

4.13. WILDFIRE

4.13.1 INTRODUCTION

The Wildfire chapter of the EIR summarizes the setting information and identifies wildfire potential within the project area based on state and local mapping. The chapter also includes a review of completed, active, and planned fuel treatments projects within the region and consideration of site-specific factors that could affect wildfire potential at the Centennial and Brunswick Industrial Sites.

4.13.2 EXISTING ENVIRONMENTAL SETTING

The following section describes the existing wildfire setting in the project region.

Several fire agencies provide fire protection services within the project area, including both wildland fire and structural fire response. The Centennial Industrial Site is located within both the Nevada County Consolidated Fire District (NCCFD) and the Ophir Hill Fire Protection District (FPD), whereas the Brunswick Industrial Site is located entirely within the Ophir Hill FPD. Responsibility for wildland fire suppression, however, is the sole responsibility of the state (i.e., California Department of Forestry and Fire Protection [CAL FIRE]), given that both the Centennial and Brunswick Industrial Sites are located within State Responsibility Areas (SRA), as shown in Figure 4.13-1.

As also shown in Figure 4.13-1, both the Centennial and Brunswick Industrial Sites are located on lands classified as being within a Very High Fire Hazard Severity Zone.

Public Resources Code 4201-4204 direct CAL FIRE to map fire hazards within SRAs, based on relevant factors such as fuels, terrain and weather. These statutes were passed after significant wildland-urban interface fires; consequently, these hazards are described according to their potential for causing ignitions to buildings. These zones referred to as Fire Hazard Severity Zones (FHSZ), provide the basis for application of various mitigation strategies to reduce risks to buildings associated with wildland fires. The zones also relate to the requirements for building codes designed to reduce the ignition potential to buildings in the wildland-urban interface zones.

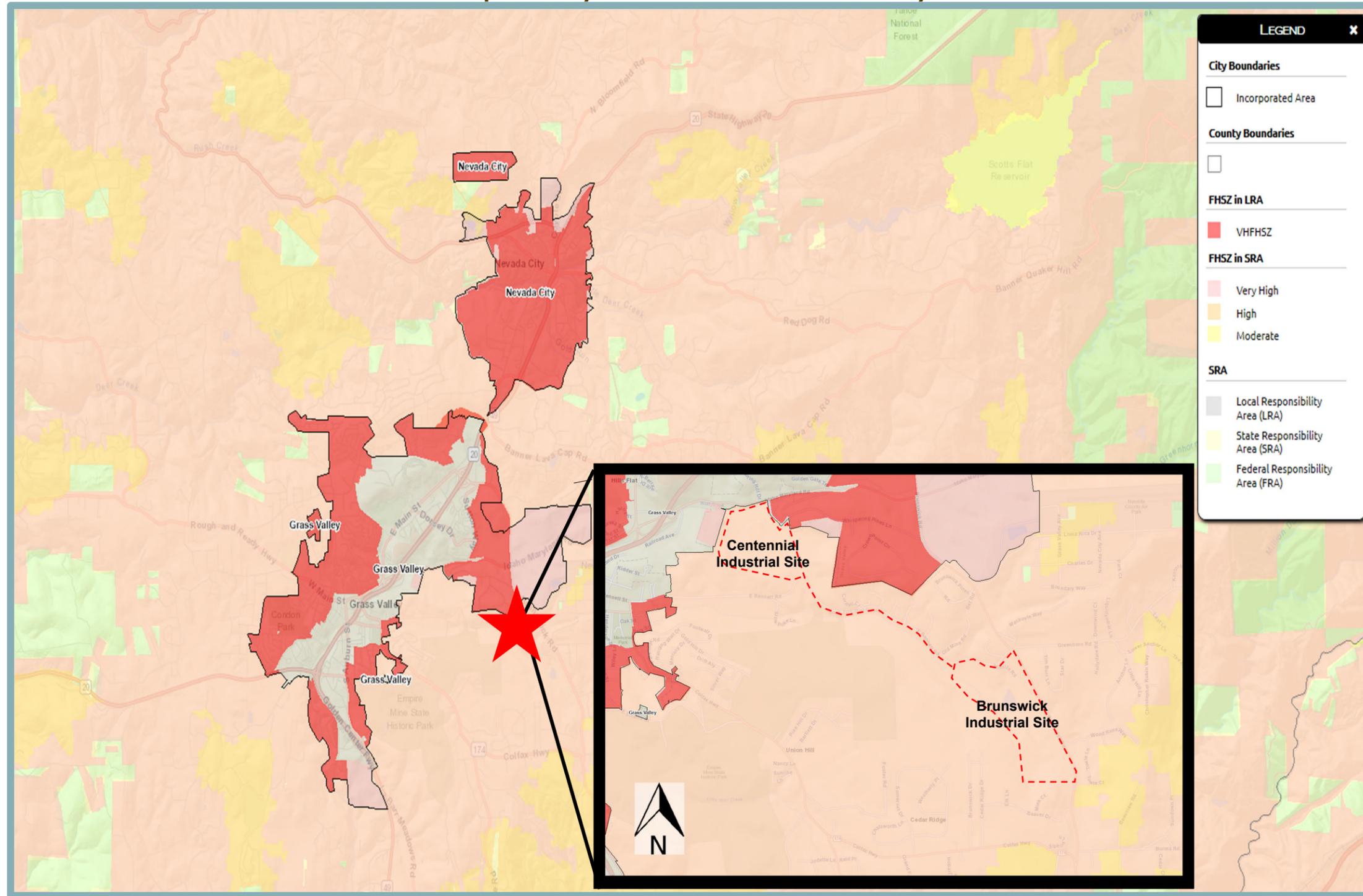
According to California Government Code Section 51178, Very High FHSZs are determined by the Director of Forestry and Fire Protection based on consistent statewide criteria and the severity of fire hazard that is expected to prevail in those areas. Very high FHSZs shall be based on fuel loading, slope, fire weather, and other relevant factors including areas where Santa Ana, Mono, and Diablo winds have been identified by CAL FIRE as a major cause of wildfire spread.

Wildland Fire Hazards

The following section includes a discussion of the potential for wildland fires to occur in the project area and the agencies and resources available for wildland fire suppression.



Figure 4.13-1
State Responsibility Areas and Fire Hazard Severity Zones



*Boundaries are approximate



Topography and Vegetation

With the exception of the developed portions of the City of Grass Valley, the region surrounding the overall project site is forested, thus, providing fuel sources for wildfire. Topography can play a significant role in wildfire risk given that fires burn faster uphill than downhill because the fuels above the fire are brought into closer contact with upward moving flames. In addition, the process of heat transfer is influenced by topography (slope and aspect). Because heat rises (convection), heat transfer through convection tends to move upward. During wildfires, burning materials on the forest floor create convection currents that preheat the leaves and branches of shrubs and trees above the fire. Heat transfer therefore occurs more rapidly through fuels up a slope causing a fire to travel more quickly upslope than downslope.

The vertical air currents can also lift burning materials. The floating embers, also called firebrands, can settle in unburned areas ahead of the fire and start small fires. This phenomenon is called spotting and can result in rapid advancement of the fire.

While topography varies across the Centennial and Brunswick Industrial Sites, as well as across the greater landscape in the project region, no significant slopes, such as those in steep-walled canyons or mountainous valleys exist. The nearest such topographical features would be approximately 3.5 to 4 miles away, and include but are not limited to Deer Creek canyon west of Nevada City and the canyons generally north and east of Rollins Lake (e.g., Greenhorn Creek, Steep Hollow Creek).

With respect to project site vegetation, based on estimates in the biological resources reports, the Brunswick Industrial Site includes approximately 58 acres of forest land and the Centennial Industrial Site (post-remediation baseline) includes up to 10 acres of forest land.

Prevailing Winds

The predominant wind direction at the project site area is from the North-East and South-West directions. This suggests, for example, that a fire burning in the forested terrain southwest of the Centennial and Brunswick Industrial Sites could burn through the Sites due to prevailing southwesterly winds.

Large Fire History

According to CAL FIRE, relatively few larger wildfires have occurred within the region surrounding the project sites over the past three years.¹

- In August 2021, the Bennett Fire burned approximately 59 acres, comprising most of the Centennial Industrial Site. Involved agencies included CAL FIRE (Nevada-Yuba-Placer Unit), NCCFD and Grass Valley Fire Department. No damaged structures were reported.
- In August 2021, the River Fire burned 2,619 acres in Nevada and Placer counties, along the Bear River and its drainages, near Milk Ranch Road and Bear River Campground Road. Damages were as follows: 21 structures damaged, 142 structures destroyed, and four injuries.
- In August 2020, the Jones Fire burned 705 acres along Jones Bar Road, South Yuba River Drainage, northwest of Nevada City, approximately seven miles northwest of the project area. Damages were as follows: three structures damaged, 21 structures

¹ CAL FIRE. *Incidents Overview*. Available at: <https://www.fire.ca.gov/incidents/>. Accessed February 16, 2021 and November 30, 2021.



destroyed, seven people injured. No other wildfires were reported by CAL FIRE for Nevada County in 2020.

- In June 2019, the only wildfire incident recorded by CAL FIRE in Nevada County was a 2-acre fire (Long Fire) north of Long Point Road, approximately 12.5 miles north of the project area. No damaged structures or injuries were reported.
- In August 2018, the only wildfire incident recorded by CAL FIRE in Nevada County was the Oak Fire, which burned 16 acres off Oak Drive and Buck Mountain Road, south of Grass Valley, approximately eight miles southwest of the project area. No damaged structures or injuries were reported.
- In 2017, seven wildfire incidents are recorded by CAL FIRE in Nevada County. The largest wildfire was the Lobo (Wind Complex) Fire (October 2017), which burned 821 acres, approximately 5.5 miles northwest of the project area, along Deer Creek Canyon. Two structures were damaged and 48 structures destroyed.
 - Approximately 3.5 miles south/southwest of the project area, the McCourtney (Wind Complex) Fire (October 2017) burned approximately 76 acres, near McCourtney Road and State Route (SR) 20. Two structures were damaged and 13 structures destroyed.
 - Approximately 9.5 miles south of the project area, the Brewer Fire (July 2017) burned approximately 10 acres off Brewer Road and Conestoga Drive in Alta Sierra.
 - Approximately 10 miles northwest of the project area, the Pleasant Fire (August 2017) burned approximately 392 acres off SR 49 and Pleasant Valley Road, south of North San Juan. One structure was damaged, no structures destroyed, and one injury was reported.
 - The Garden Fire occurred in October 2017 and burned approximately 19 acres off Wolf Road and Garden Bar Road, over 11 miles southwest of the project site. No damaged structures or injuries were reported.
 - The Greenhorn Fire occurred in July 2017 and burned approximately 15 acres near Greenhorn Access Road, Rollins Lake, approximately 4 miles southeast of the project site. No damaged structures or injuries were reported.
 - The Grizzly Fire occurred in July 2017 and burned approximately 10 acres off Grizzly Road and Turnagain Arm Road, over 10 miles northeast of the project area. No damaged structures or injuries were reported.
- In 2016, two wildfires were reported in Nevada County by CAL FIRE. The Auburn Fire burned approximately 47 acres off South Auburn Street, near Empire Mine State Park, less than two miles west of the project area. No damaged structures or injuries were reported. The Phoenix Fire burned approximately 38 acres near Soda Springs, over 25 miles northeast of the project area.
- The second largest wildfire in Nevada County within the last six years is the July 2015 Lowell Fire, which burned approximately 2,304 acres. The fire occurred in the Steep Hollow drainage, west of Alta, approximately 7.5 miles east of the project area. There was a total of one structure damaged, two structures destroyed, and six reported injuries. Only one other wildfire was reported by CAL FIRE in 2015, the 30-acre McCourtney Fire, over 13 miles southwest of the project area.

CAL FIRE strives to extinguish 95 percent of all wildland fires at 10 acres or less. There have been numerous additional fires within the region surrounding the project sites over the past three years. These fires, for the most part, were extinguished within the above stated goal of under 10 acres.



Fuel Treatment Efforts

Fuel treatment efforts have been ongoing within the project region. Forest fuel treatments are used by managers for ecological restoration and reducing fire hazard. Due to past management decisions and long-term fire exclusion, forests are more dense and are susceptible to severe wildfires. Fuel treatments aim to reduce the intensity and size of wildfires, increase species diversity, and restore forests to their historical condition. There are two common types of treatments:

- Mechanical thinning: cutting and clearing wood and brush; and
- Prescribed fire: burning existing fuel before more accumulates.

Based on proximity to homes and communities one treatment may be used over the other. Several research studies show a combination of thinning following by burning of surface fuels is most effective in promoting forest resilience to wildfire.²

Figure 4.13-2 shows the completed, active, and planned fuel treatment projects within the region surrounding the overall project site.³

The fuel treatment efforts closest to the overall project site (i.e., within an approximately 1.5 mile radius) include the active fuel treatment project within Empire Mine State Park to the south; the completed fuel treatment operation on private land directly south of the Brunswick Industrial Site, south of SR 174; the completed fuel treatment operations on portions of the Loma Rica Ranch Specific Plan property (north and south of Idaho Maryland Road); and the active fuel treatment project immediately north of the Nevada County Air Park. With respect to planned but not yet funded fuel treatment projects in the immediate vicinity (i.e., grant application submitted but award not yet confirmed), the primary project is roadside vegetation management (to create defensible space) along East Bennett Road, where the potable water pipeline would be installed, as well as the portion of Brunswick Road along the frontage of the Brunswick Industrial Site. Similar roadside vegetation management is also proposed along Greenhorn Road, east of the Brunswick Industrial Site.

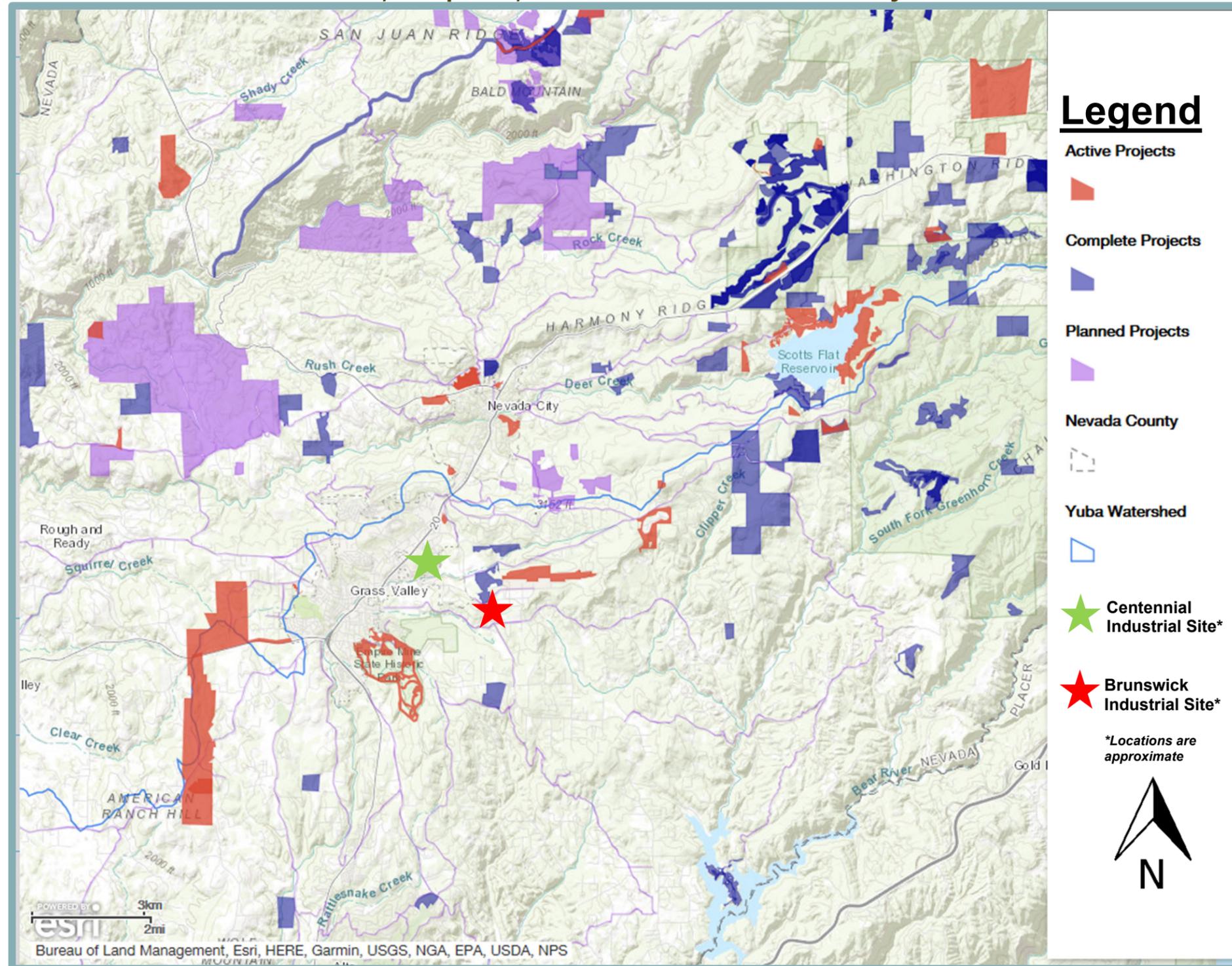
Figure 4.13-2 shows other regional fuel treatment projects that have been completed or are in the active or planning stages. Noteworthy is the fact that many of these regional fuel treatment projects are located in steep canyons or ravines where wildfire risk is increased. For example, fuel treatment was completed within the Clipper Creek drainage, east of the project site, in 2014. A relatively large fuel treatment project is funded for the Jones Ravine area, north of Newtown; this is the approximate location of the 2020 Jones Fire. The fuel treatment project is known as the Sierra Foothill Forest Climate Resilience Project. Another relatively substantial fuel treatment project in the active stage is the Ponderosa West GV Defense Zone Project – Phase 1, which is a shaded fuel break project identified as a priority project in the 2016 Nevada County Community Wildfire Protection Plan.

² For example, see United States Department of Agriculture / Forest Service, Rocky Mountain Research Station. *Review of Fuel Treatment Effectiveness in Forests and Rangelands and a Case Study from the 2007 Megafires in Central Idaho USA (General Technical Report RMRS-GTR-252)*. January 2011.

³ The source is the Yuba Forest Network Stakeholder Mapping Project which is led by the South Yuba River Citizens League's (SYRCL) Yuba Forest Network in collaboration with the County of Nevada Office of Emergency Services.



**Figure 4.13-2
 Active, Completed, and Planned Fuel Treatment Projects**



*Source: Yuba Forest Network Stakeholder Mapping Project. Accessed February 2021.



Public Safety Power Shutoffs

In an effort to prevent fires, the electrical services provider for western Nevada County, PG&E, initiated public safety power shutoff (PSPS) events in 2019, which may continue in subsequent years until fire risks associated with power lines are decreased. PSPS events involve PG&E turning off electrical service during times when the weather is predicted to have a heightened fire risk from gusty winds and dry conditions. Dependent on the fire risks, the power outage events may occur in specific areas or for all PG&E customers across the County. The PSPS events that occurred in Nevada County for 2019 impacted a majority of the western portion of the County, including Nevada City and the City of Grass Valley. Throughout the PSPS events, emergency services in Nevada County remain functional with back-up power supplies, but many businesses and agencies are not operational, potentially posing inadequate access to medical services and exposure to excessive heat or cold.

The PG&E circuit along Brunswick Road, from which the Brunswick Industrial Site operations would be served, has been subject to recent (October 2019) PSPS's due to wildfires.⁴

Fire Agencies and Resources

As discussed above, CAL FIRE has primary responsibility for wildfire suppression on lands within SRAs, wherein the Centennial and Brunswick Industrial Sites are located. The CAL FIRE Nevada-Yuba-Placer Unit serves the project area. Notwithstanding, depending upon the incident, other fire agencies may provide response during a wildfire incident through mutual and/or automatic aid agreements. These agencies are discussed in Chapter 4.11, Public Services and Utilities, of this EIR.

California Department of Forestry and Fire Protection

Wildland fire protection is provided either by the State (through CAL FIRE) or the Federal government (through the U.S. Forest Service). The State has direct protection responsibility for all state and private wildlands (or forest lands) in designated areas, and provides support and assistance to local jurisdictions in other areas of the state. CAL FIRE is responsible for wildland fire response at the Centennial and Brunswick Industrial Sites. Local fire districts may also provide wildland fire protection, depending upon the event and circumstances.

With respect to the project site, the nearest CAL FIRE station is Station 20, located at 10242 Ridge Road, Nevada City. Station 20 is typically fully staffed, 24-hours a day, year-round. A minimum of three fire personnel staff the Station at all times. During summer, the Station is equipped with two fire engines (Type 3, 500-gallon water tank), and one engine (Type 3) in the winter.

In addition to legal responsibility for wildland fires in SRAs, where the project site is located, CAL FIRE has mutual and/or automatic aid agreements, and thus, may assist local fire agencies with structural fires and medical incidents under the closest resource concept.

CAL FIRE strives to meet the National Fire Protection Association (NFPA) 1710 guideline for fire department responses of 5 minutes 90 percent of the time.

⁴ Pacific Gas & Electric. *Amended PG&E Public Safety Power Shutoff (PSPS) Report to the CPUC, October 26 & 29, 2019 De-Energization Event*. Available at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/PSPS-Report-Letter-10.26.19-amend.pdf. Accessed January 28, 2021.



Grass Valley Air Attack Base

Nevada County is home to an additional distinct emergency resource located at the Nevada County Airport in Grass Valley—the interagency Grass Valley Air Attack Base. This is one of only 13 Wildfire Air Attack Bases in California, and it is one of three interagency Wildfire Air Attack Bases in the State (the other two are in Redding and Porterville). The air attack base is operated and staffed by CAL FIRE (Nevada-Yuba- Placer Unit) Air Attack, and the U.S. Forest Service (Tahoe National Forest) Air Attack. CAL FIRE maintains two planes and the Forest Service maintains one plane. Two retardant air tankers are also based during the fire season at the air attack base. The strategic location of the Grass Valley air base assists CAL FIRE in achieving its goal of twenty-minute response times anywhere in California.

Wildfire Dispatch

The Grass Valley Emergency Command Center, located at the Nevada County Airport in Grass Valley, is an interagency-agency cooperative facility between the U.S. Forest Service (Tahoe National Forest) and CAL FIRE (Nevada-Yuba-Placer Unit). CAL FIRE dispatch personnel provide emergency dispatch services through cooperative agreements with all the fire districts and cities within Nevada County,⁵ and dispatch and accountability of all resources within 12 operational area/counties as The Region IV Coordination Center for the California Office of Emergency Services in the Sierra Nevada. Additionally, dispatch services are provided into the state of Nevada, with the North Lake Tahoe Fire Protection District.

4.13.3 REGULATORY CONTEXT

The following sections provide a summary of the federal, state and local regulations pertaining to wildfire that are applicable to the proposed project.

Federal Regulations

The following are the federal environmental laws relevant to wildfire.

Healthy Forest Reforestation Act

In recognition of widespread declining forest health, the Healthy Forest Restoration Act (HFRA) was passed in 2003 to expedite the development and implementation of hazardous fuel reduction projects on federal land. A key component of the HFRA is the development of Community Wildfire Protection Plans (CWPP) as a mechanism for public input and prioritization of fuel reduction projects. A CWPP provides background information about a project area, discussion of community values at risk, community base maps, a fire risk assessment, and recommendations that identify treatment areas for reducing fuels and promoting education and awareness about wildland fires, as well as monitoring and assessment strategies.

State Regulations

The following are the State environmental laws and policies relevant to wildfire.

State Responsibility Area

Pursuant to Public Resources Code (PRC) Sections 4125-4128, the Board of Forestry and Fire Protection classifies all lands in the state for the purposes of determining areas in which the

⁵ Yuba County fire districts (outside of incorporated cities), Placer County (west) fire districts in contract (Placer County Fire Department, Auburn City Fire, City of Colfax Fire, Alta Fire Protection District), Placer County (east) fire districts (North Tahoe Fire Protection District, Olympic Valley Fire Protection District, Meeks Bay Fire Protection District, and NorthStar Fire Protection District).



financial responsibility of preventing and suppressing wildfire is primarily the responsibility of the state. These lands are termed SRA.

Fire Hazard Severity Zones

FHSZs are geographical areas designated pursuant to California PRC Sections 4201 through 4204 and classified as Very High, High, or Moderate in SRAs or as Local Agency Very High FHSZs designated pursuant to California Government Code Sections 51175 through 51189.

The California Code of Regulations (CCR), Title 14, Section 1280 entitles the maps of these geographical areas as “Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California.”

California Public Resources Code Section 4291

California PRC Section 4291 sets forth minimum fire safety standards for development in or adjoining mountainous areas and forest-covered lands.

Provisions that would apply to development of the proposed project include, but are not necessarily limited to:

- Defensible space must be maintained 100 feet from the side, front and rear of a structure, or up to the property line where the property line is less than 100 feet from the structure;
- Any tree, shrub, or other plant adjacent to or overhanging a building must be free of dead or dying wood;
- The roof of any structure must be free of leaves, needles, or other vegetative materials;
- Prior to constructing a new building, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards; and
- Prior to final inspection approval of any building, the Fire Department must inspect the building and the fire suppression facilities to certify that the fire suppression improvements comply with Building Code and fire department service requirements.

California Building Code – Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure)

Chapter 7A of the California Building Code (CBC) includes definitions and standards for building materials, systems, and/or assemblies to be used for the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area, which is defined by the CBC as a geographical area identified by the State as a “Fire Hazard Severity Zone” in accordance with the PRC Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

Chapter 7A of the CBC is intended to establish minimum standards for the protection of life and property by increasing the ability of a building located in any FHSZ within SRAs or any Wildland-Urban Interface Fire Area to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. All new buildings to be located in a FHSZ or Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted on or after July 1, 2008 are required to comply with Chapter 7A of the CBC. Examples of the Chapter 7A standards include, but are not limited to, use of ignition-resistant materials, fire-intrusion design of roofing and vents, and use of glazed exterior windows and doors.



Local Regulations

The following local goals and policies related to wildfire are applicable to the proposed project.

Nevada County General Plan

The following applicable goals and policies related to wildfire are from the Nevada County General Plan.

Safety Element

Goal EP-10.1 Provide a coordinated approach to hazard and disaster response preparedness.

Policy EP-10.1.4 Provide for adequate evacuation routes in areas of high fire hazard, high potential for dam failure, earthquake, seiches, avalanche, flooding or other natural disaster.

Policy EP 10.1.6 Transportation routes that are designated on the General Plan Land Use Maps as interstates, freeways, highways, and other principal arterial routes shall be considered primary evacuation routes on a Countywide basis. Such routes provide the highest levels of capacity and contiguity and serve as the primary means for egress from the County.

The routes designated on the General Plan Land Use Maps as minor arterial or major collector routes shall be considered secondary evacuation routes on a Countywide basis. These routes supplement the primary evacuation routes, and provide egress from local neighborhood and communities.

Policy EP-10.1.7 Prioritize the creation and maintenance of private road districts on existing private roads to ensure emergency ingress and egress meets Nevada County and CAL FIRE road and driveway standards and maintains these standards. Private road districts shall include the assurance that emergency ingress and egress will be maintained.

Policy EP-10.1.11 Mitigate development in areas of High and Very High Fire Hazard Severity Zones by incorporating into conditions of approval the most current data in order to assure appropriate fuel modification around the development and emergency ingress and egress for residents, visitors and emergency services.

Policy EP-10.1.12 Continue to work with CAL FIRE, California Office of Emergency Services and Nevada County Office of Emergency Services to adopt by ordinance the most current Fire Hazard Severity Zones Map, adopt the most appropriate fire-resistant building material standards and fuel modification/vegetation management requirements for



each zone as a basis for project review in accordance with Federal, State and local standards.

Policy EP-10.1.13 Nevada County shall develop policies and provide updates, as appropriate, that address recovery and redevelopment after a large fire with the intent to address the reduction of future vulnerabilities to fire hazard risks through site preparation, redevelopment layout design, fire resistant landscape planning, and fire retarding building design and materials.

Goal FP-10.7 Enhance fire safety and improve fire protection effectiveness through infrastructure and service improvements.

Policy FP-10.7.1 Ensure County-maintained roads meet design standards for current or anticipated uses, as designated on the General Plan Land Use Map. Maintain and update Nevada County road standards for both public and private roads to adequately address emergency ingress and egress.

Policy FP-10.7.2 As a condition of development, require long-term maintenance of private roads to meet current standards, including roadside vegetation management, as part of a formal private road association or similar entity.

Policy FP-10.7.3 Projects requiring a traffic study shall include in such study an assessment of the current emergency evacuation capacity of the public and/or private roads that serve the proposed project, and recommended mitigation that will increase the evacuation capacity, if needed.

Policy FP-10.7.4 Encourage fire protection agencies to determine appropriate levels of fire protection facilities and services for both Community and Rural Regions.

Policy FP-10.7.5 Encourage the upgrading of facilities within existing fire protection districts, and encourage the expansion of existing districts where warranted by the population density allowed under the General Plan.

Policy FP-10.7.6 Locate new critical facilities outside of High and Very High Fire Hazard Severity Zones, unless alternatives are not available or feasible. (Refer to Fire Hazard Severity Zone Map and Critical Facilities in Section 4.3.15 in the Local Hazard Mitigation Plan).

Policy FP-10.7.7 The County shall support community or County-wide water supply systems and the ongoing maintenance of water supply infrastructure for fire protection.



Goal FP-10.8 Reduce fire risk to life and property through land use planning, ordinances, and compliance programs.

- Policy FP-10.8.1 Nevada County shall apply and enforce State of California Public Resource Code 4290 and 4291 through County-adopted ordinances, which includes minimum fire safety standards related to defensible space that are applicable to State responsibility area lands and lands classified and designated as very high fire hazard severity zones as reflected on current and future maps defined in subdivision (i) of Section 51177 of the California State Government Code. Nevada County shall continue to adopt revisions to the California Fire and Building Codes and other standards, which address fire safety, as they are approved by inspection organizations and the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.
- Policy FP-10.8.3 Recognize the value of the "same practical effect" or "exception" process when the letter of the law may not be practically applied, but the intent of the law may be achieved through application of other measures. Develop a public information sheet to increase public awareness and understanding regarding the application of these processes.
- Policy FP-10.8.4 New development and subdivisions shall include adequate emergency infrastructure that includes but is not limited to, emergency water facilities to assist and support wildfire suppression, and adequate ingress and egress routes to facilitate emergency responders' access and the evacuation of inhabitants. Provisions shall be made on applicable projects to require the maintenance of emergency infrastructure and facilities.
- Policy FP-10.8.5 Land use patterns and development standards shall minimize fire hazards, and shall be reviewed and revised, as needed, consistent with the five-year update of the Safety Element.
- Policy FP-10.8.6 Fire safe measures shall be commensurate with the response time for emergency services (e.g. longer distance to a fire department requires more stringent mitigation measures).
- Policy FP-10.8.7 As part of the coordinated and centralized fire safe reviews, the following shall be included in the Comprehensive Site Development Standards as the basis for site plan review:



- a. Standards for roads and private driveways, which will enhance the ability of emergency service providers to respond to structural and wildland fires, and calls for medical and law enforcement emergency assistance. The standards shall provide for secondary road access to new projects where necessary for fire safety or emergency access;
- b. Each property outside of a developed water system shall maintain sufficient usable water storage to provide wildfire and structure protection on the property;
- c. Sign and address standards, which will provide for easy identification of roads, streets, driveways and buildings by emergency service providers; and
- d. Standards to reduce hazards associated with the structural and wildland intermix, including:
 - 1.) Fuel modification and vegetation management procedures adjacent to structures and fuel breaks where appropriate;
 - 2.) Vegetation management adjacent to roads and driveways to provide safe travel for residents, and firefighting, medical and police personnel; and
 - 3.) Building setbacks.

Policy FP-10.8.8 In those areas outside Community Regions, which are identified as having a high to very high fire hazard severity and/or lack adequate year-round fire protection facilities, maintain low-density land use designations (Rural or Forest) in order to minimize the potential fire hazard.

Policy FP-10.8.9 The County shall consult the fire hazard severity zones map during the review of all projects so that standards and mitigation measures appropriate to each hazard classification can be applied. Land use densities and intensities shall be determined by mitigation measures that may include development clustering, fire breaks, and fire-resistant building design and materials.

Nevada County Emergency Operations Plan

The Nevada County Emergency Operation Plan (EOP) delineates responsibilities of first responders (fire and law) and other response support organizations, e.g., Department of Public Works, Environmental Health, etc. for natural disasters and manmade emergency incidents in Nevada County. The EOP is intended to mitigate future disasters and emergency incidents.

The EOP includes a Mass Evacuation Annex (Annex B) that establishes County, city and other agency responsibilities and the concept of operation for support of a mass vehicular evacuation moving within or through the County that has been caused by a disaster or incident occurring outside of Nevada County. A new Nevada Operational Area (OA) Evacuation Annex (2020) has been drafted and is set to go to the Board of Supervisors for approval. The purpose of this OA



Evacuation Annex is to provide mass evacuation strategies for the OA's response to emergencies that involve the evacuation of people from an impacted area. This involves coordination and support for the safe and effective evacuation of the population, including people with disabilities and access and functional needs, whom may need additional support to evacuate. Focus areas within the evacuation annex include public alert and warning, transportation, and evacuation terminology.

The Annex was developed as a functional support document to the Nevada County EOP; and is consistent with the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). It is coordinated with the State's emergency plan, compliant with the recommendations from the Comprehensive Preparedness Guidance (CPG) 101 v. 2.0 and is applicable to all locations and to all agencies, organizations, and personnel with evacuation and evacuation support function responsibilities within the Nevada OA.

Nevada County Local Hazard Mitigation Plan (Update)

Nevada County and six other jurisdictions, in conjunction with a planning committee, prepared the Nevada County Local Hazard Mitigation Plan (LHMP) update to the 2011 Federal Emergency Management Agency (FEMA) approved Nevada County Local Hazard Mitigation Plan. This plan was also developed, among other things, to ensure Nevada County and participating jurisdictions' continued eligibility for certain federal disaster assistance: specifically, the FEMA Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance Program (FMA).

The Nevada County LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within Nevada County's jurisdictional boundaries (hereinafter referred to as the Planning Area). The LHMP includes a vulnerability assessment of hazards and their potential impact on the community. Using this information, the LHMP includes a mitigation strategy, consisting of a set of goals, objectives, and mitigation actions (Table 5-3 of the LHMP). Wildfire mitigation actions consist of fuel reduction projects, among others.

Nevada County Community Wildfire Protection Plan

The Nevada County Community Wildfire Protection Plan (CWPP, 2016) represents the efforts of the Fire Safe Council of Nevada County, Inc. (FSCNC) in cooperation with a wide variety of organizations, private citizens and agencies, such as CAL FIRE, Bureau of Land Management, U.S. Forest Service, and Nevada County Office of Emergency Services (OES). The primary goal of the CWPP is to protect human life, private property, essential infrastructure and natural resources through the implementation of fire prevention projects that work to increase public awareness, improve forest health, sustain local wildlife and preserve the natural beauty of the area through a shared responsibility concept. To that end, the CWPP identifies mitigation actions, including fuels reduction projects, Firewise Community education and outreach, and fire prevention and suppression in the Wildland Urban Interface.

4.13.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to wildfire. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.



Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, Section XX. Wildfire, determination of significant impacts related to wildfire is based on whether the proposed project would result in the following, if located in or near state responsibility areas or lands classified as very high FHSZs:

- Substantially impair an adopted emergency response plan or emergency evacuation plan.
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Method of Analysis

The impact analysis contained in this chapter is based on a review of available CAL FIRE wildfire hazard mapping and recent wildfire history within Nevada County. In addition, state and local fire hazard regulations were evaluated to identify applicable design requirements for the proposed project to minimize wildfire risk (e.g., defensible space). Raney also contacted local fire agencies to discuss their resources and responsibilities related to wildfires.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above.

4.13-1 Substantially impair an adopted emergency response plan or emergency evacuation plan. Based on the analysis below, the impact is *less than significant*.

As stated in the Nevada County General Plan Safety Element and the Nevada OA Evacuation Annex to the County EOP, primary evacuation routes in Nevada County consist of the major interstates, highways, and principal arterials identified on the Nevada County General Plan Land Use Map. The routes designated on the General Plan Land Use Maps as minor arterial or major collector routes shall be considered secondary evacuation routes on a Countywide basis. These routes supplement the primary evacuation routes, and provide egress from local neighborhood and communities. According to the Table 4.1 of the Circulation Element of the General Plan, Brunswick Road is considered a Minor Arterial, and thus, is not a primary evacuation route for the County. Rather, Brunswick Road is considered a secondary evacuation route.

As discussed in the Project Description chapter, the average transport of engineered fill will be 1,000 tons per day. A maximum transport rate of up to 2,000 tons of engineered fill per day is required to make up for periodic weather or operational delays. Truck payloads will be approximately 20 tons per truck and therefore will require up to a maximum of 100 round trips per day and an average of 50 round trips per day, over a 16-hour period (6:00 AM to 10:00 PM). Up to 18 additional truck trips



could occur per day for various operations (gold concentrate shipping, materials deliveries, etc.).

For a period of approximately five years, trucks would transport barren rock from the Brunswick Industrial Site to the Centennial Industrial Site or Brunswick Industrial Site engineered fill areas. Transport of barren rock to the Centennial Industrial Site is anticipated to occur 16 hours per day, seven days per week. At these rates, it would take approximately five years to fill the approximately 44-acre fill area of the 56-acre Centennial Industrial Site using engineered fill from the Brunswick Industrial Site. Notwithstanding the priority of placing engineered fill at the Centennial Site, the ultimate approach to engineered fill placement will need to remain flexible to address any potential unforeseen circumstances. One such scenario would be if the remediation of the Centennial Industrial Site, currently under Department of Toxic Substances Control (DTSC) oversight, is not complete upon commencement of mining, in which case engineered fill would be placed at the Brunswick Industrial Site and/or transported off-site to be utilized in local and regional construction markets. If the clean-up project on the Centennial Industrial Site is not completed within the 80-year permit life of the mine project, engineered fill would be placed at the Brunswick Industrial Site and/or transported off-site to be utilized in local and regional construction markets, and no material would be placed on the Centennial Industrial Site. With respect to the Brunswick Industrial Site, engineered fill would be transported from the truck-loading area to an approximately 31-acre portion of the Brunswick Industrial Site, using only on-site private roads. Assuming the same rates for the Centennial Industrial Site, it would take approximately six years to fill the Brunswick Industrial Site engineered fill area to the design elevations.

After full placement of fill at the Centennial and Brunswick Industrial Sites to the pad design elevations, the need for hauling of engineered fill would continue due to ongoing mining over the use permit term of 80 years, and thus, hauling would shift entirely to local and regional markets, with the maximum truck trips per day remaining at 100, with a daily average of 50.

Engineered fill from the Brunswick Industrial Site will be hauled to the Centennial Industrial Site via Brunswick Road and Whispering Pines Lane. Engineered fill from the Brunswick Industrial Site to other customers will be hauled using Brunswick Road to SR 20/49. Off-site haul of gold concentrate will average one truck trip per a day using Brunswick Road to SR 20/49. Hauling of fuel and other freight, including explosives, would occur using Brunswick Road to SR 20/49. Thus, over the life of the project, up to 118 haul truck round trips would occur on Brunswick Road during the hours from 6:00 AM to 10:00 PM, seven days a week. On an hourly basis, this equates to approximately 7.4 haul truck round trips per hour on Brunswick Road.

In the event of an emergency, such as a wildfire, requiring evacuation, the incident command center would direct County OES to issue the evacuation order through its Code Red Mass Communication System to notify residents and/or utilize the Wireless Emergency Alert System to send out notifications through cell phones and/or utilize the Emergency Alert System (EAS), which broadcasts across TV screens and AM/FM radio. In addition, the Sheriff's Office will send out deputies to evacuation areas to broadcast an emergency siren (Hi-Lo System) from their patrol vehicles.



In the event of an evacuation order in the vicinity of the proposed mine, such as an evacuation of residents off of Greenhorn Road, the incident command center would contact dispatch and direct them to contact the mine and request the mine operator to shut down the mine and cease all truck hauling operations.⁶ While Brunswick Road is not a primary evacuation route, it would be the evacuation route used by residents of the Greenhorn Road area to evacuate to the primary evacuation route of SR 49/20. Ceasing haul truck operations during the emergency evacuation order would ensure that the proposed project would not have the potential to physically interfere with an emergency evacuation plan. Operation of the approximately 7.4 haul trucks per hour attributable to the proposed project could either be temporarily ceased and/or these trucks could pull off the road to enable residents to evacuate as quickly and expeditiously as possible. With the temporary cessation of mine operations, if directed by County dispatch, no further haul trucks would be entering Brunswick Road during an evacuation order. Accordingly, County OES has stated that the proposed project would not have a significant impact related to physically interfering with an adopted emergency evacuation plan.⁷

Based on the above, the proposed project would have a **less-than-significant** impact related to substantially impairing an adopted emergency response plan or emergency evacuation plan.

Mitigation Measure(s)

None required.

4.13-2 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Based on the analysis below, and with implementation of mitigation, the impact is *less than significant*.

Topography varies across the Centennial and Brunswick Industrial Sites, as well as across the greater landscape in the project region, and while approximately 4 acres of steep slopes (equal to or greater than 30%) occur on Centennial and less than 7 acres occur on Brunswick, no significant slopes, such as those in steep-walled canyons or mountainous valleys exist. The nearest such topographical features would be approximately 3.5 to 4 miles away, and include but are not limited to, Deer Creek canyon west of Nevada City and the canyons generally north and east of Rollins Lake (e.g., Greenhorn Creek, Steep Hollow Creek).

The predominant wind direction at the project site area is from the North-East and South-West directions. This suggests, for example, that a fire burning in the forested terrain southwest of the Centennial and Brunswick Industrial Sites could burn through the Sites due to prevailing southwesterly winds.

⁶ Personal communication between Lieutenant Robert Jakobs, Emergency Operations Coordinator, Office of Emergency Services, Nevada County Sheriff's Office, and Nick Pappani, Vice President, Raney Planning & Management, Inc., January 5, 2021.

⁷ *Ibid.*



CEQA Guidelines Appendix G indicates that additional factors must be considered to determine the potential for a project to exacerbate wildfire risk. Among these other factors is the extent and nature of on-site vegetation. As discussed in Section 4.4 of this Draft EIR, the Brunswick Industrial Site includes approximately 58 acres of forest land and the Centennial Industrial Site (under the post-Clean-Up Project baseline discussed in Section 1.3 of this EIR) includes up to 10 acres of forest land. The proposed project would reduce on-site fuel sources by removing portions of this on-site forest land. The proposed project would remove approximately 6.5 acres of the 58 acres of forest land on the Centennial Industrial Site (assuming post-remediation baseline) and would remove approximately 18.5 acres of forest land on the Brunswick Industrial Site under existing conditions. Overall, implementation of the proposed project would result in the removal of approximately 25 acres of forest land. In addition, other mid- to low-level vegetation would be removed, such as mixed chaparral (Centennial) and annual grassland (both Sites). The reduction in on-site vegetation would result in a concomitant reduction in fuel sources, and thus, wildfire hazard.

In addition to the reduction in vegetation fuel sources on the Centennial and Brunswick Industrial Sites as a result of the proposed project, ongoing fuel treatment projects are being carried out in the project region. As shown in Figure 4.13-2, fuel treatment projects have been completed in steep-walled canyons in the greater project area and more such projects are planned and funded (i.e., Jones Bar area near South Yuba River). In addition, roadside vegetation management (to create defensible space) is planned along E. Bennett Road, where the potable water pipeline would be installed, as well as the portion of Brunswick Road along the frontage of the Brunswick Industrial Site. Similar roadside vegetation management is also proposed along Greenhorn Road, east of the Brunswick Industrial Site. Grant applications have been submitted for this work and the County is waiting for confirmation of award of funding. These completed, active, and planned fuel treatment projects would further reduce wildfire risk in the project area.

A Fire Protection Plan (FPP) (January 2021) has been prepared by the project applicant for the proposed project.⁸ The FPP identifies two defensible space zones that would be maintained around the proposed industrial buildings on the Brunswick Industrial Site. The 30-foot Zone 1 and 100-foot Zone 2 defensible space from planned structures are shown in Figure 4.13-3. The required defensible space areas are within the property boundaries and no increased property line setbacks or easements are required to maintain defensible space.

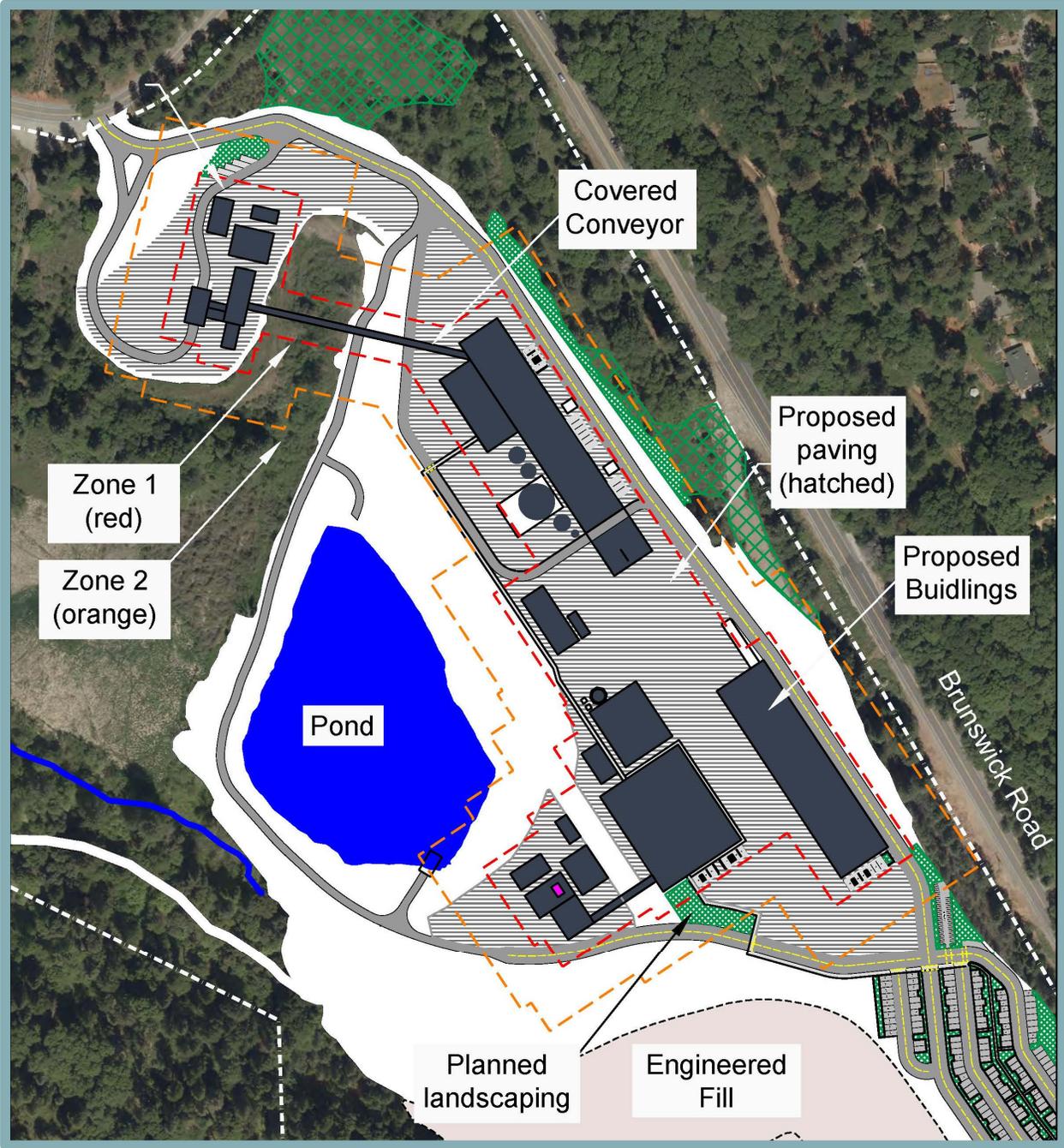
Nearly the entire Zone 1 defensible space would be paved with asphalt, except for a small area of existing vegetation adjacent to the covered conveyor and minor planned landscaping adjacent to the office and warehouse. No high fuel load areas would be present in the Zone 1 area.

All dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles would be removed from the Zone 1 area during grading and other construction activities and no dead tree or shrub branches would be in present in proximity to planned buildings. No firewood piles are proposed at the site. Flammable vegetation or items would not be allowed to be placed adjacent to buildings.

⁸ Rise Grass Valley, Inc. *Fire Protection Plan for the Idaho-Maryland Mine Project*. January 2021.



**Figure 4.13-3
Brunswick Defensible Space**



The majority of the Zone 2 defensible space would be paved with asphalt except for some areas of existing vegetation in the perimeter of the area. No high fuel load areas would be present in the Zone 2 area. Horizontal and vertical spacing among shrubs and trees would be created using the “Fuel Separation” method, the “Continuous Tree Canopy” method or a combination of both to achieve defensible space clearance requirements. Spacing would be done in accordance with the State Board of Forestry and Fire Protection's, “General Guidelines for Creating Defensible Space, February 8, 2006”. Dead and dying woody surface fuels and aerial fuels shall be removed from the Zone 2 area during grading and other construction activities. The applicant is proposing that loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, be permitted to a maximum depth of three inches (3 in.); and annual grasses and forbs be cut down to a maximum height of four inches (4 in.). It is also proposed that the maximum surface litter depth and grass height in the Zone 2 area would be maintained throughout the life of the project.

In addition, due to the Brunswick Industrial Site's location within a Very High FHSZ, the proposed structures must comply with Chapter 7A of the CBC. Examples of the Chapter 7A standards include, but are not limited to, use of ignition-resistant materials, fire-intrusion design of roofing and vents, and use of glazed exterior windows and doors. All buildings shall also meet all fire code requirements as set forth by CBC and California Fire Code (CFC), which could include fire sprinklers and fire alarms, as determined by the County Fire Marshal at building permit stage, depending upon building and occupancy type.

The Brunswick Industrial Site would also include installation of a fire flow system that would connect to the 18-inch Nevada Irrigation District (NID) water main in Brunswick Road. Two existing fire service lines (6-inch and 8-inch) extend into the Brunswick Industrial Site from the 18-inch line on Brunswick Road. This fire flow infrastructure previously served the former Bohemia Lumber Mill on the Brunswick property. During final improvement plan review, the County Fire Marshal would review the fire flow system to ensure that it meets CFC requirements.

The County Fire Marshall's Office has indicated that a comprehensive vegetation management plan will be necessary for the Centennial and Brunswick Industrial Sites. Once approved, the plan shall be adhered to, in perpetuity with the project. While the applicant has prepared an FPP to address, among other things, the long-term on-site management of fuels, initial construction activities and the use of heavy equipment on-site for vegetation removal could exacerbate wildfire risk. The vegetation management plan component shall be inclusive of both the Centennial and Brunswick Industrial Sites, as well as construction and operational activities, and be reviewed and approved by the Fire Marshall's Office. According to the local fire agencies, including CAL FIRE, whose primary responsibility it is to provide wildland fire suppression for both Sites, ongoing implementation of a vegetation management plan would reduce wildfire risk at the Sites to a less-than-significant level.⁹

In the unlikely event of a vegetation fire at either the Centennial or Brunswick Industrial Sites, resulting from on-site project operations, CAL FIRE would respond out of Station

⁹ Personal communication between Nick Pappani, Vice President, Raney Planning and Management, Inc. and CAL FIRE, Grass Valley Fire Department, and Nevada County Consolidated Fire Protection District, October 15, 2020.



20, located at 10242 Ridge Road, Nevada City. Station 20 is typically fully staffed, 24-hours a day, year-round. A minimum of three fire personnel staff the Station. During summer, the Station is equipped with two fire engines (Type 3, 500-gallon water tank), and one engine (Type 3) in the winter. Depending upon the incident, other local fire agencies may be dispatched through CAL FIRE's mutual and/or automatic aid agreements. The response time for a wildland engine from Station 20 is at or slightly above the 5-minute response time goal, depending upon local traffic conditions.

As discussed in the Hazards and Hazardous Materials chapter, the transportation, storage, and use of explosives used in furtherance of the project would be required to comply with applicable federal and State laws at all times (see Mitigation Measure 4.7-1). Compliance with such would help to ensure that a significant hazard to the public or the environment through the routine transport, storage, or use of explosives would not occur. Given that storage and use of explosives would only occur underground at the Brunswick Industrial Site, an unexpected explosive event would not be likely to exacerbate above-ground wildfire risks.

Concerns were expressed by members of the public during the Notice of Preparation (NOP) public review period that the dewatering of the mine may result in reduction of the groundwater levels and associated drying of surface vegetation, thus, exacerbating wildfire risk. According to the EMKO Hydrology Report, the depth to groundwater generally mimics the topography, but the depth is greater under ridges and drainage divides and closer to the surface near creeks and valleys. In the areas away from the creeks and valleys, the depth to groundwater is typically greater than 10 feet and, in many cases, may be 100 feet or more. In addition, the normal seasonal fluctuation in the depth to groundwater may be 10 feet to 30 feet or more. Thus, in the areas away from the creeks, the existing groundwater surface is below the typical depth of rooted vegetation and tap roots from trees, especially during the drier months when the depth to groundwater is at its greatest. Discharge of treated water to South Fork Wolf Creek would prevent the lowering of the groundwater levels along the reach of that creek because the full dewatering volume would be discharged to the creek, whereas only a small fraction of the groundwater that was removed from the subsurface would come from that area. Thus, the potential increased recharge due to the enhanced base flow in South Fork Wolf Creek would more than offset any effects from dewatering in the area near the creek. Along Wolf Creek, the change in base flow would be a small percentage of the existing flow, with NID releases during the summer being a dominant factor in the dry season. Overall, it can be reasonably concluded that the dewatering of the mine would not affect the available moisture for vegetation in the project area because the depth to groundwater is already below the typical rooting depths in higher topographic areas while adequate flows would occur in South Fork Wolf Creek and Wolf Creek to maintain groundwater levels in the lower topographic areas.¹⁰ The dewatering would not, therefore, increase fire risk due to reduced groundwater levels.

Reclamation

With respect to reclamation of the Brunswick Industrial Site, underground mining would cease and the Brunswick Shaft and Service Shaft would be closed pursuant to

¹⁰ EMKO Environmental, Inc. *Groundwater Hydrology and Water Quality Analysis Report for the Idaho-Maryland Mine Project, Nevada County, California* [pg. 121]. February 2021.



applicable state and federal regulations for safety and security purposes. The tallest structures on-site -- Brunswick Shaft and Service Shaft headframes and headframe buildings -- would be removed, along with the covered conveyor system and above-ground diesel fuel tanks. Paved surfaces and the remaining on-site building shells would remain, but internal contents would be removed. These reclamation activities would minimize potential wildfire risk at the Brunswick Industrial Site by retaining on-site paved surface.

The reclaimed condition at the Centennial Industrial Site would not include paved surfaces. Rather, an engineered fill pad would be created and the engineered fill slopes would be revegetated with an erosion-control seed mix to reduce erosion and maintain fill slope stability.

Conclusion

The Centennial and Brunswick Industrial Sites have limited steeply-sloping topography that is known to exacerbate wildfire risk and spread. Prevailing wind conditions within the surrounding area are from the North-East and South-West directions, both of which have forest lands. The incorporation of defensible space around proposed structures at the Brunswick Industrial Site, as well as designing buildings in conformance with Chapter 7A of the CBC, would help to slow the spread of wildfire moving through the area. In addition, proposed improvements at both Sites would reduce the vegetation fuel load in the area. Nevertheless, vegetation would remain on both Sites and would need to be managed on an ongoing basis. In addition, use of hydrocarbon-powered heavy-equipment on-site could exacerbate wildfire risk. Without implementation of a vegetation management plan, the proposed project could have a **significant** impact related to exacerbating wildfire risks, and thereby exposing project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.13-2 *In conjunction with submittal of Improvement Plans, the applicant shall submit a comprehensive Vegetation Management Plan, inclusive of the Centennial and Brunswick Industrial Sites, for the review and approval by the County Fire Marshall's Office. The applicant shall implement all provisions of the Vegetation Management Plan during the project construction, operations, and reclamation activities. The Vegetation Management Plan shall include but not be limited to:*

- *description of existing vegetative fuel sources;*
- *description of vegetation removal during initial construction and inventory of equipment to be used;*
- *requirement that exhausts of all equipment powered by gasoline, diesel, or other hydrocarbon fuel shall be equipped with effective spark arrestors designed to prevent the escape from the exhaust of carbon or other flammable particles over 0.0232 inches. Motor trucks, truck tractors,*



and passenger vehicles shall not be subject to this provision if their exhaust systems are equipped with mufflers;

- *requirement that all welding rigs shall be equipped with a minimum of one 20-pound or two 10-pound fire extinguishers;*
- *description of proposed landscape planting types;*
- *description and graphical presentation of defensible space zones;*
- *long-term maintenance schedule and safety practices, addressing at a minimum:*
 - *Removal of fire prone fuels and dead material.*
 - *Removal of branches beneath large trees.*
 - *Maintenance of live plants, bushes, shrubs, and trees.*
 - *Removal of needles and leaves and other combustible debris and litter from roofs and gutters.*
 - *Annual grasses and forbs shall be cut down to a maximum height of four inches within 100 feet of structures and on engineered fill slopes.*
 - *Trimming of vegetation within specified horizontal distances from roadways and overhead power line(s), the latter of which may be implemented by PG&E as the service provider, consistent with clearance requirements in PRC Sections 4292 and 4293.*
 - *Seasonal removal of all dead and dying vegetation to reduce vegetation volume and ladder fuels.*
 - *Coordination with adjacent property owners, as applicable, to maintain tree canopies, vegetation and ladder fuels on an annual basis.*
 - *Horizontal and vertical spacing among shrubs and trees shall be created using the “Fuel Separation” method, the “Continuous Tree Canopy” method or a combination of both to achieve defensible space clearance requirements. Spacing shall be done in accordance with the State Board of Forestry and Fire Protection's, “General Guidelines for Creating Defensible Space, February 8, 2006.”.*



4.13-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Based on the analysis below, the impact is less than significant.

The proposed project, primarily the Brunswick Industrial Site, would include installation of various infrastructure components, the environmental effects of which have been evaluated throughout the technical sections of this EIR. For example, ground disturbance associated with installation of roads and utilities has been evaluated in the biological resources chapter of this EIR.

With limited exception, none of the infrastructure improvements would be expected to exacerbate wildfire risk. One exception is the extension of the overhead power line along Brunswick Road that would be extended onto the Brunswick Industrial Site, which would have the potential to exacerbate wildfire risk if the line comes in contact with tree limbs or other overhanging vegetation. PG&E would be the electrical service provider for the Brunswick Industrial Site. Consistent with PRC 4292, administered by CAL FIRE, PG&E maintains a firebreak of at least 10 feet in radius of a utility pole, with tree limbs within the 10-foot radius of the pole removed up to 8 feet above ground. From 8 feet to conductor height requires removal of dead, diseased or dying limbs and foliage.¹¹ This applies in SRAs during designated fire season.

In addition, PRC 4293, administered by CAL FIRE, requires a 4-foot minimum clearance be maintained for power lines between 2,400 and 72,000 volts. The PG&E line along Brunswick Road, to which the project would connect, is a 12,000-volt line, and thus, would be subject to these standards. PRC 4293 also requires the removal of dead, diseased, defective and dying trees that could fall into the lines. This applies in SRAs during designated fire season.

The project would install two, 12,000-gallon above-ground diesel fuel storage tanks on the Brunswick Industrial Site. The tanks would be located in the industrial building complex area, away from existing and proposed vegetation. Diesel fuel is considered a Class II liquid, and as such, the tanks would be regulated in accordance with Chapter 23 of the CFC. Chapter 23 of the CFC includes robust design requirements for above-ground fuel storage tanks to minimize fire hazard to the maximum extent feasible, including but not limited to requirements for overfill protection, spill containment, and dispenser emergency shutoff valve. Compliance with CFC requirements, as determined by the Fire Marshall's Office, at time of improvement plan review, would reduce fire hazards related to on-site fuel storage tanks. The proposed 1,200-gallon temporary diesel fuel tank at the Centennial Industrial Site would also comply with CFC standards related to siting and maintenance of clearance space (i.e., removal of grass and weeds).

¹¹ Pacific Gas & Electric. *Manage trees and plants near power lines*. Available at: https://www.pge.com/en_US/safety/yard-safety/powerlines-and-trees/laws-and-regulations.page#:~:text=It%20requires%20that%20PG%26E%20maintain,or%20dying%20limbs%20and%20foliage. Accessed February 23, 2021.



Based upon the above, it can be concluded that the proposed project would have a **less-than-significant** impact with respect to requiring the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

Mitigation Measure(s)

None required.

4.13-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Based on the analysis below, the impact is *less than significant*.

Wildfires alter landscapes and can result in post-event hazards triggered primarily by rainfall. Rainfall that is normally captured and stored by vegetation can run off almost instantly, causing creeks and drainage areas to flood much sooner during a storm and with more water than is expected under unburned conditions. Soils burned at moderate and high severity tend to have reduced infiltration capacity and are more easily eroded. The potential post-fire flooding, soil erosion, and debris flows can impact recreational areas, homes, structures, roads, and other infrastructure within, adjacent to, and downstream from burned areas.

Wildfire-related flooding and increased runoff may continue for several years in a burn area, but it is unusual for post-fire debris flows to occur beyond the second rainy season. Some of the largest debris-flow events happen during the first post-fire storm season. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas. While multiple factors can affect debris-flow occurrence, post-fire debris flows generally are triggered by one of two processes: surface erosion caused by rainfall runoff, and landsliding caused by rainfall seeping into the ground. Surface-erosion runoff processes are by far the most prevalent contributors to debris flows.

Landsliding processes are much less common causes of fire-related debris flow, but prolonged heavy rains may increase soil moisture even after a wildfire.¹² The wetted soil can then fail, producing infiltration-triggered landslides. These can be shallow or deep-seated landslides (greater than 10-15 feet deep).

The United States Geological Survey (USGS) performs post-fire debris-flow hazard assessments for select fires in the Western U.S. USGS uses geospatial data related to basin morphometry, burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a design storm. The nearest fire to the project area for which USGS has performed a post-fire debris-flow assessment is the 2017 McCourtney Fire. As previously discussed, the McCourtney (Wind Complex) Fire occurred approximately 3.5 miles south/southwest of the project area in October 2017, and burned approximately 76

¹² USGS. *Post-Fire Flooding and Debris Flow*. Available at: https://www.usgs.gov/centers/ca-water/science/post-fire-flooding-and-debris-flow?qt-science_center_objects=0#qt-science_center_objects. Accessed February 24, 2021.



acres, near McCourtney Road and SR 20. The post-fire debris-flow assessment performed by USGS may be instructional for the Centennial and Brunswick Industrial Sites given general similarity in topography and vegetation types. Similar to the Centennial and Brunswick Industrial Sites, areas predominated by steep slopes do not occur; the changes in elevation at the McCourtney Fire area generally do not exceed 100 feet. The primary differences between the two areas include the presence of tailings and creeks at the Centennial and Brunswick Industrial Sites.

The post-fire debris-flow assessment for the McCourtney Fire is shown in Figure 4.13-4. The map displays estimates of the likelihood of debris flow (in percentages). These predictions are made at the scale of the drainage basin. As shown, the potential for debris flow occurrence within on-site drainages is low, at 0-20 percent. This is in contrast to areas with steep drainages, such as the Lobo Fire, near Deer Creek canyon, where probability values were much higher.¹³ It is reasonable to draw some general conclusions from this assessment for the Centennial and Brunswick Industrial Sites given that they similarly lack substantial steep topography and include mildly incised drainages. The probability for post-fire debris flows at the Sites is low.

Furthermore, the largest slopes on the Sites would ultimately be the engineered fill pads. As discussed in the Geology and Soils chapter, the proposed fill slopes for the Centennial and Brunswick Industrial Sites would be relatively gradual at 3:1 (H:V). The proposed fill material would comprise a flexible composite range of blast rock and sand tailings produced underground. The inclusion of silt into these compacted granular materials would provide additional cohesion, and therefore would increase the friction angle of the fill. Following completion of fill activities, the fill slopes would be revegetated to control erosion and ensure slope stability.

In addition, although runoff from both Sites flows into creeks, the project includes drainage facilities to capture runoff prior to entering the creeks. Should a fire occur on one or both of the Sites, the proposed drainage facilities would capture and slow post-fire runoff, thus minimizing flooding potential downstream.

For the above reasons, the proposed project would have a ***less-than-significant*** impact with respect to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

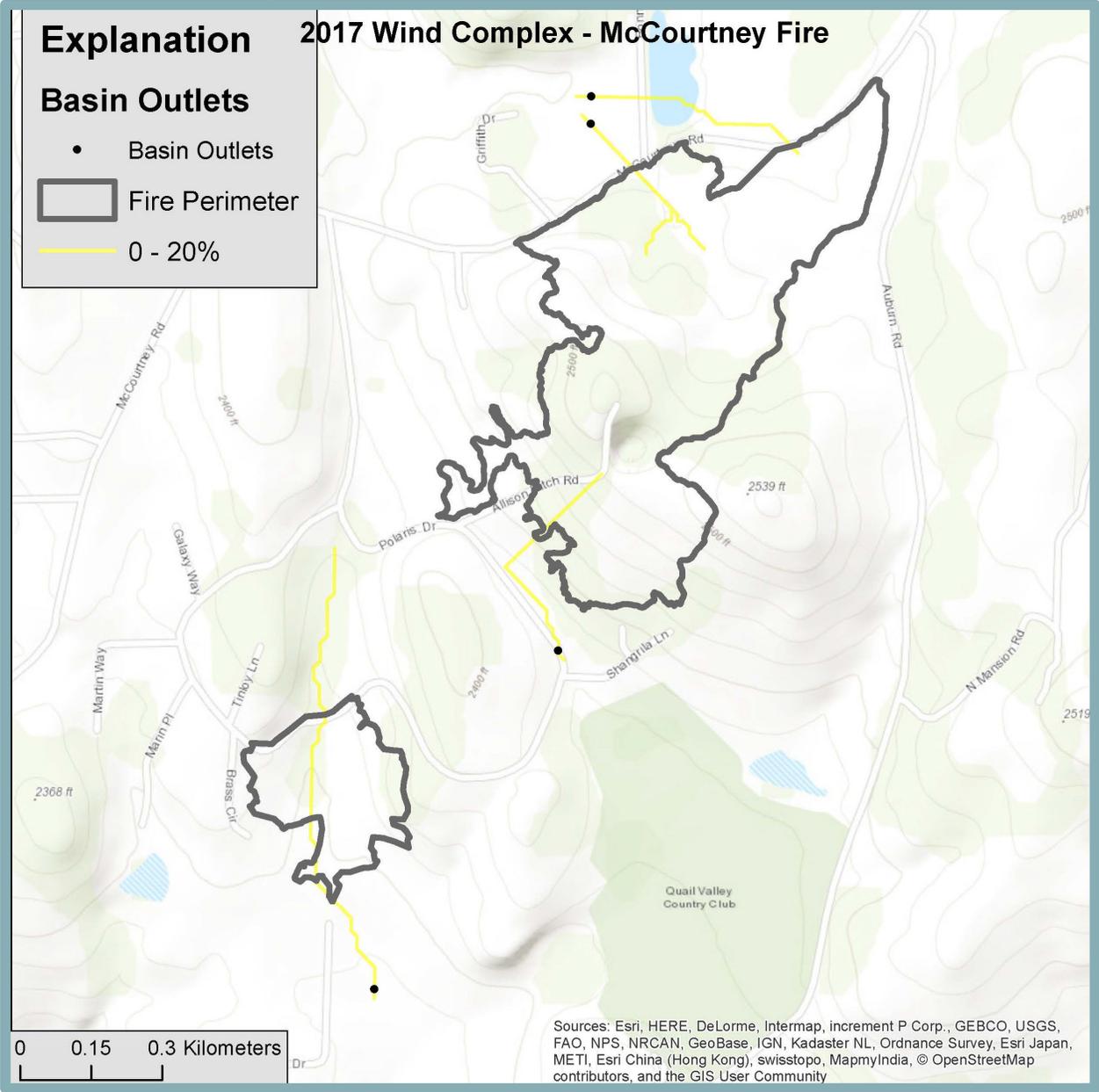
Mitigation Measure(s)

None required.

¹³ USGS. *Wind Complex – Lobo Fire (Nevada County, CA)*. Available at: https://landslides.usgs.gov/hazards/postfire_debrisflow/detail.php?objectid=170. Accessed February 24, 2021.



**Figure 4.13-4
McCourtney Fire USGS Post-Fire Debris-Flow Assessment**



Cumulative Impacts and Mitigation Measures

For detail regarding the cumulative setting for this EIR analysis, refer to Chapter 5, Statutorily Required Sections of this EIR.

4.13-5 Increase in wildfire risk attributable to the proposed project, in combination with cumulative development. Based on the analysis below, the cumulative impact is *less than significant*.

The cumulative list of projects for this EIR comprises a total of 20 projects, some of which are located within unincorporated Nevada County, while others are located within the City of Grass Valley. Similar to the proposed project, several of the cumulative projects (approximately half) are located within a Very High FHSZ, either in a Local Responsibility Area or SRA. Thus, as with the proposed project, should these projects ultimately be constructed, they would be required to comply with defensible space standards, pursuant to California PRC Section 4291, and other wildfire risk minimization standards from Chapter 7A of the CBC, including but not limited to, inclusion of ignition-resistant materials, fire-intrusion design of roofing and vents, and use of glazed exterior windows and doors. All buildings would also meet all fire code requirements as set forth by CBC and CFC, which could include fire sprinklers and fire alarms, as determined by the County Fire Marshal at building permit stage, depending upon building and occupancy type. Compliance with state and local standards would minimize wildfire risk at each cumulative project location.

Based on the above, the proposed project, with implementation of the vegetation management plan required in Mitigation Measure 4.13-2, in combination with the cumulative list of projects, would have a ***less-than-significant*** cumulative impact related exacerbating wildfire risk.

Mitigation Measure(s)

None required.

