

# **FIRE VULNERABILITY ASSESSMENT FOR MENDOCINO COUNTY**

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August 2020

# Mendocino County Fire Vulnerability Assessment

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### I. OVERVIEW

#### A. Introduction

Wildland fires in Mendocino County have historically burned thousands of acres and engendered considerable property loss with occasional loss of life. The overall goal of the Mendocino County Fire Vulnerability Assessment (FVA) is to prevent loss of life, minimize property damage caused by wildfires and reduce recovery effort spending. To accomplish this, County areas and populations that are most vulnerable to fire have been identified and recommendations are made on how to improve the County's existing strategies and practices. The consultant, Category Five Professional Consultants, Inc. (CFPC), worked collaboratively with a Technical Advisory Group (TAG) comprised of key stakeholders to develop this analysis.

The consultants thoroughly reviewed the existing County Community Wildfire Protection Plan, CAL FIRE Unit Plan, and the Hazard Mitigation Plan in addition to the cities and County General Plan, Safety Element, Housing Element and Land Use Ordinances. CAL FIRE and Resource Assessment Program (FRAP) maps, various fire agency preplanning documents and evacuation plans were also analyzed. This information was utilized in conjunction with extensive input from local area fire chiefs and the Technical Advisory Group to develop this Fire Vulnerability Assessment. Additionally, this information was used in the development of a County Evacuation Plan which delineates policies and procedures for the safe egress or "sheltering in place" of community members when threatened by a wildfire. The Evacuation Plan is designed so that it may be used for other types of emergency events that may require an evacuation such as floods and hazmat spills. Additionally, a Public Outreach Plan has been developed in order to educate the general public on how to make their properties as "Fire Safe" as possible and how and when to evacuate their homes in the event of a wildfire or other type of emergency event. Special attention has been directed towards the County's most vulnerable populations including the elderly, disabled and socially disadvantaged.

#### B. Project Objectives

Project objectives include:

- Identify areas of the County and individual communities at greatest risk to wildfire
- Perform a vulnerability assessment to ascertain areas of the County where the transportation network is vulnerable to wildfire impacts
- Identify assets at risk to wildfire
- Review existing strategies and suggest additional adaptation methods and actions to remedy identified wildfire vulnerabilities
- Recommend specific mitigation strategies to ameliorate identified wildfire

vulnerabilities

- Identify co-benefits of these mitigation strategies with respect to public health and the local economy
- Analyze the impacts of climate change on the wildland fire threat to Mendocino County

### **C. Mendocino County Description and Demographics**

Mendocino County is situated along the northern Pacific Coast of California and is bordered by Sonoma County to the south, Tehama, Glenn and Lake Counties to the east, and Trinity and Humboldt Counties to the north. The total area of Mendocino County is 3,878 square miles (10,040 km<sup>2</sup>) - 3,506 (9,080 km<sup>2</sup>) is land and 372 square miles (960 km<sup>2</sup>) is water. The County contains 129 miles of coastline. County elevations range from sea level to 6,954 feet atop Anthony Peak to the northeast.

Mendocino County contains the incorporated cities of Fort Bragg, Point Arena, Ukiah (County seat) and Willits. There are also a large number of small unincorporated communities and census-designated places including: Albion, Anchor Bay, Boonville, Branscomb, Brooktrails, Calpella, Caspar, Cleone, Comptche, Covelo, Dos Rios, Elk, Gualala, Hopland, Laytonville, Leggett, Little River, Manchester, Mendocino, Navarro, Hopland, Philo, Piercy, Potter Valley, Redwood Valley, Rockport, Talmage, Westport, and Yorkville. Additionally, within the unincorporated portion of Northern Mendocino County resides the federally recognized Round Valley Indian Reservation which has a total land area of approximately 103,000 acres. There are also nine other federally recognized Tribes within the County including the Cahto Tribe of the Laytonville Rancheria, Coyote Valley Band of Pomo Indians of California, Guidiville Rancheria of California, Hopland Band of Pomo Indians, Manchester Band of Pomo Indians, Pinoleville Pomo Nation, Potter Valley Tribe, Redwood Valley/Little River Band of Pomo Indians of the Redwood Valley Rancheria, and the Sherwood Valley Rancheria of Pomo Indians of California. A large portion of Mendocino County remains rural and undeveloped.

The population of Mendocino County is estimated by the 2019 California Department of Finance to be 88,590 with a population density of 25 people per square mile. The median resident age is 42. The racial makeup of residents is: 67.2% Whites, 23.2% Hispanics, 3.5% Native Americans, 1.8% Asians, 0.7% Blacks, and 0.4% other ethnicities.

As of 2017, the most common occupations held by County residents consist of retail trade (14.6%), healthcare and social assistance (13.9%), education (8.5%), accommodation/food service (8.3%), construction (8.3%), manufacturing (6.7%), public administration (6%), agriculture/forestry/fishing/ hunting (5.6%) and professional/scientific/technical (4.6%).

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The 2018 American Community Survey (ACS) 5-Year estimates puts Mendocino County's median household income of \$49,233 at approximately 69.1% of the statewide average of \$71,228. Mendocino has consistently been ranked among the poorest counties in the State. This percentage is well below the AB 1550 definition for "low income households".

The median resident age is 42. The percentage of County residents over age 25 having a bachelor's degree or higher is 24.1%, compared to the statewide average of 32.0%, according to the 2010 U.S. Census. The County contains a higher percentage of senior residents (over the age of 55) than the state as a whole (34.6% compared to 24.6% statewide average). Additionally, Mendocino has a larger percentage of residents with a disability (16.2%) compared to the state average (10.6%).

Mendocino County was established by the California State Legislature in 1850. The County currently resides within California's 2<sup>nd</sup> congressional district. Mendocino is governed legislatively by five members of the board of supervisors, each representing individual districts.

Sources:

<https://www.bestplaces.net/economy/county/california/mendocino>

<https://www.bestplaces.net/people/county/california/mendocino>

### **D. Planning Area Basis**

Consistent with the Mendocino Community Wildfire Protection Plan (CWPP) and the CAL FIRE Unit Plan, this wildfire threat analysis utilizes the planning areas developed for those plans. Based on a number of factors, the planning areas:

- Typically follow watershed boundaries
- Are based on weather, and to some degree fuels and topography
- Consider population density
- Utilize transportation corridors
- Match the mutual aid zones utilized by local emergency response personnel (fire and medical)
- Correlate closely with CAL FIRE battalions
- Take into account local jurisdictions and fire districts boundaries

The wildfire threat for each community, and in some cases neighborhoods, within planning areas has been delineated. The population density, area, climate, topography, fuels, fire protection resources, and access issues of the planning area are outlined in order to fully understand the wildfire threat. The critical resources and transportation assets at risk from wildfire in the planning area are also identified.



### II. COUNTY WILDFIRE ASSESSMENT

#### A. Wildfire Threat

A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property, wildlife and human life. Outbreaks of wildfire occur routinely during Mendocino's dry season and are predominantly (four out of every five), human triggered. As a natural hazard, a wildfire is often the direct result of a lightning strike. Lightning initiated fires often occur in remote undeveloped areas and spread to urban areas where structures and other human development are more concentrated.

Wildfires occurring where vegetation and the developed environment intermingle are referred to as Wildland Urban Interface fires (WUI). Two WUI conditions exist: 1) where there is a distinct interface boundary between the forest and developed areas, and 2) inter-mix areas where buildings and infrastructure are intermingled within the forest itself. Both WUI settings exist in the County of Mendocino and are often referred to as Urban and Rural WUI respectively.

When considering the risk from wildfire, the County's weather, fuels, and topography must be reviewed.

#### B. Weather/Climate

Weather can have complex and important impacts on wildfire intensity and behavior. Wind is of prime importance because as wind velocity increases, the rate of fire spread also increases. Gusty and erratic wind conditions can cause a fire to spread irregularly, making it difficult to predict its path and effectively deploy fire suppression forces. Relative humidity is also an important fire-related weather factor. As humidity levels drop, the dry air causes vegetation moisture levels to decrease, thereby increasing the likelihood that plant material will ignite and burn. The composite of weather over time in an area is referred to as climate.

Mendocino County's climate is generally mild and can be characterized by moist cool winters and warm dry summers. Inland temperature extremes range from lows of 5 degrees Fahrenheit to highs above 110 degrees Fahrenheit, while coastal areas experience fewer extreme temperatures ranging from 20 to 80 degrees Fahrenheit. A wide variety of microclimates exist throughout the County. Annual rainfall can range from 40 to 100 inches, depending on the location, elevation, and weather patterns. The declared fire season in Mendocino County typically lasts from early June to mid or late October. A more detailed description of the climate in each planning area has been included.

### C. Topography

Canyons, hillsides, river bottoms, ridges and other “lay of the land” features will have a dramatic effect on fire spread. Aspect or orientation of the fuel beds also plays an important role. In general, south facing slopes are subject to greater solar radiation, making them drier and thereby intensifying wildland fire behavior. The topography in the higher elevations of Mendocino County contain rugged terrain including many steep canyons, some of which are inaccessible. The lower elevations of the County, or foothills, have a wide variety of topographic features, from rolling grasslands to severe bluffs and tabletop benches. A more detailed description of the topography of each planning area is included.

### D. Fuel Hazards

Fuels are classified into three risk categories: Moderate, High and Very High. Depending upon the elevation and aspect, all three categories can be found in abundant supply within the County. Fuel types in the planning area consist of a mosaic of grass, oak woodlands, brush, and mixed chaparral with large areas of heavy timber found closer to the coast and in the higher inland elevations. Much of the forested area has been and continues to be timber harvested. There is second and third growth redwoods, and plenty of young trees. While the northeast inland portion of the County has experienced large wildfires in the recent past, many areas have not and subsequently there is a large build-up of wildland fuels ready to burn.

The California Fire and Resource Assessment Program (FRAP) ranks the fuel type, slope, and ladder and/or crown fuel present in the County to determine the potential wildfire hazard areas. As such, mountainous, highly combustible areas in and around the County have a Fire and Resource Assessment Program fuel ranking of **High** and **Very High** and therefore are most susceptible to wildland fires.

*A Fire Severity map can be found at the end of this section.*

### E. Climate Change

Climate change poses many challenges to the wildland areas of Mendocino County. Studies reveal that the average California fire season has increased by approximately 80 days. Warmer temperatures, wind, and variations in average rainfall will undoubtedly result in larger and more intense wildfires. Insect and disease impacts from climate change modify the forest fuels as evidenced by the current tree mortality in the California High Sierra. The introduction of invasive species as a result of climate change can alter existing fuel types. One example is the introduction of Gorse (*Ulex europaeus*) along Highway 1 in the Caspar area and Scotch Broom (*Cytisus scoparius*) in the counties to the south of Mendocino. Drought-hardy and fast-spreading, these

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species function as “ladder fuels” in a fire and overrun the habitat of native Coffeeberry and Rabbitbrush which are more fire resistant.



**Gorse (*Ulex europaeus*) located along Highway 1 in the Caspar area**

This extremely invasive shrub presents a significant hazard to road access and a serious fire danger due to its density and fuel loading. It is also a threat to the biodiversity of wildland areas. Removal is challenging due to Gorse’s sharp thorns which can easily pierce gloves.

Trees that are stressed due to drought can die or succumb to disease and pests such as the native bark beetle which has caused extensive tree mortality in the forests and forested communities in California. The bark beetle has killed thousands of pine trees in and around Mendocino County as a result of the recent drought. An increase in dead, standing trees will contribute to high fuel loads. In addition, projects that reroute naturally occurring water can contribute to tree mortality.

According to California’s Fourth Climate Change Assessment (2018), if greenhouse gas emissions continue to rise, California will see an increase of 77% in the average area burned in wildfires. Northern California’s forested areas will see an even greater increase of over 100% in burned areas, even under lower emission climate scenarios. Throughout Northern California, fire season has been longer, with new devastating records for fires being set each year as evidenced by the Mendocino Fire Complex. A review of the County’s fire history reveals a dramatic increase in the last ten years of the number of acres burned. Mendocino County has experienced ten significant wildfires totaling 665,415 acres since 2006, with dozens of smaller fires.

During the twenty years prior to that, only two significant wildfires occurred totaling 70,655 burned acres. Climate reports and recent events in Mendocino County and other parts of California indicate that longer, more severe wildfire seasons are “the new normal”. Research indicates that California may be entering a megadrought period, which is a drought lasting two decades or longer.

### **F. Historical Data**

Historically, wildland fires in Mendocino County have burned thousands of acres and caused considerable property losses in addition to an occasional loss of life. The majority of these large fires occurred away from the coastal areas in the warmer and drier portions of the County. Large fires on the coastal side of the County occur less frequently. In general, a wildfire greater than 5000 acres will occur on average once every three years. Recent Mendocino County wildfires worthy of mention include the:

#### **Ranch and River Fires (2018)**

On July 27, 2018, the Ranch and River fires started within hours of each other near the Communities of Hopland and Ukiah. Both fires grew rapidly, nearly becoming one. In order to effectively manage them, fire officials combined the management efforts creating the Mendocino Complex Fire. These combined fires spread through portions of Mendocino, Lake, Colusa, and Glenn Counties causing the evacuation of ten communities. The fires burned a combined total of 459,123 acres before being declared 100% contained more than seven weeks later on September 18, 2018. The Ranch Fire alone burned 410,203 acres becoming the largest modern California wildfire. Collectively, the fires destroyed 280 structures while damaging 37 additional outbuildings engendering greater than \$267 million in damages.

#### **Redwood Fire (2017)**

The Redwood Fire, which was discovered at 1:30 p.m. October 9, 2017, was initially thought to be the result of two fires merging, the Potter Valley and Redwood Valley fires. It was later determined that Redwood Fire was a spot fire from the Potter Valley Fire which started at approximately 10:35 p.m. on October 8<sup>th</sup> in northwest Mendocino County. Because of the steep terrain, fuel moistures, and northwest winds, the fire blazed for 21 days and was not fully contained until October 28, 2017. The fire burned 36,500 acres, destroyed 545 structures, and resulted in 9 fatalities and the evacuation of nearly 8000 people.

#### **North Pass Fire (2012)**

On August 18, 2012, the North Pass fire was ignited by lightning. A total of 41,983 acres were burned, 26 structures were destroyed, and 4 additional structures sustained damage. Full containment took nearly a month.

#### **Mendocino Lightning Complex (2008)**

The Mendocino Lightning Complex started on June 20, 2008. These fires were responsible for 54,817 burned acres and \$48.5 million worth of damage. Full containment of the fires took almost one month and resulted in the destruction of a residence and an outbuilding and caused 47 injuries.

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**Table 1: Mendocino County Large Fire History**

(Fires occurring within past 70 years that burned 5000 or more acres)

| <b>FIRE NAME</b>             | <b>YEAR</b> | <b>RESPONSIBLE AGENCY</b> | <b>ACRES BURNED</b> |
|------------------------------|-------------|---------------------------|---------------------|
| <b>Ranch</b>                 | 2018        | CAL FIRE                  | 410,203             |
| <b>River</b>                 | 2018        | CAL FIRE                  | 48,920              |
| <b>Redwood</b>               | 2017        | CAL FIRE                  | 36,523              |
| <b>Lodge Fire</b>            | 2014        | CAL FIRE                  | 12,535              |
| <b>North Pass</b>            | 2012        | USFS                      | 41,983              |
| <b>Mill</b>                  | 2012        | USFS/CAL FIRE             | 29,250              |
| <b>MEU Lightning Complex</b> | 2008        | CAL FIRE                  | 54,817              |
| <b>Whiskey</b>               | 2008        | USFS/CAL FIRE             | 7,783               |
| <b>Kingsley</b>              | 2006        | USFS                      | 6,854               |
| <b>Hunter</b>                | 2006        | USFS                      | 16,296              |
| <b>Guntley</b>               | 1995        | CDF                       | 5,187               |
| <b>Mendenhall</b>            | 1987        | CDF                       | 65,486              |
| <b>Doghouse</b>              | 1973        | CDF                       | 8,059               |
| <b>Mud Springs</b>           | 1972        | CDF                       | 5,450               |
| <b>Horse</b>                 | 1966        | USFS                      | 6,947               |
| <b>Kelly</b>                 | 1955        | CDF                       | 5,371               |
| <b>Unknown</b>               | 1952        | CDF                       | 8,645               |
| <b>Strong Mountain</b>       | 1950        | CDF                       | 20,619              |
| <b>Irene Peak</b>            | 1950        | CDF                       | 8,956               |
| <b>Rancheria Creek</b>       | 1950        | CDF                       | 6,515               |
| <b>N.W.P. RR – 20A</b>       | 1950        | CDF                       | 5,185               |

Sources: Mendocino Community Wildfire Protection Plan

CAL FIRE Large Fire History

### **G. Recent Major Emergencies within the County**

In order for this consultant to gain a thorough understanding of the emergency management practices of the County and Caltrans, as it relates to evacuation procedures, a series of meetings were conducted with key incident managers. Fire service company and chief officers who were on duty and actively engaged for either one or both of the major 2017 and 2018 wildfire events were interviewed. One of the chiefs was the initial Incident Commander on the River Fire and made the preliminary evacuation request to the Sheriff's Office. The Sheriff Lieutenant/OES Coordinator who initiated the evacuations orders for both the Redwood and Mendocino Fires Complexes was interviewed as was a senior member of the County's executive staff. The Caltrans Major Damage Engineer, who was on scene and actively engaged in supporting the evacuation efforts for both fires was also interviewed.

The Redwood Fire was discovered on October 9<sup>th</sup> at 1:30 in the morning was actually a spot fire from the Potter Fire started on October 8, 2017, at 10:35 in the evening. At the time, multiple fires were burning in counties throughout Northern California prompting large-scale evacuations and the closure of major highways and local roadways and stretching thin the available fire and Caltrans resources.

The Redwood Fire forced the closure of Route 101 in Mendocino County between Willits and Ukiah as the fire rapidly spread on both sides of the highway. Although Route 101 was re-opened 2 days later to two-way traffic, damage to critical elements of the roadway had occurred requiring the need for ongoing traffic control, restrictions, and closure of the southbound #2 lane. Fire damage repairs on Hwy. 101 in Mendocino County exceeded \$5,000,000. Damages included the cost to remove 75 hazardous trees, 27,000 feet of metal beam guard rails, signage, 2300 feet fencing, 10 drainage systems, clogged ditches, and unstable and denuded slopes in addition to other roadway impacts.

At the time, the County did not have a formal evacuation plan in place. A number of factors caused first arriving emergency managers to delay in issuing evacuation orders/public alerts. These included:

- It was nighttime in remote and rough country, and without the aid of aircraft, it was difficult to tell where the fire(s), with multiple fronts, was actually located.
- Nighttime staffing levels for the Sheriff's Office was limited, and the majority of Sheriff's Command Staff was off duty.
- Given the wind, topography and very dry fuel conditions, fire behavior was both extreme and erratic making it difficult for fire managers to accurately predict the exact direction of fire travel.



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- By the time the evacuation order was received by the two on-duty dispatchers, they were completely absorbed in answering multiple 911 calls and were delayed in activating the MendoAlert and Nixle Systems.
- Driven by the wind, the fire moved rapidly into neighborhoods, destroying homes and taking lives before an orderly evacuation could be organized.

The Mendocino Complex Fire was made up of two fires, the River and Ranch, that started on July 27, 2018. The first fire, the Ranch, started at 12:05 PM off Highway 20 near Potter Valley. An hour later, the River Fire was reported 6 miles north of Hopland on Old River Road. These two fires came within miles of merging together, burned 459,123 acres and becoming the largest recorded fire complex in California history before being declared contained on September 19, 2018.

These wildfires forced the closure of Highway Route 20 and 175 in Mendocino County and routes 20, 29, 175 in Lake County. The impact to the transportation system included extensive damage to highways 20 and 175 in Mendocino and Lake Counties. The cost to remove 50 hazardous trees, replace metal beam guard rails, signage, fencing, drainage systems, clogged ditches and unstable and denuded slopes in addition to other roadway impacts in both Mendocino and Lake Counties totaled over \$10,500,000.

Based on the experience of the 2017 Redwood Fire, the evacuation process and outcome was significantly improved when the Mendocino Complex Fire occurred including:

- Given the daytime starts, the location and direction of travel for the fires was more apparent and could be easily monitored.
- Realizing the potential fire threat early on, the Sheriff Lieutenant/OES Coordinator promptly ordered two additional dispatchers back to duty.
- With daytime staffing levels, more Sheriff's Officers and Command Staff were able to support evacuation efforts.
- With the fires starting midday on a Friday, County road crews and executive staff were more readily available to support evacuation.
- Training on the MendoAlert and Nixle Alert systems enabled dispatchers to quickly activate the system, targeting specific areas of the County for evacuation notification.

### **Caltrans Experience**

This consultant reviewed a number of documents provided by Caltrans and interviewed the Caltrans District Hydraulics Engineer and Major Damage Engineer. It should be noted that this person was on scene and actively engaged in both the Redwood and Mendocino Complex Fire evacuations. She advises that while the transportation system was significantly damaged by both fires, the overall Caltrans effort in assisting the evacuations went fairly well. Statements of discovery include:

- The early deployment of the Caltrans Satellite Communications Trailer was very beneficial. The cell phone and hardwire phone systems were either fire damaged or overloaded. Not only was the trailer valuable to the Caltrans operation it was utilized extensively by fire and law enforcement personnel in managing both emergencies.
- A number of Caltrans employees lived in the fire areas and were evacuated and suffered damage/lost homes. Caltrans management quickly brought in out of area Caltrans staff to supplement those employees who took leave to care for their families.
- Lodging for out of area Caltrans staff was difficult to find. Motel rooms were occupied by evacuees and firefighters.
- The Redwood Fire threatened a large construction project on Highway 101 just below Ridgewood Summit. A considerable amount of both Caltrans and the contractor's heavy equipment and construction related materials had to be moved and/or protected.
- Newly developed "Safety Vans" were deployed on the Mendocino Complex. Equipped with personnel protective equipment (PPE), safety gear and refreshments, these vans roved in the field ensuring personnel were kept hydrated and properly equipped.

### **COVID-19 Public Health - EOC Activation**

While this event had no direct relationship to an evacuation process, a number of shortcomings were noted by County staff in public outreach/information processes utilized during this event. Public outreach/information is a key component of a successful evacuation effort therefore a discussion is warranted. The County has no formal policy or plan regarding who, how, and when public information is released. Various departments have a variety of both policies and designated Public Information Officers (PIOs). In addition, there is no training standard for those appointed as County PIOs. A County Public Information Plan is a relatively easy plan to implement and should be developed.



### **H. Cascading Effects**

Major wildfires can completely destroy groundcover. If heavy rains follow a significant fire, flash floods, heavy erosion, landslides and mudflows can occur. After a wildfire passes through an area, the land is laid bare of its protective vegetation cover and is susceptible to excessive run-off and erosion from winter storms. The intense heat from the fire can also cause a chemical reaction in the soil that makes it less porous, and the fire can destroy the root systems of shrubs and grasses that aid in stabilizing slope material. These cascading effects can have ruinous impacts on people, structures, infrastructure and agriculture.

#### **Impacts on People and Housing**

In addition to damage to natural environments, wildfires can cause significant personal injury, loss of life to inhabitants of the fire area and firefighters, and losses of structures and personal property.

#### **Impacts on Commercial and Industrial Structures**

Wildfires can significantly impact commercial and industrial structures such as timber mills, manufacturing structures, tourist facilities, and retail establishments. The economic loss to an individual community or the County as a whole can be dramatic and long lasting as jobs and the tax base disappear.

#### **Impacts on Utility Infrastructure**

Public utilities are often strained by the impacts of wildfire, which could include depletion of water reserves, downed power lines, disrupted telephone service, and blocked roads. Furthermore, flood control facilities may be inadequate to handle an increase in storm runoff, sediment, and debris that is likely to be generated from barren, fire-scarred hillsides.

#### **Impacts on Transportation Infrastructure**

Disruption to the transportation system of an area is a common cascading effect of a wildfire. Wood bridges and trestles are susceptible to damage or destruction as are plastic culverts and drainage systems under roadbeds. As fire removes the protective vegetation of slopes above the roadways, rockslides and falls can occur. Signage, fencing and guardrails are also vulnerable to a passing wildland fire. The movement of heavy equipment such as bulldozers and water tenders on or across roads may cause damage. Additionally, the heat from a wildfire will cause deterioration of pavement.

#### **Impacts on Agriculture**

Effects on agriculture can be devastating. In addition to the obvious impacts to crops and animals, wildfires can have detrimental effects on soil and water that will impact agriculture for an extended period of time.

### **Impacts on Public Health/Air Quality**

While the obvious dangers to health and property from wildfires are of immediate concern to nearby residents, long-term impacts from exposure to smoke and airborne particulate matter poses an often-overlooked risk to human health across the whole region. Depending upon the weather, haze from large fires can often be seen and smelled for miles, causing air quality alerts to be posted over an extensive area.

Smoke typically produced by wildfires contains a wide range of mild to severe respiratory irritants from volatile organic carbons to carbon monoxide to carbon dioxide, to polycyclic aromatic hydrocarbons; the latter being a broad class of known carcinogens. Those most affected are the elderly, children and smokers, along with those individuals who have existing respiratory and cardiovascular diseases.

As noted on the Fire Safe Council website, Mendocino County air quality issues are heightened by the County's susceptibility to inversion. An inversion is when a layer of warm air traps a layer of cold air underneath it. Inversions trap pollutants at or near ground level and does not allow them to disperse. Inversions usually break one to three hours after sunrise. However, in extreme cases, inversions do not break during the day and can last for several weeks. Inversions lift when either the wind blows strong enough to mix the air layers or the sun heats the cold air below enough to cause the layers to mix on their own.

### **I. Plans, Programs and Arrangements in Place**

#### **Existing Fire Protection Services**

Within Mendocino County, the California Department of Forestry and Fire Protection's Mendocino Unit (CAL FIRE) along with two city fire departments and 19 fire protection districts/community services districts provide life and property emergency response to the residents and visitors of the County.

In addition to services traditionally offered by most fire protection agencies nationwide, these organizations work cooperatively throughout the robust California Mutual Aid System along with the U.S. Forest Service, the Bureau of Land Management, and the National Park Service in providing wildfire response in Mendocino County. The Mendocino County Sheriff's Office reports that, other than longstanding mutual aid agreements, there are no additional institutional arrangements in place dealing with the evacuation process.

A description of the fire protection services of Mendocino County by planning area can be found in Section IV of this document.

## **Mendocino County Fire Vulnerability Assessment**

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### **Mendocino County Fire Safe Council**

Founded in 2004, the Mendocino Fire Safe Council is a 501(c)3 non-profit organization comprised of individuals, agencies, and organizations that share a common vested interest in preventing and reducing loss from wildfires. The stated mission of the Mendocino Fire Safe Council (MCFSC) is to inform, empower and mobilize residents to survive and thrive in a wildfire-prone environment. The Fire Safe Council is a member of the California State Fire Safe Council. Working under the umbrella of the MCFSC are a number of local/neighborhood Fire Safe Councils. The goals of the councils are to:

- Work to minimize losses to values at stake, which include but are not limited to human lives, homes, animals, and natural resources
- Educate residents, agencies, and other stakeholders about the nature and impacts of wildfire, fire prevention strategies, and effective preparedness in the event that wildfire occurs
- Secure and utilize funding to assist residents in education, outreach, community projects, and other activities that further the mission and objectives of the Council
- Encourage road associations, homeowner groups, subdivisions, towns, and other community groups to create their own Fire Safe Councils
- Act as an advocate for the people of Mendocino County in the area of fire prevention

### **Local Fire Safe Councils**

As noted above, there are currently 17 local Fire Safe Councils working under the umbrella of the MCFSC. The MCFSC encourages the formation of these local Fire Safe Councils, the only requirement being that the group have the desire to make themselves fire safe and to educate and encourage their neighbors to do the same. The MCFSC is available to assist local councils in many ways including:

- Leading or participating in local educational events
- Providing educational materials for local distribution
- Connecting local councils with Fire Safe service providers and vendors, other councils, and anyone else who can assist their efforts
- Seeking grant funding for vegetation reduction or address/signage projects
- Providing financial services such as holding trust funds or administering grant monies

## **Mendocino County Fire Vulnerability Assessment**

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- Generally assisting with administrative, business, financial, and legal functions, leaving local groups free to do on-the-ground projects and education

Each local Fire Safe Group/Council identifies and prioritizes areas for hazardous fuel reduction treatments and also identifies the types and methods of treatments and programs that will help protect the community and its essential infrastructure.

The following local Fire Safe Councils exist: Pine Mountain, Williams Ranch Road, Sherwood Firewise, Black Bart Trail, Ridge Road, Signal Ridge, Yorkville, Upper Deerwood, Lower Deerwood, Vichy Hills, Western Hills, Mendocino Drive/Place, Robinson Creek, McNab, Anderson Valley, Upper Nash Ranch and Hills Ranch. The MCFSC is housed in the Mendocino County Resource Conservation District offices at 410 Jones Street in Ukiah.

### **J. Laws Ordinances and Codes**

#### **Mendocino County General Plan, Safety Element, and Land Use Ordinances**

Land use planning and building development in the study area is regulated by the Mendocino County Planning and Building Services. Sections within the County General Plan, Safety Element and Land Use Ordinances establish minimum standards for development within the County. It is also regulated within the incorporated cities' planning and building departments.

#### **California Health and Safety Code and the California Building Code**

The Health and Safety Code which Mendocino County has adopted, contains regulations pertaining to the abatement of fire related hazards. It also requires that local jurisdictions enforce the California Building Code, which provides standards for fire resistive building and roofing materials, and other fire-related construction methods.

#### **Fire Safe Regulations**

With California possessing one of the most severe wildfire threats in the world, Fire Safe regulations were developed in the early 1980's to minimize the loss of life and property from wildfires. The rugged terrain and flammable vegetation comprising the State's foothills and mountains make these areas unsafe for residential development in the absence of adequate fire safety measures.

A fire hazard severity classification system that takes into account fire weather, fuel loading, and slope has been developed as a basis for identifying fire hazard in the State Responsibility Areas (SRA) where CAL FIRE has the primary responsibility for wildfire protection. To facilitate development within the SRA, CAL FIRE developed Fire Safe Regulations, set

## Mendocino County Fire Vulnerability Assessment

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standards, and offers guidance for development of appropriate ingress and egress routes, water systems, land use planning and zoning.

The Fire Safe program gives homeowners and developers responsibility in terms of defensible space planning and incorporating basic fire protection measures. Each home, subdivision, and development constructed in the SRA should have adequate emergency equipment access, building, street, and address identification, and an adequate water supply for suppression needs. Residents and planners within the SRA should understand the importance of planning for fire protection, the need for ongoing and proper clearance of flammable vegetation around structures (PRC 4291), and the benefits of greenbelts, fuel breaks, and controlled burns in and around developments.

In Mendocino County, proper addressing of structures within the SRA is the greatest Fire Safe regulation challenge. Mendocino Unit personnel continue to educate the public on the vital importance of address signage in order to facilitate locating a fire and avoid delays in response time.

### **Public Resources Code (PRC) 4290 and Title 14 Code of California Regulations**

As of 1991, in accordance with PRC 4290 and Title 14 CFR, the design and construction of structures and developments within the SRA shall provide for emergency access, temporary refuge areas, pullouts, signing and building numbering, private water supply reserves for emergency fire use, and vegetation modification.

These regulations are triggered by the application for a building permit for purposes other than limited remodels. These regulations do not supersede existing local regulations that are equal to or more stringent than the state regulations. CAL FIRE has been given the role of wildland fire protection expert and is provided the opportunity to review and comment on all proposed construction and development within the SRA. CAL FIRE also performs final onsite inspections to determine if owners have met the intent of the fire safe regulations. Mendocino County has the authority to make the final ruling.

### **Public Resources Code (PRC) 4291**

In accordance with PRC 4291, property owners in mountainous areas, forest-covered lands or any land that is covered with flammable material must create at minimum a 100-foot defensible space (or to the property line) around their structures.

Specifically, property owners must establish a:

- 30-foot clean zone (or to the property line)

- 70-foot reduced fuel zone (or to the property line)

This involves thinning and breaking up the continuity of ladder fuels and large areas filled with contiguous shrubs that can readily transmit fire. It does not mean the property must be clear-cut to bare soil.

### **K. Future Development Trends**

The California Department of Finance (DOF) provides annual population growth estimates. These projections show a very modest population growth for Mendocino County, reaching an estimated population of 88,009 in 2030 down from the 2019 estimate of 88,590.

A number of issues constrain residential development/growth:

**Flood Zones:** A considerable amount of vacant land surrounding the communities of Ukiah and Willits flood on a fairly regular basis making development impractical.

**Environmentally Sensitive Habitat Areas: (ESHA)** A great deal of vacant land, especially along the coast has been deemed ESHA. Permitting requirements and the extensive mitigation costs constrains residential development.

**Wastewater Infrastructure:** Many areas of the County are currently served by individual septic systems. Much of these areas have a high-water table and high annual rainfall rates and consequently septic system problems.

**Water Infrastructure:** A number of unincorporated communities are built over “fractured hard rock,” which does not store groundwater well. In dry years, residents are susceptible to water shortages. Gualala and Redwood Valley currently have water hook-up restrictions in place.

**Seismically Active Areas:** Five active or potentially active faults traverse Mendocino County. The County’s Building Division appropriately applies the Uniformed Building Code Seismic Zone 4 safety standards in certain areas; driving up the cost of construction.

**Agricultural Uses:** The little available flat land appropriate for residential construction is often located in a high value agricultural production (wine grapes) area and not easily purchased or converted to residential zoning.

### **L. Communication Systems**

#### **Government**

##### ***Law Enforcement***

The Mendocino County Sheriff's Communication Center is located at 589 Low Gap Road. For the purposes of radio communications, the County is broken into four zones each of which has its own frequency: North Inland, South Inland, North Coast, and South Coast. Across the system, two additional frequencies are utilized, one for command and one for tactical. The cities of Fort Bragg, Willits, and Ukiah each have their own standalone systems and frequencies.

##### ***Fire/EMS Service***

The CAL FIRE Howard Forest Emergency Command Center (ECC) is located at 17501 Hwy. 1. The ECC is the dispatch center for all CAL FIRE units and stations. Under contract agreement, it also serves as the dispatch center for all the local area fire agencies and the ambulance service. However, the Little Lake Fire Department is primarily dispatched through the Willits Police Department. The ECC utilizes two frequencies, one for dispatch and one for command. Twenty-four tactical channels are assigned to the various fire agencies and ambulance service.

Mendocino County has installed a series of repeaters located on mountaintops throughout the County. Reception is adequate all along the Hwy. 101 corridor and also along the coast. In the more remote canyons and valleys, reception is poor. The 2017 Redwood Valley Fire disrupted the radio system when fire burned through a repeater site causing it to fail.

#### **Public**

Phone service, often referred to as landline or hardwire, is adequate only in the densely populated areas of the County. Local fire officials estimate that less than 10% of the homes in the rural areas have landline phone service. Residents in these areas rely on cell phone or broadband phone service which is oftentimes inadequate. As the general populace has converted to cell phones as their primary communication tool, landline providers have become increasingly hesitant to maintain and repair existing hardwire systems. In many areas the phone company has chosen to use "multiplexers" rather than adding new lines for additional customers. These multiplexers require power and have small batteries installed locally to maintain service during brief power outages. During extended outages, such as those experienced in PG & E's recent Public Safety Power Shutoff program, the batteries are drained down and causing the loss of phone service on those lines.



## Mendocino County Fire Vulnerability Assessment

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Cell phone companies tend to focus their cell service in highway corridors and areas of high population density. Therefore, cell phone service along the Highway 101 corridor through Hopland, Ukiah, and Willits is adequate. Yet, cell phone service past Willits is spotty. Cell service all along the remote areas of Highway 1 is poor or unavailable. Anderson, Laytonville, Long Valley, Potter Valley and Round Valley have adequate service on the valley floors. In general, as soon as one leaves the populated areas or highway corridors cell phone coverage diminishes.

### **Private**

As part of its Community Wildfire Safety Program (CWSP), Pacific Gas and Electric Company (PG&E) is in the process of expanding its network of weather stations and high-definition cameras to improve the company's ability to predict and respond to extreme wildfire danger. By the end of 2022, PG&E plans to have at least 1300 weather stations and 600 high-definition cameras prioritized in areas at elevated and extreme risk for wildfires, based on the California Public Utilities Commission (CPUC) High Fire-Threat District Map.

These new installations are one of the many additional precautionary measures the company is implementing following the 2017 and 2018 wildfires to further reduce wildfire risks. Personnel at PG&E's 24/7 Wildfire Safety Operations Center use these weather stations and cameras to better monitor wildfire risks and coordinate prevention and response efforts. The data is shared publicly and with public safety agencies. Building on the 200 weather stations it installed in 2018, PG&E has added an additional 200 weather stations in 2019 to capture localized, real-time data related to temperature, wind speeds and humidity levels

The Sherwood Firewise group has developed a “21<sup>st</sup> century phone tree” community alerting system that monitors/scans for emergency incident dispatches for their particular area. The information is then forwarded to subscribers using either text, email, or telephone voice calls. Other subdivisions and Fire Safe Councils in the county are creating similar network systems.

### **M. County Road Issues**

Throughout the rural portions of the County, there exists a large number of small, often private roads leading to subdivisions and very remote rural homes, ranches, and outbuildings. These roads are often unnamed, narrow, winding, poorly maintained, overgrown, lack adequate pullouts and occasionally locked with multiple gates. Proper addressing is rare. Compounding this issue, many of these roads serve as the only way in and out. These roads can be severely impacted by wildfire, blocking safe access.



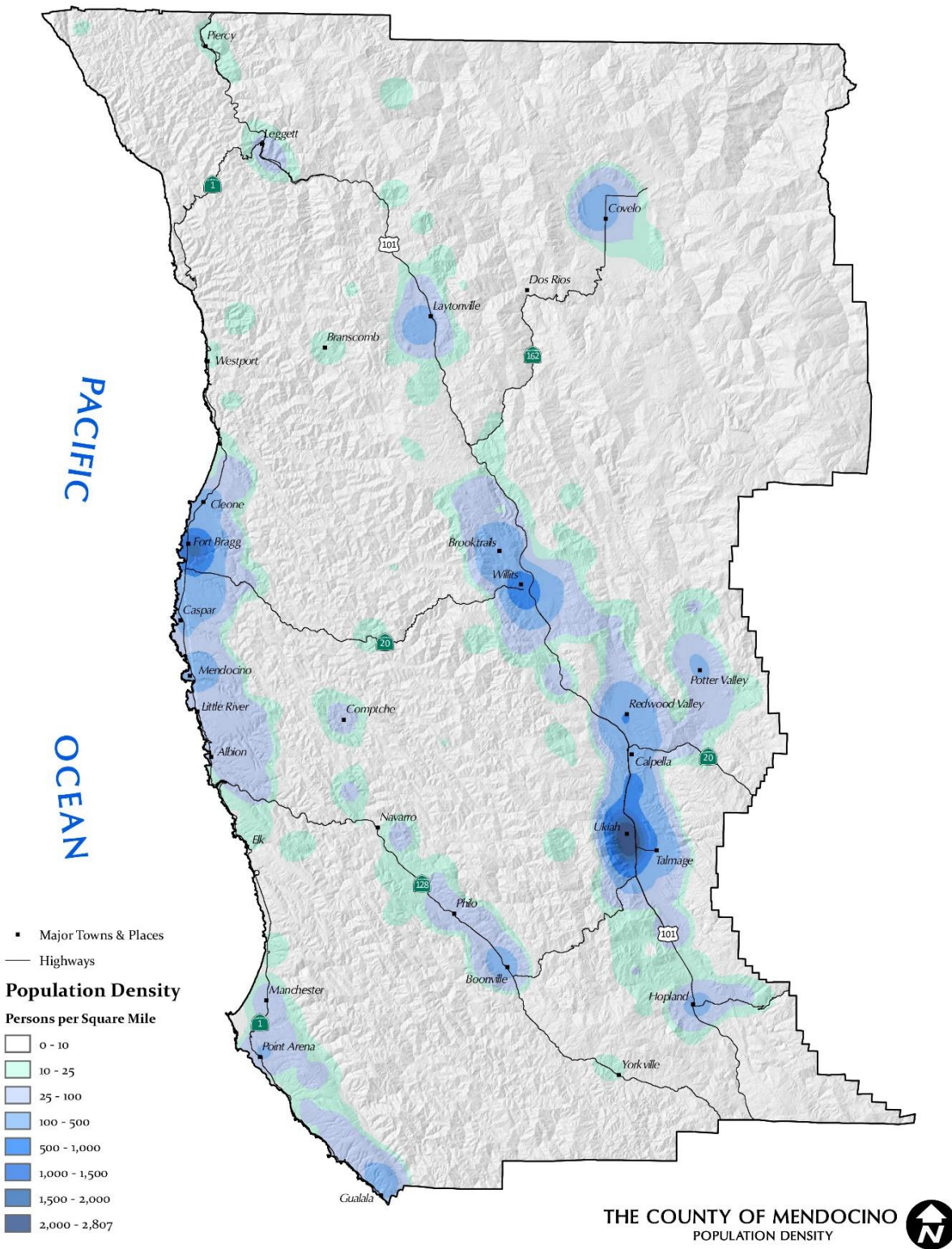
## **Mendocino County Fire Vulnerability Assessment**

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In the more densely populated areas of the County, secondary roads serve as the only access to a number of large neighborhoods, subdivisions, small communities and rancherias. Examples include the Simpson/Mitchel Creek and Pearl Drive neighborhoods in Fort Bragg, the Brooktrails Township, the Russian River Estates, and the communities of Potter Valley and Covelo. In many areas, these often narrow, winding roads pass through unmanaged and receptive wildfire fuel beds. These roads can be severely impacted by wildfire, blocking safe access.

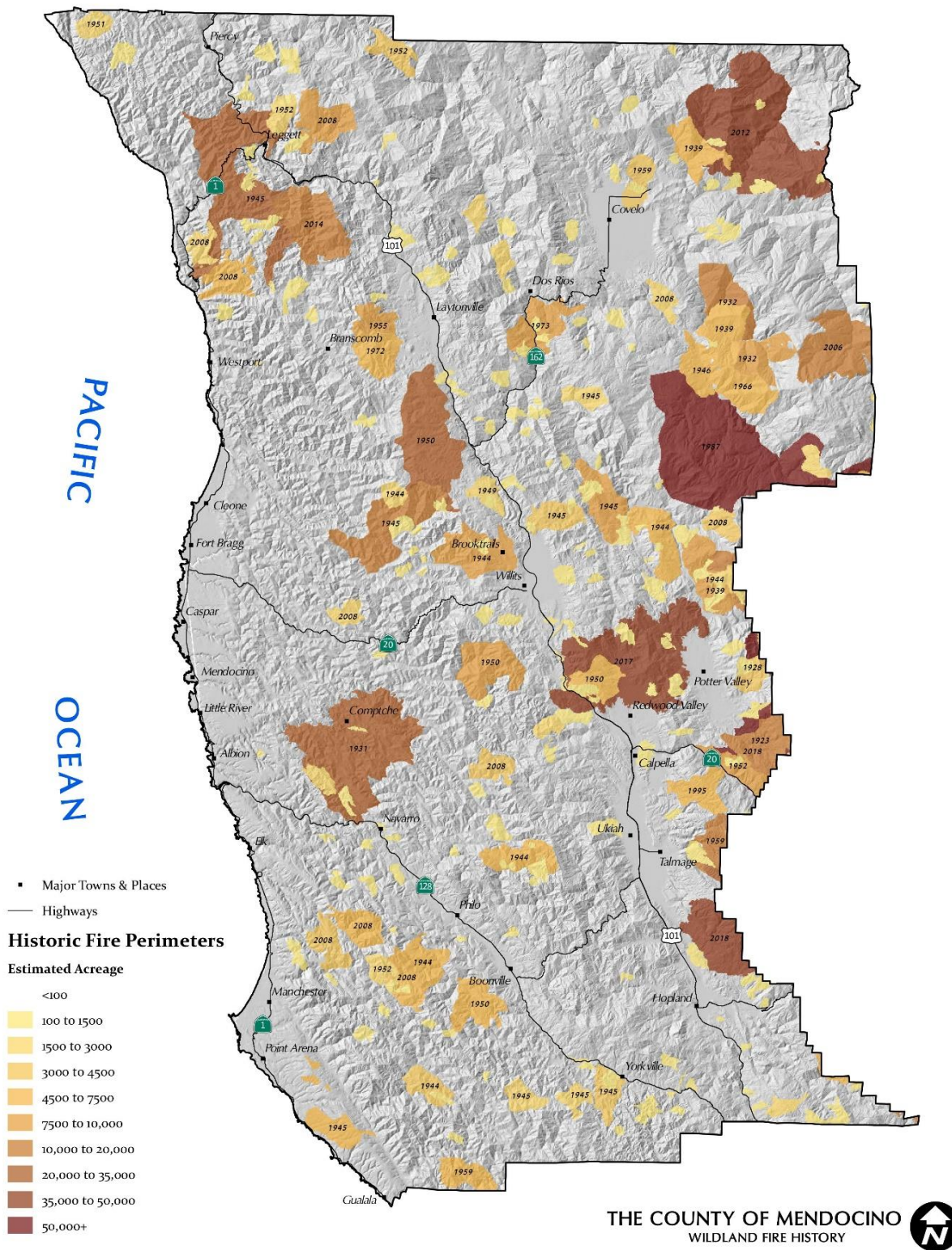
A more detailed discussion on primary and secondary transportation corridors and their effectiveness as evacuation routes can be found in the 2020 County Evacuation Plan. This Plan thoroughly describes ingress and egress issues with choke and control points delineated.

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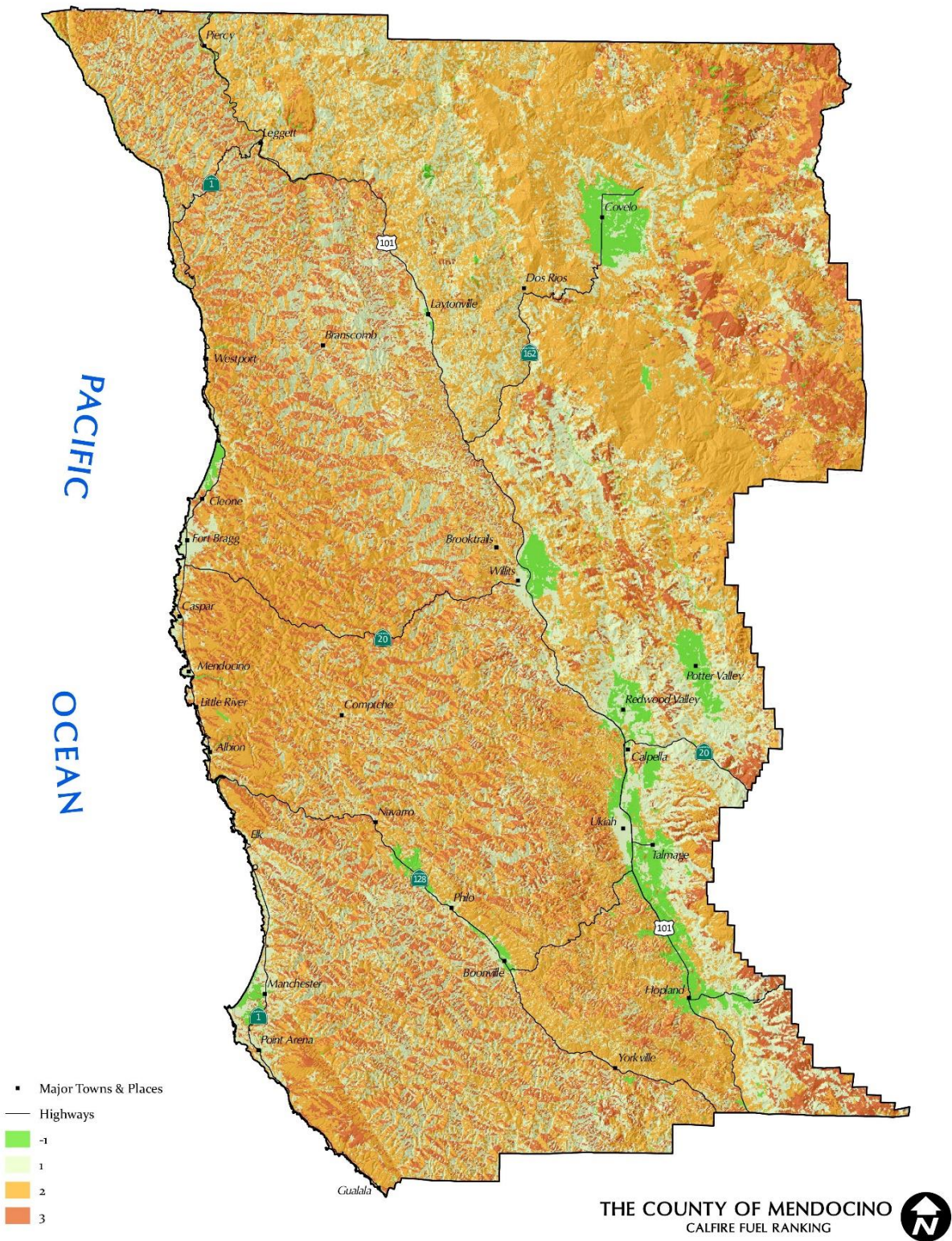
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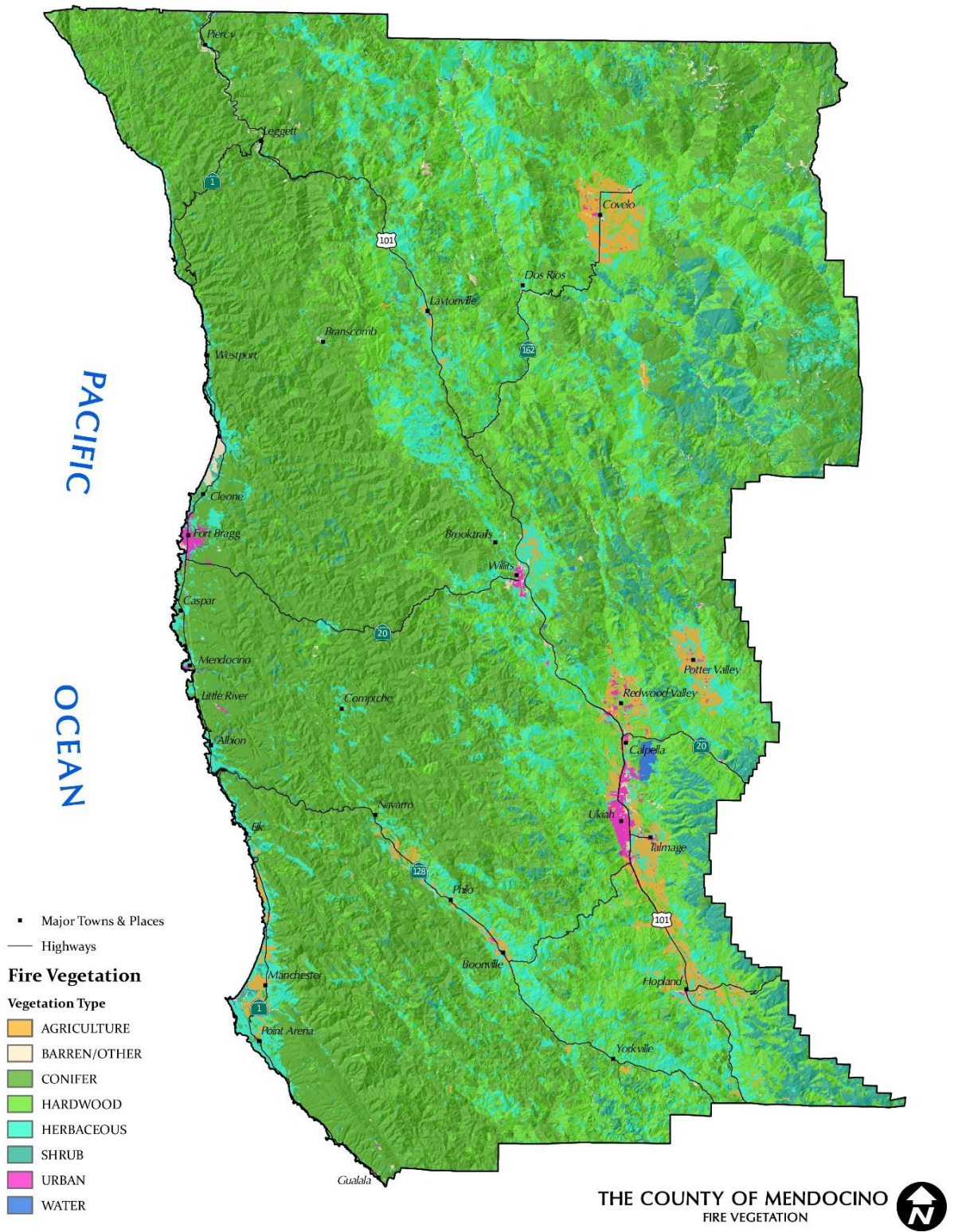
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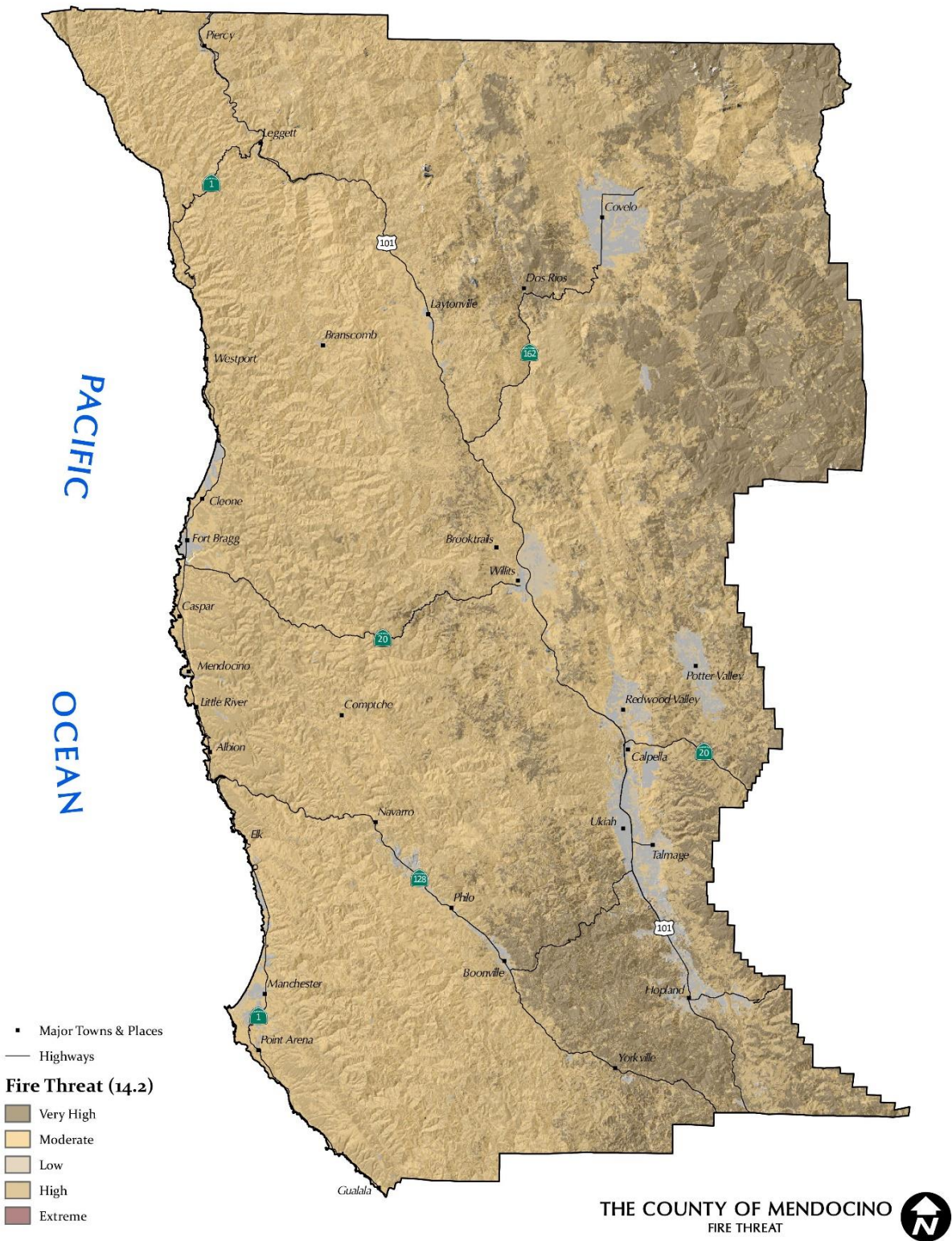
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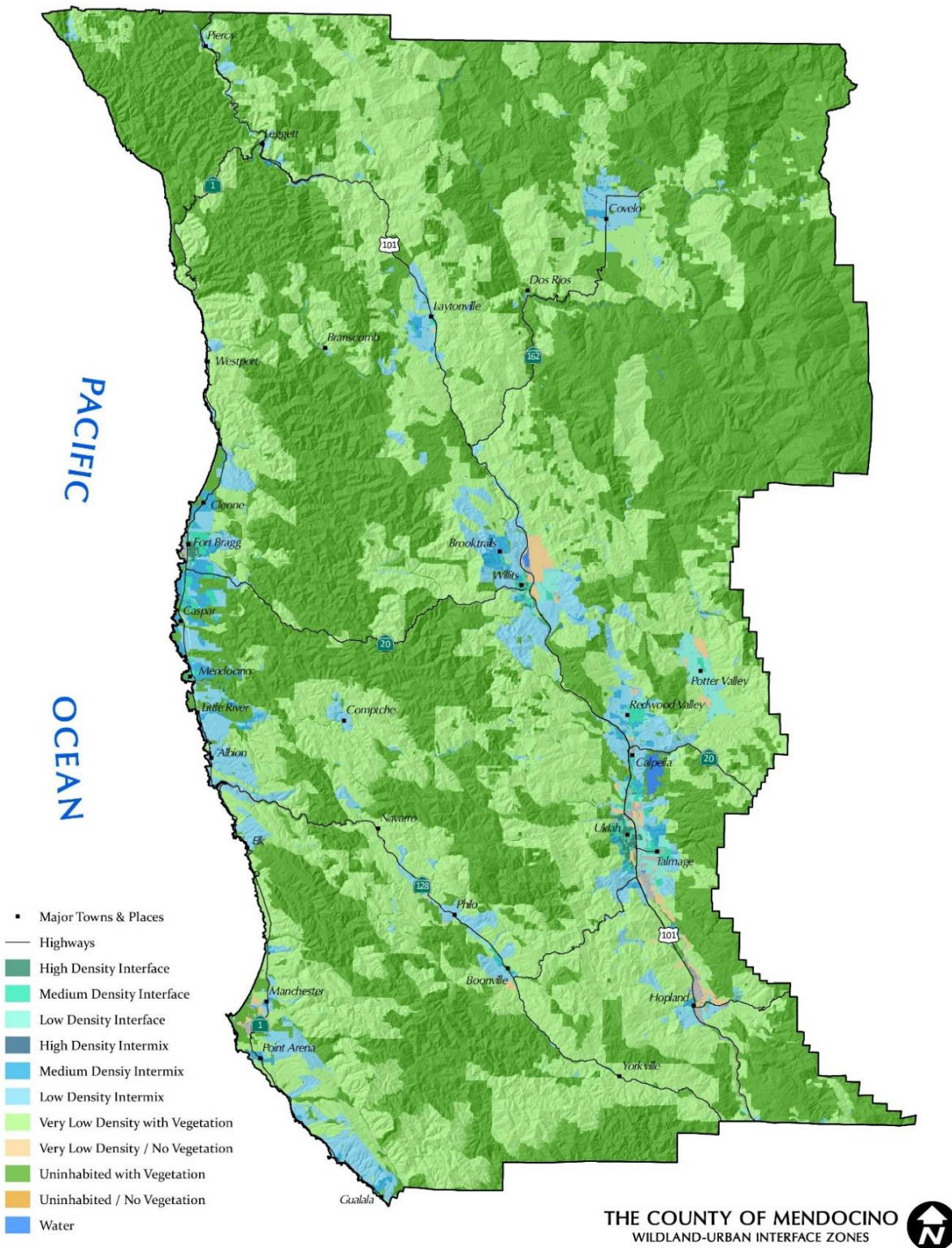


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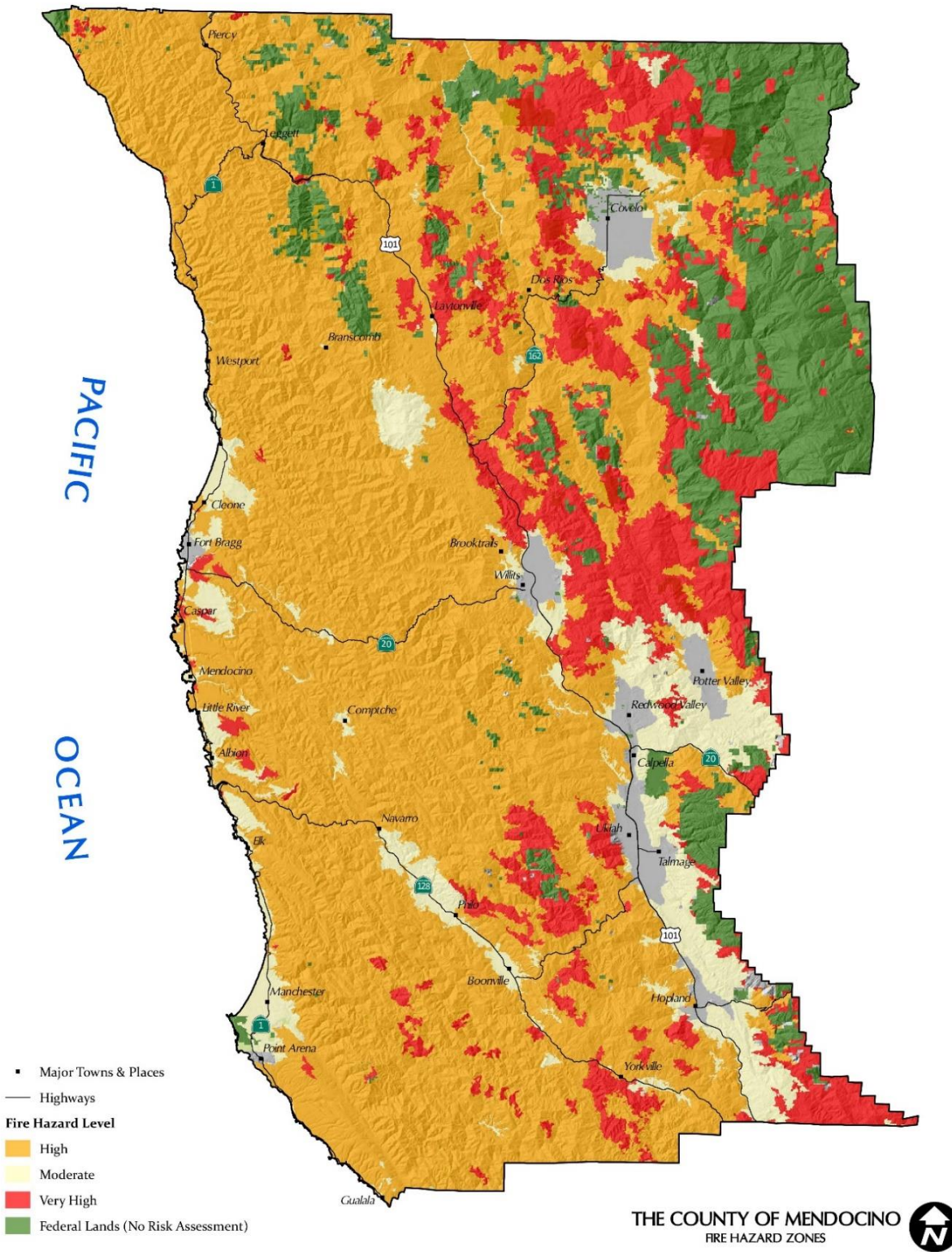
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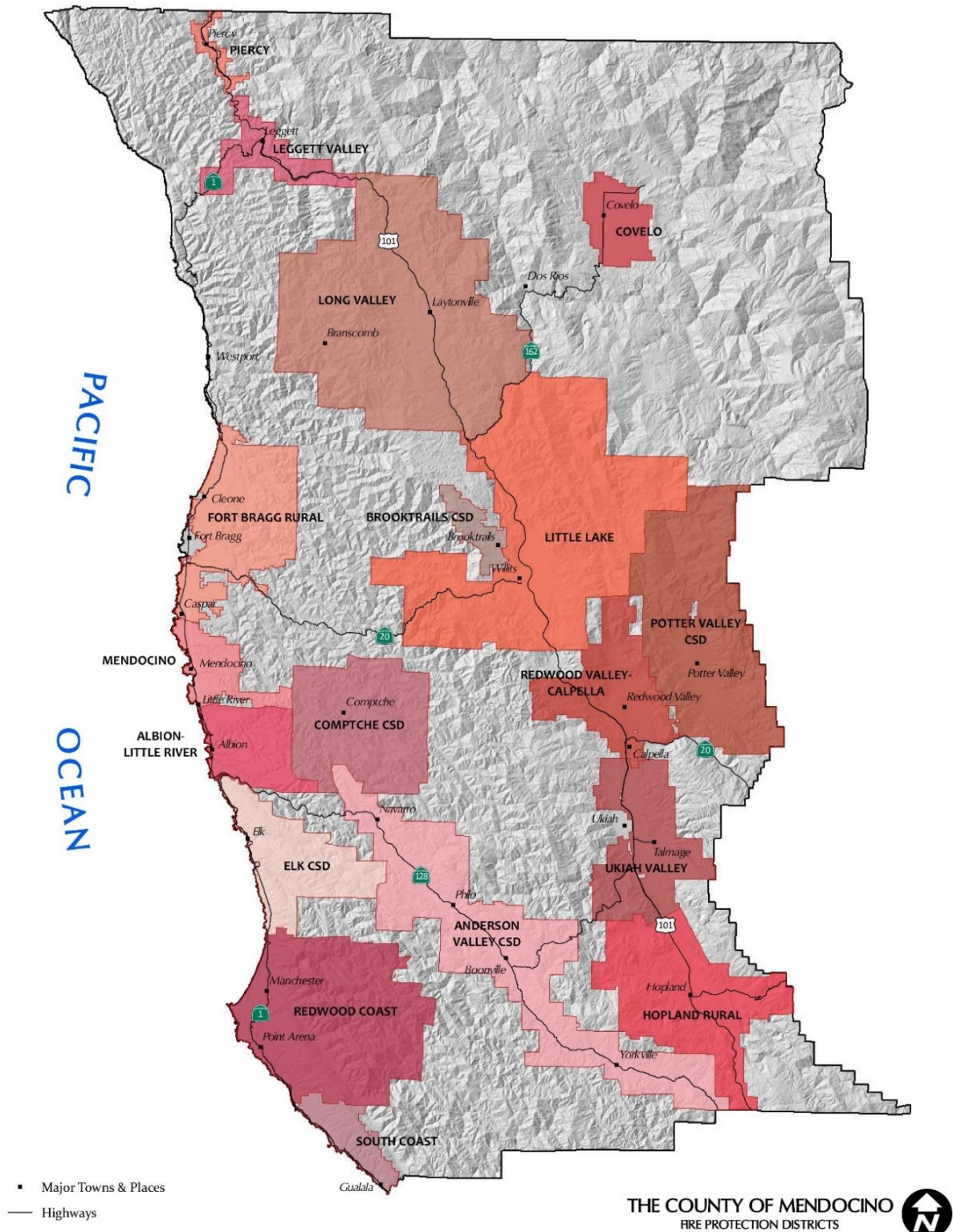
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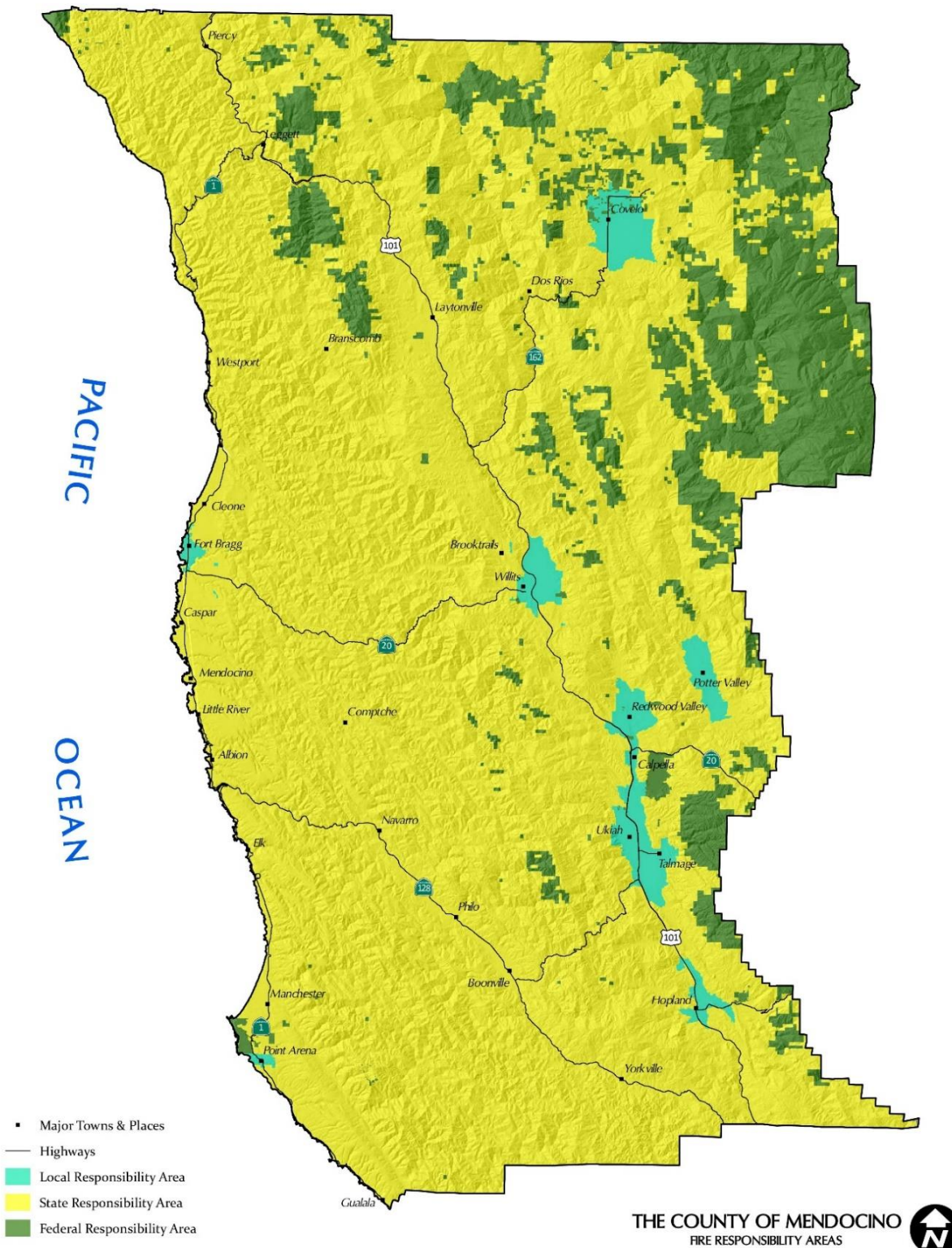


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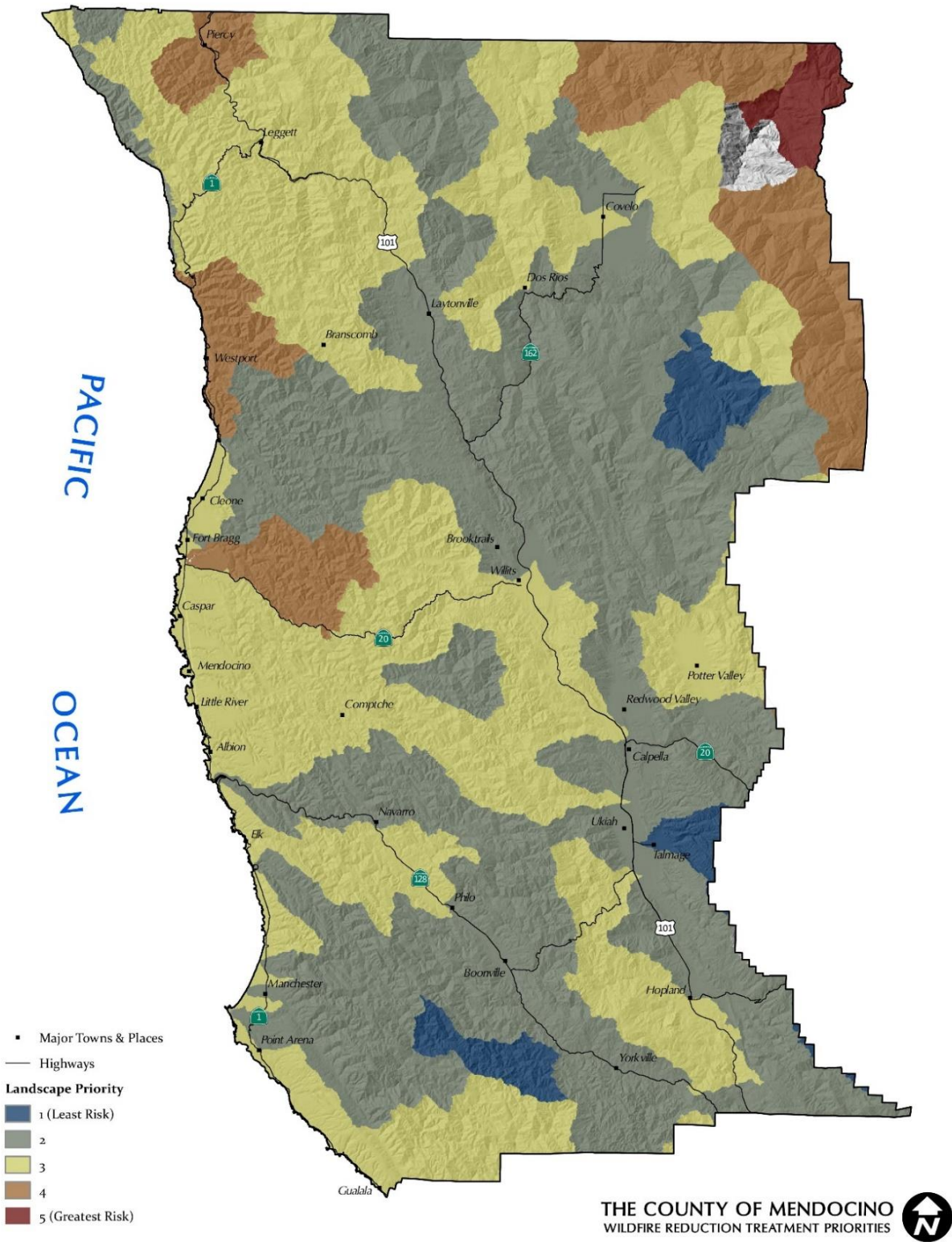
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### III. JURISDICTIONAL ASSETS AT RISK

#### **Critical Facilities and Infrastructure**

Critical facilities and infrastructure are those systems within each community whose incapacity or destruction would have a debilitating effect on the community's ability to recover subsequent to a major disaster. The following critical facilities and infrastructure are categorized as follows:

1. **Emergency Services** for the health and welfare of the whole population (e.g., hospitals, police, fire stations, emergency operations centers, evacuation shelters, schools).
2. **Lifeline Utility Systems** such as potable water, wastewater, oil, natural gas, electric power and communications systems.
3. **Transportation Systems** including railways, highways, waterways, airways and city streets to enable effective movement of services, goods and people.
4. **High Potential Loss Facilities** such as power plants, dams and levees.

#### **Non-Critical Facilities**

For the purpose of this plan, properties such as recreational facilities, parks, libraries, religious facilities, and historical buildings will be classified as non-critical facilities. Although their relevance to residents is undeniably significant, they are not classified as 'critical facilities' per the definition set in Executive Order 13010 (Critical Infrastructure Protection 1996).

#### **Private Properties**

Although personal residences are not by the above definition considered to be critical facilities, their relevance to these communities and its citizens is unquestionable. For that reason, they have been included in each jurisdiction's vulnerability assessment.

#### **Vulnerable Populations**

Access and functional need locations are delineated below. A more detailed description of these vulnerable populations can be found in the 2020 Public Outreach Plan which also contains a list of AFN specific educational material. Additionally, the 2020 Evacuation Plan lists vulnerable population locations and provides specific recommendations for the emergency evacuation of access and functional need individuals. Additionally, the Mendocino County Health and Human Services Agency maintains a confidential up-to-date comprehensive vulnerable population list that details an individual's specific access and functional need in addition to their contact information.

## Mendocino County Fire Vulnerability Assessment

**Table 2: Mendocino County Assets at Risk**

*Assets at risk include: Critical Facilities, Infrastructure, Commercial Buildings, Vulnerable Population Locations and Private Property (Residential Units)*

| Facility Type | Facility Name  | Address                        | City       | Wildfire | Earthquake* |
|---------------|--|--------------------------------|------------|----------|-------------|
| Government    | County Admin. Ctr.<br>Executive Office/<br>County Controller | 501 Low Gap Road               | Ukiah      |          | √           |
| Government    | County Agriculture   | 890 North Bush Street          | Ukiah      |          | √           |
| Government    | County Air Quality   | 306 Gobbi                      | Ukiah      |          | √           |
| Government    | Animal Care  | 19701 Summers Lane             | Fort Bragg |          | √           |
| Government    | Animal Care  | 298 Plant Road                 | Ukiah      |          | √           |
| Government    | Planning and<br>Building Services                            | 860 N. Bush Street             | Ukiah      |          | √           |
| Government    | County Building<br>Inspection                                | 790 S. Franklin Street B       | Fort Bragg |          | √           |
| Government    | County Planning<br>Services                                  | 120 W. Fir Street              | Fort Bragg |          | √           |
| Government    | County General<br>Services                                   | 841 Low Gap Road               | Ukiah      |          | √           |
| Government    | Fort Bragg Building<br>Permits/City<br>Engineering           | 416 N. Franklin Street         | Fort Bragg |          | √           |
| Government    | County Weights and<br>Measures                               | 890 N. Bush Street             | Ukiah      |          | √           |
| Government    | County Board of<br>Supervisors                               | 501 Low Gap Road               | Ukiah      |          | √           |
| Government    | Superior Court   | 700 S. Franklin Street<br>#144 | Fort Bragg |          | √           |

## Mendocino County Fire Vulnerability Assessment

|            |   |                           |             |   |   |
|------------|---|---------------------------|-------------|---|---|
| Government | County Environmental Health                               | 860 N. Bush Street        | Ukiah       |   | √ |
| Government | County Farm Advisor                                       | 890 N. Bush Street        | Ukiah       |   | √ |
| Government | County Coroner  | 951 Low Gap Road          | Ukiah       |   | √ |
| Government | County Veterans Services                                  | 189 N. Main Street        | Willits     |   | √ |
| Government | City Hall   | 111 E. Commercial S.      | Willits     |   | √ |
| Government | County LAFCO  | 200 S. School Street      | Ukiah       |   | √ |
| Government | Ukiah City Hall/Purchasing Office/City Clerk/Civic Center | 300 Seminary Avenue       | Ukiah       |   | √ |
| Government | County Garage   | 841 Low Gap Road          | Ukiah       |   | √ |
| Government | Ukiah Building Inspections                                | 300 Seminary Avenue       | Ukiah       |   | √ |
| Government | US Army Corps of Engineers                                | 1160 Lake Mendocino Drive | Ukiah       | √ | √ |
| Government | Anderson Valley Community Services District               | 14281 CA-128              | Boonville   | √ | √ |
| Government | Brooktrails Community Services District                   | 24680 Birch Street        | Brooktrails | √ | √ |
| Government | Gualala Community Services District                       | 42455 Old Hwy. 1          | Gualala     | √ | √ |
| Government | Child Support Services                                    | 107 South Street          | Ukiah       |   | √ |

## Mendocino County Fire Vulnerability Assessment

|                            |  |                        |             |   |   |
|----------------------------|--|------------------------|-------------|---|---|
| Government                 | Social Services  | 747 South State Street | Ukiah       |   | √ |
| Government                 | Social Services  | 310 E. Redwood Avenue  | Fort Bragg  |   | √ |
| Government                 | Social Services  | 255 Main Street        | Point Arena | √ | √ |
| Government                 | Point Arena City Hall  | 451 School Street      | Point Arena | √ | √ |
| Government-Water Resources | Mendocino City Community Services District                   | 10500 Kelly Street     | Mendocino   | √ | √ |
| Law Enforcement            | Mendocino County Sheriff's Office/ County Emergency Services | 951 Low Gap Road       | Ukiah       |   | √ |
| Law Enforcement            | California Highway Patrol                                    | 540 S. Orchard Avenue  | Ukiah       |   | √ |
| Law Enforcement            | Ukiah Police Department                                      | 300 Seminary Avenue    | Ukiah       |   | √ |
| Law Enforcement            | Willits Police Department                                    | 125 E. Commercial St.  | Willits     |   | √ |
| Law Enforcement            | Fort Bragg Police Department                                 | 250 Cypress Street     | Fort Bragg  |   | √ |
| Emergency Response         | CAL FIRE Howard Forest Station- Unit Headquarters            | 17501 Hwy 101          | Willits     | √ | √ |
| Emergency Response         | CAL FIRE - Woodlands Fire Station Mendocino Ranger Unit      | 41722 Little Lake Road | Mendocino   | √ | √ |
| Emergency Response         | CAL FIRE – Covelo Station                                    | 77251 Covelo Road      | Covelo      | √ | √ |
| Emergency Response         | CAL FIRE Ukiah Station                                       | 2690 N. State Street   | Ukiah       | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|                    |   |                        |                |   |   |
|--------------------|---|------------------------|----------------|---|---|
| Emergency Response | CAL FIRE Boonville Fire Station         | 16001 CA-Hwy. 128      | Boonville      | √ | √ |
| Emergency Response | CAL FIRE Point Arena Station            | 410 School Street      | Point Arena    | √ | √ |
| Emergency Response | CAL FIRE/ Laytonville Station           | 46101 US Hwy 101       | Laytonville    | √ | √ |
| Emergency Response | CAL FIRE/Hopland Station                | 11000 South Hwy. 1     | Hopland        | √ | √ |
| Emergency Response | Mendocino Volunteer Fire Department     | 44700 Little Lake Road | Mendocino      | √ | √ |
| Emergency Response | Mendocino Volunteer Fire Department     | 10461 Lansing Street   | Mendocino      | √ | √ |
| Emergency Response | Brooktrails Fire Department             | 24860 Birch Street     | Brooktrails    | √ | √ |
| Emergency Response | Anderson Valley Fire Department         | 14281 CA-128           | Boonville      | √ | √ |
| Emergency Response | Covelo Fire Protection District         | 75900 California 162   | Covelo         | √ | √ |
| Emergency Response | Comptche Volunteer Fire Station         | 8491 Flynn Creek Road  | Comptche       | √ | √ |
| Emergency Response | U.S. Forest Service Fire Station        | 78150 Covelo Road      | Covelo         | √ | √ |
| Emergency Response | Hopland Volunteer Fire Department       | 21 Feliz Creek Road    | Hopland        | √ | √ |
| Emergency Response | Hopland Volunteer Fire Department #612  | 151 Henry Station Road | Hopland        |   | √ |
| Emergency Response | South Coast Volunteer Fire Department   | 39215 Church Street    | Gualala        | √ | √ |
| Emergency Response | Redwood Valley-Calpella Fire Department | 8481 East Road         | Redwood Valley | √ | √ |



## Mendocino County Fire Vulnerability Assessment

|                    |  |                            |               |   |   |
|--------------------|--|----------------------------|---------------|---|---|
| Emergency Response | Westport Volunteer Fire Department                             | 33751 CA-Highway 1         | Westport      | √ | √ |
| Emergency Response | Laytonville Volunteer Fire Department                          | 44950 Willis Avenue        | Laytonville   | √ | √ |
| Emergency Response | Potter Valley Fire Department                                  | 10521 Main Street          | Potter Valley | √ | √ |
| Emergency Response | Willits Fire Department  | 1575 Baechtel Road         | Willits       |   | √ |
| Emergency Response | Albion-Little River Fire Department Station 811                | 32600 Albion Ridge Road    | Albion        | √ | √ |
| Emergency Response | Redwood Coast Fire Department                                  | 282 Lake Street            | Point Arena   | √ | √ |
| Emergency Response | Redwood Coast Fire Protection District                         | 19601 CA Hwy 1             | Manchester    | √ | √ |
| Emergency Response | Fort Bragg Fire Department                                     | 141 N. Main Street         | Fort Bragg    |   | √ |
| Emergency Response | South Coast Volunteer Fire Department                          | 37215 Church Street        | Gualala       | √ | √ |
| Emergency Response | Ukiah Valley Fire Authority Station                            | 141 Lovers Lane            | Ukiah         |   | √ |
| Emergency Response | Ukiah Fire Department  | 300 Seminary Avenue        | Ukiah         |   | √ |
| Emergency Response | Ukiah Valley Fire District                                     | 1500 S. State Street       | Ukiah         |   | √ |
| Emergency Response | Elk Volunteer Fire Department and Water District - Station 711 | 6129 S. Highway 1          | Elk           | √ | √ |
| Emergency Response | Elk Volunteer Fire Department Station 712                      | 27501 Philo Greenwood Road | Elk           | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|                          |  |                           |             |   |   |
|--------------------------|--|---------------------------|-------------|---|---|
| Emergency Response       | Elk Volunteer Fire Department Station 713      | 1701 Cameron Road         | Elk         | √ | √ |
| Emergency Response       | County Emergency Medical Services              | 1120 S. Dora Street       | Ukiah       |   | √ |
| Utility-Sewage           | Mendocino County Sewage Treatment Plant        | 10500 Kelly Street        | Mendocino   |   | √ |
| Utility-Electric         | PG&E Big River Substation                      | 44325 Little Lake Road    | Mendocino   | √ | √ |
| Utility-Electric         | PG&E Customer Service Office                   | 100 N. Main Street        | Fort Bragg  |   | √ |
| Utility-Electric         | PG&E Customer Service Office                   | 2641 N. State Street      | Ukiah       |   | √ |
| Utility Electric         | Babcock Substation                             | 700 Babcock Lane          | Ukiah       |   | √ |
| Utility-Electric         | Electric Service Center                        | 1350 Hastings Road        | Ukiah       |   | √ |
| Utility-Electric         | Orchard Substation                             | 724 S. Orchard Ave.       | Ukiah       |   | √ |
| Utility-Hydroelectric    | Hydroelectric Power Plan                       | 1229 Lake Mendocino Drive | Ukiah       |   | √ |
| Utility-Water            | Mendocino Water Agency                         | 890 N. Bush Street        | Ukiah       |   | √ |
| Utility-Water and Sewage | Surfwood Mutual Water Corporation              | 12101 Alderwood Road      | Mendocino   |   | √ |
| Utility-Water Treatment  | Fort Bragg Water Treatment/Aquatic Bio-Science | 31228 Thomas Lane         | Fort Bragg  |   | √ |
| Utility-Water            | Point Arena Water Works Inc.                   | 135 Hay Parkway           | Point Arena | √ | √ |
| Utility-Wastewater       | Point Arena Wastewater                         | 105 Iverson Avenue        | Point Arena | √ | √ |
| Utility Water            | Irish Beach Water District                     | 14501 Forest View Road    | Manchester  | √ | √ |
| Utility - Telecom        | AT&T Fiber Optic Cable Landing                 | 44500 Kinney Road         | Manchester  |   | √ |

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## Mendocino County Fire Vulnerability Assessment

|                         |   |                       |                       |   |   |
|-------------------------|---|-----------------------|-----------------------|---|---|
| Utility-Water           | Millview County Water District              | 3081 N. State Street  | Ukiah                 |   | √ |
| Utility-Water           | Willow County Water District                | 151 Laws Avenue       | Ukiah                 |   | √ |
| Utility-Mixed           | Ukiah City Utilities                        | 300 Seminary Avenue   | Ukiah                 |   | √ |
| Utility-Sewer           | Ukiah Sewer Treatment Plant                 | 300 Plant Road        | Ukiah                 |   | √ |
| Utility-Water           | Ukiah Water Department                      | 1320 Airport Road     | Ukiah                 |   | √ |
| Utility-Water Treatment | Ukiah Water Treatment Plant                 | 935 River Street      | Ukiah                 |   | √ |
| Utility-Water           | Willow Water District                       | 151 Laws Avenue       | Ukiah                 |   | √ |
| Utility-Water           | Rogina Water Company                        | 1850 Talmage Road     | Ukiah                 |   | √ |
| Utility-Water           | Laytonville County Water District           | 45020 US Hwy 101      | Laytonville           | √ | √ |
| Utility-Water           | Redwood Valley County Water                 | 2370 Webb Ranch Road  | Redwood Valley        | √ | √ |
| Utility-Water           | Brooktrails Water Plant                     | 2401 Primrose Drive   | Brooktrails           | √ | √ |
| Utility-Water           | Willits Water Plant                         | 1 Water Plant Road    | Willits               | √ | √ |
| Utility-Water           | Pine Mountain Mutual Water Company          | 3800 Chinquapin Drive | Willits-Pine Mountain | √ | √ |
| Utility-Waste Water     | City of Willits Waste Water Treatment Plant | Sewer Plant Road      | Willits               | √ | √ |
| Utility-Water Treatment | Mendocino City Community Services           | 10500 Kelly Street    | Mendocino             |   | √ |
| Utility-Water           | Westport County Water District              | 36970 Omega Drive     | Westport              | √ | √ |

*Category Five Professional Consultants, Inc.-Fire Vulnerability Assessment for Mendocino County- August 2020*

## Mendocino County Fire Vulnerability Assessment

|                    |                                     |                           |                     |   |   |
|--------------------|-------------------------------------|---------------------------|---------------------|---|---|
| Utility-Water      | Gualala Community Services District | 42455 Old Hwy 1           | Gualala             | √ | √ |
| Utility-Irrigation | Potter Valley Irrigation District   | 10170 Main Street         | Potter Valley       | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | 38701 Comptche Ukiah Road | Little River        | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | 25470 Ten Mile Road       | Point Arena         | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | 44701 Fish Rock Road      | Point Arena         | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater Building   | 44900 Port Street         | Point Arena         | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | Sanel Mountain            | Hopland             | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | Spanish Mountain          | Ukiah               | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | Cahto Peak                | West of Laytonville | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | Laughlin Peak             | Willits             | √ | √ |
| Utility-Radio      | Radio Microwave/Repeater            | Cold Spring Peak          | Philo               | √ | √ |
| Utility-Dam        | Bevans Creek Dam                    |                           | County              |   | √ |
| Utility-Dam        | Bradford Dam                        |                           | County              |   | √ |
| Utility-Dam        | Lake Emily Dam                      |                           | Brooktrails         |   | √ |
| Utility-Dam        | Cape Horn Dam                       |                           | County              |   | √ |
| Utility-Dam        | Chinquapin Dam                      |                           | County              |   | √ |
| Utility-Dam        | Cornett Dam                         |                           | County              |   | √ |
| Utility-Dam        | Coyote Valley Dam                   |                           | County              |   | √ |
| Utility-Dam        | Crawford Ranch Dam                  |                           | County              |   | √ |
| Utility-Dam        | Jayne's Lake Dam                    |                           | County              |   | √ |
| Utility-Dam        | Lake Ada Rose Dam                   |                           | Brooktrails         |   | √ |

## Mendocino County Fire Vulnerability Assessment

|                         |                           |                       |              |   |   |
|-------------------------|---------------------------|-----------------------|--------------|---|---|
| Utility-Dam             | Lolonis Vineyards Dam     |                       | County       |   | √ |
| Utility-Dam             | Mast Dam                  |                       | County       |   | √ |
| Utility-Dam             | McNab Dam                 |                       | County       |   | √ |
| Utility-Dam             | Mendocino Middle Dam      |                       | County       |   | √ |
| Utility Dam             | Perry Gulch Dam           |                       | County       |   | √ |
| Utility dam             | Ridgewood Dam             |                       | County       |   | √ |
| Utility-Dam             | Round Mountain Dam        |                       | County       |   | √ |
| Utility-Dam             | Schwindt Dam              |                       | County       |   | √ |
| Utility-Dam             | Scout Lake Dam            |                       | County       |   | √ |
| Utility-Dam             | Williams Valley Dam       |                       | County       |   | √ |
| Utility-Dam             | Morris Dam                |                       | Willits      |   | √ |
| Utility-Dam             | Centennial Dam            |                       | County       |   | √ |
| State/Federal Highways  | 353.43 Miles of Road      |                       | County       | √ | √ |
| Transportation Facility | Ukiah Municipal Airport   | 475 S. State Street   | Ukiah        |   | √ |
| Transportation Facility | Willits Municipal Airport | 1320 Poppy Drive      | Willits      | √ | √ |
| Transportation Facility | Boonville Airport         | Airport Road          | Boonville    | √ | √ |
| Transportation Facility | Round Valley Airport      | 22830 S. Airport Road | Covelo       | √ | √ |
| Transportation Facility | Ocean Ridge Airport       | 37691 Old Stage Road  | Gualala      | √ | √ |
| Transportation Facility | Little River Airport      | 43001 Airport Rd      | Little River | √ | √ |
| Transportation Facility | Public Works Yard         | 23290 Airport Road    | Covelo       | √ | √ |
| Transportation Facility | Public Works Yard         | 1825 Branscomb Road   | Laytonville  | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|                         |                                     |                                 |             |   |   |
|-------------------------|-------------------------------------|---------------------------------|-------------|---|---|
| Transportation Facility | Public Works Yard                   | 14301 Eureka Hills Road         | Point Arena | √ | √ |
| Transportation Facility | County Road Yards                   | 1400 Highway 128                | Boonville   |   | √ |
| Transportation Facility | Caltrans Maintenance Yard           | Highway 1 at Road 271           | Leggett     | √ | √ |
| Transportation          | Caltrans Maintenance Yard           | Hwy. 128 at Anderson Valley Way | Boonville   |   | √ |
| Transportation          | Caltrans Maintenance Yard           | Highway 1 in Manchester         | Manchester  | √ | √ |
| Transportation          | Caltrans Maintenance Yard           | Highway 1 at Airport Road       | Fort Bragg  |   | √ |
| Transportation          | Caltrans Maintenance Yard           | 90 W. Lake Mendocino Drive      | Ukiah       |   | √ |
| Transportation Facility | Mendocino Transit Authority         | 241 Plant Road                  | Ukiah       |   | √ |
| Transportation Facility | MTA Bus Barn                        | 710 Maple Street                | Ukiah       |   | √ |
| Transportation Facility | County Department of Transportation | 340 Lake Mendocino Drive        | Ukiah       |   | √ |
| Transportation Facility | Mendocino Council of Governments    | 367 N. State Street             | Ukiah       |   | √ |
| Transportation Facility | Ukiah City Streets Yard             | 1320 Airport Road               | Ukiah       |   | √ |
| Transportation Facility | Fort Bragg City Streets Yard        | 120 East Bush                   | Fort Bragg  | √ | √ |
| Transportation Facility | Public Works Yard                   | 23290 Airport Road              | Covelo      | √ | √ |
| Transportation Facility | Public Works Yard                   | 31301 Cedar Street              | Fort Bragg  | √ | √ |
| Transportation Facility | Public Works Yard                   | 751 Hearst Road                 | Willits     |   | √ |
| Transportation Facility | Mendocino County Road Yards         | 43401 Eureka Hill Road          | Point Arena |   | √ |

## Mendocino County Fire Vulnerability Assessment

|                          |                                       |                         |               |   |   |
|--------------------------|---------------------------------------|-------------------------|---------------|---|---|
| Healthcare               | County Health and Human Services      | 747 S. State Street     | Ukiah         |   | √ |
| Healthcare               | County Health Department              | 1726 S. Main Street     | Willits       |   | √ |
| Healthcare               | Adventists Hospital                   | 275 Hospital Drive      | Ukiah         |   | √ |
| Healthcare               | Howard Memorial Hospital              | 1 Madrone Street        | Willits       |   | √ |
| Healthcare               | Anderson Valley Health Center         | 13500 Airport Road      | Boonville     | √ | √ |
| Healthcare               | Consolidated Tribal Health Project    | 6991 North State Street | Calpella      |   | √ |
| Healthcare               | Long Valley Health Center             | 51 Branscomb Road       | Laytonville   | √ | √ |
| Healthcare               | Redwood Coast Medical Services        | 46900 Ocean Drive       | Gualala       | √ | √ |
| Healthcare               | Round Valley Indian Health Clinic     | Hwy. 162/ Biggar Lane   | Covelo        | √ | √ |
| Healthcare               | WIC Public Health Prenatal Care       | 790 Franklin Street     | Fort Bragg    |   | √ |
| Healthcare               | County Mental Health                  | 860 North Bush Street   | Ukiah         |   | √ |
| Healthcare               | Potter Valley Community Health Center | 10175 Main Street       | Potter Valley | √ | √ |
| Healthcare               | Redwood Coast Medical Services        | 46900 Oceano Drive      | Gualala       | √ | √ |
| Vulnerable** Populations | Holy Child Residential Care Home III  | 419 Grove Street        | Willits       |   | √ |
| Vulnerable Populations   | Holy Spirit Residential Care Home III | 414 Grove Street        | Willits       |   | √ |
| Vulnerable Populations   | Northbrook Healthcare Center          | 64 Northbrook Way       | Willits       | √ | √ |
| Vulnerable Populations   | Redwood Meadows Senior Housing        | 1475 Baechtel Road      | Willits       |   | √ |

*Category Five Professional Consultants, Inc.-Fire Vulnerability Assessment for Mendocino County- August 2020*



## Mendocino County Fire Vulnerability Assessment

|                        |                                      |                          |             |   |   |
|------------------------|--------------------------------------|--------------------------|-------------|---|---|
| Vulnerable Populations | Burtons Residential Care             | 79 Whitmore Lane         | Ukiah       |   | √ |
| Vulnerable Populations | Ukiah Autumn Leaves, Inc.            | 425 E. Gobbi Street      | Ukiah       |   | √ |
| Vulnerable Populations | Dalistan Care Home II                | 208 Scott Street         | Ukiah       |   | √ |
| Vulnerable Populations | Holy Child Residential Care Home I   | 1074 Albright Place      | Ukiah       |   | √ |
| Vulnerable Populations | Holy Child Residential Care Home II  | 512 Canyon View Court    | Ukiah       |   | √ |
| Vulnerable Populations | Holy Spirit Residential Care Home    | 224 Laws Avenue          | Ukiah       | √ | √ |
| Vulnerable Populations | Holy Spirit Residential Care Home II | 1275 Elm Street          | Ukiah       |   | √ |
| Vulnerable Populations | Mountain View Assisted Living        | 1343 S. Dora Street      | Ukiah       | √ | √ |
| Vulnerable Populations | Observatory Care Home                | 270 Observatory Street   | Ukiah       |   | √ |
| Vulnerable Populations | Redwood Cove Healthcare Center       | 1162 S. Dora Street      | Ukiah       |   | √ |
| Vulnerable Populations | Romes Care Facility                  | 1127 S. Dora Street      | Ukiah       |   | √ |
| Vulnerable Populations | Ukiah Healthcare                     | 1349 S. Dora Street      | Ukiah       |   | √ |
| Vulnerable Populations | Brookside Retirement Resident        | 1199 S. Dora Street      | Ukiah       |   | √ |
| Vulnerable Populations | Senior Living Complex                | 100 Port Road            | Point Arena | √ | √ |
| Vulnerable Populations | Equinox Care Facility                | 38281 S. Hwy 1           | Gualala     | √ | √ |
| Vulnerable Populations | Diamonds on the Water                | 33531 Navarro Ridge Road | Albion      | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|                        |  |                                 |              |   |   |
|------------------------|--|---------------------------------|--------------|---|---|
| Vulnerable Populations | Ocean Lake Adult Mobile Home                             | 1184 N. Main Street             | Fort Bragg   | √ | √ |
| Vulnerable Populations | Oceanside (Assisted) Living of Fort Bragg                | 535 East Chestnut Street        | Fort Bragg   |   | √ |
| Vulnerable Populations | Oceanside (Assisted) Retirement Living                   | 1370 Navarro Bluff Road         | Albion/Elk   | √ | √ |
| Vulnerable Populations | Oceanside (Assisted) Villa                               | 550 S. Franklin Street          | Fort Bragg   |   | √ |
| Vulnerable Populations | Sherwood Oaks Health Center (SNF)                        | 130 Dana Street                 | Fort Bragg   |   | √ |
| Vulnerable Populations | The Woods  | 43300 Little River-Airport Road | Little River | √ | √ |
| Education              | Mendocino County Office of Education                     | 2240 Old River Road             | Ukiah        |   | √ |
| Education              | Anderson Valley Jr./Sr. High School                      | 18200 Mountain View Road        | Boonville    |   | √ |
| Education              | Anderson Valley Elementary School/Charter Network School | 12300 Anderson Valley Way       | Boonville    | √ | √ |
| Education              | Fort Bragg Senior High School                            | 300 Dana Street                 | Fort Bragg   |   | √ |
| Education              | Fort Bragg Middle School                                 | 500 N. Harold Street            | Fort Bragg   |   | √ |
| Education              | Redwood Elementary School                                | 324 S. Lincoln St.              | Fort Bragg   |   | √ |
| Education              | Dana Gray Elementary                                     | 1197 E. Chestnut St.            | Fort Bragg   |   | √ |
| Education              | Noyo High School   | 250 S. Sanderson Way            | Fort Bragg   |   | √ |
| Education              | Three Rivers Charter School                              | 1211 Del Mar Drive              | Fort Bragg   |   | √ |
| Education              | Montessori del Mar Community School                      | 22850 CA-1                      | Fort Bragg   |   | √ |
| Education              | Manchester Elementary School                             | 19550 Hwy. 1                    | Manchester   |   | √ |

*Category Five Professional Consultants, Inc.-Fire Vulnerability Assessment for Mendocino County- August 2020*

## Mendocino County Fire Vulnerability Assessment

|           |  |                           |                |   |   |
|-----------|--|---------------------------|----------------|---|---|
| Education | Rancheria Continuation School                  | 12300 Anderson Valley Way | Boonville      | √ | √ |
| Education | Unicorn School                                 | 18151 Rays Road           | Philo          | √ | √ |
| Education | Developing Virtue School                       | 2001 Talmage Road         | Talmage        |   | √ |
| Education | Greenwood Elementary School                    | 5150 S. Highway 1         | Elk            |   | √ |
| Education | Albion Elementary School                       | 30400 Albion Ridge Road   | Albion         | √ | √ |
| Education | Waldorf School of Mendocino                    | 6280 Third Street         | Calpella       |   | √ |
| Education | Comptche Elementary School                     | 31301 Comptche-Ukiah Road | Comptche       | √ | √ |
| Education | Deep Valley Christian School                   | 8555 Uva Drive            | Redwood Valley | √ | √ |
| Education | Eagle Peak Middle School                       | 8601 West Road            | Redwood Valley | √ | √ |
| Education | Mendocino Community High School                | 45220 Covelo Street       | Mendocino      | √ | √ |
| Education | Mendocino Middle School                        | 44301 Little Lake Road    | Mendocino      | √ | √ |
| Education | Mendocino Elementary School                    | 44261 Little Lake Road    | Mendocino      | √ | √ |
| Education | Mendocino Alternative Learning Center          | 44302 Little Lake Road    | Mendocino      | √ | √ |
| Education | Mendocino Community Day School                 | 44141 Little Lake Road    | Mendocino      | √ | √ |
| Education | Mendocino High School/Mendocino Academy School | 10700 Ford Street         | Mendocino      | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|           |   |                         |               |   |   |
|-----------|---|-------------------------|---------------|---|---|
| Education | Green House School                          | 41725 Road 409          | Mendocino     | √ | √ |
| Education | Potter Valley Elementary/Junior High School | 10401 Main Street       | Potter Valley | √ | √ |
| Education | Potter Valley High School                   | 10401 Main Street       | Potter Valley | √ | √ |
| Education | Centerville High School                     | 10401 Main Street       | Potter Valley | √ | √ |
| Education | Calpella Elementary                         | 151 Moore Street        | Ukiah         |   | √ |
| Education | Frank Zeek Elementary                       | 1060 North Bush Street  | Ukiah         |   | √ |
| Education | Grace Hudson Elementary                     | 251 Jefferson Lane      | Ukiah         | √ | √ |
| Education | Nokomis Elementary                          | 495 Washington Avenue   | Ukiah         |   | √ |
| Education | Oak Manor Elementary                        | 400 Oak Manor Drive     | Ukiah         |   | √ |
| Education | Pomolita Middle School                      | 740 North Spring Street | Ukiah         |   | √ |
| Education | Redwood Academy of Ukiah                    | 1059 N. State Street    | Ukiah         |   | √ |
| Education | South Valley High                           | 429 South Dora Street   | Ukiah         |   | √ |
| Education | Ukiah Adult School                          | 1056 N. Bush Street     | Ukiah         |   | √ |
| Education | Ukiah High School/Independent Study Academy | 1000 Low Gap Road       | Ukiah         |   | √ |
| Education | Yokayo Elementary                           | 790 South Dora Street   | Ukiah         |   | √ |
| Education | Mendocino College                           | 1000 Hensely Creek Road | Ukiah         | √ | √ |

## Mendocino County Fire Vulnerability Assessment

|           |  |                              |             |   |   |
|-----------|--|------------------------------|-------------|---|---|
| Education | Ukiah Junior Academy School                  | 180 Stipp Lane               | Ukiah       |   | √ |
| Education | Willits Seventh Day Adventist School         | 22751 Bray Road              | Willits     |   | √ |
| Education | Vineyard Elementary School                   | 16500 Hearst-Willits Road    | Willits     |   | √ |
| Education | Crazy Horse Elementary School                | 27220 String Creek Road      | Willits     |   | √ |
| Education | Sherwood School                              | 32600 Sherwood Road          | Willits     | √ | √ |
| Education | Branscomb Elementary School                  | 14320 Branscomb Road         | Laytonville | √ | √ |
| Education | Laytonville Continuation High School         | 200 Branscomb Road           | Laytonville | √ | √ |
| Education | Laytonville Elementary School                | 150 Ramsey Road              | Laytonville | √ | √ |
| Education | Laytonville High School                      | 250 Branscomb Road           | Laytonville | √ | √ |
| Education | Spyrock Elementary School                    | 3510 Spyrock Road            | Laytonville | √ | √ |
| Education | Eel River Charter School                     | 25995 East Lane              | Covelo      | √ | √ |
| Education | Covelo Christian School                      | 76451 Henderson Lane         | Covelo      | √ | √ |
| Education | Round Valley Elementary School               | Foothill and Airport Streets | Covelo      | √ | √ |
| Education | Round Valley High School                     | Howard and High Streets      | Covelo      | √ | √ |
| Education | Round Valley Continuation School             | Howard and High Streets      | Covelo      | √ | √ |
| Education | Leggett Valley Elementary School/High School | 1 School Street              | Leggett     | √ | √ |
| Rancheria | Laytonville Rancheria Community Center       | 300 Cahto Drive              | Laytonville |   | √ |

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## Mendocino County Fire Vulnerability Assessment

|                     |   |                            |                   |                   |                     |
|---------------------|---|----------------------------|-------------------|-------------------|---------------------|
| Rancheria           | Guidiville<br>Rancheria- Office<br>Building             | 405 Talmage Road           | Ukiah             |                   | √                   |
| Rancheria           | Manchester-Point<br>Arena Rancheria<br>Community Center | 24 Mamie Laiwa Drive       | Point Arena       | √                 | √                   |
| Rancheria           | Redwood Valley<br>Rancheria<br>Community Center         | 3250 Road I                | Redwood<br>Valley | √                 | √                   |
| Rancheria           | Coyote Valley<br>Reservation<br>Community Center        | Redwood Valley, 95470      | Redwood<br>Valley |                   | √                   |
| Rancheria           | Round Valley<br>Reservation<br>Community Center         | 77826 Covelo Road          | Covelo            | √                 | √                   |
| Rancheria           | Sherwood Valley<br>Rancheria<br>Community Center        | 190 Sherwood Hill<br>Drive | Willits           | √                 | √                   |
| Rancheria           | Hopland Rancheria<br>Community Center                   | 3000 Shanel Road           | Hopland           | √                 | √                   |
| Rancheria           | Pinoleville Pomo<br>Nation Community<br>Center          | 500 Pinoleville Drive      | Ukiah             |                   | √                   |
| Private<br>Property | Residential<br>Structures                               | 3,000 Units                | Fort Bragg        | √<br>150<br>Units | √<br>3,000<br>Units |
| Private<br>Property | Residential<br>Structures                               | 6,000 Units                | Ukiah             | √<br>350<br>Units | √<br>6,000<br>Units |
| Private<br>Property | Residential<br>Structures                               | 2,100 Units                | Willits           | √<br>200<br>Units | √<br>2,100<br>Units |
| Private<br>Property | Residential<br>Structures                               | 450 Units                  | Point Arena       | √<br>100<br>Units | √<br>450<br>Units   |

## Mendocino County Fire Vulnerability Assessment

|                     |                           |              |                         |                      |                      |
|---------------------|---------------------------|--------------|-------------------------|----------------------|----------------------|
| Private<br>Property | Residential<br>Structures | 20,500 Units | Unincorporated<br>Areas | √<br>18,500<br>Units | √<br>20,500<br>Units |
|---------------------|---------------------------|--------------|-------------------------|----------------------|----------------------|

\*Because five potentially active faults traverse Mendocino County, earthquake threat was included in this critical facilities table.

\*\*The Mendocino County Health and Human Services Agency maintains a comprehensive vulnerable population list that details an individual's specific access and functional need along with their contact information.

#### IV. COMMUNITY THREAT ASSESSMENTS

As mentioned above, the planning areas selected for this Fire Vulnerability Assessment are consistent with the Mendocino Community Wildfire Protection Plan (CWPP) and the CAL FIRE Unit Plan. These planning areas were identified as the result of a number of factors including: watershed boundaries, weather, fuels, topography, population density, transportation corridors, mutual aid zones utilized by local emergency response personnel (fire and medical), CAL FIRE battalion locations, and local jurisdiction and fire district boundaries.

Within each planning area, the wildfire threat for each community, and in some cases neighborhoods, has been outlined. The population density, area, climate, topography, fuels, fire protection resources, and access issues of the area are delineated in order to fully explain the wildfire threat. Area specific critical facilities threatened by wildfire are also identified. The County is broken down into the following planning areas:



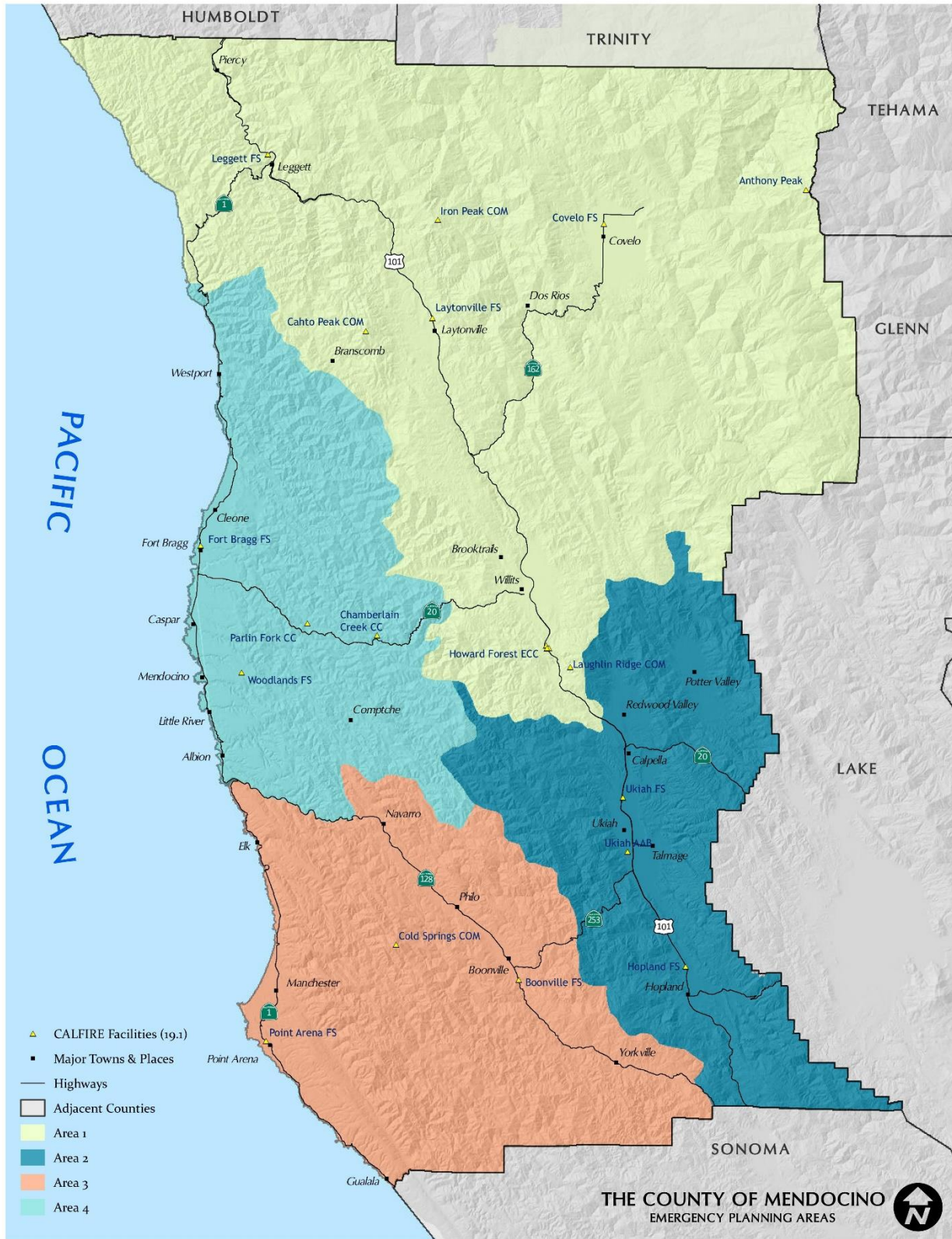
## Mendocino County Fire Vulnerability Assessment

**Table 3: Mendocino County Threat Analysis Planning Areas**

| <b>Planning Area</b> | <b>Area of County</b>           | <b>CAL FIRE Battalion(s)</b> | <b>Towns and Fire Departments</b>  | <b>Watersheds</b>  |
|----------------------|---------------------------------|------------------------------|--|--|
| <b>1</b>             | North and Northeast             | 1,2,4                        | Brooktrails, Covelo, Laytonville, Leggett, Piercy, Willits   | Eel River including North Fork, Middle Fork, and South Fork. Noyo River  |
| <b>2</b>             | Southeast and Central           | 3                            | Hopland, Potter Valley, Redwood Valley, Ukiah, Talmage   | Russian River, plus Eel River to the north of Potter Valley  |
| <b>3</b>             | Southwest                       | 5                            | Anderson Valley, including Yorkville, Boonville, Philo, and Navarro, to Gualala, Point Arena, Manchester, and Elk on the South Coast of the County | North Fork Gualala, Garcia, Russian, and Navarro Rivers, and Dry Creek. Coastal drainages includes Greenwood, Elk, Alder, and Brush Creeks |
| <b>4</b>             | West Central and Coastal Region | 6                            | Albion, Little River, Mendocino, Fort Bragg, Cleone, and Westport on the coast, plus Comptche nine miles inland of Mendocino                       | Albion, Big River, Noyo, and Ten Mile River, and Salmon Creek  |

*A map of the above listed Planning Areas can be found below.*

# Mendocino County Fire Vulnerability Assessment



Category Five Professional Consultants, Inc.-Fire Vulnerability Assessment for Mendocino County- August 2020

### ►PLANNING AREA I: NORTH AND NORTHEAST

Includes: The communities and fire departments of Covelo, Willits, Brooktrails, Laytonville, Leggett, and Piercy and the Cahto Tribe of the Laytonville Rancheria and Round Valley Indian Reservation and Sherwood Valley Rancheria of Pomo Indians. It covers the watersheds of the Eel River, including the North Fork, Middle Fork, and South Forks of the Eel River. CAL FIRE Battalions 1, 2, and 4

#### A. Estimated Population Size

Brooktrails & Sherwood

|               |       |
|---------------|-------|
| Road Corridor | 6,000 |
|---------------|-------|

|                         |       |
|-------------------------|-------|
| Laytonville/Long Valley | 2,000 |
|-------------------------|-------|

|         |     |
|---------|-----|
| Leggett | 500 |
|---------|-----|

|        |     |
|--------|-----|
| Piercy | 300 |
|--------|-----|

|                     |       |
|---------------------|-------|
| Round Valley/Covelo | 4,500 |
|---------------------|-------|

|                            |               |
|----------------------------|---------------|
| Willits & surrounding area | <u>11,000</u> |
|----------------------------|---------------|

|              |               |
|--------------|---------------|
| <b>Total</b> | <b>24,300</b> |
|--------------|---------------|

#### B. Climate

This portion of the County enjoys a Mediterranean climate, with cool winters and a hot day/cool night summer. Summer temperatures range from 50 to 85 degrees Fahrenheit and 32 to 55 degrees Fahrenheit in the winter. Average rainfall for Willits is approximately 50 inches a year. The area will typically not experience rainfall from early June to late October. The mountains surrounding Willits, Laytonville, and Covelo will accumulate considerably more rainfall, in some locations up to 100 inches.

There are occasional snow falls throughout the area each year. For example, Willits will receive an average of 3.6 inches of snow annually. The most snow in one month was 20.0 inches in December 1964. Snow will accumulate in the higher elevations in the surrounding foothills and mountains especially in the Mendocino National Forest in the northeast portion of the planning area.

This area can experience both strong and erratic winds in the summer. As the interior valleys (i.e.-Round Valley) and further to the east (i.e.-Sacramento Valley) become

warmer, the rising hot air is replaced by cool air flowing to the east from the Pacific Ocean. As the valleys become warmer, the coastal drainages will see an increase in erratic wind behavior.

Occasionally in the fall, the jet stream, the high-altitude river of air along which weather systems track, will plunge south from Alaska and Canada into the mountain west. Low pressure will develop over the Great Basin creating an atmospheric pressure differential. The difference in pressure over this relatively short distance will generate strong winds. These winds have the critical impact of drying out the air as it descends after passing over mountain peaks. When the ultra-dry air overlays parched vegetation, tinderbox conditions develop that are ripe for extreme fire growth. Illustrating how powerful this weather phenomenon can be, wind gusts well above hurricane force have been recorded in many locations of the planning area. Wildfires occurring during these wind events are extremely dangerous and destructive.

### **C. Topography**

This area is comprised of four large valleys and the smaller Sherwood Valley: 1) Round Valley, with Covelo in its center, is located in the northeastern section of the area. 2) Willits is located in the center of Little Lake Valley. 3) Long Valley surrounds the community of Laytonville. 4) Leggett Valley is found in the northern portion of the County which contains the communities of Leggett and Piercy. 5) Sherwood Valley is located north of Brooktrails on the north branch of Sherwood Road. These valleys, either directly or through tributaries are drained by the Eel River, which flows to the north. Numerous mountain peaks over 6,000 feet are found in the northeastern portion of the area with the highest point in the County being Anthony Peak at an elevation of 6954 feet.

### **D. Fuel Hazards**

Fuel types in the planning area consist of a mosaic of grass, oak woodlands, brush, and mixed chaparral with large areas of heavy timber found closer to the coast and in the higher inland elevations. Much of the forested area has been timber harvested in the distant past and is now matured. As outlined below, portions of the area surrounding Covelo and the Highway 162 corridor have experienced wildfires in the recent past. However, many areas have not and subsequently there is a large build-up of wildland fuels ready to burn.

The mountains and foothills surrounding the communities of Willits, Whale Gulch, Laytonville, Leggett, and Piercy present a considerable wildfire urban interface and intermix challenge. Outside of these communities, there exists a number of sparsely populated large parcel



## Mendocino County Fire Vulnerability Assessment

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subdivisions that are at risk from wildfire. Examples include the Cherry Creek Ranches and Spyrock subdivisions.

The city of Willits is located 20 miles north-northwest of Ukiah on Highway 101. Referred to as the “Gateway to the Redwoods”, the city has a significant wildland urban interface on the west side of the community.

The Brooktrails Township is an unincorporated community located immediately northwest of the city of Willits. The Township is comprised of the Brooktrails subdivision and the Redwood Park. This steep and wooded area has the distinction of being the first community in the United States to blend a four-square mile redwood and mixed growth forest conservation park with a fully improved residential subdivision. Adjacent to the Brooktrails Township is the Willits Municipal Airport (Ells Field). An area north of the Brooktrails Township, often referred to as the “Sherwood Corridor” includes the Spring Creek, Sylvandale, Sherwood Valley Rancheria, Sherwood Ranch, and the Gates and Blue Lake properties. See “Special Concerns” below for more details on Brooktrails area.

Round Valley is sparsely populated. The small community of Covelo, is located in the center of the valley and has a population of approximately 1000. The majority of the valley floor is involved in agricultural production. There are no large contiguous fuel beds in the valley. The community itself is not at significant risk from wildfire. The foothills and mountains surrounding this valley are lightly populated and heavily vegetated by oak woodlands. The homes and ranches in the area are at considerable risk from fire. Over the years, CAL FIRE and the Round Valley Indian Tribe have invested considerable time, energy and money in vegetation management projects to protect the tribal lands.

Branscomb is a small unincorporated community located eight miles west-southwest of Laytonville on Branscomb Road. The area is vegetated by heavy timber and is very lightly populated.

Whale Gulch is a small isolated community in the northwestern most part of Mendocino County. It is bifurcated by the county line with the northern half of the Gulch being in Humboldt County. The terrain of Whale Gulch is very steep and heavily forested. There are about 80 residences with a population under 200.

Away from the communities, the majority of the outlying areas and subdivisions are served by secondary roads that could be severely impacted by fire, blocking ingress and egress. Compounding this issue, many of these roads serve as the only way in and out.

### **E. Fire History**

This area has a significant fire history. In the 19<sup>th</sup> century, the town of Sherwood, located in Sherwood Valley, burned down and was never rebuilt. In August of 1944, the Ironies #2 Fire burned through the community of Willits. The Strong Mountain fire burned through what is now the Brooktrails Township in August of 1950. In 2012, the North Pass Fire burned 41,983 acres northeast of Covelo primarily within the Mendocino National Forest. This wildfire was started by lightning. It destroyed 8 residences and 18 outbuildings.

The Redwood Fire, which was discovered at 1:30 p.m. on October 9, 2017, was initially thought to be the result of two fires merging, the Potter Valley and Redwood Valley fires. It was later determined that Redwood Fire was a spot fire from the Potter Valley Fire which started at approximately 10:35 p.m. on October 8<sup>th</sup> in northwest Mendocino County. Because of the steep terrain, fuel moistures, and northwest winds, the fire blazed for 21 days and was not fully contained until October 28, 2017. The fires burned 36,500 acres, destroyed 545 structures, and resulted in 9 fatalities and the evacuation of nearly 8,000 people.

In general, a wildfire greater than 5,000 acres will occur on an average of once every three years either in or in close proximity to this planning area.

### **F. Fire Protection**

The Brooktrails Fire Department, a part of the Brooktrails Township Community Services District, provides fire protection in the Brooktrails Township, Sylvandale, and Spring Creek subdivisions. Staff consists of a combination of paid/paid call firefighters operating out of one station. The Covelo Fire Protection District serves the Round Valley area with an all-volunteer staff operating out of one station. The department also staffs a Basic Life Support (BLS) ambulance. The Little Lake Fire Protection District, located in the center of the County, serves both the city of Willits and the surrounding areas. Staff consists of a combination of paid/paid call firefighters operating out of one station. Long Valley Fire Protection District, locally known as the Laytonville Fire Department, has a combination of paid/paid call staff that operates out of two stations. The department also staffs two ambulances; one of which provides Advanced Life Support (ALS) and the other Basic Life Support (BLS). The Leggett Fire Department is a small, all volunteer fire department that operates out of a fire station which is located on Drive Thru Tree Road in Leggett. The Piercy Fire Protection District is a small, all volunteer fire department, that operates out of a single fire station which is located on Highway 101 just south of the Humboldt County Line in Mendocino County's far northwestern corner. West of Piercy is the Whale Gulch Volunteer Fire Company, whose response area is in both Mendocino and Humboldt Counties. Whale Gulch volunteers operate out of a single station located in Whale Gulch

## Mendocino County Fire Vulnerability Assessment

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and are dispatched from Humboldt County, working in conjunction with Humboldt County fire departments. The U.S. Forest Service staffs a fire station in Covelo during fire season. CAL FIRE operates four fire stations within this area. They are located in Covelo, Laytonville, Leggett, and Howard Forest. A CAL FIRE helitack base is also located at Howard Forest.

The Brooktrails Fire Department sponsors a Community Emergency Response Team (CERT). It assists the department with the specialized emergency response needs, including assisting the Mendocino County Sheriff's Office in carrying out evacuation plans not only in Brooktrails, but also in Willits and Laytonville.

### **G. Transportation Corridors**

Highways 101 and 162 are the primary transportation routes for this area. They are well maintained and have more than adequate carrying capacity. Highway 1, 41 miles north of Fort Bragg, converges with Highway 101 at Leggett. This section of Highway 1 is winding, narrow, and in some places quite steep.

Secondary roads of importance include the following:

- Sherwood Road transits from Willits, through the Brooktrails Township, all the way to Laytonville a distance of approximately 30 miles. From Willits to Sherwood School, it is fairly straight but narrow. It is well paved but, in some places, quite steep. One mile past the Sherwood School, Sherwood Road branches west to the Sherwood Valley and then branches east to Hwy. 101 just south of Laytonville. The Sherwood Road western branch is paved to the Sherwood Valley Rancheria. The east branch is a gravel road and becomes very narrow and winding as passes through the mountains to Hwy. 101 just south of Laytonville, it has two stream bed crossings making use unavailable.
- Highway 162 transits from Highway 101 at Longvale all the way to Highway 5 at Willows. Highway 162 also becomes Mendocino Pass Road and Forest Highway 7 at the intersection of Highway 162 and Mina Road in Covelo. It is the only year-round access road to Covelo from Highway 101. This road is not a year-round access road east of Covelo. Through the valley, it is flat and mostly straight, however through the mountains to the east and west it is narrow, steep and winding.
- Branscomb Road transits from Laytonville over the mountains to DeHaven on Highway 1 just north of Westport. The road is steep, winding and narrow.
- Laytonville Dos Rios Road transits from Laytonville to Dos Rios at Highway 162. The road is winding and narrow.

Wildfire could impact and compromise all of these routes.

Throughout the planning area exist a number of small, often private roads leading to very remote, rural homes, ranches, and outbuildings. These roads are often unnamed, narrow, winding, poorly maintained, overgrown, and locked with multiple gates. Fire and law enforcement officials will need to “triage” evacuation efforts to ensure that the limited public safety resources are directed to do the most good for the most people. When available, consider using helicopters equipped with warning systems to make emergency notifications to rural residences and ranches.

### **H. Special Concerns**

The Brooktrails Township Community Services District is the fourth largest community in Mendocino County. In the 1960s, a 5,000-acre dude ranch/old lumber mill was developed as a “Vacation Village” with 6,000 private lots on 60 miles of Mendocino County paved two-lane roads constructed with water and sewer service lines. 2,300 acres are dedicated to the open space Redwood Park and greenbelts with trails, two lakes and a nine-hole golf course in the Redwoods. With 1,600 homes and 4,000 residents, Brooktrails is a bedroom community to Mendocino County. Two rural private gravel road subdivisions of Spring Creek and Sylvandale are in the Brooktrails District, adding about 2,700 acres, and enjoy a level of autonomy from Brooktrails Township regulations.

The Township’s water system uses two dams to impound domestic water for its water treatment plant with a design capacity of 1.2 million gallons per day. Twenty-three water tanks with 1.7 million gallons of storage and 18 pump stations supply the community. Two sewer pump stations help send flows to the Willits Sewer Treatment Plant. Prior to the first PG&E public safety power shut off event in 2019, Brooktrails deployed over a dozen mobile and fixed generators to continue operations with transfer switches for hook-ups. Upgrades to fixed propane-fueled generators are ongoing. Of concern are the many redwood water tanks that could be lost in a wildfire affecting firefighting efforts. Replacement steel tanks are being placed every two years, and several decades of ongoing effort are needed to complete this program.

The Brooktrails Township depends on the County of Mendocino to maintain the 60 miles of County two lane roads in the District. Local roads must climb 1,000 feet to the western ridge and 500 feet to the east to the Willits Airport from the Brooktrails Township service center along Willits Creek. Of concern are the steep, winding feeder roads that have many complexes of streets with similar names (Street, Court, Circle, Drive, Way, etc.), requiring a discerning mind to navigate as a visitor. Compounding this issue is that all feeder roads

## Mendocino County Fire Vulnerability Assessment

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go to Sherwood Road, which is over capacity at peak hours with 10,000 to 18,000 vehicle trips per day and is the only way in/out available for the Sherwood Corridor communities. A car accident or tree across the road blocks hundreds of cars in a short period of time during daylight hours.

The Brooktrails Fire Department operates a year-round fire fuels abatement program on private parcels with grass lots cleared in the summer near improved lots and wooded lots noticed in the winter months to allow burning of brush piles. Annual compliance with abatement notices is in the 90% range. However, over the years and for a variety of reasons, a number of vacant lots have been abandoned by property owners and are now in “tax defaulted” status and do not sell at public auction. Many of these properties need vegetation management but the absentee landlords do not respond to “threats of abatement” and/or placing of liens on the property to cover wildfire fuel abatement costs. A new procedure should be developed to “condemn” the properties or otherwise take public ownership to allow vegetation management on selected lots.

CAL FIRE clears fire fuels and constructs fuel breaks in the 2,300 acres of public park and greenbelts. For the past 30 years, both programs have transformed Brooktrails Township ground level fuel loads. The steepest areas in the parklands are not treatable so some ground fuel accumulations will still be present. Although these active programs have reduced fire intensity in the community, any canopy fire, such as experienced in communities to our south and ember storms from adjacent areas, will be of major concern. Climate extremes, such as high wind events, are the greatest threat. PG&E has cut and trimmed thousands of trees along Brooktrails roads in 2019/20 improving local conditions along power lines.

The Brooktrails Fire Department responds as dispatched to all 30 miles of the Sherwood Corridor and its rural subdivisions and ranches. Many responses are outside the Fire Districts tax boundaries and efforts to raise additional fire district funding are ongoing. The need to replenish the ranks of volunteer firefighters is also a major concern to all local fire services.

Outside of Brooktrails Township, along the Sherwood corridor, few major community fire fuel reduction programs have existed beyond home clearance efforts, with CAL FIRE doing inspections over the last decades. First Gate, Second and Third Gates to the east, and Sylvandale and Spring Creek to the west, are major subdivisions on middle Sherwood Road. Sherwood School, Sherwood Valley Rancheria, Sherwood Ranch, and many other ranches are further out.

The Sherwood Firewise group is now active with educational programs and roadway lot



## Mendocino County Fire Vulnerability Assessment

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clearance grants. The 25 miles of Sherwood Road beyond Brooktrails has many subdivisions and ranch properties that are heavily forested with dense understory fire fuels and a fire history of wind driven fires. 2,000 citizens inhabit these rural communities. All depend on a narrow, winding Sherwood Road for access to Willits.

Although decades of efforts to design and acquire a new county road as a circulation and emergency second access for the Sherwood Corridor communities have been undertaken, the significant cost and environmental concerns has stymied those efforts. Some logging roads are being improved for emergency operations but cannot be used for a rapid evacuation scenario because of the volume of traffic that must be accounted for and the hazards of accidents trapping evacuees.

Tremendous efforts by CAL FIRE and the Brooktrails Fire Department have helped prevent any homes being lost to wildfire in the Township, but climate change has modified fire behavior as evidenced by recent fire history. The extensive county road system with many private roads on ranches and subdivisions feeding into a very restricted exit corridor, as the only paved year-round exit/ingress option puts residents at extreme risk in wildfire/evacuation events. Recommendations regarding additional access roads can be found in the Summary/Recommendation section of this plan.

The Little Lake Fire Protection District serves the city of Willits, extensive BLM lands, two Indian Rancherias, and a large wildlife habitat at the north end of the valley. Three subdivisions of special concern are: Pine Mountain Estates, the Ridgewood Subdivision, and the Hilltop Drive Subdivision.

In Laytonville, areas of special concern include: The Nature Conservancy's Wilderness Lodge and the subdivisions of Ten Mile Creek, Woodman Canyon, Jack of Hearts Creek, and Cherry Creek Ranches.

In summary, all of the communities in Planning Area 1 are ranked at a **High or Very High** hazard risk for wildfire.

*Please see Fire Model located in Section V.*

## Mendocino County Fire Vulnerability Assessment

### I. Critical Assets at Risk for Wildfire

**Table 4: Critical Infrastructure at Risk in Planning Area 1**

| <b>Community or Area</b> | <b>Facility/Location</b>  |
|--------------------------|---|
| Branscomb                | Laytonville Fire Department Station 511<br>14322 Branscomb Road |
| Brooktrails              | Brooktrails Community Services District<br>24860 Birch Street   |
| Brooktrails              | Brooktrails Fire Department<br>24860 Birch Street               |
| Brooktrails              | Brooktrails Water Treatment Plant<br>2401 Primrose Drive        |
| Covelo                   | Covelo Fire Protection District<br>75900 Covelo Road            |
| Covelo                   | County Public Works Yard<br>23290 Airport Road                  |
| Covelo                   | Round Valley Indian Health Clinic<br>Highway 162/Biggar Lane    |
| Covelo                   | Round Valley Reservation Community Center<br>77826 Covelo Road  |
| Covelo                   | CAL FIRE – Covelo Station<br>77251 Covelo Road                  |
| Covelo                   | Sheriff's Sub Station<br>76091 Covelo Road                      |
| Covelo                   | U.S. Forest Service Fire Station<br>78150 Covelo Road           |
| Covelo                   | Eel River Charter School<br>25995 East Lane                     |
| Covelo                   | Covelo Christian School<br>76451 Henderson Lane                 |
| Covelo                   | Round Valley Elementary School<br>Foothill/Airport Streets      |
| Covelo                   | Round Valley High/Continuation School<br>Howard/High Streets    |
| Laytonville              | Laytonville County Water District 45020 US<br>Highway 101       |

## Mendocino County Fire Vulnerability Assessment

|                     |  |
|---------------------|--|
| Laytonville         | County Public Works Yard<br>1825 Branscomb Road  |
| Laytonville         | Laytonville Fire Department Station 510<br>44500 Willis Avenue                         |
| Laytonville         | CAL FIRE – Laytonville<br>46101 US Hwy 101   |
| Laytonville         | Long Valley Health Center<br>51 Branscomb Road   |
| Laytonville         | Branscomb Elementary School<br>14320 Branscomb Road                                    |
| Laytonville         | Laytonville Elementary School<br>200 Branscomb Road                                    |
| Laytonville         | Laytonville High School<br>50 Branscomb Road   |
| Laytonville         | Laytonville Continuation School<br>200 Branscomb Road                                  |
| Laytonville         | Spyrock Elementary<br>3510 Spyrock Road  |
| West of Laytonville | Radio Repeater<br>Cahto Peak<br>39 41' 11" N x 123 43'46" W                            |
| Willits             | Howard Forest CAL FIRE Station/<br>Unit Headquarters<br>17501 US Hwy 101               |
| Willits             | Willits Police Department<br>125 E. Commercial Street                                  |
| Willits             | Willits Fire Department<br>1575 Baechtel Road  |
| Willits             | Water Plant/Water Shed<br>1 Water Treatment Plant Road x Hwy 101<br>(South of Willits) |
| Willits             | Pine Mountain Mutual Water Treatment Plant<br>3800 Chinquapin Drive – Pine Mountain    |
| Willits             | City of Willits Waste Water Treatment Plant<br>Sewer Plant Road                        |
| Willits             | Willits Radio Repeater-Laughlin Peak<br>39 19' 37" N x 123 16' 22" W                   |

## Mendocino County Fire Vulnerability Assessment

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|         |   |
|---------|---|
| Willits | Sherwood Valley Rancheria Community Center<br>190 Sherwood Hill Drive |
| Willits | Northbrook Healthcare Center<br>64 Northbrook Way                     |

### ➤ **PLANNING AREA 2: SOUTHEAST AND CENTRAL**

Includes: The communities and fire departments of Ukiah, Talmage, Redwood Valley, Calpella, Hopland, and Potter Valley and the Redwood Rancheria, Hopland Rancheria, Guidiville Rancheria, Coyote Valley Reservation, Potter Valley Tribe and Pinoleville Pomo Nation. It covers the watersheds of the Russian River, plus Eel River North of Potter Valley. CAL FIRE Battalion 3

#### **A. Estimated Population Size**

|                            |              |
|----------------------------|--------------|
| Hopland                    | 5,000        |
| Ukiah and surrounding area | 30,000       |
| Redwood Valley/Calpella    | 7,500        |
| Potter Valley              | <u>1,500</u> |

|              |               |
|--------------|---------------|
| <b>Total</b> | <b>44,000</b> |
|--------------|---------------|

#### **B. Climate**

This portion of the County enjoys a Mediterranean climate, with dry, warm to hot summers. This planning area will typically not see rainfall from early June through late October. Average summer temperatures range from 90 to 105 degrees Fahrenheit and 37 to 56 degrees Fahrenheit in the winter. Average rainfall for Ukiah is approximately 40 inches per year. The mountains surrounding Ukiah and Hopland will accumulate considerably more rainfall, in some locations up to 100 inches annually can be anticipated. Snow fall is rare in the lower elevations of the valley floor, seldom accumulating for more than a day or two. Snow will occasionally accumulate in the higher elevations in the surrounding foothills and mountains.

This area can experience both strong and erratic winds. As the interior valleys warm in Redwood and Potter Valleys and the Sacramento Valley (to the east), the rising hot air will be replaced by cool air flowing to the east from the Pacific Ocean through the coastal drainages. The warmer the valleys become, the more erratic and stronger the winds will become. In the Ukiah area, firefighters refer to these winds as the “Low Gap Express.”

Occasionally in the fall, the jet stream, the high-altitude river of air along which weather systems track, will plunge south from Alaska and Canada into the mountain west. Low pressure will



develop over the Great Basin creating an atmospheric pressure differential. The difference in pressure over this relatively short distance will generate strong winds. The winds have the critical impact of drying out the air as the air descends after passing over mountain peaks. When the ultra-dry air overlays parched vegetation, tinderbox conditions develop that are ripe for extreme fire growth. Illustrating how powerful this weather phenomenon can be, wind gusts well above hurricane force have been recorded in many locations of the planning area. Wildfires occurring during these wind events are extremely dangerous and destructive.

### **C. Topography**

This area is comprised of three valleys. The Ukiah Valley, which is drained by the Russian River, contains the principal communities of Ukiah, Talmage and Hopland. Redwood Valley is located just north of Ukiah. Potter Valley is located about 20 miles to the east of Redwood Valley. Highway 101 runs through or adjacent to the communities of Hopland, Ukiah and Calpella- this area is often referred to as the “101 Corridor”. The valleys are surrounded by foothills and in some places steep mountains.

### **D. Fuel Hazards**

Fuel types in the planning area consist of a mosaic of grass, oak woodlands, brush, and mixed chaparral. Heavy timber can be found on northern aspects in the ravines and in the foothills and mountains above the valley floors. As outlined below, portions of this area have experienced wildfires in the recent past. However, many areas have not and subsequently there is a large build-up of wildland fuels ready to burn.

Portions of the Ukiah and Redwood Valleys are heavily populated. The mountains and foothills surrounding the communities of Redwood Valley, Calpella, Ukiah, and Hopland all present a considerable wildfire urban interface challenge. Outside of these communities, there exists a number of subdivisions that are at risk from wildfire. Examples include: the Russian River Estates, the McNab Road area, Eldorado Estates, Regina Heights area, Vichy Springs area and the Hopland Rancheria in the Hopland area. A number of these areas/subdivisions are served by secondary roads that could be severely impacted by fire, blocking access. Compounding this issue, many of these roads serve as the only way in and out, an example being the Redwood Valley Rancheria.

Potter Valley is sparsely populated. The small communities of Potter Valley and the nearby Pomo are located in the northeast portion of the valley and have a combined population of approximately 600 people. The majority of the valley floor is involved in agricultural production;

there are no large contiguous fuel beds in the valley. The communities themselves are not at significant risk from fire. However, the hills to the east, accessed by Mid Mountain Road, are sparsely populated and are vegetated by an oak woodland fuel type, presenting a significant risk from wildfire. Van Aresdale is a small isolated community located on the Eel River four miles north of the community of Potter Valley. It is at significant risk for both wildfire and flooding as the result of potential dam failure. The foothills and mountains surrounding this valley are lightly populated and heavily vegetated by an oak woodland fuel type.

### **E. Fire History**

Recent wildfires here are worthy of mention. The Redwood Fire, which started on October 8, 2017, was the result of two fires merging, the Potter Valley and Redwood Valley fires. The Potter Valley fire started at approximately 10:35 p.m. in northwest Mendocino County and joined a second fire that ignited at approximately 1:30 a.m. on October 9. Because of the steep terrain, fuel moistures, and northwest winds, the fire blazed for 21 days and was not fully contained until October 28, 2017. The fires burned 36,500 acres, destroyed 545 structures, and resulted in 9 fatalities and the evacuation of nearly 8000 people. On July 27, 2018, the Ranch and River fires started within hours of each other near the communities of Hopland and Ukiah respectively. Both fires grew rapidly, nearly becoming one. In order to more effectively manage them, fire officials combined the two as the Mendocino Complex Fire. The fires spread through portions of Mendocino, Lake, Colusa, and Glenn Counties causing the evacuation of more than ten communities. After burning a combined total of 459,123 acres, the fires were declared 100% contained on September 18, 2018. The Ranch Fire alone burned 410,203 acres becoming the largest modern California wildfire. Collectively, the Ranch and River Fires destroyed 280 structures while damaging 37 others causing at least \$267 million in damages.

### **F. Fire Protection**

Ukiah Valley Fire Authority is the largest municipal fire department in the County with a combination of paid/paid call staff operating out of four stations, two of which are constantly staffed. Redwood Valley/Calpella Fire Protection District serves 82 square miles and is staffed with a combination of paid/paid call firefighters working out of one station. Potter Valley Fire Department is a nonprofit corporation providing fire protection under an agreement with the Potter Valley Community Services District. The department is all volunteer and operates out of one station. Hopland Fire Protection District covers 350 square miles and operates out of two stations; one at 21 Feliz Creek Road and the other at 151 Henry Station Road. Staff is a combination of paid/paid call. CAL FIRE has two

stations in the planning area; one just North of Hopland and one in Ukiah on North State Street at Hensley.

### **G. Transportation Corridors**

Highways 101 and 20 are the primary transportation routes for this area. They are well maintained and have more than adequate carrying capacity. It is not uncommon for the Russian River to overbank causing Highways 101 and 175 in Hopland to flood. When this occurs, traffic is rerouted to Old River Road from its intersection with Highway 101 at the Russian River to Ukiah, by passing Hopland.

Secondary roads of importance include the following:

- Highway 175 transits from Hopland to Lakeport in Lake County. It is the only access road to Nokomis Road, which serves as the only way into the Hopland Rancheria. Through the valley, it is flat and mostly straight, however through the mountains to the east on into Lakeport, it is narrow, steep and winding.
- Mountain House Road transits from Hopland, over the mountains, to the south end of the Anderson Valley. The road is winding and narrow.
- Highway 253 (Boonville/Ukiah Road) transits from Ukiah, over the mountains, to Boonville in the Anderson Valley. The road is winding and narrow.
- Potter Valley Road connects Highway 20 to the community of Potter Valley and the surrounding area. It is essentially the only access. The road has a history of closure due to flooding and wildfire.
- Orr Springs Road transits from Ukiah through Comptche to Hwy 1 on the coast to the community of Mendocino. It is winding, narrow and in many places steep.

Wildfire could impact and compromise all of these routes. As noted above, a number of subdivisions throughout the planning area are served by secondary roads that could be severely impacted by fire, blocking access. Further compounding this issue is the fact that many of these roads serve as the only way in and out. In order to facilitate evacuation of these areas, they have been organized into Area Specific Pre-Identified Evacuation Zones so that both law enforcement and fire officials can concentrate efforts and resources to the location in greatest need first.

Throughout the planning area exist a number of small, often private roads leading to very remote, rural homes, ranches, and outbuildings. These roads are often unnamed, narrow, winding, poorly maintained, overgrown, and locked with multiple gates. Fire and law enforcement official will

need to “triage” evacuation efforts to ensure that the limited public safety resources are directed to do the most good for the most people. When available, consider using helicopters equipped with warning systems to make emergency notifications to rural residences and ranches.

### **H. Special Concerns**

The U.S. Army Corps of Engineers’ Lake Mendocino Recreation Area and the BLM’s Cow Mountain Recreation Area, both experience a high visitor load each summer and experience numerous wildfires.

The threat of flooding from a dam failure exists for the Potter Valley area. Known as the Potter Valley Project, Pacific Gas & Electric has two dams (Scott and Cape Horn), a diversion tunnel, and a large power generating facility located on the Eel River just north of Potter Valley. The failure of one or all of these facilities could cause flooding along the Eel River as it transitions through Potter Valley. The County Office of Emergency Services and the Potter Valley Fire Department are in possession of an Emergency Action Plan detailing actions to be taken should a problem arise.

The entire east of the Russian River from Calpella/Lake Mendocino south to Hopland is served by fire departments based west of the river. In this 20 mile stretch of the Russian River, there are only seven crossings serving a very large area with a sizable population. Significant delays in both law enforcement and fire/medical services could result during a major wildfire, flood or earthquake event. Given the limited river crossings, large scale evacuations from east to west across the river could prove to be problematic.

The significant wildland urban interface found in all the communities in this area and the multitude of outlying subdivisions throughout the planning area are of considerable concern. Many of these areas have significant ingress/egress issues which include one or more of the following:

- Poor or non-existent addressing
- Unnamed or poorly identified roads/streets
- Steep, narrow and winding roads
- Heavy wildland fuel accumulations
- Access ways passing through areas of high wildland fire fuel loads

In summary, all of the communities in Planning Area 2 are at a **very high** hazard risk for wildfire.

***Please see Fire Model located in Section V.***

## Mendocino County Fire Vulnerability Assessment

### I. Critical Assets at Risk for Wildfire

**Table 5: Critical Infrastructure at Risk in Planning Area 2**

| Community or Area           | Facility/Location   |
|-----------------------------|---|
| Hopland                     | Hopland Volunteer Fire Department<br>21 Feliz Creek Road                              |
| Hopland                     | Hopland Volunteer Fire Dept. # 612<br>151 Henry Station Road                          |
| Hopland                     | CAL FIRE - Hopland Station<br>11000 South Highway 101                                 |
| Hopland                     | Sanel Mountain<br>Radio Microwave/Repeater<br>38 56' 06" N x 123 11' 38" W            |
| Hopland                     | Hopland Elementary School<br>13710 Mountain House Road                                |
| Hopland                     | Hopland Rancheria<br>Community Center<br>3000 Shanel Road                             |
| Potter Valley               | Potter Valley Fire Department<br>10521 Main Street                                    |
| Potter Valley               | Potter Valley Elementary/Junior High/<br>Centerville High School<br>10401 Main Street |
| Redwood Valley/<br>Calpella | Redwood Valley County Water<br>2370 Webb Ranch Road                                   |
| Redwood Valley/<br>Calpella | Redwood Valley/Calpella Fire Dept.<br>8481 East Road                                  |
| Redwood Valley              | Deep Valley Christian School<br>8555 Uva Drive  |
| Redwood Valley              | Redwood Valley Elementary School<br>700 School Way Road                               |
| Redwood Valley              | Eagle Peak Middle School<br>8601 West Road  |
| Redwood Valley              | Redwood Valley Rancheria<br>Community Center<br>3250 Road I                           |



## Mendocino County Fire Vulnerability Assessment

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|       |   |
|-------|---|
| Ukiah | County Sheriff/OES<br>951 Low Gap Road  |
| Ukiah | County Administration Center<br>501 Low Gap Road                              |
| Ukiah | Radio Microwave/ Repeater Spanish<br>Mountain<br>39 06' 57" N x 123 13' 59" W |
| Ukiah | 1 U.S. Army Corps of Engineers<br>160 Lake Mendocino Drive                    |
| Ukiah | California Highway Patrol<br>540 S. Orchard Avenue                            |
| Ukiah | Mendocino College<br>1000 Hensely Creek Road                                  |
| Ukiah | Grace Hudson Elementary<br>251 Jefferson Lane                                 |
| Ukiah | Holy Spirit Residential Care<br>224 Laws Avenue                               |
| Ukiah | Mountainview Assisted Living<br>1343 S. Dora                                  |

### ➤ **PLANNING AREA 3: SOUTHWEST**

Includes: The communities and fire departments from Anderson Valley, including Yorkville, Boonville, Philo, and Navarro, to Gualala, Point Arena, Manchester, Elk on the South Coast and the Manchester-Point Arena Rancheria. It covers the watersheds of the North Fork Gualala, Garcia, Russian, and Navarro Rivers, and Dry Creek. Coastal drainages include Greenwood, Elk, Alder, and Brush Creeks. CAL FIRE Battalion 5

#### **A. Estimated Population Size:**

|                                  |              |
|----------------------------------|--------------|
| Anderson Valley                  | 3,500        |
| Gualala                          | 2,500        |
| Point Arena                      | 500          |
| Manchester-Point Arena Rancheria | 750          |
| Elk                              | <u>450</u>   |
| <b>Total</b>                     | <b>7,700</b> |

Note: The entire planning area is a very popular tourist destination with numerous inns, campgrounds, and RV parks. It is safe to assume that on a holiday weekend the population may increase by 4-6,000 people.

#### **B. Climate**

The Pacific Ocean coastal influence keeps portions of the planning area along the coast cool and humid in the summer, with daily temperatures in the 60 to 70 degree Fahrenheit range. Fog and low overcast with an occasional light drizzle are common from May to October. Very rarely will the temperature reach above 75 degrees along the coast. Moving away from the coast, the weather becomes warmer and drier. The communities in the northwest portions of Anderson Valley Fire Protection Department/Community Services District experience warm (but not hot) and dry summers, with average monthly temperatures in the range of 72 degrees. In the more southeasterly portions of the district, temperatures will frequently reach 90 degrees, and often above 100 degrees. Consequently, the fire danger is much higher.

The winters are moist and cold with an average yearly rainfall of 42 inches along the coast; higher amounts are recorded in the mountains (70-80 inches). The immediate coastline will rarely see a dusting of snow. The foothills to the east will occasionally see a moderate amount

of snowfall. Northwest, moisture laden winds of 15 to 25 knots are common along the coast, especially during the spring and summer months. Mild offshore wind events are occasionally experienced, usually in the fall.

### **C. Topography**

The communities of Gualala, Point Arena, Manchester, Manchester-Point Arena Rancheria and Elk are located directly on the coast on a marine bench or terrace approximately 75 to 150 feet above sea level. The marine bench will extend back in many areas for a mile or more transitioning into low-lying foothills/mountains.

The interior or eastern portion of this planning area consists of a large valley approximately 40 miles long and 3 miles wide. Known as Anderson Valley, it includes the communities of Yorkville, Boonville, and Philo, terminating at Navarro. The Anderson Valley watershed empties into the Navarro River drainage which flows to the Pacific Ocean just to the south of Albion. The valley floor is rolling to nearly level and is surrounded by steep hills and mountains.

### **D. Fuel Hazards**

The coastal portion along Highway 1 is vegetated by a mosaic of fuel types, from light flashy grass and brush, oak woodland, to heavy timber in the ravines and in the foothills and mountains away from the coast. A number of eucalyptus groves are found along Highway 1, which if burning would impede traffic flow. The coastal portion of the area is very lightly populated and spread out over an extended stretch of Highway 1. The hills and mountains to the east of Highway 1 are also very sparsely populated.

The primary fuel model found on the floor of Anderson Valley is oak woodland. Heavy timber is found on the adjacent hills and mountains. The fuel beds on the valley floor are not contiguous, broken by vineyards and orchards. The surrounding hills are populated with multiple subdivisions and scattered structures creating a high-risk urban intermix environment.

### **E. Fire History**

Most wildfires in the area are small and are contained in a day or two. There is no large fire history in the areas immediately surrounding the coastal communities in the planning area. Small fires do routinely occur in the Anderson Valley, however the flatter terrain, broken by numerous roads, orchards and vineyards makes control of these fires somewhat easier. Large fires have occurred in the mountainous areas surrounding both sides of the Anderson Valley including the 2008 Lightning Fire Complex (55,000 acres) and the 1933 Comptche Fire (33,000 acres).

### **F. Fire Protection**

This planning area is served by the Anderson Valley Fire Department/Community Services District in the interior with nine fire stations and a combination of paid and volunteer staff. Elk has two all-volunteer fire departments located at 6129 S. Highway 1 and 27501 Philo Greenwood Road. The Redwood and South Coast Fire Protection Districts on the coast are staffed by a combination of paid and paid/call staff. Two CAL FIRE stations are located in the planning area. One is located in Point Arena and one in the Anderson Valley; both are staffed only during fire season.

### **G. Transportation Corridors**

Highways 1, 128, and 253 are the primary transportation routes for this area. They are well maintained and have more than adequate carrying capacity. Flooding will cause the closure of both Highway 1 and 128 on a regular basis. Winter storms, combined with high tides and storm surf, will result in the closure of Highway 1 at the Garcia River crossing and at the intersection of Highway 1 and 128. Highway 1 could be compromised in a number of locations by a tsunami event.

Secondary roads that transition from Highway 1 or 128 from the coast to the inland valley include the following:

- Mountain View Road is a narrow, winding, and sometimes steep road that transits from Highway 1 near Manchester to Boonville on Highway 128.
- Fish Rock Road runs from Highway 1 near Anchor Bay to Highway 128 near Boonville. The road is narrow, portions are gravel, but it is maintained by the County and is open year-round.
- Cameron Road transits from Highway 1 near Navarro Beach and joins with Philo Greenwood Road.
- Philo Greenwood transits from Highway 1 near Elk to Philo on Highway 128 in the Anderson Valley.
- Masonite Industrial Road transits from Highway 128 at mile marker 12.81 all the way to Ukiah. It is a combination paved and gravel road, that with permission from the property owner (Mendocino Redwood Company) could serve as a secondary route should Highway 1 or 128 be compromised.

A series of well-maintained secondary roads run on top of the ridge from Gualala to Point Arena, a distance of approximately 18 miles. These are the Old State Highway, Iverson Road, and Ten

## Mendocino County Fire Vulnerability Assessment

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Mile Cut Off. All three could serve as a secondary evacuation route for many of the subdivisions and ranches found to the east of Highway 1.

To the south of Gualala, in Sonoma County, Skaggs Spring Road transits from Stewarts Point on Highway 1 to Lake Sonoma /Highway 101.

Throughout the planning area exist a number of small, often private roads leading to very remote, rural homes, ranches, and outbuildings. These roads are often unnamed, narrow, winding, poorly maintained, overgrown, and locked with multiple gates. Fire and law enforcement official will need to “triage” evacuation efforts to ensure that the limited public safety resources are directed to do the most good for the most people. When available, consider using helicopters equipped with warning systems to make emergency notifications to rural residences and ranches.

Wildfire could impact and compromise all of these routes.

### H. Special Concerns

Emergency responders in this area have a well-defined local mutual aid system. Should a significant emergency event requiring regional mutual aid occur, both fire and law enforcement resources will have a 1 to 2-hour response time.

The Anchor Bay and Gualala River campgrounds (35400 S. Highway 1 and Highway 1 at the Gualala River) could present a significant evacuation challenge in the event of a wildfire or tsunami warning.

In and around the Philo/Navarro River area there are a number of recreation areas, both public and private, that are serviced by narrow roads. Hendy Woods State Park, Blackbird Farm and a resort called The Land are popular summer time attractions and could present a significant evacuation challenge in the event of a wildfire in the area.

In summary, the coastal influence, a majority of the time, minimizes the wildfire threat for the communities located along the coast of Planning Area 3. However, the interior portions of the Planning Area being warmer and drier face an increased wildland fire risk. As such, the coastal communities are rated as having a **moderate** fire hazard risk. The majority of the Anderson Valley Fire District is rated as a **very high** hazard risk for wildfire.



## Mendocino County Fire Vulnerability Assessment

### I. Critical Assets at Risk for Wildfire

**Table 6: Critical Infrastructure at Risk in Planning Area 3**

| Community or Area     | Facility/Location  |
|-----------------------|--|
| Anderson Valley/Philo | Radio Broadcast and Repeater Site<br>Signal Ridge Road @ Cold Spring Peak        |
| Boonville             | Anderson Valley Community Services District<br>14281 CA-Highway 128              |
| Boonville             | Anderson Valley Fire Department<br>14281 CA-Highway 128                          |
| Boonville             | CAL FIRE Station<br>16001 CA-Highway 128   |
| Boonville             | Anderson Valley Health Center<br>13500 Airport Road                              |
| Boonville             | Boonville Airport<br>Adjacent to 13500 Airport Road                              |
| Elk                   | Elk Volunteer Fire Department Station<br>711/Water District<br>6129 S. Highway 1 |
| Elk                   | Elk Volunteer Fire Department Station<br>712<br>27501 Philo Greenwood Road       |
| Elk                   | Elk Volunteer Fire Department<br>Station 713<br>1701 Cameron Road                |
| Elk/Albion            | Oceanside Retirement Living<br>1370 Navarro Bluff Road                           |
| Gualala               | Gualala Community Services District<br>42455 Old Highway 1                       |
| Gualala               | Redwood Coast Medical Services<br>46900 Oceano Drive                             |
| Gualala               | South Coast Volunteer Fire Department<br>37215 Church Street                     |

## Mendocino County Fire Vulnerability Assessment

|             |  |
|-------------|--|
| Gualala     | Equinox Care Facility<br>38281 S. Hwy 1                                      |
| Manchester  | Irish Beach Water District<br>14501 Forest View Road                         |
| Manchester  | Redwood Coast Fire Department/FPD<br>19601 CA – Highway 1                    |
| Manchester  | Caltrans Maintenance Yard<br>Hwy 1 in Manchester                             |
| Point Arena | Point Arena City Hall<br>451 School Street                                   |
| Point Arena | Social Services<br>255 Main Street   |
| Point Arena | Radio Microwave/ Repeater<br>44701 Fish Rock Road                            |
| Point Arena | Radio Microwave/ Repeater<br>44900 Port Street                               |
| Point Arena | CAL FIRE Station<br>410 School Street  |
| Point Arena | Redwood Coast Department<br>282 Lake Street                                  |
| Point Arena | Point Arena Water Works Inc.<br>135 Hay Parkway                              |
| Point Arena | Manchester-Point Arena Rancheria<br>Community Center<br>24 Mamie Laiwa Drive |
| Point Arena | Senior Living Complex<br>100 Port Road                                       |

### ➤ **PLANNING AREA 4: WEST CENTRAL AND COASTAL REGION**

Includes: The communities and fire departments of Albion, Little River, Mendocino, Fort Bragg, Cleone and Westport on the coast, plus Comptche, nine miles inland of Mendocino. It covers the watersheds of Albion, Big River, Noyo, and Ten Mile River, and Salmon Creek. CAL FIRE Battalion 6

#### **A. Estimated Population Size:**

|                                    |               |
|------------------------------------|---------------|
| Albion – Little River              | 2,500         |
| Mendocino                          | 5,500         |
| Fort Bragg and<br>surrounding area | 15,000        |
| Cleone                             | 700           |
| Comptche                           | 500           |
| Westport                           | 350           |
| Unincorporated areas               | <u>2,000</u>  |
| <b>Total</b>                       | <b>26,250</b> |

Note: The entire area is a very popular tourist destination with numerous inns, campgrounds, and RV parks. On a holiday weekend, the population may increase by 7-10,000 people.

#### **B. Climate**

The Pacific Ocean coastal influence keeps most of the planning area cool and humid in the summer, with daily temperatures in the 60 to 70-degree Fahrenheit range. Fog and low overcast with an occasional light drizzle are common from May to October. Very rarely will the temperature exceed 75 degrees. The Comptche area, much further inland, is much warmer and drier.

The winters are moist and cold with an average yearly rainfall of 42 inches along the coast; higher amounts are recorded in the mountains (70-80 inches). Very rarely will the immediate coastline see a dusting of snow. The foothills to the east will occasionally see a moderate amount of snowfall. Northwest, moisture laden winds of 15 to 25 knots are common along the coast,

especially during the spring and summer months. Mild offshore wind events are occasionally experienced, usually in the fall.

### **C. Topography**

Most communities in this planning area are located on a marine bench or terrace approximately 75 to 100 feet above sea level. The marine bench will extend back in many areas for a mile or more transitioning into low-lying foothills and then mountains. An exception to this is the area around Westport where the transition from the ocean bluffs/marine terrace to the mountains is abrupt and steep. Comptche is located nine miles inland from Mendocino in a remote mountainous area surrounded by heavy timber. There are many remote, isolated residences and ranches found in the higher elevations of the planning area. They are often accessed by poorly maintained private roads with numerous locked gates along the way.

### **D. Fuel Hazards**

A mix of most fuel types can be found in the planning area from light flashy grasses along the coast to heavy timber in the foothills. A number of eucalyptus groves are found along Highway 1, which if burning would impede traffic flow.

The areas to the east and south of Fort Bragg present a considerable wildfire urban interface challenge as does the small community of Comptche. The small community of Mendocino, surrounded by ocean on three sides, and protected by Highway 1 on the fourth is not threatened by wildfire.

Three small high fire severity zones, totaling about 50 acres, are found approximately 2-3 miles inland to the east of Casper and Mendocino accessed by roads 408 and 409. A unique biological pygmy forest zone, a portion of which is located in Van Damme State Park, is a result of a unique combination of acidic soils and soil moisture. One of these zones is adjacent to “The Woods”- a large senior community of 135 homes. The Woods is located at 43300 Little River-Airport Road. The Little River Airport is the designated Temporary Refuge Area should this senior community need to be evacuated.

### **E. Fire History**

Most wildfires in the area are small and are contained within a day or two. There is no large fire history in the areas immediately surrounding the communities in Planning Area 4. Large fires have occurred in the remote, mostly unpopulated eastern portion of the planning area including the 2008 Lightning Fire Complex.

### **F. Fire Protection**

Albion-Little River Fire Department is an all-volunteer department with two stations. The Mendocino Fire Department is all volunteer and operates out of one main station with three satellite stations. Fort Bragg has three fire stations and is staffed by a combination of paid and volunteer personnel. Fort Bragg also has a very active Community Emergency Response Team (CERT) that reports to the Fort Bragg Police Department. Westport and Comptche are small volunteer, single station fire departments. CAL FIRE has two stations in the planning area; one in Fort Bragg and one east of Mendocino on Little Lake Road.

### **G. Transportation Corridors**

Highways 1, 20, and 128 are the primary transportation routes for this area. They are well maintained and have more than adequate carrying capacity. Flooding will commonly impact both Highway 1 and 128. In a tsunami event, Highway 1 could be compromised in a number of locations.

Secondary roads that transition from Highway 1 or 128, away from the coast to the inland valley include the following:

- Masonite Industrial Road transits from Highway 128 at mile marker 12.81 all the way to Ukiah. It is a combination paved and gravel road, that with permission from the property owner (Mendocino Redwood Company) could serve as a secondary route should Highway 1 or 128 be compromised. Note: This road also serves planning area 3.
- Flynn Creek Road connects Highway 128 just east of Highway 1 to Comptche, then east to Ukiah or west to Highway 1 at the intersection of Comptche/Ukiah Road.
- Branscomb Road transits from Highway 1 near DeHaven over the mountains, through Branscomb, to Laytonville. It is County maintained, but is steep, narrow and winding.
- Fort Bragg-Sherwood Road transits from Fort Bragg to Willits. It is not available as an evacuation route.



## Mendocino County Fire Vulnerability Assessment

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- Orr Springs Road transits from Ukiah through Comptche to Hwy 1 on the coast to the community of Mendocino. It is winding, narrow and in many places steep.

Wildfire could impact and compromise all these routes.

Throughout the planning area exist a number of small, often private roads leading to very remote, rural homes, ranches, and outbuildings. These roads are often unnamed, narrow, winding, poorly maintained, overgrown, and locked with multiple gates. Fire and law enforcement official will need to “triage” evacuation efforts to ensure that the limited public safety resources are directed to do the most good for the most people. When available, consider using helicopters equipped with warning systems to make emergency notifications to rural residences and ranches.

### **H. Special Concerns**

A remote beach campground, Usal, is located 6 miles off of Highway 1 on a very rough road, the turn off being 14 miles north of Westport. The road is passable only in the summer and as many as 100 people will camp there on a busy weekend, it is located at:  
39 49' 55" N x 123 50' 51" W.

The Westport RV Park and Campground (37700 Highway 1) could present a significant evacuation challenge in the event of a wildfire or tsunami warning.

North of Westport, along Highway 1 are a number of State Parks/Campgrounds that are heavily used in the summer.

As noted above Comptche is a remote community that is accessed by narrow, winding roads that would hinder a prompt evacuation. In addition, cell service is limited and hard wire phone service is subject to failure in a power outage.

Outside of the community of Mendocino, the Woodlands State Park (39350 Little Lake Road), located on a narrow winding road, could present a significant evacuation challenge in the event of a wildfire. In addition to access via Little Lake Road, there are gated and locked logging roads that transit out to Roads 450 and 500.

The 135-home senior community, The Woods, located at 43300 Little River-Airport Road is at significant risk for wildfire. An area of temporary refuge would be at the Little River Airport. There is no indoor safe refuge at this location and transport of these individuals out of the fire area would be a priority.

Emergency responders, operating under the incident command system, have a well-defined local mutual aid system. Should a significant emergency event requiring regional mutual aid occur, both fire and law enforcement resources will have a 1 to 2-hour response time.

## Mendocino County Fire Vulnerability Assessment

In summary, the coastal influence minimizes the wildfire threat for the communities located along the coast of Planning Area 4. The communities of Fort Bragg and Mendocino are predominately located in a **moderate fire** hazard zone, with the Fort Bragg Simpson Lane neighborhood rated as having a **very high** fire hazard. The north coast Westport area, is rated as a **high fire** hazard area. Small areas of **very high fire** hazard exist in the Albion - Little River area, Navarro Ridge, Comptche, the Van Damme State Park Pygmy Forest area, and the Rancho Navarro communities.

### I. Critical Assets at Risk for Wildfire

**Table 7: Critical Infrastructure at Risk in Planning Area 4**

| Community or Area     | Facility/Location  |
|-----------------------|--|
| Albion – Little River | Albion-Little River Fire Department<br>Station 811<br>3260 Albion Ridge Road |
| Albion – Little River | Radio Microwave/Repeater<br>38701 Comptche Ukiah Road                        |
| Albion                | Albion Elementary School<br>30400 Albion Ridge Road                          |
| Comptche              | Comptche Elementary School<br>31301 Comptche-Ukiah Road                      |
| Comptche              | Comptche Fire Department<br>8491 Flynn Creek Road                            |
| Comptche              | Chapel of the Redwoods<br>(Evacuation Shelter)<br>31201 Comptche Ukiah Road  |
| Comptche              | Comptche Community Center<br>30672 Comptche Ukiah Road                       |
| Comptche              | Comptche General Store/Gas Sta.<br>31051 Comptche Ukiah Road                 |
| Little River          | The Woods<br>43300 Little River-Airport Road                                 |
| Little River          | Little River Airport<br>43001 Airport Road                                   |

## Mendocino County Fire Vulnerability Assessment

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|            |   |
|------------|---|
| Mendocino  | Mendocino County Sewage Treatment Plant<br>10500 Kelly Street |
| Mendocino  | PG&E Big River Substation<br>44325 Little Lake Road           |
| Mendocino  | Surfwood Mutual Water<br>12101 Alderwood Road                 |
| Mendocino  | Mendocino Volunteer Fire Dept. #1<br>44700 Little Lake Road   |
| Mendocino  | Mendocino Volunteer Fire Dept. #2<br>10461 Lansing Street     |
| Mendocino  | CAL FIRE Woodlands Station<br>41722 Little Lake Road          |
| Mendocino  | Mendocino City Community Services<br>10500 Kelly Street       |
| Mendocino  | Green House School<br>41725 Road 409                          |
| Fort Bragg | City Streets Yard<br>120 E. Bush Street                       |
| Fort Bragg | Ocean Lake Adult Mobile Home<br>1184 N. Main Street           |
| Westport   | Westport Volunteer Fire Department<br>33751 Hwy.1             |

### V. FIRE MODELING

Fire modeling is a computer-generated graphical representation of the anticipated fire behavior given a well-defined set of parameters. Based on discussions with fire officers and emergency managers, the consultant worked with a Fire Behavior Analyst to create fire models in two separate locations, one in Ukiah and one in Brooktrails. The locations and burning conditions were chosen based on current and expected weather conditions, existing fuel types, and past fire history. The sites chosen are densely populated and would cause an evacuation order to be issued. The exact conditions used including weather, fuel, time of day, and topography are outlined at the end of this section.

***Please note:***

- 1) The fire progression demonstrated in the following models does not account for any fire suppression activity.
- 2) The irregular color patterns found on some of the models is a result of a number of factors. Specifically, fire moves through different fuel types at varying speeds and when a mix of fuel types is present, fire spread will be erratic. Also, spot fires ahead of the primary fire create a very mixed fire front progression. Additionally, uneven or changing topography will significantly impact the rate of fire spread.

## Mendocino County Fire Vulnerability Assessment

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### Fire Model # 1

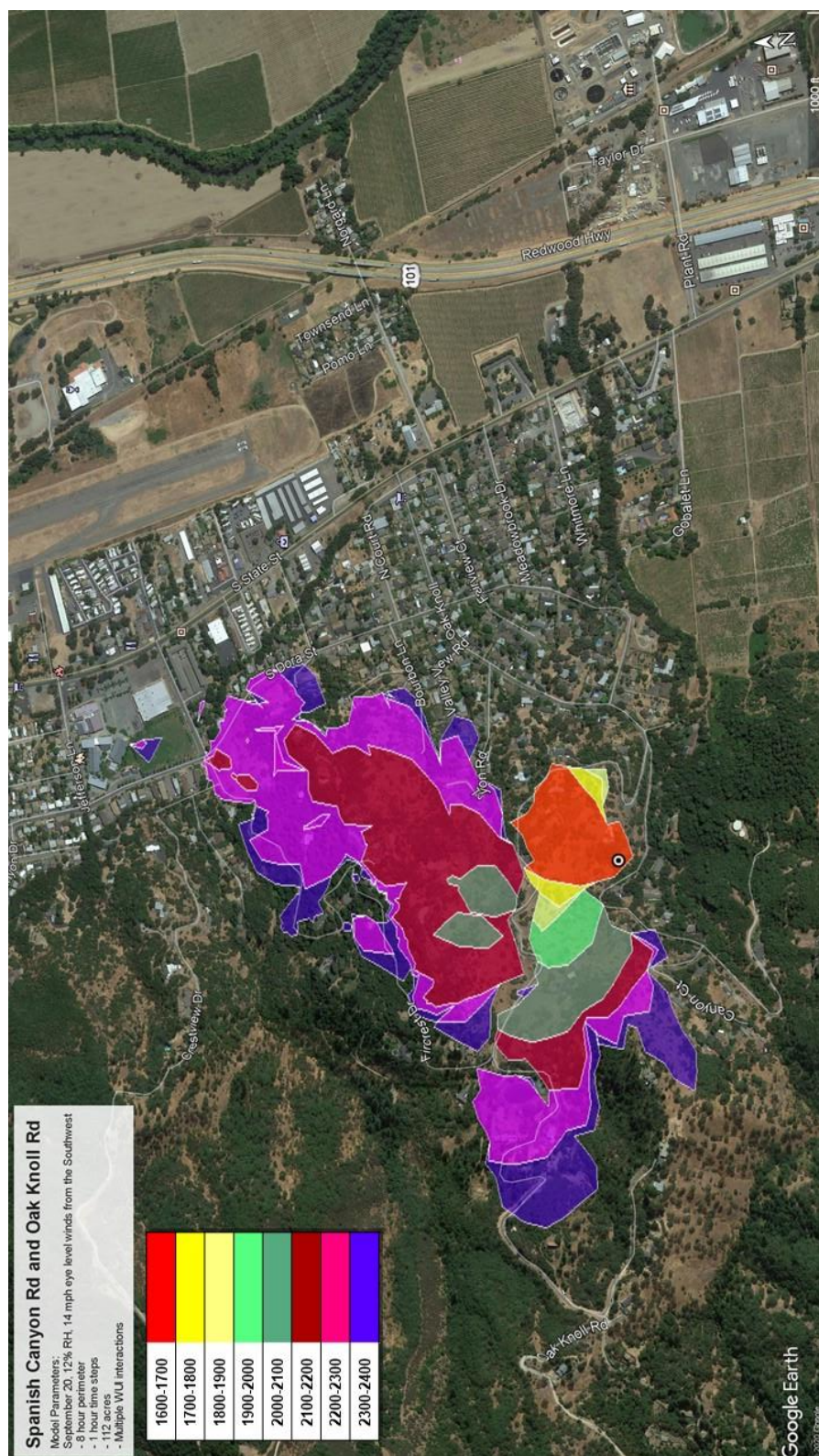
This fire model is staged in the community of Ukiah, California at the intersection of Spanish Canyon Drive and Oak Knoll Road. The time frame is set at September 20, 2020 at 1600 hours, with a relative humidity of 12% and a wind speed of 14 MPH. Please see the attached data sheet for exact weather parameters.



**Typical residence and fuel type in Fire Model area # 1**

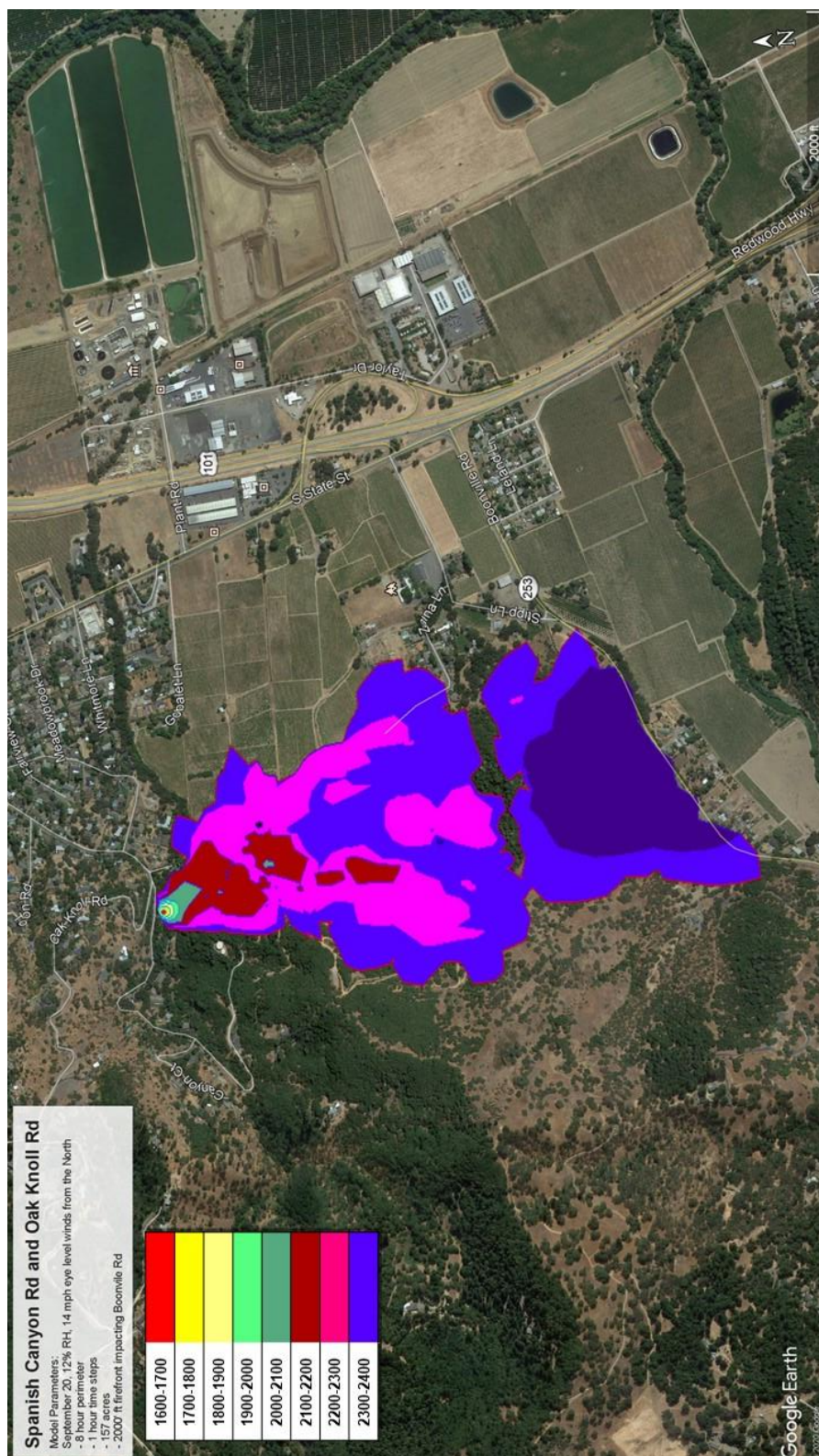


## Mendocino County Fire Vulnerability Assessment





## Mendocino County Fire Vulnerability Assessment



## Mendocino County Fire Vulnerability Assessment

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### Fire Model # 2

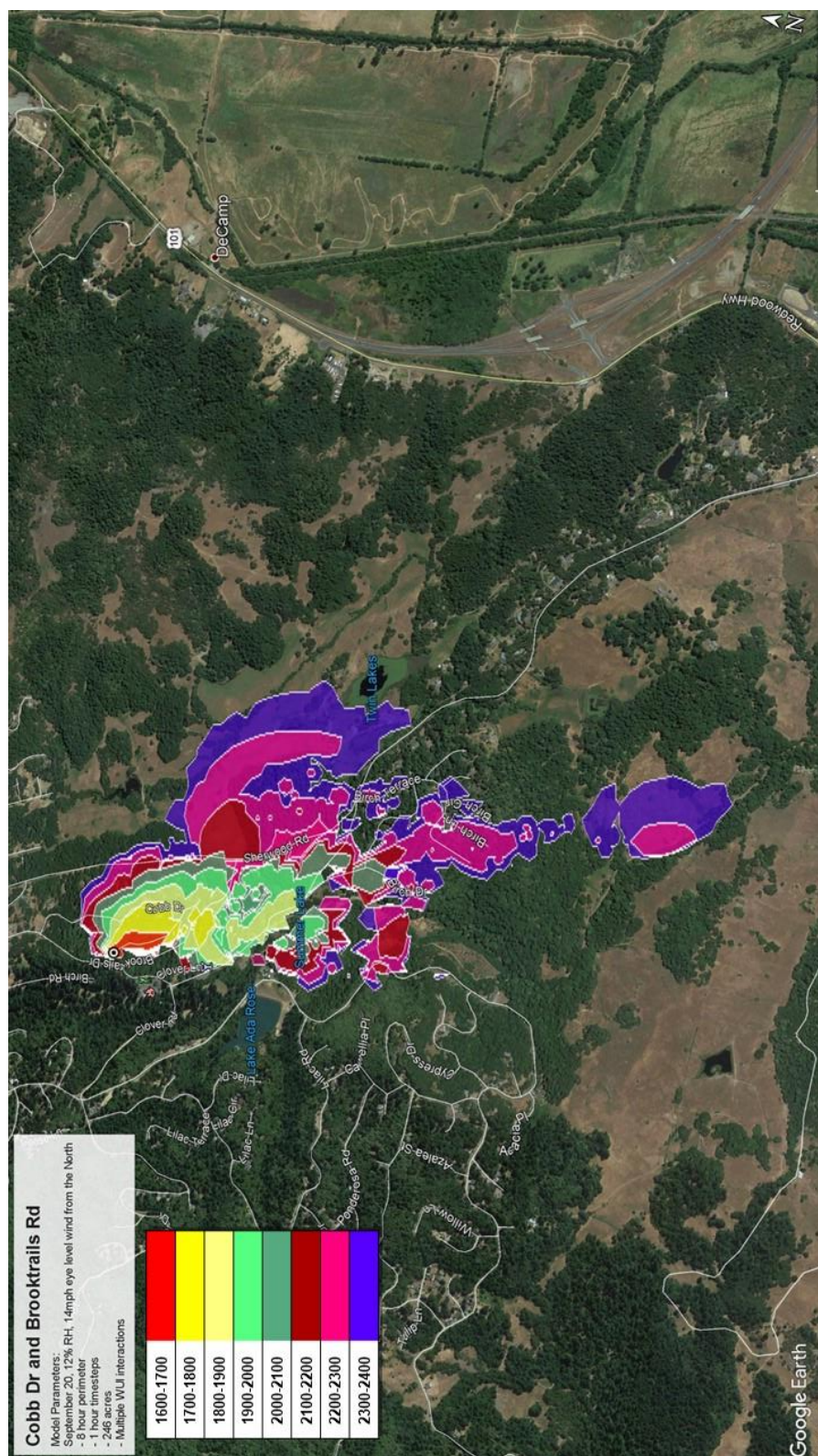
This fire model is staged in the community of Brooktrails, CA. at the intersection of Cobb Drive and Brooktrails Drive. The time frame is set at September 20, 2020 at 1600 hours, with a relative humidity of 12% and a wind speed of 14 MPH. Please see the attached data sheet for exact weather parameters.



**Typical residence and fuel type in Fire Model area #2**

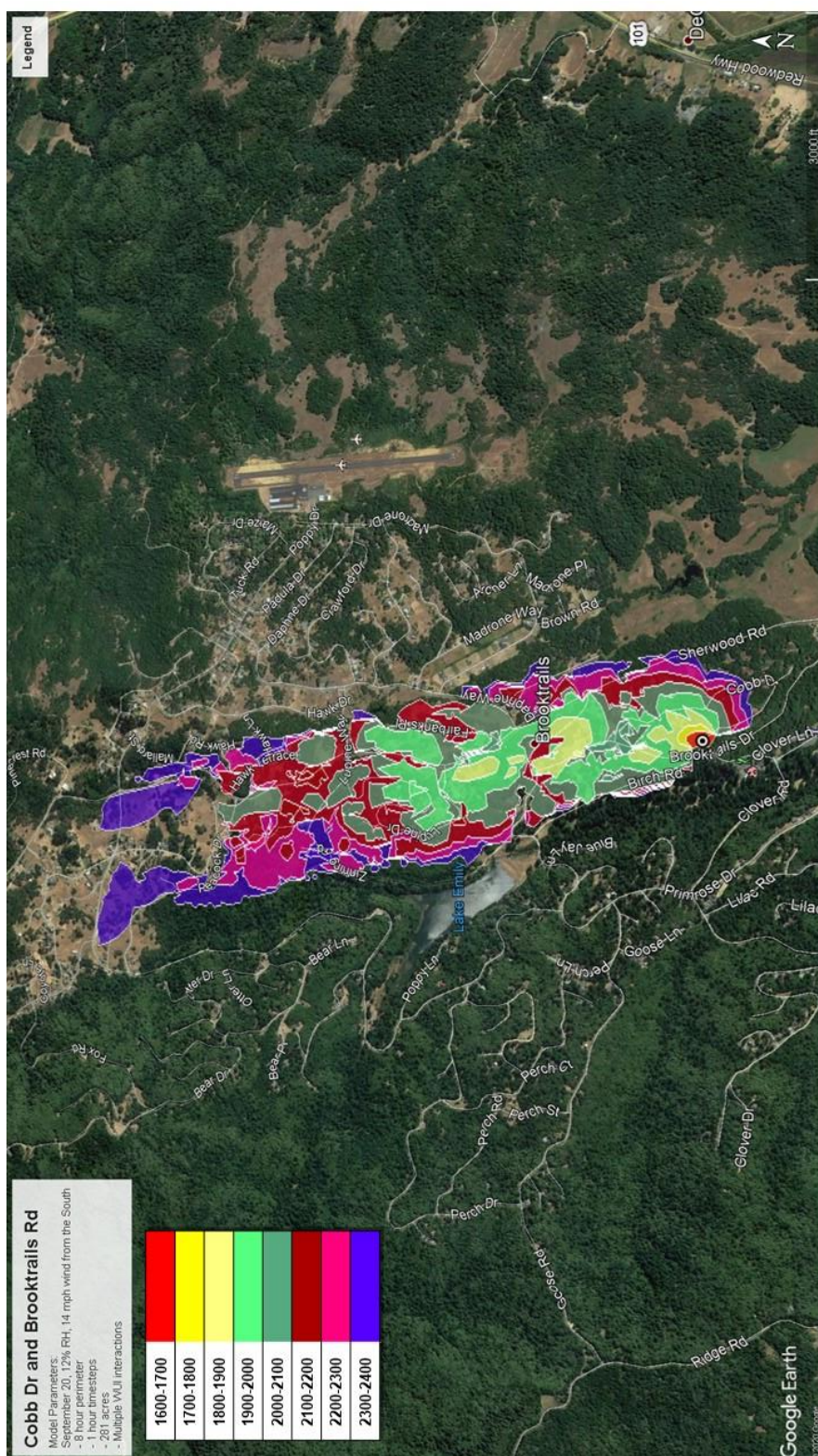


## Mendocino County Fire Vulnerability Assessment





## Mendocino County Fire Vulnerability Assessment





### Metadata for Fire Models

#### **Programs used to generate data and maps:**

FLAMMAP, FARSITE, ArcGIS 10.3.1, FireFamilyPlus, WindNinja, Google Earth Pro

#### **Weather Parameters:**

- Ignitions modeled as point features, adjusted off non-burnable fuel models as appropriate
- 65/95 degree diurnal (low/high-Fahrenheit)
- 12/45% relative humidity (low/high)
- 20 mph 20-foot wind with 0.3 conversion factor
- 0600-1500 temp low/high temporal
- Spot Fire Probability of Ignition: 25%
- Foliar live fuel moisture: 90%
- Woody fuel moisture (brush): 55%
- Herbaceous fuel moisture: 30% (dynamic; modeled as dead)
- Finney Crown Fire model
- Burn period: September 20, 2020 conditioned 2 days prior and to 2200 day of ignition
- Start time: 1600. End time: 2400 (8 hour burn period)
- Fill barriers: yes
- Wind was modeled at 180, 360, 225 degrees from north, as appropriate
- Spatial demonstrated at 60% opacity with descriptive legend

### VI. SUMMARY/RECOMMENDATIONS

Throughout the course of developing this Wildfire Vulnerability Assessment and the Emergency Evacuation Plan, the consultants have noted areas where the community can lessen its risk to a significant wildfire threat and minimize loss of life and property. Subsequently, the following recommendations are offered:

#### A. Emergency Alerting Systems

To ensure that wildfire safety and preparedness and evacuation planning address the needs and fears of residents throughout Mendocino County, community outreach was initiated through the use of a web-based survey. This survey was made available to the residents of Mendocino County to solicit feedback on areas of concern and also individual needs if an emergency evacuation were to occur.

This survey shed light on the fact that a large number of respondents are either unaware or confused about the County's MendoAlert and Nixle systems. Two-thirds of respondents have not enrolled and many claim these notification systems do not work or fail when the power is down.

#### Recommendations-Emergency Alerting:

1. Have the Office of Emergency Services expand its efforts in educating the general public about local alerting systems, how and when they are used, and how to sign up. This can be accomplished through the Public Safety Announcement Program (*described below*) in addition to educating the general public by enclosing flyers in the various utility bills (PG&E, water) or through sending out postcards.
2. Have the County Office of Emergency Services investigate why the alerting system does not appear to work during power outages.

#### B. Codes and Ordinances

Mendocino County has amended the California Building Code allowing for Class K Construction. The Class K Building Ordinance exists to provide minimum requirements for limited density rural dwellings and appurtenant structures and to permit the use of ingenuity and preferences of the builder.

### Recommendations-Codes and Ordinances:

1. The Board of Supervisors should direct the Planning and Building Services Department to amend the existing codes and ordinances to require that all new construction:
  - Provide for emergency on site water storage for fire protection
  - Cover all rain gutters with non-combustible leaf shields
  - Require only non-combustible fences and decks
  - Require enclosed eaves on all structures
  - Install fireproof vents on all structures (Calif. Fire Code, Chapter 7A – Listed Vents)

It should be noted that at this time, amending the current code as described above will have limited financial impacts given that new development is currently limited.

2. The County Planning and Building Services Department should support and encourage all regulatory agencies with fire prevention responsibilities to aggressively enforce the existing codes and ordinances.
3. The County Planning and Building Services Department should develop a policy that directs staff to notify all fire agencies of building permit applications that involve new structures, change in structure size, change in occupancy, and/or involve any manufacturing or processing operations.
4. As revisions of the County Safety Element and Multi-Jurisdictional Hazard Mitigation Plan are currently in process, County Planning staff should identify residential developments in any hazard area that doesn't have at least two emergency evacuation routes. Their location, capacity, safety concerns, and viability should be reviewed and identified under a variety of emergency situations. In addition, it would be beneficial to identify and analyze all existing abandoned routes connecting to developments for potential as emergency access.
5. Working with the Brooktrails Township and the Sherwood Firewise county staff explore the possibility of developing a new procedure to "condemn" or otherwise take public ownership of abandoned vacant lots or properties in the Brooktrails Township in order to allow for vegetation management.

### C. Roads/Streets Naming and Addressing

Throughout the County, there exists hundreds of residences that are located on unnamed roads. The majority of these roads were developed for the purpose of harvesting timber, where naming and addressing was not a consideration. Oftentimes homes on these unnamed roads will utilize addresses tied back to the nearest named road which can be quite a distance away requiring several turns on other unnamed roads to reach them. Another issue of considerable concern is duplicate or confusing road names such as Deer Lane, Deer Court, and Deer Way all in the same neighborhood. For the emergency services community, these issues can result in extended response times and critical delays in providing service. The potential for confusion and delays during an emergency evacuation is evident.



On February 4<sup>th</sup>, 2020, the Board of Supervisors (BOS) provided direction to streamline the process for renaming private roads in unincorporated Mendocino County at the behest of local residents, the Mendocino County Sheriff's Office and local Fire Chiefs.

As directed by the BOS, County staff is working to identify the most effective pathways to update this procedure. Within Mendocino County, 'Name of Roads' is regulated by Code Section 18.16.070. Under these regulations, there are many aspects that complicate the renaming of private roads, including but not limited to the required petition approval percentage and the application fee.

As of April 2020, County staff has not yet had an opportunity to reply to the Board of Supervisors' request at a public hearing due to the COVID-19 pandemic occurring. Presently,

## Mendocino County Fire Vulnerability Assessment

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the County is preparing revised procedures that would allow for Local Fire Departments and the Mendocino County Sheriff's Office to identify a designated number of private road segments to rename each year. In these situations, the County would waive the fee and petition requirements, or process per Mendocino County Code Section 18.16.070(C). Issues related to time-compensation, road name selection, appeal procedures, hearing body/officer selection, and notification of property owners remain outstanding, and will need to be addressed prior to finalizing this update. County staff expects to respond to the BOS directive by the Fall of 2020 and commence road renaming in conjunction with the Sheriff and Local Fire Departments in early 2021.

### **Recommendations-Naming and Addressing:**

1. Following review by County Counsel and County Planning and Building Services regarding streamlining and updating procedures for street name changes, the County Board of Supervisors should adopt the proposed changes regarding fees, naming, renaming, and addressing roads in the County.
2. Upon adoption by the County BOS, local area fire chiefs should work aggressively to name, rename, and address the roads, both private and public, in their individual areas of responsibility. Additionally, chiefs should continue to develop GIS electronic maps with GIS information and GPS coordinates to alleviate some of the street addressing problems.

### **D. Access**

As identified in the Wildfire Threat Analysis, there exists in the rural portions of the County a large number of small, often private roads leading to subdivisions and very remote rural homes, ranches, and outbuildings. In addition, in the more populated regions of the County, there are a number of neighborhoods, large subdivisions/estates, small communities and rancherias that are served by secondary roads that are also narrow, winding and occasionally steep. Examples include: Brooktrails, Covelo, Russian River Estates, the Hopland Rancheria and the Simpson Lane neighborhood in the Fort Bragg area. Further compounding the issue, many of these roads serve as the only way in and out. These roads can be severely impacted by wildfire, blocking safe access.

Where there is a significant wildfire threat to a community or populated area with only one means of access, it is critically important that the primary way in and out be made as fire resistant as possible. Please see the Vegetation Management Section below for recommendations on fuel reduction projects required to reduce the threat to evacuation corridors.

### *New Alternate Access Routes*

As noted above, there are a number of neighborhoods, large subdivisions/estates, small communities and rancherias in the County that are served by secondary, one way in and out roads. Oftentimes these roads are also narrow, winding and occasionally steep. These areas/roads when engaged in wildfire present a considerable life risk to both the general public and responding firefighters. Providing secondary access to these areas can be accomplished in one of two ways: construct new roads or improve existing undeveloped roads.

Challenges associated with new construction include:

- **Topography-** The steep mountainous terrain in a number of these areas does not readily allow for new road construction.
- **Environmental Concerns-** Roads and road construction cause significant environmental damage and are disruptive to wildlife. Thus, permitting and mitigation processes are onerous.
- **Financial-** New road development is costly to construct and maintain given the areas topography and environmental issues.

The County Engineer, long ago, realized the need for a new secondary access out of the Brooktrails area and subsequently completed the necessary preliminary studies on a project to construct a “full service” two-way road out of Brooktrails to Highway 101, north of Willits. This project lacks the substantial funding required to obtain the necessary property and construction costs. In discussions with area Fire Chiefs and the County Director of Transportation, this consultant found no immediately viable opportunity for new road construction.

### *Improving Existing Alternate Access Routes*

For the reasons noted above, the development of existing unapproved or undeveloped roads is more cost efficient and practical than constructing new roads. However, there are still challenges associated with this approach including:

- **Private Property-** Many property owners are either reluctant to sell or allow easements or special use agreements across their land, even for “emergency use” only.
- **Liability-** Most property owners are not willing to accept the liability of the public crossing their land, especially in the event of a wildfire. However, the development of indemnification clauses in use agreements is possible.



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- **Public Funds-** Paying for private road improvements with public funds is considered a “gift of public funds” and is illegal. However, it should be noted that the Mendocino County Board of Supervisors has authorized staff to work with Sherwood Firewise to develop a new Benefit Zone under County Service Area 3. The Benefit Zone would provide a funding source for ongoing route maintenance through property tax payments made by local property owners.

Interestingly enough, property owners and community members are often vehemently opposed to the development of secondary access routes in and out of their neighborhoods. They express concerns about the environmental impacts, additional traffic, noise and the loss of privacy.

The County’s Fire Chiefs and the Director of Transportation (County Engineer) thoroughly understand and support the need for secondary access routes in and out of populated areas. The Chiefs have studied their local areas of responsibility in search of possible solutions, identifying a number of potential projects, which are described below.

- **Tomki Road/Cave Creek** - Construct all-weather creek crossings (9) and road improvements for Tomki Road/Cave Creek, which is located north of Redwood Valley. The primary objective of this project is to improve water quality in Cave Creek which has been degraded by vehicle traffic across the wet fords on Tomki Road. Currently, this road becomes impassable during the high-water flows experienced during most winters. If completed, an associated benefit would be year-round access between Redwood Valley and Little Lake Valley.
- **Masonite Haul Road** - The Anderson Valley Fire Chief advises that the potential exists for the use of this road, which transits from Ukiah to the coast at Highway 128, for emergency use only. Historically, emergency responders have been allowed to use this road, however recently, the Mendocino Redwood Company has denied access.
- **Mitchell Creek Drive - Gibney Lane** - The Fort Bragg Fire Chief has initiated this project, which opens up and improves an existing road “for emergency use only” in cooperation with the property owner and CAL FIRE. The goal is to have the road completed in the summer of 2020.
- **Navarro and Albion Ridge Road** - The Albion-Little River Fire Chief believes the potential may exist to negotiate with the property owner for the use of an existing road for “emergency use only” from the Navarro Ridge Road to Highway 128.

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- **Redwood Valley Rancheria** – Representatives from the Redwood Valley Band of Pomo Indians report the possibility of developing an “emergency use only” road from the end of the cul-de-sac on Redwood Drive across Deer Creek, which is located on land not owned by the Tribe to County Road J.
- **Brooktrails Area** - There exists a number of nonresidential roads, private roads that serve as utility easements, timber haul, and recreational purposes in the Brooktrails area. They are single lane, dirt/gravel surfaced, and passable in the dry season only. In June of 2019, a Board of Supervisors Ad Hoc Committee and County Supervisor performed a cursory survey of the two roads with the most potential for “emergency use only.” They are:
  - The FirCo Haul Road which traverses 2.25 miles of private properties from Poppy Drive, about a mile northwest of the Willits Airport, to Highway 101 approximately 3 miles north of Willits. In 2019, CAL FIRE crews completed an extensive fuel reduction project along the FirCo Haul Road. The property owner has conditionally approved the use of this road for “emergency/public safety vehicles use only”.
  - The Willits Creek Trail (aka Summer Lake Road or Bates Lane), also referred to as the Sewer Easement Road, traverses 2 miles of private property from Birch Street in Brooktrails to Mill Creek Drive in Willits. The property owner has conditionally approved the use of this road for “emergency/public safety vehicles use only”. CAL FIRE will be performing fuel reduction along this route this year with funding secured by Sherwood Firewise.

On June 16, 2019, a report titled “Preliminary Opinion of Existing Condition, Actions Necessary to Meet Current Development Standards, Costs and Practical Factors” for these two roads was produced. The report concluded that with some minor improvements and waiving of some Resource Code standards, these roads could be utilized by public safety vehicles only. The report also outlines the improvements needed to make the roads suitable for both “one way only” and “two-way” traffic on a dirt, light duty, and restricted/controlled use by the general public.

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**Road to Noyo River  
Boat Basin and  
RV Park**

**Mitchel Creek Drive - Gibney  
Lane Emergency Access**



It should also be noted that a number of roads are frequently mentioned by the general public as potential options for secondary access in different parts of the County. This consultant has reviewed those options and reports as follows:

- In the Brooktrails area, Sherwood Road transits from Willits, through the Brooktrails Township, all the way to Laytonville a distance of approximately 30 miles. From Willits to Sherwood School, it is fairly straight but narrow. It is well paved but, in some places, quite steep. Past Sherwood School, it becomes very narrow and winding as it passes through the mountains terminating at Laytonville. Sherwood Road, north and south bound is the official evacuation route for Brooktrails and Sherwood Corridor communities. CAL FIRE and Sherwood Firewise have made, and are planning to make improvements to Sherwood Road. Pullouts, water storage, identified Temporary Refuge Areas, and improvements to a stream crossing near the Laytonville terminus are planned. Additionally, another non-maintained and rough road, the Fort Bragg-Sherwood Road,

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transits from Sherwood Valley just north of Brooktrails to Fort Bragg. In the winter, these roads are often impassable. The Fort Bragg-Sherwood Road, due to the condition and the length of travel is not considered to be a viable secondary egress route for the Brooktrails and Sherwood Corridor communities.

- The Williams Ranch Road, a private road, once served as a secondary ingress/egress to the Black Bart Subdivision located south of Willits near Ridgewood Summit area. Recent winter storms caused a significant portion, 1/8 of a mile, to slough off into the creek below. The repair costs are significant and the property owner is unwilling to make them.
- In the Ridgewood Subdivision area, a series of old logging roads, Mariposa Creek and Old Boy Scout, transit from the east portion of the subdivision over the top of the ridge and down to Tomki Road or Highway 101 via Willits Watershed Road. The combination of the travel distance, and the winding and narrow conditions make these roads unacceptable as potential secondary access routes.

### **Recommendations-Existing Access Route Improvements (prioritized):**

1. Complete the “Emergency Access Route” in the Mitchel Creek Drive – Gibney Lane area of Fort Bragg. The Fort Bragg Fire Chief has initiated this project, in cooperation with the property owner and CAL FIRE. This project opens up and improves an existing road. The goal is to have the road completed in the summer of 2020.
2. The County of Mendocino should continue to explore funding mechanisms for the “full service” second access road from the Brooktrails community, as designed by the County Engineer. In the interim, the Brooktrails Township CSD should continue their efforts in improving both the FirCo Haul Road and the Willits Creek Trail as “emergency use only” access roads for ingress by emergency response vehicles and egress by the general public if directed by the Sheriff/OES or the Incident Commander.
3. The Mendocino County Board of Supervisors should continue to support the work of staff and Sherwood Firewise in the development of a new Benefit Zone under County Service Area 3. This would provide a funding source for ongoing route maintenance through property tax payments made by local property owners who would benefit from the routes.
4. The Board of Supervisors should direct the County Office of Emergency Services to initiate negotiations with the Mendocino Redwood Company for the use of the existing Masonite Industrial Road as an “Emergency Access Route” road.

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5. Support the efforts of the Albion-Little River Fire Chief in the development of a secondary access road in the Navarro and Albion Ridge areas.
6. Support the efforts of the Redwood Valley Rancheria in developing an “Emergency Access Route” from the end of the cul-de-sac on Redwood Drive across Deer Creek to county Road J.
7. The County of Mendocino should continue to explore funding mechanisms for the all-weather creek crossings and road improvements for Tomki Road, as designed by the County Engineer.
8. Each spring, the responsible fire agencies should survey the primary and alternate emergency evacuation routes in their jurisdiction to ensure their continued availability.

### **E. Transportation Asset Improvements**

In an interview with the County Director of Transportation, this consultant learned of no areas where the existing County road or State Highway transportation systems could be easily improved considering the difficulties outlined above. However, the Director has been successful in making improvements to, or replacing, a prioritized list of County bridges on rural roads serving as exit corridors. Fire equipment, especially water tenders and bulldozer transports, are very heavy often exceeding the carrying capacity of rural bridges. This equipment is vital in controlling fires when they are small, reducing the need for large scale evacuations. It is important to note that grant funding for bridge improvements/replacements is more readily available than funds for road improvements.

Street/Road Maintenance Yards are the storage areas for many items vitally important to an orderly evacuation effort. Examples of items stored there include: message boards, barricades, heavy equipment for clearing of roadways. The consultant has recorded, in the Emergency Evacuation Plan, the location of the various maintenance yards located throughout the County. It should be noted that all maintenance yards, with the exception of two, are either safely located in areas not vulnerable to wildfire or are adequately protected by clearance and/or non-combustible construction. The Caltrans Yard in Manchester is well constructed of modern, non-combustible materials. However, directly across the Highway 1 yard entrance, as well as along the north side of the yard, there exists a stand of dead trees. Should these trees catch fire, access to the yard would be compromised. The Caltrans Yard in Leggett is surrounded by heavy timber and is very vulnerable to fire. The facility is old and long range planning should include finding a more suitable location.

### **Recommendations-Transportation Asset Improvements:**

1. The Board of Supervisors should continue to support the County Director of Transportation in his efforts to improve rural bridges within the County, especially those found in wildfire prone areas.
2. Caltrans should remove the dead standing trees on the property across from the entrance and along the north side of the Manchester Maintenance Yard.
3. Caltrans long-range capital improvement plans should include moving the Leggett Maintenance Yard to a more suitable location.
4. Given the enormous expense associated with moving the Leggett Yard to a less vulnerable location or modernizing and retrofitting the existing facilities with a fire sprinkler system, the consultant recommends that Caltrans limit the storage of essential evacuation equipment at this facility.
5. OES should conduct a yearly fleet survey of all MTA and School District buses and vans that includes the inventory and the type of fuel used (gas, electric, or diesel). If possible, fire emergency evacuation training for all bus drivers would be optimal.

### **F. Transportation Agreements**

The County Evacuation Plan utilizes the Mendocino Transit Authority (MTA) and school district buses and vans to aid in the evacuation effort. For example, during the 2018 Ranch Fire 6 Ukiah School District buses were used to evacuate the County Jail. In addition, the MTA supplied a bus and driver on standby at Howard Hospital for the potential evacuation use. There are currently no transportation agreements in place. Having pre-established agreements will expedite these requests. While a number of small charter bus companies are available in the County, this consultant believes the resources of, first the MTA, and then the school districts are more than adequate to fill emergency evacuation/transportation needs of the County. It should be noted that several non-governmental organizations (NGO) such as Meals on Wheels and local senior centers operate MTA buses and vans. These NGO's serve vulnerable residents/populations so there is familiarity with many of the individuals that would need evacuation assistance.

The recent advances in electric vehicle (EV) technology coupled with aggressive state and federal grants for electric buses and vans has and will continue to increase the number of electric



buses and vans in transportation fleets. EV buses and vans present several operational challenges for emergency evacuation operations including limited range and extended charge times.

### **Recommendation-Transportation Agreements:**

1. The County Board of Supervisors should direct the County Office of Emergency Services (OES) to develop and enter into an agreement with the Mendocino Transit Authority and the School Districts for the emergency use of buses and drivers for evacuation purposes for carless populations, skilled nursing facilities, correctional facilities and hospitals. Additionally, emergency evacuation training of all bus drivers would be optimal.

### **G. Vegetation Management**

**CAL FIRE's Vegetation Management Program (VMP)** is a cost-sharing program utilizing prescribed fire, and mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. The use of prescribed fire mimics natural processes, restores fire to its historic role in wildland ecosystems, and provides significant fire hazard reduction benefits that enhance public and firefighter safety. CAL FIRE also administers several state and federal forestry assistance programs with the goal of reducing wildland fuel loads and improving the health and productivity of private forest lands.

The Mendocino County Fire Safe Council (MCFSC) works to identify important local fire preparation projects and works to seek grant funding to enable them. Additionally, the MCFSC oversees local fire safe councils and works to obtain grant funding for vegetation reduction and other wildfire mitigation projects.

### **Recommendations-Vegetation Management:**

1. The Board of Supervisors should continue to support the work of the Mendocino Fire Safe Council by again providing funding for staff in the 2021 budget cycle. This community-based effort is a very efficient and cost-effective way to manage the wildfire fuel load throughout the County and the continuity of staff is critically important in achieving the MCFSC's goals.
2. The Mendocino County Community Wildfire Protection Plan should be updated. However, this does not need to be a standalone effort. The MCFSC should coordinate with CAL FIRE and the Fire Chiefs Association to identify the most efficient ways to use

the data those organizations already gather in order to update and prioritize the fuel reduction projects currently outlined in the outdated CWPP.

3. Maximizing the safety of transportation corridors for Mendocino County's isolated populations/populations with limited egress is a critical priority. The most important of these projects is the Sherwood Road exit corridor through Brooktrails. Additionally, the following transportation corridors are also in need of fuel reduction. Please note that grant objectives must be aligned with specific fuel modification projects, making prioritization of individual projects challenging.

- Ridgewood Road - Pine Mountain Subdivision – east of Willits
- Nakomis Road - Hopland Rancheria
- Williams Ranch Road – Black Bart Subdivision south of Willits
- Pepperwood Springs Road – Piercy
- Red Mountain Road – Piercy
- Bell Springs Road – Piercy
- Mill Creek Road – Talmage
- Multiple east and west side Ukiah Valley roads not covered by the current Ukiah Valley Fire Fuels Reduction Project
- Orr Springs Road
- Greenfield Ranch
- Spyrock Road (including Registered Guest Road, Iron Peak Road, and Blue Rock Road) is inhabited by approximately 2,000 people living in various types of homes. (CAL FIRE Battalion 4)
- Ten Mile Creek has approximately 200 residents. (CAL FIRE Battalion 4)
- Bear Pen subdivision contains 18 homes. (CAL FIRE Battalion 4)
- Ebert Lane is a narrow road accessing 11 homes; its vegetation includes not only brush and saplings but also timber. (CAL FIRE Battalion 4)
- Pepperwood Springs subdivision has approximately 20 homes. (CAL FIRE Battalion 4)
- Cherry Creek subdivision, which currently contains about 30 homes, is becoming a very popular area for new construction. (CAL FIRE Battalion 4)

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- Mulligan Lane contains areas of brush that need to be removed. (CAL FIRE Battalion 4)
4. The MCFSC should continue to work collaboratively with CAL FIRE, local fire departments, the County, State Parks and neighborhood groups in the development of an ongoing system of “Neighborhood Chipping Day” programs.
  5. The MCFSC should continue to refine and develop its current “Defensible Space” program for County residents. A county wide public forum on defensible space will be held in the Summer of 2020.

**Fuel  
Reduction  
Project**



### **H. Incident Command Posts – North Coast**

Communications along Highway 1 north of the small community of Inglenook are very problematic. Cell phone and radio service (both law and fire) is available on a hit or miss basis all along the Highway 1 coast. Currently, responding emergency units will search for a spot along the road where they can get both cell phone and radio coverage. They will park there, and then the spot becomes a Command Post by default. Frequently, there is not enough room for incoming units or agencies, so another spot is located and put into service. Fire units will

typically land in one spot and law enforcement in another. Emergency events that require response from a variety of agencies need to be managed from a single unified Command Post.

### **Recommendations-Incident Command Posts:**

1. The County Office of Emergency Services should explore the possibility of developing a pre-identified command post on Highway 1 in the vicinity of Newport. The first step would be to test the fire and law radio system and cell phone coverage from a variety of suitable command post locations. Potential sites include the large field directly south of the Westport Fire Station on the east side of Highway 1 and the field adjacent to the Inn at Newport Ranch at 31502 N. Highway 1.
2. Once identified, County OES should designate the site(s) as a Command Post in the appropriate County, fire service and law enforcement plans and policies.
3. The County should improve the site with all-weather access and parking, and an establish a connection point for hardwire phone connections.

### **I. Public Outreach**

To develop communities of prepared and informed residents, a coordinated approach needs to be taken amongst local fire departments and local government agencies. The County has a number of Public Information Officers with varying degrees of training yet there is no Public Information Plan. The development of a Public Information Plan will enable PIO's to provide a clear, cohesive response throughout the County. Additionally, as firefighters tend to be well respected in their communities, it is advantageous for local fire departments to provide year-round education to citizens about preparing for wildland fire threat and creating situational awareness. A plan has been designed outlining how throughout the year, participating public safety organizations can take turns providing seasonally appropriate public safety message for the entire County.



### Recommendations-Public Outreach:

1. The County Executive Officer should direct the County Office of Emergency Services to develop a Public Information Plan. All individuals throughout the County with PIO responsibilities should be trained on this plan.
2. The County Office of Emergency Services should be the PSA program manager or seek a volunteer agency to manage the program.
3. The County Office of Emergency Services should encourage the Fire Chief's Association, the Fire Safe Council, and other key stakeholders to adopt the Public Safety Announcement Program as outlined in the Public Outreach Plan.



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**Table 8: Action Plan**

| <b>Activity</b>   | <b>Responsible Agency</b>                     | <b>Funding Source</b>  | <b>Target Completion Date</b> |
|---|---|------------------------|-------------------------------|
| <b>Roads and Addressing:</b><br>BOS Adopt Proposed Changes                                    | Mendocino County Board of Supervisors         | None Required          | Fall 2020                     |
| <b>Roads and Addressing:</b><br>Rename Roads/Streets  | All Local Fire Departments                    | None Required          | Ongoing                       |
| <b>Ingress and Egress:</b><br>-Mitchel Creek Dr.<br>/Gibney Lane                              | CAL FIRE/Fort Bragg Fire Dept.                | General Fund           | Summer 2020                   |
| <b>Ingress and Egress:</b><br>Masonite Industrial Road  | County OES/<br>Anderson Valley Fire           | None Required          | Fall 2020                     |
| <b>Ingress and Egress:</b><br>Navarro/Albion Ridge Road                                       | Albion/Little River Fire District             | None Required          | Fall 2020                     |
| <b>Ingress and Egress:</b><br>Redwood Drive<br>Emergency Access                               | Redwood Valley Rancheria                      | Rancheria General Fund | Fall 2021                     |
| <b>Ingress and Egress:</b><br>Brooktrails “full service” road                                 | Brooktrails CSD                               | Grand Funding          | Ongoing                       |
| <b>Ingress and Egress:</b><br>Benefit Assessment CSA # 3                                      | Mendocino County Planning & Building Services | None Required          | Spring 2021                   |
| <b>Ingress and Egress:</b><br>Improvements FirCo and Willits Creek Trail “emergency use only” | Brooktrails CSD                               | Grand Funding          | Ongoing                       |
| <b>Ingress and Egress:</b><br>Tomki Road  | County of Mendocino                           | Grant Funding          | Ongoing                       |

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|--|---|--------------------------|-------------|
| <b>Ingress and Egress:</b><br>Road Surveys   | All Fire Agencies                             | None Required            | Ongoing     |
| <b>Codes and Ordinances:</b><br>Code Amendments                                      | Mendocino County Board of Supervisors         | General Fund             | Spring 2021 |
| <b>Codes and Ordinances:</b><br>Abandoned Lots                                       | Mendocino County Board of Supervisors         | General Fund             | Spring 2021 |
| <b>Codes and Ordinances:</b><br>Aggressive Code Enforcement                          | All Fire Agencies                             | General Funds            | Ongoing     |
| <b>Codes and Ordinances:</b><br>Notify Fire Agencies of Building Permit Applications | Mendocino County Planning & Building Services | None Required            | Ongoing     |
| <b>Codes and Ordinances:</b><br>Safety Element/LHMP                                  | County Planning Staff                         | None Required            | Summer 2020 |
| <b>Emergency Alerting System:</b><br>Educate Public                                  | OES   | General Fund             | Ongoing     |
| <b>Emergency Alerting System:</b><br>Troubleshoot Problems                           | OES   | General Fund             | Ongoing     |
| <b>Vegetation Management:</b><br>Support MCFSC and CAL FIRE VMP                      | County BOS and all Fire Agencies              | General and Grant Funded | Ongoing     |
| <b>Vegetation Management:</b><br>Update CWPP   | MCFSC and all Fire Agencies                   | General Funded           | Summer 2021 |
| <b>Vegetation Management:</b>  | MCFSC with support from all Fire Agencies     | Grant Funded             | Ongoing     |

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|  |   |               |             |
|--|---|---------------|-------------|
| Focus Grant Priority on transportation corridors   |   |               |             |
| <b>Vegetation Management:</b><br>Neighborhood Chipping Program                             | MCFSC with support from all Fire Agencies | Grant Funded  | Ongoing     |
| <b>Vegetation Management:</b><br>Defensible Space Program                                  | MCFSC with support from all Fire Agencies | Grant Funded  | Ongoing     |
| <b>Vegetation Management:</b><br>Dead Tree Removal at Manchester Maintenance Yard          | Caltrans                                  | General Fund  | Winter 2021 |
| <b>Transportation Assets:</b><br>Reduce Wildfire Vulnerability at Leggett Maintenance Yard | Caltrans                                  | General Fund  | Winter 2021 |
| <b>Transportation Assets:</b><br>Limit Storage at Leggett Yard                             | Caltrans                                  | None Required | Ongoing     |
| <b>Transportation Assets:</b> Improve Rural Bridges  | County Board of Supervisors               | Grant Funded  | Ongoing     |
| <b>Transportation Assets:</b><br>Annual Vehicle Survey                                     | County OES                                | None Required | Ongoing     |
| <b>Transportation Agreements:</b><br>Bus Transportation Agreements                         | County Administration Staff               | General Fund  | July 2020   |

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|   |                                |               |                |
|---|--------------------------------|---------------|----------------|
| <b>North Coast Incident Command Post:</b> Investigate Potential Site              | County OES/<br>Westport Fire   | None Required | July 2020      |
| <b>North Coast Incident Command Post:</b> Designate Site & Amend Plans & Policies | County OES/<br>Westport Fire   | None Required | July 2020      |
| <b>North Coast Incident Command Post:</b> Improve Site                            | County OES                     | Grant Funded  | September 2020 |
| <b>Public Outreach:</b> Public Information Plan Development                       | County OES                     | None Required | Fall 2020      |
| <b>Public Outreach:</b> Public Safety Announcement Program Manage and Promote     | County OES/Local Fire Agencies | None Required | Ongoing        |
| <b>Training:</b> Annual EOP/ Evacuation Plan training                             | County OES                     | General Fund  | Ongoing        |