

# **Exhibit V**

## **Wildfire Prevention and Risk Mitigation**

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**Wheatridge Renewable Energy Facility East  
January 2024**

**Prepared for  
Wheatridge East Wind, LLC**

**Prepared by**



**TETRA TECH**

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**List of Attachments**

Attachment V-1. Wildfire Mitigation Plan



## Acronyms and Abbreviations

Certificate Holder	Wheatridge East Wind, LLC
CWPP	Community Wildfire Protection Plan
EAP	Emergency Action Plan
Facility	Wheatridge Renewable Energy Facility East
MW	megawatts
OAR	Oregon Administrative Rules
RFA 1	Request for Amendment 1

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## 1.0 Introduction

The Wheatridge Renewable Energy Facility East (Facility) is an approved, but not yet constructed, wind energy generation facility consisting of up to 66 turbines and related or supporting facilities with a peak generating capacity of up to 200 megawatts (MW), to be located in an Approved Site Boundary of approximately 4,582 acres on over 42,000 acres of leased land in Morrow and Umatilla counties, Oregon. As part of Request for Amendment (RFA) 1 to the Facility Site Certificate, Wheatridge East Wind, LLC (Certificate Holder) is proposing to expand wind power generation at the Facility to provide the opportunity for increased power capacity and availability. This includes expanding the Site Boundary and micrositing corridors, increasing the peak generating capacity by adding more and newer turbines, changing the intraconnection routes, and extending the construction date. See the RFA 1's Division 27 document (*Request for Amendment #1 for the Wheatridge Renewable Energy Facility East*) for a more detailed summary of the proposed changes.

This Exhibit V was prepared to meet the submittal requirements of Oregon Administrative Rules (OAR) 345-021-0010(1)(v), including providing evidence that the Facility complies with the approval standard in OAR 345-022-0115. The Certificate Holder is not aware of a Wildfire Protection Plan (that has been approved in compliance with OAR chapter 860, division 300) including the area within the Approved and Amended Site Boundary, or Analysis Area. Therefore, OAR 345-022-0115(2) is not anticipated to apply.

## 2.0 Analysis Area

In accordance with OAR 345-001-0010(35)(c), the Analysis Area for wildfire risk is the area within and extending 0.5 miles from the Amended Site Boundary. The Amended Site Boundary is inclusive of portions of the Approved Site Boundary.

## 3.0 Wildfire Risk Assessment – OAR 345-021-0010(1)(v)

*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).*

This section provides baseline information on how the Facility has analyzed wildfire risk within the Analysis Area using the best available data per OAR 345-022-0115(1)(a). A Wildfire Mitigation Plan has been prepared in conformance with OAR 345-022-0115(1)(b) and is attached as Attachment V-1.

### 3.1 Fire Ecology in the Analysis Area

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 high (USFS 2012). Fires in the region 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 average expected flame length modeled in the Analysis Area is 4 to 8 feet (CWPP 2022), and is expected to be moderately to highly difficult to control as a fire in these areas can be expected to be moderate intensity.

### 3.2 Methods

#### ***OAR 345-022-0115 Wildfire Prevention and Risk Mitigation***

*To issue a site certificate for a proposed wind energy facility, the Council must find that the applicant:*

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

*(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 Oregon Community Wildfire Protection Plan (CWPP) planning tool were used for these analyses (CWPP 2022). 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 the Analysis Area.

For this analysis, the following datasets were used (CWPP 2022):

- Hazard to Potential Structures;
- Overall Potential Impact;
- Overall Wildfire Risk;
- Wildfire Risk to Assets;
- Potential Impact to People and Property;
- Potential Impact to Infrastructure;
- Average Flame Length; and
- Burn Probability.

### 3.3 Baseline Fire Risk

*(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;*

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 (Gilbertson et al. 2018). Baseline Fire Risk is based on factors that remain constant for periods of years and is described using the Hazard to Potential Structures data layer in the CWPP tool (CWPP 2022) (Table V-1; Figure V-1). The Hazard to Potential Structures layer shows impact levels to structures within 150 meters of a burnable fuel type, as if structures were present, and if a wildfire occurs. This data layer is based on modeled vegetation and not on building construction materials. This data layer ranges from a very low hazard to potential structures, where the fuel in the area is largely non-burnable or very sparse and there is a low potential for loss of a structure or residence, to a very high hazard to potential structures, where if a fire ignites nearby, there is a high potential for loss of a residence or a structure (Gilbertson-Day et al. 2018).

The hazard to potential structures within the Amended Site Boundary is primarily moderate (43 percent) and low (30 percent) (Table V-1). Areas of high hazard (20 percent) to potential structures, similar to moderate hazard to potential structures, are present consistently throughout the Analysis Area with the exception of portions of the northern and western edges. These moderate and high hazard to potential structures areas include farm and ranch buildings and infrastructure along Big Butter Creek Road and Little Butter Creek Road.

**Table V-1. Baseline Fire Risk - Hazard to Potential Structures**

Hazard to Potential Structures	Acres	Percent of the Analysis Area
Very High	1,089	1
High	22,656	20
Moderate	48,668	43
Low	34,066	30
Non-burnable / Very Low	6,102	5
<b>Total</b>	<b>112,580</b>	<b>100</b>

Baseline fire risk and potential impacts to existing infrastructure within the Analysis Area include the existing Wheatridge facilities, the Blue Ridge Substation, the operations and maintenance (O&M) building, the battery energy storage system (BESS), transmission lines and poles, underground collector lines, meteorological towers, access roads, and local roads as shown on

Figure 2 in Exhibit C. The shared/existing Blue Ridge Substation is in the northwesternmost portion of the Amended Site Boundary.

The Overall Fire Risk data layer assesses the likelihood and consequence of wildfire on all mapped highly valued resources and assets and is discussed below in Section 3.5.

### 3.4 Seasonal Fire Risk

*(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 fire risk is based on factors that inform baseline fire risk (fuels, weather, topography, historical fire data, assets) and information that is dynamic throughout the year. Current conditions such as precipitation to-date, current fuel moisture data, and local weather may increase or decrease seasonal fire risk. Fire Weather watches and Red Flag Warnings are used to identify times of heightened chance of ignition and large fire spread. These conditions will be monitored, and Facility activities and mitigation measures will be adjusted based on their annual variations. The Analysis Area gets approximately 12.7 inches of precipitation per year. July and August are the driest years, with averages of 0.15 and 0.16 inches respectively (NRCS 2022). Average high temperatures in July and August are 83- and 82-degrees Fahrenheit respectively (NOAA 2022). With drying and warming weather, fuel moistures will be lower. Fine fuels (e.g., 1 hour time lag fuels) will remain dry through the day due to high temperatures, low daytime humidity, and low humidity recovery overnight. Larger fuels (e.g., 10 hour time lag, and 100 hour time lag fuels) will likely be at their lowest moisture content of the year (larger fuels dry out more slowly, but are not as affected by diurnal changes in humidity or wet up as quickly during precipitation). Fire risk will increase during July and August, and Fire Weather watches and Red Flag Warnings will be more likely.

### 3.5 Areas of Heightened Risk

*(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 data (Table V-2) and overall wildfire risk (Table V-3). These data consider the likelihood of fire in areas with valuable assets such as critical infrastructure, housing, and developed recreation areas (Figure V-2) and vulnerability of assets in relation to fire paths and the likelihood of that asset being harmed (Figure V-3).

Most of the Analysis Area is classified as no risk to assets due to lack of mapping of assets. Only 1 percent of the Analysis Area is mapped as having a risk to assets, which includes 0.6 percent as moderate risk and 0.4 percent as low risk, which are primarily along Oregon Route 207 (OR-207) in the northwesternmost portion of the Analysis Area (Table V-2; Figure V-2). Any time assets are added to a landscape, wildfire risk to assets 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 category for wildfire risk to assets.

**Table V-2. Areas of Heightened Risk – Risk to Assets**

<b>Risk to Assets</b>	<b>Acres</b>	<b>Percent of the Analysis Area</b>
Very High	0	0.0
High	30	<0.1
Moderate	634	0.6
Low	456	0.4
<b>Total</b>	<b>1,120</b>	<b>1</b>

The CWPP data on overall wildfire risk (Figure V-3) are also used to identify areas of heightened risk (CWPP 2022). The Pacific Northwest Quantitative Wildfire Risk Assessment (PNRA) report (Gilbertson-Day et al. 2018) includes the Conservation Biology Institute’s (CBI) definition of overall wildfire risk as the product of the likelihood and consequence of wildfire on all mapped highly valued resources and assets combined: critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, historic structures, timber, municipal watersheds, vegetation condition, and terrestrial and aquatic wildlife habitat. CBI (CBI 2020) also assigns risk ratings ranging 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 Analysis Area that falls into each fire risk rating appears in Table V-3 and is displayed on Figure V-3. Of the mapped areas of overall wildfire risk, low overall fire risk rating covers the largest area (2.3 percent) of the Analysis Area. Most of the Analysis Area has no overall wildfire risk data (over 96.7 percent), which indicates there are no highly valued resources or assets mapped in the area or simulated wildfires did not burn the area due to low historical occurrence/absence of burnable fuel (CBI 2020, Gilbertson-Day et al. 2018). High and moderate overall wildfire risk areas are centered around farm and ranch buildings and infrastructure. Big Butter Creek Road and Little Butter Creek Road are the main corridors where moderate to high overall risk were modeled in the Analysis Area (Figure V-3).

**Table V-3. Areas of Heightened Risk - Overall Wildfire Risk**

<b>Overall Fire Risk Rating</b>	<b>Acres</b>	<b>Percent of the Analysis Area</b>
Very High	136	0.1
High	914	0.8
Moderate	82	0.1
Low	2,551	2.3
Low Benefit	0	0.0
Benefit	2	<0.1
<b>Total</b>	<b>3,685</b>	<b>3.3</b>

### 3.6 High Fire Consequence Areas

*(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*

The CWPP data on risk to people and property and risk to infrastructure as well as the Overall Potential Impact layer are used to identify high-fire consequence areas. The risk to people and property data do not include likelihood of fire ignition, spread, or intensity but are solely the presence or absence of high value assets. Potential threats to people and property and to infrastructure are summarized in Table V-4 and shown in Figures V-4 and V-5. Potential impacts to people and property and to infrastructure only account for 0.9 percent and 0.4 percent of the Analysis Area, respectively (Table V-4). Moderate potential impact areas (0.3 percent) for people and property are areas are centered around farm and ranch buildings and infrastructure along Big Butter Creek Road and Little Butter Creek Road. There are no moderate or high consequence areas for infrastructure as most infrastructure is fire hardened (e.g., roads). The very high potential impact to infrastructure (less than 0.1 percent) includes discrete areas west of the central portion of the Analysis Area (Figure V-5).

**Table V-4. High Fire Consequence Areas – People, Property, and Infrastructure**

Asset	Potential Impact	Acres	Percent of the Analysis Area
People and Property	Very High	0	0.0
	High	19	<0.1
	Moderate	306	0.3
	Low	510	0.5
<b>Total</b>		<b>835</b>	<b>0.9</b>
Infrastructure	Very High	22	<0.1
	High	0	0.0
	Moderate	0	0.0
	Low	355	0.3
<b>Total</b>		<b>377</b>	<b>0.4</b>

High-fire consequence areas are further described using the CWPP Planning Tool overall potential impact analysis layer (Table V-5; Figure V-6). The overall potential impact layer represents the consequence of wildfire, if it occurs, on all mapped highly valued assets and resources combined including but not limited to critical infrastructure, developed recreation, housing unit density, timber, and vegetation condition. This data layer shows potential impact only to characterize exposure, and the potential impact values range from a very high negative rating, where wildfire is detrimental (e.g., to structures, infrastructure, and early seral stage and sensitive forests), to a positive, where wildfire will produce an overall benefit (for example, to improve vegetation condition or wildlife habitat)(CBI 2020).



**Table V-5. High Fire Consequence Areas – Overall Potential Impact**

Overall Potential Impact	Acres	Percent of the Analysis Area
Very High	136	0.1
High	914	0.8
Moderate	82	0.1
Low	2,551	2.3
Low Benefit	0	0.0
Benefit	2	<0.1
<b>Total</b>	<b>3,685</b>	<b>3.3</b>

The overall potential impact within the Analysis Area is primarily no data (97 percent) indicating there are no highly valued resources or assets mapped in the area or simulated wildfires did not burn the area due to low historical occurrence of burnable fuel (CBI 2020). Of the 3,685 acres with mapped overall potential impact, low overall potential impact covered the most area (2.3 percent) within the Analysis Area (Table V-5). These areas are primarily in the western edge of the Analysis Area. There are also discrete areas of high (0.8 percent) and very high (0.1 percent) as shown on Figure V-6 that are along Big Butter Creek Road in the northern portion and Sand Hollow Road in the western portion of the Analysis Area.

## 4.0 Wildfire Mitigation Plan

*(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.*

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

## **5.0 Conclusion**

Per the data reviewed and presented here, wildfire risk and consequences of fire in the Analysis Area are typical for the vegetation type and fire regime encountered in Columbia Basin Plateau. Within the Analysis Area, assets that could currently be impacted include existing Wheatridge facilities, the Blue Ridge Substation, the O&M building, the BESS, transmission lines and poles, underground collector lines, meteorological towers, residential and agricultural areas, and roads. If a wildfire did ignite near those assets, they could be at risk. After construction of the Facility, more assets could be in the path of wildfire, and overall risk within the Analysis Area would increase. It is anticipated that due to moderate probability of ignition and moderate expected intensity as measured by flame length, post construction overall fire risk would be moderate.

During construction and operation, equipment use and other human activity will present increased chance of ignition. 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 and emergency response procedures will reduce overall fire risk.

This exhibit provides evidence that the Energy Facility Siting Council's wildfire risk management standard (OAR 345-022-0115) will be met as wildfire risk introduced by the construction and operation of the Facility will be minimized through the implementation of the Wildfire Mitigation Plan.

## **6.0 References**

- CBI (Conservation Biology Institute). 2020. Wildfire Risk Assessment Data Layer Descriptions Spreadsheet. DataLayerDescriptions\_04\_01\_2019.Xlsx. Conservation Biology Institute. <https://databasin.org/datasets/31cc2ca6bebe4efab3b139c50dd79722/>.
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USFS (U.S. Forest Service). 2012. Missoula Fire Sciences Laboratory. Information from LANDFIRE on fire regimes of Columbia Plateau grasslands and steppe communities. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). Available online at: [www.fs.usda.gov/database/feis/fire\\_regimes/CP\\_grass\\_steppe/all.html](http://www.fs.usda.gov/database/feis/fire_regimes/CP_grass_steppe/all.html) [2022, August 30].

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# Figures

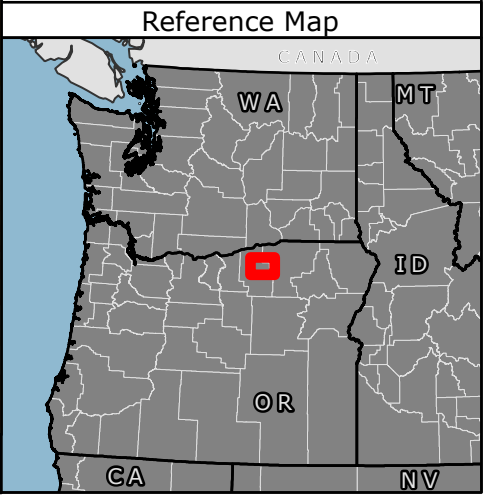
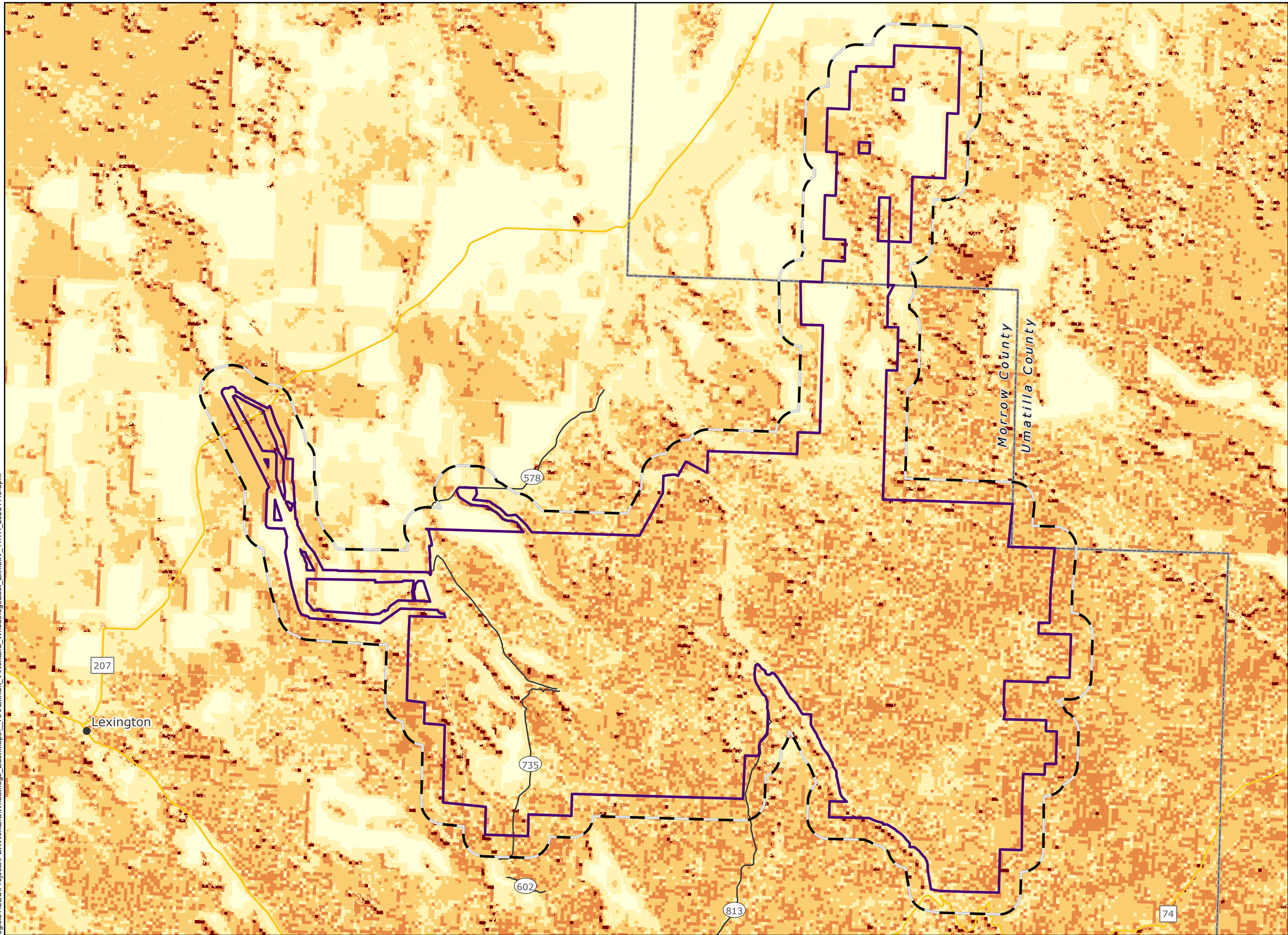
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# Wheatridge Renewable Energy Facility East

## Figure V-1 Hazard to Potential Structures

MORROW AND UMATILLA COUNTIES, OR

- Amended Site Boundary
  - Analysis Area (0.5-mile Buffer)
  - City/Town
  - County Boundary
  - State Highway
  - County Highway
- Potential Impact to Structures
- Very High
  - High
  - Moderate
  - Low
  - Non-burnable/Very Low



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# Wheatridge Renewable Energy Facility East

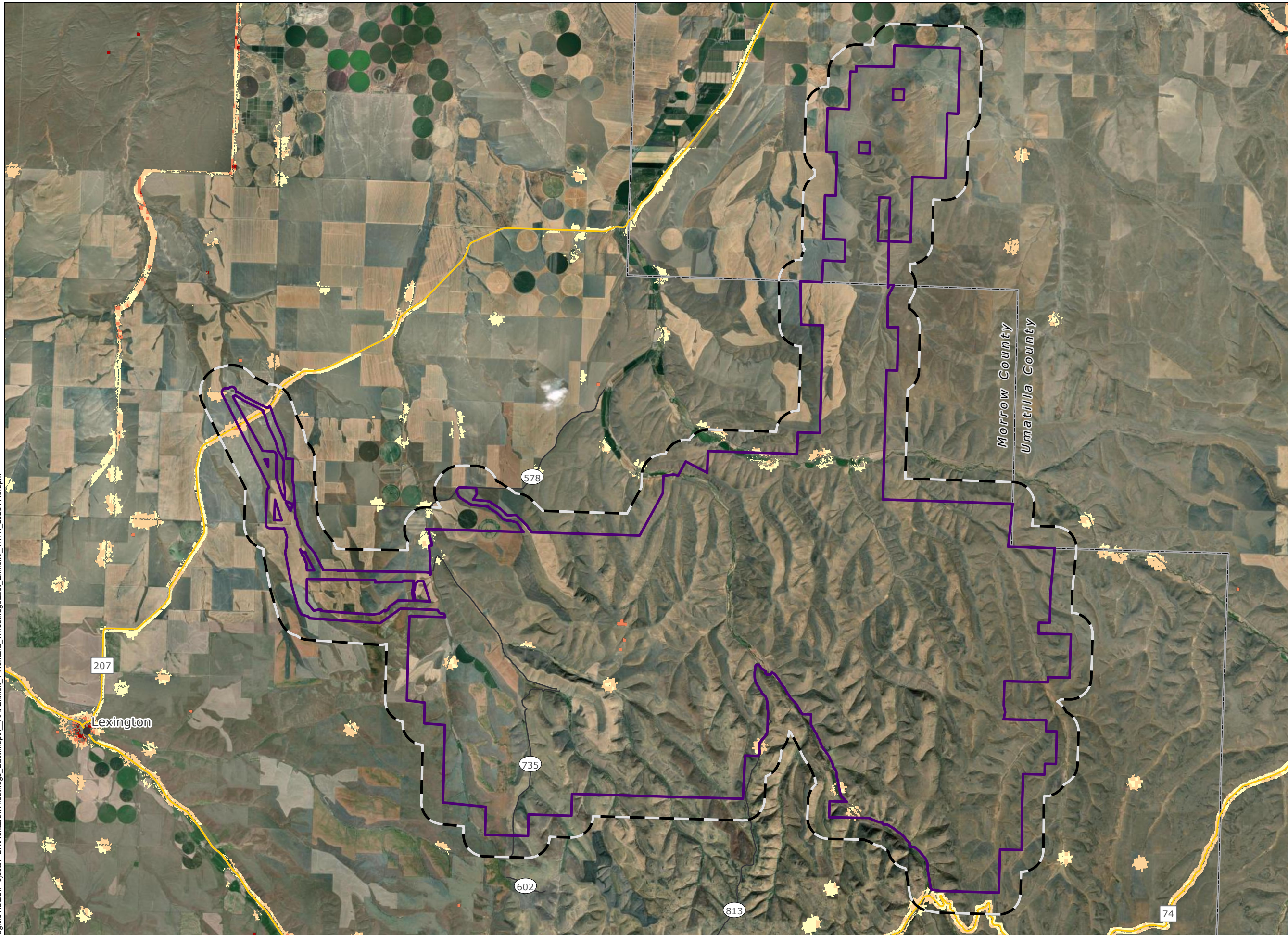
## Figure V-2 Wildfire Risk to Assets

MORROW AND UMATILLA COUNTIES, OR

- Amended Site Boundary
  - Analysis Area (0.5-mile Buffer)
  - City/Town
  - County Boundary
  - State Highway
  - County Highway
- Wildfire Risk to Assets
- Very High
  - High
  - Moderate
  - Low



Reference Map

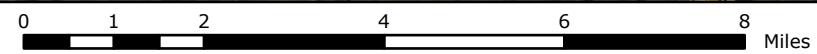


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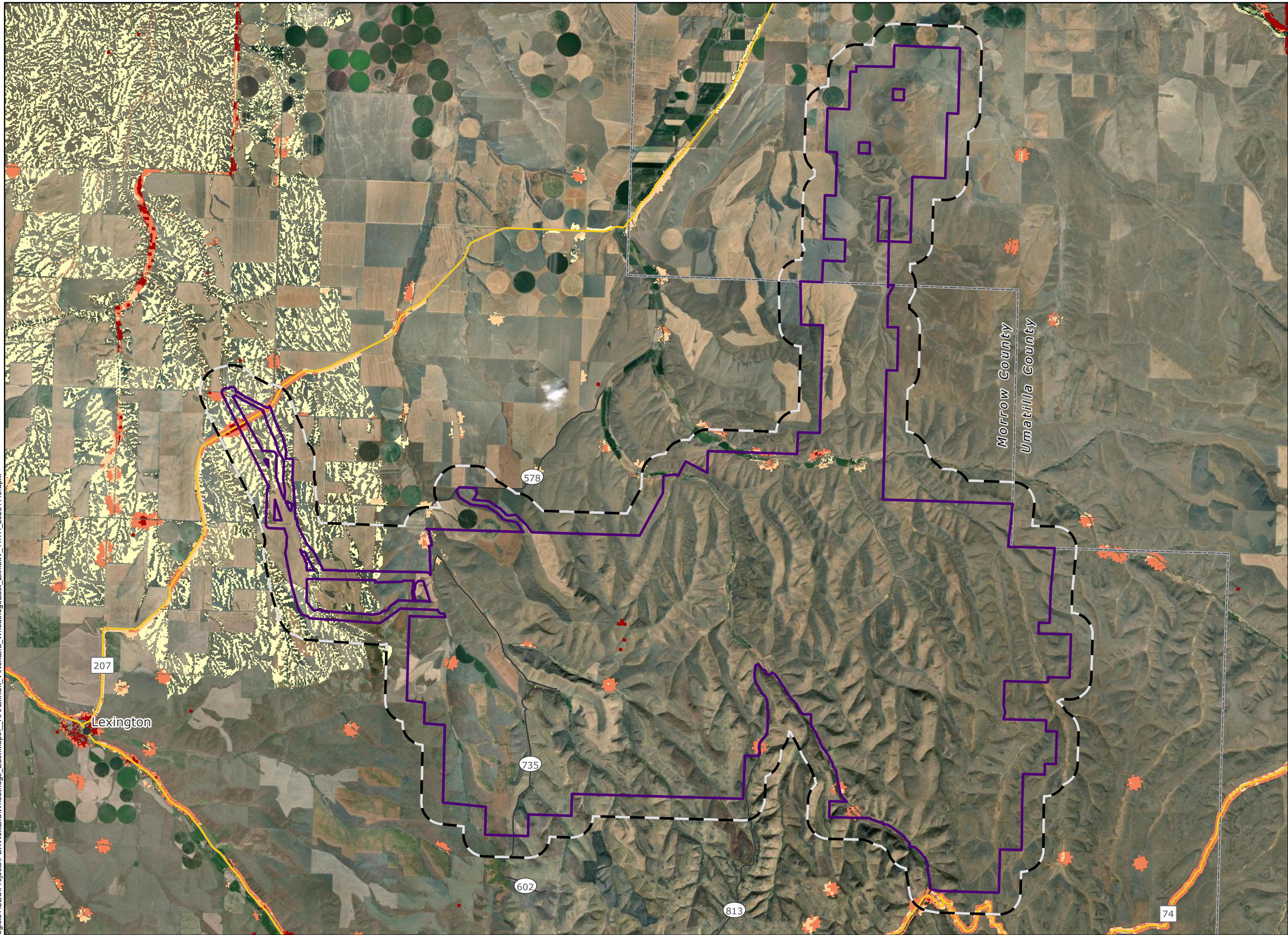
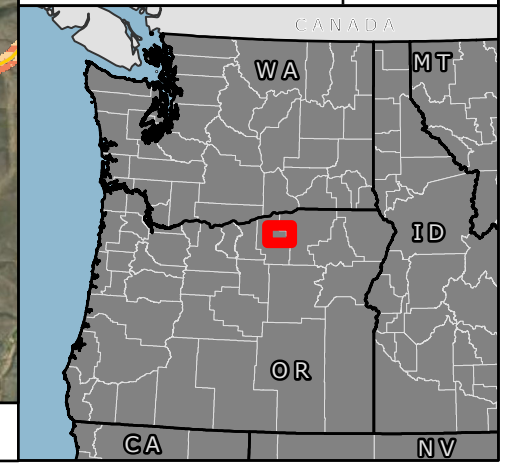
## Figure V-3 Overall Wildfire Risk

MORROW AND UMATILLA COUNTIES, OR

- Amended Site Boundary
  - Analysis Area (0.5-mile Buffer)
  - City/Town
  - County Boundary
  - State Highway
  - County Highway
- Overall Wildfire Risk
- Very high
  - High
  - Moderate
  - Low
  - Low benefit
  - Benefit



Reference Map













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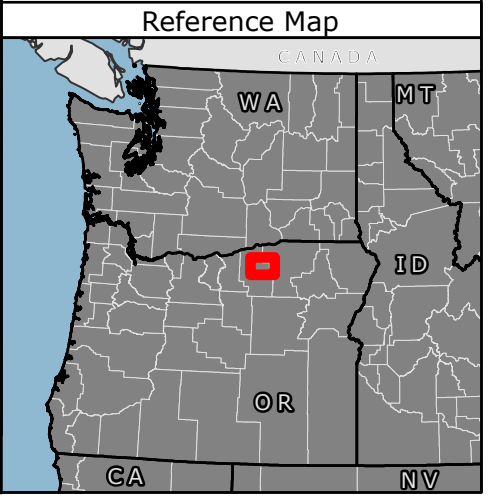
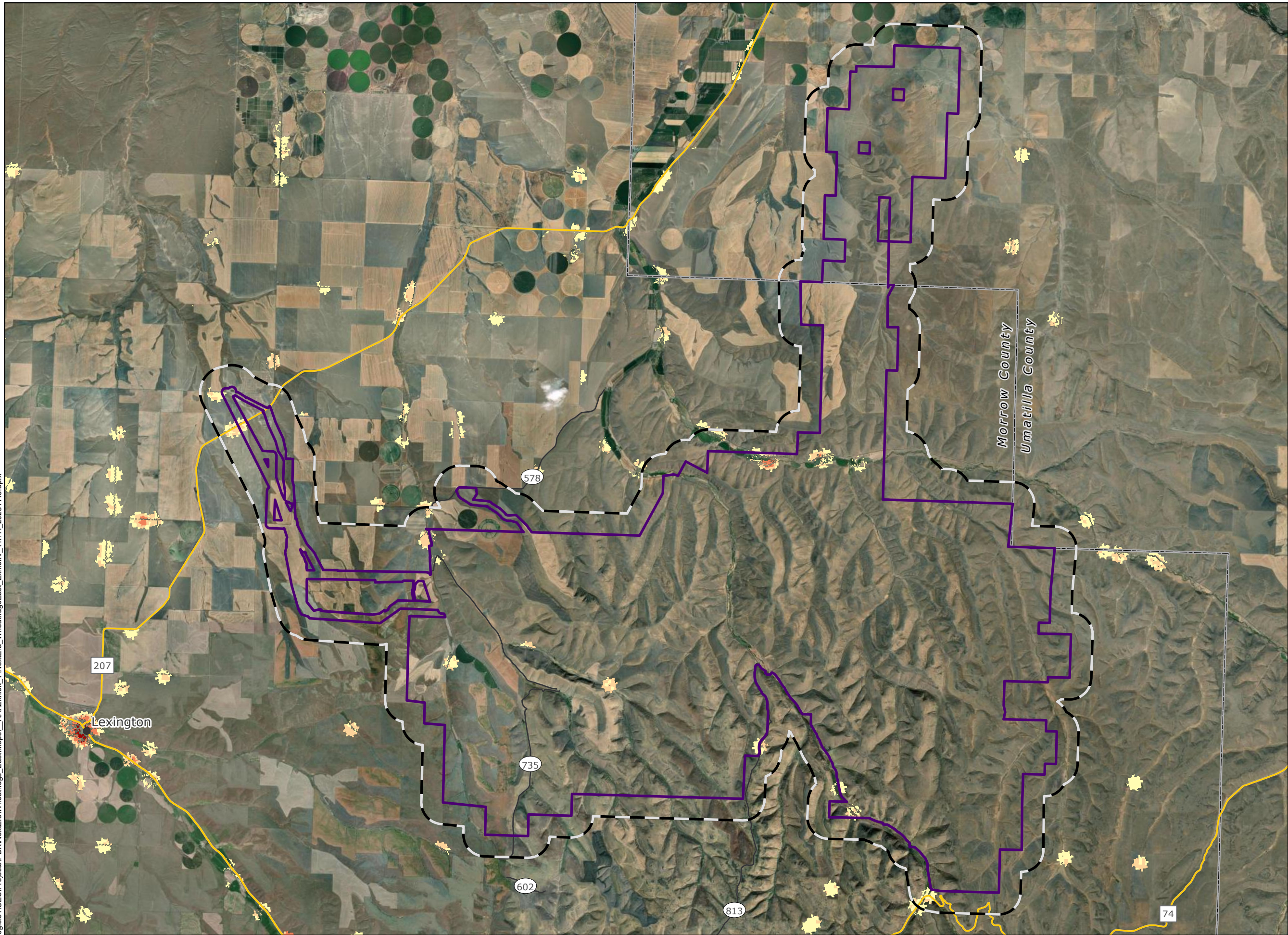


# Wheatridge Renewable Energy Facility East

## Figure V-4 Wildfire Potential Impacts to People and Property

MORROW AND UMATILLA COUNTIES, OR

-  Amended Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  City/Town
  -  County Boundary
  -  State Highway
  -  County Highway
- Potential Impact to People and Property
-  Very High
  -  High
  -  Moderate
  -  Low













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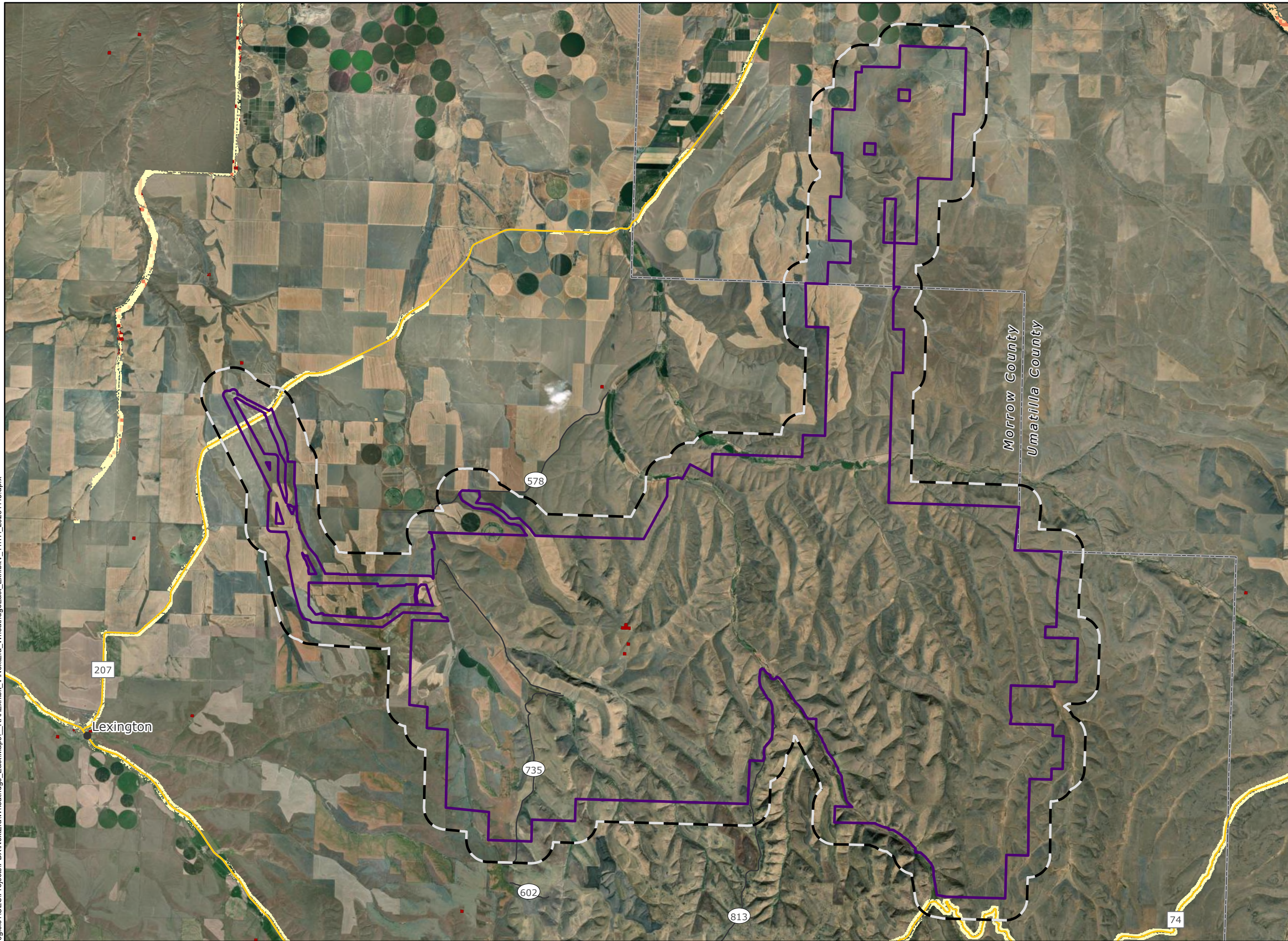
## Figure V-5 Wildfire Potential Impacts to Infrastructure

MORROW AND UMATILLA COUNTIES, OR

-  Amended Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  City/Town
  -  County Boundary
  -  State Highway
  -  County Highway
- Potential Impact to Infrastructure
-  Very High
  -  High
  -  Moderate
  -  Low



Reference Map

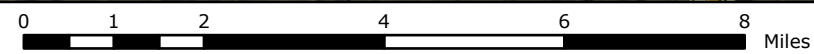


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# Wheatridge Renewable Energy Facility East

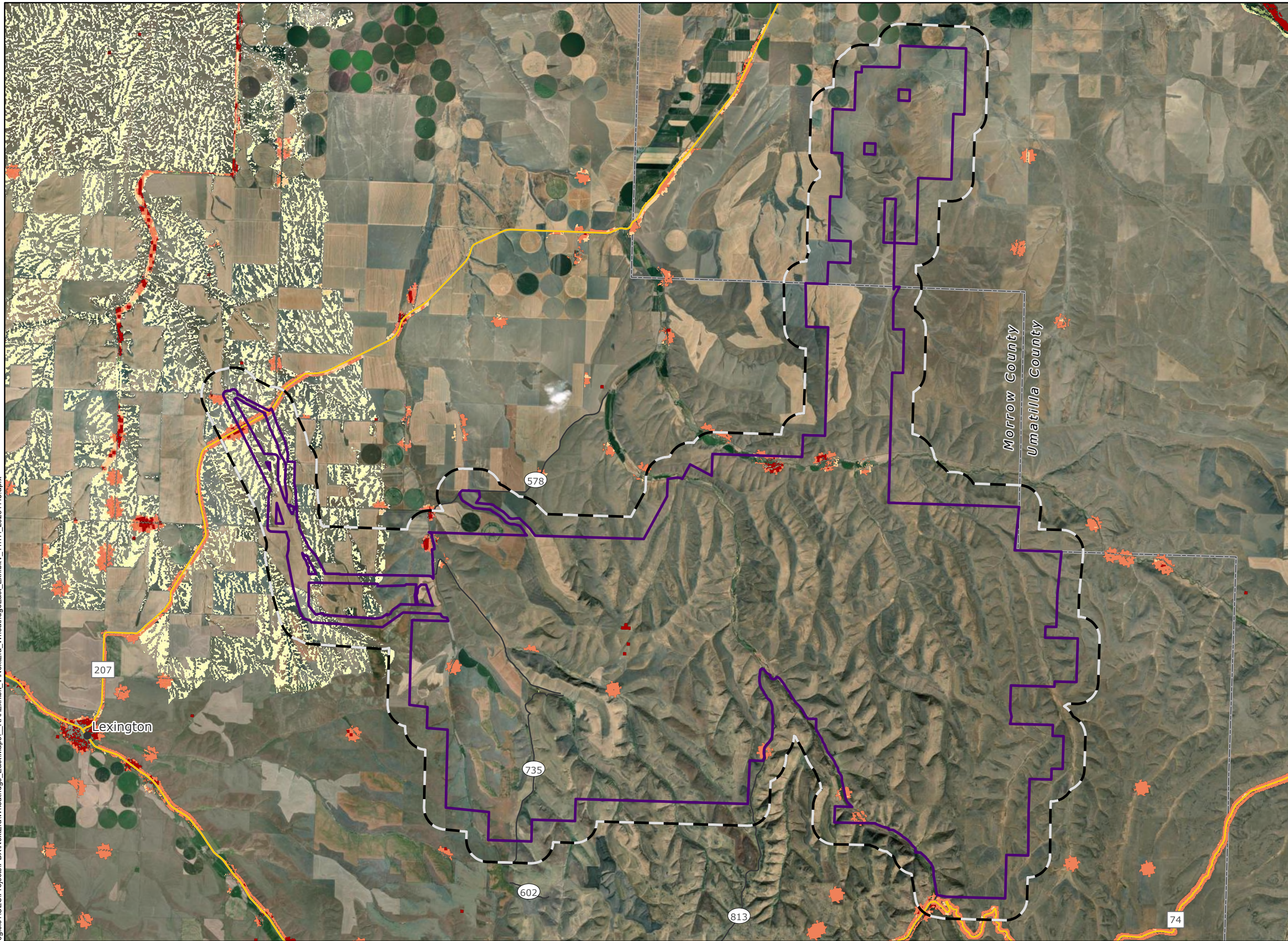
## Figure V-6 Overall Potential Impact

MORROW AND UMATILLA COUNTIES, OR

-  Amended Site Boundary
  -  Analysis Area (0.5-mile Buffer)
  -  City/Town
  -  County Boundary
  -  State Highway
  -  County Highway
- Overall Potential Impact
-  Very High (>95th)
  -  High (80-95th)
  -  Moderate (50-80th)
  -  Low (30-50th)
  -  Low Benefit (15-30th)
  -  Benefit (0-15th)



Reference Map

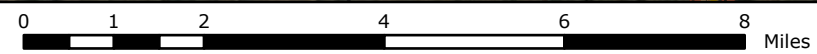


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# **Attachment V-1. Wildfire Mitigation Plan**

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# **Wildfire Mitigation Plan**

**Prepared for  
Wheatridge East Wind, LLC**

**Prepared by**



**January 2024**

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## 1.0 Introduction

This Wildfire Mitigation Plan (Plan) is provided to satisfy the approval standards under Oregon Administrative Rules (OAR) 345-022-0115(1)(b), which requires the Plan to:

- (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.*

## 2.0 Wildfire Mitigation Measures

This section provides an analysis of areas within the Wheatridge Renewable Energy Facility East (Facility) that may have heightened wildfire risk, and describes facility-wide mitigation measures that will be implemented during construction and operation to reduce the risk of wildfire per OAR 345-022-0115(1)(b).

### 2.1 Areas of Heightened Risk

Areas of heightened risk are described using the Oregon Community Wildfire Protection Plan (CWPP) wildfire risk to assets data and overall wildfire risk (CWPP 2022) (see Exhibit V, Table V-2 and Table V-3). 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 the Amended Site Boundary with a half-mile buffer around the perimeter (Analysis Area). These data consider the likelihood of fire in areas with valuable assets such as critical infrastructure, housing and developed recreation areas and vulnerability of assets in relation to fire paths and the likelihood of that asset being harmed (see Exhibit V, Figure V-2 and Figure V-3). Overall wildfire risk is the product of the likelihood and consequence of wildfire on all mapped highly valued resources and assets combined: critical infrastructure, developed recreation, housing unit density, seed orchards, sawmills, historic structures, timber, municipal watersheds, vegetation condition, and terrestrial and aquatic wildlife habitat (CBI 2020).

Most of the Analysis Area is classified as no risk to assets due to lack of mapping of assets. Only 1 percent of the Analysis Area is mapped as having a risk to assets, which includes 0.6 percent as moderate risk and 0.4 percent as low risk, which are primarily along Oregon Route 207 (OR-207) in the northwesternmost portion of the Analysis Area (see Exhibit V, Table V-2 and Figure V-2). When assets are added to a landscape, wildfire risk to assets 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 category for wildfire risk to assets.

The percent of the Analysis Area that falls into each wildfire risk rating appears in Exhibit V, Table V-3 and is displayed on Figure V-3. Of the mapped areas of overall wildfire risk, low overall fire risk covers the largest area (2.3 percent) of the Analysis Area. Most of the Analysis Area has no overall wildfire risk data (over 96.7 percent), which indicates there are no highly valued resources or assets mapped in the area or simulated wildfires did not burn the area due to low historical occurrence/absence of burnable fuel (CBI 2020). High and moderate overall wildfire risk areas are centered around farm and ranch buildings and infrastructure. Big Butter Creek Road and Little Butter Creek Road are the main corridors where moderate to high overall risk were modeled in the Analysis Area (see Exhibit V, Figure V-3).

See Exhibit V for assessment of baseline fire risk, seasonal fire risk, and high fire consequence areas.

## **2.2 Wildfire Mitigation Through Facility Design**

The Facility's components, and overall project design, will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards and will not pose a significant fire risk. The facility will be deenergized for most of the construction period, only during the final commissioning stage it is expected to be connected to grid. During construction, contractor will follow all relevant Occupational Safety and Health Administration and National Fire Protection Association requirements related to fire hazards including: no smoking policy, fire permit requirement, hazardous material and combustible storage areas, pre task planning to assess fire risks, relevant fire awareness training, lockout-tagout requirement, hazardous materials documentation, appropriate management, and disposal.

The Certificate Holder will design the Facility to maintain a defensible space clearance along Facility features. Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season. All combustion engines (including but not limited to off road vehicles, chainsaws, and generators) will be equipped with a spark arrester that meets U.S. Forest Service Standard 5100-1a.

Vegetation within the fence line will be managed as needed to reduce fuels for fire. Facility access roads will be sufficiently sized for emergency vehicle access, in accordance with local building code and local fire department requirements. The fenced areas around Facility infrastructure will be graveled, with no vegetation present. Smoke/fire detectors will be placed around the site that will be tied to the supervisory control and data acquisition system and will contact local firefighting services. The limited vegetation present within the Amended Site Boundary during operations will

also help to minimize spread of fire. Any potential fires inside the Amended 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.

## **2.3 Wildfire Risk Mitigation During Facility Operations**

### ***2.3.1 Vegetation Management***

The Certificate Holder will maintain vegetation within the Amended Site Boundary and will also maintain a defensible space clearance along Facility features. Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season. All combustion engines (including but not limited to off road vehicles, chainsaws, and generators) will be equipped with a spark arrester that meets U.S. Forest Service Standard 5100-1a.

A physical vegetation survey assessment of the area will be completed at least once annually to monitor for vegetation clearances, maintenance of fire breaks, and monitor for wildfire hazards. This survey will focus on areas of heightened risk and high fire consequences as described in Sections 2.5 and 2.6 respectively, and displayed in Figures V-2, V-3 and V-4 (see Exhibit V). The initial vegetation survey assessments will occur in May or June, prior to the start of the dry season, a time when wildfire risk is usually heightened due to low fuel moisture and high temperature. The vegetation survey assessment 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. The Site Operations Manager will visually assess and note vegetation height, abundance, and areas where vegetation should not be present such as crushed rock bed around collector substations. The vegetation survey assessment will determine that clearances and fire breaks are satisfactory, and if not, the mitigation procedures will be implemented (e.g., vegetation management) to ensure clearances and fire breaks are satisfactory.

The survey will be used to create a Vegetation Maintenance Work Plan and will be incorporated into the Revegetation Plan (see Exhibit P attachments). The Vegetation Maintenance Work Plan will be a living document that will be updated in order to meet the objectives of this Wildfire Prevention and Risk Mitigation Plan. Observations in the vegetation survey assessment will include:

- Location of wildfire hazards;
- Species;
- Estimated growth rate;
- Abundance;
- Vegetation clearance/setbacks; and
- Risk of fire hazard.

Criteria that will be used to determine that clearances and fire breaks are satisfactory include a 5-foot noncombustible, defensible space around Facility structures (e.g., substations, operations and maintenance [O&M] building), a 5-foot minimum vegetation clearance from conductors, no vegetation in graveled areas or crushed rock areas around facility structures (e.g., O&M buildings, substations, and battery energy storage system [BESS]), and height of vegetation within transmission line corridors managed to appropriate height requirements (Table 1).

To reduce the availability of fuels for wildfire near electrical components, the Certificate Holder will install a non-flammable gravel base around wind turbines, substations, and BESS as described in the RFA 1’s Division 27 document (*Request for Amendment #1 for the Wheatridge Renewable Energy Facility East*) and implement ongoing vegetation management outlined in Table 1 to ensure that vegetation does not grow in these graveled areas.

**Table 1. Vegetation Management Procedures by Facility Component**

Vegetation Management	Procedure	Standard	Time Frame
Turbine	Herbicide application on gravel pad surrounding turbines. Highly compacted gravel foundations of turbines are not suitable for vegetation.	IEEE 80 <sup>1</sup> NFPA 70 <sup>2</sup>	Yearly, depending on vegetation condition.
Substation	Herbicide application on substation gravel pad. Highly compacted gravel foundations of substation are not suitable for vegetation.	IEEE 80 <sup>1</sup> NEC 70 <sup>2</sup>	Yearly, depending on vegetation condition.
Battery energy storage system	Herbicide application on gravel pad surrounding the battery energy storage system. Highly compacted gravel foundations of the battery energy storage system are not suitable for vegetation.	IEEE 80 <sup>1</sup> NEC 70 <sup>2</sup>	Yearly, depending on vegetation condition.
Overhead electrical lines	Mow vegetation to achieve clearance requirements between conductor and ground.	North American Electric Reliability Corporation (NERC) <sup>3</sup>	Yearly, depending on vegetation condition.
1. IEEE (2015) 2. NFPA (2023) 3. NERC (2009)			

Additional vegetation surveys may be required throughout the season based on seasonally heightened fire risk. The Revegetation Plan will be followed during operation of the Facility to ensure that vegetation does not grow in a manner that increases the rate of fire spread should an ignition occur. Vegetation control will begin following the surveys and employ best management practices and techniques that are most appropriate for the local environment.

These may include physical vegetation control, such as mowing or the introduction of non-invasive species that are low growing as described in Exhibit P and the Habitat Mitigation Plan (HMP; Attachment P-2), and the Revegetation Plan (Attachment P-4). Depending on the location, soil type,

and HMP or Revegetation Plan criteria, the vegetation may either be mowed or managed through low-growing species in a seed mix. For example, vegetation under overhead electrical lines may be mowed to achieve clearance requirements between conductor and ground (Table 1). Habitat subtypes within the Amended Site Boundary primarily consist of Native Perennial Grassland, Dryland Wheat, Revegetated/Other Planted Grassland, and Rabbitbrush/Snakeweed Shrub-steppe. Based on the HMP and Revegetation Plan, the appropriate non-invasive, low-growing species for physical vegetation control can be included in seed mixes for the restoration of habitat with either 1) a mix of native or non-invasive, non-persistent non-native grasses; or 2) a mix of native or non-invasive, non-persistent non-native grasses, forbs, and shrubs.

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. Noxious weeds within the Amended Site Boundary will be controlled in accordance with the Noxious Weed Control Plan (see Exhibit P, Attachment P-3).

## **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 issued by the National Weather Service. 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 construction or overland vehicle travel in certain high risk locations or employ additional mitigation measures. High risk locations may include areas of extremely combustible material such as grass, brush, or timber. Mitigation measures during a Red Flag Warning may include communicating to on-site staff of the Red Flag Warning, communicating with local fire protection agency personnel of on-going conditions, driving or parking on roads to avoid sparking a fire in grass or brush, and halting construction activities that may increase fire risk such as hot work.

## **2.5 Emergency Response**

Emergency response is outlined in the Wheatridge Emergency Action Plan. Personnel will be trained on the RACE (i.e., Remove, Alarm, Confine and Extinguish or Evacuate) 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 inch "D" Handle, blade - 12 inches long and 10 inches wide;
- Collapsible Pail or Backpack Pump: 5-gallon capacity; and
- Drip Can: 5-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 Amended Site Boundary.

## **2.6 Updates to the Wildfire Mitigation Plan**

The Wildfire Mitigation Plan will be a living document that will be updated in order to meet the objectives and to respond to changing conditions within the Amended Site Boundary. The Mitigation Plan will be updated annually to account for changes in local fire protection agency personnel and changes in best practices for minimizing and mitigating fire risk. Emerging technologies will likely contribute to increased knowledge of wildfire risk and wildfire mitigation. Improvements in wildfire modeling and detection will be monitored and integrated into the plan. Specifically, this document will be updated if wildfire models cited in this report are updated.

## **3.0 References**

- CBI (Conservation Biology Institute). 2020. Wildfire Risk Assessment Data Layer Descriptions Spreadsheet. DataLayerDescriptions\_04\_01\_2019.Xlsx. Conservation Biology Institute. <https://databasin.org/datasets/31cc2ca6bebe4efab3b139c50dd79722/>.
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