittal requirements in Oregon Administrative Rule (OAR) 345-021-0010(1)(v), including providing evidence that the Project complies with the approval standard in OAR 345-022-0115.

Exhibit V demonstrates that the construction and operation of the Facility, taking into account mitigation, is not likely to result in significant adverse impacts to the provisions listed in OAR 345-022-0115. This document provides an overview of wildfire risk a potential impact in the Facility and outlines recommended steps to mitigate risk. This exhibit (including Attachment V-1) function as the Facility's Wildfire Prevention and Risk Mitigation Plan (WMP), and has been prepared to meet the approval standard under OAR 345-022-0115(1)(a)(b), which requires the WMP to address the following:

*(a) The applicant has adequately characterized wildfire risk within the Analysis Area using current data from reputable sources, by identifying:*

*(A) Baseline wildfire risk, based on factors that are expected to remain fixed for multiple years, including but not limited to topography, vegetation, existing infrastructure, and climate;*

*(B) Seasonal wildfire risk, based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including but not limited to, cumulative precipitation and fuel moisture content;*

*(C) Areas subject to a heightened risk of wildfire, based on the information provided under paragraphs (A) and (B) of this subsection;*

*(D) High-fire consequence areas, including but not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat; and*

*(E) All data sources and methods used to model and identify risks and areas under paragraphs (A) through (D) of this subsection.*

*(b) That the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan approved by the Council. The Wildfire Mitigation Plan must, at a minimum:*

*(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;*

*(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;*

*(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;*

*(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and*

*(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.*

The Morrow County Community Wildfire Protection Plan (CWPP) is a countywide effort of various agencies and local jurisdictions responsible for wildfire suppression and protection to reduce wildland fire risk to communities and the environment (Morrow County 2019). The Morrow County CWPP has been agreed upon and endorsed by a stakeholder group including the Morrow County Board of Commissioners, the District Forester of the Central Oregon District for Oregon Department of Forestry, Boardman Rural Fire Protection District, Heppner Rural Fire Department, and the Umatilla National Forest, Heppner District. Tetra Tech spoke with Tamra Mabbot, Planning Director, and Stephen Wrecsics, GIS Planning Technician, of the Morrow County Planning Department over the phone on June 20 and June 21, 2023, and they agreed that the Morrow County CWPP is an approved plan, but they were not aware if the CWPP has been approved in compliance with OAR Chapter 860, Division 300. Therefore, OAR 345-022-0115(2) could potentially apply. If the Morrow County CWPP has been approved in compliance with OAR chapter 860, division 300, the Energy Facility Siting Council (Council) may issue a site certificate without making the findings under OAR 345-022-0115(1). As the Application for Site Certificate for the Facility has not been determined complete at the time of the effective date of this rule (July 29, 2022), OAR 345-022-0115(3) is not anticipated to apply either and therefore, the standard under OAR 345-022-0115(1) applies to the Facility.

Additionally, Morrow County has adopted a Natural Hazards Mitigation Plan (NHMP) that addresses hazards, vulnerabilities, and associated wildfire risks (Morrow County 2016). The Morrow County NHMP is non-regulatory, but as applicable, the Applicant has incorporated guidance in the Wildfire Mitigation Plan as outlined in the wildfire annex, which is the Morrow County CWPP (Morrow County 2019). For example, a primary objective of the Morrow County CWPP is building a partnership and cooperative environment between “community based” organizations, fire districts, local government and public land management agencies to identifying and prioritizing measures to reduce wildfire risk (Morrow County 2019).



## 2.0 Characterization of Wildfire Risk

This section provides baseline information on how the Applicant has analyzed wildfire risk within the Facility Site Boundary, inclusive of a 0.5-mile buffer around the Site Boundary (analysis area) using the best available data per OAR 345-022-0115(1)(a). The Site Boundary is approximately 7,450 acres, and the analysis area is approximately 19,843 acres.

### 2.1 Baseline Fire Risk – OAR 345-022-0115(1)(a)(A)

*(A) Baseline wildfire risk, based on factors that are expected to remain fixed for multiple years, including but not limited to topography, vegetation, existing infrastructure, and climate;*

The baseline wildfire risk within the Site Boundary is primarily low, but has areas of high risk. The areas of low wildfire risk includes areas of irrigated cultivated crop land cover and relatively flat topography. The few areas of high baseline wildfire risk include higher densities of infrastructure and structures along roads in more steep terrain. The average annual rainfall in the Site Boundary is 13 inches, indicative of a semi-arid environment (NOAA 2022).

#### 2.1.1 Topography

The topography in Morrow County varies from gently rolling plains adjoining the Columbia River to broad plateaus and rounded ridges in the central part of the county, which merges with the more rugged terrain of a forested spur of the Blue Mountains in the southern part of the county (Morrow County 2017). The Site Boundary occupies slopes ranging from approximately zero to 24 percent, with an average slope of 5.5 percent (NRCS 2021). Elevations within the site boundary range from approximately 879 feet above mean sea level to 1,440 feet above mean sea level. The Site Boundary is on the Columbia Plateau physiographic province, which consists of a large plateau formed by a series of basalt flows. The top of the plateau tends to be relatively flat but has been dissected by ephemeral streams into steep-sided canyons. Potential wildfires would travel quicker on steeper slopes and slower on the flatter portions of land within the analysis area. The analysis area is primarily flat topography, but has areas of steeper topography that includes Juniper Canyon, Strawberry Canyon, and Little Juniper Canyon. There are no areas within the Site Boundary or analysis area with slopes greater than 25 degrees (Figure V-1). The Applicant has selected this site for solar development due to its flat topography and southern exposure to the sun. The Site Boundary is bordered all around by farmland and Lexington Echo Highway (OR-207) to the east.

#### 2.1.2 Vegetation

The majority of the habitat classification within the Site Boundary and analysis area is category 6 habitat because the area is considered developed agricultural lands. Based on available National Landcover Dataset data, the Site Boundary is primarily irrigated agriculture (89 percent) with portions of shrub/scrub (5 percent) and herbaceous (4 percent) land covers (NLCD 2019). Outside of the Site Boundary but within the analysis area is also primarily irrigated agriculture but with more herbaceous coverage along the northern and eastern edges of the Site Boundary.

The CWPP Planning Tool derives fuel model groups through broad vegetation data. Fuel Models describe the types of vegetation that are responsible for fire spread and are used in fire behavior modeling. Typical fire regimes in grassland and steppes of the Columbia River Plateau are characterized by a fire return interval (the number of years expected between fires) of 40 to 81 years and expected severity (the net ecological effect of the fire after it has burned) of replacement, which causes greater than 75 percent kill or top-kill of the upper canopy layer (USFS 2012). Fires in the Columbia River Plateau burn in fuel types that are best described as moderate load, dry climate grass-shrub (Fuel Model 122), and low load, dry climate grass (Fuel Model 102). In Fuel Model 122, fire is carried by grasses and shrubs. In Fuel Model 102, the primary fuel is grass, with shrub cover not contributing to the flaming front. Fuel model groups describe the fire-carrying fuel type of the surface fuels. The groups are broad categories (grass, shrub, timber, timber litter, timber understory, and slash/blowdown.) of burnable fuels based on descriptions of live and dead vegetation that represent distinct fuel types, size classes, and load distributions (amounts).

There are two primary fuel models that dominate the Site Boundary and analysis area: Fuel Model 93 and Fuel Model 102 (Table 1, Figure V-2). Fuel Model 93 (agricultural field), is 49 percent of the Site Boundary and 37 percent of the analysis area. This fuel model is land maintained in a non-burnable condition such as irrigated annual crops (NWCG 2021). Fuel Model 102 (low load dry climate grass), which is 45 percent of the Site Boundary and 54 percent of the analysis area, is grass where the fuel bed is more continuous (NWCG 2021). The primary carrier of fire for Fuel Model 102 is grass. There is an additional fuel model present, Fuel Model 122, which is nearly 5 percent of the analysis area. Fuel Model 122’s primary carrier of fire is both grass and shrubs, with a high spread rate and moderate flame length (NWCG 2021). A further discussion of the fuel models appears in Section 2.2.

**Table V-1. Fuel Models**

<b>Fuel Model</b>	<b>Fuel Model Name</b>	<b>Percent of the Site Boundary</b>	<b>Percent of the Analysis Area</b>
93	Agricultural Field	49	37
102	Low load dry climate grass	45	54
91	Urban/Suburban	2	2
121	Low load dry climate grass-shrub	2	<1
101	Short, sparse dry climate grass	<1	<1
99	Bare Ground	<1	<1
103	Low load very coarse humid climate grass	<1	0
122	Moderate load dry climate grass-shrub	0	5
<b>Totals<sup>1</sup></b>		<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>
1. Note that totals may not sum to due to rounding.			

### ***2.1.3 Existing Infrastructure***

The existing infrastructure in the Site Boundary includes farm and ranch buildings and power distribution lines along transportation corridors including Lexington-Echo Highway (OR-207), Bombing Range Road, and Strawberry East Road in the central portion of the Site Boundary. Similarly, there is existing infrastructure including residential properties and distribution lines along Lexington-Echo Highway, Lindsay Road, and Juniper Canyon Road in the southern and eastern portions of the Site Boundary. There are transmission lines that cross Juniper Canyon Road in the western portion of the Site Boundary. Along Strawberry East Road in the central portion of the Site Boundary, there are residential properties, solar arrays, distribution lines, wind turbines, and the Wheatridge Power Plant. There are wind turbines near Grieb-Wood Road in the northernmost portion of the Site Boundary. Also there is a transmission line extending from Strawberry East Road north to Little Juniper Lane north to Grieb-Wood Road. There is a transmission line at the northern edge of the Site Boundary which extends east and west within the analysis area.

South and southwest of the Site Boundary but within the analysis area there is existing infrastructure along Baseline Lane and Juniper Canyon Road including the Lexington Pump, residential properties, and distribution lines. Existing infrastructure east of the Site Boundary but within the analysis area includes wind turbines and solar arrays along Lexington Echo Highway. There is also existing infrastructure north of the Site Boundary but within the analysis area along Grieb Lane including residential properties. The roads throughout the analysis area would act as firebreaks including Baseline Lane, Strawberry East Road, Juniper Canyon Road, Lexington Echo Highway, Grieb Lane, Grieb-Wood Road, Little Juniper Lane, Bombing Range Road, Barak Martin Road, and Lindsay Road.

### ***2.1.4 Climate***

The area has a cooler, semi-arid climate. Based on available monthly normals of climate data between 1991 and 2020 for the Heppner station approximately 12 miles south of the Site Boundary, the driest months on average are July, August, and September which have averages of 0.31, 0.28, and 0.43 inches per month, respectively (Table 3; NOAA 2022). These three summer months are also the hottest months with average daily max temperatures of 86°F, 86°F, and 77°F, respectively (Table 3; NOAA 2022). The total average annual precipitation for the area is 13 inches per year which is indicative of a semi-arid climate (NOAA 2022). Additionally, the area receives approximately 13 inches of snow in the winter months with the coldest month, December, having approximately 4 inches of snowfall, an average daily maximum temperature of 43°F, and an average daily minimum temperature of 27°F (Table 2; NOAA 2022).

**Table V-2. Summary of Monthly Normal Temperature and Precipitation at Heppner Station (1991 - 2020)**

Month	Max Temperature (°F)	Avg Temperature (°F)	Avg Precipitation (inch)
January	43.6	35.6	1.32
February	47.4	38.3	1.07
March	54.7	44.2	1.36
April	60.8	49.3	1.46
May	69.4	56.9	1.71
June	76.6	63.1	1.35
July	86.8	71	0.31
August	86.1	70.4	0.28
September	77.3	62.8	0.43
October	63.8	51.7	1.17
November	51.0	41.6	1.37
December	42.5	34.9	1.26

Source: Heppner Station, OR US USC00353827 (NOAA 2022).

**2.1.5 Burn Probability**

Burn probability is the likelihood of a wildfire greater than 250 acres burning a given location, based on wildfire simulation modeling. This is an annual burn probability, adjusted to be consistent with the historical annual area burned. The burn probability classes within the Site Boundary range from non-burnable (a majority of non-burnable fuel types such as water, agriculture, or urban) to high burn probability, which indicates up to a 1-in-100 chance of a wildfire greater than 250 acres in a single year. The areas of high probability in the Site Boundary are primarily in the central and southwestern portions (Figure V-3). The analysis area has similar burn probabilities, consisting of primarily non-burnable (agricultural areas) or high probability (Table 3; Figure V-3). The areas of high probability, 37 percent of the Site Boundary and 45 percent of the analysis area, include areas of herbaceous or shrub vegetation and existing infrastructure in the northwestern, southwestern, and southeastern portions of the analysis area (Figure V-3). There are no areas of high (up to 1-in-50 chance) or very high (up to 1-in-25 chance) burn probability within the analysis area.

**Table V-3. Burn Probability**

Burn Probability	Percent of Site Boundary	Percent of Analysis Area
Non-burnable	52	40
<b>Low</b> (<= 1-in-10,000)	<1	<1
<b>Low</b> (1-in-10,000 to 1-in-5,000)	<1	<1

<b>Burn Probability</b>	<b>Percent of Site Boundary</b>	<b>Percent of Analysis Area</b>
<b>Moderate</b> (1-in-5,000 to 1-in-1,000)	4	4
<b>Moderate</b> (1-in-1,000 to 1-in-500)	7	10
<b>High</b> (1-in-500 to 1-in-100)	37	45
<b>High</b> (1-in-100 to 1-in-50)	0	0
<b>Very High</b> (1-in-50 to 1-in-25)	0	0
<b>Total<sup>1</sup></b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>
1. Note that totals may not sum to due to rounding.		

**2.2 Seasonal Fire Risk – OAR 345-022-0115(1)(a)(B)**

*(B) Seasonal wildfire risk, based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including but not limited to, cumulative precipitation and fuel moisture content;*

Seasonal wildfire risk is based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including cumulative annual and monthly precipitation, weather advisories which include fuel moisture content data, and an evaluation of Average Flame Length which is the average length of flames expected during a fire, given local fuel and weather conditions. There are no historic or active fire locations or perimeters within the Site Boundary or analysis area (CWPP 2022, NIFC 2019, NIFC 2020, NIFC 2021, NIFC 2022a, Short 2017). The nearest historic fire was the 2015 Boardman Fire, which was less than 0.5 miles northwest of the analysis area.

The seasonal wildfire risk within the Site Boundary and analysis area is moderate based on the seasonally dry climate, potential for a high rate of fire spread based on Average Flame Length, and low average rainfall during the summer months.

**2.2.1 Precipitation**

Based on available climate data for the Heppner station approximately 12 miles south of the Site Boundary, the driest months on average include July, August, and September which have averages of 0.31, 0.28, and 0.43 inches per month, respectively (Table 2; NOAA 2022). All other months have between 1 and 2 inches of precipitation per month. These three summer months are also the hottest months with average daily max temperatures of 86°F, 86°F, and 77°F, respectively (Table 2; NOAA 2022). The total average annual precipitation for the area is 13 inches per year which is indicative of a semi-arid climate (Table 2; NPS 2019, NOAA 2022).

**2.2.2 Fuel Moisture Content**

Fuel moisture content varies depending on changes in weather (both seasonally and during short periods) and determination of exact fuel-moisture values at any time is complicated by both the

nature of the fuels and their responses to the environment. The higher the fuel moisture content, the more difficult it is for fires to ignite and propagate. Living plants and dead fuels respond differently to weather changes; the drying and wetting processes of dead fuels is such that the moisture content of these fuels is strongly affected by weather changes. These moisture contents are influenced by precipitation, air moisture, air and surface temperatures, wind, cloudiness, as well as by fuel factors such as surface to volume ratio, compactness, and arrangement. Fuel moisture content is dynamic throughout the year and throughout the day (USFS 1970). Therefore, current conditions such as precipitation to-date, current fuel moisture data, and local weather may increase or decrease seasonal fire risk. The Northwest Interagency Coordination Center predictive services group provides fire weather advisories (such as Red Flag Warnings) and fuel and fire behavior advisories (including fuel status reports and fuel moisture content predictions) for each predictive service area in the northwest. The Site Boundary is located within Predictive Service Area E3 (NIFC 2022b). During construction and operation, fire danger forecasts would be monitored, and Facility activities and mitigation measures would be adjusted based on their annual variations under the methods and measures identified in the Emergency Management Plan and the WMP.

Fuel moisture for types of vegetation varies. For example, annual grasses may reach a highly flammable stage while broadleaf vegetation is still in prime growth and not in a peak flammable stage (USFS 1970). Additionally, living foliage of evergreen trees and shrubs can burn even with moisture contents over 100 percent. Typical fire regimes in grassland and steppes of the Columbia River Plateau are characterized by a fire return interval (the number of years expected between fires) of 40 to 81 years and expected severity (the net ecological effect of the fire after it has burned) of replacement, which causes greater than 75 percent kill or top-kill of the upper canopy layer (USFS 2012). Fires in the Columbia River Plateau burn in fuel types that are best described as moderate load, dry climate grass-shrub (Fuel Model 122), and low load, dry climate grass (Fuel Model 102). Fuel Models describe the types of vegetation that are responsible for fire spread and are used in fire behavior modeling. In Fuel Model 122, fire is carried by grasses and shrubs. In Fuel Model 102, the primary fuel is grass, with shrub cover not contributing to the flaming front.

The analysis area is primarily grassland (Fuel Model 102) and irrigated agriculture (Fuel Model 93) with smaller areas of grassland mixed with shrubland (Fuel Model 122) (Table 1). Along the northwestern and eastern edges within the analysis area, there are pockets of more herbaceous and shrub/scrub vegetation, Fuel Model 122 (Figure V-2).

### ***2.2.3 Flame Length***

Average Flame Length shows the average length of flames expected, given local fuel and weather conditions (CWPP 2018). Flame lengths have potential to exceed the mapped values shown, even under normal weather conditions. Flame length is commonly used as a direct visual indication of fire intensity and is a primary factor to consider for firefighter safety and for gauging potential impacts to resources and assets. A majority of the Site Boundary has a modeled average flame length of 0 feet (52 percent) and 4 – 8 feet (30 percent) (Table 4). The analysis area has a higher

percentage of areas of greater than 8 feet (25 percent) of average flame length, with less than 1 percent of the analysis area modeled with average flame length 8 – 11 feet (Figure V-4; Table 4; CWPP 2018). The fire spread in areas of 4 – 8 feet average flame length can be high, and the fire spread in areas that have an average flame length of 8 – 11 feet can be very high. A fire in these areas can be expected to have extreme intensity and extremely difficult to control. The areas with an average flame length of 8 – 11 feet of are along Lexington Echo Highway, Strawberry East Road, Barak-Martin Road in central portion of the Site Boundary and between Juniper Canyon Road and Lindsay Road in the southwest.

Outside of the Site Boundary but within the analysis area includes areas of greater than 11 feet of average flame length. These areas of greater than 11 feet of average flame length are along Barak-Martin Road south of Juniper Lane as well as west of the northern portion of the Site Boundary between Juniper Canyon Road and Grieb-Wood Road (Figure V-4).

**Table V-4. Average Flame Length**

<b>Average Flame Length (feet)</b>	<b>Percent of Site Boundary</b>	<b>Percent of Analysis Area</b>
0	52	40
>0-4	30	34
4-8	17	25
8-11	1	1
>11	0	0
<b>Totals</b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>

**2.3 Areas of Heightened Risk – OAR 345-022-0115(1)(a)(C)**

*(C) Areas subject to a heightened risk of wildfire, based on the information provided under paragraphs (A) and (B) of this subsection;*

Areas of heightened risk are described using the CWPP Risk to Assets, potential impacts to people and property, and potential impacts to infrastructure datasets. Risk to assets includes likelihood and consequences of wildfire on mapped highly valued assets including critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures (CBI 2020). People and property data take into account housing density based on residential data and U.S. Forest Service private inholdings (Pyrologix 2018). Infrastructure includes critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures (Pyrologix 2018).

The Site Boundary contains low to high risk to assets (Table 5, Figure V-5). A majority (95 percent) of the Site Boundary contains no mapped assets, and therefore no risk to assets. The areas with high risk to assets include along Lexington-Echo Highway through the southeastern portion of the Site Boundary, Bombing Range Road in the eastern portion of the Site Boundary, Strawberry Lane across the middle of the Site Boundary, and in the southwestern corner of the Site Boundary along Juniper Canyon Road. In addition to those areas, areas of heightened risk outside of the Site

Boundary but within the analysis area include in the south along Baseline Lane and in the north along Juniper Canyon Road and where the analysis area meets the southern edge of the Boardman Bombing Range.

**Table V-5. Areas of Heightened Risk**

Risk to Assets	Percent of the Site Boundary	Percent of the Analysis Area
Very High	0	0
High	<0.5	<0.5
Moderate	3	4
Low	2	3
No Data <sup>1</sup>	95	93
<b>Total<sup>2</sup></b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>
1. There are no mapped assets combined: critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures (CWPP 2018, Pyrologix 2018). 2. 1. Note that totals may not sum to due to rounding.		

Within the Site Boundary and analysis area, existing structures include distribution and transmission lines, wind turbines, the Lexington Pump, the Blue Ridge Substation, and a few residential properties. If a wildfire were ignited onsite, the areas subject to heightened risk would be the areas associated with these structures. The distribution line poles and residential structures may be considered areas of high fire consequence as there is the potential for high fire hazard for these structures.

The Site Boundary primarily (95 percent) does not have any mapped assets, and therefore no risk to assets. Of the approximately 5 percent of the Site Boundary that has risk to assets, approximately 3 percent is moderate risk to assets and 2 percent is low risk to assets. Any time assets are added to a landscape, wildfire risk will increase. With the addition of infrastructure that will result from Facility construction, it is expected that more of the area would fall into moderate to high categories for wildfire risk to assets.

Additional areas of heightened risk include moderate potential for impacts areas to people and property is approximately 1 percent of the Site Boundary. These areas are centered around farm and ranch buildings and infrastructure along Lexington-Echo Highway, Bombing Range Road, and Strawberry East Road in the southeastern portion of the Site Boundary and along Juniper Canyon Road in the southwestern portion of the Site Boundary (Figure V-6). Similarly, there are low to moderate potential for impact to infrastructure along Lexington-Echo Highway in the southeast and low to high potential for impact to infrastructure along Juniper Canyon Road in the southwestern portions of the Site Boundary (Figure V-7).

South and southwest of the Site Boundary and within the analysis area there are additional moderate and high potential impacts to people and property that cover approximately 1 percent and less than 0.5 percent, respectively, of the analysis area. These areas are along Baseline Lane and Juniper Canyon Road. There is also additional low to moderate potential impact to infrastructure



north of the Site Boundary but within the analysis area along Lexington-Echo Highway in the east and along Juniper Canyon Road and southern edge of Boardman Bombing Range.

**Table V-6. High Fire Consequence Areas**

Asset	Potential Impact	Percent of the Site Boundary	Percent of the Analysis Area
People and Property	Very High	0	0
	High	0	<0.5
	Moderate	1	1
	Low	3	2
	No Data <sup>1</sup>	96	97
	<b>Total</b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>
Infrastructure	Very High	<0.5	<0.5
	High	<0.5	<0.5
	Moderate	<0.5	<0.5
	Low	2	3
	No Data <sup>2</sup>	98	97
	<b>Total</b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>

Note that totals may not sum due to rounding.

1. There are no housing unit density and U.S. Forest Service private inholdings mapped in the area or simulated wildfires did not burn the area due to low historical occurrence/absence of burnable fuel (CWPP 2018, Pyrologix 2018).

2. There is no mapped infrastructure in the area or simulated wildfires did not burn the area due to low historical occurrence or absence of burnable fuel (CWPP 2018, Pyrologix 2018).

**2.4 High-Fire Consequence Areas – OAR 345-022-0115(1)(a)(D)**

*(D) High-fire consequence areas, including but not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat; and*

Approximately 27 percent of the Site Boundary has low wildfire risk (Table 7). Approximately 6 percent of the Site Boundary has moderate to very high wildfire risk. The areas with high to very high wildfire risk are along Lexington-Echo Highway through the southeastern portion of the Site Boundary, Bombing Range Road in the eastern portion of the Site Boundary, Strawberry Lane across the middle of the Site Boundary, and a portion in the southwest corner along Juniper Canyon Road due to more shrub/scrub vegetation. The areas with high to very high wildfire risk within the analysis area immediately outside of the Site Boundary include in the south along Baseline Lane and in the north along Juniper Canyon Road and where the analysis area meets the southern edge of the Boardman Bombing Range.

**Table V-7. Overall Fire Risk**

Overall Fire Risk Rating	Percent of the Site Boundary	Percent of the Analysis Area
Very High	1	1
High	3	4
Moderate	2	2
Low	21	27
Low Benefit	0	4
Benefit	<0.5	<0.5
No Data <sup>1</sup>	73	62
<b>Total<sup>2</sup></b>	<b>100 (7,450 acres)</b>	<b>100 (19,843 acres)</b>
1. There are no highly valued resources or assets (such as critical infrastructure, developed recreation, housing unit density) mapped in the area, or simulated wildfires did not burn the area due to low historical occurrence/absence of burnable fuel (CWPP 2018, Pyrologix 2018). 2. Note that totals may not sum due to rounding.		

Wildfire risk is fire hazard multiplied by the vulnerability of assets in a fire’s path. The hazard side of the equation includes both the likelihood of a wildfire ignition and its expected intensity. The vulnerability side includes the assets (human life and property) in the path of the fire and the susceptibility of those assets to the fire (Pyrologix 2018). Baseline Fire Risk is based on factors that remain constant for periods of years and is measured by the Overall Wildfire Risk data in the CWPP tool (CWPP 2018).

Overall Fire Risk Rating measures hazard via a Burn Probability model derived from the FSim Wildfire Risk Simulator (Pyrologix 2018). FSim encompasses information on fuels, weather, and topography, in addition to historic fire occurrences. Model outputs include fire size distribution, and fire intensity (Pyrologix 2018). Overall Fire Risk Rating measures vulnerability of assets by the presence of the assets within the fires path, and the likelihood of that asset being harmed.

Risk ratings range from very high wherein many resources are vulnerable, to beneficial, where fires may improve resources such as timber stands or wildlife habitat. The percent of the Site Boundary that falls into each Fire Risk Rating appears in Table 7 and displayed on Figure V-8. The Site Boundary and analysis area primarily contain no fire risk rating data (Table 7). Approximately 21 percent of the Site Boundary contains low fire risk rating and 27 percent of the analysis area contains low fire risk rating. Approximately 6 percent of the Site Boundary includes moderate to very high fire risk while nearly 7 percent of the analysis area contains moderate to very high fire risk. Moderate to very high wildfire risk areas are focused along roadways where there is more varied terrain, residential buildings, infrastructure, and shrub-scrub vegetation. These corridors within the Site Boundary and analysis area include Lexington-Echo Highway, Juniper Canyon, Strawberry Canyon, and Little Juniper Canyon.

## 2.5 Data Sources and Methods – OAR 345-022-0115(1)(a)(E)

*(E) All data sources and methods used to model and identify risks and areas under paragraphs (A) through (D) of this subsection.*

Data from the CWPP planning tool was used for the analyses provided in response to OAR 345-022-0115(1)(a) (CWPP 2018). The statewide wildfire risk map was developed and will be updated and maintained per requirements under Senate Bill 762 and associated administrative rules. The map shows the assigned risk classification (extreme, high, moderate, low and no risk) for every tax lot in the state. For those tax lots that are both within the wildland-urban interface and classified as high or extreme risk, the owners will receive written notification from Oregon Department of Forestry and may be subject to future changes to defensible space and home building codes. However, as of August 4, 2022, the statewide wildfire risk map (that was released on June 30, 2022, as an outcome of Senate Bill 762) has been temporarily withdrawn for further refinement. The Oregon Explorer's data presented are from the 2018 Quantitative Wildfire Risk Assessment (CWPP 2018). The CWPP provides a clearinghouse of fire behavior and fire effects data to aid decision makers in charge of reducing wildfire risk in their communities. These data were analyzed within Site Boundary and within the analysis area. The following Oregon datasets were used to inform this analysis (CWPP 2018):

- Slope
- Fuel Models
- Average Flame Length
- Burn Probability
- Wildfire Risk to Assets
- Potential Impact to People and Property
- Potential Impact to Infrastructure
- Overall Wildfire Risk

## 2.6 Wildfire Mitigation Plan – OAR 345-022-0115(1)(b)

*(b) That the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan approved by the Council. The Wildfire Mitigation Plan must, at a minimum:*

Attachment V-1 has been prepared to meet the approval standard under OAR 345-022-0115(1)(b).

*(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;*

See section 2.0 of the Draft WMP (Attachment V-1).

*(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;*

See Section 3.0 of the Draft WMP (Attachment V-1).

*(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;*

See Section 4.0 of the Draft WMP (Attachment V-1).

*(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and*

See Sections 4.0 and 5.0 of the Draft WMP (Attachment V-1).

*(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.*

See section 6.0 of the Draft WMP (Attachment V-1).

### **3.0 Wildfire Risk Assessment Conclusion**

During construction and operation, equipment use, and other human activity will present increased chance of ignition, such as when welding and metal cutting for foundation rebar frames will take place, and vehicles and construction equipment may be used in areas of tall, dry grass. Mitigation measures such as spark arrestors, travel restrictions, and prohibitions on smoking will help to reduce those risks. Should an ignition occur, mitigation measures such as vegetation management, fire weather watches, Red Flag Warnings, and emergency response procedures will reduce overall fire risk.

Attachment V-1 should be considered a living document that will be amended based on changes to any of the fire risk or consequence factors over time. The Applicant will consult with Morrow County, the local fire department, and the Morrow County Emergency Manager as appropriate. Likewise, mitigation actions described in Attachment V-1 should be continually updated based on current and future conditions. The Applicant will conduct an annual review of wildfire risk during the operational period to ensure it continues to meet the requirements of OAR 345-022-115.

Per the data reviewed and presented here, wildfire risk and consequences of fire in the Site Boundary are typical for the vegetation type and fire regime encountered in Columbia Basin Plateau. Within the Site Boundary, assets that could currently be impacted include residential structures, agricultural areas, and infrastructure along roads. If a wildfire did ignite near those assets, they could be at risk. After construction of the Facility, more assets such as the solar arrays, associated infrastructure, and converted irrigated agriculture vegetation could be in the path of

wildfire, and overall risk within the Site Boundary would increase. It is anticipated that due to moderate probability of ignition and moderate expected intensity as measured by average flame length, fuels, weather, and topography, post construction overall fire risk would be moderate. See Exhibit B for further fire prevention and control measures. See Attachment V-1 for additional details on vegetation management during operation.

This exhibit provides evidence that the Council’s wildfire risk management standard (OAR 345-022-0115) will be met as wildfire risk introduced by the construction and operation of the Project will be minimized through the implementation of the wildfire mitigation plan. Therefore, the Council may conclude that the Facility will comply with OAR 345-022-0115.

## **4.0 Submittal Requirements and Approval Standards**

### **4.1 Submittal Requirements**

**Table V-8. Submittal Requirements Matrix**

<b>Requirement</b>	<b>Location</b>
OAR 345-021-0010(1)(v) Information about wildfire risk within the analysis area, providing evidence to support findings by the Council as required by OAR 345-022-0115, including but not limited to, a draft Wildfire Mitigation Plan that satisfies the requirements of OAR 345-022-0115(1)(b).	Section 1.0 and Attachment V-1

### **4.2 Approval Standards**

**Table V-9. Approval Standard**

<b>Requirement</b>	<b>Location</b>
<b>OAR 345-022-0115</b>	-
(1) To issue a site certificate, the Council must find that:	-
(a) The applicant has adequately characterized wildfire risk within the analysis area using current data from reputable sources, by identifying:	Section 2.0
(A) Baseline wildfire risk, based on factors that are expected to remain fixed for multiple years, including but not limited to topography, vegetation, existing infrastructure, and climate;	Section 2.1
(B) Seasonal wildfire risk, based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including but not limited to, cumulative precipitation and fuel moisture content;	Section 2.2
(C) Areas subject to a heightened risk of wildfire, based on the information provided under paragraphs (A) and (B) of this subsection;	Section 2.3
(D) High-fire consequence areas, including but not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat; and	Section 2.4

<b>Requirement</b>	<b>Location</b>
(E) All data sources and methods used to model and identify risks and areas under paragraphs (A) through (D) of this subsection.	Section 2.5
(b) That the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan approved by the Council. The Wildfire Mitigation Plan must, at a minimum:	Section 3.0, and Attachment V-1
(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;	Section 3.0, and Attachment V-1
(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;	Section 3.0, and Attachment V-1
(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;	Section 3.0, and Attachment V-1
(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and	Section 3.0, and Attachment V-1
(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.	Section 3.0, and Attachment V-1
(2) The Council may issue a site certificate without making the findings under section (1) if it finds that the facility is subject to a Wildfire Protection Plan that has been approved in compliance with OAR chapter 860, division 300.	Section 1.0
(3) This Standard does not apply to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 on or before the effective date of this rule.	Section 1.0

## 5.0 References

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


# Figures

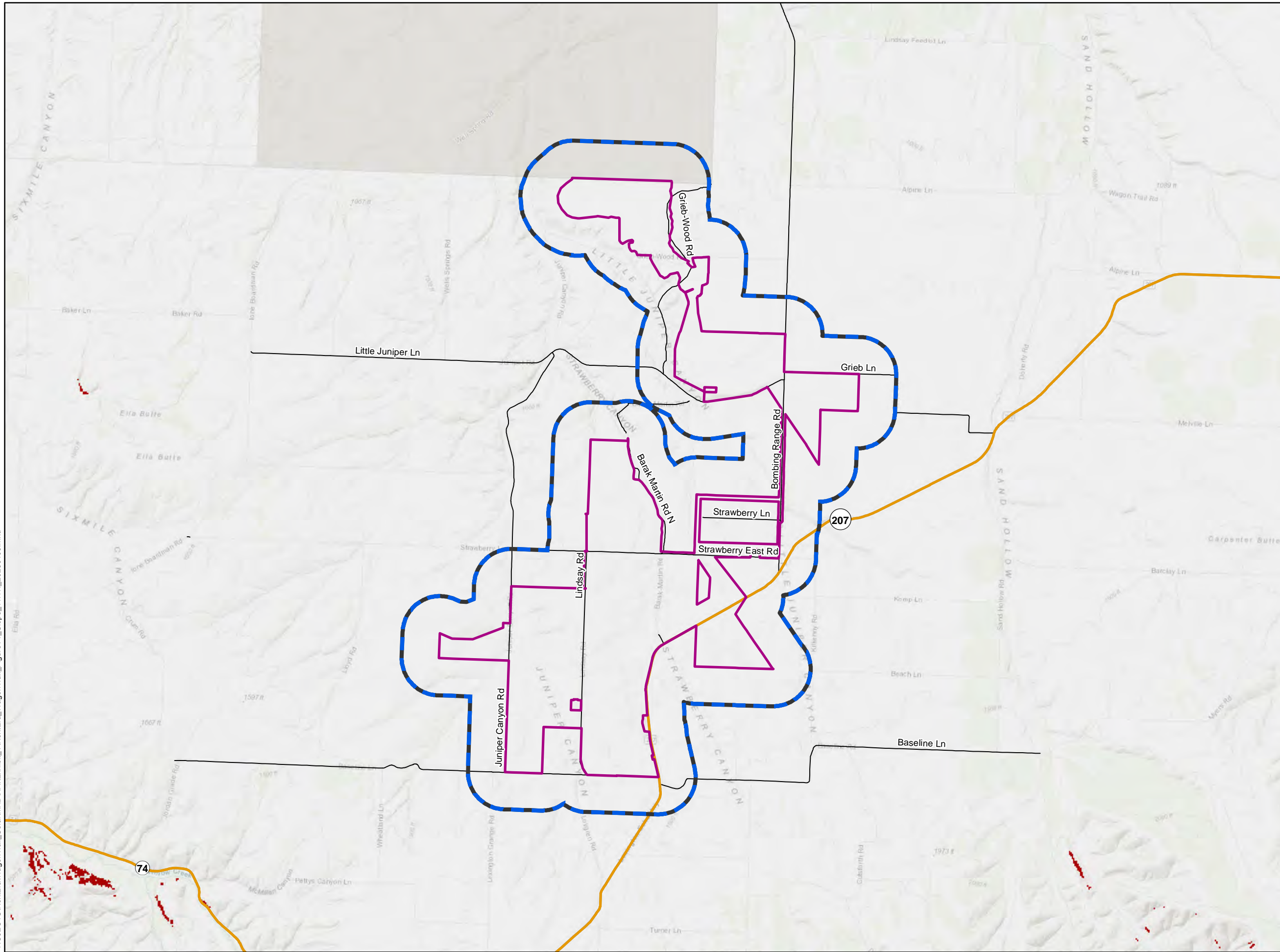
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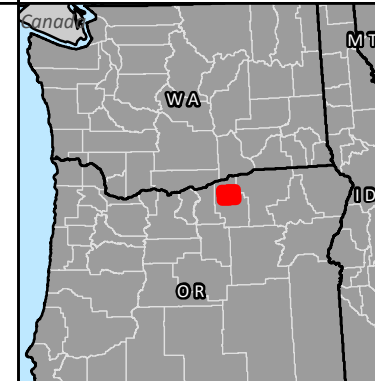
# Wagon Trail Solar Project

## Figure V-1 Slope

MORROW COUNTY, OREGON

-  Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  State Highway
  -  Local Road
  -  County Boundary
- Slope
-  0 - 25 degrees
  -  25 - 50 degrees

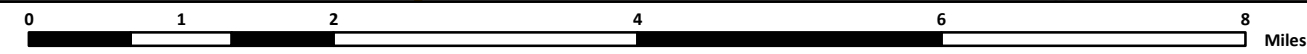


Data Sources	Reference Map
NextEra-Project Infrastructure; USDA-Aerial Imagery; ESRI- County Boundaries	

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















NOT FOR CONSTRUCTION

# Wagon Trail Solar Project

## Figure V-2 Fuel Models

MORROW COUNTY, OREGON

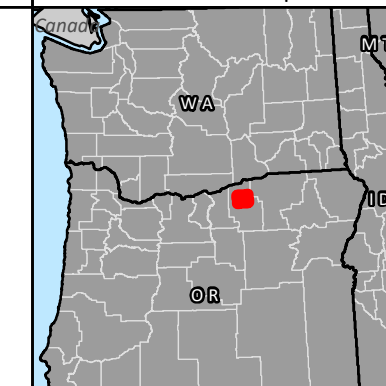
-  Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  State Highway
  -  Local Road
  -  County Boundary
- Fuel Model
-  91
  -  93
  -  99
  -  101
  -  102
  -  103
  -  121
  -  122
  -  142
  -  182
  -  183
  -  186



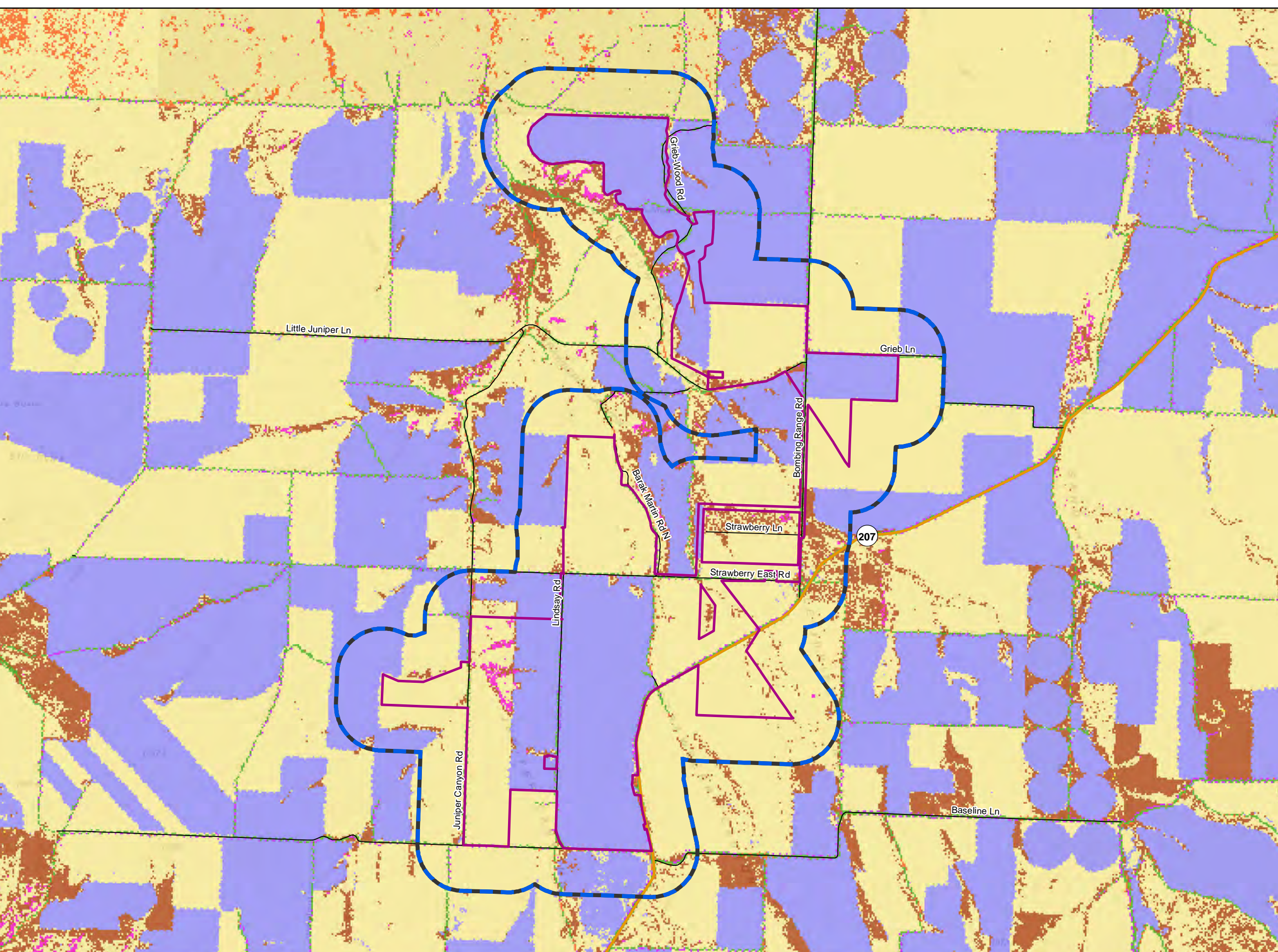
Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map



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# Wagon Trail Solar Project

## Figure V-3 Burn Probability

MORROW COUNTY, OREGON

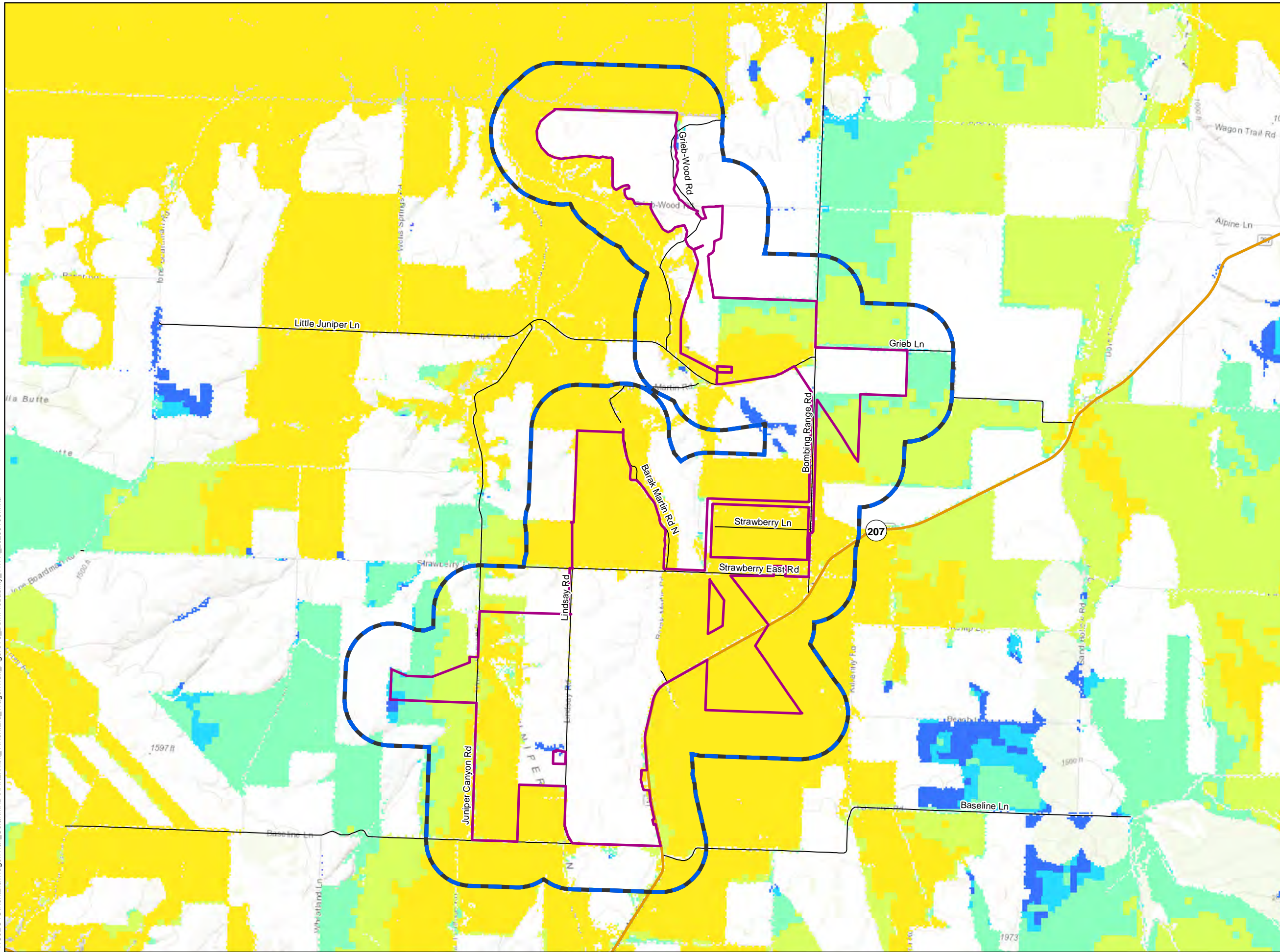
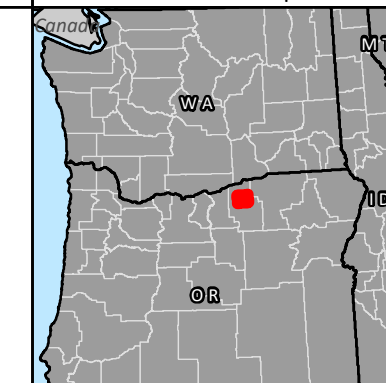
- Analysis Area (0.5-mile Buffer)
  - Site Boundary
  - State Highway
  - Local Road
  - County Boundary
- Burn Probability**
- 0
  - 0 - 0.0001 Low (<= 1-in-10,000)
  - 0.0001 - 0.0002 Low (1-in-10,000 to 1-in-5,000)
  - 0.0002 - 0.001 Moderate (1-in-5,000 to 1-in-1,000)
  - 0.001 - 0.002 Moderate (1-in-1,000 to 1-in-500)
  - 0.002 - 0.01 High (1-in-500 to 1-in-100)
  - 0.01 - 0.02 High (1-in-100 to 1-in-50)
  - 0.02 - 0.04 Very High (1-in-50 to 1-in-25)



Data Sources

Reference Map

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

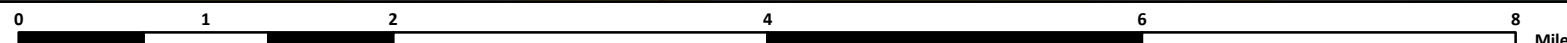


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





8 Miles

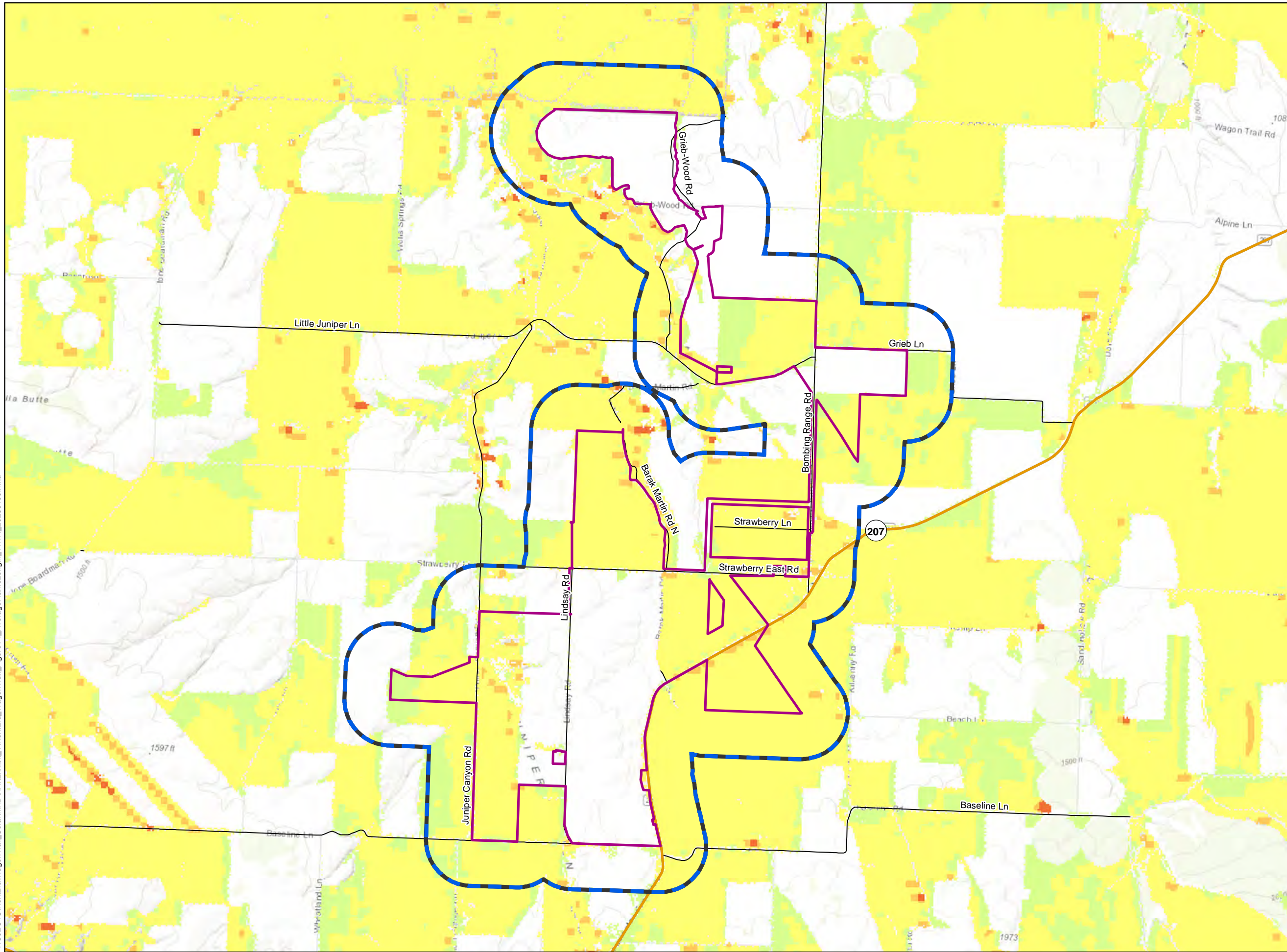
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# Wagon Trail Solar Project

## Figure V-4 Average Flame Length

MORROW COUNTY, OREGON

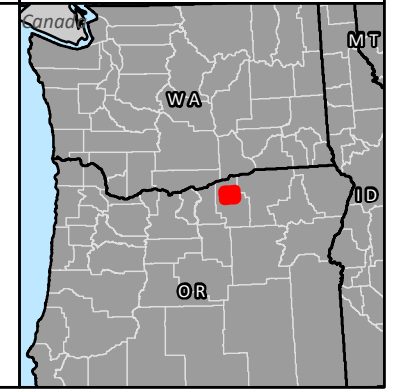
-  Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  State Highway
  -  Local Road
  -  County Boundary
- Average Flame Length
-  0
  -  >0 - 4 ft
  -  4 - 8 ft
  -  8 - 11 ft
  -  > 11 ft



Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map

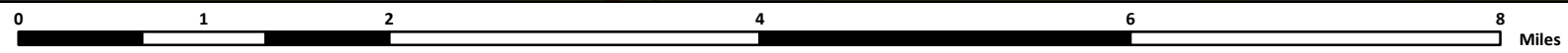


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





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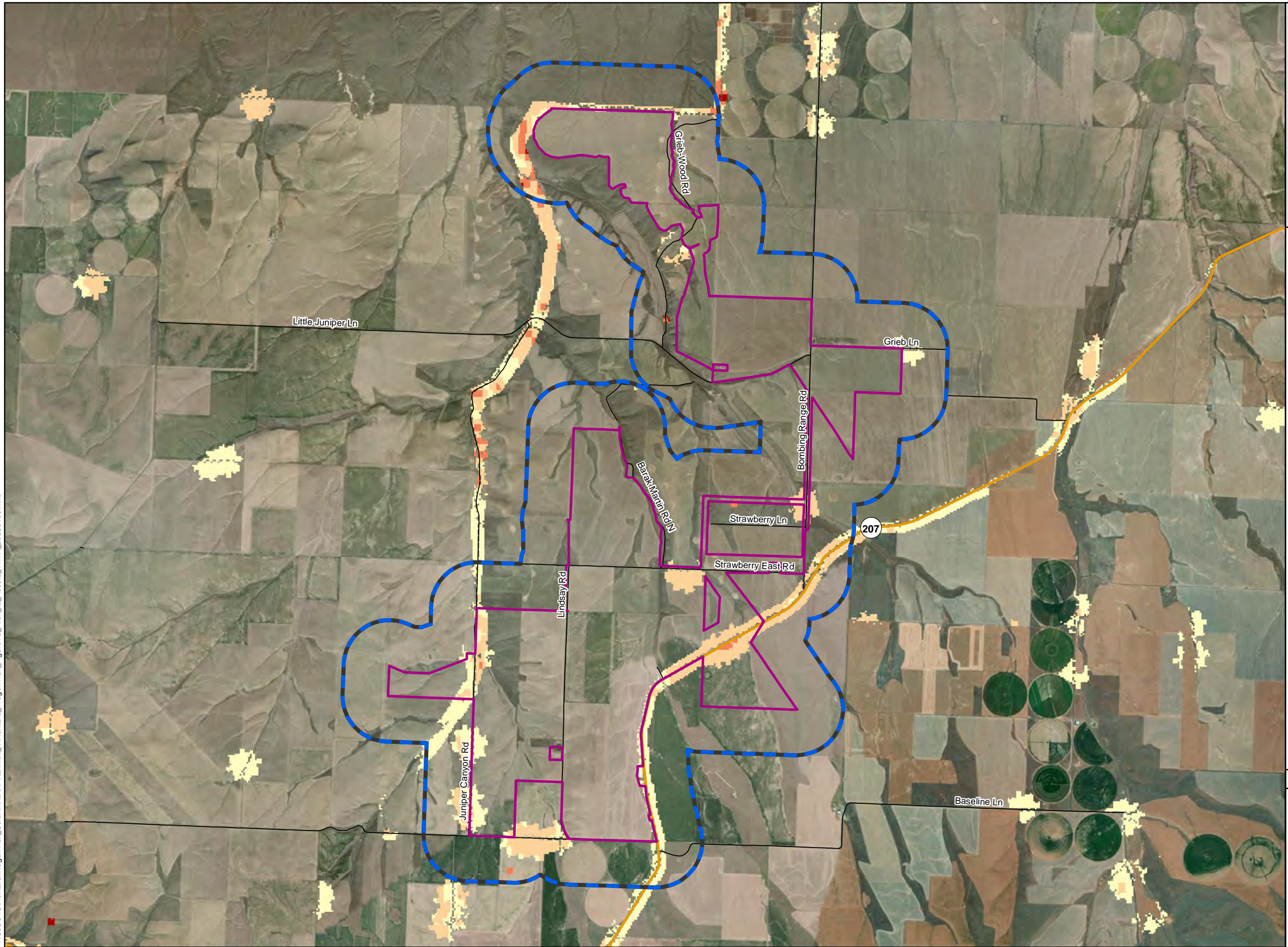
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# Wagon Trail Solar Project

Figure V-5  
Wildfire Risk to Assets

MORROW COUNTY, OREGON

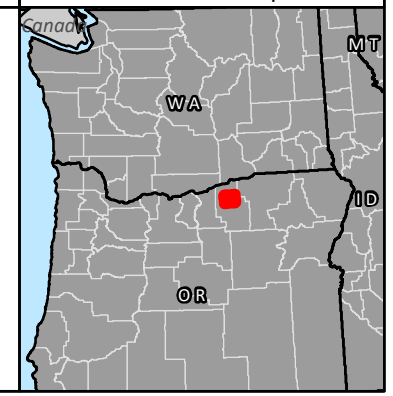
-  Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  State Highway
  -  Local Road
  -  County Boundary
- Wildfire Risk to Assets
-  Very High
  -  High
  -  Moderate
  -  Low



Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map

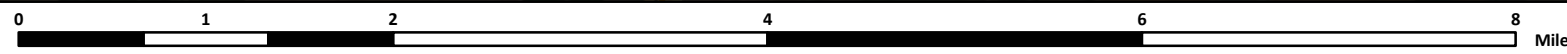


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



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# Wagon Trail Solar Project

Figure V-6  
Wildfire Potential Impacts to  
People and Property

MORROW COUNTY, OREGON

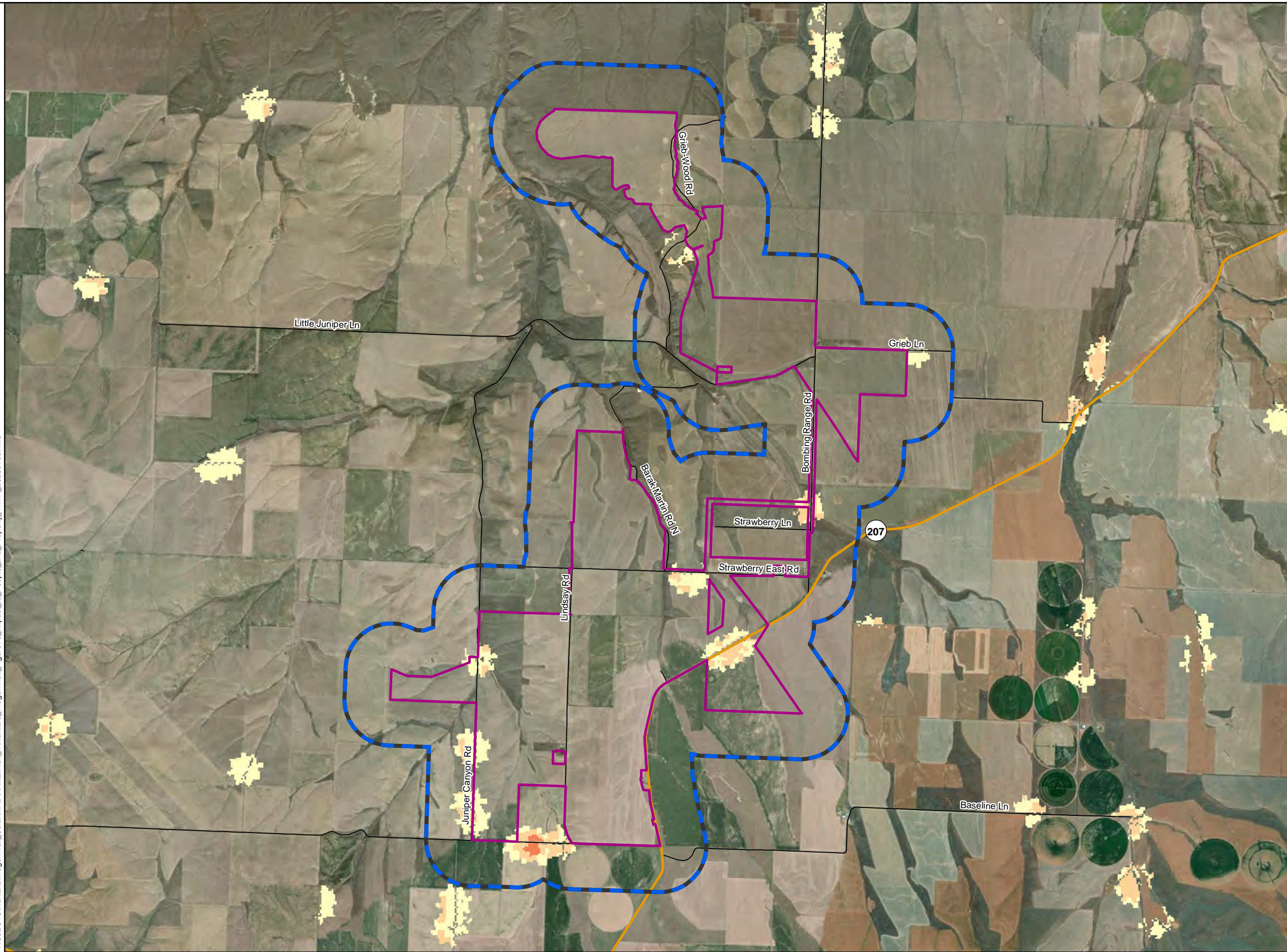
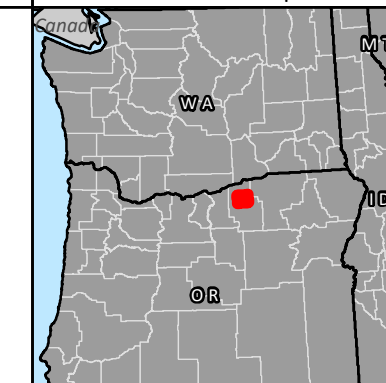
-  Site
  -  Analysis Area (0.5-mile)
  -  State
  -  County
- Potential Impacts to People and Property
-  High
  -  Moderate
  -  Low



Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map



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Miles










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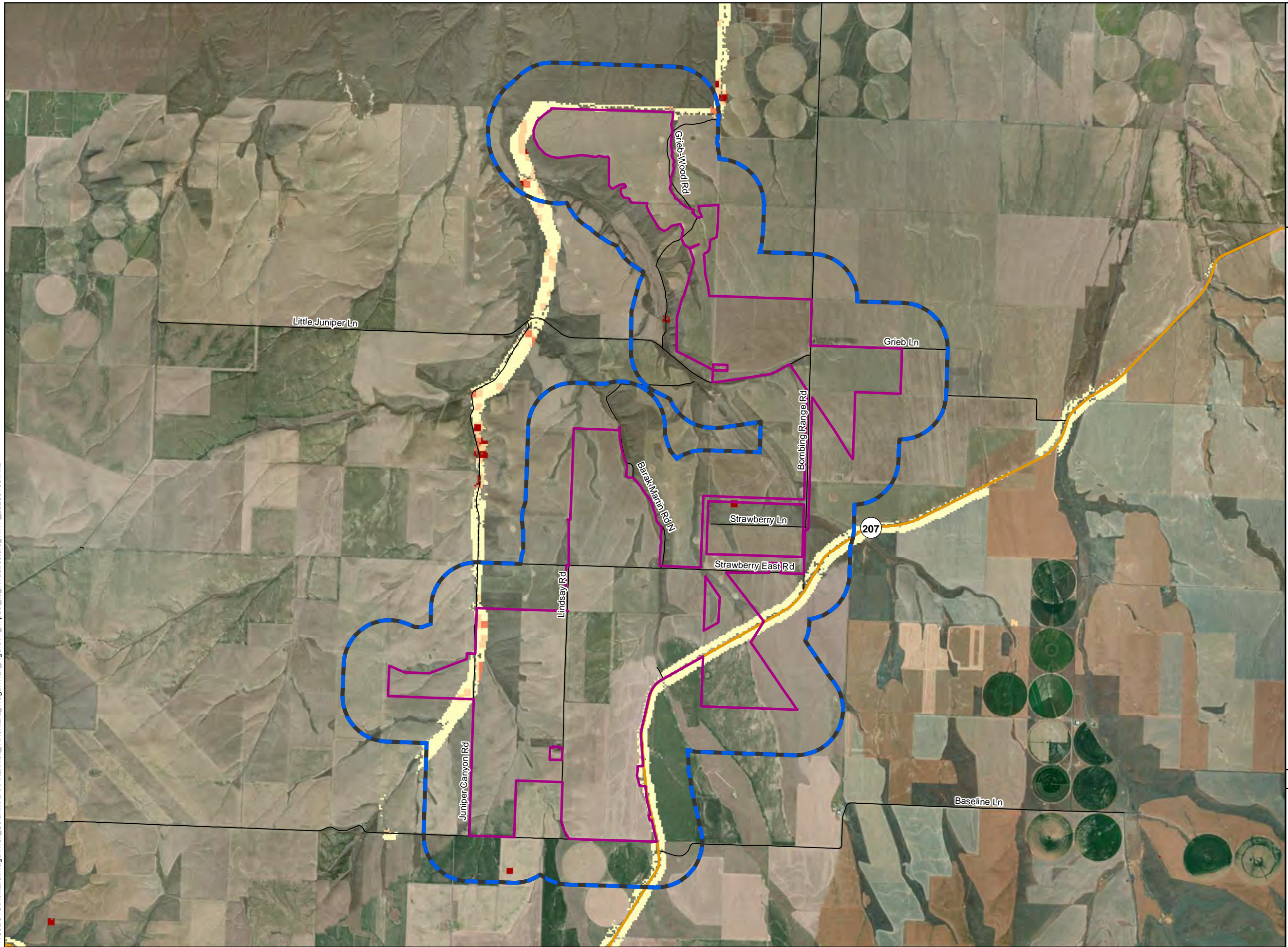


# Wagon Trail Solar Project

Figure V-7  
Wildfire Potential Impacts to Infrastructure

MORROW COUNTY, OREGON

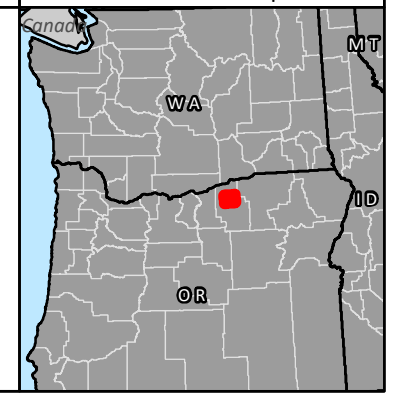
-  Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  State Highway
  -  Local Road
  -  County Boundary
- Potential Impacts to Infrastructure**
-  Very High
  -  High
  -  Moderate
  -  Low



Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map



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









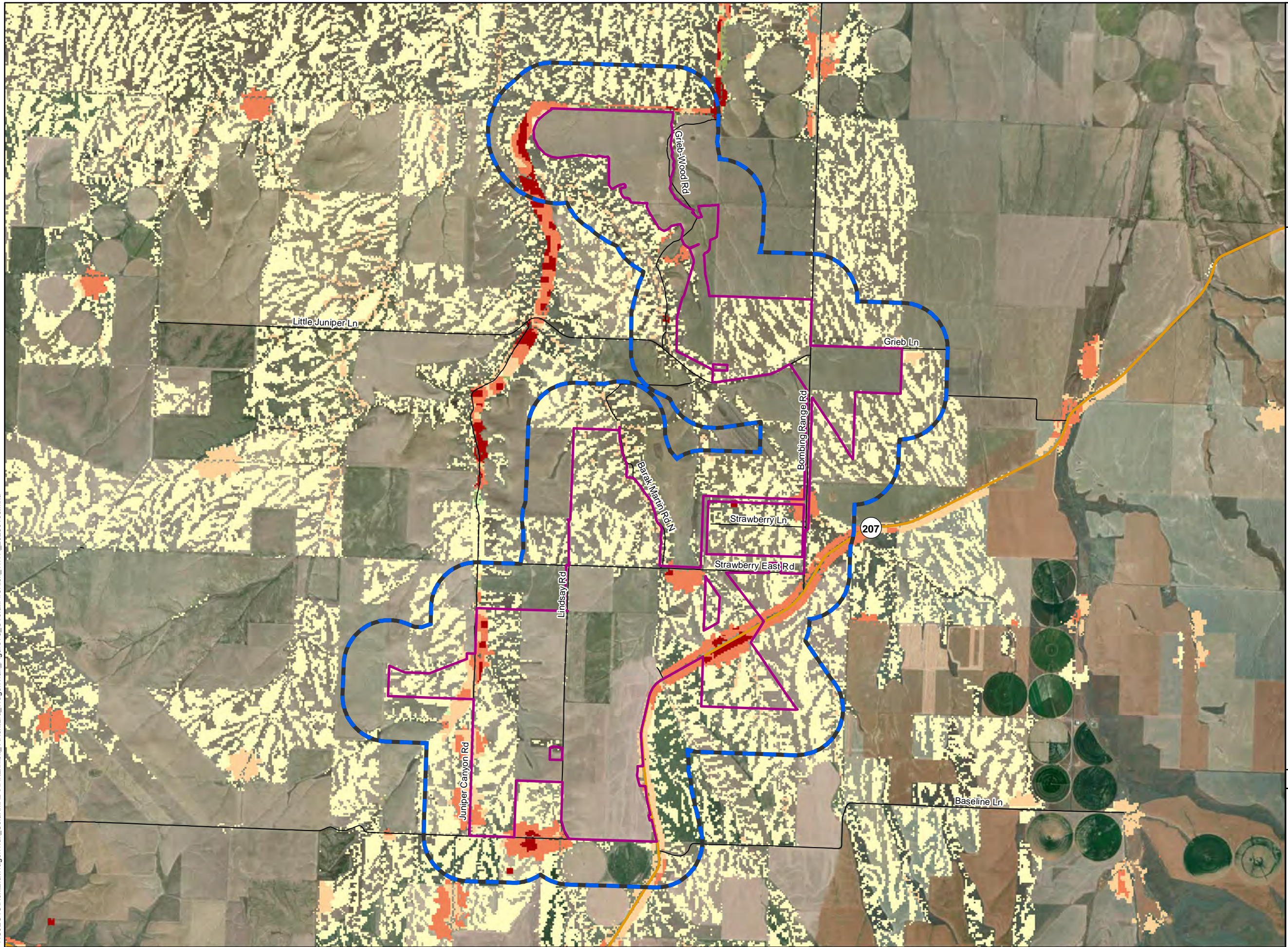
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# Wagon Trail Solar Project

## Figure V-8 Overall Fire Risk

MORROW COUNTY, OREGON

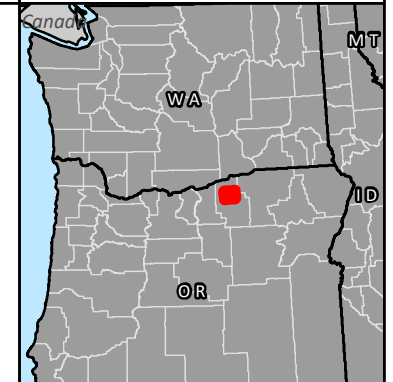
-  Site Boundary
-  Analysis Area (0.5-mile Buffer)
-  State Highway
-  Local Road
-  County Boundary
- Overall Wildfire Risk**
-  Very High
-  High
-  Moderate
-  Low
-  Low Benefit
-  Benefit



Data Sources

NextEra-Project Infrastructure;  
USDA-Aerial Imagery; ESRI-  
County Boundaries

Reference Map

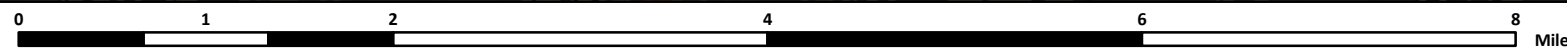


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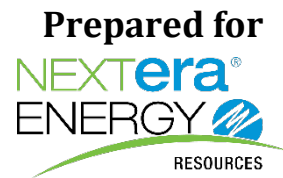
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# **Attachment V-1. Wildfire Mitigation Plan**

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# Wagon Trail Solar Project Wildfire Mitigation Plan

Wagon Trail Solar Project  
December 2023



Prepared by



**Tetra Tech, Inc.**

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## Acronyms and Abbreviations

APLIC	Avian Power Line Interaction Committee
Applicant	Wagon Trail Energy Center, LLC c/o NextEra Energy Resources, LLC
ASC	Application for Site Certificate
CFR	Code of Federal Regulations
CWPP	Community Wildfire Protection Plan
EMP	Emergency Management Plan
Facility	Wagon Trail Solar Project
NERC	National Energy Reliability Corporation
NHMP	Natural Hazards Mitigation Plan
O&M	operations and maintenance
OAR	Oregon Administrative Rules Wildfire Mitigation Plan
Plan	
SCADA	supervisory, control, and data acquisition



## 1.0 Introduction

This Wildfire Mitigation Plan (Plan) was prepared to meet the submittal requirements in Oregon Administrative Rule (OAR) 345-021-0010(1)(v), including providing evidence that the Wagon Trail Solar Project (Facility) complies with the approval standard in OAR 345-022-0115.

## 2.0 Wildfire Risk Assessment

This Plan has been prepared to meet the approval standard under OAR 345-022-0115(1)(b), which requires:

- (5)** *Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;*

Data from the Oregon Community Wildfire Protection Plan (CWPP) planning tool were used for the analyses in this Plan (CWPP 2018). The Oregon CWPP provides a clearinghouse of fire behavior and fire effects data to aid decision makers in charge of reducing wildfire risk in their communities. The statewide wildfire risk map was developed and is maintained per requirements under Senate Bill 762 and associated administrative rules. The Oregon Explorer's CWPP data presented are from the 2018 Pacific Northwest Quantitative Wildfire Risk Assessment (Pyrologix 2018).

Based on data provided in the Application for Site Certificate (ASC), approximately 27 percent of the Site Boundary has low wildfire risk where it contains irrigated cultivated crop land cover and is relatively flat topography. Approximately 6 percent of the Site Boundary has moderate to very high wildfire risk. The areas with high to very high wildfire risk are along Lexington Echo Highway (OR-207) through the southeastern portion of the Site Boundary, Bombing Range Road in the eastern portion of the Site Boundary, Strawberry Lane across the middle of the Site Boundary, and a portion in the southwest corner along Juniper Canyon Road due to more shrub/scrub vegetation. The areas within the analysis area outside of the Site Boundary with high to very high wildfire risk include along Baseline Lane in the south and in the north along Juniper Canyon Road and where the analysis area meets the southern edge of the Boardman Bombing Range.

Areas of heightened risk are described using the Oregon CWPP Risk to Assets (see Exhibit V: Figure V-5), potential impacts to people and property (Exhibit V: Figure V-6), and potential impacts to infrastructure datasets (Exhibit V: Figure V-7). Risk to assets includes likelihood and consequences of wildfire on mapped highly valued assets including critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures (CBI 2020). People and property data take into account housing density based on Where People Live and USFS private inholdings (Pyrologix 2018). Infrastructure includes critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, and historic structures (Pyrologix 2018).

The Site Boundary contains low to high wildfire risk to assets. A majority (95 percent) of the Site Boundary contains no mapped assets, and therefore no risk to known assets. Of the approximately 5 percent of the Site Boundary that has wildfire risk to assets, approximately 3 percent is moderate

risk to assets and 2 percent is low risk to assets. The areas in the Site Boundary with high risk to assets include along Lexington-Echo Highway through the southeastern portion, Bombing Range Road in the eastern portion, Strawberry Lane across the middle, and in the southwestern corner along Juniper Canyon Road. Additionally, areas of heightened risk outside of the Site Boundary but within the analysis area include in the south along Baseline Lane and in the north along Juniper Canyon Road and where the analysis area meets the southern edge of the Boardman Bombing Range.

Within the Site Boundary and analysis area, existing structures include distribution and transmission lines, wind turbines, the Lexington Pump, the Blue Ridge Substation, and a few residential properties. If a wildfire were ignited onsite, the areas subject to heightened risk would be the areas associated with these structures. The distribution line poles and residential structures may be considered areas of high fire consequence as there is the potential for high fire hazard for these structures. Any time assets are added to a landscape, wildfire risk will increase. With the addition of infrastructure that will result from Facility construction, it is expected that more of the area would fall into moderate to high categories for wildfire risk to assets.

Additional areas of heightened risk include moderate potential for impacts areas to people and property is approximately 1 percent of the Site Boundary. These areas are centered around farm and ranch buildings and infrastructure along Lexington-Echo Highway, Bombing Range Road, and Strawberry East Road in the southeastern portion and along Juniper Canyon Road in the southwestern portion of the Site Boundary. Similarly, there are low to moderate potential for impact to infrastructure along Lexington-Echo Highway in the southeast and low to high potential for impact to infrastructure along Juniper Canyon Road in the southwestern portions of the Site Boundary.

There are additional areas of moderate to high potential impact to people and property south and southwest of the Site Boundary and within the analysis area that cover approximately 1 percent and less than 0.5 percent respectively of the analysis area. These high potential impact areas are along Baseline Lane and Juniper Canyon Road. There is also additional low to moderate potential impact to infrastructure north of the Site Boundary but within the analysis area along Lexington-Echo Highway in the east and along Juniper Canyon Road and southern edge of Boardman Bombing Range.

### **3.0 Inspection and Management**

*(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;*

#### **3.1 Facility Inspections**

Facility components would be inspected quarterly. The supervisory, control, and data acquisition (SCADA) system collects operating and performance data from the facility as a whole and allows

remote operation. Wagon Trail Energy Center, LLC c/o NextEra Energy Resources, LLC (Applicant) will monitor the Facility components, such as the substation and solar arrays 24 hours a day, 7 days a week including shutdown capabilities. These operational monitoring and maintenance measures are also discussed in Section 4.0.

Onsite inspections of Facility equipment will occur quarterly. Onsite inspections will include check lists provided by the Original Equipment Manufacturer and the use of utility industry best practices. Smoke/fire detectors will be placed around the site that will be tied to the SCADA system and will contact local firefighting services as needed.

Additionally, the BESS will have an integrated fire safety system that monitors heat, and smoke, and provides dedicated annunciation/alarming in the event a fire condition is detected, automatically returns the system to a standby mode and if necessary, automatically deploys an appropriate suppression agent.

The facility components that could cause electrical fires are solar inverters, wind turbines, substations, battery energy storage system (BESS), and overhead electrical lines. The Applicant will inspect these components during operations as outlined in Table 1.

**Table 1. Operational Inspections for Electrical Components**

Inspection	Procedure	Standard	Time frame
Solar Inverter	Visual inspection of inverter and surrounding area.	SPCC Plan <sup>1</sup> Manufacturer's maintenance recommendations	Monthly SPCC Bi-annual Preventative Maintenance
Substation	Visual inspection of MPT, Avian Power Line Interaction Committee (APLIC) measures, and surrounding area.	Manufacturer's maintenance recommendations APLIC <sup>2</sup>	Monthly Yearly (APLIC)
BESS	Visual inspection of BESS, PCS, and surrounding areas	SPCC Plan Manufacturer's maintenance recommendations	Monthly
Overhead electrical lines	Visual inspection of components, grounding, APLIC measures, vertical clearance distance between conductor and vegetation.	National Energy reliability Corporation (NERC) <sup>3</sup> APLIC	Bi-annual
<p>1. The Operational Spill Prevention, Control, and Countermeasure Plan for the facility will require these components to be inspected monthly for spills. During these inspections, Operational Staff will also visually inspect the component and surrounding area.</p> <p>2. Applicant will develop an inspection checklist and program of electrical equipment based on manufacturer's recommendations for individual components.</p> <p>3. Vegetation maintenance standard FAC-003-0 .</p>			

### 3.2 Vegetation Management

The Applicant will maintain vegetation within the fence line and will also maintain a 5-foot noncombustible, defensible space clearance along the fenced perimeter of the Site Boundary.

A physical vegetation survey assessment of the fenced area will be completed at least twice a year to monitor for vegetation clearances, maintenance of fire breaks, and monitor for wildfire hazards. Additionally, the Applicant will incorporate guidance regarding the fuel breaks for defensible/survivable space per the Morrow County adopted Natural Hazards Mitigation Plan (NHMP) and OAR 629-044-1085, as applicable.

One of the vegetation survey assessments will occur in May or June, prior to the start of the dry season, a time when wildfire risk is heightened. The survey will be conducted by the Site Operations Manager and will be used to assess the frequency of upcoming vegetation maintenance and identify areas that may need additional attention and will be used to create a Vegetation Maintenance Work Plan. The work plan will be a living document that will be updated in order to meet the objectives of this Plan. Observations in the vegetation survey will include:

- Location;
- Species;
- Estimated growth rate;
- Abundance;
- Clearance/setbacks; and
- Risk of fire hazard.

Additional vegetation surveys may be required throughout the season based on seasonally heightened fire risk. The Vegetation Maintenance Work Plan will be followed during operation of the Facility to ensure that vegetation does not grow in a manner that blocks or reduces solar radiation reaching the solar panels and reduce the risk of starting a fire. Vegetation control will employ best management practices and techniques that are most appropriate for the local environment. These may include physical vegetation control such as mowing or introduction of a non-invasive species that is low growing. In rare circumstances where it is necessary to use herbicides, an effort will be made to minimize use and only apply bio-degradable, U.S.

Environmental Protection Agency-registered, organic solutions that are non-toxic to wildlife. Any herbicides used for vegetation management the site will be selected and used in a manner that fully complies with all applicable laws and regulations.

Vegetation within the fence line and below the solar arrays will be maintained to a height of 18-inches and provide a minimum of 24-inch clear distance to any exposed electrical cables. Exposed electrical wires should be running under the solar panels at the midpoint or higher than the center of the panel. Vegetation will be removed within 10-foot perimeter of the inverter/transformer/battery unit pads. Gravel or similar noncombustible base will be located

within the 10-foot perimeter of these pads. Vegetation will be removed from inside the Facility collector substation fence line. Gravel or similar noncombustible base shall be used.

To reduce the availability of fuels for wildfire near electrical components, the Applicant will install a non-flammable gravel base around solar inverters, substations, and BESS, and implement on-going vegetation management outlined in Table 2 to ensure that vegetation does not grow in these graveled areas.

**Table 2. Vegetation Management Procedures by Facility Component**

Vegetation Management	Procedure	Standard	Time frame
Solar Inverter	Herbicide application on gravel pad around inverter to prevent vegetation growth.	IEEE 80 NEC 70	Yearly, depending on vegetation condition.
Substation	Herbicide application on substation gravel pad. Highly compacted gravel foundations of substation are not suitable for vegetation ground.	IEEE 80 NEC 70	Yearly, depending on vegetation condition.
BESS	Herbicide application on gravel pad surrounding BESS. Highly compacted gravel foundations of BESS are not suitable for vegetation.	IEEE 80 NEC 70	Yearly, depending on vegetation condition.
Overhead electrical lines	Mow vegetation to achieve clearance requirements between conductor and ground.	NERC	Yearly, depending on vegetation condition.

## 4.0 Preventative and Minimization Actions for Wildfire Risk

*€ Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;*

### 4.1 Preventative Actions

The Applicant will minimize risk of facility components causing wildfire through preventative actions. In the design of the facility, the Applicant will implement the design considerations and best practices outlined in Table 3 to minimize electrical fire risk from facility components.

**Table 3. Design Considerations for Fire Safety by Facility Component**

Consideration	Solar Inverter	Substation	BESS	Overhead Lines
Electrical connections by qualified electricians	X	X	X	X
Inspections for mechanical integrity prior to energizations	X	X	X	X
Lighting protection	X	X	X	X
Corrosion protection	X	X	X	X

<b>Consideration</b>	<b>Solar Inverter</b>	<b>Substation</b>	<b>BESS</b>	<b>Overhead Lines</b>
Strain relief of connecting cabling	X	X	X	X
Protection against moisture	X	X	X	X
Grounding systems	X	X	X	X
Limits on input voltage and power	X	X	X	X
Safety setback from structures	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>2</sup>
Technology specific design standards	X <sup>3</sup>	X <sup>4</sup>	X <sup>5</sup>	X <sup>3</sup>
1. 50-foot setback from structures. 2. Vertical and horizontal clearances from structures depends on voltage of conductor. 3. NFPA 70. 4. IEEE 979. 5. NFPA 1, Chapter 52.				

During Facility operations, the areas within the Site Boundary that are subject to a heightened risk of wildfire include the solar array areas. The solar array areas will have low-growing vegetation maintained below the solar arrays during the operational period of the Facility. Measures for reducing the risk of fire ignition and reducing the risk of equipment damage were a wildfire to occur are discussed further in Section 3.0, including the Facility’s vegetation management program (see Section 3.2), and through the emergency response procedures that will be described in the Emergency Management Plan (EMP). The EMP will be developed for the Facility and is outlined below in Section 4.2.5. The collector substation area, transformer pads, and the permanent, fenced parking and storage area will have reduced risk for fire due to the fact that these areas will have a gravel base with no vegetation within a 10-foot perimeter to reduce fire risk.

The Facility components will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards and will not pose a significant fire risk. The solar array will have shielded electrical cabling, as required by applicable code, to prevent electrical fires. In addition, the collector system and substation will have redundant surge arrestors to deactivate the Facility during unusual operational events that could start fires. The collector substation and the switchyard will have also sufficient spacing between equipment to prevent the spread of fire.

Unless already paved, access roads will be graveled. The fenced areas around the collector substation, operations and maintenance (O&M) building, met stations, and energy storage system will be graveled, with no vegetation present. All newly constructed roads will be graded and graveled to meet load requirements for all equipment. Service roads, approximately 12 feet wide, will be constructed within the solar array fence line, to facilitate access for construction and maintenance purposes. Approximately 20-foot-wide service roads will be constructed outside the solar array fence line to reach the separately fenced substations. Vegetation will be cleared and maintained along service roads to provide a vegetation clearance area for fire safety. Service roads will be all-weather, compacted soil or gravel, with an internal turning radius of 28 feet. Vegetation

maintenance along service roads will include mowing as needed for fire safety requirements. Facility access roads will be sufficiently sized for emergency vehicle access.

Smoke/fire detectors will be placed around the site that will be tied to the supervisory, control, and data acquisition (SCADA) system and will contact local firefighting services. The SCADA system collects operating and performance data from the solar array and from the facility as a whole and allows remote operation from the O&M building. The limited vegetation present within the Site Boundary during operations will also help to minimize spread of fire. Any potential fires inside the Site Boundary will be controlled by trained staff who will be able to access the Facility around the clock. These measures will help keep external fires out or internal fires in.

The Applicant proposes the option to construct up to two alternating current coupled battery storage sites within the site boundary (Exhibit C, Figure C-2). The BESS will be capable of storing and later deploying approximately 500 megawatts of energy generated by the Facility or other sources connected to Blue Ridge Substation.

The Applicant will implement the following fire prevention and control methods to minimize fire and safety risks if Li-ion batteries are used for battery storage:

- The batteries will be stored in completely contained, leak-proof modules.
- Ample working space will be provided around the BESS for maintenance and safety purposes.
- Off-site, 24-hour monitoring of the BESS will be implemented and will include shutdown capabilities.
- The ESP will have response procedures specific to the BESS in the event of an emergency, such as a fire.
- Transportation of Li-ion batteries is subject to 49 Code of Federal Regulations (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 the 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 energy storage at the time of construction.
- Additionally, the Applicant will employ the following design practices, as applicable to the available technology and design at time of construction:

- Use of Li-ion phosphate battery chemistry that does not release oxygen when it decomposes due to temperature;
- Employment of an advanced and proven battery management systems;
- Employment of Fike fire control panels with 24-hour battery backup at every battery container;
- Installation of fire sensors, smoke and hydrogen detectors, alarms, emergency ventilation systems, cooling systems, and aerosol fire suppression/extinguishing systems in every battery container;
- Installation of doors that are equipped with a contact that will shut down the battery container if opened;
- Installation of fire extinguishing and thermal insulation sheets between each individual battery cell;
- Implementation of locks and fencing to prevent entry of unauthorized personnel;
- Installation of remote power disconnect switches; and
- Clear and visible signs to identify remote power disconnect switches.

## **4.2 Preventative Programs**

The Applicant will implement the following programs to minimize fire risk during operations of the Facility.

### ***4.2.1 OSHA-Compliant Fire Prevention Plan***

All workers, contracting employees, and other personnel performing official duties at the Facility will conduct work under a Fire Prevention Plan that meets applicable portions of 29 CFR 1910.39, 29 CFR 1910.155, 29 CFR 1910, subpart L. The plan will ensure that:

- Workers are trained in fire prevention, good housekeeping, and use of a fire extinguisher
- Workers are trained in the evacuation procedures in the event in a fire occurs in a wind turbine while workers are inside the turbine.
- Necessary equipment is available to fight incipient stage fires. Fire beyond incipient stage shall be managed using local fire response organizations.
- Provide necessary safety equipment for handling and storing combustible and flammable material.
- Ensure equipment is maintained to prevent and control sources of ignition.
- Do not allow smoking or open flames in an area where combustible materials are located.
- Implement a Hot Work Procedure and permit program.



### ***4.2.2 Electrical Safety Program***

All operational workers will be trained in electrical safety and the specific hazards of the facility. This training will address:

- Minimum experience requirements to work on different types of electrical components;
- Electrical equipment testing and troubleshooting;
- Switching system;
- Provisions for entering high voltage areas (e.g., substation);
- Minimum approach distances; and
- Required personal protective equipment.

### ***4.2.3 Lock Out/Tag Out Program***

During maintenance activities on electrical equipment is the de-energized and physically locked or tagged in the de-energized positions to inadvertent events that could result in arc flash.

### ***4.2.4 Fire Weather Monitoring***

Burn probability, expected flame length, and overall risk may increase during periods of the fire season. Personnel on site will monitor Fire Weather Watches and Red Flag Warnings. A fire weather watch indicates the potential for weather conducive to large fire spread in the next 12 to 72 hours. A Red Flag Warning is issued when current weather conditions are conducive to large fire growth in the next 24 hours. Personnel monitoring these conditions may halt work in certain high risk locations or employ additional mitigation measures.

### ***4.2.5 Emergency Management Plan***

The EMP will be prepared prior to construction by the Applicant and construction contractor and will contain policies and procedures for preparing for and responding to a range of potential emergencies, including fires. Implementation of the EMP will ensure risks to public health and safety and risks to emergency responders are minimized. Any potential fires inside the solar array will be controlled by trained staff who will be able to access the Facility around the clock. These measures will help keep external fires out or internal fires in. The EMP will cover response procedures that consider the dry nature of the region and address risks on a seasonal basis. The plan will also specify communication channels the Applicant intends to pursue with local fire protection agency personnel, for example, annual meetings to discuss emergency planning, and invitations to observe any emergency drill conducted at the Facility. At the beginning of Facility operations, a copy of the site plan indicating the arrangement of the Facility structures and access points will be provided to the local fire district. The Applicant will incorporate guidance from Chapter 4: Emergency Operations of the Morrow County NHMP regarding wildland fire suppression procedures as needed (Morrow County 2016).

In addition to the emergency responses to be stipulated in the EMP, personnel will be trained on the RACE procedure to implement in the event of a fire start. RACE procedure includes:

- **Rescue** anyone in danger (if safe to do so);
- **Alarm** – call the control room, who will then determine if 911 should be alerted;
- **Contain** the fire (if safe to do so); and
- **Extinguish** the incipient fire stage (if safe to do so).

Personnel on site will carry fire suppression equipment during the fire season in their vehicles. This equipment shall include, at a minimum:

- Fire Extinguisher: Dry chemical. 2.5 or 2.8 pound. 1A-10B: C U/L rating, properly mounted or secured;
- Pulaski Hand Shovel: Round point. 26 to 28 in“h”"D" Handle, bla-e - 12 inches long and 10 inches wide;
- Collapsible Pail or Backpack Pump: 5-gallon capacity; and
- Drip Can: 5-gallon capacity.

Another potential safety mitigation to have available on site during construction and operation is a water truck, water buffalo, or tank with minimum 500 gallon capacity.

Personnel will receive training on use of suppression equipment. All personnel shall also be equipped with communication equipment capable of reaching the control room from all locations within the Site Boundary.

## 5.0 Wildfire Risk Minimization Procedures

*(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source;*

In addition to the measures described above, the risk of a wildfire affecting the public safety, first responders, or Oregon Energy Facility Siting Council-protected resources would be minimized by the procedures listed in Table 4. Additionally, the Applicant will incorporate guidance as outlined in the wildfire annex of the Morrow County NHMP (Morrow County 2016), which is the Morrow County CWPP (Morrow County 2019) as needed.

**Table 4. Procedures to Wildfire Risk**

Topic	Procedures
Public health and safety	The public will be excluded from the solar, substation, and BESS facilities by fencing. Ground mounted inverters near turbines, and junction boxes will be surrounded by bollards to minimized inadvertent vehicle/farm equipment collisions with electrical equipment.
First Responders	The Applicant will offer annual training to local first responders. Training will cover the firefighting responses to electrical fires. Response to fires in the facility should focus on controlling spread to adjacent lands. Operational staff will be trained in the use of fire extinguishers for responding to incipient stage fires on site.
Resource Protection	Resources covered by Oregon Energy Facility Siting Council standards near the project area include agricultural land, shrub steppe habitat, and cultural resources. The existing county roads will form a fire break between fields that will discourage the spread of wildfire between fields into wildlife habitat or cultural resources. According to Exhibit S within the Site Boundary, there is one eligible National Register of Historic Places historic site, the North Lexington Grain Elevator, a potentially eligible historic residence (70575 Bombing Range Road), four unevaluated archaeological sites, and two Historic Properties of Religious and Cultural Significance to Indian Tribes.

Plan Updates and Modification€(E) *Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.*

This Plan will be updated by the Applicant every five years. Updates to this Plan will account for changes in local fire protection agency personnel and changes in best practices for minimizing and mitigating fire risk. It is recommended to consult with Morrow County, the local fire department, and the Morrow County Emergency Manager including updates to the Morrow County NHMP (Morrow County 2016) and Morrow County CWPP (Morrow County 2019).

After each 5-year review, a copy of the updated plans will be provided to the Oregon Department of Energy with the annual compliance report required under OAR 345-026-008(2). If after the 5-year review of the Plan, a determination is made that no updates are required, an explanation of this determination will be provided in the annual compliance report.

Every five years, the Applicant will review wildfire risk and update this Plan for the Site Boundary. Evaluation of wildfire risk will be consistent with the requirements of OAR 345-022-0115(1) using current data from reputable sources.

The Applicant may consider revisions to this plan at its sole discretion to incorporate future best practices or emerging technology depending on whether the new technology is cost effective and suitable for the site conditions. The Applicant will track the industry groups and applicable design standards outlined in Table 5 to identify future technologies or best practices that could be implemented at the Facility.

**Table 5. Resources for Future Best Practices**

Reference	Description	Method
American Clean Power	Industry ground that establishes best practices for renewable energy projects.	The Applicant is a member of ACP and participates in best practice development <sup>1</sup> .
National Electric Reliability Corporation (NERC)	National Energy Reliability Corporation develops electrical standards for large energy facilities.	The Applicant will follow NERC Standard FAC-003-0 for its vegetation management program of transmission lines <sup>2</sup> , or updates to this standard as approved by NERC.
Oregon Specialty Building Codes	Building codes applicable to inhabitable spaces, including the O&M building and the substation enclosure.	Remodeling to the O&M and enclosure structure that requires permits will follow any updates to the OSPC at that time.
APLIC	Avian protection methods for electrical facility reduce fires related to bird/mammal nests on electrical equipment.	The Applicant is a member of APLIC <sup>3</sup> . An operational wildlife monitoring program will inspect for wildlife nesting on facilities that could cause fire, and take actions following applicable laws (e.g., MBTA).
<p>1. Link to ACP Standards &amp; Practices: <a href="https://cleanpower.org/resources/types/standards-and-practices/">https://cleanpower.org/resources/types/standards-and-practices/</a>.</p> <p>2. NERC FAC-003-0: <a href="https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-0.pdf">https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-0.pdf</a>.</p> <p>3. Link to APLIC member organization: <a href="https://www.aplic.org/member_websites.php">https://www.aplic.org/member_websites.php</a>.</p>		

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