PART 4—PLANNING UNIT ACTION PLANS, INTRODUCTION

The Planning Unit Action Plans (Action Plans) provide an individual wildfire analysis for each of the fourteen planning units within Humboldt County. The planning unit boundaries were determined based on several considerations, including geographic divisions such as watershed basins, distribution of community groups, and the jurisdictional boundaries of fire protection services. The fourteen Planning Units in Humboldt County are:

1. Orick—Redwood Park
2. Upper Yurok Reservation
3. Mid Klamath
4. Hoopa
5. Trinidad
6. Redwood Creek
7. Willow Creek Area
8. Humboldt Bay Area
9. Kneeland—Maple Creek
10. Eel
11. Mad—Van Duzen
12. Mattole—Lost Coast
13. Southern Humboldt
14. Avenue of the Giants

The purpose of the Action Plans is to inspire and guide action towards community wildfire preparedness and adaptation. They are intended for use by community members, organizations, and agencies working and living within each unit. They are not meant, however, to serve as regulatory or management plans. Instead, they provide an overview of the wildfire environment, examine various factors contributing to wildfire risks, and assess the level of emergency preparedness and fire protection capabilities within each planning unit. Community values and concerns, expressed during a series of public workshops, are reflected and incorporated into every chapter.

Each Action Plan concludes with a list of action recommendations tailored to the needs of each unit. The *Priority Action Recommendations* are based on a review and evaluation of community-identified fire planning features, other relevant plans, and the findings of the Humboldt County risk assessment. Based on this analysis and a growing understanding of local capacity and potential supporting resources, actions determined to have the greatest potential impact were selected as priorities while other potential actions, organized by countywide CWPP goal category, are included in an *Action Catalogue*.

The Action Plans follow the same format and in many cases, share similar content given the common risks and challenges faced by various communities across the county. They are designed as stand-alone documents that can be used, for the most part, independent of the countywide CWPP or the other unit-specific plans. They will be treated as living documents that can evolve as they are implemented and as new information is discovered. Each Action Plan contains the following sections:

1. **UNIT DESCRIPTION:** PROVIDES A GENERAL OVERVIEW OF THE UNIT AREA.
2. **ASSETS AND VALUES AT RISK:** INCLUDES ASSETS AND VALUES AT RISK, INCLUDING THOSE IDENTIFIED BY COMMUNITY MEMBERS AT CWPP WORKSHOPS.
3. **WILDFIRE ENVIRONMENT**: DESCRIBES THE FACTORS AFFECTING WILDFIRE HAZARD SEVERITY IN THE UNIT, INCLUDING FIRE HISTORY, RISK OF STRUCTURAL IGNITION, AND AVAILABLE WATER RESOURCES.
4. **FIRE PROTECTION CAPABILITIES:** LISTS LOCAL FIRE PROTECTION RESOURCES AND THEIR CONTACT INFORMATION. CHALLENGES FACED BY LOCAL FIRE SERVICE ARE DISCUSSED.
5. **EVACUATION:** PROVIDES GENERAL INFORMATION ON EVACUATION PLANNING IN THE UNIT.
6. **COMMUNITY PREPAREDNESS:** DESCRIBES LOCAL FIRE PLANNING GROUPS AND EFFORTS, WHERE THEY EXIST.
7. **LOCAL WILDFIRE PREVENTION PLANS:** SUMMARIZES EXISTING PLANS AND DOCUMENTS DEVELOPED BY COMMUNITY GROUPS OR OTHER LOCAL ORGANIZATIONS AND AGENCIES.
8. **COMMUNITY IDENTIFIED POTENTIAL PROJECTS:** DISCUSSES THE THIRD ITERATION OF COMMUNITY INVOLVEMENT IN THE DEVELOPMENT OF THIS CWPP AND LISTS PROJECTS IDENTIFIED THROUGH THAT PROCESS.
9. **ACTION PLAN:** PROVIDES A LIST OF PRIORITY ACTION RECOMMENDATIONS AND ADDITIONAL ACTIONS THAT CAN BE TAKEN TO ENHANCE FIRE SAFETY WITHIN THE PLANNING UNIT.

ORICK–REDWOOD PARK PLANNING UNIT ACTION PLAN



Redwood National Park. Photo: Eureka-Humboldt Visitors Bureau

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Helpful Links

CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.1 ORICK-REDWOOD PARK PLANNING UNIT ACTION PLAN

4.1.1 ORICK–REDWOOD PARK PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.1.1, ***Orick–Redwood Park Planning Unit.***

The Orick–Redwood Park Planning Unit encompasses over 100,000 acres in the northernmost part of the county. Elevations range from 5,300 feet down to sea level along the coast. The Unit consists of mostly mountainous, forested area, much of which is parkland. Orick, the population center of this unit, is located near the coast at the approximate north-south midpoint of the Unit. The town occupies the flat bottomlands between steep, forested hillsides to the east and the Pacific Ocean to the west.

Orick is considered by many to be the southern gateway community to Redwood National and State Parks. Redwood National Park (RNP), which is managed by the National Park Service (NPS), dominates approximately three-quarters of the Unit, while the northwestern quadrant of the Unit contains Prairie Creek State Park. The northeastern portion of the Unit contains industrial timberland owned by Green Diamond Resource Company.

4.1.2 ORICK–REDWOOD PARK ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The majority of community assets at risk in this planning unit are residential homes, commercial and service industries, community or town centers, schools, and critical infrastructure components, such as a PG&E substation and the Rodgers Peak Repeater. The parklands in this unit encompass a range of landscapes and ecosystem types, ranging from redwood forests, oak woodlands and prairies, to coastal and marine ecosystems, which provide habitat for an array of plants and wildlife. The value of these habitats to the biodiversity in this region underscores the ecological significance of these parklands. Together, Redwood National and State Parks are "a World Heritage Site and International Biosphere Reserve protecting resources cherished by citizens of many nations".[1]

Map 4.1.2, found at the end of this Planning Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[2] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the following table. This list is not intended to be comprehensive and illustrates participating community members' concerns.

[1] Welcome to Redwood National Park (2018). Retrieved form *https://www.national-park.com/welcome-to-redwood-national-park*

[2] Geographic Information Systems (GIS).

FIGURE 4.1.1 ORICK–REDWOOD PARK: COMMUNITY-IDENTIFIED ASSETS AT RISK	
Cell phone tower, radio repeaters	Orick School
Community Center / Hall	PG&E Substation
Community Services District Office	Redwood National Park Outdoor School
Lyon's Ranch historic barns	Redwood Trails
Orick Fire Hall	Simpson Mill A
Orick Inn	Water pumps
Orick Town Center	
Additional Assets	
Access Roads	Ladybird Johnson Grove
Campgrounds	Redwood National Park Visitor Centers
Freshwater Lagoon	

4.1.3 ORICK–REDWOOD PARK WILDFIRE ENVIRONMENT

The Redwood National and State Parks Fire Management Plan 2010 provides information about the wildfire environment and fire history of the area.

Readers are encouraged to review that plan for more details.

The plan can be downloaded from: http://www.nps.gov/redw/learn/management/firemanagement.htm

The majority (72%) of the Orick–Redwood Park Planning Unit is zoned "High *Fire Hazard Severity*," as determined by CAL FIRE.[3] However, the populated areas surrounding Orick, Highway 101, and the central coast region (12% of the Unit) are zoned "Moderate Fire Hazard Severity". Fifteen percent of the unit in the north- and south-eastern portions is zoned "Very High Fire Hazard Severity". *For a closer look at fire hazard severity in this unit, see Map 4.1.2* ***Orick–Redwood Park Community-Identified Protection Resources, Values/Assets, & Risks/Hazards.***

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

[3] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

Possible wildfire ignition sources in this planning unit are primarily human-related, including arson, poorly maintained campfires or brush piles, smoking, equipment use, vehicles or vehicular accidents, and downed power lines. Lightning is the primary source of naturally induced wildfire in this unit.

Fire History

Fire management in this unit has undergone several regime shifts. Native Americans in this region used intentional burning to increase the production of cultural resources, such as acorns and basketry materials, and to influence the growth of particular grasses favored by the deer and elk they hunted for food. Early agricultural settlers in the mid-1800s also used fire to clear pasture areas for livestock animals. However, when total *fire suppression* became a national policy in the 1930s, the landscape ecosystems that had developed through centuries of natural and human-caused ignitions were fundamentally altered.[4]

> ***Fire suppression:*** All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.
>
> ***Prescribed fire (controlled burning):*** a fire that burns within a range of predetermined conditions (such as fuel moisture content, weather conditions, etc.) that will keep it controllable, at low intensity, and able to achieve its stated objectives. A written, approved prescribed fire plan must exist, and environmental requirements (where applicable) must be met, prior to ignition.
>
> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Years of fire exclusion along with development and cultivation have enabled the encroachment of Douglas fir and grand fir into oak woodland and prairies, altering unique wildlife habitat. Some areas of encroachment on oak woodlands have resulted in total conversion to conifer forest. Observing these patterns, resource managers and vegetation management staff of the NPS recognized the need for *prescribed fire* to restore and manage these ecosystems, and the park's first prescribed burn was conducted in 1980 in the Bald Hills.[5] The prescribed fire program blossomed throughout the 1990s and evolved to include management of redwood forests, particularly second growth forests. The conifer cutting program involves aggressive removal of encroaching fir in prairies and oak woodlands, and was initiated in 1991. The progress of this program has slowed, however, "due to requirements for increased consultations to ensure compliance with protections for threatened, endangered, and sensitive wildlife species and cultural resources".[6]

Fire Management in Redwood National Park today is divided, based on ecosystem type, into various Fire Management Units (FMU), including the Coniferous Forest FMU, the Coastal FMU, the Bald Hills FMU, the Little Bald Hills FMU, the *wildland-urban interface (WUI)* FMU, and the State Parks FMU. Approaches to maintaining these FMUs include a variety of techniques that take into account the "values to be protected" within each area, as well as specific "management considerations", such as the existence of endangered species or the proximity to areas of cultural significance.[7]

[4] U.S. Department of the Interior (DOI): National Park Service. (2010). Redwood National and State Parks Fire Management Plan. (p. 5). Retrieved from https://www.nps.gov/redw/learn/management/firemanagement.htm

[5] Redwood National and State Parks Fire Management Plan. (p. 7).

[6] Redwood National and State Parks Fire Management Plan: Appendix M: Fire Monitoring Plan. (p. 8).

[7] Redwood National and State Parks Fire Management Plan. (pp. 19-40).

FIGURE 4.1.2 ORICK–REDWOOD PARK FIRES OVER 10 ACRES 1967-2017[8]				
Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
G.P. #6	Unknown/ Unidentified	1970	491	567
Tuk	Unknown/ Unidentified	2003	279	279
Elk	Arson	2006	72	73
Mid-Basin West	Unknown/ Unidentified	1998	52	52
98 Elk	Unknown/ Unidentified	1998	37	37
Lower Ganns	Unknown/ Unidentified	2002	19	19
Williams Ridge	Unknown/ Unidentified	1991	5	38
Williams	Arson	2007	5	10
Note: An interactive map of fire history through 1908 is available through the County Web GIS.				

Structural Ignitability

Homes within Orick and along Highway 101, adjacent to state and national park lands exist within the WUI, which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[9], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

> ***Home Ignition Zone:*** The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of buildings pose some of the greatest threats to structural ignitability. Of particular concern are structures with needles and leaves accumulating on rooftops or in rain gutters. Structures with wooden rooftops and sidings add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. RNP outposts and ranger stations situated within the forests generally maintain *defensible space* buffers; however, they are often surrounded on all sides by the dense vegetation of the wildland in more remote locations, which increases their risk of structural ignitability resulting from wildfire. Sawdust

[8] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.

[9] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

and residue from the many redwood carving businesses in this unit are particularly vulnerable to ignition from burning embers and could spread fire to adjacent residences and community assets.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[10]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Defensible space (i.e. survivable space): an area, either natural or manmade, where material capable of causing a fire to spread has been treated, cleared, reduced, or changed in order to provide a barrier between an advancing wildland fire and the loss to life, property, or resources. Distance from the structure and the degree of fuels treatment vary with vegetation type, slope, density, and other factors.

Map 4.1.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

Potable water is provided to the residents of this planning unit by the Orick Community Services District (OCSD). The District serves a land area of approximately 2.3 square miles and is funded by local taxes, water customer fees, and donations. Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.1.3 ORICK–REDWOOD PARK: FIRE PROTECTION WATER SOURCES

Charlie's Pond	Pacific Ocean
Community water tanks	Pond below Elk Camp barn
Freshwater Lagoon	OCSD fire hydrants (treated water, preferred for structure fire use)
Garland Pond	Standpipe at the Orick Fire Station (used for top-filling water tenders)

Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.

Map 4.1.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal*: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.1.4 ORICK–REDWOOD PARK FIRE PROTECTION CAPABILITIES

Community fire protection services are provided through the OCSD by the Orick Volunteer Fire Department (OVFD). Wildland fire protection services are provided by CAL FIRE and the Redwood National Park Service. The County of Humboldt maintains an *Amador agreement* with CAL FIRE to provide fire protection within County Service Area (CSA) #4, which covers an area from just north of McKinleyville, near Moonstone Beach, up to the OCSD boundary. County Service Area (CSA) #4 was established in 1986

Amador agreement: A contract that continues CAL FIRE staffing and station coverage through the winter "off season".

[10] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

and is a dependent special district governed by the Humboldt County Board of Supervisors. The CSA #4 resources work hand-in-hand with the local volunteer agencies on a variety of incidents throughout the year.

The OVFD participates in the countywide *mutual aid agreement* and provides assistance to and receives aid from other Humboldt County fire service providers. The OVFD also has mutual aid agreements with CAL FIRE and the Redwood National Park Service so that these entities can provide additional support to each other as needed. The OVFD and CAL FIRE often coordinate to provide community fire protection and emergency services within the southern and northern parts of their respective service areas. The OVFD will also respond to calls from the east, along Bald Hills Road, to emergency incidents near the roadway and on private lands on the west side of the Klamath River.

Mutual aid agreement: A reciprocal aid agreement between two or more agencies that defines what resources each will provide to the other in response to certain predetermined types of emergencies. Mutual aid response is provided upon request.

Fire behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography. Common terms used to describe behavior include: smoldering, creeping, running, spotting, torching, and crowning.

The RNP is a "service first" organization and by agreement, works with the Six Rivers National Forest (SRNF) to protect both federal and state lands, also called direct protection areas. RNP and SRNF operate as one fire management organization, supporting each unit's fire and land management objectives. During declared fire season, RNP staffs two engines, five days a week from 9:30 AM to 6:00 PM. RNP firefighting equipment is maintained at the Wolf Creek Fire Cache in Orick. RNP's daily staffing level is based on the Park's Preparedness Plan. This Plan determines thresholds for Low, Medium, High, Very High, and Extreme fire danger based on daily Energy Release Component (ERC) predictions. The Park currently uses two Remote Automated Weather Stations (RAWS) located near the far north and south ends of the Park to determine its daily ERC's. If RNP is experiencing extreme fire indices, the acting Duty Officer will determine if longer staffing hours are needed.

National Park Service policy is to meet or exceed a 95% initial-attack success target. Standard dispatch for any given incident in RNP is determined by its Preparedness Plan. It generally includes one engine module; the Duty Officer will request additional resources through the Fortuna Interagency Command Center (FICC) if conditions warrant. The RNP Service's familiarity with *fire behavior*, informed by experience with its prescribed burn program, enhances their preparedness for managing and addressing wildland fires. The OVFD, CAL FIRE, and RNP resources are dispatched by the FICC.

FIGURE 4.1.4 ORICK–REDWOOD PARK: FIRE PROTECTION RESOURCES[11,12]

PERSONNEL	SERVES		RESPONSE
	RESIDENTS	AREA (SQ. MI)	
ORICK VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 834-6162			
13 Volunteer	400	District: 2.3 Out of District: 121.5	○ Structural fires ○ Medical and rescue services
APPARATUS			
○ Engine pumper, 4WD ○ Rescue truck, 4WD			○ Rescue van ○ Water tender

[11] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 43). Retrieved from https://humboldtgov.org/Archive.aspx?AMID=75

[12] Humboldt Local Agency Formation Commission. (Adopted Jan. 2016). North County Regional Fire Services: Municipal Service Review. Retrieved from http://humboldtlafco.org/msr-soi-reports

FIGURE 4.1.4 ORICK–REDWOOD PARK: FIRE PROTECTION RESOURCES	
PERSONNEL	RESPONSE
REDWOOD PARK SERVICE – PHONE: (707) 465-7335 OR WEB: *http://www.nps.gov/redw/index.htm*	
○ Full staff Jun-Oct ○ Reduced staff Nov-May	○ Wildland fires, nationwide ○ Prescribed burning ○ Traffic accidents
APPARATUS	
○ Small fire engine	○ Large fire engine
CAL FIRE TRINIDAD – PHONE: (707) 677-3638	
○ 1 crew (off-season) ○ 2 crews (fire season)	○ Wildland fires ○ Other fires/emergencies ○ Contracted by County of Humboldt to provide fire protection within County Service Area (CSA) #4
APPARATUS	
○ (2) Type-3 fire engine	
CAL FIRE ELK CAMP – PHONE: (707) 499-2240	
○ Summer only	○ Wildland fires ○ Other fires/emergencies

FIGURE 4.1.5 ORICK–REDWOOD PARK: KEY ISSUES OF CONCERN FOR FIRE SERVICES
○ A generator is needed for backup power for the water system, the fire hall, CSD office, and the community hall, which are all key emergency assets.
○ Road access during emergency response is sometimes difficult because of road conditions and lack of access permission.
○ Insufficient home address signs can delay emergency response – Kane Road is an example of this (small, difficult to see signs are also a problem).
○ There is insufficient availability of fire protection water outside the OCSD. The OVFD water tender helps with this but a second water tender would be helpful for backup and reserve.

4.1.5 ORICK–REDWOOD PARK EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Orick–Redwood Park Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Generally, evacuation from within this unit will travel either north or south along Highway 101. Although Highway 101 is the central route through most of the Unit, Newton B. Drury Scenic Drive runs parallel to Highway 101 and offers an alternative route through Prairie Creek

Redwoods State Park. Bald Hills Road provides access through the southeastern portion of the Unit, eventually connecting with Highway 169. Although Highway 169 is non-continuous and offers limited northern access, it is connected to Highway 96, another major transportation corridor, which offers ingress and egress south towards Willow Creek, and northeast towards Orleans.

Poorly or inaccurately marked streets and intersections present a challenge for emergency responders. Many roads and driveways are overgrown with flammable vegetation and have inadequate turn around spaces. Other ingress and egress impediments may include steep road sections, fallen trees or power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads/driveways that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[13] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

4.1.6 ORICK–REDWOOD PARK COMMUNITY PREPAREDNESS

No local *fire safe councils* (FSC) or recognized *Firewise communities* exist within this planning unit. The process of becoming recognized as Firewise® includes a site-specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. **The Firewise® process would be beneficial for the town of Orick and other neighborhoods within this planning unit.**

[13] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

RNP maintains an active fire prevention program that includes participation in interagency fire prevention programs at local schools and community events. Trained employees help educate the public about the role of fire within park ecosystems and the mission of the parks' prescribed fire program. They also provide information about how to prevent unwanted fires, emphasizing the distinction between management-ignited fires and unwanted human-caused fires, and illustrating the severe impacts that unwanted fires can have on communities and ecosystems. In addition to the prescribed fire program, RNP also has a mechanical fuels reduction program that utilizes a variety of techniques and machinery to modify fuel complexes.

Through hazard mitigation planning and activities, the community of Orick has successfully achieved Tsunami Ready and Storm Ready status.[14] These initiatives could potentially be springboards for an additional effort to become a Firewise® community. Additionally, many of the preparedness activities and outreach associated with these established programs (emergency supply kits, evacuation drills, communitywide communication networks) will benefit residents during a large wildfire event.

Many people have contributed to increasing the fire safety of their homes, neighborhoods, and communities in the Orick–Redwood Park Planning Unit, often on volunteer time. The following table summarizes some of the key accomplishments since 2013.

FIGURE 4.1.6 ORICK–REDWOOD PARK: FIRE PREVENTION ACCOMPLISHMENTS

- The OVFD was recently able to establish an internet connection and phone line for the fire hall office and are in the process of purchasing a computer and phone. This might seem like a small achievement but it will greatly assist with communications, training, and operations.
- Secured Measure Z funding for fire protection equipment including PPE, HAM radios, hoses, and a new fire engine.
  - In 2016, received a Measure Z funded 4-wheel drive fire engine that will allow access to all roads in the district and outlying areas.
  - In 2015, received Measure Z funding for eleven sets of structure turnouts, twelve sets of wildland PPE, eight Self Contained Breathing Apparatus (SCBAs), and nine portable radios.
- Began construction of a new structure to house the new fire engine.
- RNP has maintained a robust prescribed fire program in an effort to return fire and its associated ecological benefits to the parks.
- The County of Humboldt coordinates with outside contractors, CAL FIRE crews, and County Road Maintenance staff to manage vegetation on the Redwood Creek Levee to maintain compliance with U.S. Army Corps of Engineers requirements. This work provides multiple benefits including the reduction of fire hazards. Portions of the Levee are treated on a rotating basis with the goal of a continuous annual maintenance cycle for the entire Levee.

[14] County of Humboldt, Natural Resources Planning. (2014). Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (p. 14-3).

4.1.7 ORICK–REDWOOD PARK LOCAL WILDFIRE PREVENTION PLANS

As of the date of this CWPP, there were no completed local planning documents such as a CWPP or Firewise® Assessment in this planning unit. The community may choose to pursue Firewise® recognition, and through that process would develop a Firewise® Action Plan that identifies and prioritizes actions, which reduce the risk posed by wildfire in the Orick–Redwood Park Unit. Alternatively, a local fire safe council could facilitate the writing and implementation of a community-level wildfire protection plan. **As a first step, a point person or group of individuals must come forward to lead these efforts from within the community, in coordination with CAL FIRE, OVFD, the HCFSC, and or RNP.**

This Planning Unit Action Plan will provide a starting point for these fire-planning efforts. To help guide and inspire wildfire preparedness in this planning unit, this CWPP provides a list of priority action recommendations reflective of the community concerns and ideas collected through the process described below. *See section 4.1.9, **Orick–Redwood Park Action Plan** for the list of priority actions recommended by this CWPP.*

The Redwood National and State Parks *Fire Management Plan* is a noteworthy planning document that addresses wildfire topics within this planning unit. The plan provides the park service with operational guidance used to safely manage wildfire while protecting park resources and human life and property.

> ***Fire Management Plan (FMP)**:* A strategic plan that defines a program to manage wildland and prescribed fires. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

The Wildland Fire Management Goals[15] associated with that Management Plan include the following:

- Ensure safety to firefighter and public is the highest priority in every fire management action.
- Protect the public, private property, and the natural and cultural resources of the parks utilizing strategies and tactics commensurate with the values at risk.
- Use fire as a management tool to meet resource objectives where deemed appropriate and identified risk is both manageable and acceptable.
- Manage wildland fuel complexes in order to protect resources at risk and minimize unacceptable impacts from fire.
- Cooperate with adjacent landowners and land management agencies in the full range of fire management activities, respecting the jurisdiction, interests and legal mandates of each participant.
- Increase the understanding of the role and function of fire in the parks.
- Restore fire as an ecosystem process in the park's biotic communities to the fullest extent practical.



Schoolhouse Prescribed Fire. Photo: Redwood National Park.

[15] U.S. Department of the Interior: National Park Service. (2010). Redwood National and State Parks Fire Management Plan. (p. 15).

The Fire Management Plan is supported by the RNP's fire ecology program, which has put forth an elaborate Fire Monitoring Plan that provides monitoring and research support to the Fire Management Plan. This helps ensure that fire protection strategies are well-informed and that fire management is based upon the best available science and knowledge.[16]

4.1.8 ORICK–REDWOOD PARK COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 2, 2017 at the Orick Community Hall with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.1.3*). New or confirmed existing projects ideas proposed during the 2017 update process are summarized in *Figure 4.1.7* and *Figure 4.1.8* in this section. *For more information on the mapping exercise, see Appendix B.5 **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.1.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

[16] U.S. Department of the Interior: National Park Service. (2010). Appendix M: Fire Monitoring Plan. Redwood National and State Parks Fire Management Plan.

The following non-geographic community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.1.7 ORICK–REDWOOD PARK: PROPOSED PROJECTS, NON-GEOGRAPHIC
○ Post more road and address signs to facilitate emergency response throughout the Planning Unit.
○ Increase community outreach and education at events such as the Rodeo. Foster a culture of preparedness among neighbors.
○ Compile a directory of brushing crews.
○ Seek funding for a coordinator to organize a Firewise® community and other projects.
○ Work with Parks to create a robust buffer zone between Parks and community.
○ Identify and address road access issues wherever possible.
○ Increase water availability outside Community Services District. Install tanks for firefighting water with proper fittings that are well marked (and mapped, if possible).
○ Initiate the Blue Dot Program within the community.
○ Initiate evacuation planning and begin running drills in key areas.
○ Replace damaged fire hydrants.
○ Hold Community Chipper Days (Contact Del Norte Fire Safe Council or the CAL FIRE Chipper Program).
○ Design and implement a fire department recruitment strategy to get more volunteers (especially volunteers who can respond during the day).

The local residents who attended the November 2, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.1.8 ORICK–REDWOOD PARK: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Levee vegetation – brushing / burning as needed	Hazardous Fuel Reduction	ORI038
Fix Riverview Road Access – Private drive; resolve property owner dispute regarding stream diversion	Access/Evacuation	ORI036
Gunst Road – brush road for emergency access	Roadside Clearance	ORI037
Additional Hydrants in “The Blocks” (Orick proper)	Water	ORI041
Post more address signs to facilitate emergency response	Access/Evacuation	Non-geographic

4.1.9 ORICK–REDWOOD PARK ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- Identify a community organization or group of individuals in Orick with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program.
    - Existing disaster preparedness groups could add wildfire preparedness as a focus area of their activities.
    - Conduct a community risk assessment with support from CAL FIRE, the OVFD, and the HCFSC and draft a Firewise® action plan. Use information from this unit action plan as a starting point for the development of community assessments and action plans.
    - Actively implement and maintain the Firewise® action plans on an annual schedule.
    - Host a Firewise® Day to share findings and inspire action; Firewise activities could be added to an existing annual community event. The annual Orick Rodeo was suggested as a potential venue.
    - If necessary, seek funding to support this effort.
- Once a local group has been organized, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in this *Priority Action Recommendations* list and the *Action*

Catalogue below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.

- **P**riority areas within this planning unit for fuels reduction and outreach are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness:
    - Levee vegetation brushing and burning, as needed. (ORI038)
    - The Blocks neighborhood in Orick.
    - Owl Gulch neighborhood off of Old State Highway.
    - Neighborhoods along Hilton Road and Eris Lane.
    - Neighborhoods along Hufford Road, west of Orick.
    - Neighborhoods along roads branching off of Hufford Road, including Foothill Drive, Viewcrest Drive and Gunst Road.
    - Neighborhood along Riverview Road, north of Orick.
- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads to evaluate include:
    - Brush thinning along Gunst Road (ORI037)
    - Private roads off of the Old State Highway
    - Hilton Road and Eris Lane
    - Foothills Road
    - Riverview Road (also address road access issue)
    - Robinson Road
    - Orick Hill Road
- **C**oordinate wildfire preparedness efforts between community members, CAL FIRE, the OVFD, Redwood National Park, and the HCFSC.
- **C**ollaborate with Redwood National Park to conduct prescribed burns or use other methods to create wildfire resilient landscapes as a buffer between the Park and WUI. Focus initial efforts on the following area:
    - Area of Redwood National Park between Hilton Road and Old State Highway.
    - Areas along Hufford Road, west of Orick; ideally, this project should correlate with Chipper Days.
- **C**oordinate with CAL FIRE, the OVFD, and local community members and/or groups to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.

- **A**ddress emergency access obstacles in the "Blocks". Streets are blocked by cars and other obstructions that could delay emergency responders—endangering lives and property. In addition, install more hydrants in this neighborhood.
- **A**ddress the problem of not having a local facility for disposing of green waste. Identify responsible and feasible disposal methods, possibly a chipper program and or an agreement with a composting facility. Educate residents about safe pile burning and associated permitting.
- **S**ecure resources to purchase an updated set of Jaws of Life and a water tender for the OVFD.
- **S**ecure resources to purchase a generator or generators as a power back-up for the Orick water system and to maintain services out of the OCSD office, the OVFD Fire Hall, and the community hall during power outages.
- **W**ork with the Humboldt County Fire Chiefs' Association to develop OVFD volunteer training packages that can be delivered locally and to set up remote participation in the Association's monthly meetings.
- **I**ncrease the availability of water for fire protection by:
    - Investing in more community water tanks.
    - Ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment (Blue Dot Program).
    - Installing additional fire hydrants in "The Blocks" (Orick proper). (ORI041)
    - Addressing water needs in neighborhoods outside of the OCSD boundary.
    - Replacing damaged fire hydrants as needed within the OCSD boundary.
- **W**ork with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well. Focus initial efforts in the following areas:
    - Post more address signs to facilitate emergency response throughout the Unit.
    - Bald Hills Road.
    - Robinson Road, west of Highway 101.
    - Old State Highway, east of Highway 101.
- **A**ddress road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments. The following priority access issues were identified at community workshops and/or through analysis and are recommended for initial evaluation and action:
    - Fix access on private drive along Riverview Road. Mitigate stream diversion issues as well. If property owners cannot resolve disagreements about an approach to this, consider alternative routes or methods. (ORI036)
    - Collaborate with the Public Works Roads Division to better understand and provide input to the process of setting priorities for roadside vegetation maintenance.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about past coastal wildfire events.
    - Encourage Boy Scouts of America or other service organization to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- Provide residents with information about and assistance with reducing structural ignitability and maintaining adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response. See details in *Priority Action Recommendations* above.

- Work with PG&E and local landowners to reduce fuels along power line easements.
- Create community chipping programs to support defensible space maintenance and vegetation management in priority areas. See details in *Priority Action Recommendations* above.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot-spots for Sudden Oak Death infected trees. Conduct fuels reduction projects as needed in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.
- Work with CAL FIRE to increase frequency of inmate crew fuel reduction projects.

Disaster Preparedness

- Work with the County Office of Emergency Services (OES) and local fire service to engage community members in evacuation preparedness and the identification of local evacuation routes and sites. In addition, identify local community liaisons to work directly with emergency management officials.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Focus evacuation planning efforts in populated areas located along single access or difficult to access roads. Priority neighborhoods and roads for outreach efforts include:
    - The “Blocks” in Orick
    - Homesteads at the end of Old State Highway
    - Gunst Road
    - Riverview Lane
    - Orick Hill Road
    - Hilton Road
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.

- **W**ork with residents to ensure adequate road and home address signage for more efficient emergency response. See details in *Priority Action Recommendations* above.
- **A**ddress road conditions that inhibit effective evacuation and access by emergency responders. See details in *Priority Action Recommendations* above.
- **I**nform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- **I**nform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- **I**ncrease the availability of water for fire protection. See details in *Priority Action Recommendations* above.

Fire Protection

- **H**elp local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.
- **S**upport the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention. (Note: Although the OVFD is not currently experiencing a shortage of volunteers, this is a common challenge with volunteer fire departments throughout the county. Check in with the department periodically to find out if they have emerging volunteer needs.)
- **A**ssist in the development of recruitment and retention strategies for volunteer fire departments. (See note above.)

Restore Beneficial Fire

- **P**rovide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, the Northern California Prescribed Fire Council, and Redwood National Park.[17]
- **S**hare information about educational events that provide information about prescribed burning.
- **E**ncourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.

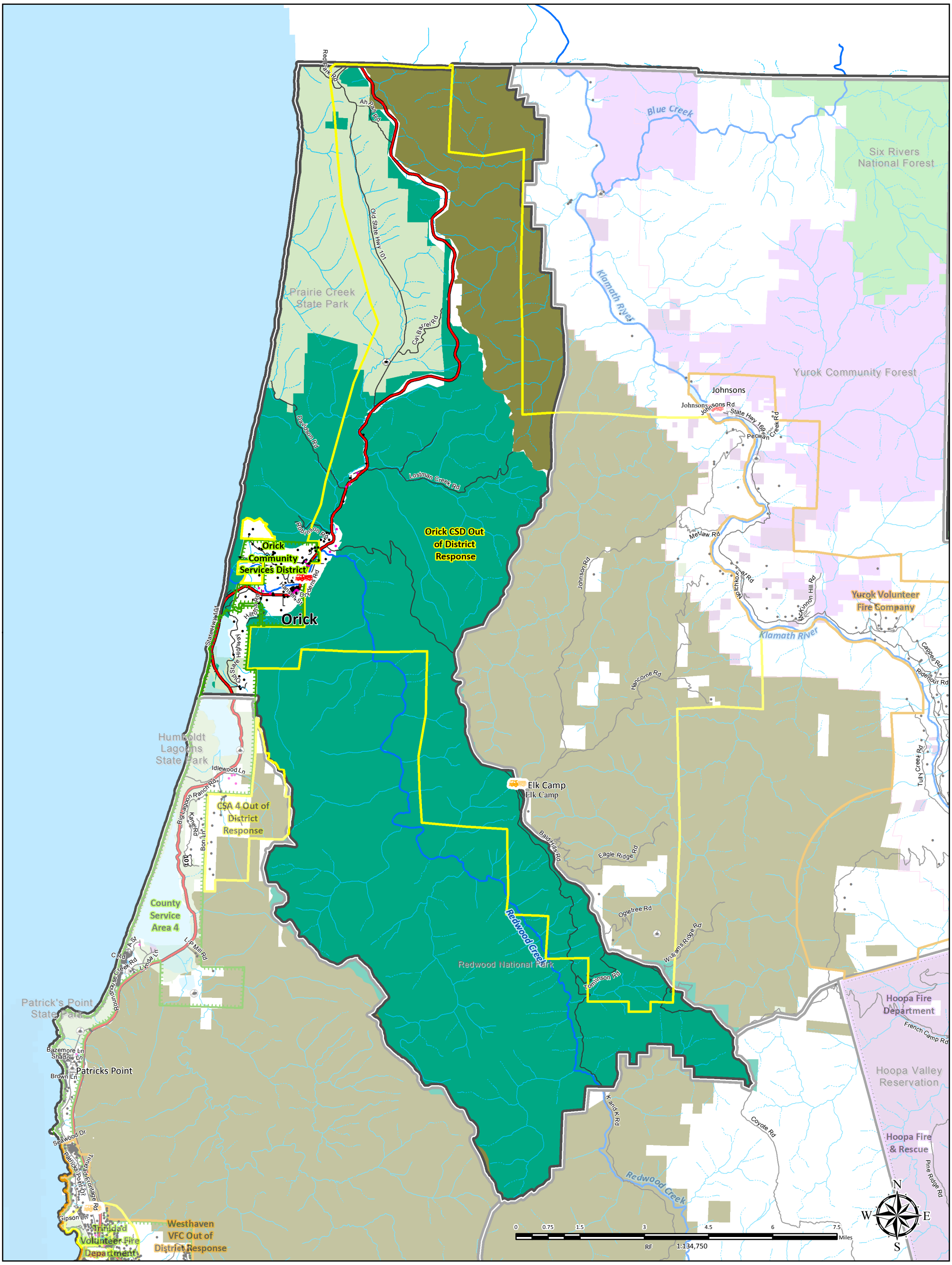
[17] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

- Help federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

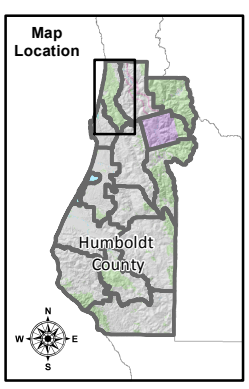
Integrated Planning

- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland. See details in *Priority Action Recommendations* above.
- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

MAP 4.1.1 ORICK—REDWOOD PARK PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

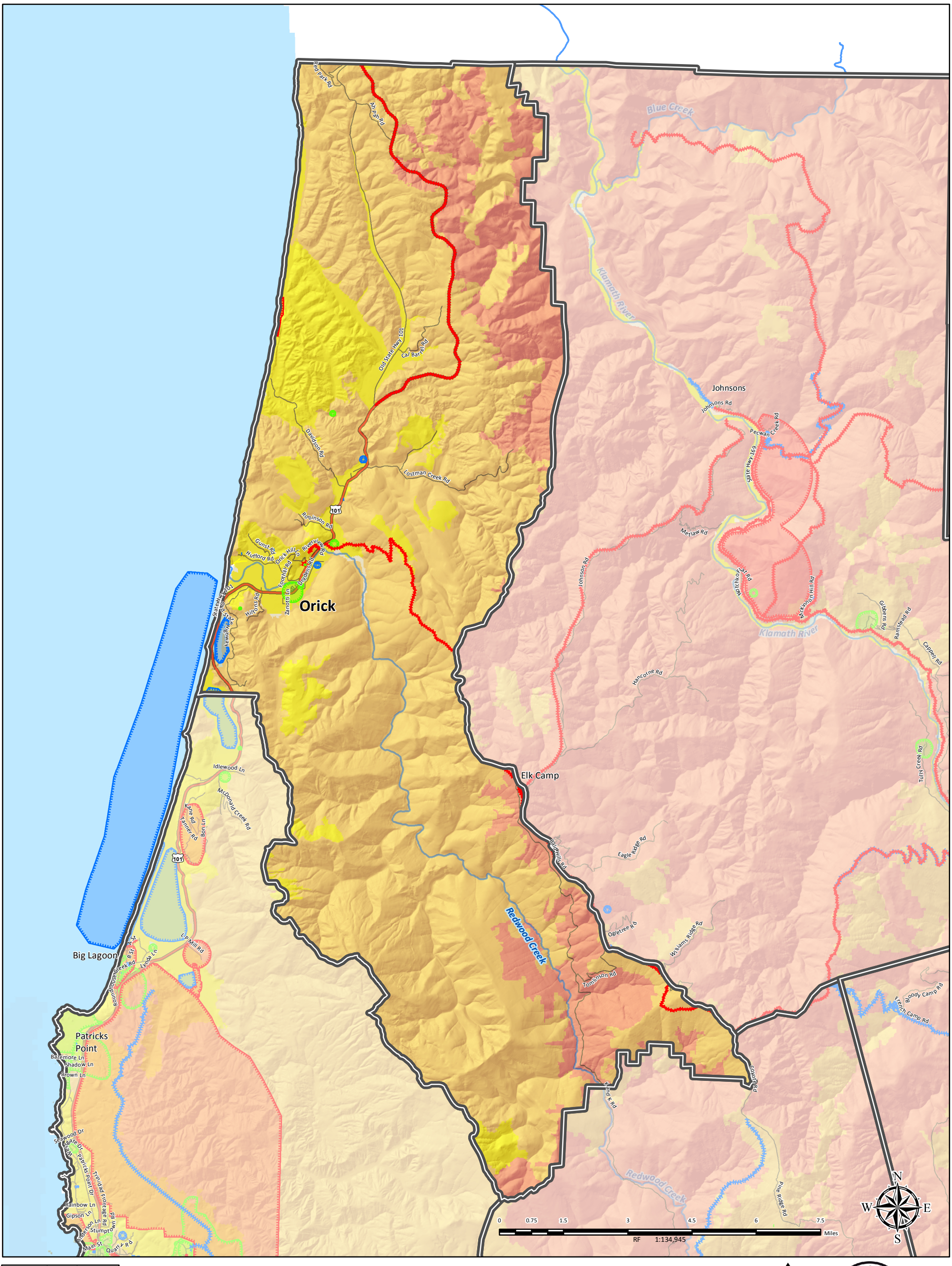
Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

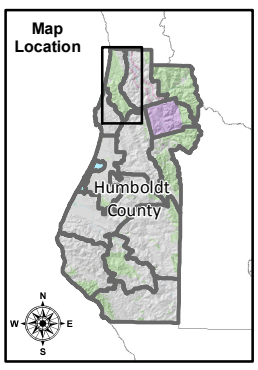
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.1.2 ORICK–REDWOOD PARK PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

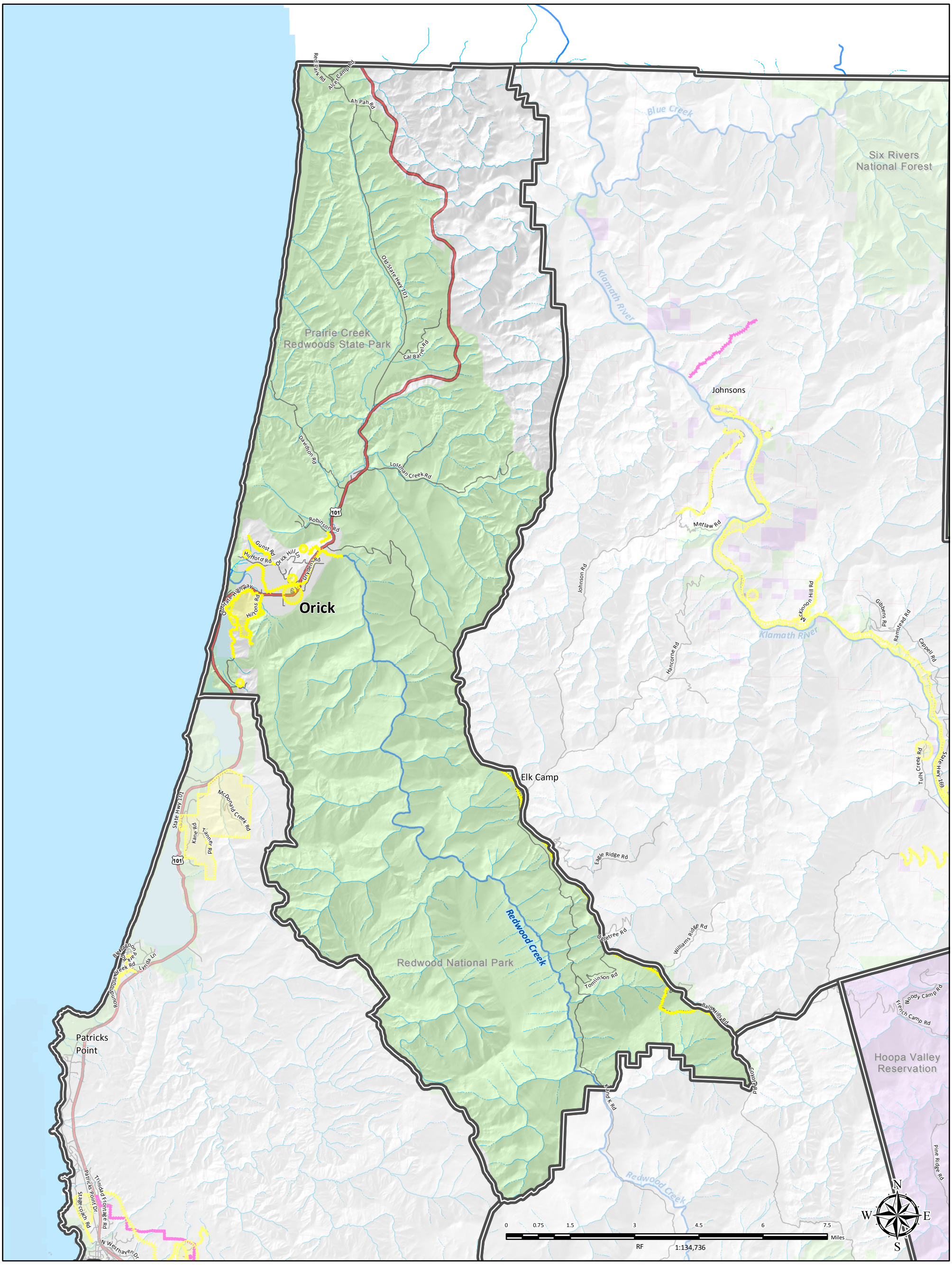
The map is intended for planning purposes and should not be used for precise measurement or navigation.

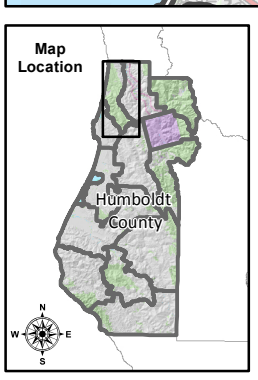
Map compiled by County of Humboldt, November 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.1.3 ORICK–REDWOOD PARK PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

- Proposed Project
- Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

- Public Land
- Tribal Land
- Cities

Highways and Roads

- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography

- Major River or Stream
- Perennial Stream
- Intermittent Stream

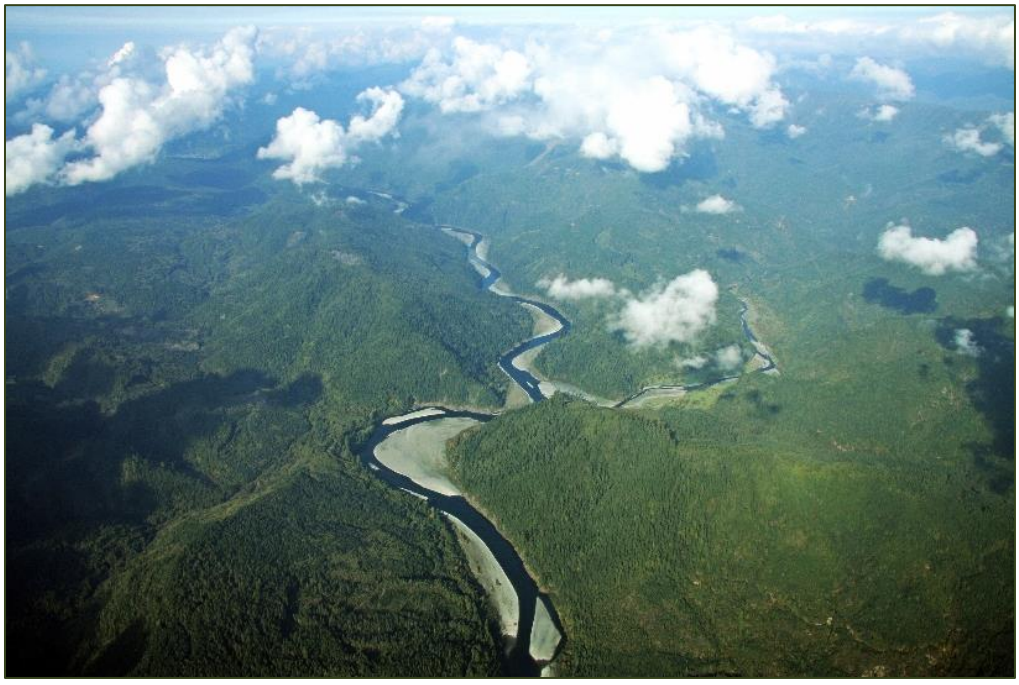
Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, November 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

UPPER YUROK RESERVATION PLANNING UNIT ACTION PLAN



The Klamath River running through the Yurok Reservation. Photo: Western Rivers Conservancy.

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Helpful Links

YUROK TRIBE OFFICIAL WEBSITE:	*www.yuroktribe.org*
YUROK TRIBE FORESTRY:	*www.yuroktribe.org/departments/forestry*
CULTURAL FIRE MANAGEMENT COUNCIL:	*www.culturalfire.org*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.2 UPPER YUROK RESERVATION PLANNING UNIT ACTION PLAN

4.2.1 UPPER YUROK RESERVATION PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.2.1, ***Upper Yurok Reservation Planning Unit.***

FIGURE 4.2.1 KLAMATH RIVER TRIBUTARIES	
Mettah Creek	Notchko Creek
Pecwan Creek	Bear Creek
Coon Creek	Achelth Creek
Halagow Creek	Surpur Creek
Roach Creek	Pine Creek
Ah Pah Creek	Blue Creek

FIGURE 4.2.2 UPPER YUROK COMMUNITIES	
Weitchpec	Bald Hills
Tulley Creek	McKinnon Hill
Notchco	Ke'pel
Pecwan	Wautec

The Upper Yurok Reservation Planning Unit encompasses nearly 160,000 acres situated in north-central Humboldt County. The Klamath River basin and its many tributaries characterize the Unit's geography.[1]

Highway 169 is the main transportation corridor, following the Klamath River in a north-south direction across the Unit. However, it is important to note that Highway 169 is a non-continuous route and comes to a dead-end near the Johnsons community in the northern portion of the Planning Unit.

The majority of communities in this planning unit are largely contained within what is known locally as the "up-river" portion of the Reservation, which is located in Humboldt County. The down-river portion of the Reservation is located in Del Norte County near the mouth of the Klamath River.

The heart of the Unit area falls within the Yurok Tribe's territory, which consists entirely of Ancestral lands, specifically including but not limited to, the Yurok Reservation and Tribal fee lands. The Reservation extends one mile out on each side of the Klamath River, from the mouth of the river to an upriver distance of about 44 miles. In total, the Yurok Indian Reservation spans 63,035 acres across Humboldt and Del Norte Counties. The Yurok Tribe is the largest Indian Tribe in California, with over 6,500 enrolled members. According to the most recent population record, the entire Reservation has a population of 4,912.[2]

Based on the communities at risk analysis conducted by the California Fire Alliance, all of the communities listed in *Figure 4.2.2* have been identified as "communities at risk for wildfire".[3] Weitchpec—situated in the southeastern corner of the Unit near the intersection of Highways 169 and 96—is the hub of community life in this planning unit.

[1] Dyett & Bhatia. (2002). Lower Klamath Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. (p. 43). Retrieved from *https://humboldtgov.org/571/Background-Reports*

[2] County of Humboldt, Natural Resources Planning. (2014). Part 1 – Introduction. Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (pp. 2-14-2-15). Retrieved from *http://www.humboldtgov.org/506/Local-Hazard-Mitigation*

[3] Yurok Tribe, Planning and Community Development. Prepared by Tetra Tech. (2013). Chapter 13 Community Wildfire Protection Plan. Yurok Tribe Hazard Mitigation Plan, Draft 3. [PDF]. (p. 13-13). Retrieved from *http://yuroktribe.org/departments/planning/documents/Yurok_Tribe_HMP&CWPP_2013-01-16.pdf*

Weitchpec contains the Yurok Tribal Office and Community Center, where many community services are located and events take place.

While much of the Reservation is owned by the Yurok Tribe, a substantial amount of land within the Planning Unit is also privately owned. Private lands include residential parcels, and large tracts of ranchlands and industrial timberlands. A small section of the northeastern portion of the Unit falls within Six Rivers National Forest boundaries and is therefore managed by the US Forest Service. Only a small portion of the Yurok Reservation has been developed for residential housing, and much of that lacks basic services such as electricity and telephone service.[4]

4.2.2 UPPER YUROK RESERVATION ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.



Lyons Ranch barn.
Photo: Redwood Hikes.



Morek Won Community Center.
Photo: Yurok Tribe.



Community hub of Weitchpec.
Photo: Lost Coast Outpost.

The majority of community assets at risk in this planning unit are residential homes along with commercial and service industries, community facilities, schools, fire stations, as well as infrastructure components, such as communications towers, power lines, and bridges. Highly important cultural sites and natural resources are also at substantial risk to wildfire. Commercial assets at risk in this planning unit include timber stands and associated carbon resources, the Yurok Community Forest, and livestock range. Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.2.3 UPPER YUROK RESERVATION: ASSETS AT RISK	
Blue Creek Salmon Sanctuary	Transfer Station
Burrill Creek drafting site, may require cultural approval	Tribal Police Station
Church and convenience store	Weitchpec water tanks
Forest and carbon resources	Weitchpec Elementary School
Gibbons Road water/power	Yurok Community Forest
Lyons Ranch Barns – Historical	Yurok Fire Station #1 and #2
Pine Creek drafting site, may require cultural approval	Yurok Tribal Head Start and Early Head Start
RAWS weather station	Yurok Tribal Office
River access for river rescue and swift water safety training	

[4] County of Humboldt, Natural Resources Planning. (2014). Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (p. 2-14).

Map 4.2.2, found at the end of this Planning Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[5] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

The Reservation contains many culturally significant Ancestral landscapes, which are often also areas of environmental significance. Protecting these spaces is a top priority for communities in this planning unit. The Yurok Tribe has partnered with the Western Rivers Conservancy over the last ten-plus years to help conserve over 47,000 acres along the lower Klamath River. Over 14,000 acres of this acquisition lies within the Blue Creek *watershed*. Blue Creek is a vital cold-water tributary to the lower Klamath River that provides high-quality spawning habitat for *endangered* Chinook and coho salmon, as well as steelhead trout.

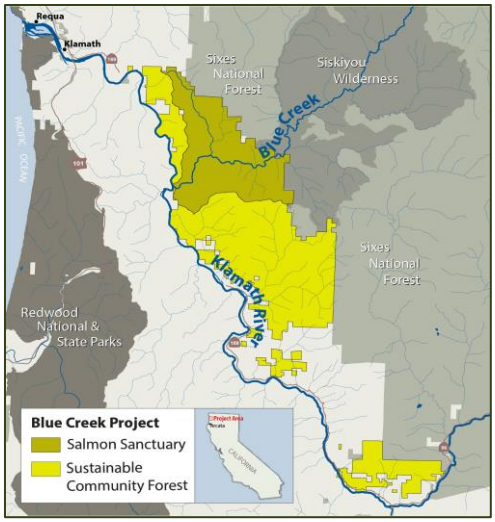
***Watershed*:** All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

Endangered: A population of organisms classified by the state or federal government as being at risk of becoming extinct because it is few in number and/or threatened by changing environmental or predation parameters.

Protecting Blue Creek will help restore salmon runs and protect the watershed, which provides valuable habitat for other important wildlife species such as marbled murrelets, northern spotted owls, Humboldt marten, deer and bears. In February 2018, Western Rivers Conservancy successfully purchased the last 9,000 acres of private industrial timberland within the Blue Creek watershed from Green Diamond Resource Company by leveraging a creative mix of public and private funding sources.[6] This Ancestral land has since been returned to the care and ownership of the Yurok Tribe, who will manage the restoration of these former timberlands toward old growth structure and characteristics to ensure the health of the 14,790 acre Salmon Sanctuary. Equally important, this project also helps re-establish a homeland and economic base for the Yurok Tribe by creating a 32,307 acre sustainably managed community forest. The graphic below illustrates planned management areas for the Salmon Sanctuary and the Yurok Community Forest.[7]



The mouth of Blue Creek, as it enters the Klamath River. Photo: Yurok Tribe.



Blue Creek Project Map Graphic: Western Rivers Conservancy.

[5] Geographic Information Systems (GIS).

[6] Western Rivers Conservancy. (n.d.). Klamath-Blue Creek. Retrieved from *http://www.westernrivers.org/projectatlas/blue-creek*

[7] Graphic retrieved from *https://lostcoastoutpost.com/2018/feb/28/yurok-tribe-acquires-thousands-acres-blue-creek-wa*

4.2.3 UPPER YUROK RESERVATION WILDFIRE ENVIRONMENT

A detailed wildfire risk assessment is included in Chapter 13, Community Wildfire Protection Plan of the Yurok Tribe Hazard Mitigation Plan.

Readers are encouraged to review that plan for more details about the wildfire environment: *www.yuroktribe.org/departments/planning/documents/Yurok_Tribe_HMP&CWPP_2013-01-16.pdf*.

Approximately 88% of the Upper Yurok Reservation Planning Unit is zoned "Very High *Fire Hazard Severity*," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[8] However, several small areas throughout the Unit, particularly in the southern region near Pine Creek and Weitchpec, and surrounding Highway 169 are zoned "High Fire Hazard Severity" (totaling 11%). The Unit area is largely comprised of rugged, steep forestland with valleys and drainages running from the mountainous regions toward the ocean. The steep slopes within this unit can increase fire risk by accelerating the rates at which fires spread uphill; these slopes can have topographical influences on wind patterns as well.

Possible ignition sources in this planning unit are primarily human-related, including arson, poorly maintained campfires or brush piles, smoking, equipment use, vehicles or vehicular accidents, and downed power lines. Lightning is the primary source of naturally induced wildfire in this planning unit.

For a closer look at fire hazard severity, see Map 4.2.2 ***Upper Yurok Reservation Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

[8] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

Fire History

Ecosystems and plant communities in this region are historically adapted to wildfire occurrence to the extent that some varieties are not only fire-tolerant but *fire-dependent* for healthy ecosystem functioning. In the past, the Yurok people implemented intentional burns, or *prescribed fire*, throughout the Reservation area for ecological and cultural purposes. However, a history of *fire suppression* beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in the forest understory. This vegetation can fuel wildfires and increases the risk of high-intensity burns. The exclusion of fire from these landscapes adapted to low-intensity fires that would burn off brush and newer starts in the understory has led to overcrowding of forests, accumulated fuels, and alterations in species compositions and forest structure. This ecosystem dynamic is creating risk for wildfires of greater intensities and on a larger scale than the local vegetation is adapted to withstand.

Fire-dependent: Plants, vegetation communities, and specific habitat types that have evolved to rely on fire in order to exist and/or thrive.

Prescribed fire (Controlled Burning): A fire that burns within a range of predetermined conditions (such as fuel moisture content, weather conditions, etc.) that will keep it controllable, at low intensity, and able to achieve its stated objectives. A written, approved prescribed fire plan must exist, and environmental requirements (where applicable) must be met, prior to ignition.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

The extent to which the landscape has been altered as a result of fire suppression and industrial timber management is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area. Approximately 50% of the Upper Yurok Reservation Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 39% of the area is condition class 2, or moderately altered from the historical range.

On average, there are between ten and twelve brush fires each year on the Yurok Indian Reservation.[9] Fortunately, despite its "Very High" fire hazard severity zoning, there have been few fire events of significant size in the Unit within the past decade.

Fires in the lands adjacent to this planning unit have impacted residents of the Reservation as well. The Megram Fire in November 1999 was located approximately 60 miles east of Weitchpec, and generated dense smoke and ash that spread throughout Northern California, decreasing visibility and air quality. Many people were evacuated from the Reservation at this time due to health concerns. Similarly, the Biscuit Fire in July 2002, which began in Southern Oregon as a result of lightning strikes, generated smoke that created health problems for residents within a 100-mile radius.[10] More recently, residents were impacted by smoke from a wildfire just outside of the Planning Unit—the Mill Creek 1 Fire, which burned north of Hoopa throughout the month of August. The fire was detected on August 16, 2018 and was reportedly caused by arson.

[9] Yurok Tribe, Planning and Community Development. Prepared by Tetra Tech. (2013). Chapter 13 Community Wildfire Protection Plan. Yurok Tribe Hazard Mitigation Plan (HMP), Draft 3. (p. 13-44).

[10] Yurok Tribe. (2013). Chapter 13 Community Wildfire Protection Plan. Yurok Tribe HMP, Draft 3. (p. 13-41).

FIGURE 4.2.4 UPPER YUROK RESERVATION: FIRES OVER 10 ACRES 1997-2017[11]				
Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
No Name	Unknown/ Unidentified	1998	18,190	18,692
Nickowitz	Lightning	2015	1,256	7,576
Tulley	Arson	2016	607	607
Queen	Arson	2015	159	159
Tectah	Lightning	2003	97	97
Arrow Complex	Arson	2012	81	81
Elk	Arson	2006	0.37	73
Johnson	Equipment Use	2016	23	23
Pecwan	Unknown/ Unidentified	2014	21	21
Cappel	Unknown/ Unidentified	2007	13	13
Williams	Arson	2007	5	10
Pecwan	Unknown/ Unidentified	2009	10	10
Note: An interactive map of fire history through 1908 is available on the County Web GIS.				

Structural Ignitability

Homes in this unit exist within the *wildland-urban interface* or WUI, which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[12], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

[11] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.

[12] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

Wildland-urban interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Home Ignition Zone: The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

Structural ignitability: The ease with which a home or other structure ignites.

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. These items are generally more susceptible to combustion from embers or radiant heat and, if lighted, could cause the rest of the home to catch fire as well.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[13]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.2.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

The Public Utilities Division within the Yurok Tribe's Planning and Community Development Department provides potable water and fire protection water to residents throughout the Reservation. Fire protection water is available from a number of natural water sources. However, the smaller, cold-water creeks are extremely valuable to fisheries health in the area, and firefighters should always attempt to draft fire protection water from the river prior to accessing the cooler creeks.

Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge. In addition to these sites, there are 10,000 gallon water storage tanks located throughout the forest dedicated to fire suppression. *Map 4.2.2, found at the end of this Planning Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources.* More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[14] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

FIGURE 4.2.5 UPPER YUROK RESERVATION: WATER DRAFTING SITES	
Pine Creek	Gist Creek
Burrill Creek	School Creek
Garland Pond	Rube Ranch
Charlie's Pond	Ha Amar Creek
Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.	

[13] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

[14] Geographic Information Systems (GIS).

4.2.4 UPPER YUROK RESERVATION FIRE PROTECTION CAPABILITIES

The Yurok Wildland Fire Department operates out of the Tully Creek Fire and Fitness Center in Weitchpec. In addition to providing fire-protection services to the Upper Yurok Reservation, the Department has some staff and resources for contract wildland firefighting throughout the region. The BIA also maintains an agreement with CAL FIRE to provide wildfire protection for Yurok Tribal trust lands in this area. The Upper Yurok Reservation Planning Unit falls within CAL FIRE Battalion 4 and ground resources would be sent from the Trinidad station and/or Elk Camp, depending on the incident type. Additional firefighters would be requested from throughout the region as needed through mutual aid agreements.

The Yurok Volunteer Fire Department was formed in 2004 with supporting grant funding to build two fire stations in the upper Yurok Reservation area. The Yurok Tribe has, when available, also provided funding, equipment, and facilities for the Department. Volunteers have worked with Reservation citizens to establish fire programs and awareness efforts to mitigate fire danger. The Tribe is building capacity to maintain fire-protection service Reservation-wide through the volunteer fire program and the Tribal Fire Management program. The Volunteer Fire Department is working to recruit more volunteers, secure much-needed additional equipment, and improve response communications.

Fire and rescue response is challenging within the Upper Yurok Reservation Planning Unit due to a variety of factors. Many access roads off of the main roadways are in poor condition and cannot support larger fire suppression and emergency response vehicles. Response times can be long because of road conditions, long travel distances, and limited and fluctuating numbers of available firefighters.

FIGURE 4.2.6 UPPER YUROK RESERVATION: FIRE PROTECTION RESOURCES[15]

PERSONNEL	SERVES		FIRE APPARATUS	RESPONSE
	RESIDENTS	AREA (SQ. MI.)(SQ. MI)		
YUROK VOLUNTEER FIRE DEPARTMENT – PHONE: (530) 625-4130				
4	350	80	1 fire engine	When active, the department responds to and supports: ○ Structural and wildland fires ○ Medical and rescue incidents ○ Cultural burns/prescribed fire ○ Tribal ceremonies; cultural events
YUROK WILDLAND FIRE DEPARTMENT – PHONE: (530) 625-4130 EXT. 1900				
				○ Wildland fires ○ Cultural burns/prescribed fires ○ Tribal ceremonies; cultural events ○ Other fires/emergencies
CAL FIRE ELK CAMP – PHONE: (707) 499-2240				
				○ Wildland fires ○ Other fires/emergencies

4.2.5 UPPER YUROK RESERVATION EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents

[15] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 49). Retrieved from https://humboldtgov.org/Archive.aspx?AMID=75

can go to survive a wildfire. **Evacuation sites may be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** On the Upper Yurok Reservation, the determination for the location of these sites is normally made by the Yurok Tribe Office of Emergency Services (OES), in coordination with the American Red Cross and the Humboldt County Office of Emergency Services. The Humboldt County Sheriff's Office and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*), door-to-door methods, social media, and media releases—in coordination with the Tribe—to inform residents about the threat and where residents should go to take shelter.

Fire behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography. Common terms used to describe behavior include smoldering, creeping, running, spotting, torching, and crowning.

Evacuation routes in the Upper Yurok Reservation Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on *fire behavior*, wind patterns, traffic, and ingress of emergency vehicles. Highway 169 is the central ingress and egress route; however, users should be cautioned that this is a non-continuous route that dead ends in the northern portion of the Unit, far from any other major roads. The abrupt end of the primary access route in this unit exacerbates risks associated with the remoteness of homes in this area and limits residents' options for evacuation and creates the potential for dangerously long emergency response times.

FIGURE 4.2.7 UPPER YUROK RESERVATION: POTENTIAL EVACUATION ROUTES

- South along **Highway 169**, connecting with **Highway 96** to precede either northeast towards Orleans, or south towards Hoopa.
- If evacuation is blocked to the east and south, **Bald Hills Road** may also be used to travel west.

There are numerous smaller roads connecting residences and neighborhoods to Highway 169, Highway 96, and Bald Hills Road. Adequate ingress and egress along these roads is vital to a large portion of the community that may need access to main evacuation routes and for firefighters who will be using the roads to access wildfires in these areas. Many of the smaller roads throughout the Reservation are in poor condition, which can challenge effective delivery of fire suppression resources. Poor or complete lack of signage on these roads and at intersections also poses potential problems for emergency responders; this is especially true for more remote residences further away from any community center. In addition, the narrowness of smaller roads leading to remote residences could create serious complications for emergency vehicles trying to gain access during simultaneous home evacuations. Many roads are also overgrown with vegetation, and some properties have inadequate vehicle turn around spaces. Other ingress and egress impediments may include steep road sections, fallen trees or power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[16] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire

[16] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.2.6 UPPER YUROK RESERVATION COMMUNITY PREPAREDNESS

The Yurok Tribe indicates in its 2013 Hazard Mitigation Plan that it is working towards establishing a local *Fire Safe Council* (FSC) to guide the implementation of their Community Wildfire Protection Plan.[17] This group was organized to help educate residents about fire safety and wildfire preparedness. The Tribe recruited potential FSC members from the Hazard Management Plan update Steering Committee.

Fire Safe Council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

The Cultural Fire Management Council (CFMC) was formed in 2012 out of a desire to increase the use of cultural burning on Yurok Tribal lands while also promoting wildfire awareness and safe practices within the community. The mission of the CFMC is to:

> Facilitate the practice of cultural burning on the Yurok Reservation and Ancestral lands, which will lead to a healthier ecosystem for all plants and animals, long term fire protection for residents, and provide a platform that will in turn support the traditional hunting and gathering activities of Yurok.[18]

The CFMC has been working to bring what they refer to as cultural burning back to the Upper Yurok Reservation. Much of this burning has been completed through their biannual Yurok Training Exchange or TREX. CFMC partners with the Nature Conservancy and the Fire Learning Network to "bring fire back to Yurok land in a way that emphasizes cultural resource management, building of relationships, and healthy communities".[19] The TREX burning objectives have included propagation of basket weaving materials, medicinal plants and traditional foods; prairie restoration; home protection; and fuel reduction along the Highway 169 corridor.[20]

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[17] Yurok Tribe. (2013). Chapter 13 Community Wildfire Protection Plan. Yurok Tribe HMP, Draft 3. (p. 13-1).

[18] Cultural Fire Management Council. (2018). About Us. Retrieved from *http://culturalfire.org/about-us*
Learn more about CFMC history from a "Power of Stories" production produced by KCET in partnership with the California Endowment. (2018). Retrieved from *https://www.kcet.org/shows/departures/yurok-fight-for-cultural-burning*

[19] Cultural Fire Management Council. (2018). TREX. Retrieved from *http://culturalfire.org/trex*

[20] Fire Leaning Network - Notes from the Field Number 129: Yurok TREX. Retrieved from *https://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/USFLNPublications/Pages/Notes-YurokTREX-spring2018.aspx*

The Yurok Forestry Program is planning and hiring staff to build capacity to write and implement burn plans for landscape level treatments. Fuels mitigation and wildland fire management must be addressed with a layered approach to be successful. Fuels around homes are to be managed intensively and fuels in the surrounding forest must also be manipulated to make the forest more resilient to fire. Tribal representatives hold the strong belief that only the application of prescribed fire will protect homes and communities from the effects of a warming and drying climate, more extreme weather and fire behavior, and longer, drier summers.

The table below summarizes the most notable accomplishments made in this unit over the past five years.

FIGURE 4.2.8 UPPER YUROK RESERVATION: FIRE PREVENTION ACCOMPLISHMENTS
○ The CFMC has completed biannual TREX burns with support from the Nature Conservancy since 2013.
○ CFMC has worked to increase awareness about what they call cultural burning through various outreach activities, including the maintenance of a website (*culturalfire.org*), an educational float at the Salmon Festival in Klamath, and the production of community training days in collaboration with the Nature Conservancy that teach community members how to safely use fire as a tool for home protection and cultural resources.
○ Made progress on a road and address signage project.
○ CAL FIRE completed seven acres of roadside shaded fuel break along Highway 169. Partial funding support was provided through the County Fire-adapted Landscapes and Safe Homes or FLASH program. (2017-2018)
○ Over the last five years, the Yurok Tribe has achieved several important milestones in their running partnership with the Western Rivers Conservancy to create the 47,000-acre Blue Creek Salmon Sanctuary and Yurok Tribal Community Forest. Bringing these sacred Ancestral lands back under the management and stewardship of the Tribe will help rehabilitate damaged habitat. Although the project has a clear focus on restoring the ecosystem for fish and wildlife, there will be multiple benefits including increased wildfire resiliency from forest health and fuels management projects.
○ The Yurok Office of Emergency Services successfully updated the Yurok Hazard Mitigation Plan, which will be available in late 2018. Look for this plan on the Yurok Homepage (*http://www.yuroktribe.org*) under Departments, Yurok Office of Emergency Services.

Green Diamond Resource Company, which owns significant acreage in this planning unit, has undertaken efforts to help reduce risk of wildfire occurrences on company lands. Firefighting equipment is maintained at logging operations and inside all vehicles; harvesting operations are suspended at specified levels of low relative humidity; and logging crews are required to make daily fire inspections after work is done during the fire season. The company also maintains fire trucks and heavy equipment for wildland fire emergencies. Green Diamond Forestry staff, logging and maintenance crews, and contractors are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. The company also treats logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, *broadcast burning*, and at times mastication and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post-harvesting *biomass recovery* for power generation, resulting in fuel hazard reduction.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.

Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

4.2.7 UPPER YUROK RESERVATION LOCAL WILDFIRE PREVENTION PLANS

The Yurok Tribe Hazard Mitigation Plan (HMP) contains a wildfire risk assessment and recommendations for wildfire prevention and preparedness actions.[21] The purpose of the plan was to "identify hazards, establish community goals and objectives, and select mitigation activities that are appropriate for the Yurok Indian Reservation." The HMP includes an embedded community wildfire protection plan (CWPP).

> The CWPP is intended to serve as the guiding document for reducing the risk of fire to the Yurok Reservation and its surrounding communities.[22]

The CWPP planning process involved a compilation of efforts from various groups and agencies from throughout the planning area that came together in an effort to address the mitigation of wildfire hazards to communities at risk. The CWPP is intended to guide the following actions:

- Promote fire safety.
- Build capacity of local fire organizations.
- Coordinate local activities with the federal and state agencies charged with fire protection and management responsibilities.
- Incorporate planning for fire safe communities into the County land use planning process.
- Provide planning tools for fire safe communities.
- Identify funding sources to support local organizations that provide fire prevention and protection services.

The Yurok-Hupa-Karuk Healthy Country Plan[23] is being prepared through a team effort involving Tribal members and invited guests. The process is being guided by facilitators from the Fire Learning Network[24]. Many who are involved in this process serve on the leadership and/or advisory team of the Indigenous Peoples Burn Network (IPBN). The May 2018 edition of the Yurok Voice reported that the "IPBN is a coalition comprised of members of the Yurok, Karuk and Hoopa Valley Tribes. The Healthy Country Plan is a document that will be used to guide the future application of fire in the Tribes' respective territories". Ideally, this plan will help bring traditional burning back to levels practiced before European contact. Strategies outlined in the draft plan include the following:

- Establish a family-led burn program in each Tribe/community.
- Build local capacity for cultural burning.
- Initiate collaborative burning and learning opportunities.
- Strengthen state support of cultural burning.
- Strengthen federal support of cultural burning.

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[21] Yurok Tribe, Planning and Community Development. Prepared by Tetra Tech. (2013). Yurok Tribe Hazard Mitigation Plan Draft 3. [PDF]. Retrieved from *http://www.yuroktribe.org/departments/planning/documents/Yurok_Tribe_HMP&CWPP_2013-01-16.pdf*

[22] Yurok Tribe, Planning and Community Development. Prepared by Tetra Tech. (2013). Chapter 13 Community Wildfire Protection Plan. Yurok Tribe Hazard Mitigation Plan, Draft 3. (p. 13-2).

[23] When the Yurok-Hupa-Karuk Healthy Country Plan is finalized, it will be available at: *www.culturalfire.org*

[24] The Fire Learning Network (FLN), launched in 2002, is a joint project of The Nature Conservancy, the USDA Forest Service and several agencies of the U.S. Department of the Interior (Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service and National Park Service). Find out more about the FLN at: *https://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/Pages/fire-learning-network.aspx*

4.2.8 UPPER YUROK RESERVATION COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on December 4, 2017 at the Weitchpec Tribal Office with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.2.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.2.9* and *4.2.10* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.2.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following non-geographic community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.2.9 UPPER YUROK RESERVATION: COMMUNITY-IDENTIFIED PROPOSED PROJECTS, NON-GEOGRAPHIC

○ Support efforts to work with PG&E on slash treatment under power lines.
○ All roads should be evaluated for understory clearing needs.
○ When clearing for wildfire hazard mitigation is done, burning or chipping the piles as soon as possible should be a priority so they do not become a hazard.
○ Write a comprehensive burn plan that will assist efforts to start burning traditional, cultural burn areas again to improve ecological resource production.

The local residents who attended the December 4, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.2.10 UPPER YUROK RESERVATION: COMMUNITY-IDENTIFIED PRIORITY PROJECTS

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Shaded fuel break/water supply: Head Start School	Defensible Space	ORL452
Fuel break: Hwy 96 to Weitchpec Elementary School	Roadside Clearance	ORL064
Fuel break: Upper Prairie Lake Rd.	Landscape	ORL065
Understory burning: bear grass resource production/fire protection	Roadside Clearance	ORL446
Understory burning and fuel break	Roadside Clearance	ORL447
Understory burning: HWY 169 to Klamath River	Landscape	ORL457
Defensible space around Jack Norton School (tall tree hazard)	Defensible Space	ORL461

4.2.9 UPPER YUROK RESERVATION ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. **This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County.** It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **D**etermine the community wildfire preparedness roles of, and potential for collaboration and/or coordination of activities among Yurok Tribal Departments involved in wildfire mitigation activities, the CFMC, the FSC developed by the Yurok Tribe through the local hazard mitigation planning process, the YTVFD and wildland fire department, the Yurok Tribal government, CAL FIRE, Six Rivers National Forest, and the Humboldt County Fire Safe Council. There may be opportunities for these groups and agencies to work together on mutually beneficial projects.
- **E**valuate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Yurok Hazard Mitigation Plan (CWPP)*, *The Heathy Country Plan*, as well as in this *Priority Action Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- **P**riority areas within this planning unit for fuels reduction and outreach are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness:
    - Landscape surrounding Head Start School (ORL452).
    - Landscape around Weitchpec
    - Landscape surrounding Weitchpec Tribal Center (ORL449).
    - Wo-tekw Village area.

School (ORL454).
- Jack Norton School (tall tree hazard) (ORL461).
- Subdivision on Tully Creek Road, west of Highway 169.
- New Village area, off of Highway 96.
- Notchko Flat Road RAWS.

- The high fire danger, a dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a general lack of wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Prioritize evacuation planning and education programs for residents located along roads where there is a high possibility of a wildfire blocking safe evacuation. Priority roads for outreach efforts include:
        - Roads and driveways off of Highway 169.
        - Weitchpec Road, between Highway 169 and Weitchpec School.
        - Upper Prairie Lake Road.
    - Work with Yurok Tribal departments (fire management, YOES, and law enforcement), County Office of Emergency Services (OES), and local fire service to engage community members in evacuation preparedness and the identification of local evacuation routes and sites.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites.
    - Due to the large number of residences located on long, dead end roads, work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
    - Identify and actively maintain large open areas where community members can seek refuge if evacuation routes are blocked, especially in areas with one-way-in, one-way-out roads. Areas of high priority in need of such preparation include:
        - Johnsons community along Highway 169.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote-hard to access residences. Priority roads to evaluate include:
    - Hazardous fuels reduction (as needed) along upper Cappell Road and Rube Road.
    - Brush thinning along Highway 96 near Bluff Creek Resort.
    - Hazardous fuels reduction and understory burning along Po'to'yo Road (Iron Gate Road), off Cappell Road.
    - A shaded fuelbreak along Alameda Road.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. Evaluate the following priority areas:
    - Collaborate to design strategic fuel breaks between Six Rivers National Forest lands and private/Tribal forestlands to protect timber, cultural, and natural resource assets from wildfires that start on public lands.

- Develop and implement forest health and landscape fuels management projects within this planning unit to increase wildfire resiliency and restore ecosystem function and cultural values.
- Upper Prairie Lake Road fuelbreak. (ORL065).
- Understory burning to support fire protection / bear grass production / fire protection along Bald Hills Road. (ORL446).
- Understory Burning along Po'to'yo Road (Iron Gate Rd). (ORL447).
- Reduce fine fuels and grass in Old Village Area.
- Conduct understory burning between Highway 169 and the Klamath River.
- Upper Cappell fuelbreak (Cappell and Rube Roads).
- McCaulley Land prescribed burn; ongoing project.
- Fuelbreak between Highway 96 and the Weitchpec School.

- Continue to host the biannual CFMC TREX conducted on the Yurok Reservation on both private and Tribal lands.
- Continue efforts to build up a volunteer-base, secure equipment, and improve communications for the YTVFD.
- Work with the Yurok Tribal departments (Planning and OES), County OES, and County Planning and Building to ensure all residences have an assigned address—information that is vital to emergency response personnel.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*. In addition, the Yurok Tribe Hazard Mitigation Plan and embedded CWPP provide detailed recommendations similar to the general guidance listed on the following pages. To guide local action, review those plans first.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.

- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- Provide residents with information about and assistance with reducing structural ignitability and maintaining adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response. See details in *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Create community chipping programs to support defensible space maintenance and vegetation management in priority areas. See details in *Priority Action Recommendations* above.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether hot-spots for Sudden Oak Death infected trees exist. Conduct fuels reduction projects in those areas as necessary to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners such as Green Diamond Resource Company to create strategic fuelbreaks on their land to buffer residences from wildfires that originate from the wildlands and to protect timber resources and ecological values from fires that start in adjacent developed areas.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- Inform residents about the importance of keeping local gates open or accessible during Red Flag conditions. Community members and timber companies should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment. Priority water needs to evaluate include:
    - Head Start School fire protection water supply.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.

- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

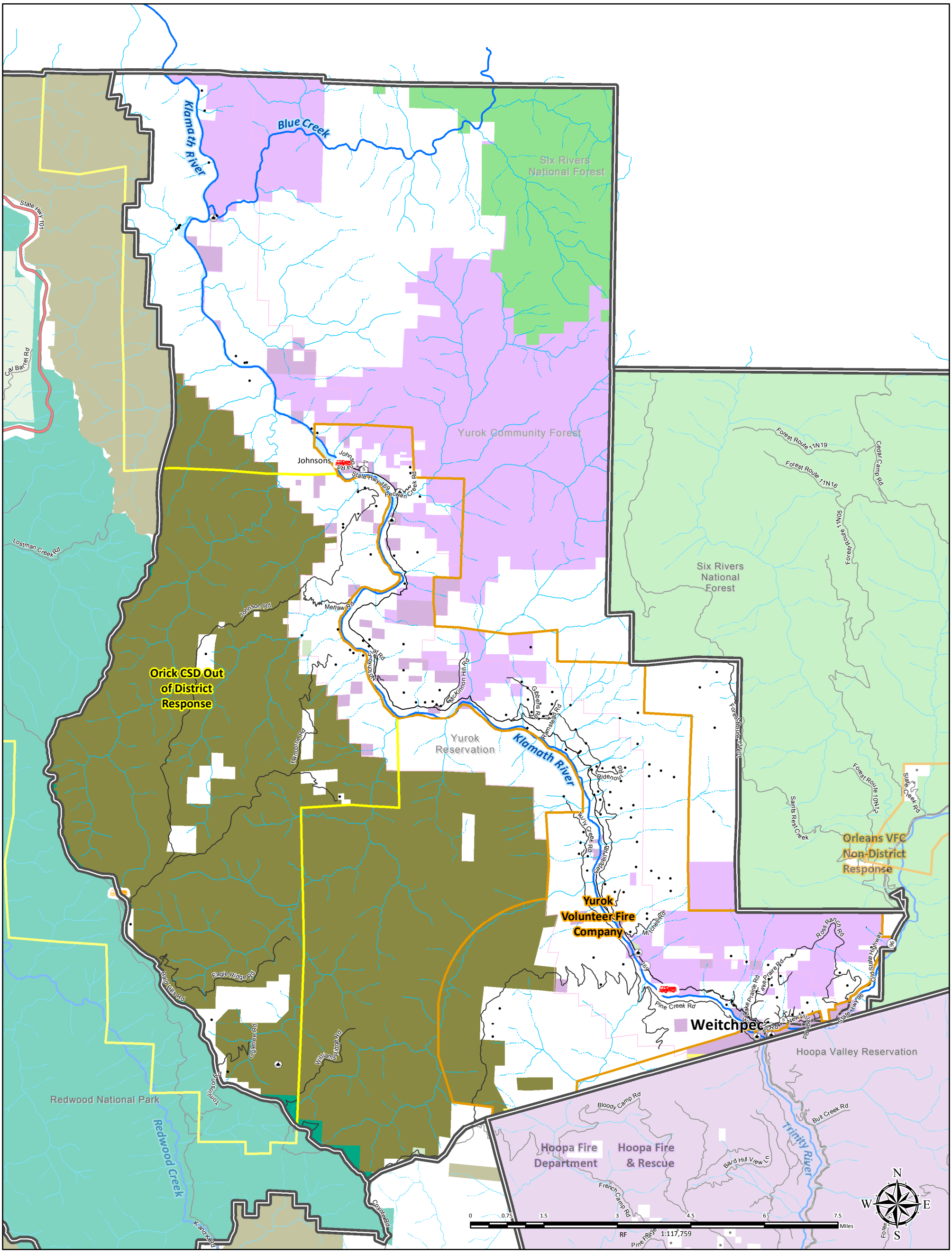
- Explore ways to reintroduce fire to broader landscapes and especially medicinal and material gathering places.
- Support and promote cultural burning education and training.
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for the Yurok Tribe, the Tribe's Forest Management Program, the CFMC, CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[25]
- Share information about educational events that provide information about prescribed fire and cultural burning.
- Help federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.
- Facilitate collaboration with neighboring tribes and organizations involved in organizing TREX and other prescribed fire activities; identify opportunities to share resources and knowledge.

Integrated Planning

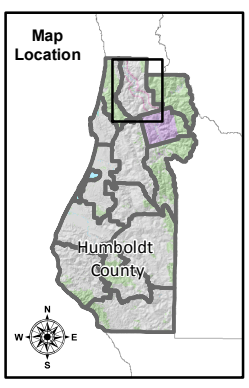
- Identify and map priority medicinal and material gathering places.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland. This will include active implementation and maintenance of a Firewise® action plan and organizing an annual Firewise® Day.
- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

[25] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.2.1 UPPER YUROK RESERVATION PLANNING UNIT



Map Location



PLANNING UNIT MAP

- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

***Improved Parcels**
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

*Note: Improved parcel data may not be as accurate for Tribal-owned areas.

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

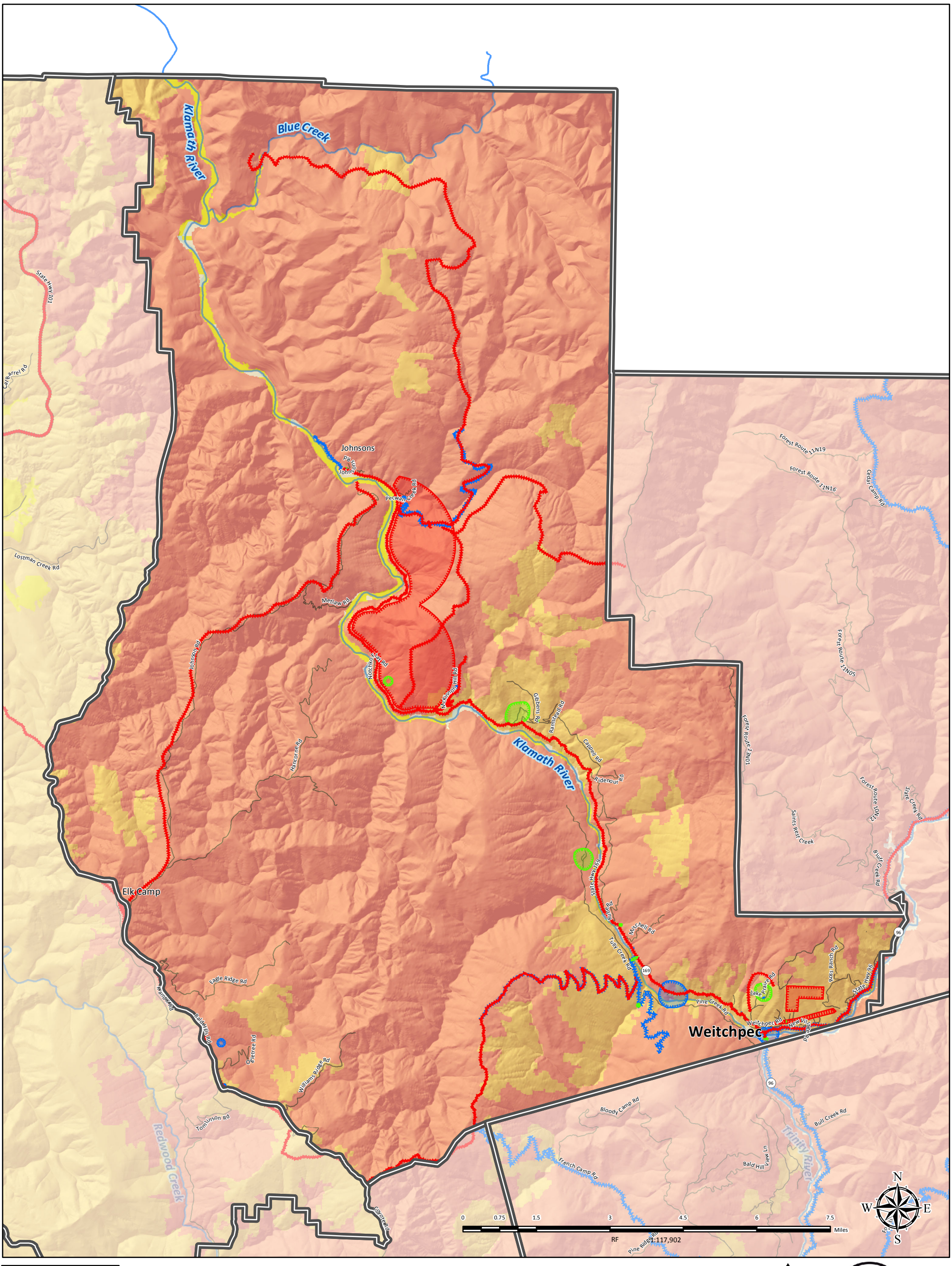
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

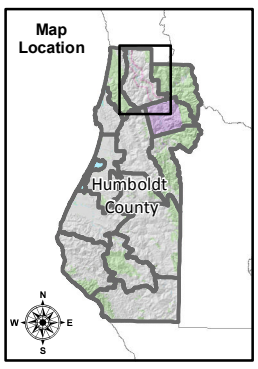
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.2.2 UPPER YUROK RESERVATION PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

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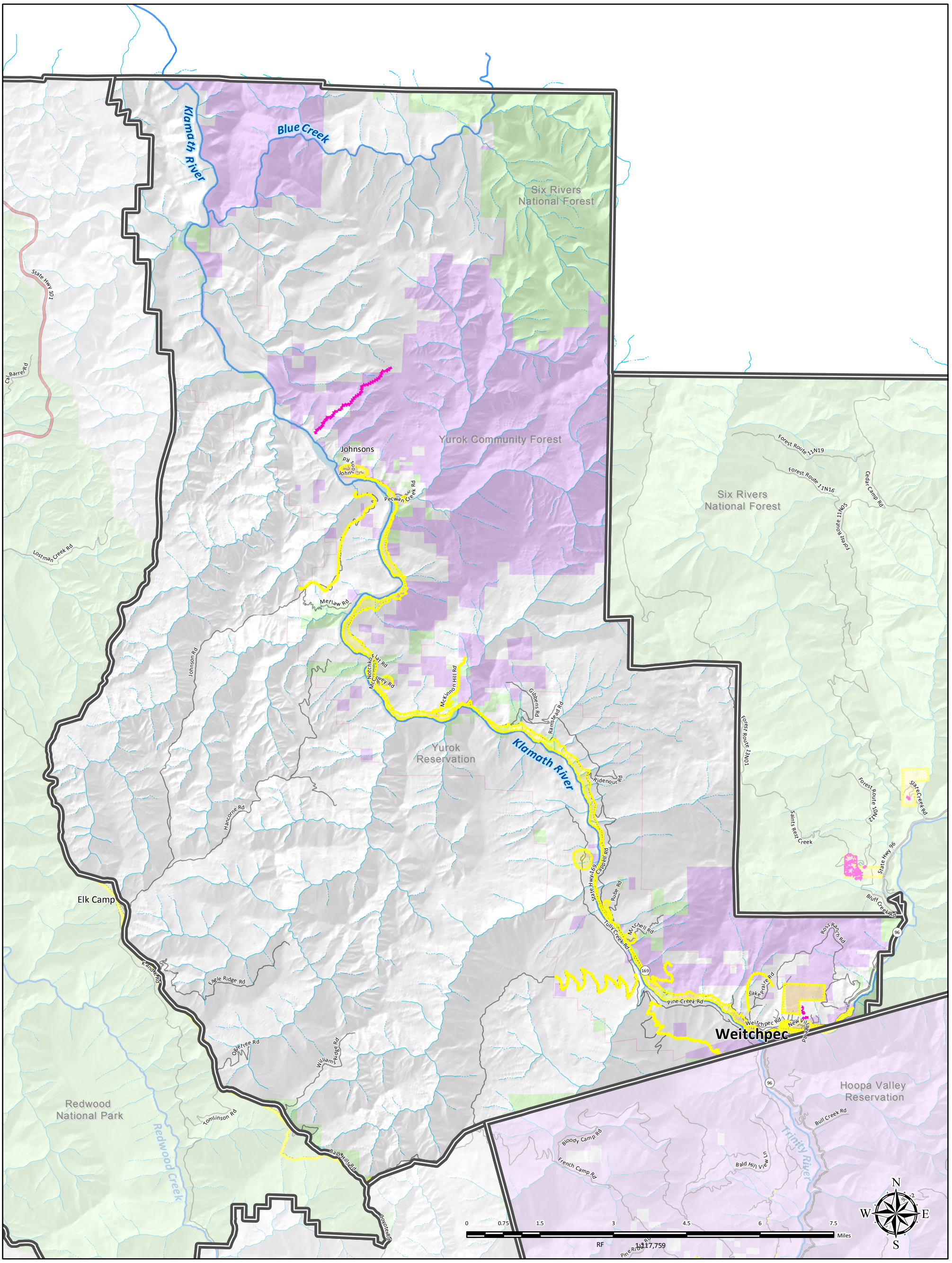
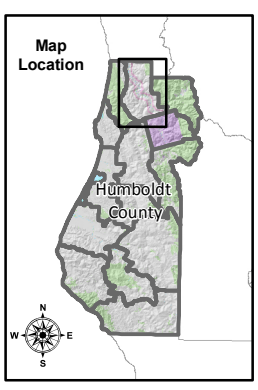
MAP 4.2.3 UPPER YUROK RESERVATION PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, November 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MID KLAMATH PLANNING UNIT ACTION PLAN



The Klamath River. Photo: Mid Klamath Watershed Council (MKWC).

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Helpful Links

KARUK TRIBE OFFICICAL WEBSITE:	*http://www.karuk.us*
MID KLAMATH WATERSHED COUNCIL:	*http://www.mkwc.org*
ORLEANS VOLUNTEER FIRE DEPARTMENT:	*https://www.orleansvfd.org*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.3 MID KLAMATH PLANNING UNIT ACTION PLAN

4.3.1 MID KLAMATH PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.3.1, ***Mid Klamath Planning Unit.***

FIGURE 4.3.1 HWY 96 NEIGHBORHOODS	
Bluff Creek	Pearch Creek
Camp Creek/Lower Camp Creek	Red Cap/Upper Red Cap
Cedar Camp	Slate Creek
Donahue Flat	Ten Eyck
Lammon	Bark Shanty
Lower Ishi Pishi	Upper Ishi Pishi
Owl Mine Road	

Wildland-urban interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

The Mid Klamath Planning Unit encompasses 135,466 acres situated in the northeast corner of Humboldt County. Highway 96 is the main transportation route through the Planning Unit and cuts diagonally across the area following along the Klamath River—the second largest river system in California. The Unit encompasses a portion of the Lower Klamath sub-basin and its tributary watersheds, which include Red Cap, Bluff, Camp, Hopkins, Slate, Pearch, and Aikens Creeks. Public lands, managed by the Six Rivers National Forest, make up the majority of this unit's landmass. Nearly all of the land within the planning unit falls within the Karuk Ancestral Territory as defined by the Karuk Tribe, which extends as far north as the Oregon border, following the Klamath River.

The town of Orleans comprises the community population center of this planning unit. Orleans is included on the federal communities at risk list for damage from wildfire.[1] Nearby Somes Bar, in Siskiyou County, is also a designated community at risk and is included in many of the plans and activities mentioned in this plan. Several other small neighborhood groupings border the Highway 96 corridor with a few outlying in-holdings scattered throughout the surrounding National Forest. Not all residents in these communities have access to electricity or telephone service. The 2010 Census reported 605 people in Orleans, with approximately 39% having Native American heritage, mainly of the Karuk Tribe.[2]

Parcels in this planning unit range in size from less than one acre to more than 1,200 acres, with average parcel size between five and ten acres. The general building type is wooden houses built before *wildland urban interface* (WUI) building standards[3] were in place. Recent development in the area has been primarily by the Karuk Tribal Housing Authority on Tribal lands in the Orleans Valley.

The boundaries of this planning unit are based on the Humboldt County portion of the Orleans/Somes Bar Fire Safe Council's planning area, which also includes portions of Siskiyou County. While the scope of this planning unit action plan includes Humboldt County only, the Orleans/Somes Bar Community Wildfire Protection Plan includes details about Siskiyou County as well and should be used in conjunction with this plan.

[1] CAL FIRE. (2001). Communities at Risk List. Retrieved from http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk

[2] Firewise Communities/USA® Recognition Program. (2011). Orleans Community Assessment. Retrieved from https://humboldtgov.org/735/Orleans

[3] California Building Standards Commission. 2016 California Building Code of Regulations Title 24, Part 2, Volume 1, Chapter 7a: Materials and Construction Methods for Exterior Wildfire Exposure. Retrieved from https://codes.iccsafe.org/content/chapter/1774

4.3.2 MID KLAMATH ASSETS AND VALUES AT RISK

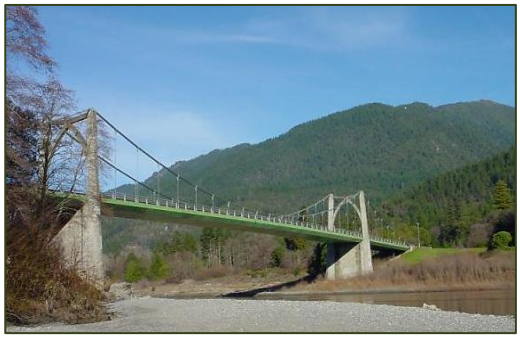
Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The majority of community assets at risk in this planning unit are residential homes, as well as community, Tribal, and United States Forest Service (USFS) lands and facilities, farmlands, and the Klamath River. Traditional subsistence resources and the hunting, fishing, and gathering areas of the Karuk People are also assets at risk. Other assets in this unit include communications and utility infrastructure.

Map 4.3.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[5] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.3.2 MID KLAMATH: COMMUNITY-IDENTIFIED ASSETS AT RISK	
Central Orleans	Panamnik Building (houses the post office and Mid Klamath Watershed Council Offices)
Crawford Creek watershed (Municipal water source)	Perch Creek area (water source)
Crawford Hill subdivision/Camp Creek	Recreational river access points
Ferris Ranch and south half of Orleans	Red Cap homes and water
Karuk Community Center	Sandy Bar Ranch and other campgrounds/cabins
Orleans Community water tank	Thunder Mountain and Madrone Neighborhoods and Thunder Mountain water supply
Note: The Orleans/Somes Bar Community Wildfire Protection Plan contains a detailed list of community assets and their relative risk ranking as identified by community and Tribal representatives and local fire professionals (see Part 4. Develop a Community Risk Assessment, starting on page 26 of the Orleans/Somes Bar Community Wildfire Protection Plan).[4]	



Orleans Bridge. Photo: USFS.



Orleans Fire Engine Bay. Photo: OVFD.

[4] Orleans/Somes Bar Fire Safe Council. (2012). Orleans/Somes Bar Community Wildfire Protection Plan. Retrieved from *http://www.mkwc.org/programs/fire-fuels/publications*

[5] Geographic Information Systems (GIS).

4.3.3 MID KLAMATH WILDFIRE ENVIRONMENT

There are several existing plans and resources where the wildfire environment of this area is described in much more detail.

Readers interested in learning more on this topic are encouraged to begin by reviewing the following:

- Orleans/Somes Bar Community Wildfire Protection Plan: *http://mkwc.org/files/5113/7573/7763/OSB_CWPP_FINAL_withSignatures.pdf*
- Karuk Tribe Department of Natural Resources, 2010 draft of the Eco-Cultural Resources Management Plan: *http://www.karuk.us/images/docs/dnr/ECRMP_6-15-10_doc.pdf*
- Karuk Climate Change Projects: *https://karuktribeclimatechangeprojects.wordpress.com*
- Western Klamath Restoration Partnership: *https://www.wkrp.network*
- Orleans Firewise Community Assessment: *https://humboldtgov.org/735/Orleans*

Nearly the entire Mid Klamath Planning Unit (99%) is zoned "Very High *Fire Hazard Severity*," as determined by CAL FIRE.[6] The unit is composed of rugged, mountainous terrain with elevations ranging from around 400 feet along the Klamath River corridor to over 6,000 feet at the top of Orleans Mountain. With much of the area in the 60% or greater slope class, steep slopes dominate the forestlands, which can increase the rate at which a fire spreads.

For a closer look at fire hazard severity, see Map 4.3.2, ***Mid Klamath Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Humans and lightning strikes are the main wildfire ignition sources here. While lightning-caused ignitions are fewer and scattered sporadically throughout the unit, human-caused ignitions are more densely centralized near Orleans and along creeks, rivers, and roads.[7] Vehicles can also be ignition sources where accumulated fuel loads exist on the side of the road. PG&E power lines can also be an ignition

[6] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

[7] Orleans/Somes Bar Fire Safe Council. (2012). Figure 3.2 and 3.3: Fire starts by cause and ignition density. Orleans/Somes Bar Community Wildfire Protection Plan.

source. There is significant concern within this planning unit about the quality of PG&E's vegetation management program under power lines. Multiple landowners within the Unit have raised concerns about wildfire hazards created when brush is cleared from under power lines and not safely discarded.

Fire History

"The exceptional biological diversity of the mid-Klamath River region of northern California has emerged in conjunction with sophisticated Karuk land management practices, including the regulation of the forest and fisheries through ceremony and the use of fire. Over three quarters of Karuk traditional food and cultural use species are enhanced by fire. Fire is also central to cultural and spiritual practices."[8] However, a history of *fire suppression* since the early 1900's has dramatically altered the landscape and fostered the accumulation of dense, flammable vegetation in the forest understory, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to frequent fires that would burn off brush and newer starts in the understory, are now threatened by overcrowded forests and accumulated fuel. Whereas most of the this planning unit would have seen on average 10-20 fire overlaps in any given area over the past century, they now average 0-1 fire overlap. This is a critical metric to gauge the resiliency of these fire-dependent systems. This ecosystem dynamic is creating risk for wildfires of greater intensities and on a larger scale than the local vegetation is adapted to withstand. The introduction of invasive and exotic species, which can alter the structure of native plant communities, may exacerbate this fuel problem.[9] The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.



Somes Fire (2006) on the Orleans Ranger District. Photo: USFS.

Approximately 48% of the Mid Klamath Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 41% of the area is condition class 2, or moderately altered from the historical range.

[8] Karuk Tribe. (2016). Karuk Climate Change Projects. Historic Fire Regimes. Used with permissions and retrieved from https://karuktribeclimatechangeprojects.wordpress.com

[9] Orleans/Somes Bar Fire Safe Council. (2012). Orleans/Somes Bar Community Wildfire Protection Plan. (p. 12).

In the past decade there has been frequent wildfire activity within and adjacent to the Unit. The names, year, and acreage covered by the most recent major fire events within this unit are summarized in the table below. [10] However, it is important to note that this planning unit has been frequently threatened by wildfires ignited outside of the planning unit boundaries as well, primarily from within the adjacent National Forests and in neighboring Siskiyou County. Nearby wildfires have, in the past, severely impacted the air quality within this unit.

FIGURE 4.3.3 MID KLAMATH: FIRES OVER 10 ACRES 1998-2017[11]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Megram	Lightning	1999	7,664	125,073
Somes	Lightning	2006	6,494	15,506
**No Name*	Unknown/ Unidentified	1998	2,752	21,382
Mill Creek 4	Miscellaneous	2009	1,533	2,831
Dance	Arson	2013	577	577
Camp 2	Arson	2003	85	85
Dance	Campfire	2001	62	62
Lt-17 (Backbone)	Lightning	2009	49	5,194
Wilder	Miscellaneous	2004	47	47
Crawford	Lightning	2006	34	34
Windy	Miscellaneous	2000	25	70
Butler	Arson	2013	19	22,445
Go	Miscellaneous	2002	17	17
Packsaddle	Lightning	2008	11	35
Redspot	Lightning	2009	0.22	1,130

*This table entry represents a conglomeration of fires ranging from hundreds to thousands of acres that burned all across the Yurok and mid-Klamath region in October 1998.

Note: An interactive map of fire history through 1908 is available through the County Web GIS.

Structural Ignitability

Homes in this planning unit exist within the WUI, which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire

[10] For a more detailed list, including fire severity, please refer to page 11 of the 2012 Orleans/Somes Bar Community Wildfire Protection Plan or the County Web GIS layer.

[11] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.

preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[12], published by the University of California Agriculture and Natural Resources.

> ***Home Ignition Zone:*** The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.
>
> ***Structural ignitability:*** The ease with which a home or other structure ignites.

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated, or other flammable materials stored beneath them.

Although an impressive amount of wildfire preparedness work has been completed within this unit, there are still many homes where steps need to be taken to ensure structure survival when wildfire is nearby. Within this planning unit, vegetation types around structures vary; some residences on high river bars support farms and gardens, while other parcels are largely forested or contain pastures in small-to-medium openings in the forest.[13] Although private properties tend to be located on more gentle terrain, some homes are surrounded by steep slopes that can limit their defensible areas and put structures in the line of up-hill spreading wildfires. According to the Orleans/Somes Bar CWPP, the risk of fuel hazard and wildland fire occurrence is "low" around many of the important community structures, such as the Karuk Medical Clinic and Department of Natural Resources, the Orleans Elementary School, and the Panamnik Building. **However, the vast majority of neighborhoods and residences within the Unit are designated "medium" and "high" risk for fuel hazard and wildland fire occurrence.[14]**

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[15]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Some community members have expressed concern over the fire risk posed by *Sudden Oak Death*, which can greatly increase fuel loads as trees and tree limbs die off. While the disease is not yet widespread within the Unit, landowners should be aware of the risks and vigilant about removing afflicted trees on their property in order to prevent spread.

> ***Sudden Oak Death (SOD):*** A disease in oak trees that is a caused by *Phytophthora ramorum*, an invasive forest pathogen introduced to California in the Mid 1990s through the horticultural plant trade. Affected areas can have a significantly higher fire hazard due to higher proportions of dead fuels of all sizes and prevalence of snags.

Map 4.3.2, found at the end of this Unit Action Plan illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

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[12] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from *https://anrcatalog.ucanr.edu/pdf/8393.pdf*

[13] Firewise Communities/USA® Recognition Program. (2011). Orleans Community Assessment. (p.5).

[14] Orleans/Somes Bar Fire Safe Council. (2012). Table 4.1: Risk Assessment for Structures at Risk. Orleans/Somes Bar Community Wildfire Protection Plan.

[15] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

Water Sources

The Orleans Community Service District provides potable water to a population of approximately 300 and services 1.59 square miles. Their critical infrastructure and equipment includes approximately 100 miles of water mains, a water treatment facility, and three filters; one 100,000 gallon redwood tank, two 10,000 gallon back-up tanks, and one pump station with one 5-hp pump; and two computerized pumps, two back-up generators, as well as 33 fire hydrants. Residents outside the Service District obtain water through other means, such as drawing from nearby creeks and holding tanks.

Many communities/neighborhoods in this unit have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially over-taxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters, and for community members to ensure that their water sources are properly outfitted.

Community-identified locations from which fire protection water could be drawn are listed below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.3.4 MID KLAMATH: FIRE PROTECTION WATER DRAFT SITES	
Big Bar	Red Cap Bar
Orleans Bar	Ullathorne
Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.	

Map 4.3.2, found at the end of this Planning Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.3.4 MID KLAMATH FIRE PROTECTION CAPABILITIES

Community fire protection within the Unit is provided by the Orleans Volunteer Fire Department (OVFD), which serves 30 square miles, and provides mutual aid to USFS on another 30 square miles. The OVFD is a non-district fire company, incorporated in 1968. In addition to providing fire and rescue services, members of the OVFD are involved with sustaining Orleans Firewise® activities to help community members prepare their homesteads for wildfire.

FIGURE 4.3.5 MID KLAMATH: FIRE PROTECTION RESOURCES[16]				
PERSONNEL	SERVES		FIRE APPARATUS	RESPONSE
	RESIDENTS	AREA		
ORLEANS VOLUNTEER FIRE DEPARTMENT (NON-DISTRICT, NON-TAX BASED) – PHONE: (530) 627-3344				
13 Volunteers 7 Supporters	400	60 sq. mi.	○ 2007 Ferrara International Pumper Engine ○ 1985 Ford F800 Type 4 Wildland Engine ○ 1973 Kenworth 3,500-gallon water tender ○ 2018 Ford F550 mini-pumper	○ Structural fires ○ Wildland fire support ○ Medical and rescue services (basic life support or BLS)

[16] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 44). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

Priorities for the fire department include repair of a defective repeater—a piece of equipment essential to radio communications—and replacement of the department's deteriorating fire hall. OVFD has successfully acquired land and completed design on the fire hall and is now turning their attention to fundraising for construction. Recruitment and retention of volunteer firefighters remains a challenge for the department as does maintaining adequate funding to keep up with maintenance and training requirements. OVFD recently celebrated the acquisition of a new fire engine, made possible through the Public Safety and Essential Services half-cent sales tax (Measure Z, renewed by Measure O), as well as a new rescue mini-pumper made possible through a FEMA grant.

The USFS is responsible for wildland fire protection, primarily on federal lands. However, a cooperative agreement enables the USFS to respond to fires on private properties with consent from landowners, Tribal representatives, and the OVFD. Additionally, the USFS – Orleans Ranger District may provide firefighting resources if the OVFD is in need of aid; reciprocally, the OVFD may respond to requests for additional support from the USFS. These two agencies also share the responsibility of responding to threats of fire spreading as a result of vehicular accidents.

The Six Rivers National Forest Orleans Ranger District can be reached by calling **(530) 627- 3291** or by visiting the Forest website at: *https://www.fs.usda.gov/main/srnf*.

The Karuk Tribe supports a fire and fuels program through the Karuk Department of Natural Resources with offices in both Humboldt (Orleans) and Siskiyou (Happy Camp and Yreka) counties[17]. They manage forty to fifty National Wildfire Coordinating Group (NWCG) qualified personnel, including their partners such as the Mid Klamath Watershed Council, Salmon River Restoration Council, and the Cultural Fire Management Council. The Tribe has sponsored one twenty-person NWCG-qualified Type-2 Initial Attack Wildland Fire Crew for over twenty years. This crew is operated under the Bureau of Indian affairs (BIA) for reimbursement purposes for federal wildland fire and emergency dispatches, and follows all federal guidelines. The Klamath National Forest dispatches the crew for federal emergencies.

The Karuk fire and fuels program recently added a ten-person fuels crew, which is working towards becoming qualified as a Wildland Fire Use Module[18]. Most fire and fuels projects are grant funded, involving hazardous fuel reduction by hand treatment or prescribed fire, to reduce the risk of catastrophic wildfire and increase cultural and natural resource resilience while emphasizing Eco-Cultural Revitalization.

Find out more about the Karuk fire and fuels program by calling the Karuk Department of Natural Resources at **(530) 627-3446** or by visiting their website: *http://www.karuk.us/index.php/departments/natural-resources*.

4.3.5 MID KLAMATH EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

[17] The aboriginal territory of the Karuk people spans both Humboldt and Siskiyou counties.

[18] Fire use module. (n.d.). In *Wikipedia*. Retrieved from *https://en.wikipedia.org/wiki/Fire_use_module*

Evacuation routes in the Mid Klamath Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Highway 96 will, in most cases, serve as the primary evacuation route. There are numerous smaller roads connecting residences and neighborhoods to Highway 96. The narrowness of smaller roads leading to these remote residences could create serious complications for emergency vehicle responses trying to gain access during simultaneous home evacuations. Routes may also be overgrown with vegetation, and many properties have inadequate vehicle turn-around spaces.[19] The potential for landslides in the area could also inhibit access. Other evacuation impediments may include fallen trees or power lines, poorly marked streets and intersections, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles, or leave residents stranded should the roads become blocked. Adequate ingress and egress along these roads is vital to a large portion of the community that may need access to the main highway evacuation route and for firefighters who will be using the roads to access wildfires burning in up-slope areas.

FIGURE 4.3.6 "HIGH PRIORITY" EMERGENCY ACCESS ROUTES IN THE ORLEANS/SOMES BAR CWPP

Bark Shanty Road	Ishi Pishi Road
Big Rock Road	Lower and Upper Nantucket Roads
Camp Creek Road	Lower Camp Creek Road
East and West Pearch Creek Roads	Madrone Lane Thunder Mountain Road
Eyeese Road	Orleans School Road
Ferris Ranch Road	Red Cap Road
Gold Dredge Road	Ten Eyck Mine Road

Because of their importance, some roads have been given an overall community priority rating as emergency access routes in the Orleans/Somes Bar CWPP. Overall priority for emergency access routes was identified by using a simple point scale corresponding to overall risk and community value rankings. Community value was determined by the number of people served by the route and the route's strategic placement for fire protection for the entire community.[20] The majority of the emergency access routes were assessed as having "high" or "medium" overall risk based on fuel hazard, risk of wildland fire occurrence, and level of firefighting capability. The roads listed in *Figure 4.3.6* were rated "high" in overall priority as emergency access routes in the Orleans/Somes Bar CWPP and should be the first to receive wildfire hazard mitigation treatments.[21]

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[22] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

[19] Firewise Communities/USA® Recognition Program. (2011). Orleans Community Assessment. (p. 8).

[20] Orleans/Somes Bar Fire Safe Council. (2012). Orleans/Somes Bar Community Wildfire Protection Plan. (p. 30).

[21] Orleans/Somes Bar Fire Safe Council. (2012). Table 5.4: Priority for Other Areas of Community Importance. Orleans/Somes Bar Community Wildfire Protection Plan.

[22] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: http://www.readyforwildfire.org/What-To-Do-If-Trapped and http://idahofirewise.org/evacuation/if-you-get-trapped.

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.3.6 MID KLAMATH COMMUNITY PREPAREDNESS

There is a rich history of community wildfire preparedness and resilience within this planning unit. Because of the severe level of wildfire risk and past experiences with wildfire, many residents in this planning unit have an acute understanding of the need to take fire hazard mitigation action. This high level of awareness has led to many activities intended to reduce vulnerability to damage from wildfire while keeping the beneficial uses of fire in mind with a focus on wildfire adaptation and resiliency. Wildfire adaptation steps have included managing flammable vegetation around homes and neighborhoods through *manual* and *mechanical fuel reduction* and *prescribed burning*; improving road and home address signage; development of water sources to increase firefighting capacity; fuels treatment along critical access routes; and extensive pre-fire planning efforts in conjunction with the Six Rivers National Forest – Orleans Ranger District. Uniquely situated at the border of two counties (Humboldt and Siskiyou) and two National Forests (Six Rivers and Klamath), the communities within this planning unit not only face a significant risk of wildfire but also face the challenge of collaborating toward the same goal with multiple entities with various strategies and perspectives.

Manual fuel reduction: Methods of modifying wildfire fuel complexes without the use of machinery; such treatments may include fire use applications, chemical treatments and livestock grazing

Mechanical fuel reduction: Methods of modifying fuel complexes with machinery; these treatments include: biomass removal, biomass thinning, rearrangement, chipping, piling, felling and piling, crushing, and mastication.

Prescribed burning (Controlled burning): a fire that burns within a range of predetermined conditions (such as fuel moisture content, weather conditions, etc.) that will keep it controllable, at low intensity, and able to achieve its stated objectives. A written, approved prescribed fire plan must exist, and environmental requirements (where applicable) must be met, prior to ignition.

The progress made so far goes to show how those involved are not easily deterred. However, there is still a large amount of work to be done. This Plan encourages continued collaboration and community outreach and a systematic review, revision, and implementation of all relevant planning documents. **The capacity to plan and implement action within this planning unit is high.** At varying levels, work is being guided by the efforts of and collaboration between the Karuk Tribe, the Mid Klamath Watershed Council (MKWC) and Orleans/Somes Bar Fire Safe Council (OSB FSC), the OVFD, Orleans Firewise®, and Six Rivers National Forest. There are also agencies and organizations outside of this planning unit from Siskiyou County and beyond working with those mentioned above to bring wildfire resiliency back to the Klamath Mountains and communities. The following pages provide a review of the active organizations and collaboratives followed by summaries of the planning documents that can be used to inspire and guide action.

Karuk Tribe

For the Karuk Tribe, fire has long been used to promote forest health. Decades of fire suppression precluded the use of fire as a land management tool and prevented the Tribe from utilizing this cultural practice. But attitudes—and policies—are changing, and as a result the Tribe has been able to increase their use of fire in an effort to restore the natural fire regime and revitalize their cultural management practices. The Karuk Department of Natural Resources (Karuk DNR) is leading these efforts, guided by their mission to:

> "…protect, enhance and restore the cultural/natural resources and ecological processes upon which Karuk people depend. Natural Resources staff ensure that the integrity of natural ecosystem processes and traditional values are incorporated into resource management strategies."[23]

Karuk DNR works towards the fulfilment of their mission in collaboration with local, regional, and national partners. To that end, the 2010 draft Eco-Cultural Resources Management Plan was developed as an implementation strategy and overarching document used to establish "a unified approach to managing the human, cultural/natural resources and interests of the Karuk Tribe".[24] Active participation has been sustained by Karuk DNR staff in the development and maintenance of the Orleans/Somes Bar CWPP and the addition of supplemental addendums; coordination of the Karuk fire and fuels program; development and support of prescribed fire and cultural fire planning efforts and programs; and multiple multi-agency and grassroots collaboratives.

Karuk DNR can be reached by calling **(530) 627-3448.** Find more details at:
http://www.karuk.us/index.php/departments/natural-resources

Mid Klamath Watershed Council and the Orleans/Somes Bar Fire Safe Council

Since 2001, community wildfire preparedness within this unit has been guided by the Mid Klamath Watershed Council's Fire and Fuels program administered by the Orleans/Somes Bar Fire Safe Council (OSB FSC).

> "The mission of the OSB FSC is to help plan, implement, and monitor the reinstatement of historic fire regimes primarily through strategic fuel reduction in a manner that protects life, property, improves forest health, and enhances the resources valued by its stakeholders."[25]

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

[23] Karuk Tribe. (n.d.) Department of Natural Resources Homepage. Retrieved from *http://www.karuk.us/index.php/departments/natural-resources*

[24] Karuk Tribe, Department of Natural Resources. (2010). Eco-Cultural Resources Management Plan [DRAFT]. Retrieved from *http://www.karuk.us/index.php/departments/natural-resources*

[25] Orleans/Somes Bar Fire Safe Council. (2012). Orleans/Somes Bar Community Wildfire Protection Plan. (p.3).

The OSB FSC has been awarded nearly $1 million in grant funding to support projects such as coordinating the creation and maintenance of a local CWPP; participating in multiple collaborative efforts; developing outreach materials; constructing shaded fuelbreaks; developing prescribed burning programs; coordinating community volunteer brushing and burning workdays and the Firewise® program; and running a community mow and chip program. For example, the OSB FSC, along with the Klamath Salmon Media Collaborative have produced three videos: "Sparking a Change: Burning for a Fire-Safe Community and Forest," which documents their early prescribed burning program, and "Lifestyles of the Rural and Fire Safe," which highlights local residents who utilize diverse methods to protect their homes from wildfires.[26] "Catching Fire" is a longer documentary which details the movement to bring back prescribed fire as a tool to protect communities and ecosystems across Northern California.[27]

Every three years since 2008, the OSB FSC has hosted the Klamath Fire Ecology Symposium, which attracts fire scientists, managers, students, agencies, and practitioners from across the country to create a shared vision for managing fire in the Klamath Mountains and beyond. This symposium has been instrumental in spurring the progress made within this planning unit, as well as highlighting fire management strategies that are being emulated at the state and national levels.

Additionally, the OSB FSC has collaborated with the County of Humboldt to implement the Fire-adapted Landscapes and Safe Homes (FLASH) program. FLASH is a rebate program that reimburses property owners for hazardous vegetation management completed around their homes, along access routes, and in particularly hazardous areas. Through three iterations of FLASH, between 2010 and 2018, over 100 acres were treated on at least 60 different private parcels.

Community workshops, hosted by the OSB FSC and OVFD every few years since 2012 have been held in order to update local information and gather new input regarding wildfire risks and community preparedness. Group mapping exercises during these workshops have been effective in identifying and pinpointing where particular fire hazards exist, the location of protection resources, such as fire water drafting sites, as well as values and assets at risk within the community that could be threatened by wildfire. These workshop processes provided an opportunity for participating community members to ask questions and provide information based on their local knowledge. The workshops also facilitated discussion among community members about potential actions that could reduce fire risks in their community. Through discussion and collaborative processes, participants have identified major hazard areas and compiled lists of project proposals for enhancing their community's fire preparedness.

The OSB FSC can be reached by calling Will Harling or Nancy Bailey at the Mid Klamath Watershed Council at **(530) 627-3202** or find out more about them at: *http://www.mkwc.org/programs/fire-fuels/about-us*.

Orleans Firewise®

Orleans became a nationally recognized Firewise® community in 2011 and has maintained its Firewise® status since then. OVFD, OSB FSC, and the USFS collaborate to host innovative and interactive Firewise® events in the schools every year, and also complete at least one large community volunteer workday in prioritized areas with other partners. Firewise® days are also often incorporated into other community events, such as The Old Timers Day Parade and Picnic, where OVFD fire trucks are on parade and fire-safe educational materials are distributed to landowners. This group maintains a Firewise® community wildfire assessment and action plan. These documents are excellent tools for communities to learn about wildfire hazards in their area and collaboratively identify actions to reduce those hazards. In

[26] These two videos are available on the OSB FSC Youtube channel: *https://www.youtube.com/user/osbfiresafe*

[27] "Catching Fire" is available on the Klamath Salmon Media Collaborative Youtube channel: *https://www.youtube.com/channel/UCogIL7tRYooQEGp_CW_izvQ*

2014, the National Fire Protection Association (NFPA) awarded Orleans, along with four other communities in the country, a grand prize for the community's wildfire preparedness work.

For more information about Orleans Firewise® contact the OVFD at **(530) 627-3344** or the OSB FSC at **(530) 627-3202** or access Orleans Community Assessment and Orleans Firewise® Action Plan at: *https://humboldtgov.org/735/Orleans*.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Klamath Prescribed Fire Training Exchange

Since 2012**,** the Klamath Prescribed Fire Training Exchange (Klamath TREX) has been hosted within the planning unit and beyond into Siskiyou county. The Klamath TREX is organized and implemented through a partnership between MKWC, the Karuk Tribe, OVFD, the Nature Conservancy, and the Fire Learning Network. More recently, help has been provided by CAL FIRE and the USFS. TREX is an annual two-week training in the use of prescribed fire. Over 1,500 acres have been burned and over 600 individuals trained through this program. The benefits of TREX go far beyond numbers of acres burned and include the enhancement of cultural resources; the quality and scope of the training experience; the relationships established and nurtured; and the partnerships strengthened. TREX has also provided a unique opportunity for collaboration between local groups and federal agencies to work across property boundaries on large-scale fuel reduction projects, which is critical within this unit where many private properties abut federal land.

Western Klamath Restoration Partnership

Western Klamath Restoration Partnership (WKRP)[28] began in 2007 as a collaborative partnership between local, federal, state, and Tribal groups to facilitate restoration projects. The WKRP is a demonstration project of the National Cohesive Wildland Management Strategy (Cohesive Strategy)[29] providing an example of how to work collaboratively on fire management challenges at a larger scale and across all lands. The vision of the WKRP is to:

> Establish and maintain resilient ecosystems, communities, and economies guided by cultural and contemporary knowledge through a truly collaborative process that effectuates the revitalization of continual human relationships with our dynamic landscape.[30]

Importantly, the WKRP has demonstrated the benefits of collaboration among stakeholders with diverse perspectives when applied to the shared goal of land restoration.

[28] Western Klamath Restoration Partnership. (n.d.). Homepage. [Web]. Retrieved from *https://www.wkrp.network*

[29] Western Klamath Restoration Partnership. (n.d.). Cohesive Strategy. [Web]. Retrieved from *https://www.wkrp.network/cohesive-strategy*

[30] Harling W. and Tripp, B. (2014). Western Klamath Restoration Partnership: A Plan for Restoring Fire Adapted Landscapes. Retrieved from *http://www.mkwc.org/programs/fire-fuels/policy-and-management/western-klamath-restoration-partnership*

The Orleans fire in 2013, which burned right through the center of town, was a wakeup call for many. In the five years following that fire and the publication of the last County CWPP, this community has picked up speed and made incredible progress in preparing for wildfire. Below is a summary of those accomplishments.

FIGURE 4.3.7 MID KLAMATH: FIRE PREVENTION ACCOMPLISHMENTS[31]
Enhancing Fire Protection: Helping Firefighters Protect the Community
Ongoing: Mid-Klamath Watershed Council (MKWC) rents the firehall to the Orleans Volunteer Fire Department (OVFD) for $1/year and works closely with OVFD to implement the Firewise program and the Prescribed Fire Training Program (TREX).
2014: Through the Firewise program, school children painted town water hydrants. Eight road signs were installed around town. OVFD received Measure Z funding for eight sets of SCBA (Self Contained Breathing Apparatus).
2015: OVFD received Measure Z funding for ten sets of personal protective equipment and structural and wildland turnouts.
2016: OVFD received Measure Z funding for a new Type II Structure Engine and a local landowner donated one acre of land for a new fire station.
2017: OVFD received Measure Z funding for materials to build new fire station and acquired a brand new mini-pumper through a FEMA grant.
Encouraging and Implementing Defensible Space Throughout Humboldt County
Ongoing: Each year through the OSB FSC Mow and Chip Program (a fee for service program), FSC crew mows between 10 and 20 acres in and around town. Some years we are able to subsidize the costs through grant funding.
2013: Through funding from the USFWS, the brushing crew reduced fuels on seven properties, each of which included defensible space.
2014: Lower Camp Creek Demonstration Project. Over 20 community members participated in three day event. Catching Fire: Prescribed Burning in Northern CA [Video][32], produced by Klamath Salmon Media Collaborative, tells the story of the neighborhood that barely escaped the 2013 Orleans Fire.
2016: FLASH program enabled 16 local residents to complete defensible space and roadside projects on 25 acres. Firewise Demonstration Project on Ishi Pishi road, a roadside clearing involving neighbors, OSB FSC chipper and crew, and the Hoopa Tribal Civilian Community Corps.
2017: New round of the FLASH program obtained commitments from 8 local landowners to complete defensible space projects on a potential of 17 acres. Brushing crew and volunteers revisited the Lower Camp roadside and defensible space areas initially treated in 2014.
Creating Fire-Safe Communities: Empowering Residents to Take Responsibility
The ongoing (funded in 2014 and 2016) FLASH program represents a good example of residents taking responsibility. In each round of this program, we have exceeded our target number of acres.
Promoting Fire-Safe Education
2014: Firewise Day held in conjunction with the Old Timers Parade, which had a fire safety theme. OSB FSC "Defensible Space" float won first prize. MKWC hosted the fourth Klamath Fire Ecology Symposium (KFES). FLASH technicians accomplished Home Risk Assessments at ten of the participating properties.

[31] These accomplishments are organized under the 2013 CWPP action plan categories.

[32] Catching Fire: Prescribed Burning in Northern CA. Youtube, produced by Will Harling and Jenny Staats, narrated by Peter Coyote, music by Red Richardson. Klamath Salmon Media Collaborative. (2012). Retrieved from https://youtu.be/LWriDpfZnXQ

FIGURE 4.3.7 MID KLAMATH: FIRE PREVENTION ACCOMPLISHMENTS, CONTINUED
2015: Six separate school Firewise events were coordinated by the Firewise committee.
2016: Firewise events at Orleans and Junction elementary schools. FLASH technicians accomplished Home Risk Assessments at nine of the participating properties.
2017: Firewise events at Orleans and Junction elementary schools. Fifth KFES.
2018: Firewise events at Orleans and Junction elementary schools. Free Chipping day on Wildfire Community Preparedness Day in collaboration with the Karuk Tribe.
Reducing Hazardous Fuels Throughout Humboldt County
2013: FSC Brushing crew with support from the US Fish and Wildlife Service, thinned 64 acres on seven private properties, enhancing wildlife habitat, and accomplishing fire-safe fuels reduction at the same time. MKWC, in partnership with the Nature Conservancy's Fire Learning Network, hosted the second Klamath Prescribed Fire Training exchange (TREX) which burned 85 acres (55 acres in Humboldt County) on private land from Ti Bar to Orleans.
2014: Brushing crew implemented 59 acres of fuels reduction on eight private properties funded by the California Fire Safe Council and US Fish and Wildlife. TREX put prescribed fire on 240 acres on 17 properties protecting 150 homes, including 190 acres in Humboldt County.
2015: Brushing crew restored vegetation on 99 acres across nine private properties funded by the California Fire Safe Council, US Fish and Wildlife Partners Program and the US Forest Service. Through collaboration with at least 17 partner organizations, including local, tribal, state, and federal fire management entities, a highly successful TREX program implemented nearly 400 acres of prescribed fire in five local communities, including 285 acres in Humboldt County.
2016: Through FLASH, 16 local residents completed defensible space/fuels reduction projects on 25 acres. Brushing crew implemented thinning and brushing on 95 acres of private and Tribal property. TREX burned 405 acres on 27 properties, including 184 acres in Humboldt County. The Western Klamath Restoration Partnership (WKRP) made significant progress on planning the 6500 acre Somes Bar Integrated Fire Management Project (at the border of Humboldt County)
2017: OCSB FSC brushing crew reduced fuels on public (Orleans Community Fuels Reduction units) and private land amounting to 130 acres. TREX program burned 310 acres, including 143 acres in Humboldt County.
2018: OSB FSC brushing crew reduced fuels on 95 acres of public land (through a contract with the Karuk Tribe) and 10 acres of private land in Humboldt County. Klamath River TREX program burned 270 acres, 186 of which were in Humboldt County. For the first time, TREX organizers received no complaints of smoke were received.[33]



Controlled burn, TREX program. Photo: MKWC.



Orleans Fire Crew reviewing the day's assignment. Photo: MKWC.

[33] For an informative summary of the 2018 TREX program, see the North Coast Journal article *Changing the Landscape* by Malcolm Terence, available at: https://www.northcoastjournal.com/humboldt/changing-the-landscape/Content?oid=12063326

4.3.7 MID KLAMATH LOCAL WILDFIRE PREVENTION PLANS

A tremendous amount of work related to fire-planning has been completed in this planning unit including the publication of the 2012 Orleans/Somes Bar CWPP, which provides more detail than this County CWPP unit action plan. In addition, the Orleans community completed the Firewise® assessment and associated action plan as part of the Firewise® certification process. Additional plans and documents have been developed for the Klamath Mountains including the area within this planning unit and beyond. The sections below summarize these complimentary plans.

Orleans/Somes Bar CWPP

The Orleans/Somes Bar Fire Safe Council (OSB FSC) coordinated the creation of the Orleans/Somes Bar CWPP, completed in January 2012. Collaborators include Orleans VFD, USFS, Karuk Tribe, CAL FIRE, Salmon River FSC, the Humboldt County FSC, and the FSC of Siskiyou County. The Plan's primary goals are "to protect life, property, and resources in and around the Orleans/Somes Bar community, especially in regards to protection from wildland fire."[34] The Plan is also intended to enhance collaboration between local, state, Tribal, and federal wildland fire protection agencies as well as community members, and to provide communities, agencies and the Karuk Tribe with information that can be used to guide the planning and implementation of community fire-safety projects.

The following summarizes the types of projects proposed in the Orleans/Somes Bar CWPP. A complete copy of the Orleans/Somes Bar CWPP can be found on the Mid Klamath Watershed Council website: *http://mkwc.org/programs/fire-fuels/publications*.

- Education
- Planning and Coordination
- Fuels Reduction
- Policy
- Biomass Utilization
- Fire Protection
- Research and Monitoring

Orleans Firewise® Action Plan

The OSB FSC, in collaboration with the OVFD, and with support from the County of Humboldt and CAL FIRE, achieved national Firewise® recognition for the community of Orleans in November 2011. As part of the certification process, the OSB FSC authored the Orleans Firewise® Community Assessment and Action Plan. These two documents provide residents with information and guidance for taking action on an individual and community-wide level to address wildfire hazards. Since the writing of the Firewise® Action Plan, this proactive community has gone above and beyond the goals they set for themselves in 2011. *See Figure 4.3.7, **Mid Klamath: Fire Prevention Accomplishments** for a list of accomplishments in this unit over the last five years.*

Western Klamath Restoration Partnership: A Plan for Restoring Fire Adapted Landscapes

A Plan for Restoring Fire Adapted Landscapes[35] was developed through the WKRP as a result of intense collaboration between the Karuk Tribe, the Mid Klamath Watershed Council, the US Forest Service, area Fire Safe Councils, environmental groups and other community-based stakeholders. This process resulted in a plan for three integrated fire management projects on a landscape-level. These projects include the Salmon River Integrated Large Fire Management Project; Somes Bar Integrated Fire Management and Capacity Development Project; and Happy Camp Integrated Community Protection and Workforce

[34] Orleans/Somes Bar Fire Safe Council. (2012). Orleans/Somes Bar Community Wildfire Protection Plan. (p. 3).

[35] Harling W. and Tripp, B. (2014). Western Klamath Restoration Partnership: A Plan for Restoring Fire Adapted Landscapes. Retrieved from *http://www.mkwc.org/programs/fire-fuels/policy-and-management/western-klamath-restoration-partnership*

Development Project in Del Norte County. This Plan is a valuable resource for communities in Humboldt County and beyond, seeking guidance on landscape-level wildfire planning that emphasizes inclusivity and collaboration.

Eco-Cultural Resources Management Plan

In 2010, the Karuk Tribe published the draft Eco-Cultural Resources Management Plan[36], which outlines an integrative and adaptive approach to resource management that utilizes Traditional Ecological Knowledge supported by western science. The plan provides extensive historical context and articulates clear values, principles, and mission. The plan outlines draft cultural environmental management practices highlighting resource objectives and management indicators for a variety of activities, including the reduction of fuel loading in areas such as key ridge systems, riparian zones, adjacent to homes, and along forest roads. Although this is a draft plan, it is a useful guide and is looked to as a living document. It is projected to be complete within the next five to ten years.

Karuk Climate Change Projects

The Karuk Climate Change Projects website provides a climate vulnerability assessment, which can inform both adaptation and mitigation efforts, and includes preliminary action recommendations. In addition, the value of and importance of maintaining sovereignty over Karuk Traditional Ecological Knowledge is discussed and "the hope of opening up a space for more cross-cultural collaboration and management in the face of climate change" is expressed.[37] The resources on this site can be used to guide action now and as a foundation for a detailed Climate Adaptation Plan. The increased risk of high severity wildfire in the face of climate change is identified as a pressing issue. All of the information provided on this site should be reviewed and understood by anyone wishing to understand the anticipated role of climate change and associated wildfire behavior and impacts in this area as well as the history of the Karuk Tribe's relationship to fire and their work to mitigate those impacts.

The Karuk Tribe Department of Natural Resources also produced a publication titled "Electrical Ignitions, Wildfire Risk and Community Climate Adaptation in Northern California".[38] The changing climate and associated impacts on fire risk and behavior and vulnerable rural communities are discussed, as well as the relationship between wildfire ignitions and power lines. The report provides climate change adaptation recommendations based on a combination of western science and traditional Karuk fire knowledge. This publication may become an addendum to the Orleans/Somes Bar CWPP and the analysis and recommendations should be replicated in other areas of the county and region.

The Yurok-Hupa-Karuk Healthy Country Plan

The Yurok-Hupa-Karuk Healthy Country Plan[39] is being prepared through a team effort involving tribal members and invited guests. The process is being guided by facilitators from the Fire Learning Network[40].

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[36] Karuk Tribe, Department of Natural Resources. (2010). Eco-Cultural Resources Management Plan [DRAFT]. Retrieved from *http://www.karuk.us/index.php/departments/natural-resources*

[37] Karuk Tribe. (2016). Karuk Climate Change Projects. Historic Fire Regimes. Used with permissions and retrieved from *https://karuktribeclimatechangeprojects.wordpress.com*

[38] Karuk Tribe, Department of Natural Resources. (2018). Electrical Ignitions, Wildfire Risk and Community Climate Adaptation in Northern California. [PDF]. Retrieved from *http://www.karuk.us/images/docs/dnr/kari%20norgaard%20-%20Climate%20Change%20and%20Critical%20Infrastructure%20FINAL.pdf*

[39] When the Yurok-Hupa-Karuk Healthy Country Plan is finalized, it will be available at*:* *http://www.karuk.us/index.php/departments/natural-resources*

[40] The Fire Learning Network (FLN), launched in 2002, is a joint project of The Nature Conservancy, the USDA Forest Service and several agencies of the U.S. Department of the Interior (Bureau of Indian Affairs, Bureau of Land

Many who are involved in this process serve on the leadership and/or advisory team of the Indigenous Peoples Burn Network (IPBN). The Healthy Country Plan is a document that will be used to guide the future application of fire in the Tribes' respective territories. Ideally, this plan will help bring traditional burning back to levels practiced before European contact. Strategies outlined in the draft plan include the following:

- Establish a family-led burn program in each tribe/community.
- Build local capacity for cultural burning.
- Initiate collaborative burning and learning opportunities.
- Strengthen state support of cultural burning.
- Strengthen federal support of cultural burning.

Six Rivers National Forest Plans

The Six Rivers National Forest Land and Resource Management Plan (LRMP)[41], published in 1995, directs the management of the Six Rivers National Forest for a 10-15 year planning period. The Plan provides specific direction to national forest managers and identifies specific goals related to watershed health, plants and wildlife, and wildfire. The standards and guidelines set forth under the Fire and Fuels Management section of the Plan emphasize protection of structures and sensitive natural resources while also encouraging managers to seize opportunities to let wildfire take its natural course, whenever possible. In recognition of the ecological importance of fire to the health of California forests, particular emphasis is placed on using prescribed fire as a tool for achieving resource management objectives.

In 2011, the Forest Service, Pacific Northwest Region published the Ecological Restoration Implementation Plan[42], which echoes many of the management goals of the LRMP but focuses in on resiliency, productivity, and diversity. The Plan's chapter on Six Rivers National Forest cites the SRNF Rivers to Ridges Restoration program, which has supported a number of successful fuels reduction projects in recent years.

The Six Rivers National Forest also participates in implementing the National Cohesive Wildland Management Strategy, a collaborative and broad-based guidance document rooted in the best available science. The National Strategy "establishes a national vision for wildland fire management, defines three national goals, describes the wildland fire challenges, identifies opportunities to reduce wildfire risks, and establishes national priorities focused on achieving the national goals."[43] The Western Regional Action Plan provides more specific direction for western states, including California. Its implementation is supported and facilitated by the Western Regional Strategy Committee.[44]

Management, Fish & Wildlife Service and National Park Service). Find out more about the FLN at: *https://www.conservationgateway.org/ConservationPractices/FireLandscapes/FireLearningNetwork/Pages/fire-learning-network.aspx*

[41] Six Rivers National Forest Service. (1995). Six Rivers National Forest Land and Resource Management Plan. Retrieved from *https://www.fs.usda.gov/detailfull/srnf/landmanagement/planning/?cid=stelprdb5084033&width=full*

[42] Six River National Forest Service. (2011). Ecological Restoration Implementation Plan. Retrieved from *https://www.fs.usda.gov/detail/srnf/home/?cid=STELPRDB5411627*

[43] Forests and Rangelands. (2014). National Cohesive Wildland Fire Management Strategy. Retrieved from *https://www.forestsandrangelands.gov/strategy*

[44] Visit the West Regional Strategy Committee website for more information and a copy of the Western Regional Action Plan: *http://wildfireinthewest.blogspot.com/p/p.html*

4.3.8 MID KLAMATH COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this countywide CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2* ***Collaborative Planning, Process*** *and Appendix B,* ***Planning Process Details*** *for more information.* The workshop for this planning unit was held on October 30, 2017 in the Panamnik Building with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 countywide fire-planning process and the 2012 and 2017 Humboldt County CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.3.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.3.8* and *4.3.9* in this section. For more information on the mapping exercise, *see Appendix B.5,* ***Mapping Exercise Instructions****.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.3.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.3.8 MID KLAMATH: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Outreach to cannabis growers: encourage participation in community wildfire planning/preparedness.
○ Fundraise for and construct new fire hall.
○ Educate residents regarding hazards of wooden fences.
○ Harden homes and support prescribed burns: Gold Dredge Area.
○ Harden homes and support prescribed burns: Camp Creek Area.
○ Collaborate with USFS to organize winter time “chews crews”.

The local residents who attended the October 30, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.3.9 MID KLAMATH: NEW COMMUNITY-IDENTIFIED PROJECTS

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Red Cap Road – needs stabilization (road collapsing)	Access/Evacuation	ORL487
Le Perron Road fuels reduction	Landscape	ORL483
Upper Red Cap Creek fuels reduction	Landscape	ORL484
Owl Mine fuels reduction, burn jackpots	Landscape	ORL485
Fuel reduction after snow downs	Landscape	ORL495, 496, 499, 500, 502
Fuels reduction buffers between USFS and private land	Landscape	Non-geographic
Systematic fuels reduction at Tishanik	Landscape	Non-geographic
Burn jackpots in winter (NEPA use moisture gradients)	Landscape	Non-geographic

4.3.9 MID KLAMATH ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- The residents of the Mid Klamath Planning Unit are fortunate to live in an area where the Karuk Tribe and local organizations such as MKWC, OSB FSC and OVFD support efforts to prepare for and protect them from wildfire and make progress towards community wildfire resilience. This CWPP recommends that these groups work together and with members of the community to evaluate, further develop, seek funding for, and/or implement—as appropriate and feasible—the community-identified priority actions listed above as well as the community-identified potential projects stored in the Web GIS Portal. Perform this same process for actions identified in the *Orleans/Somes CWPP*, *Orleans Firewise Action Plan*, the Western Klamath Restoration Partnership's *A Plan for Restoring Fire Adapted Landscapes*, the *Karuk Climate Change Projects*, the *Karuk Eco-Cultural Resources Management Plan*, the *Yurok-Hupa-Karuk Healthy Country Plan*, this *Priority Action Recommendations* list, and the *Action Catalogue* below. Different groups will likely be involved at varying levels depending on the focus and scope of each plan. **The capacity within this unit is sufficient to meet the needs of wildfire preparedness ranging from hardening homes to influencing management practices in the Klamath Mountains and watersheds.**
- Maintain the plans listed above so that they retain their relevancy and effectiveness as tools to inspire and guide action.

- Continue to grow the collaborative relationship between the Karuk Tribe (Karuk DNR and other applicable departments as well as Tribal members), MKWC, OSB FSC, OVFD, CAL FIRE, Six Rivers National Forest, and local community members.
    - Continue participation in the Western Klamath Restoration Partnership.
- Maintain and support the OSB FSC as a vehicle for synthesizing the multitude of planning efforts and programs and working with community members on implementing recommended actions as appropriate.
    - Inspire more community and Tribal involvement in the OSB FSC with outreach about what they do and how to get involved.
    - Ensure that the OSB FSC continues to be represented on the Humboldt County FSC and consider nominating a Karuk Tribal member.
    - Increase outreach to marijuana/cannabis growers and encourage participation in community wildfire planning and preparedness.
    - Support the continuation of the Orleans/Somes Bar FSC Mow and Chip/Fee for Service Program.
- Maintain participation in the Firewise Communities/USA® Recognition Program:
    - Actively implement and maintain the Firewise® action plan.
    - Focus activity on home hardening and defensible space in partnership with residents in Orleans and neighborhoods throughout the planning unit.
    - Continue to host an annual Firewise® Day.
- Priority areas within this planning unit for fuels reduction and outreach, with an emphasis on hardening homes to facilitate safe nearby prescribed burns, are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Orleans
    - Gold Dredge Area
    - Camp Creek Area
    - Consider using the Perch Creek Watershed as a model, demonstrating the establishment of fire resilient forests protecting a municipal watershed, fire hardened water supply infrastructure, neighborhood home hardening and defensible space maintenance, and coordination with Six Rivers National Forest on the management of hazardous fuels on their lands adjacent to private homes.
    - **Use the Orleans Somes Bar CWPP as a resource for identifying which additional neighborhoods are priorities.**
- The high fire danger, a large and dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a need for increased wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - **Use the Orleans Somes Bar CWPP as a resource for identifying which neighborhoods are priorities.**

- Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
- Continue to develop the Community Liaison Program to provide community input to wildfires and other emergencies.
- Identify and map local evacuation routes and sites.
- Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
- Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments. Evaluate areas of Red Cap Road that are collapsing and need stabilization (ORL487).
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. **See the Orleans/Somes Bar CWPP for a list of priority roads.**
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.
    - Le Perron Flat Road area prescribed fire project (ORL483).
    - Shelton Butte Road area prescribed fire project (Upper Red Cap Creek) (ORL484).
    - Owl Mine area prescribed fire project (burn jackpots) (ORL485).
    - Fuel reduction after snow downs (ORL495, 496, 499, 500, 502).
- **S**eek funding and support to extend prescribed fire programs to a longer period so that burning, mop up, and monitoring can continue until a season ending event (heavy rains). Having the resources to maintain a burn team to conduct these activities as long as possible would be beneficial.
- **S**upport the Karuk Tribe in efforts to establish a program that can safely and effectively facilitate family based burning.
- **W**ork with PG&E and local landowners to reduce fuels along power line easements.
    - Approve and implement the power infrastructure supplemental addendum submitted by the Karuk Tribe to the Orleans/Somes Bar CWPP.

- **C**ontinue to explore options and make progress on local fire service sustainability efforts such as:
    - Pursuing funding, in addition to the Public Safety and Essential Services half-cent sales tax, to rebuild the OVFD fire hall;
    - Communicating the need for and help with developing a strategy for the repair of a defective repeater to improve radio communications;
    - Recruiting and retaining volunteers;
    - Establishing consistent and sustainable revenue sources; and
    - Ensuring that all appropriate areas are within the boundaries of a fire related district through district formation, annexation, and consolidation.
- **W**ork with the HCFSC to share successful local strategies to help inspire similar action throughout the county.
- **S**hare GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). Compare GIS fire planning datasets and determine an appropriate sharing and maintenance process to ensure that the most up-to-date and accurate information is provided through the County Web GIS Portal or another appropriate location. Coordinate this effort with the work of the Humboldt County Fire Safe Council to implement the Integrated Planning, Fire-Planning Data Management priority action of the *Countywide Action Plan* (*Chapter 3, Section 3.6.4*).

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*. In addition, the Orleans/Somes Bar CWPP and other locally developed plans provide detailed recommendations similar to the general guidance listed on the following pages. To guide local action, review those plans first.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies in order to avoid an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about past wildfire events.
    - Encourage local volunteer/service organizations or schools to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes. See details in the *Priority Action Recommendations* above.
- Collaborate to create defensible space for elderly, disabled, and low-income residents who are unable to do the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.

- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Identify hot-spots for Sudden Oak Death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well. Priority roads to evaluate include:
    - Downs Ranch Road
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a “Blue Dot” program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment.
- Conduct maintenance on existing water sources, broaden community awareness about water usage and source locations, work on developing additional water sources, and encourage residents to adapt their water sources to the needs of fire protection equipment. Search for grant funding to aid these efforts.
- Work on ways of improving ingress and egress, such as opening access to emergency response vehicles on connective private roads, and creating fire engine turn-around spaces.

Fire Protection

- **S**upport the OVFD by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- **A**ssist in the development of recruitment and retention strategies for the OVFD.
- **H**elp the OVFD raise funds by making donations directly and/or organizing fundraising events or efforts.

Restoration of Beneficial Fire

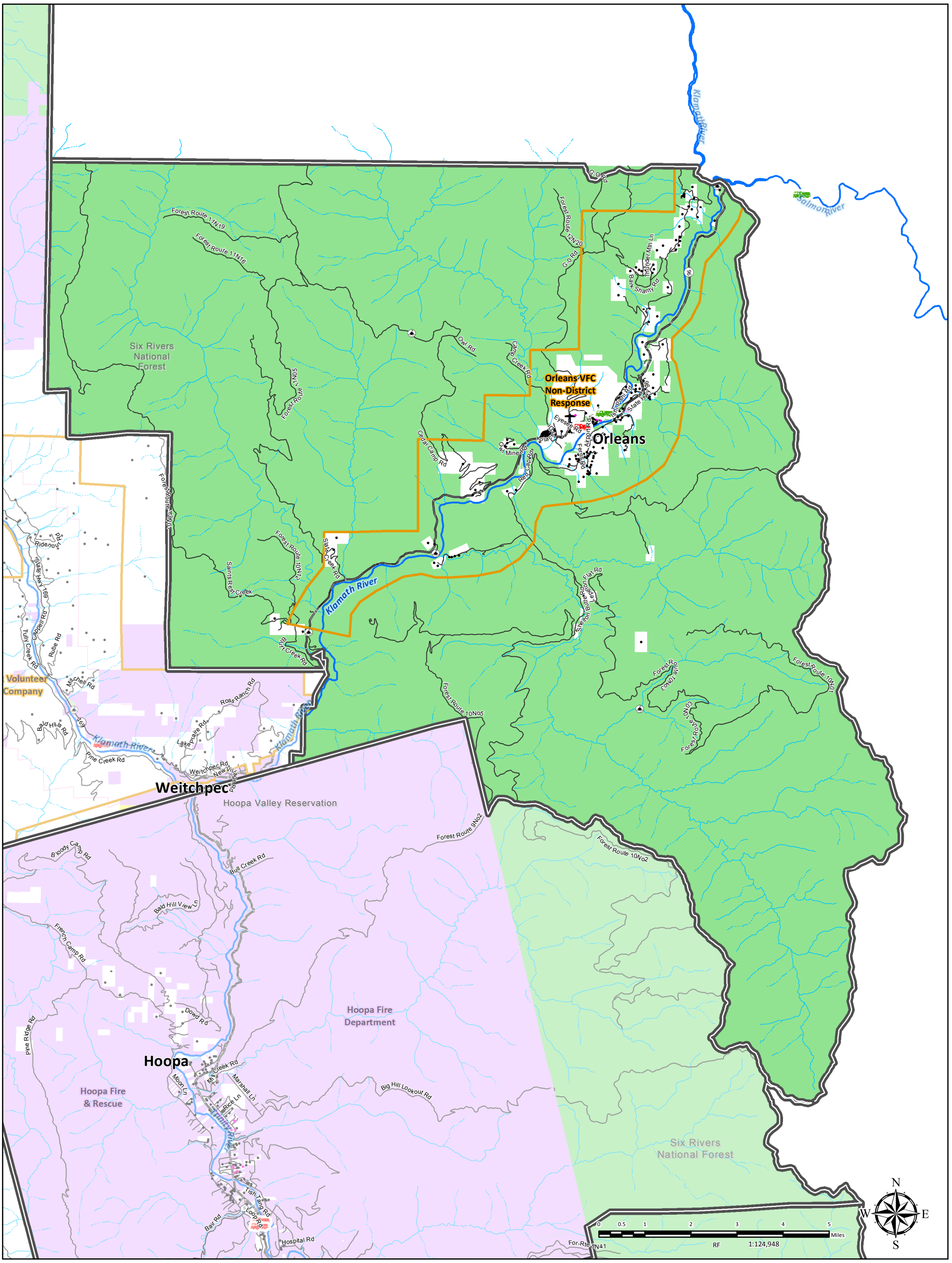
- **C**ontinue TREX burning program.
- **A**ssess and evaluate the effectiveness of strategies within the Burned Area Emergency Response (BAER) program.
- **P**rovide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for the Karuk Tribe, MKWC, CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[45]
- **S**hare information about educational events that provide information about prescribed burning.
- **E**ncourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- **H**elp federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

Integrated Planning

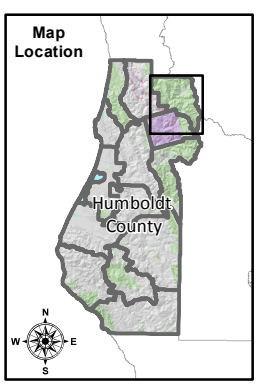
- **I**ntegrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- **C**oordinate the implementation and maintenance of the Orleans Somes Bar CWPP, this CWPP, and Firewise Assessments and Action Plans.
- **A**ugment collaboration between fire protection and forestry organizations as well as community members to develop more cohesive wildland fire-management strategies.
- **S**hare GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal. See more about this action in *Priority Action Recommendations* above.

[45] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at lquinndavidson@ucanr.edu or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at chris.ramey@fire.ca.gov or call him at (707) 726-1206.

MAP 4.3.1 MID KLAMATH PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

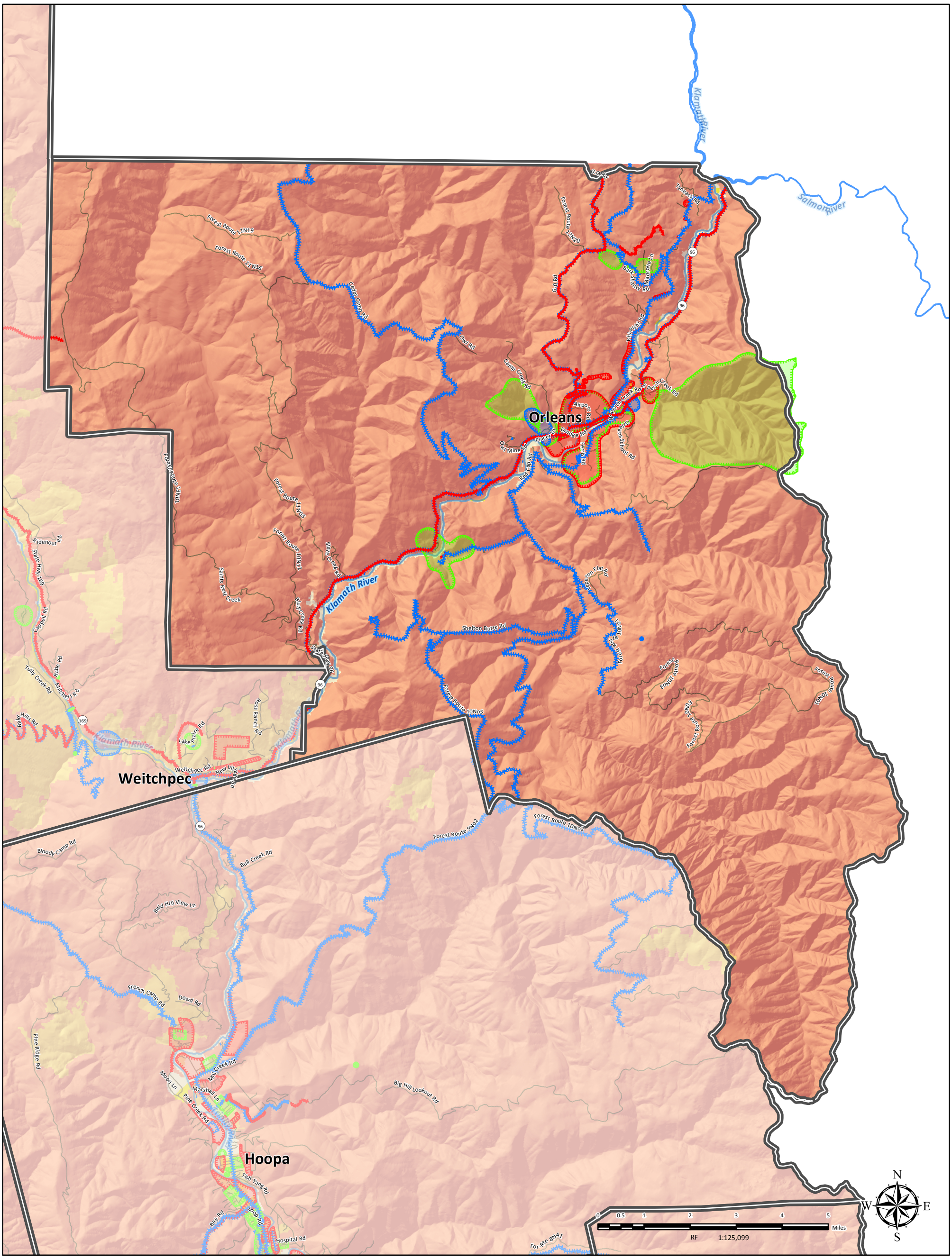
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

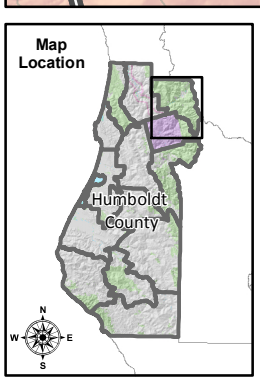
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.3.2 MID KLAMATH PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

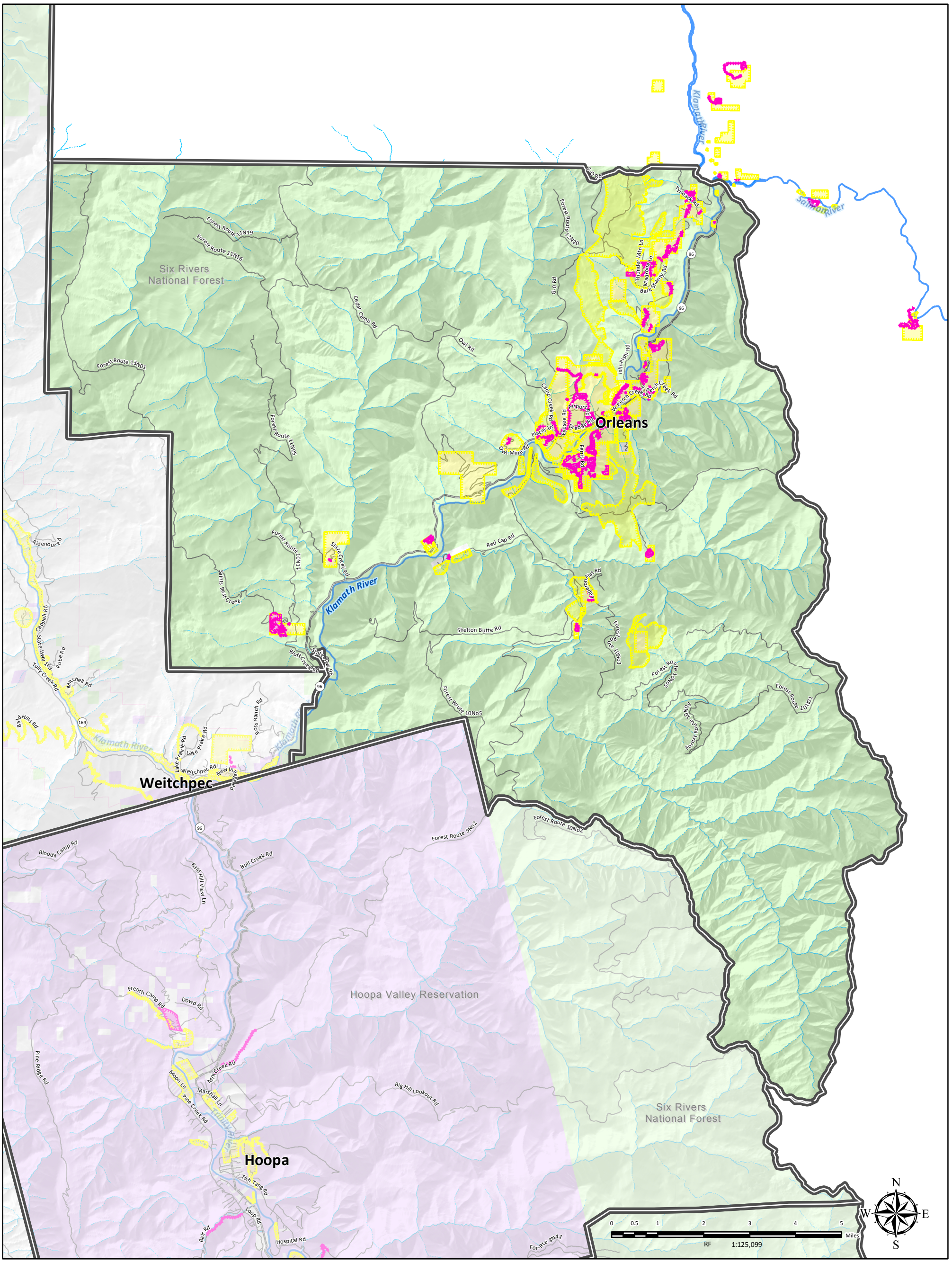
The map is intended for planning purposes and should not be used for precise measurement or navigation.

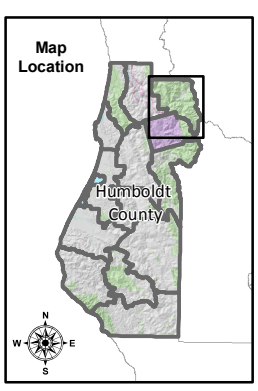
Map compiled by County of Humboldt, November 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.3.3 MID KLAMATH PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, November 2018.

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Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

HOOPA PLANNING UNIT ACTION PLAN



Hoopa Valley. Photo: National Museum of the American Indian.

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Helpful Links

HOOPA TRIBE OFFICIAL WEBSITE:	https://www.hoopa-nsn.gov
HOOPA FIRE DEPARTMENT AND OFFICE OF EMERGENCY SERVICES (OES):	https://www.hoopa-nsn.gov/the-tribal-government/departments/emergency-service-departments/wildland-fire-department
HOOPA OES FACEBOOK PAGE:	https://www.facebook.com/HoopaOES
HOOPA TRIBAL FORESTRY:	http://www.hoopaforestry.com
HOOPA FSC WEBPAGE:	https://humboldtgov.org/2440/Hoopa-Fire-DepartmentFSC
HUMBOLDT COUNTY WEB GIS:	https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	https://humboldtgov.org/FireSafeCouncil
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	cimmit@co.humboldt.ca.us

4.4 HOOPA PLANNING UNIT ACTION PLAN

4.4.1 HOOPA PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.4.1, ***Hoopa Planning Unit.***

The Hoopa Planning Unit spans over 114,000 acres of rugged, mountainous terrain and a broad valley, which forms the basin of the Trinity River watershed. The Trinity River and its tributaries bisect the valley, flowing in a northerly direction towards its confluence with the Klamath River near the town of Weitchpec, just north of the Unit. Highway 96 follows alongside the Trinity River and serves as the main transportation corridor into and out of the area. The map, at left, shows the Reservation boundaries as well as the aboriginal territories to the east of the reservation, currently under Six Rivers National Forest management. The reservation is 12 miles square.

At over ninety-two thousand acres, the Hoopa Valley Indian Reservation (HVIR), is the largest Indian Reservation in California.[1] The reservation covers approximately 50% of the Hupa aboriginal territory. The Hoopa Valley Tribe, under a compact agreement with the United States, is a Self Determination – Self Governance Tribe and manages all lands within the exterior boundary of the Reservation. Privately owned land within this boundary, which accounts for less than 2% (1,553 acres), also falls under the jurisdiction of the Tribe.

The town of Hoopa comprises the community population center and is the only town within the boundaries of the Reservation. The gently sloping Hoopa Valley is where all of the businesses, schools, post office, Tribal offices, and the majority of residences are located. Approximately 4,000 people reside in this planning unit. More populous areas of the Reservation include the valley floor, Bald Hills, and Trinity River Gorge. Neighborhoods on the valley floor include Telescope Road, Agency Field, Big Hill Road area, Upper and Lower Campbell Field Housing, Hostler Field Housing, Community Services Housing, Hostler Flat, and Norton Field Housing. Outside of the Valley, the Reservation can be characterized by steep mountainous terrain. In large part due to the rugged terrain surrounding the Hoopa community, the Federal Register classifies the entire Reservation as *Wildland Urban Interface (WUI)*.[2]

> ***Wildland-Urban Interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

4.4.2 HOOPA ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

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[1] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (pp. 3-4). [PDF]. Retrieved from *https://www.hoopa-nsn.gov/wp-content/uploads/2017/09/Revised-final-CWPP-9-5-15.pdf*

[2] USFS, BIA, BLM, CDFW, & NPS. (2001). Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire. Document 66 FR 751. Retrieved from *https://www.federalregister.gov/documents/2001/01/04/01-52/urban-wildland-interface-communities-within-the-vicinity-of-federal-lands-that-are-at-high-risk-from*

The majority of assets at risk in this planning unit are residential homes and tribal facilities, along with a variety of commercial and service industries, community centers, medical and dental clinics, schools, museums, as well as infrastructure components, such as a water treatment facility. Timber is a highly significant asset in this unit. The Hoopa Valley Tribal Forestry Department is responsible for over 87,000 acres of timberland. The Tribe's sustainable, environmentally-focused timber practices earned its certification as a Responsible Forestry Operation by the Forest Stewardship Council. Timber values on the Reservation are estimated in the hundreds of millions of dollars.[3] However, the forest is valued for much more than the monetary benefits it confers. The Tribe places a high value on the abundance of culturally useful plant species, game animals, and other natural resources found throughout the forest. Trinity River is also an asset at risk. The Tribe relies on the River's salmon populations for subsistence and ceremonial purposes. Low water levels and sediment buildup can have devastating impacts on their ecosystems. Numerous areas throughout the Reservation are held in high regard for cultural reasons as well.

Map 4.4.2, found at the end of this Planning Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web Geographic Information System (GIS) Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.4.1 HOOPA: ASSETS AT RISK	
Community-Identified Assets at Risk	
Agency Field neighborhood	KIDE Radio/Police dispatch/Casino/Post Office
Big Hill & Rice Lane neighborhood & Squire Housing	K'ima:w Medical Center, Dental Clinic & Rest Home
Cell tower on Bald Hills (TV, radio, phone)	Lower Campbell
Gathering grounds for indigenous plants and foods (used for cultural reasons and subsistence)	Norton Field Housing Authority
Hoopa Fire Department and OES Services facilities	Telescope neighborhood
Hoopa High School/Elementary School and Water	Tribal cemetery, near School Rd along Trinity River
Hoopa Tribal neighborhood facilities	Tribal dance grounds
Hoopa VFD	Upper Campbell neighborhood
Hostler Field housing	Water Treatment Facility
Additional Assets	
Lucky Bear Casino	Tish Tang Campground
Merchantable timber	Trinity River
Note: The Hoopa Valley Indian Reservation CWPP contains a detailed list of values at risk identified by Tribal fire professionals organized by district and fire risk levels (see Table 4, page 30 of the Hoopa CWPP).[4]	



Hoopa Valley High School. Photo: KTJUSD



Hazel and spruce basket. Photo: J. Kalt



Coho salmon. Photo: BLM

[3] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 28).

[4] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 30).

4.4.3 HOOPA WILDFIRE ENVIRONMENT

A detailed wildfire risk assessment is included in the Hoopa Community Wildfire Protection Plan.

Readers are encouraged to review that plan for more details about the **wildfire environment.**

The plan can be downloaded and more information about wildfire and other hazard preparedness can be found on the Hoopa Fire Department and Office of Emergency Services webpage: *https://www.hoopa-nsn.gov/the-tribal-government/departments/emergency-service-departments/wildland-fire-department*

Approximately 94% of the Hoopa Planning Unit is zoned "Very High *Fire Hazard Severity*," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[5] A small portion of the land area in the Valley, particularly along Highway 96, is zoned "High Fire Hazard Severity" (4%), while a negligible amount is zoned "Moderate Fire Hazard Severity". Fire management in the Reservation is divided into two Fire Management Zones (FMZs) by the Hoopa Fire Department (HFD) and Office of Emergency Services' (OES) Prevention Plan. One FMZ saw 90% of the fires in the last 10 years. Not coincidentally, this FMZ covers the most populated, Wildland Urban Interface (WUI) areas (Bald Hills, Gorge Valley, Valley West, and Highway 96), representing 47.3% of the Reservation's total acreage. The second FMZ contains 52.7% of Reservation acres and only 10% of the fires in the last 10 years; it is comprised of unpopulated, mountainous, and forested areas with mostly steep terrain (Telescope, Pine, Hopkins, Deerhorn, and Tish Tang).

For a closer look at fire hazard severity in this planning unit, see Map 4.4.2, ***Hoopa Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Humans are responsible for nearly all fire ignitions in this planning unit. Arson is an ongoing problem throughout the Reservation, to the extent that arson or suspicion of arson has represented 90% of fire causes in the past decade. Less common ignitions result from campfires, trash burning and brush clearing, vehicles, and fireworks. Lightning is the sole natural cause for fires reported on the Reservation and is only responsible for 0.54% of fire starts since 1999.[6]

[5] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

[6] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 14).

> The costs associated with wildfire and other fire incidents between the years 1999-2011 in the Reservation are totaled at $15,710,150.[7]

Fire History

Ecosystems and plant communities in this region are historically adapted to regular wildfire occurrence. Hoopa Tribal members have traditionally implemented intentional burns throughout the Reservation area for ecological and cultural purposes. However, a heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, this fuel increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that historically burned off brush and newer starts in the understory, become overcrowded with accumulated fuel. This puts them at greater risk for destructive loss from wildfire.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Approximately 60% of the Hoopa Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 30% of the area is condition class 2, or moderately altered from the historical range.

In the past decade there has been frequent wildfire activity within and adjacent to the Hoopa Unit. According to the Hoopa Valley Hazard Mitigation Plan, local firefighting resources respond to anywhere from 200 to 400 fires per year, the majority of which are caused by arson or human error.[8] The Hoopa Valley Indian Reservation Community Wildfire Protection Plan states that 98.5% of fires on the reservation are human caused.[9] The Hoopa Valley remains one of the highest risks for arson related fires and incidences in the State of California. The most recent such fire was determined to be started by an arsonist on August 16, 2018. The fire burned over 3,600 acres in the Mill Creek watershed north of the Hoopa community—the largest wildfire on the Hoopa Reservation in recorded history. Local firefighters worked tirelessly to contain the blaze and were joined by reinforcements from the out of area Type 2 Incident Management Command Great Basin Team 6. Unhealthy air quality from the fire impacted residents of the Hoopa Valley and an associated emergency declaration was made by the Hoopa Tribal Chairman.

[7] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 7).

[8] Hoopa Valley Tribe. (2014). Multi-Hazard Mitigation Plan. [PDF]. (p. 134). Retrieved from https://www.hoopa-nsn.gov/wp-content/uploads/2017/09/2014-approved-Hoopa-Valley-MHMP-distribution-copy-5.30.14.pdf

[9] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 7).

The names, year, cause, and acreage covered by recent major fire events within this planning unit are summarized in the table below.

FIGURE 4.4.2 HOOPA FIRES OVER 10 ACRES 1967-2017[10]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Megram	Lightning	1999	20,205	125,073
Corral	Lightning	2013	1,728	12,541
Mill Creek 4	Miscellaneous	2009	1,298	2,831
Lt-17 (Backbone)	Lightning	2009	554	5,194
Bald Hill 3	Vehicle	2014	210	210
Deer Horn 2	Lightning	2015	86	86
Packsaddle	Lightning	2008	24	35
Telescope	Miscellaneous	1997	1	38
Summit	Unknown/ Unidentified	2016	0.49	20

Note: An interactive map of fire history through 1908 is available through the County WebGIS.

Structural Ignitability

Homes in this planning unit exist within the WUI, which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[11], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

> ***Home Ignition Zone:*** The home and area out to approximately 100 feet, where conditions affect a home's potential ignitability during a wildfire.
>
> ***Structural ignitability:*** The ease with which a home or other structure ignites.

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-300 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated, or other flammable materials stored beneath them. The high

[10] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.

[11] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

percentage of mobile homes in the Unit is another concern for structural ignitability. Mobile homes are subject to the same risks as built houses regarding the accumulation of fuels on or nearby the structure; however, if ignition does occur, mobile homes have a greater propensity to burn rapidly and completely.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[12]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.4.2, found at the end of this planning unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

The Hoopa Valley Public Utilities District provides potable water and fire protection water throughout the Hoopa Valley Reservation. The table below summarizes the drafting sites identified by community members through the County's fire-planning workshops.

Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.4.3 HOOPA: FIRE PROTECTION WATER DRAFT SITES
Legion Way – River Access
Tish Tang Road – River Access
Mill Creek
HFD – River Access
Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.

Map 4.4.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.4.4 HOOPA FIRE PROTECTION CAPABILITIES

Fire protection services in this planning unit are provided by the Hoopa Fire Department and Office of Emergency Services (HFD/OES) and Hoopa Volunteer Fire and Rescue (HVFR). HVFR is a community-based volunteer organization established in the late 1970s by the Hoopa Valley Tribal Council and the Bureau of Indian Affairs (BIA) as an all-risk organization primarily focused on structural fire suppression.

The HFD/OES is a chartered stand-alone organization within Tribal government and is solely operated and managed by the Hoopa Valley Tribe. The Hoopa Fire Department and the Tribal Office of Emergency Services operate in synchrony under the leadership of the Chief of the Department and are tasked with operational responsibilities all year round. The HFD/OES is an all-risk program that is responsible for disaster planning, response, preparedness, and recovery from disasters. The HFD/OES is a national resource and responds across the nation to provide assistance to local, state, and federal agencies when requested.

[12] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

Responsibility for fire management over the last 30 years has fallen to the Hoopa Valley Tribe and the HFD/OES. Strategies have continued to strongly emphasize fire suppression and strategic decision making by Department command staff due to a large fire occurrence, with a ten year average of 194 wildfires annually. Because the HFD/OES is federally funded, they are part of the California Mobilization and National Mobilization guides and receive mutual aid and assistance through the mobilization process. Through a cooperative agreement with the Bureau of Indian Affairs (BIA) and the compact agreement with the U.S. government, the Fire Department utilizes the statewide master agreement for Fire Management. The Bureau of Indian Affairs Regional Fire Management Program is signatory to the Statewide agreement and allows the HFD/OES to participate as the parent agency.

FIGURE 4.4.4 HOOPA FIRE PROTECTION RESOURCES[13]

PERSONNEL	SERVES		APPARATUS	RESPONSE
	RESIDENTS	AREA (SQ. MI)		
HOOPA VOLUNTEER FIRE AND RESCUE (HVFR) – PHONE: (530) 625-1118				
19 Volunteers 3 Auxiliary	4,000	144	○ (2) Type-1 engine ○ Rescue utility vehicle ○ Command vehicle ○ (2) 16-ft outboard jet boats ○ Rescue-2 support unit (retired ambulance)	○ Structural fires ○ All-risk organization ○ Provides support for wildland fires
HOOPA FIRE DEPARTMENT AND OFFICE OF EMERGENCY SERVICES (HFD/OES) – PHONE: (530) 625-4366				
19 Full-time 6 Temporary	4,000	144	○ (3) Type-3 engines ○ (2) Type-4 quick attack engines ○ Type-2 water tender	○ Wildland fires / All-risk ○ Provides assistance to local, state, and federal agencies when requested

4.4.5 HOOPA EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Hoopa Incident Commander in cooperation with an Incident Management Team. Mass communication and door-to-door methods will be used to inform residents about the threat and where residents should go to take shelter. As part of the Evacuation Alert Protocol all community residents should tune into KIDE FM 91.3 when they hear the Warning Sirens alert to determine the type of emergency and what they are instructed to do.

Evacuation routes in the Hoopa Planning Unit will depend on the location of the community at risk and law enforcement and/or HFD/OES recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Highway 96 is the central ingress and egress route, with numerous smaller roads connecting residences and neighborhoods to it. Adequate ingress and egress along these roads is vital to residents that may need to access the main highway evacuation route and for firefighters responding to wildfires near these neighborhoods.

[13] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pg. 41-42). Retrieved from https://humboldtgov.org/Archive.aspx?AMID=75

FIGURE 4.4.5 HOOPA: ALTERNATIVE EVACUATION ROUTES TO HWY 96

- **Mill Creek Road** leads northeast to Orleans.
- **Big Hill Road** leads east into Six Rivers National Forest territory.
- **Bair Road** provides westward access toward Redwood Valley and 299, via Stover Road.
- **Bloody Camp and Dowd Roads** provide northern access.
- **Pine Creek Road,** leads north to Bald Hills Road, which connects with town of Orick.

Note: Most of these roads are narrow and windy that traverse unpopulated and steep terrain and would therefore, not be ideal for massive evacuation efforts. There are more details provided about evacuation routes in the Hoopa Valley CWPP on page 22.

Most of the structures within the Unit are not far from the main highway, but a few neighborhood groupings are more remote. The narrowness of smaller roads leading to remote residences could create complications for emergency vehicle response trying to gain access during simultaneous home evacuations. Landslides resulting from heavy rains falling on snow melt in the late winter and early spring could inhibit access and create hazardous road conditions. Other ingress and egress impediments may include steep road sections, fallen trees and power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. Poorly or inaccurately marked streets and intersections may also present a challenge for emergency responders.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[14] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (e.g. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the **Humboldt County Office of Emergency Services (707) 268-2500**.

[14] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

4.4.6 HOOPA COMMUNITY PREPAREDNESS

The HFD/OES strives to develop programs and processes for the protection of the Hoopa Indian Reservation and the community of Hoopa. This is accomplished through an aggressive suppression and prevention program. The Department has developed a Community Wildfire Protection Plan, approved in 2016. With this plan, the development and initiation of the Hoopa Fire Safe Council has direction and an opportunity to plan for and protect the community from wildfire within the WUI.

Fire Prevention is also a large part of the HFD/OES' daily activities. Helping landowners and working on Tribal Lands, department personnel assist with land clearing, utilizing mechanical methods as well as burning. In addition, the HFD/OES conducts public presentations, fire prevention drills and talks in the local schools, and constantly shares information with the community about the prevention of catastrophic fire. An active Facebook[15] presence helps keep followers informed about emergencies and where to find support.

The Hoopa FSC was formed in 2013 to assist with the development and implementation of a local CWPP. Members of the HFD/OES are working to rebuild the FSC as a venue for implementing the Hoopa Valley Indian Reservation CWPP and educating community members about wildfire preparedness. *See section 4.4.7 below for a summary of that CWPP.*

The Hoopa Valley Tribe and Tribal departments can be reached by calling **(530) 625-4211** or by visiting their website at: http://www.hoopa-nsn.gov.

FIGURE 4.4.6 HOOPA: FIRE PREVENTION ACCOMPLISHMENTS

- The Hoopa Valley Indian Reservation Community Wildfire Protection Plan was successfully completed, and approved by the Tribal Council on January 7, 2016.
- The Hoopa Valley Tribe Multi-Hazard Mitigation Plan was successfully completed and approved by FEMA on May 28, 2014 and is currently being revised and rewritten.
- The HFD/OES has treated approximately 90 acres since August 2017 under the Fuels Management Program.
- The WUI program has successfully cleared approximately 600 acres of hazardous fuels on the valley floor and Bald Hills area since August 2017.
- HVFR secured funding through Measure Z for the purchase of turnouts, radios, and SCBA (self-contained breathing apparatus).
- Hoopa Tribal Forestry has completed numerous fuels reduction projects including ridgetop and roadside shaded fuel breaks and they continue to plan and implement more projects.
- The Hoopa Valley Tribe hosted Team Rubicon[16] to assist with "Operation KI Te Lit". Their goal is to prioritize and complete WUI projects identified in the Hoopa CWPP, to safeguard and protect structures, minimize the impacts of potential conflagration from fire, and save lives. The work of this volunteer team saved the Tribe over $60,000.

[15] Hoopa Office of Emergency Services Facebook page: https://www.facebook.com/HoopaOES
[16] Team Rubicon website: https://teamrubiconusa.org

4.4.7 HOOPA LOCAL WILDFIRE PREVENTION PLANS

The Hoopa Valley Indian Reservation Community Wildfire Protection Plan was successfully completed, and adopted by the Tribal Council on January 7, 2016. The Hoopa Valley Tribe Multi-Hazard Mitigation Plan[17] is also a significant source of information and guidance about wildfire prevention and preparedness. The HFD/OES also offers guidance to residents on how to plan for fire safety in the Tribes' Fuels Management Plan, which has also been approved by the Tribal government.

Hoopa Valley Indian Reservation CWPP

The primary objective of The Hoopa Valley Indian Reservation CWPP is to achieve the goal of a resilient fire safe community by creating a pathway for the community to understand and reduce their wildfire risk. It is hoped that the CWPP will help set priorities for wildfire mitigation projects, inspire local wildfire preparedness action, and leverage funding to support projects. The CWPP outlines a number of priority actions that have been identified by HFD/OES, Hoopa Valley Fire and Rescue, and various Tribal resource professionals.

- **Himalayan Blackberry Removal:** Himalayan blackberry, an invasive species, continues to grow in dense thickets around critical infrastructure and key resources. The dense, woody thickets have become a major fire hazard throughout Hoopa Valley. Removal projects will be a top priority in coming years.

> "Blackberry infestation should be identified around CIKR (Critical Infrastructure and Key Resources) and removed as first priority. The subsequent recommendations are: 1) a detailed mapping of Blackberry infestation on reservation land, 2) Develop a prioritized removal plan based on mapping and CIKR, 3) Determine best method for removal of Blackberry thickets in region and finally 4) Implement removal plan. It is suggested that some test sites be implemented to see best method for removal in conjunction with removal around CIKR and infestation mapping to reduce timeline for removal."[18]

- **Fuels mitigation projects through education and outreach:** Create an incentive system for community members to complete fuels reduction projects. Provide resources and educational tools to support the community in these projects.
- **Increased Responsibility and Funding:** Pursue funding through the Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation (PDM) project grant.
- **Long-term Wildfire Risk Reduction Planning with WUI Partners:** Continue collaborating with the Humboldt County Fire Safe Council. Plan and carry out a demonstration project that would both reduce wildfire risk in the chosen area through fuels reduction, and educate commuters and community members about wildfire hazards and the effectiveness of simple changes. Pair the project with a public outreach campaign to maximize reach.

The Hoopa Valley Tribe Indian Reservation CWPP is available for download on the Tribe's website: *https://www.hoopa-nsn.gov/wp-content/uploads/2017/09/Revised-final-CWPP-9-5-15.pdf*.

Fuels Management Plan

In 2008 the Hoopa Tribal Forestry Department completed and the Tribe approved a Ten-Year Fuels Management Plan for the Hoopa Reservation. The document lays out a plan for implementing a variety of

[17] Hoopa Valley Tribe. (2014). Multi-Hazard Mitigation Plan [PDF]. Retrieved from *https://www.hoopa-nsn.gov/wp-content/uploads/2017/09/2014-approved-Hoopa-Valley-MHMP-distribution-copy-5.30.14.pdf*

[18] Hoopa Valley Tribe. (2016). Hoopa Valley Indian Reservation Community Wildfire Protection Plan. (p. 34). Retrieved from *https://humboldtgov.org/2440/25270/Hoopa-Fire-DepartmentFSC*

fuels treatment activities on approximately 20,000 acres, or 20% of the Reservation, over the 10-year management period. The plan seeks to improve forest health while also protecting the community from the potentially catastrophic consequences of a wildfire. This plan will be updated within the next few years.






HFD/OES Cultural Burn. Photos: Hoopa Valley Tribe.

4.4.8 HOOPA COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on December 6, 2017 at the training facility of the HFD/OES with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.4.3*). It should be noted that the maps associated with the Hoopa Planning Unit are a reflection of **County-maintained data**. There are known gaps in this data including an underestimate of development and inaccurate or missing road name information. It is possible that some of this data can be replaced in the future with data developed and maintained by the Hoopa Tribe. As directed by this CWPP (see *Integrated Planning* in the *Action Catalogue* below), the County will work with Hoopa planning partners to develop a system of data-sharing.

New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.4.7* and *4.4.8* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.4.2*) also reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following non-geographic community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.4.7 HOOPA: COMMUNITY-IDENTIFIED PROPOSED PROJECTS, NON-GEOGRAPHIC
○ Increase public outreach regarding elder/low income assistance with vegetation management.
○ Improved and well maintained fire hydrant system (could improve ISO ratting)
○ Increased training for local HVFR and HFD (could improve ISO ratting)
○ Grant writing support for HVFR.
○ Include policy about the use of fire retardant within sensitive areas in pre-attack plan and identify those sensitive areas.
○ Resolve problems of blocked river access for firefighting water and other uses.
○ Identify and map priority medicinal and material gathering places.

The local residents who attended the December 6, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years.

FIGURE 4.4.8 HOOPA: PRIORITY COMMUNITY-IDENTIFIED PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Hazardous vegetation clearance around Tish Tang North Campground	Defensible Space	WCK413
Break up continuity of hazardous fuel in Heck Creek drainage	Landscape	WCK411
Campbell Field Rd: High winds, fuel buildup, and fire history	Roadside Clearance	WCK416
Bald Hills brush removal below cell tower	Defensible Space	WCK120
Brush removal on State fee lands, either side of HWY 96	Roadside Clearance	WCK108

4.4.9 HOOPA ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **T**he residents of the Hoopa Valley are fortunate to have active agencies, organizations and programs that support efforts to prepare for and protect them from wildfire. This CWPP recommends that those living and working in Hoopa work together to evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for actions identified in the *Hoopa Valley Indian Reservation CWPP*, the *Hoopa Valley Tribe Multi-Hazard Mitigation Plan*, the *Hoopa Valley Tribe Fuels Management Plan*, this *Priority Action Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- **C**ontinue to build the capacity of the Hoopa FSC to support the implementation of local plans and promote community outreach and education.
- **E**nsure active participation from the Hoopa Valley Tribe on the Humboldt County Fire Safe Council.
- **T**he high fire danger, a dispersed WUI population, the large number of dead-end roads leading to multiple residences, and limited individual wildfire evacuation preparation combine to make **evacuation planning** and education a top priority in this planning unit. Work with HFD/OES, the County Office of Emergency Services, and local fire service to engage community members in

evacuation preparedness and the identification of local evacuation routes and sites. In addition, identify local community liaisons to work directly with emergency management officials. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life. Direct initial evaluation and outreach efforts to neighborhoods along the following priority roads:

- Campbell Field District, ingress and egress
- Redwood Grove Road
- Pine Creek Road
- Community Service Road
- Hostler Ridge Road
- Beaver Creek Road, near Pine Creek Road
- Tish Tang Road
- Community Services Road
- Both sides of Highway 96

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation, especially those roads used by the highest number of residents, single access roads, and roads leading to remote-hard to access residence. Overgrown brush and tree limbs along roadways and in residential driveways can pose challenges to emergency response vehicle access. Priority roads for initial evaluation and outreach efforts include:
  - In and around Tish Tang Campgrounds (ongoing WCK413)
  - Campbell Field Road (an area with high winds, fuel buildup, and fire history - WCK416)
  - Brush removal on State fee lands, either side of HWY 96 (Roadside Clearance - WCK108)
  - Priority roads identified in relevant Hoopa Valley Tribe planning documents
- Collaborate with relevant Tribal Departments (Forestry and Fire) and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. Evaluate the following priority areas/actions:
  - Break up continuity of hazardous fuel in Heck Creek drainage (WCK411).
  - Bald Hills brush removal below cell tower on Translator Road (WCK120).
  - Collaborate to design strategic fuel breaks between Six Rivers National Forest lands and private/Tribal forestlands to protect timber, cultural, and natural resource assets from wildfires that start on public lands.
  - Develop and implement forest health and landscape fuels management projects within this planning unit to increase wildfire resiliency and restore ecosystem function and cultural values.
  - Explore ways to reintroduce fire to medicinal and material gathering places.
  - Support and promote cultural burning education and training.

- Identify, map, and prioritize treatment of pockets of invasive Himalayan blackberry causing hazardous fuels buildup, especially around homes and critical infrastructure. Explore use of prescribed fire for maintenance.

- Continue to explore options and make progress on building the capacity of the HVFR as a community fire protection and rescue provider, such as:
  - Recruiting and retaining volunteers, particularly those who can be available all day, every day, as many volunteers are unavailable to respond during business hours, due to jobs or childcare responsibilities.
  - Increasing volunteer training.
  - Identifying community members or others to assist with grant writing and fundraising, to address a persistent lack of sufficient funding.
  - Rebuilding the firehouse, which was originally built in the early 1970s and is in desperate need of upgrades.
  - Replacing old fire engines.
- Continue coordinating efforts of HFD/OES, HVFR, USFS, and CAL FIRE to reduce unplanned human-caused ignitions.
- Increase public outreach regarding elder/low income assistance with vegetation management.
- Manage brush accumulation (especial blackberry bushes) around fire hydrants and water tanks to reduce hazardous conditions. Hoopa residents are encouraged to clear brush to assist local volunteer firefighters.
- Improve maintenance of fire hydrant system and replace hydrants as needed.
- Pursue FEMA Pre-Disaster Mitigation project grant funding to address wildfire hazards and disaster preparedness.
- Explore ideas for how to assist residents with keeping or securing affordable fire insurance. There is a need for advocacy on this topic and community concern expressed about potential "red-lining".
- Identify sensitive areas and priority medicinal and material gathering places and include in pre-attack plans to limit use of fire retardant. There is local concern about fire retardant's potential harmful impacts on the environment and basket making materials.
- Work closely with the Executive Council to address problems with frequent and intentional blocking of access points that could hinder evacuation and emergency response.
- To support integrated planning and collaboration, share relevant local GIS data sets between the County FSC and Tribal Departments so that future coordinated planning efforts are based on the best possible mapping and data analysis for the Hoopa Valley. This may include locally generated GIS layers containing roads, land use and planning designations, wildfire ignitions and perimeters, planned and completed fuels reduction projects, natural resources features, and evacuation routes.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*. In addition, the Hoopa CWPP and Hazard Mitigation Plan provide detailed recommendations similar to the general guidance listed on the following pages. To guide local action, review those plans first.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them (particularly arson).
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about past wildfire events.
    - Encourage local service organizations to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction. See details in the *Priority Action Recommendations* above.
- Create a hardened homes and defensible space demonstration project. The project should be centrally located, highly visible, and include interpretive signage to educate residents and commuters.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment.

- Identify and mitigate access limitations such as narrow roads, lack of turnouts, and/or limited turnaround points for emergency vehicles.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or efforts.

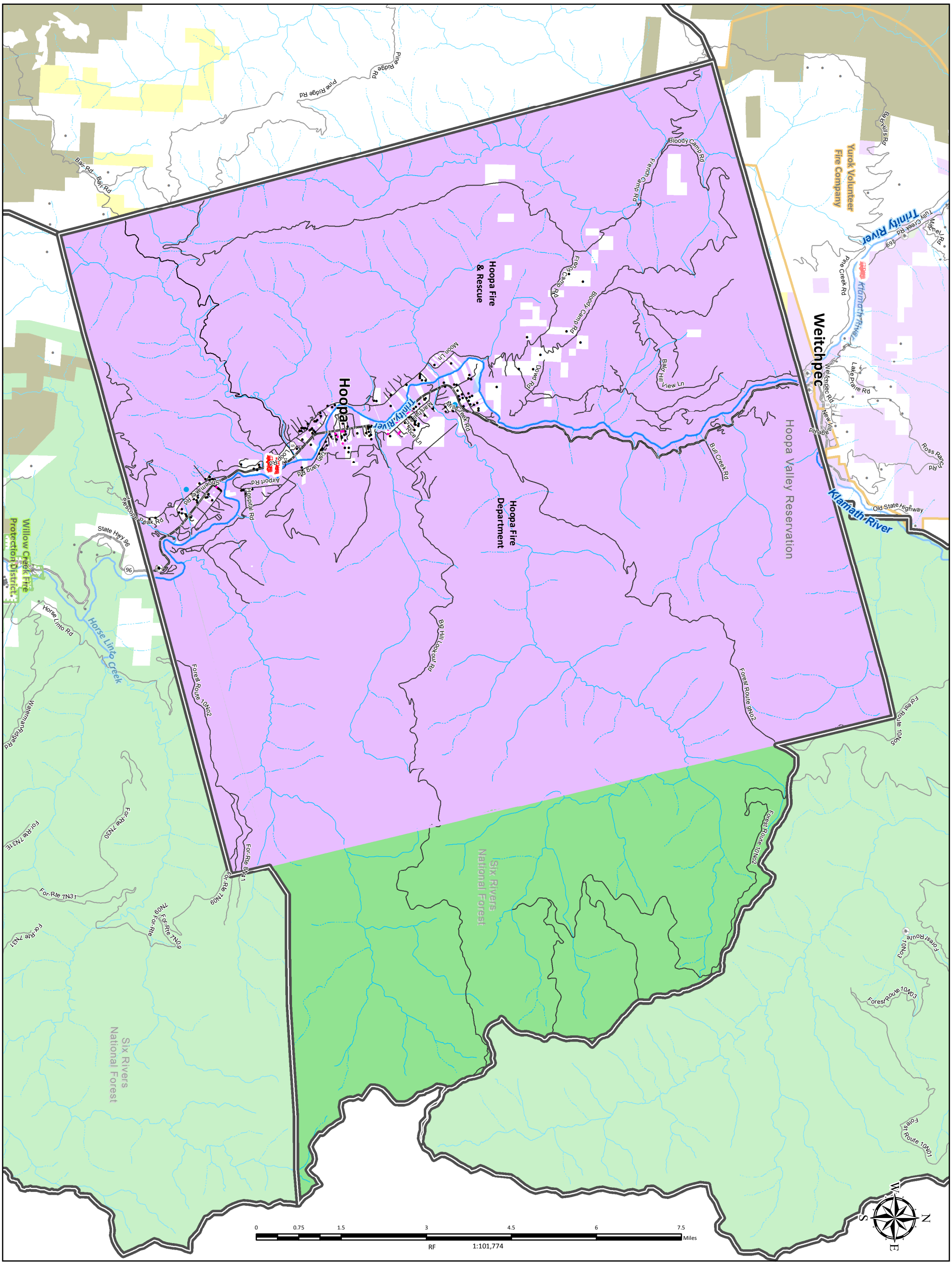
Restoration of Beneficial Fire

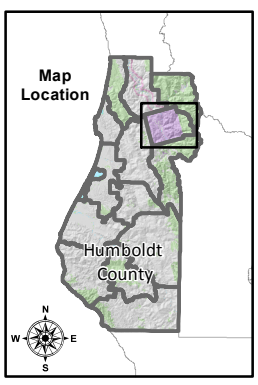
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for the HFD/OES.
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands and the HFD/OES for the Hoopa Indian Reservation, for Hoopa Lands.
- Help nearby federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

Integrated Planning

- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland. This will include active implementation and maintenance of the Firewise® action plan and organizing an annual Firewise® Day.
- Share GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal. See details in *Priority Action Recommendations* above.

MAP 4.4.1 HOOPA PLANNING UNIT





PLANNING UNIT MAP

CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

***Improved Parcels**
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

*Note: Improved Parcel data may not be as accurate for Tribal-owned areas.

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

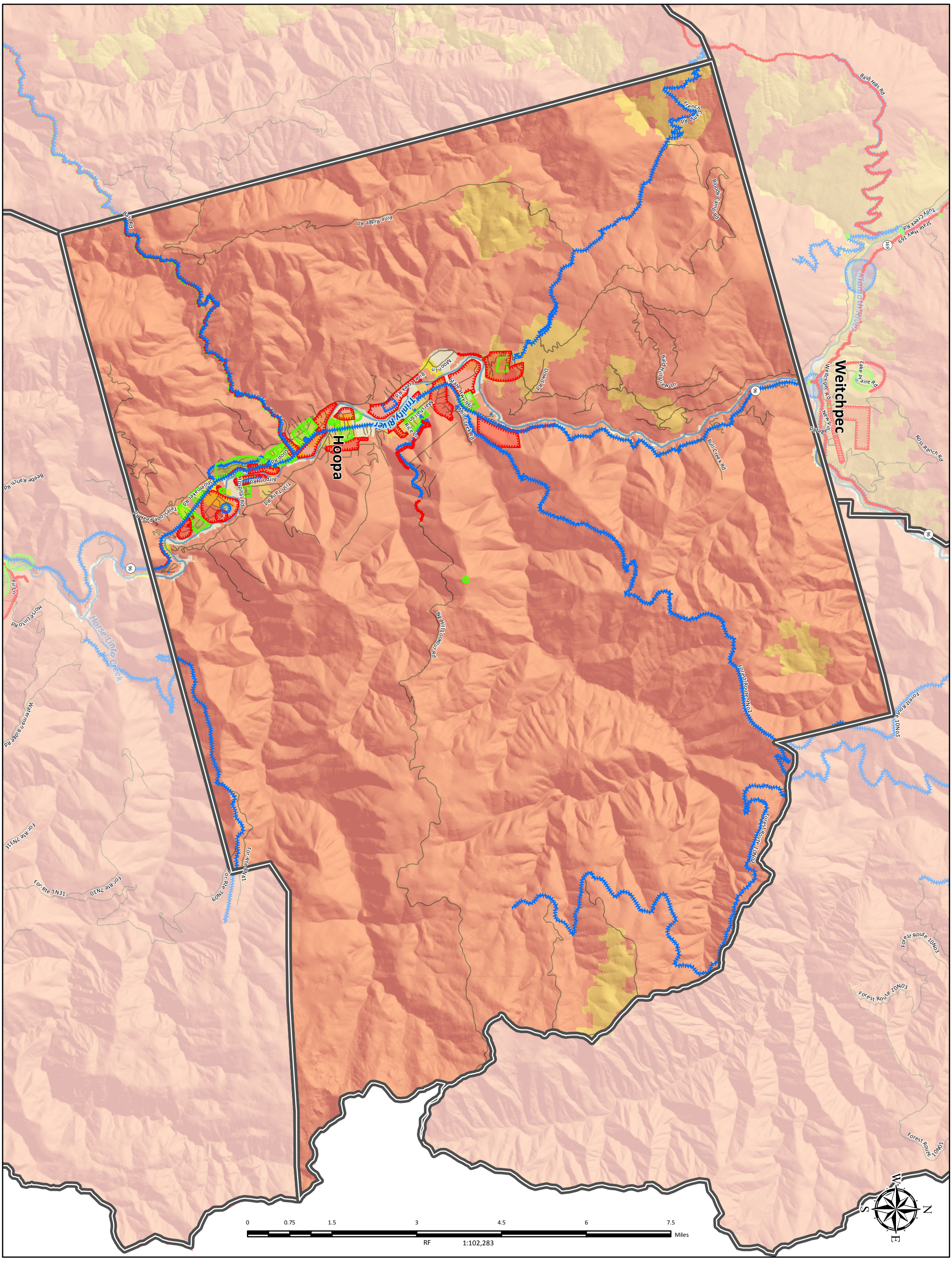
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

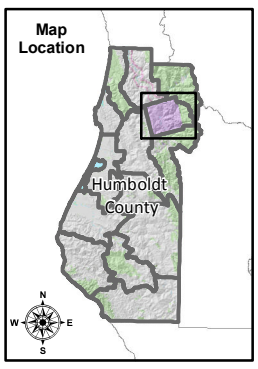
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.4.2 HOOPA PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

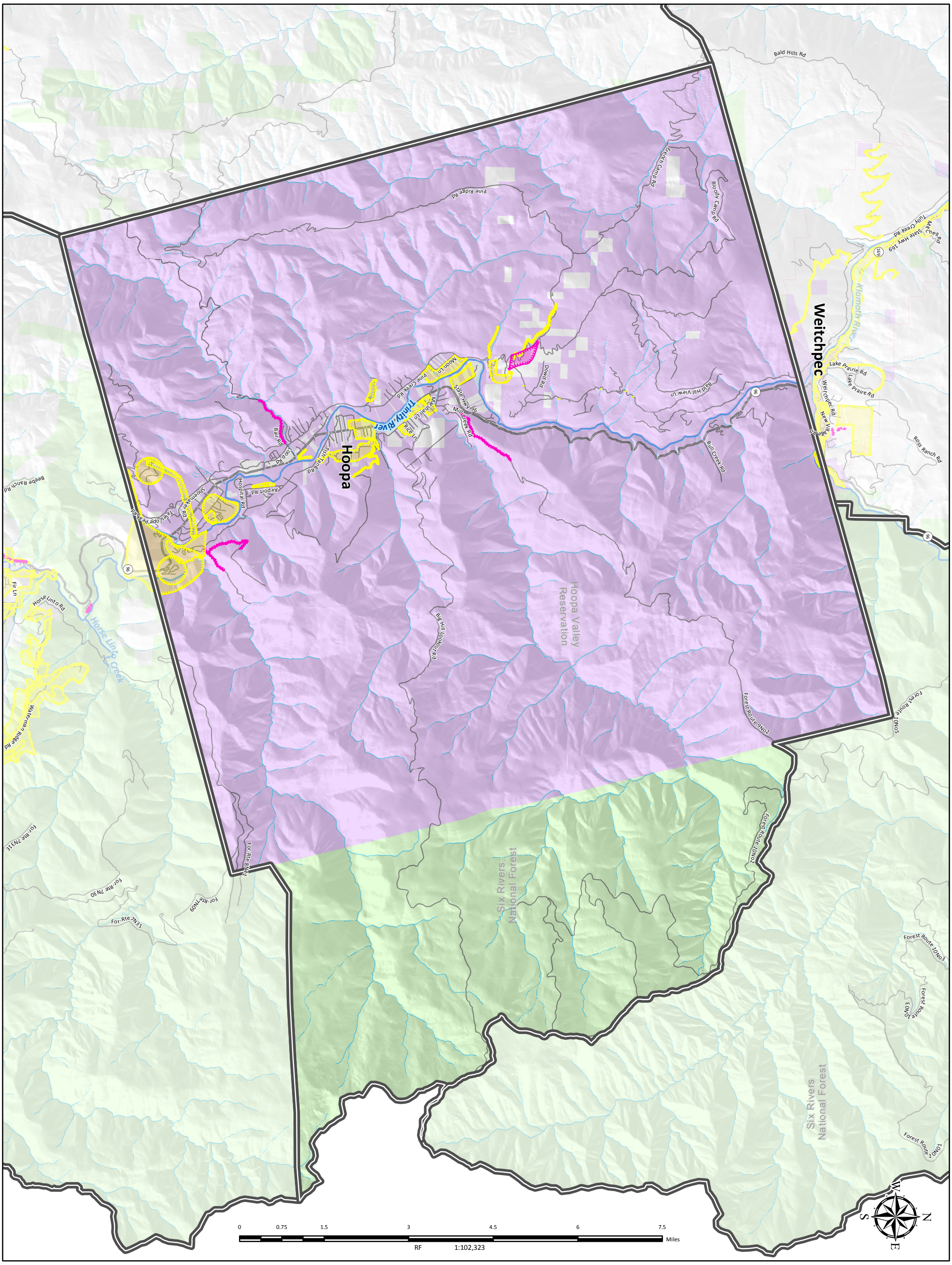
The map is intended for planning purposes and should not be used for precise measurement or navigation.

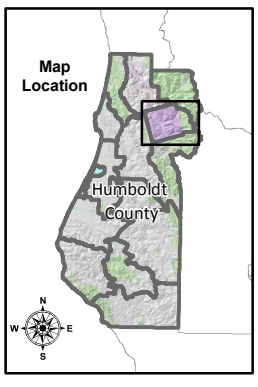
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.4.3 HOOPA PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

TRINIDAD PLANNING UNIT ACTION PLAN



Trinidad State Beach. Photo: California State Parks.

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Helpful Links

LOOK FOR THE WESTHAVEN AND TRINIDAD VOLUNTEER FIRE DEPARTMENTS ON FACEBOOK	*https://facebook.com*
TRINIDAD FIRE DEPARTMENT:	*http://trinidad.ca.gov/volunteer-fire-department-0*
TRINIDAD RANCHERIA:	*https://trinidad-rancheria.org*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.5 TRINIDAD PLANNING UNIT ACTION PLAN

4.5.1 TRINIDAD PLANNING UNIT DESCRIPTION



*A larger map of this planning unit can be viewed in Map 4.5.1, **Trinidad Planning Unit**.*

The Trinidad Planning Unit encompasses over 67,000 acres situated on the northern coast of Humboldt County. Highway 101 is the main transportation route, which runs north-to-south, parallel to the ocean. The Trinidad watershed is the smallest watershed in the county, with 83,684 acres spread along the Pacific coastline; Maple Creek and Little River are its primary waterways, both of which reach less than 20 miles inland.

The City of Trinidad, which was incorporated in 1870, comprises the community population center of this planning unit. Although the local population is small—containing less than 400 people—"the City of Trinidad acts as the commerce hub for around 1,500 inhabitants in the surrounding unincorporated communities, including Westhaven, Patrick's Point, and Big Lagoon".[1]

The Community of Westhaven is another population center within this unit. Westhaven is an unincorporated area that roughly encompasses the coastal area just north of Little River (near Moonstone Beach) and south of the City of Trinidad. The majority of the population resides within or adjacent to the boundary of the Westhaven Community Services District (WCSD). The WCSD is approximately 384 acres in size and serves a population of approximately 500.[2]

The area around Trinidad Head once supported the Yurok village of Tsurai, which was occupied until 1916 and is said to be the southernmost of many dozens of Yurok villages.[3] Today, Trinidad is bordered by the Cher-Ae Heights Indian Community of the Trinidad Rancheria, a federally recognized tribe with ancestral ties to the Yurok, Wiyot, Tolowa, Chetco, Karuk and Hupa peoples located within the ancestral territory of the Yurok. The Trinidad Rancheria is composed of 88 acres of trust lands in the towns of Trinidad, Westhaven, and McKinleyville and has 244 enrolled members.[4]

Also located within this planning unit is the Big Lagoon Rancheria, a federally recognized tribe composed of the Yurok and Tolowa peoples. Their 20 acre reservation is located near the community of Big Lagoon with a population of approximately 17. The Tribe has 24 enrolled members.[5]

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[1] County of Humboldt, Natural Resources Planning. (2014). Part 2 – Annexes for Municipalities [PDF]. Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (p. 10-1). Retrieved from http://www.humboldtgov.org/506/Local-Hazard-Mitigation

[2] County of Humboldt, Natural Resources Planning. (2014). Part 3 – Annexes for Community Service Districts. Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (p. 17-1).

[3] Heizer, R.F. & Milles, J.E. (1952). The Four Ages of Tsurai: A Documentary History of the Indian Village on Trinidad Bay. ("Preface", para. 1). Berkeley and Los Angeles, CA: University of California Press.

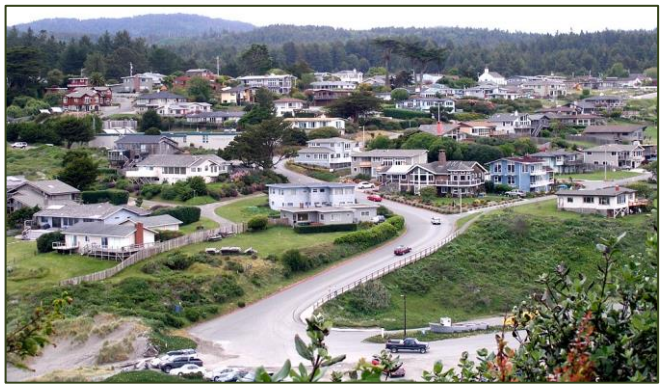
[4] Cher-Ae Heights Indian Community of the Trinidad Rancheria, prepared by Wise Oak Consulting. (2018). Multi-Hazard Mitigation Plan Update. [Draft PDF]. Retrieved from https://trinidad-rancheria.org/wp-content/uploads/2018/10/Trinidad_Rancheria_HMP_Draft_October_19_2018compressed.pdf

[5] Big Lagoon Rancheria. (n.d.). In *Wikipedia*. Retrieved from https://en.wikipedia.org/wiki/Big_Lagoon_Rancheria

The population and associated residential and commercial development within this unit is primarily located on the coast along Highway 101, intermixed with California State Parks lands and flanked to the east by large tracts of timberlands. Parcels in this planning unit span a variety of types, from "million dollar" homes with stellar ocean views, to rental units and RV parks near the freeway. The majority of homes are stick-built, and many have been upgraded within the last decade. Well over half of the land in the Unit is commercial timberland, most of which is managed by the Green Diamond Resource Company. State Parks areas such as Patrick's Point, Trinidad Beach, and Big Lagoon are scattered along the coastline.

4.5.2 TRINIDAD ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.



City of Trinidad. Photo: Cool Caesar.

> ***Special status species:*** Animal or plant species that are officially listed, proposed for listing, or are a candidate for possible listing under the State and/or Federal Endangered Species Act. Also includes species that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.

The majority of assets at risk in this planning unit are residential homes, water related infrastructure, and key natural resource areas. These natural resources specifically include private and municipal water supply drainages, commercial timberland, and public beaches. Several *special-status wildlife species* found in this planning unit include southern torrent salamander, tailed frogs, red tree vole, as well as Chinook and coho salmon, and steelhead trout.[6]

Map 4.5.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[7] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.



Southern torrent salamander. Photo: Gary Nafis.



Patrick's Point State Park. Photo: Nathan Gonzalez.

[6] Dyett & Bhatia. (2002). Trinidad Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. (p.116). Retrieved from *https://humboldtgov.org/571/Background-Reports*

[7] Geographic Information Systems (GIS).

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.5.1 TRINIDAD: COMMUNITY-IDENTIFIED ASSETS AT RISK	
Big Lagoon Rancheria	Big Lagoon School
Patrick's Point State Park	Patrick's Point Drive, Hotels, etc.
Trinidad Head Cell Phone Towers	Westgate Community Development
Little Red Inn – historical site	Trinidad Downtown
Cher-Ae Heights Casino	Tribal youth center
Tribal operations building and emergency center	Greater Trinidad
Westhaven Fire Hall	Westhaven Community
Westhaven Community Church	Big Lagoon Community and Big Lagoon Rancheria
Trinidad Water Treatment Plant	Upper Fox Farm Community
Westhaven Water Treatment Plant	Patrick's Point Watershed (Drinking Water)
Trinidad Water Tanks (300,000 gallons)	Luffenholtz Watershed (Municipal Watershed)
Moonstone Grill / Beach Area	Two Creeks (Municipal Watershed)
Additional Assets	
Commercial timberland	State and County beaches

4.5.3 TRINIDAD WILDFIRE ENVIRONMENT

Approximately 32% of the Trinidad Planning Unit is zoned "Moderate *Fire Hazard Severity*," as determined by CAL FIRE,[8] including all of the populated areas along the coastline. Nearly the entire remaining Unit area containing timberlands is zoned "High Fire Hazard Severity" (68%).

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

For a closer look at fire hazard severity, see Map 4.5.2, ***Trinidad Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

[8] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

Humans, vehicles, and lightning strikes are the most probable ignition sources here. Human-caused fire starts are more likely to occur in populated areas and recreation spots; buildup of roadside fuels increases the likelihood of fire starts from vehicles. Downed power lines are also potential ignition sources. Much of the land in this unit is seismically active, with the Trinidad and Big Lagoon faults located close to shore; this creates the potential for electrical fire starts that may follow an earthquake.

Fire History

Traditional forest management methods used by Native Americans in this region typically incorporated low-intensity, intentional burns that helped facilitate the production of cultural and ecological resources. However, a national policy beginning in the 1930s that emphasized *fire suppression* in forest management systems has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Logging operations in the area that incorporated clear-cuts have also contributed to alterations in stand compositions. Forest ecosystems adapted to low-intensity fires that would burn off brush and newer starts in the understory are now threatened by overcrowded forests and accumulated fuels in some areas of the Unit.

> ***Fire suppression:*** All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

There have been very few major fire events in this planning unit within **recent decades**. The A-Line Fire in 1936 was one of the last major wildfire events in this area, burning a substantial 1,628 acres in total. The Luffenholtz Fire in 1908 is another noteworthy event that burned the town of Luffenholtz to the ground. According to a September 25, 1908 article in the *Sacramento Union*, over 100 residents were left homeless, there were two deaths, thousands of acres of timberland were destroyed, and the Little River Mill burned. The Little River Redwood Lumber Company, the Oregon and Eureka Railroad Company, and Kellstroms's Mill reported significant financial losses. The southern edge of the community of Westhaven and neighborhoods along Crannell and Dows Prairie roads now sit within the historic footprint of that devastating fire. Despite the coastal influences and moist climate, catastrophic wildfire has and could still play a role in the local environment. Particular vigilance should be observed during the months between June and October.

FIGURE 4.5.2 TRINIDAD: WILDFIRES OVER 10 ACRES IN THE LAST 100 YEARS 1908-2017[9]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
A-Line	Unknown/ Unidentified	1936	17,531	17,531
G.P. #6	Unknown/ Unidentified	1970	76	567
Luffenholz	Unknown/ Unidentified	1908	3,420	7,434
No Name	Unknown/ Unidentified	1945	15,792	15,792

Note: An interactive map of fire history through 1908 is available through the County WebGIS.

[9] FRAP. (2018). State Fire Perimeters 1908-2017.

Structural Ignitability

> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.
>
> ***Home Ignition Zone:*** The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.
>
> ***Structural ignitability:*** The ease with which a home or other structure ignites.

Communities in this unit exist within the *wildland-urban interface* (WUI), which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[10], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Many homes in the Unit are surrounded by steep slopes that can limit their defensible areas, put structures in the line of up-hill spreading wildfires, and limit emergency access of firefighting resources.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[11]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Although the high levels of humidity and precipitation within the coastal climate help prevent thorough drying-out of vegetation, it is important that communities in this area do not become complacent about the risk of wildfire. Hazardous fuel loads in the form of brush and timber litter produced by logging activity can increase the potential for ignition and rapid spread of wildfires.

Map 4.5.2, found at the end of this Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

The City of Trinidad's Water Department provides potable water to residents within the city limits and has 30 hydrants available to provide fire protection water. The WCSD supplies drinking water to customers and maintains fire hydrants in all areas where water service is available within its

[10] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from *https://anrcatalog.ucanr.edu/pdf/8393.pdf*

[11] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

boundaries.[12] Residents outside of this service area obtain water through other means, such as drawing from nearby creeks and holding tanks. The availability of sufficient firefighting water has been identified as a challenge for providing fire protection services to communities within this planning unit. A lack of water tanks outside of water service areas contributes to this complication. Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.5.3 TRINIDAD: FIRE PROTECTION WATER DRAFT SITES	
○ Big Lagoon	○ Azalea Glen Pond
○ Two Ponds (1 million gallon total; dip or draw)	○ Big Lagoon Mill Pond
○ Trinidad Water Tanks (300,000 gallons)	
Note: Locations identified at community workshops will need to be vetted further with local firefighting personnel.	

Map 4.5.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.5.4 TRINIDAD FIRE PROTECTION CAPABILITIES

The Trinidad *Volunteer Fire Department* (TVFD), the Westhaven Volunteer Fire Department (WVFD), and CAL FIRE provide community fire protection within the Unit. The Trinidad Rancheria does not have its own fire department and services are provided through multiple local and Federal agreements depending on the Tribal land area.[13]

The TVFD provides fire protection, medical, and rescue services to the City of Trinidad as well as the surrounding area as needed through mutual aid agreements. The WVFD was founded in 1950 as a non-district volunteer company with financial support provided primarily by donations and fundraisers. Their primary fundraiser is the annual Wild Blackberry Festival, featuring blackberry pies and jams handmade by the Westhaven Ladies Club.

This planning unit is also home to the Trinidad CAL FIRE Station, which provides year-round fire protection services to communities within County Service Area #4 (CSA #4) through an *Amador agreement* with the County of Humboldt. CAL FIRE has *mutual aid agreements* with volunteer fire departments in the surrounding areas. These entities may call upon each other for additional support when responding to structural or wildland fires. Even with statewide obligations during fire season, at least one fire engine is guaranteed to remain in the Trinidad station at all times.

The VFDs in this unit are in need of more volunteer members to perform a range of duties including administration, fundraising, and maintenance. Both Trinidad and Westhaven VFDs are currently working to secure funds to improve their fire stations.

[12] Humboldt Local Agency Formation Commission. (2008). Municipal Service Review for the City of Trinidad. Retrieved from *http://humboldtlafco.org/msr-soi-reports*

[13] Trinidad Rancheria. (2018). Multi-Hazard Mitigation Plan Update.

Volunteer fire department: A fire department associated with a local agency (either a city of a special district authorized to provide fire protection) that is comprised almost entirely of volunteer, unpaid, firefighters, whose primary objective is community fire protection.
Amador agreement: A contract that continues CAL FIRE staffing and station coverage through the winter off season.
Mutual aid agreement: A reciprocal aid agreement between two or more agencies that defines what resources each will provide to the other in response to certain predetermined types of emergencies. Mutual aid response is provided upon request.

FIGURE 4.5.4 TRINIDAD: FIRE PROTECTION RESOURCES[14,15]

PERSONNEL	SERVES		FIRE APPARATUS	RESPONSE
	RESIDENTS	AREA (SQ. MI)		
TRINIDAD VOLUNTEER FIRE DEPARTMENT (TVFD) – PHONE (707) 677-0224 • EMAIL: *tvfdchief@gmail.com*				
10 Volunteer	367	District: 0.65 Out of District: 1.63	○ Fire protection ○ Medical and rescue services ○ Aid to CAL FIRE and WVFD	
FIRE APPARATUS				
○ Type-1 engine ○ Type-4 4x4 vehicle			○ Type-7 rescue vehicle	
WESTHAVEN VOLUNTEER FIRE DEPARTMENT (WVFD) (NON-DISTRICT, NON-TAX BASED) – PHONE (707) 677-0388				
8 Volunteer 15 Auxiliary	857	Response: 13	○ Fire protection ○ Medical and rescue services ○ Aid to CAL FIRE and TVFD	
FIRE APPARATUS				
○ Fire engine ○ Water tender			○ Rescue truck ○ (2) Rescue vehicles	
TRINIDAD BATTALION COMMUNITY SERVICE AREA (CSA) #4 – PHONE (707) 677-3638				
10 Regular 19 Seasonal	2,500	District: 23.5 Out of District: 9.95	○ Fire Protection ○ Medical and rescue services ○ Aid to WVFD and TVFD	
FIRE APPARATUS				
○ (2) Type-3 engines			○ Medical and rescue gear	

[14] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 45-47). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*
[15] Humboldt Local Agency Formation Commission. (Adopted Jan. 2016). North County Regional Fire Services: Municipal Service Review. Retrieved from *http://humboldtlafco.org/msr-soi-reports*

4.5.5 TRINIDAD EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Trinidad Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. It is likely though, that evacuation will travel either north or south along Highway 101. Several smaller roads connect residences and neighborhoods to Highway 101, and adequate ingress and egress along these roads is vital to residents that need to access the main highway evacuation route. Many of these smaller roads are narrow and windy, and some have sections that are un-paved and one-lane only. These types of conditions on smaller roads that lead to remote residences could create complications for emergency response vehicles trying to gain access during simultaneous home evacuations. Many routes are also overgrown with vegetation and many properties have inadequate turnaround spaces. Other ingress and egress impediments may include steep road sections, fallen trees and power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides along steep slopes in this area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

County fire-safety standards require roads to be of a certain width to allow access during emergencies. However, concern has been expressed that there is the potential for increased fire danger resulting from the widening of county roads to meet fire-safety standards. Although widening the road improves access, this process can also open up the overstory canopy to sunlight, which can enable the encroachment of fire-prone vegetation, such as huckleberry and scotch broom. Maintaining roadside vegetation clearance is important for keeping ignition risk low and protecting the communities that depend on these roads.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[16] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

[16] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**

4.5.6 TRINIDAD COMMUNITY PREPAREDNESS

No local *fire safe councils* (FSC) exist in this planning unit and none of the communities have achieved national *Firewise Communities/USA®* recognition. However, during the community outreach process, the communities of Trinidad and Westhaven both expressed an interest in forming a local FSC. Given their proximity and their shared interest in this goal, there is good potential for collaboration amongst these two communities in this endeavor. Alternatively, they may choose to pursue recognition as a Firewise® Community. The Trinidad Rancheria Multi-Hazard Mitigation Plan Update also identifies the formation of a Firewise® Community as a potential wildfire mitigation action. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. The process of becoming Firewise® includes a site specific wildfire risk assessment, an action planning process, and an annual educational community event.

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others to protect people, property, and natural resources from the risk of wildland fire. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Currently, efforts to educate community members about fire safety and to improve emergency preparedness within this unit are guided by the local fire protection service providers, the Trinidad Rancheria, CAL FIRE, Humboldt County Office of Emergency Services (OES), and the Humboldt County FSC.

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resource Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

Green Diamond Resource Company, which owns a significant acreage in this planning unit, has undertaken efforts to help reduce risk of wildfire occurrences on company lands. Firefighting equipment is maintained at logging operations and inside all vehicles; harvesting operations are suspended at specified levels of low relative humidity; and logging crews are required to make daily fire inspections after work is done during the fire season. The company also maintains fire trucks and heavy equipment for wildland fire emergencies. Green Diamond Forestry staff, logging and maintenance crews, and contractors are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. The company also treats logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, broadcast burning, and at times mastication and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post-harvesting biomass recovery for power generation, resulting in fuel hazard reduction.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.

Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

The table below summarizes the accomplishments of the Trinidad Planning Unit over the past five years.

FIGURE 4.5.5 TRINIDAD: FIRE PREVENTION ACCOMPLISHMENTS

- Westhaven VFD celebrated the following accomplishments in the last five years:
  - Secured $100,000 in grant funding over the last 10 years.
  - Acquired a water tender.
  - Improved their Insurance Services Office (ISO) classification from a 10 to a 5.
  - Received Measure Z funding for new fire engine and critical safety equipment (12 SCBAs and several sets of turnouts).
- In 2017, the Trinidad VFD modified their firehouse to accommodate larger Type-1 fire engines.
- In 2018, the Trinidad Rancheria completed a draft of the Multi-Hazard Mitigation Plan Update with a target final draft date in December.
- The annual Westhaven Wild Blackberry Festival fundraiser, sponsored by the Westhaven Ladies Club, has continued to benefit the Westhaven Volunteer Fire Department. July 2018 marked its 58th year.



Blackberry pie served at the Westhaven VFD annual fundraiser. Photos: Elaine Weinreb.



Westhaven VFD fire truck.

4.5.7 TRINIDAD LOCAL WILDFIRE PREVENTION PLANS

As of the date of this CWPP, there were no completed local planning documents such as a CWPP or Firewise® Assessment for this planning unit. Communities within this unit may choose to pursue Firewise® recognition, and through that process would adopt a Firewise® Action Plan that identifies and prioritizes actions that reduce the risk posed by wildfire in the Trinidad Unit. Alternatively, a local Fire Safe Council could facilitate the writing and implementation of a community-level wildfire protection plan. As a first step, a point person or group of individuals must come forward to lead these efforts from within the community. This Planning Unit Action Plan as well as the Trinidad Rancheria hazard mitigation plan can provide a starting point for fire-planning efforts within this planning unit. To help guide and inspire wildfire preparedness in this planning unit, this CWPP provides a list of priority action recommendations reflective of the community concerns and ideas collected through the process described below. *See section 4.5.9, **Trinidad Action Plan** for a list of priority action recommendations.*

A relevant plan that addresses wildfire hazards for a portion of this unit is the Cher-Ae Heights Indian Community of the Trinidad Rancheria Multi-Hazard Mitigation Plan Update. The plan is being updated to "protect lives, property, and the environment; as well as support tribal sovereignty".[17] The Trinidad Rancheria community identified the following five goals to reduce or avoid long-term vulnerabilities to the identified hazards[18]:

- Goal #1: Promote sustainable living
- Goal #2: Protection of lives and property
- Goal #3: Increase Public Awareness of Local Hazards
- Goal #4: Partnerships and Implementation
- Goal #5: Strengthen Emergency Services Capability

Reference the Trinidad Rancheria website to view details and monitor Plan update progress and implementation. The hazard mitigation plan is a valuable resource that should be reviewed to increase understanding of local wildfire hazards and potential mitigation actions within the Rancheria as well as the surrounding area.

4.5.8 TRINIDAD COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 14, 2017 at the Westhaven Fire Hall with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of

[17] Trinidad Rancheria. (2018). Multi-Hazard Mitigation Plan Update.
[18] Trinidad Rancheria. (2018). Multi-Hazard Mitigation Plan Update.

this Unit Action Plan (*Map 4.5.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.5.6* and *4.5.7* in this section. *For more information on the mapping exercise, see Appendix B.5,* ***Mapping Exercise Instructions****.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.5.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following non-geographic community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.5.6 TRINIDAD: COMMUNITY-IDENTIFIED PROPOSED PROJECTS, NON-GEOGRAPHIC
○ Upgrade all water mains to 4" and add hydrants.
○ Build fire department garage addition for Westhaven VFD.
○ Develop program to put in water tanks with fire department hookup/standpipe.
○ Rural (north) Trinidad would like CAL FIRE to audit defensible space.
○ Create a local fire safe council.
○ Implement a community-wide mobile Chipping Program.
○ Implement a Big Red Truck Program, where fire department representatives visit residents and help them identify priority areas, such as those with high fuel loads and one-way-in, one-way-out roads.
○ Increase Hazard Awareness with public outreach and education; demonstrate good examples with local models of fire safe landscaping.
○ Conduct a “boilerplate” Firewise® Assessment as a public outreach tool to gauge local interest in becoming a Firewise® Community.
○ Install a fire hydrant at Moonstone Beach.
○ Recruit more volunteers for the local fire departments.
○ Seek out more volunteer firefighting training opportunities.

The local residents who attended the November 14, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years.

FIGURE 4.5.7 TRINIDAD: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Inter-tie between Westhaven & Trinidad water systems	Water	TRI065
Upgrade all water mains to 4" & add hydrants (particularly Westhaven CSD)	Water	Non-geographic
Fire department garage addition	Upgrade	Non-geographic
Rural Trinidad neighborhood fuels reduction	Defensible Space	TRI074

4.5.9 TRINIDAD ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- Identify community or neighborhood level organizations, Tribes and/or groups of individuals with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program, FSC, or other similar wildfire preparedness program.
    - This focus area could be added to existing disaster preparedness groups.
    - Conduct community risk assessments with support from the HCFSC, local fire departments, and CAL FIRE and draft Firewise® action plans. Use information from this unit action plan as a starting point for the development of community assessments and action plans.
    - Actively implement and maintain the Firewise® action plans on an annual schedule.
    - Host Firewise® Days to share findings and inspire action; Firewise® activities could be added to existing annual community events.
    - If necessary, seek funding to support these efforts.
- Once implementation groups are formed, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Trinidad Rancheria Multi-Hazard Mitigation Plan Update*, this *Priority Recommendations List*, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.

- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include, creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. The Big Red Truck Program was suggested for this area, where local firefighters visit residences and offer advice for improving fire safety on a property.
    - Rural Trinidad Neighborhoods off of Stagecoach Road (TRI065)
    - Trinidad Rancheria (TRI098)
    - Westhaven (TRI095)
        - Moonstone Cross Road
        - Driver Road
        - Ox Lane
        - Skyhorse Ranch/Brindle Lane
    - Neighborhood at the end of Fox farm Road (TRI096)
    - Crannell / Dows Prairie Road neighborhoods (TRI097)
    - McDonald Creek Rd and Kane Ridge Road neighborhoods (ORI055)
- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites.
    - Residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
        - Create an alternative evacuation route for neighborhoods at the end of Fox Farm Road (potential alternative is from Fox Farm to Stumptown Road (TRI068).
        - Create an alternative evacuation route for residents in Big Lagoon.
    - Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote-hard to access residences. Priority roads for initial evaluation and outreach efforts include:
    - Old Railroad Grade North
    - Luffenholtz Lane
    - Fox Farm Road
    - Stagecoach Road

- Implement the Cher-Ae Heights Indian Community of the Trinidad Rancheria Multi-Hazard Mitigation Plan Update and consider opportunities to collaborate with neighboring communities.
- Pursue funding and support for the Westhaven and Trinidad fire hall additions/expansions.
- Conduct public education and outreach efforts regarding wildfire hazards and risks. Send out informational material in mailers throughout the communities. Focus initial efforts on increasing awareness about the risk of wildfire occurrence to inspire action. Education will help residents understand that there is a seasonal window of opportunity when the conditions are just right for severe wildfire and it only takes one ignition during that time to threaten local communities.
- Coordinate with CAL FIRE, the WVFD, the TVFD, and local community members and/or groups to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
    - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
    - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
    - Contact the HCFSC for more details and examples of how to address this situation.
- Seek funding and partners to address water system needs:
    - Establish an inter-tie between Westhaven and Trinidad water systems (TRI065).
    - Make essential water main upgrades to support fire flow, particularly for the Westhaven CSD.
    - Evaluate the need for additional fire hydrants.
    - Evaluate possible funding sources, including Federal Emergency Management Agency (FEMA) hazard mitigation grants and/or Proposition 1 Water Bond funding though the Integrated Regional Water Management program administered by the North Coast Resource Partnership[19].
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots. Community identified priority was placed on the following:
    - Trinidad greater area neighborhoods.

[19] Find out more about the North Coast Resource Partnership and funding cycles at: *https://northcoastresourcepartnership.org*

- Westhaven greater area neighborhoods.

- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing tanks are outfitted with fittings compatible with firefighting equipment.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about recent coastal wildfires.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.

- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Work with commercial timberland owners such as Green Diamond Resource Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
    - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
    - Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.

- **W**ork with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- **A**ddress road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- **I**nform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- **I**nform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression. See details in the *Priority Action Recommendations* above.
- **I**ncrease the availability of water for fire protection. See details in the *Priority Action Recommendations* above.

Fire Protection

- **S**upport the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- **A**ssist in the development of recruitment and retention strategies for volunteer fire departments.
- **H**elp local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

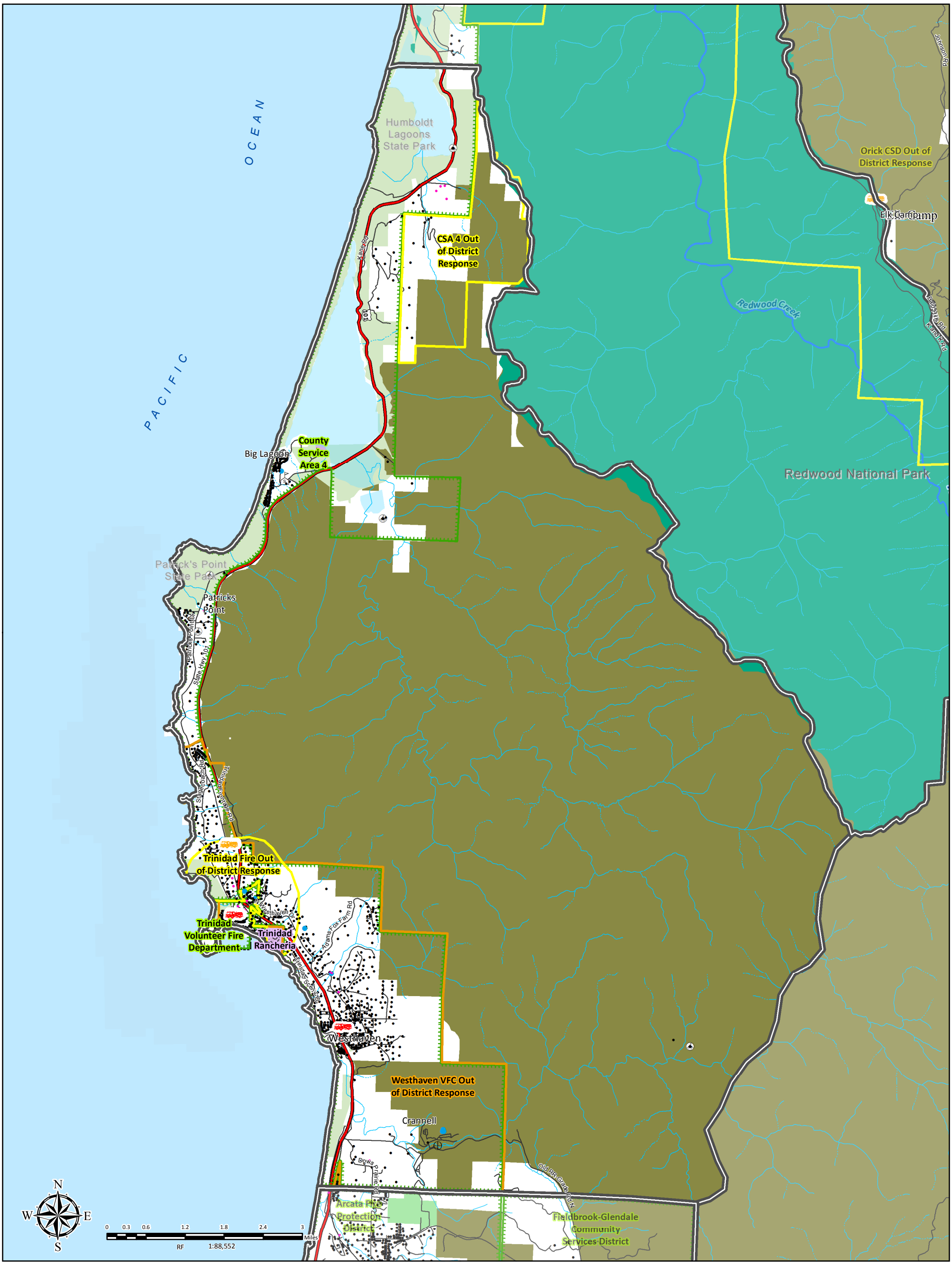
- **P**rovide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[20]
- **S**hare information about educational events that provide information about prescribed burning.
- **E**ncourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- **H**elp federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

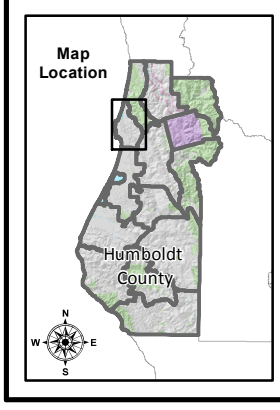
[20] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

Integrated Planning

- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland, particularly where there are many residences located along dead-end roads. See details in *Priority Action Recommendations* above.
- Share GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*).

MAP 4.5.1 TRINIDAD PLANNING UNIT





PLANNING UNIT MAP

- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

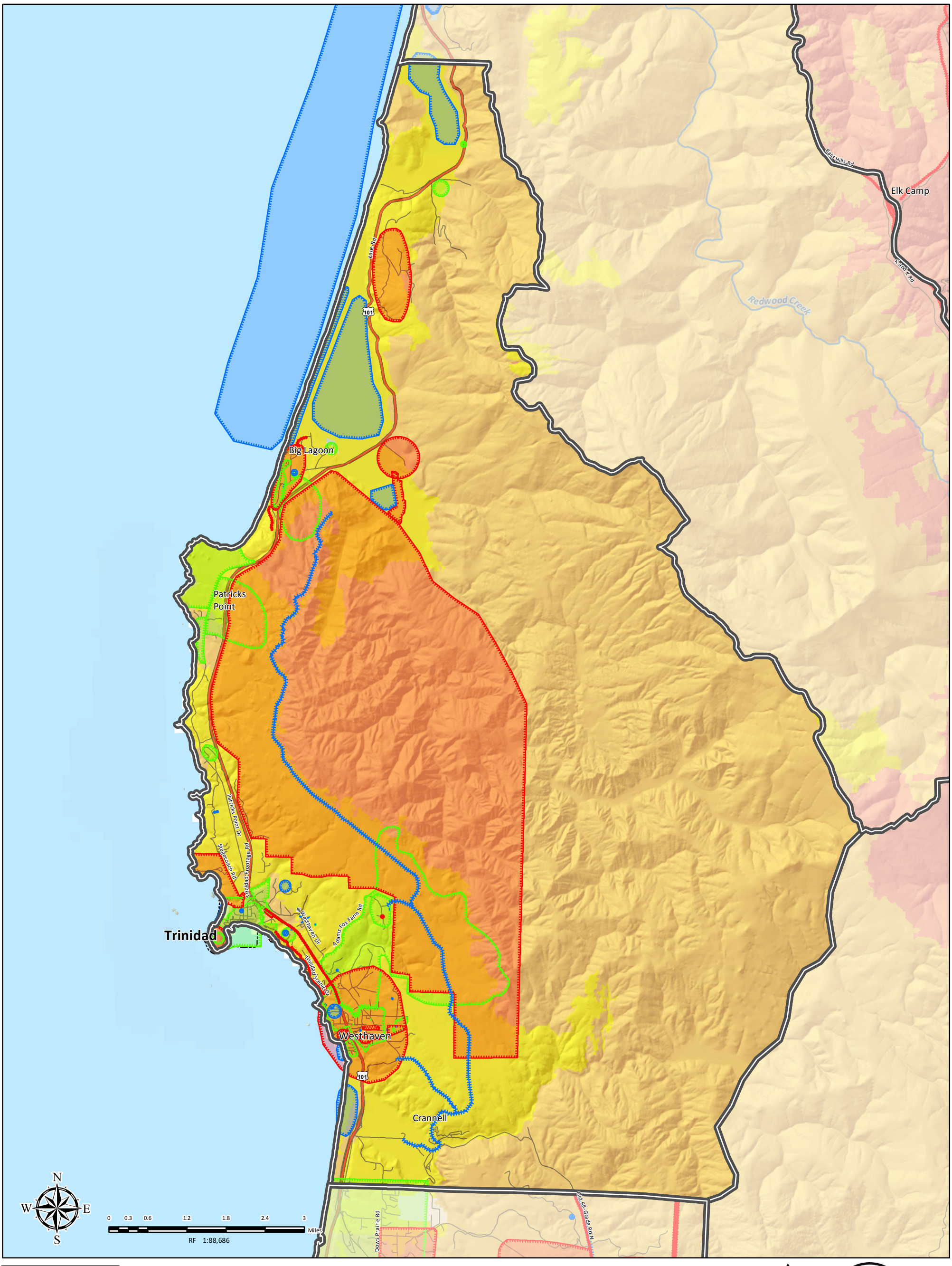
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

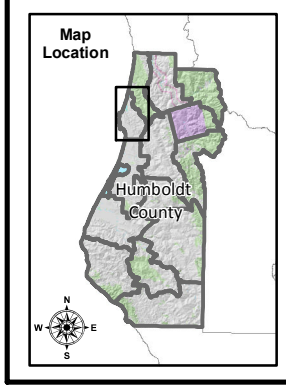
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.5.2 TRINIDAD PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

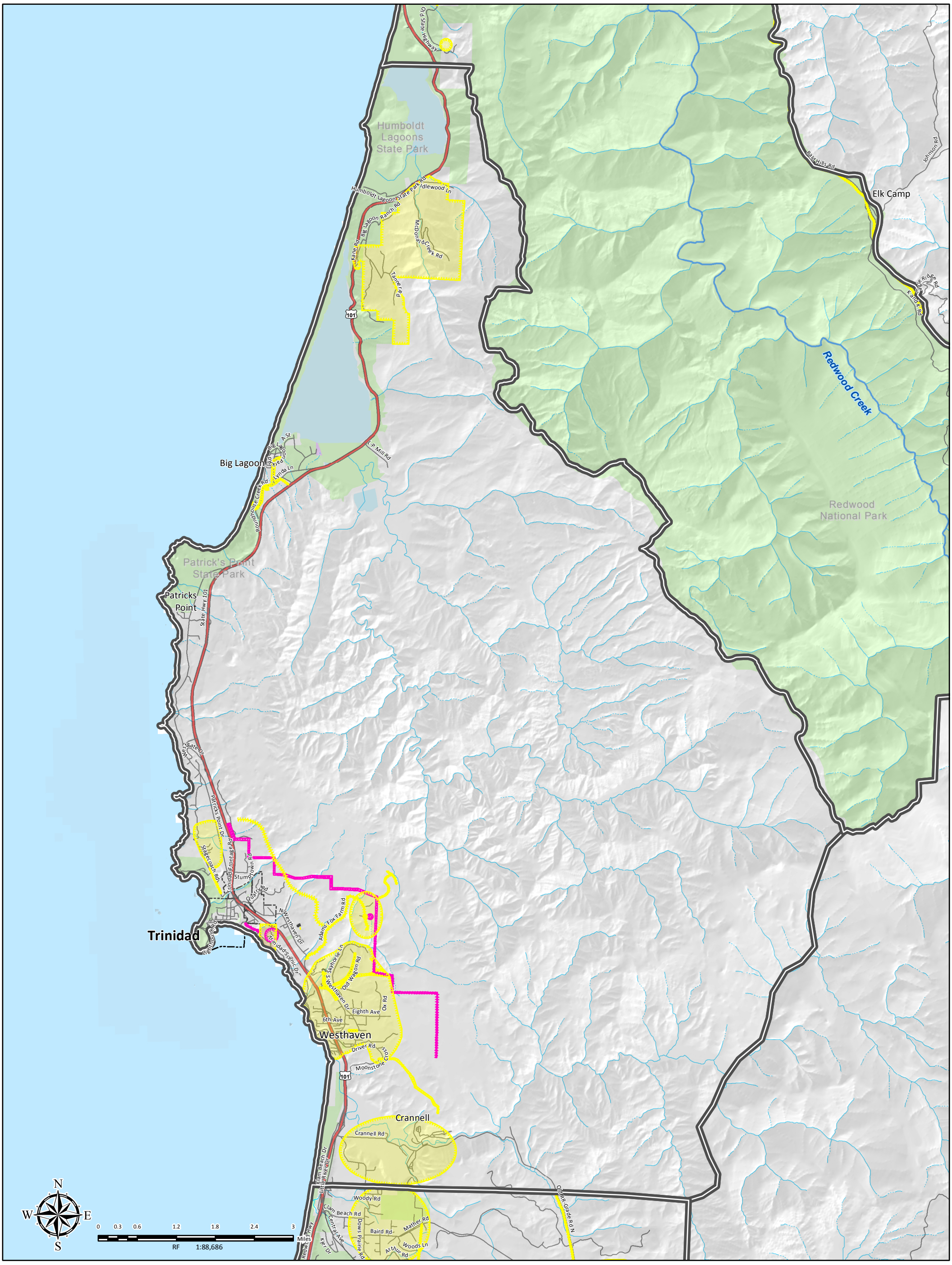
The map is intended for planning purposes and should not be used for precise measurement or navigation.

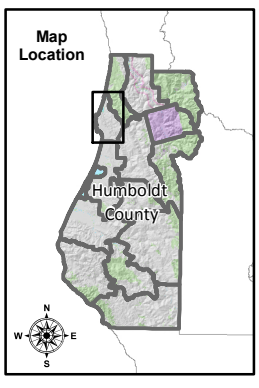
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.5.3 TRINIDAD PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

REDWOOD CREEK PLANNING UNIT ACTION PLAN



View from top of Chezem Road, overlooking Hwy 299 and the Redwood Creek drainage.

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Helpful Links

REDWOOD VALLEY/CHEZEM FIREWISE®:	*https://humboldtgov.org/1929/Redwood-ValleyChezem*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.6 REDWOOD CREEK PLANNING UNIT ACTION PLAN

4.6.1 REDWOOD CREEK PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.6.1, ***Redwood Creek Planning Unit****.*

The Redwood Creek Planning Unit encompasses over 190,000 acres situated in the northern heart of Humboldt County. Highway 299 is the main transportation route through the area and winds across the middle of the Unit in an east-to-west direction. This planning unit encompasses a substantial part of the Redwood Creek watershed, from its headwaters to the southern Redwood National Park boundary. Redwood Creek flows across the eastern side of the Unit in a northerly direction towards Orick, where it meets the Pacific Ocean. Other major waterways include the North Fork of the Mad River in the west, and Canon Creek in the southwest.

This planning unit is sparsely populated and there are no designated towns or cities within its boundaries. Three prominent neighborhood groupings are identifiable: the Redwood Creek community, clustered in the northern portion of the Unit along Stover Road; the Titlow Hill community, which is dispersed throughout the eastern portion of the Unit on Titlow Hill Road, just south of Highway 299; and the Chezem Road community, west of Titlow Hill Road. Numerous homesteads are also scattered throughout the Planning Unit, branching off Highway 299 and the smaller roads throughout the southern region of the Unit, such as Bald Mountain Road and Snow Camp Road.

Private land is the dominant ownership pattern in this planning unit, with the majority of land owned and managed by Green Diamond Resource Company. Barnum Timber Company and R.H. Emmerson & Son also maintain industrial timberland within the unit. A few parcels of Bureau of Land Management (BLM) land lie west of the Hoopa Reservation, and a small part of the southeastern Unit area includes a portion of Six Rivers National Forest, which is managed by the U.S. Forest Service. Primary land uses are timber and livestock production.

4.6.2 REDWOOD CREEK ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and other important attributes that individual communities rely on for their well-being.

The majority of assets at risk in this planning unit are residential homes, neighborhood areas, and ranchlands, as well as infrastructure components such as access roads/evacuation routes and a transfer station. Timberland resources are also valuable assets at risk to loss from wildfire. Environmentally significant assets include the habitat provided by the Redwood Creek watershed, which includes at least

33 *special-status* species of wildlife (threatened, endangered, or sensitive to human activities), five of which are fish species.[1]

Map 4.6.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[2] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Special status species: Animal or plant species that are officially listed, proposed for listing, or are a candidate for possible listing under the State and/or Federal Endangered Species Act. Also includes species that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.6.1 REDWOOD CREEK: COMMUNITY-IDENTIFIED ASSETS AT RISK

○ Bair Road to Hoopa	○ Green Diamond water hole access
○ Barber Construction; helicopter landing zone	○ Green Point School
○ Barnum meadow and bull pasture	○ Hooker Cabin (historical)
○ Barnum Ranch House "Bair House" stage coach stop	○ Mill Creek Bar (Green Diamond)
○ Beaver Flat (at Green Point School)	○ Old growth redwood stands
○ Camp Anderson (historical)	○ Old Three Creeks Road
○ Cemetery	○ Prairies, oak trees, bunch grass
○ Chezem Flat RV Sites	○ Redwood Creek Camp
○ Chezem Road creek access (Chezem Flat)	○ River Bar at Stover Ranch
○ Chezem Road Hwy 299 – buildings	○ Stover Road to Bair Road to Hwy 299
○ Chezem Road at Redwood Creek crossing (Lane Hoffman)	○ Stover Road to Bald Hills Road
○ Cookson Ranch neighborhood	○ Transfer Station
○ Creek Pool at bridge on Bair Road	

4.6.3 REDWOOD CREEK WILDFIRE ENVIRONMENT

The majority (62%) of the Redwood Creek Planning Unit, particularly the eastern half, is zoned "Very High *Fire Hazard Severity*", as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[3] The remaining 38% of the Unit, including most of the western half and some of the more populated areas on the eastern side (such as Titlow Hill) is zoned "High Fire Hazard Severity".

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, vehicles dragging chains while towing or issues with tires that throw sparks, smoking, playing with fire, poorly maintained debris burning or camp fires, ignitions associated with marijuana cultivation and processing, and arson are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources. Lightning is the most probable natural cause of fire starts within this

[1] Dyett & Bhatia. (2002). Redwood Creek Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. (p.82). Retrieved from *https://humboldtgov.org/571/Background-Reports*

[2] Geographic Information Systems (GIS).

[3] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

planning unit. Other factors that are likely to have a future impact on fire risk within this unit include climate change, which is likely to extend the dry season and large fuel increases resulting from the spread of *Sudden Oak Death (SOD)*—which has already been detected in areas of the watershed. In addition to true oaks, SOD kills tan oak trees, of which there are many interspersed throughout the area. As trees and tree limbs die off, a patchwork of dry fuel is left behind, greatly increasing the fire danger. This, combined with local weather patterns, high fuel loads, and homesteads spread across the landscape, creates a potentially dangerous wildfire environment.

Sudden Oak Death (SOD): A disease in oak trees that is a caused by *Phytophthora ramorum*, an invasive forest pathogen introduced to California in the mid-1990s through the horticultural plant trade. Affected areas can have a significantly higher fire hazard due to higher proportions of dead fuels of all sizes and prevalence of snags.

Concern was raised within this planning unit about the wildfire risks associated with marijuana cultivation and processing. This type of fire incident is not currently tracked, so it is difficult to document the extent of this impact. It is also unclear how the legalization and regulation of this industry will impact associated wildfire risks. However, there is enough concern to warrant prioritizing wildfire preparedness outreach to the associated population. In addition, it will be important to develop strategies to better track marijuana related fire ignitions and determine if associated regulation and permitting result in a reduction or change in the number of ignitions. This Plan recommends monitoring regulatory effectiveness in this regard and making changes as necessary.

For a closer look at fire hazard severity, see Map 4.6.2, ***Redwood Creek Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Some of the early agricultural settlers in the late 1800s used intentional burning to clear and maintain grasslands for pasture animals. A heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires.

Fire suppression: All the work of extinguishing or containing a fire, beginning with its discovery.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuel. Intense timber harvests during the 20th century further exacerbated damages to forest ecosystem health.

The extent that the landscape has been altered as a result of fire suppression is reflected in the *condition class* of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area. **Approximately 44% of the Redwood Creek Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 25% of the area is condition class 2, or moderately altered from the historical range.**

There have been very few major fire events in this planning unit within recent decades. Wildfires have occurred in and around the populated areas, but they were kept relatively small. Despite the limited fire occurrence, wildfire has and could still play a role in the local environment. In the absence of wildfire or human intervention wildfire fuels and the associated hazards will continue to grow. The conditions for wildfire are ripe and it is essential that the hazard mitigation actions already in progress continue and expand in scope. Particular vigilance should also be observed during the months between June and October. The table below lists recent large (over 10 acres) wildfires and their causes.

FIGURE 4.6.2 REDWOOD CREEK: FIRES OVER 10 ACRES 1967-2017[4]

Fire Name	*Cause*	*Year*	*Acres*
Red	Debris	2014	332
Snow	Escaped Prescribed Burn	2011	63
River	Debris	2009	33
Little	Escaped Prescribed Burn	2009	29
Bald Fire	Lightning	2015	27
Valley	Debris	2009	25
Summit	Unknown/ Unidentified	2016	20

Note: An interactive map of fire history through 1908 is available through the County WebGIS.

Structural Ignitability

> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

All residences in this planning unit exist within the *wildland-urban interface* (WUI), where wildfires can easily become structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L Living*

[4] FRAP. (2018). State Fire Perimeters 1908-2017.

with Wildfire and *Home Survival in Wildfire-Prone Areas*[5], published by the University of California Agriculture and Natural Resources. **The Redwood Valley/Chezem Firewise® Community Assessment reports many homes in direct contact with flammable vegetation, debris accumulated on roof tops, and tree branches overhanging structures.**[6] These are all hazards that could contribute to structure losses during a wildfire and they need to be mitigated.

It is a well-known fact—albeit difficult to quantify—that there are homes built in this planning unit without permits. There are also some homes that were built before building code compliance was required; building codes include standards intended to harden homes against damage from wildfire. In addition, in some instances, alternative owner-builder permit procedures can be used, for which many of the standard permit requirements do not apply, including those intended to harden homes against wildfire. Many of these unpermitted, pre-code, and alternative owner-builder permitted homes are especially vulnerable to wildfire ignition. That being said, and based on recent examples in neighboring counties, all homes in this planning unit have vulnerabilities to wildfire and steps should be taken to mitigate wildfire impacts.

The Safe Homes Program is a countywide program that property owners who have unpermitted strictures within this planning unit should be aware of and find out more about. In an effort to incentivize building permit compliance for existing unpermitted structures, the Humboldt County Planning and Building Department is administering the Safe Homes Program.[7] Through December 31, 2022, the Humboldt County Planning and Building Department and the Humboldt County Division of Environmental Health will waive penalty fees associated with construction permits; all customary permit fees will still apply and applicable codes and regulations will need to be met.

SAFE HOMES PROGRAM

For additional information and submittal requirements contact:

Humboldt County Planning & Building **707-445-7541**

https://humboldtgov.org/156/Planning-Building

The subdivision of timber- and ranchlands throughout the planning unit area has generated an increase in the number of homes that exist in the wildland-urban interface (WUI). The most noteworthy of these is a 60 parcel unpermitted subdivision in the Titlow Hill area. The property owners are in the process of working with the County of Humboldt to complete a General Plan Amendment and a Zone Reclassification to bring the parcels into compliance. An Environmental Impact Report (EIR) is required as part of this process and is currently under development. The substantial unpermitted development associated with this subdivision raises concerns about increased risk of wildfire. Investigating this issue further is out of the scope of this CWPP, however, it is vital that wildfire hazard mitigation and public safety measures are incorporated into the process of bringing the subdivision into compliance with applicable laws and regulations. The safety of the residents and the protection of the associated property and local ecological values depend on due diligence in this matter.

Wildfire risk in this planning unit is also exacerbated by the presence of dense vegetation growing in the Home Ignition Zone and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to structural ignitability. Of particular concern are houses with needles and leaves accumulating

[5] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from *https://anrcatalog.ucanr.edu/pdf/8393.pdf*

[6] Redwood Valley/Chezem Firewise® Community Working Group. Redwood Valley/Chezem Firewise® Community Wildfire Assessment. Retrieved from *https://humboldtgov.org/1929/Redwood-ValleyChezem*

[7] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

on rooftops or in rain gutters. Houses with wooden rooftops and sidings add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Many homes in this unit are surrounded by steep slopes that can limit their defensible areas and put structures in the line of up-hill spreading wildfires.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[8]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Community-identified hazards are listed in the table below. This list is not intended to be comprehensive and illustrates the concerns of participating community members.

FIGURE 4.6.3 REDWOOD CREEK: COMMUNITY-IDENTIFIED SIGNIFICANT HAZARDS
○ Eroding roads and slides hindering evacuation and emergency vehicle access.
○ Long dead-end roads with only one way in and one way out.
○ Slash buildup resulting from timber harvest activities adjacent to residential properties.
○ Significant unpermitted construction that is not in compliance with Humboldt County Fire Safe Regulations, particularly in Titlow Hill neighborhoods.

Map 4.6.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

No municipal water sources service the neighborhoods within this planning unit. Rather, residents obtain water through other means, such as drawing from nearby creeks and holding tanks.

Community-identified locations from which fire protection water could be drawn are listed below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.6.4 REDWOOD CREEK: FIRE PROTECTION WATER DRAFT SITES
○ Chezem Road – creek access (Chezem Flat)
○ Creek Pool at bridge on Bair Road
○ Green Diamond water hole access
○ Mill Creek Bar (Green Diamond)
Note: Locations identified at community workshops and will need to be vetted further.

Map 4.6.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

[8] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

4.6.4 REDWOOD CREEK FIRE PROTECTION CAPABILITIES

CAL FIRE is primarily responsible for wildland fire management within this planning unit. However, the closest CAL FIRE station is in Trinidad and it can take nearly an hour for an engine to arrive on scene. Air response, if available, will respond to wildfires from the CAL FIRE Kneeland Helitack or Rohnerville Air Attack bases.

This planning unit is outside of the boundaries of any local fire related district. Residents rely on the "*goodwill service*" of Blue Lake and Willow Creek fire protection districts for structure fire and rescue emergencies. Blue Lake and Willow Creek fire resources will usually respond to emergency calls outside of their designated districts, so long as their services are not required within their immediate districts at the time. Although, the towns of Blue Lake and Willow Creek are far enough away from the neighborhoods within this unit that response times can take as long as 30 minutes or more. Emergency responders from outside the area may also have difficulty navigating the area and locating remote residences, especially when roads or addresses are poorly marked.

> ***Goodwill service***: Fire protection services provided by a fire district to a location that is outside of the district's jurisdictional boundaries and for which no compensation is provided neither through direct payment, nor through a tax base.

Local groups of residents have been taking steps to build informal firefighting capacity within this planning unit. Firefighting equipment has been donated to locations in the Titlow Hill and Chezem neighborhoods and some training has taken place. These entities are not dispatched through the Fortuna Command Center but may provide a quick local initial attack or incident support while waiting for responders from CAL FIRE, Willow Creek, and/or Blue Lake. It will be important for these residents to understand their capabilities and the associated risks and keep their level of response within those bounds.

The lack of a fire related district or recognized volunteer fire company within this planning unit is a high priority concern, particularly because of the way that neighborhoods and residences are scattered across the landscape and intermixed within the wildlands. Community members should understand the potential for lengthy response times from out-of-the-area fire protection and emergency services. A strong emphasis should be placed on proactive, preventative measures, such as maintaining defensible space, maintaining local emergency supply caches, and developing enough situational awareness to support quick and appropriate action during an emergency. Knowledge should be shared about which community members have experience or training in first aid and medical response, particularly those with Community Emergency Response Team, or CERT training.

4.6.5 REDWOOD CREEK EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Redwood Creek Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Evacuation will likely travel either east or west along Highway 299. Adequate ingress and egress along the numerous smaller roads connecting residences to Highway 299 is vital to

the majority of the community that may need to access the main highway evacuation route and for firefighters who will be using the same roads to access wildfires burning in up-slope areas.

For residents located along Stover Road, an alternative evacuation route may be accessed via Bair Road, leading northeast toward Hoopa. Residents living along Snow Camp, Ward, and Barr Roads could access Bald Mountain Road as an alternative route, west towards Korbel. Titlow Hill residents would most likely require permission and assistance from the United States Forest Service (USFS) to utilize alternative evacuation route USFS6N08 into Six Rivers National Forest, with access to Highway 299 and Willow Creek.

Poor or complete lack of signage at roads and intersections poses potential problems for ingress and egress. Most of the residences in this unit are remote and many are only accessible via steep and narrow roads, some of which have no alternative exit route. The narrowness of these smaller roads leading to remote residences could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. The condition of the county roads was also identified as an evacuation and emergency response safety concern. Many county road surfaces are hazardous for travelers under normal circumstances and during an emergency these conditions could slow down evacuees as well as emergency responders. Other evacuation impediments may include landslides, fallen trees, downed power lines, overgrown vegetation, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles, or leave residents stranded should the roads become blocked.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[9] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

[9] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

4.6.6 REDWOOD CREEK COMMUNITY PREPAREDNESS

The Redwood/Valley Chezem Community was first recognized as a Firewise® Community in 2014. The process of becoming recognized as Firewise® includes a site-specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire.

Each year since 2014, the community has hosted a Firewise® Day at Green Point Elementary School and successfully completed at least one action identified in their Firewise® Action Plan.[10] As a result of this Plan and the motivated community members behind it, the Redwood Valley/Chezem community has made some notable accomplishments in the last five years, each of which are summarized in the table below. The Firewise® process would be beneficial for more neighborhoods within this planning unit, particularly in the Titlow Hill area.

FIGURE 4.6.5 REDWOOD CREEK: FIRE PREVENTION ACCOMPLISHMENTS
○ Hosted a Firewise® Day each year since gaining recognition as a Firewise® Community in 2014.
○ Installed two community bulletin boards on which fire safety tips are regularly posted. The bulletin boards are located at the entrance to Green Point School and at the entrance to Redwood Valley, where Bair Rd. meets Hwy 299.
○ Posted green reflective address signs on previously unmarked locations through a grant secured from Humboldt Area Foundation.
○ Prepared Green Point School for use as an emergency shelter, stocked with essential supplies.
○ Started a Community Emergency Response Team (CERT).
○ Created a shaded fuelbreak around Green Point School to enhance defensible space.
○ Completed a Map Book including addresses in Redwood Valley and on Chezem Road for emergency response personnel.
○ Built a shelter for local, resident-owned fire truck
○ Built a two million gallon plastic lined pond for fire water.

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resource Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

Green Diamond Resource Company, which owns a significant acreage in this planning unit, has undertaken efforts to help reduce risk of wildfire occurrences on company lands. Firefighting equipment is maintained at logging operations and inside all vehicles; harvesting operations are suspended at specified levels of low relative humidity; and logging crews are required to make daily fire inspections after work is done during the fire season. The company also maintains fire trucks and heavy equipment

[10] Redwood Valley/Chezem Firewise® Community Working Group. Redwood Valley/Chezem Firewise® Action Plan. Retrieved from *https://humboldtgov.org/1929/Redwood-ValleyChezem*

for wildland fire emergencies. Green Diamond Forestry staff, logging and maintenance crews, and contractors are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. The company also treats logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, *broadcast burning*, and at times mastication and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post-harvesting *biomass recovery* for power generation, resulting in fuel hazard reduction.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.

Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

4.6.7 REDWOOD CREEK LOCAL WILDFIRE PREVENTION PLANS

As part of the initial Firewise® certification process in 2014, a Firewise® Action Plan was developed by the Redwood Valley/Chezem Firewise Community Working Group. Firefighters with CAL FIRE and the Blue Lake and Willow Creek volunteer fire departments provided guidance for the development of the action plan.

The priority actions identified in the Plan are as follows:

- Improve firefighters' ability to find homes.
- Conduct evacuation planning and provide local training.
- Improve water supply and access.
- Hazardous fuels reduction (flammable vegetation management).
- Enhance emergency preparedness capacity.

In addition to the Redwood Valley/Chezem Firewise® Action Plan, this Planning Unit Action Plan will help guide the development of additional projects and priorities aimed at increasing wildfire preparedness in this planning unit. This CWPP provides a list of priority action recommendations reflective of the community concerns and ideas collected through the process described below. *See section 4.6.9, **Redwood Creek Action Plan** for a list of priority actions recommended by this CWPP.*

4.6.8 REDWOOD CREEK COMMUNITY IDENTIFIED PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 16, 2017 at Green Point School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping

exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.6.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.6.6* and *4.6.7* in this section. *For more information on the mapping exercise, see Appendix B.5,* ***Mapping Exercise Instructions***. The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.6.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.6.6 REDWOOD CREEK: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Start a local fire department or collaborate with Blue Lake Fire Department to expand their service area. Possibly get surplus equipment from other fire departments in the area.
○ Develop/improve community Phone Tree list; compile a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication train a few community members to use the HAM radios that are currently housed at the school.
○ Improve signage throughout the community. Make home addresses and road signs more visible and add mile markers along main roads.
○ Encourage evacuation planning and talk to property owners about supplying keys to locked gates on private properties in case emergency access is needed.
○ Hold a “Living on Shaky Ground” course.

The local residents who attended the November 16, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.6.7 REDWOOD CREEK: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Develop Stover Road as an evacuation route	Evacuation	RWV070
Water Storage at Beaver Flat	Water	RWV047
Stover Road (from school to end) shaded fuel break	Roadside Clearance	RWV043
Beaver Flat brush clearing & helicopter landing zone	Landscape	RWV044
Fix eroding evacuation route: Chezem Road	Evacuation	RWV057

4.6.9 REDWOOD CREEK ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **M**aintain the Redwood Valley/Chezem Firewise Communities/USA® Site:
  - Actively implement and maintain the Firewise® action plan.
  - Focus activity on home hardening and defensible space in partnership with residents in Redwood Valley/Chezem.
  - Continue to host an annual Firewise® Day.
  - Consider adding the development of a community chipper program into action plan updates.
  - Support the continuation of this group to facilitate community wildfire preparedness and mitigation.
  - Reach out to establish increased participation from residents as well as Green Diamond Resource Company and other timber companies operating in the unit.
  - Inspire more community involvement and support with continued outreach about what the group does and how to get involved.
- **I**dentify other community organizations or groups of individuals with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program; particularly in the Titlow Hill area.
  - Conduct a risk assessment with support from the HCFSC and/or CAL FIRE and draft a Firewise® action plan (the existing Redwood Creek/Chezem plan can be used as a resource for this).

- Host a Firewise® Day to share findings and inspire action, or add Firewise® activities to an existing annual community event.
- If necessary, seek funding to support this effort.

- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Cookson Ranch (RWV072)
    - Green Point School defensible space (RWV071)
    - Chezem neighborhood (WCK222a)
    - Neighborhoods along Titlow Hill Road (WCK222)
    - Homes off of and along Stover Road
- The high fire danger, a dispersed WUI population, and a need for increased wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. Based on observations of construction design and home siting in many areas throughout this planning unit, many homes are vulnerable to ignition from wildfires (even embers from far off fires). This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County OES, local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map potential local evacuation routes and sites.
        - Work with industrial timberland owners to evaluate logging roads for use as evacuation routes.
    - Identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
        - Organize a group of community members to test the feasibility of evacuating along Stover Road towards Bald Hills Road and actively pursue the removal of any obstacles encountered. (Highly ranked community priority – RWV070)
    - Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads. Potential areas to evaluate include:
        - Beaver Flat create and maintain a clearing and helicopter landing zone (Highly ranked community priority – RWV044)
        - Cookson Ranch meadow (RWV051)
    - Maintain a list of local contacts with specialized skills such as first aid, firefighting, or HAM radio operation that may be useful in an emergency.

- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **C**oordinate with County OES to ensure that the local Community Emergency Response Team (CERT) has appropriate training and certification, including basic wildfire behavior and firefighting techniques. Expand membership of this team or create additional CERTs. Also encourage the local CERT to establish equipment caches in case of isolation to ensure the availability of emergency supplies. Depending on the severity of the disaster, it could be days or even weeks before professional emergency services reach some areas.
- **W**ork with local organizations, the Humboldt County Board of Supervisors, Humboldt County FSC and GIS staff, state legislators, CAL FIRE, and/or utilities to address communications challenges including the lack of internet access in some areas; radio repeater dead zones; confusion about road names and local addresses; and more.
    - Post address signs at the bottom of long driveways branching off the main roads (many property owners have done this already but there are still many more addresses to post).
    - Work with Humboldt County Roads Maintenance to add mile markers along main roads, especially Stover Road and Titlow Hill Road.
- **I**mprove community communication networks and explore ways to increase redundancy. This might include:
    - Developing or improving a community phone tree list.
    - Compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas.
    - Training or identifying a few community members to use the HAM radios currently stored at the school.
- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority projects to evaluate include:
    - Constructing a shaded fuel break on Stover Road from school to end (Highly ranked community priority – RWV043)
    - Fuels reduction along Dolly Varden Road (Green Diamond), first 0.5 mile from Highway 299
- **W**ork with Humboldt County Road Maintenance to address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments. The following priority access issues were identified at community workshops and/or through analysis and are recommended for initial evaluation and action:
    - Area of heavy erosion on Chezem Road (Highly ranked community priority – RWV057)
    - Stover Road
    - Sawdust Trail
    - Bair Road, bridge to Hwy 299Upper Redwood Valley Ranch Road
    - Old Tree Creeks Road
    - Chezem Road

- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.
    - Construct a shaded fuel break around Chezem campgrounds.
    - Collaborate with UC Cooperative Extension and BLM on Lack's Creek efforts to reduce spread of Sudden Oak Death.
- Work with commercial timberland owners to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
    - Design projects to buffer residences from wildfires that originate from the Green Diamond, Barnum Timber, and R.H. Emmerson & Son timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
- Explore options for increasing the level of service for local community fire protection and rescue within this planning unit such as:
    - Helping local fire departments that respond to this area (which is outside of their service district) raise funds by making donations directly and/or contributing to fundraising events or campaigns.
    - Continuing to build local firefighting capacity and/or collaborating with the Blue Lake and Willow Creek fire protection districts to expand their jurisdictional boundaries.
    - Continuing to seek surplus equipment from other fire departments as well as opportunities for additional firefighting training for residents living within the Planning Unit.
    - Working with CAL FIRE to organize a special firefighting training for community members or sponsoring a few community members to attend fire academy.
    - Fundraising for a water tender or trailer with a water tank and establishing a group of community members who are trained to use it. Explore potential for reimbursement of costs through rental to CAL FIRE.
    - Finding a permanent home for the fire engine in the Chezem neighborhood or establishing a sustainable agreement for it to be housed at its current location.
- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment.
    - Water storage at Beaver Flat (Highly ranked community priority – RWV047)
- Inform residents of the need to have accessible, mapped and identifiable water sources for fire suppression, and to share that information with firefighters. Priority areas to evaluate include:
    - Titlow Hill Road
- Work with Humboldt County Planning and Building to ensure that wildfire hazard mitigation and public safety measures are incorporated into the process of bringing the Titlow Hill subdivision into compliance with applicable laws and regulations, including, but not limited to, County Fire

Safe Regulations and the California Subdivision Map Act (fire protection). (See *Appendix J County Fire Safe Regulations*).

- Encourage residents with unpermitted structures or additions on their property to participate in the Humboldt County Planning & Building Department's Safe Homes Program.[11] Educate those residents about the benefits of upgrading structures and/or bringing structures into compliance with current building codes. Priority areas for outreach include:
    - Titlow Hill subdivision

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in unintended wildfires.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers; via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media, local media outlets, and any means used by the local community to share important information.
    - Encourage local volunteer/service organizations or the school to help perform community service activities including delivering literature to homeowners.

[11] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- Collaborate to create defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Identify hot-spots for sudden oak death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See *Priority Action Recommendations* above.

Disaster Preparedness

- Work with the County OES and local fire service to engage community members in evacuation preparedness. See details in *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. See details in *Priority Action Recommendations* above.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. See details in *Priority Action Recommendations* above.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Increase the availability of water for fire protection. See details in *Priority Action Recommendations* above.

- Inform residents of the need to have accessible, mapped and identifiable water sources for fire suppression. See details in *Priority Action Recommendations* above.

Fire Protection

- Increase level of service for local community fire protection and rescue within this planning unit. See details in *Priority Action Recommendations* above.

Restoration of Beneficial Fire

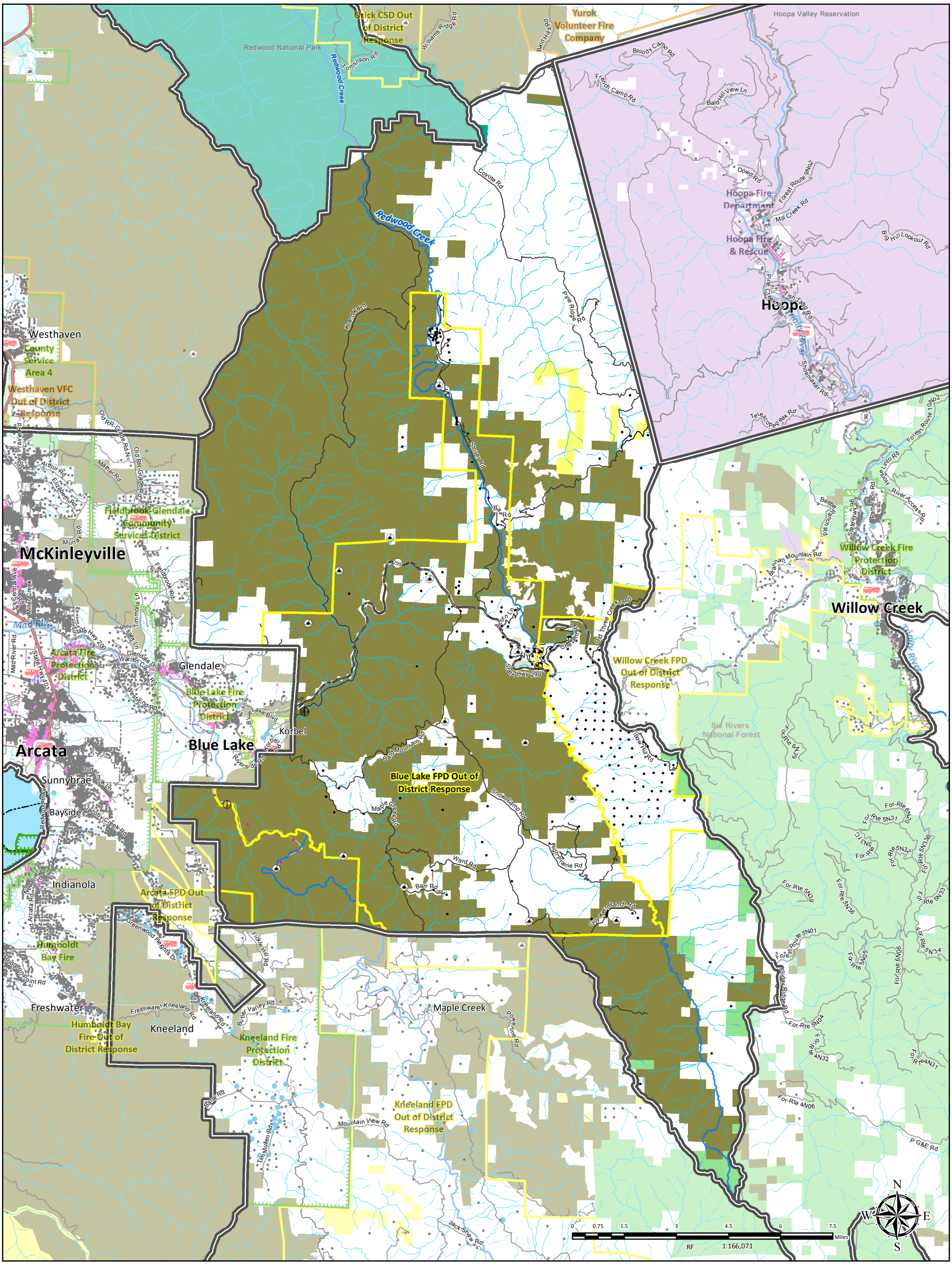
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[12]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

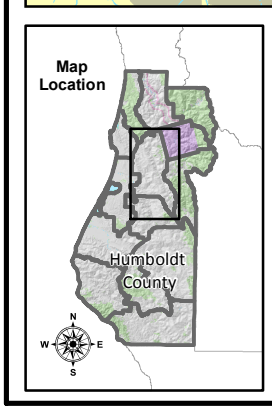
Integrated Planning

- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Continue to maintain participation in the Firewise Communities/USA® Recognition Program. See details in *Priority Action Recommendations* above.
- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

[12] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.6.1 REDWOOD CREEK PLANNING UNIT





PLANNING UNIT MAP

CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

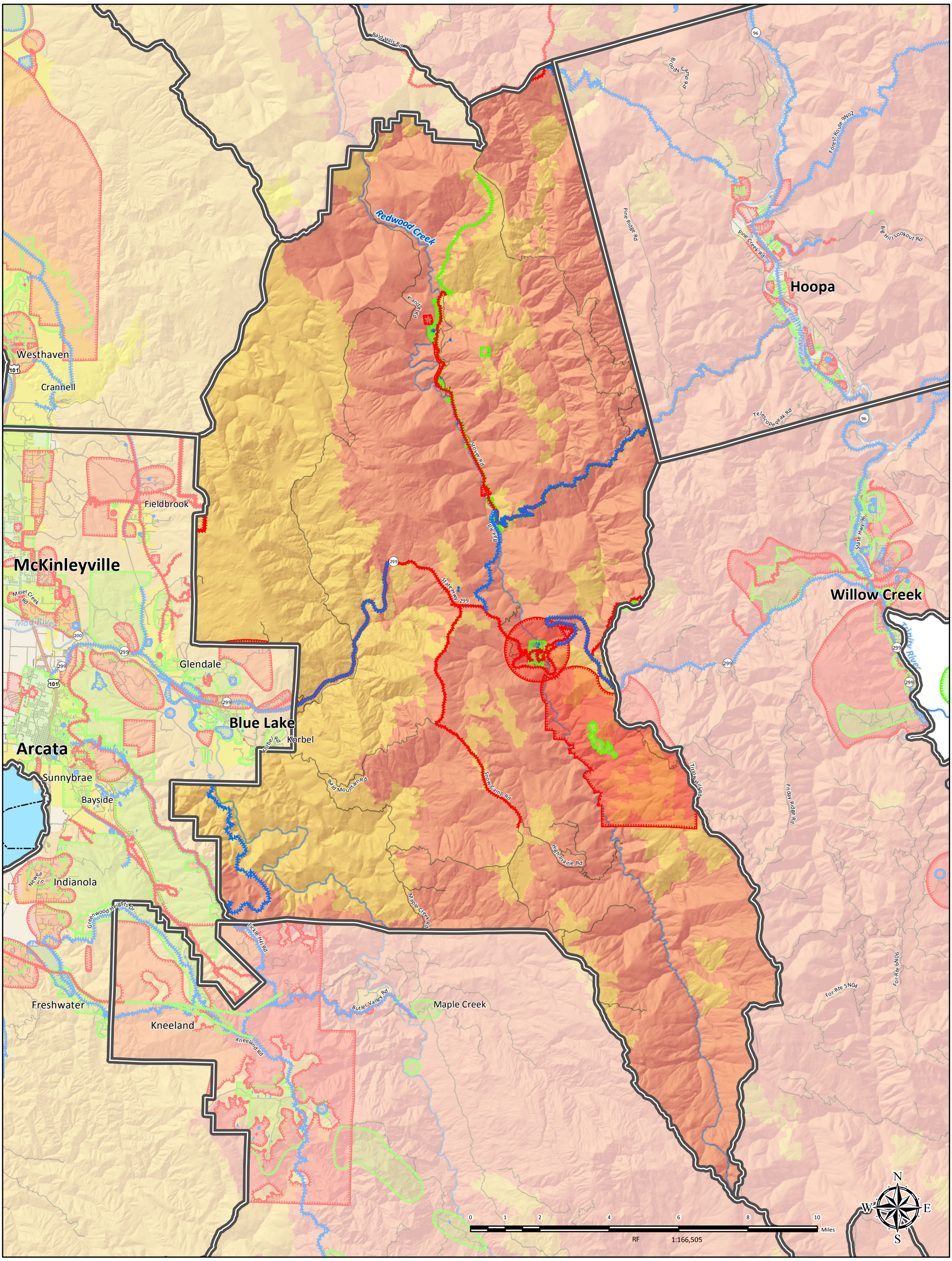
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

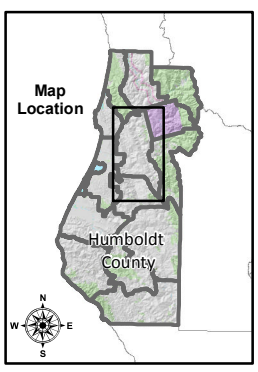
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.6.2 REDWOOD CREEK PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

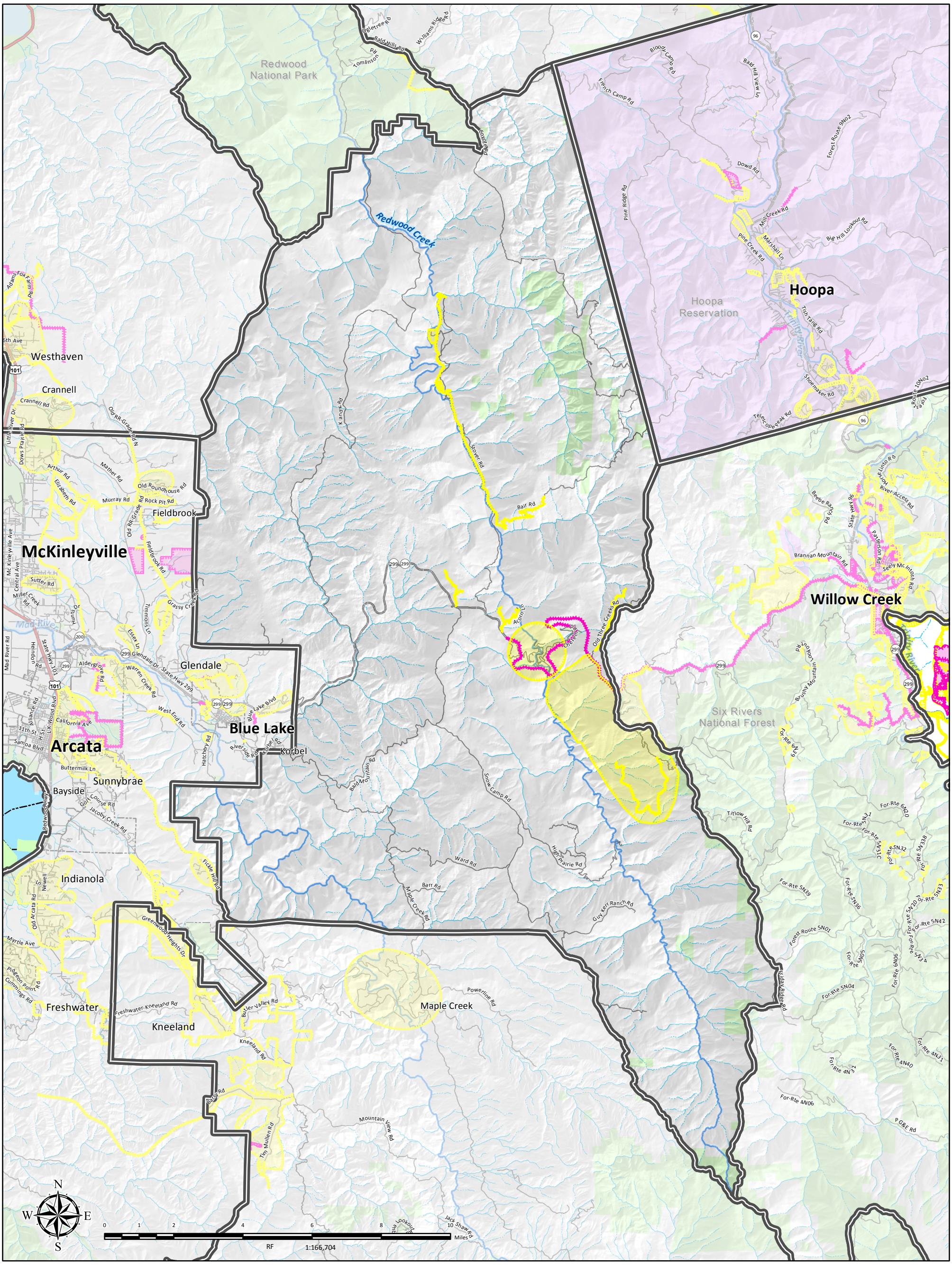
The map is intended for planning purposes and should not be used for precise measurement or navigation.

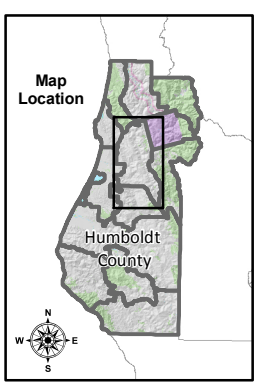
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.6.3 REDWOOD CREEK PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

- Proposed Project
- Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

- Public Land
- Tribal Land
- Cities

Highways and Roads

- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography

- Major River or Stream
- Perennial Stream
- Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

WILLOW CREEK AREA PLANNING UNIT ACTION PLAN



Trinity River, Willow Creek. Photo: Eureka-Humboldt Visitors Bureau.

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Helpful Links	
WILLOW CREEK FIRE SAFE COUNCIL:	*http://www.willowcreekfsc.org*
WILLOW CREEK COMMUNITY SERVICES DISTRICT:	*http://www.willowcreekcsd.com*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.7 WILLOW CREEK AREA PLANNING UNIT ACTION PLAN

4.7.1 WILLOW CREEK AREA UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.7.1, ***Willow Creek Area Planning Unit.***

FIGURE 4.7.1 WILLOW CREEK AREA NEIGHBORHOODS	
Bigfoot	Knights
Brannon Mountain	Patterson Road
Clover Flat	Riteway Lane
The Farms	Rowley
Hodgson	Seely-McIntosh
Kimtu	Terrace

The Willow Creek Area Planning Unit encompasses over 168,000 acres situated in eastern Humboldt County within the south-central Klamath Mountains, bordering Trinity County. Currently, public lands managed by the Six Rivers National Forest make up the majority of this unit's landmass, much of which falls within the Hupa Ancestral Territory. The boundaries of this planning unit are based on the Humboldt County portion of the Willow Creek Fire Safe Council's planning area, which also includes portions of Trinity County. While the scope of this planning unit action plan includes Humboldt County only, the Willow Creek Greater Area Community Wildfire Protection Plan (Willow Creek Greater Area CWPP), includes details about Trinity County as well and should be used in conjunction with this plan. However, because some residents of Trinity County participated in the Humboldt plan update, there are some references to out of county areas and project ideas.

The two main transportation routes within this planning unit are Highway 299, which leads southeast towards Weaverville or west towards Arcata, and Highway 96, which follows the Trinity River north towards Hoopa. These primary roads intersect in the central town of Willow Creek, about 35 miles from the Pacific coast.

Part of the Trinity River watershed, this planning unit is made up of mostly steep and mountainous terrain with deep valleys formed by the Trinity River and its network of tributaries. "The New River, the South Fork of the Trinity, and Willow Creek all confluence with the main stem of the Trinity along with numerous streams, creeks, and unnamed water courses."[1] Elevations in this unit range from 440 to 9,025 feet above sea level.

> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Willow Creek is the community and commercial hub of this unit. Willow Creek, with many homes located within the *wildland-urban interface* (WUI) and adjacent to federal forest lands, is designated as a community at high risk of damage from wildfire.[2] The majority of the neighborhoods in this planning unit exist along or just off of Highway 299 or Highway 96. Although the majority of the population has access to phone and electrical services, there is limited cellular phone reception and many residents live "off-the-grid".[3]

[1] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area Community Wildfire Protection Plan. (p. 6). Retrieved from http://willowcreekfsc.org/cwpp.html

[2] CAL FIRE. (2001). Communities at Risk List. Retrieved from http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk

[3] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (p. 6).

As mentioned above, the majority of this planning unit falls within Six Rivers National Forest boundaries and is managed by the US Forest Service (USFS). The distribution of private and public lands within this unit is somewhat like a checkerboard, with private in-holdings interspersed throughout USFS land. Private ownerships include residential parcels, timberlands, and ranchlands. The area also supports small produce and specialty farms, vineyards, and marijuana farms. Dominant land uses include recreation, timber, fisheries, wildlife habitat, and grazing.

4.7.2 WILLOW CREEK AREA ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The majority of assets at risk in this planning unit are residential homes and neighborhoods, along with a variety of commercial and service industries, community centers, medical clinics, schools, fire stations, as well as infrastructure components such as a water treatment facility. Several small organic farms and local wineries within this unit are also considered assets at risk.

Natural resource assets such as waterways, forests, fisheries and wildlife are highly valued by residents in this area. These assets contribute positively to local quality of life and to the tourist-related economy as well. Many culturally sensitive sites of special importance to Native Americans exist throughout the Unit as well.[4]

Map 4.7.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[5] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.7.2 WILLOW CREEK AREA: COMMUNITY-IDENTIFIED ASSETS AT RISK	
All residences and communities	Shaded fuel break: Hanson Property/ Bigfoot Area Subdivision
California Highway Patrol Resident Post	Six Rivers National Forest Field Office
Cal Trans Maintenance Field Office	Trinity Valley Elementary School
Cell Tower above Peach Tree Lane	Willow Creek Community Health Center
Commercial District – US Post Office	Willow Creek Community Services District
County SWAP project areas where fuels reduction work needs to be maintained	Willow Creek Community Services District Water Pumping and Treatment Station
Creek Side Park	Willow Creek Fire Department
Farms and wineries	Willow Creek repeater
Note: Community-identified assets located in Trinity County can be found in the Willow Creek Greater Area Community Wildfire Protection Plan.	

[4] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (pp. 18-19).

[5] Geographic Information Systems (GIS).

4.7.3 WILLOW CREEK AREA WILDFIRE ENVIRONMENT

There are several existing plans and resources where the wildfire environment of this area is described in much more detail.

Readers interested in learning more on this topic are encouraged to begin by reviewing the following:

- Willow Creek Greater Area Community Wildfire Protection Plan: *https://humboldtgov.org/1890/Willow-Creek-FSC*
- Willow Creek Firewise® Community Assessment: *https://humboldtgov.org/745/Willow-Creek*
- The Six Rivers National Forest Land and Resource Management Plan: *https://www.fs.usda.gov/detailfull/srnf/landmanagement/planning/?cid=stelprdb5084033&width=full*
- Ecological Restoration Implementation Plan: *https://www.fs.usda.gov/detail/srnf/landmanagement/?cid=stelprdb5411627*

Nearly the entire Willow Creek Area Planning Unit (97%) is zoned "Very High *Fire Hazard Severity*," as determined by CAL FIRE,[6] although fire risk tends to be slightly lower in the flatter and less vegetated areas. The mountainous terrain and steep river canyons that are characteristic of this region, combined with long, hot summers that generate fuels with low moisture levels can amplify the rate that fires spread and their level of intensity.

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Humans have been the primary cause of fires in the last 50 years. Most fires have occurred along main road systems, down in the river valley, and near residences and recreation areas. Lightning strikes are another cause of fire, but they are spread more evenly throughout the Unit, often occurring at higher elevations and in remote locations. Numerous wildfires may be generated from multiple strikes within the same lightning storm, which can put a strain on firefighting resources. Vehicles are also a potential ignition source, with higher risks resulting from roadside fuels built up along town streets, back roads, and highways. Recreation operations draw in an increased population during the summer months, which can create a higher ignition risk as well. Additional ignition risks include unattended campfires, structure fires spreading into the wildlands, arson, and power lines.[7]

For a closer look at fire hazard severity in this unit, see Map 4.7.2, ***Willow Creek Area Community-Identified Protection Resources, Values/Assets, & Risks/Hazards.***

[6] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

[7] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (p. 2).

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Some of the early agricultural settlers in the late 1800s used intentional burning to clear and maintain grasslands for pasture animals. A heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuel. This change from the *natural fire regime* has also altered vegetation composition and the ecological structure of forests in these areas, such that the majority of ecosystems in this area are "out-of-whack" and susceptible to losing key ecosystem components.[8] Intense timber harvests during the 20th century have further exacerbated damages to forest ecosystem health. The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical natural fire regime. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural Fire regime: Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem.

Approximately 56% of the Willow Creek Area Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 32% of the area is condition class 2, or moderately altered from the historical range.



Corral Fire (2013) with footprint of Megram Fire (1999) visible in background.
Photo: Kimberly Baker via Environmental Protection Information Center.

The Fire History Map[9] within the Willow Creek Greater Area CWPP shows some of the more widespread fires. Although several of these fires burned in the Shasta-Trinity National Forest (NF) area, outside of Humboldt County, the proximity of these fires was near enough for the communities within this planning unit to experience their impacts, particularly in the form of degraded air quality.

[8] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (p. 9).

[9] Willow Creek Fire Safe Council. (2011). Fire History Map. [Map]. In Willow Creek Greater Area CWPP. (p. 14).

FIGURE 4.7.3 WILLOW CREEK AREA: FIRES OVER 10 ACRES 1997-2017[10]				
Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Megram	Lightning	1999	31,044	125,073
Corral	Lightning	2013	9,914	12,541
Half	Lightning	2008	9,097	15,130
Groves	Lightning	2015	3,997	6,803
Blake	Lightning	2015	2,432	11,439
Sims	Equipment Use	2004	2,031	4,036
East	Lightning	2015	1,531	1,531
Johnson	Lightning	2015	1,477	17,821
Lt-17 (Backbone)	Lightning	2009	1,092	5,194
Happy	Lightning	2015	502	68,095
Friday	Equipment Use	2003	389	389
Saddle	Lightning	2015	161	1,543
Chance	Lightning	2015	160	160
Telescope	Miscellaneous	1997	37	38
Bennett-Lime Complex	Lightning	2008	31	31
Sugar	Arson	2003	17	17
Note: An interactive map of fire history through 1908 is available through the County Web GIS.				

Structural Ignitability

Home ignition zone: The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

Structural ignitability: The ease with which a structure ignites.

Homes within this unit exist within the wildland-urban interface (WUI), which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[11], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

[10] FRAP. (2018). State Fire Perimeters 1908-2017.

[11] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure such as woodpiles, fences, gates and wood lattices. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[12]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.7.2, found at the end of this Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

The Willow Creek Community Services District (CSD), which was incorporated in 1964, provides water to over 1,700 customers with 945 service connections. Fire hydrants within the urbanized portions of Willow Creek are installed and maintained by the CSD. Services are provided by a staff of approximately five to an area of a little over 6 square miles. The District's critical facilities include a water treatment plant, pump stations, and multiple water tanks.[13] The CSD also provides park services, recreation facilities, and street lighting to the community and is involved in establishing a wastewater system for the commercial area of town. Residents outside the Services District obtain water through other means, such as drawing from nearby creeks and holding tanks.

For nearly ten years, the Willow Creek Fire Safe Council has worked with the CSD, the local fire department, and residents to identify and confirm the availability of firefighting water sources. Suitable sources are marked with a blue reflective dot, visible from key access points. This activity is referred to as the Blue Dot Program and the water sources that meet specific conditions are shared with firefighting agencies. Water sources include hydrants, water tanks, ponds, swimming pools, and water tankers.

Many neighborhoods in this unit have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially over-taxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to expand and continually review the work of the Blue Dot Program to make the location of existing water sources more apparent to firefighters and ensure that water sources are properly outfitted for firefighting equipment.

Community-identified locations from which fire protection water could be drawn are listed in the following table. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

[12] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

[13] County of Humboldt, Natural Resources Planning. (2014). Part 3 – Annexes for Community Service Districts [PDF]. Humboldt Operational Area Hazard Mitigation Plan; Volume 2 – Planning Partner Annexes. (pp.18-1-18-2). Retrieved from *http://www.humboldtgov.org/506/Local-Hazard-Mitigation*

FIGURE 4.7.4 WILLOW CREEK AREA: FIRE PROTECTION WATER DRAFT SITES
○ Big Rock – USFS river access
○ Bigfoot golf course
○ Kimtu Beach
○ Burnt Ranch Mill water intake (Trinity County)
○ Hennessy Creek (Trinity County)
○ Hawkins Bar – USFS river access (Trinity County)
○ Skycrest Lake (private property, Trinity County)
Note: Locations identified at community workshops will need to be vetted further with local firefighting personnel. In addition, firefighting water sources are identified as part of the Willow Creek Blue Dot Program and provided to firefighting resources.

Map 4.7.2, found at the end of this Unit Action Plan illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.7.4 WILLOW CREEK AREA FIRE PROTECTION CAPABILITIES

The Willow Creek Volunteer Fire Department (WCVFD) is primarily responsible for responding to structural fires and medical emergencies within this planning unit; however, volunteers are also trained for wildfire management and may be called upon to assist in case of fire emergencies. WCVFD was founded in 1957 after two major business fires in downtown Willow Creek. The Willow Creek Fire Protection District (FPD) was established in 1959. WCVFD provides fire service for the FPD and responds to the town of Willow Creek and a large portion of eastern Humboldt, serving a population of over 1,800. The Willow Creek VFD is an all-risk fire department dedicated to serving the community with integrity and professionalism. Emergency response is also provided within this unit as needed from neighboring VFDs in Trinity County (Hawkins Bar and Salyer).

Hawkins Bar VFD can be reached at **(530) 629-3920**. Salyer VFD can be reached at **(707) 677-3638.**

FIGURE 4.7.5 WILLOW CREEK AREA: FIRE PROTECTION RESOURCES[14]				
PERSONNEL	SERVES		FIRE APPARATUS	RESPONSE
	RESIDENTS	AREA (SQ. MI)		
WILLOW CREEK VOLUNTEER FIRE DEPARTMENT (WCVFD) – PHONE (530) 629-2229				
14	1,800	District: 6.4 Out of District: 57	○ (2) Type-2 engines ○ (1) Type-6 wildland engine ○ (1) Rescue truck ○ (1) 3,000 gallon water tender ○ (1) Type-1 engine	○ Structural fires ○ Medical and rescue services ○ Wildfire management

[14] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 48). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

The Willow Creek Area Planning Unit has excellent coordination and collaboration between various fire protection groups. Federal, state, and local agencies have a cooperative agreement for exchanging protection responsibility in specific areas; for example, CAL FIRE provides both 911 dispatching services to the WCVFD, and suppression resources to the Six Rivers National Forest when requested.

> Because fires do not respect jurisdictional boundaries and in the spirit of shared protection responsibility, local, state, and federal resources work together to ensure a well-coordinated wildfire management strategy.[15]

The USFS is responsible for wildland fire protection, primarily on federal lands. However, a cooperative agreement enables the USFS to respond to fires on private properties with consent from landowners, Tribal representatives, and the WCVFD. Additionally, the USFS – Lower Trinity Ranger District may provide firefighting resources if the WCVFD is in need of aid; reciprocally, the WCVFD may respond to requests for additional support from the USFS. These two agencies also share the responsibility of responding to threats of fire spreading as a result of vehicular accidents.

The Six Rivers National Forest Lower Trinity Ranger District can be reached at: **(530) 629-2118**. Visit the District's webpage at: *https://www.fs.usda.gov/recarea/srnf/recarea/?recid=11477*

4.7.5 WILLOW CREEK AREA EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Willow Creek Area Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on *fire behavior*, wind patterns, traffic, and ingress of emergency vehicles. Evacuation will likely travel either south-east or -west along Highway 299 or north on Highway 96. There are numerous smaller roads connecting residences and neighborhoods to Highway 96. Adequate ingress and egress along these roads is vital to a large portion of the community that may need access to the main highway evacuation route and for firefighters who will be using the roads to access wildfires burning in these areas.

***Fire behavior**: The manner in which a fire reacts to the influences of fuel, weather, and topography. Common terms used to describe behavior include: smoldering, creeping, running, spotting, torching, and crowning*

Topographical features of the Unit such as narrow winding roads and hilly terrain create potential problems for orderly evacuation and delivery of emergency services. The terrain also poses problems for water delivery in fire protection. Many private roads originating off Highways 299 and 96 serve isolated residences but do not provide a secondary emergency evacuation route. This problem of one-way-in/one-way-out roads is prevalent throughout the Unit and poses a serious potential risk to firefighter access, particularly if home evacuations are occurring simultaneously. One prominent example is the bridge on Country Club Road, which serves as

[15] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (p. 20).

the only way for residents of the Bigfoot Subdivision, Seely-McIntosh, Patterson Road, and Oak Lane neighborhoods to get across the river to Highways 299 and 96. These neighborhoods are otherwise surrounded by the steep, dense forests of Six Rivers National Forest.[16] Several US Forest Service Routes could potentially provide for alternative evacuation; however, residents would most likely require permission and assistance to utilize these routes.

FIGURE 4.7.6 WILLOW CREEK AREA: ALTERNATE EVACUATION ROUTES TO HWYS 299 AND 96

- **Surrounding Willow Creek:** Campbell Ridge Road, Brannan Mountain Road, Beebe Ranch Road, Coon Creek Road, and USFS Rte 4
- **SW portion of the Unit:** USFS Rte 5N01, USFS Rte 5N10, USFS Rte 1, and PVT – Redwood Valley
- **NE portion of the Unit:** USFS Rte 4, USFS Rte 06N10, and USFS Rte

Note: The suitability of these roads will need to be evaluated before they are included in evacuations plans or used during an emergency.

Other evacuation impediments may include landslides, fallen trees, downed power lines, overgrown vegetation, and poorly marked streets and intersections that could inhibit evacuation and emergency response, or leave residents stranded should the roads become blocked.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[17] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (e.g. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

[16] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. (p. 13).

[17] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

4.7.6 WILLOW CREEK AREA COMMUNITY PREPAREDNESS

Willow Creek Fire Safe Council

Over the last ten years, the members of the Willow Creek Fire Safe Council (WCFSC) have worked hard to help their community prepare for wildfire. The WCFSC was incorporated in 2008 and operates as a 501(c)(3) non-profit to fulfill the following mission:

> "Reduce wildfire risk and increase survivability by implementing fuels reduction projects and encouraging residents of the greater Willow Creek area to make their homes, neighborhoods, and communities fire safe."[18]

The WCFSC is a very active volunteer group that has achieved an admirable amount of work. The group has secured grant funding for supplies, equipment, and some contracting and has received technical support from both the Humboldt and Trinity County FSCs. WCFSC coordination and operations are supported by the volunteer labor of its members. The WCFSC has done an excellent job of coordinating with CAL FIRE, the California Conservation Corps (CCC), and the Humboldt County Sheriff's Work Alternative Program to plan and implement continual hazardous fuels reduction work throughout their area. The group has also provided an excellent example of working through permitting processes with Caltrans and Humboldt County Public Works to make way for roadside fuels reduction projects.

The WCFSC is also committed to educating and supporting their community through a variety of activities including the annual Firewise® Community Fair and Youth Ecology Day, chipper days, and a "Blue Dot Program", which makes water sources available for fire protection more apparent to firefighters. In addition, they have constructed their own website, through which community members can access fire safety information, and produced their own and contributed to a regional "Living with Fire" publication. The WCFSC works in coordination with the Willow Creek Volunteer Fire Department (WCVFD) to provide community education, and with CAL FIRE to conduct a fire prevention program. The WCFSC also maintains and implements the Willow Creek Greater Area CWPP, which was completed in 2011 and is in the process of being updated.

Willow Creek Firewise

The community of Willow Creek received national recognition as a Firewise® community in 2010 and has actively maintained this status since then. Some successful Firewise® modifications include hazardous vegetation management around homes, roads, parks, and businesses; eliminating *ladder fuels* in the Home Ignition Zone; creating well positioned, reflective address and road signs; implementing fire safe landscaping around homes in the community (such as stone and gravel pathways that can act as *fuelbreaks*); and obtaining funding assistance for property owners making these modifications via the Fire-adapted Landscapes and Safe Homes (FLASH) program.[19] FLASH is a rebate program that reimburses property owners for hazardous vegetation management completed around homes, along access routes, and in particularly hazardous areas. Between 2010 and 2016, Willow Creek area landowners treated over 60 acres under the FLASH program and over 30 home risk assessments were conducted by WCFSC volunteers.

[18] Willow Creek Fire Safe Council. (n.d.) Our Mission. Willow Creek Fire Safe Council Homepage. Retrieved from *www.willowcreekfsc.org*

[19] Firewise Communities/USA® Recognition Program. (2010). Willow Creek Community Firewise® Assessment.

The WCFSC and Firewise® program can be contacted by calling **(707) 499-0767** or by email at: ***admin@willowcreekfsc.org***. Visit their website at: ***www.willowcreekfsc.org*** or the Humboldt County WCFSC page at: ***www.humboldtgov.org/1890/Willow-Creek-FSC*.**

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Ladder fuels: Fuels that provide vertical continuity between strata and allow fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Fuelbreaks: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

Six Rivers National Forest

The Six Rivers National Forest recognizes that wildfires do not respect jurisdictional boundaries and consequently, the agency strives for effective partnerships with other federal, state, and local agencies. These relationships foster a safer and more efficient firefighting organization for the public and help to communicate consistent fire prevention messages to adjacent landowners and the visiting public.[20] Faced with longer fire seasons, the impacts of climate change, excessive fuel buildup, and increasing lightning activity, the Forest is responding with programs intended to strategically reduce fuels near communities.[21] Forest Service personnel out of the Lower Trinity Ranger District have a long history of working closely with the WCFSC to help prepare the community for wildfire.

The Willow Creek community has made great progress over the last five years in preparing for wildfire. The table below summarizes many of their accomplishments.

FIGURE 4.7.7 WILLOW CREEK AREA: FIRE PREVENTION ACCOMPLISHMENTS
○ The **Willow Creek VFD** brought a new rescue truck into service in 2017. It is a great addition to the community and surrounding areas during a time of record emergency calls.
○ Public safety funding from Measure Z has helped support **WCVFD's** continued response to out of district calls for service along Highway 299 (primarily vehicle collisions).
○ **WCFSC** continues to support the Willow Creek Volunteer Fire Department by promoting recruitment efforts, and participating in the department's annual crab feed fundraiser.
○ **WCFSC** assists WCVFD at the Trinity Valley Elementary and Creekside Elementary schools during Fire Safety Week.
○ **WCFSC** continues to maintain the Willow Creek Blue Dot Program, which involves recording the locations of hydrants, tanks, swimming pools, ponds, or other water sources available for fighting any type of fire within the Willow Creek Community and making this information available to the local fire department.
○ **WCFSC** maintains a Defensible Space Chipping Program open to any private landowner within WCFSC's district. **WCFSC** continues to promote the Defensible Space Chipping Program by mailing notices to entire neighborhoods and posting notices at the Willow Creek Community Service District Office and other businesses though out the community.

[20] Six Rivers National Forest. Fire Management. [Webpage]. Retrieved from *https://www.fs.usda.gov/main/srnf/fire*
[21] Six Rivers National Forest. Land & Resources Management. [Webpage]. Retrieved from *https://www.fs.usda.gov/land/srnf/landmanagement*

FIGURE 4.7.7 WILLOW CREEK AREA: FIRE PREVENTION ACCOMPLISHMENTS
○ **WCFSC** completed numerous home assessments of defensible space projects through the FLASH program, and worked with landowners to plan fuels reduction projects through the program.
○ **WCFSC** offers free home risk assessments to homeowners.
○ **WCFSC** began participating in Dream Quest's youth program "Agents of Change" in 2017. Local youth earn community service credit by providing brush removal and yard work services free of charge to elderly and disabled residents to help create defensible space. WCFSC furnishes hand tools and safety equipment (gloves, helmets, vest, etc.) for this program, and is responsible for chipping the generated material.
WCFSC fire-safe education accomplishments include: ○ Hosting their annual Firewise® Community Fair and Youth Ecology Day the third Saturday in May each year at the Veteran Park in Willow Creek; 2019 will be their 17th annual event. The event highlights fire-safe education, in addition to other demonstrations and displays prepared by WCFSC, CAL FIRE, US Forest Service, Pacific Gas & Electric, Sheriff Department, Office of Emergency Services, and the local fire department. ○ Continuing to use educational booths at local events as an outreach tool. Local events include the Farmer's Market, Taste of Willow Creek, and Bigfoot Days and other community events. ○ Partnering with Pacific Gas and Electric to host an in-school fire safety program about trees and home safety at Trinity Valley Elementary School & Preschool to celebrate Arbor Day. Afterward, students plant trees and flowers at the school and park. ○ Hosted the SkyCrest Lake Youth Fish Derby and Firewise® Day in Burnt Ranch for 10 years on the second Saturday in June. The event highlighted fire-safe education, in addition to other demonstrations and displays prepared by WCFSC, CAL FIRE, US Forest Service, and the local fire department.
○ **WCFSC** – The Willow Creek Greater Area CWPP, Willow Creek Action Plan, and Willow Creek Community Assessment Plan are in the process of being updated.
WCFSC has completed, and has maintained, the following fuel reduction projects since 2013: ○ Worked with the Sheriff Work Alternative Program on implementing fuel reduction projects, including brush clearing in two local parks (approx. 30 acres); preparing emergency evacuation routes, including 3 miles of Patterson Road; and creating fuel breaks on the north and south sides of Willow Creek, as well as on the west side of Highway 96 (approx. 20 acres); and 2 acres along Hwy 299 east of Willow Creek. ○ Fuel reduction projects—accomplished in collaboration with CAL FIRE—include projects in downtown Willow Creek, Kimtu Road, Bigfoot Subdivision, and Patterson Road. WCFSC chipped 12.75 acres of brush removed from these projects. ○ Fuel reduction projects—accomplished in collaboration with the CCC—include a fuel break in downtown Willow Creek, Highway 96, and Kimtu Road. WCFSC chipped 17 acres of brush removed from these projects. An additional 7 acres along Hwy 299 west of Willow Creek was in progress in late 2018. ○ Carried out the Neighborhood Defensible Space Chipping Program whereby WCFSC chips brush and trees that homeowners removed. The program serves 30 to 35 residents per year.
○ **WCFSC** actively works to identify and clear brush off the sides of emergency evacuation roads.
○ **WCFSC** informs local residents of potential evacuation routes and provides educational material regarding safe evacuation at all WCFSC events and fundraisers
○ **WCFSC** distributes educational material concerning home hardening and structural ignitability at all WCFSC events and fundraisers.
○ **WCFSC** provides information on how to register for Humboldt Alert at all WCFSC events and fundraisers.
○ **WCFSC** chips materials on site for landowners to mulch or use for landscaping. For landowners who wish to have the materials removed, WCFSC provides the contact information of a local recycling business that accepts chipped brush. Unwanted material suitable for firewood is donated to seniors or disabled persons.
○ **WCFSC** encourages landowners to contact **NCUAQMD** to acquire a permit before burning and to comply with Air Quality rules and regulations.
○ **WCFSC** works with local agencies and complies with fire-safety regulations and policies.

FIGURE 4.7.7 WILLOW CREEK AREA: FIRE PREVENTION ACCOMPLISHMENTS
○ **WCFSC/Firewise Board** created and published the "Living with Fire in the Lower Trinity" newspaper insert.
○ **WCFSC** worked with Redwood Valley and Burnt Ranch on organizing Firewise® events, required as part of the Firewise® Community certification process.
○ **WCFSC** obtained a USFS grant to purchase a Cargo Trailer, safety equipment, and power and hand tools.
○ **WCFSC** obtained a RAC grant in 2017 for to purchase a Vemeer Chipper.
○ **WCFSC** has participated in Cal Trans' "Adopt-A-Highway" program for the last 7 years, which involves litter cleanup and maintenance of shaded fuel break along one mile of Hwy 96 east of Willow Creek.
○ **WCFSC** works with the Trinity Village Homeowners' Association on chipping brush, which they clear and stack along the roadway. WCFSC chips brush for landowners with the Village, as needed.
○ **WCFSC** worked with the Humboldt County Fire Safe Council, Cal Fire, and USFS in developing the regional "Living with Wildfire" magazine.
○ **WCFSC** actively participates in the Humboldt County Fire Safe Council.
○ **WCFSC** is a member of the Willow Creek Chamber of Commerce, attends monthly meetings with the Willow Creek Community Service District and updates the community on projects/activities of the WCFSC.
○ **WCFSC** promotes defensible space and the free chipping program at Neighborhood Watch meetings.

4.7.7 WILLOW CREEK AREA LOCAL WILDFIRE PREVENTION PLANS

A tremendous amount of work related to fire-planning has been completed in this planning unit, including the publication of the Willow Creek Greater Area CWPP in 2011 and the Firewise® Action Plan, completed in 2010 and updated in 2014 as part of the Firewise® certification process. The Willow Creek Greater Area CWPP encompasses the communities in Humboldt and Trinity counties, including Willow Creek, Salyer, Hawkins Bar, Burnt Ranch, and Cedar Flat.

Willow Creek Greater Area CWPP

Some of the main objectives of the Willow Creek Greater Area CWPP are **to improve the protection of lives and properties from wildfire; merge the goals of landowners with community needs regarding wildfire risk reduction; coordinate fire protection strategies across property boundaries; and provide a tool to help coordinate grant funding for such efforts.** The plan is also aimed at increasing public awareness of good fire safety practices for living in the WUI and providing residents with resources to help them reduce fire risk on their own properties. The update of the Willow Creek Greater Area CWPP is near completion and will soon be available on the Willow Creek FSC website.[22] The most recent published version (2011) is currently available on the website. Listed below are the project categories recommended in the Willow Creek Greater Area CWPP to improve fire safety in the area over the five to ten years following publication.

- Reduce Structural Ignitability
- Support and Improve Fire Protection Capabilities
- Treatment of Hazardous Fuels
- Education
- Planning

[22] Willow Creek Fire Safe Council. (2011). Willow Creek Greater Area CWPP. Retrieved from *www.willowcreekfsc.org/cwpp.html*

Firewise® Action Plan

The Firewise® Action Plan[23], which resulted from the Firewise® Community Assessment, contains a list of short-term actions with measurable objectives that can be done within the Home Ignition Zone, within high-risk community areas, and the community at large. These actions are consistent with implementation of the Willow Creek Greater Area CWPP. The following list summarizes the projects proposed in the Firewise® Action Plan:

- Update and revise the Willow Creek Community Assessment and Firewise® Action Plan.
- Assist CAL FIRE and CCC with fuel reduction projects.
- Hold twelve Neighborhood Cleanup Days to help property owners get rid of flammable debris and byproducts; this will be done with assistance from PG&E and CAL FIRE.
- Hold ten Sheriff Work Alternative Program (SWAP) Work Days to reduce buildup of roadside fuels throughout the community.
- Host the "Willow Creek Firewise Community Fair & Youth Ecology Day"—Willow Creek's annual Firewise® event.

Willow Creek's high capacity Fire Safe Council and Firewise Board provide support to other Firewise® Communities including Redwood Valley and Burnt Ranch in Trinity County. WCFSC/Firewise Board supports Redwood Valley by participating in their annual Firewise® event and providing chipper demonstrations and educational presentations. WCFSC/Firewise Board also assists Trinity County Fire Safe Council in maintaining the Firewise® Community certification for Burnt Ranch.

Six Rivers National Forest Plans

The Six Rivers National Forest Land and Resource Management Plan (LRMP)[24], published in 1995, directs the management of the Six Rivers National Forest for a 10-15 year planning period. The Plan provides specific direction to national forest managers and identifies specific goals related to watershed health, plants and wildlife, and wildfire. The standards and guidelines set forth under the Fire and Fuels Management section of the Plan emphasize protection of structures and sensitive natural resources while also encouraging managers to seize opportunities to let wildfire take its natural course, whenever possible. In recognition of the ecological importance of fire to the health of California forests, particular emphasis is placed on using prescribed fire as a tool for achieving resource management objectives.

In 2011, the Forest Service, Pacific Northwest Region published the Ecological Restoration Implementation Plan[25], which echoes many of the management goals of the LRMP but focuses in on resiliency, productivity, and diversity. The Plan's chapter on Six Rivers National Forest cites the SRNF Rivers to Ridges Restoration program, which has supported a number of successful fuels reduction projects in recent years.

The Six Rivers National Forest also participates in implementing the National Cohesive Wildland Management Strategy, a collaborative and broad-based guidance document rooted in the best available science. The National Strategy "establishes a national vision for wildland fire management, defines three national goals, describes the wildland fire challenges, identifies opportunities to reduce wildfire risks, and establishes national priorities focused on achieving the national goals."[26] The Western Regional Action Plan

[23] Willow Creek Fire Safe Council/Firewise Board. (2014). Willow Creek Greater Area Firewise Action Plan. Retrieved from *https://humboldtgov.org/745/Willow-Creek*

[24] Six Rivers National Forest Service. (1995). Six Rivers National Forest Land and Resource Management Plan. Retrieved from *https://www.fs.usda.gov/detailfull/srnf/landmanagement/planning/?cid=stelprdb5084033&width=full*

[25] Six River National Forest Service. (2011). Ecological Restoration Implementation Plan. Retrieved from *https://www.fs.usda.gov/detail/srnf/home/?cid=STELPRDB5411627*

[26] Forests and Rangelands. (2014). National Cohesive Wildland Fire Management Strategy. Retrieved from *https://www.forestsandrangelands.gov/strategy*

provides more specific direction for western states, including California. Its implementation is supported and facilitated by the Western Regional Strategy Committee.[27]

4.7.8 WILLOW CREEK AREA COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create the Humboldt County CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this unit was held on November 8, 2017 at the Trinity Valley Elementary School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (Humboldt County CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 Humboldt County CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.7.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.7.8* and *4.7.9* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.7.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

All of the geographic community-identified project information is cataloged in the Humboldt County Web GIS Portal described above as well as in the Willow Creek Greater Area CWPP. This County CWPP incorporates that information by reference here. This information will continue to be made available as a resource for capturing grant funds and continued project implementation tracking.

[27] Visit the West Regional Strategy Committee website for more information and a copy of the Western Regional Action Plan: *http://wildfireinthewest.blogspot.com/p/p.html*

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.7.8 WILLOW CREEK AREA: PROPOSED PROJECTS
○ Organize to lobby for tax incentive to support Best Management Practices on private land.
○ Identify community liaisons that can assist in evacuation planning.
○ Develop a strategy for engaging with absentee landowners regarding overgrown vegetation.

The local residents who attended the November 8, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.7.9 WILLOW CREEK AREA: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Fuel Break, west of Willow Creek (wildland buffer)	Landscape	WCK110
Fuel reduction on evacuation route (Baldwin Creek Road)	Roadside Clearance	WCK122
Bigfoot Subdivision understory clearing on Forest Service land	Landscape	WCK141
Bigfoot Subdivision West fuel breaks (wildland buffer)	Landscape	WCK220
Upper Brannon Mt. Road Clearance: fuel reduction on roadway/driveways	Roadside Clearance	WCK224
Shaded fuel break: Willow Creek town entrance on either side	Roadside Clearance	WCK226
Bigfoot subdivision: brush clearance along foot trail	Trail Clearance	WCK229
Bigfoot subdivision defensible space	Defensible Space	WCK436
Outreach to PG&E to clear brush under powerlines	Non-geographic	-
More participation in chipper program: Trinity Acres	Non-geographic	-
More participation in chipper program: Willow Creek Area	Non-geographic	-
More participation in chipper program: Bigfoot subdivision	Non-geographic	-

4.7.9 WILLOW CREEK AREA ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- The residents of the Willow Creek Area Planning Unit are fortunate to live in an area with a dedicated group like the WCFSC continually working towards wildfire preparedness. The highest priority is to maintain and support the WCFSC to facilitate community wildfire preparedness and mitigation.
    - Inspire more community involvement in and support of the WCFSC with outreach about what they do and how to get involved.
    - Continue to develop a succession planning strategy to ensure survival of the organization into the future.
    - Reach out to establish increased participation from Six Rivers National Forest and unrepresented neighborhoods.
    - Ensure that the WCFSC continues to be represented on the Humboldt County FSC.
- Maintain the Willow Creek Firewise Communities/USA® Site:
    - Actively implement and maintain the Firewise® action plan.
    - Focus activity on home hardening and defensible space in partnership with residents in Willow Creek and neighborhoods throughout the planning unit.
    - Continue to host an annual Firewise® Day.
- WCFSC, WCVFD, and the Willow Creek CCSD work with community members to evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the

community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Willow Creek CWPP* and *Firewise Action Plan*, this list of *Priority Recommendations*, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values. WCFSC, WCVFD, and the Willow Creek CCSD work with community members to further refine and integrate the lists of potential projects identified through the various fire planning processes discussed above and collaborate to prioritize and implement them.

- Priority areas within this planning unit for fuels reduction are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Bigfoot Subdivision (highly ranked community-identified priority – WCK436)
    - Upper Friday Ridge Road neighborhood (WCK445)
    - Brannan Mountain neighborhoods (WCK223)
    - Patterson neighborhood (WCK444)
    - Neighborhoods off of Seeley McIntosh Road (WCK443)
- Organize to lobby for tax incentive to support Best Management Practices on private land and tie this effort in with the countywide action plan and associated Working Group.
- The high fire danger, a large and, in some cases, dispersed WUI population, the large number of dead-end roads leading to multiple residences, and the need for increased wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - WCFSC and WCVFD work with the County Office of Emergency Services (OES) to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches. Target the following priority areas:
        - Bigfoot Subdivision, Seely-McIntosh, Patterson Road, and Oak Lane neighborhoods.
        - Brannan Mountain Road.
        - Friday Ridge Road (evaluate condition of secondary access and confirm feasibility).
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites (Start with the community-identified features in this plan and associated GIS data).
    - Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify

alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.

- Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads for initial evaluation and outreach efforts include:
  - Baldwin Creek Road (highly ranked community-identified priority – WCK122)
  - Upper Brannan Mountain (highly ranked community-identified priority – WCK224)
  - Willow Creek town entrance on either side (highly ranked community-identified priority – WCK226)
  - Bigfoot subdivision, west side
  - Patterson Road
  - Patterson Road, north side
  - Friday Ridge

  Secondary priorities include:
  - Conducting fuel clearance along Otter Lane.
  - Improving defensible space in Trinity Acres neighborhood.
  - Landscape clearing and modifications to improve bottleneck situation on Highway 299, west of Willow Creek.
  - Conducting roadside clearance on fuels along Old Three Creeks.
- Collaborate with Six Rivers National Forest and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. See the Willow Creek CWPP for priority areas. Highly ranked community-identified priorities to evaluate for feasibility:
  - Managed buffer of wildfire reliant forest on the west side of the town of Willow Creek (WCK110)
  - Bigfoot Subdivision understory clearing on Forest Service land (WCK141)
  - Managed buffer of wildfire reliant forest on the west side Bigfoot Subdivision (WCK220)
- Support the WCFSC community chipping program and seek increased participation. The town of Willow Creek, the Bigfoot Subdivision in particular, and Trinity Acres were highly ranked community-identified areas for more participation in the program.
- Conduct outreach to PG&E to clear brush under power lines and dispose of brush in a safe and effective manner. Learn more about their wildfire programs and maintain a liaison with the WCFSC.

- Continue to explore options and make progress on local fire service sustainability efforts such as:
    - Increase WCVFD recruitment and retention efforts to meet the need for more qualified volunteers and rebuild the auxiliary volunteer base to support firefighters and emergency medical service volunteers.
    - Establishing consistent and sustainable revenue sources.
    - Ensuring that all appropriate areas are within the boundaries of a fire related district through district formation, annexation, and/or consolidation.
    - Secure funding to replace the WCVFD's 1989 Type-1 fire engine.
    - Upgrade the existing WCVFD fire station and continue to work towards establishing a second station and associated equipment and apparatus on the other side of the Trinity River.
- Increase the availability of water for fire protection by investing in more community water tanks. Ensure existing water tanks are outfitted with fittings compatible with firefighting equipment and replace tanks where necessary. Work with the Willow Creek CSD.
- Continue and expand the Willow Creek Blue Dot Program. Continually add new water sources to the inventory and review and confirm existing ones. Secure funding or establish a partnership to digitize the water source locations and create GIS datasets and maps.
- Coordinate with USFS and/or CAL FIRE, WVFD, the WCFSC/Willow Creek Firewise® to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Expand on the process already developed by the WCFSC and share success with the HCFSC as an example for other areas.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
    - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
    - Confirm the defensible space inspection responsibility agreement between CAL FIRE and Six Rivers National Forest and ensure that these inspections are being done.
    - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
    - Contact the WCFSC for more details and examples of how to address this situation.
- Share GIS datasets between local representatives, Six Rivers National Forest, and County staff to maintain the fire planning features included in the County Web GIS Portal (*webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). Compare GIS fire planning datasets and determine an appropriate sharing and maintenance process to ensure that the most up-to-date and accurate information is provided through the County Web GIS Portal or another appropriate location. Coordinate this effort with the work of the HCFSC to implement the Integrated Planning, Fire-Planning Data Management priority action of the *Countywide Action Plan* (*Chapter 3, Section 3.6.4*).

- **W**ork with the HCFSC to share successful local strategies to help inspire similar action throughout the county.

Action Catalogue:

This Action Catalogue lists wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the HCFSC. To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*. In addition, the Willow Creek Greater Area CWPP and Firewise® Action Plan provide detailed recommendations similar to the general guidance listed on the following pages. To guide local action, review those plans first.

Wildfire Ignition Prevention

- **I**mplement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign***.**
- **U**se *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire***.**
- **I**dentify primary ignition sources in the local community and focus prevention efforts on reducing them.
- **I**ncrease community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- **I**nform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- **D**evelop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- **P**rovide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.

- Collaborate to create defensible space for elderly, disabled, and low-income residents who are unable to do the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support the WCFSC community chipping programs. See more about this action in *Priority Action Recommendations* above.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form or build up an existing Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by the “Blue Dot Program”, which identifies the location of firefighting water sources by marking them with blue reflective dots.

- Increase the availability of water for fire protection See more about this action in *Priority Action Recommendations* above.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

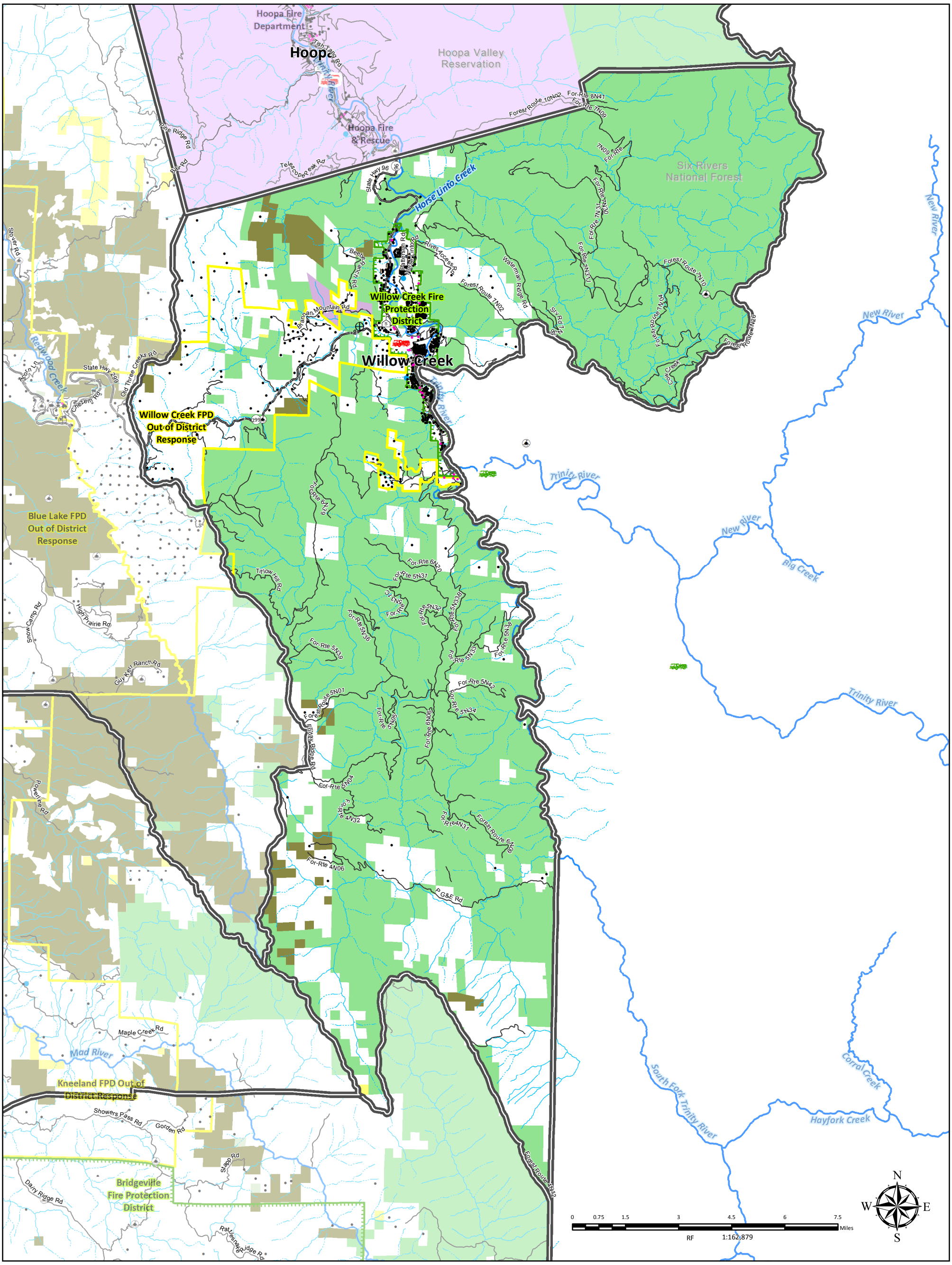
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[28]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

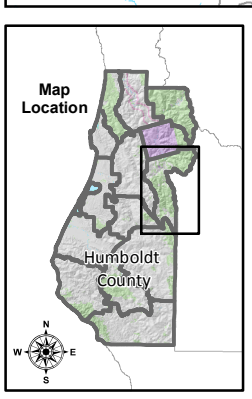
Integrated Planning

- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program other neighborhood groups in developed areas adjacent to the wildland. See details in *Priority Action Recommendations* above.
- Share GIS data sets between local, state and federal representatives working in this unit and County staff to maintain the fire planning features included in the County Web GIS Portal. See more about this action in *Priority Action Recommendations* above.

[28] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.7.1 WILLOW CREEK AREA PLANNING UNIT





PLANNING UNIT MAP

CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

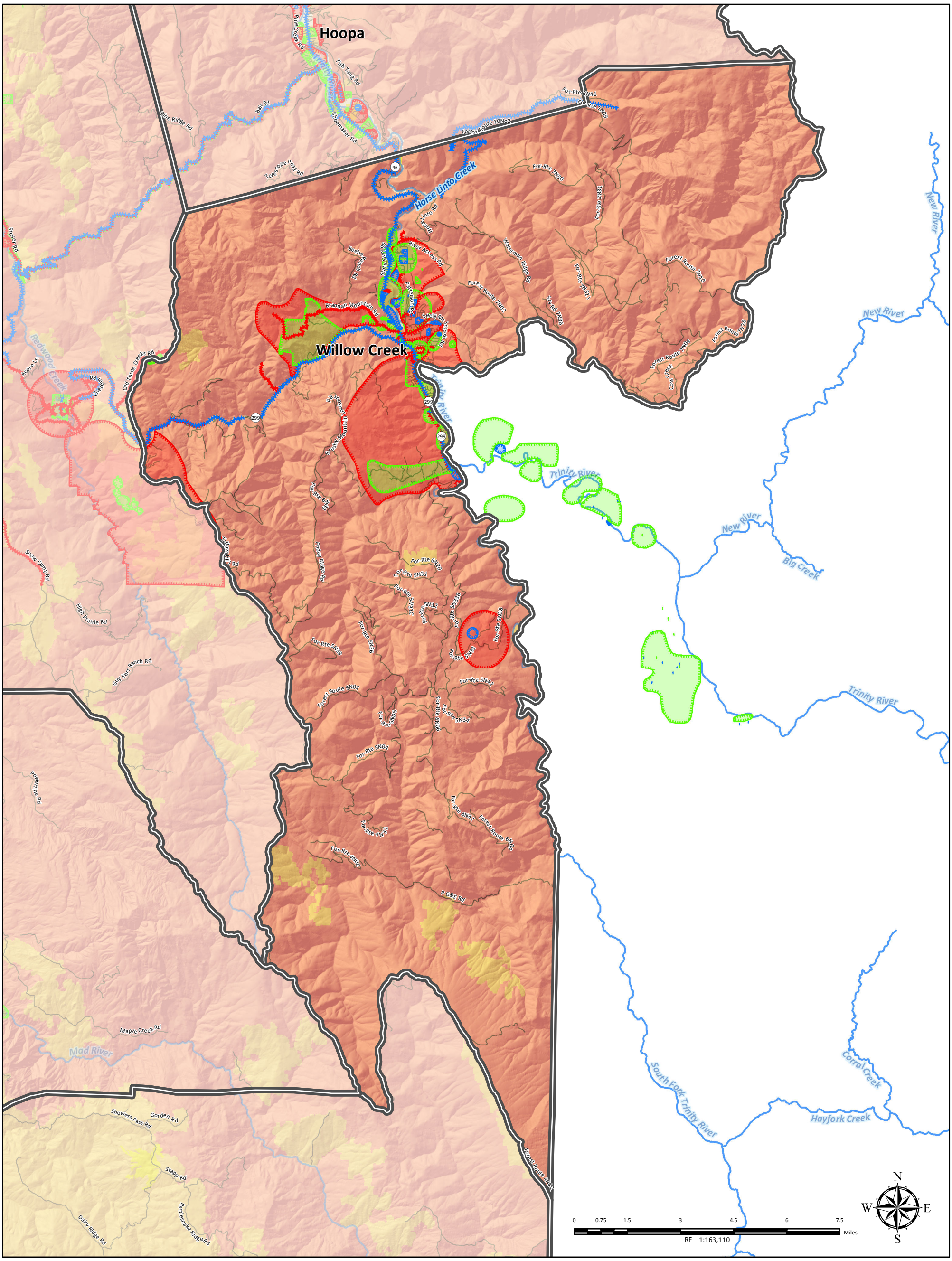
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

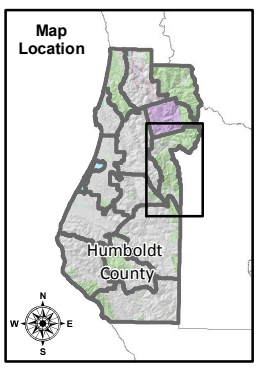
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.7.2 WILLOW CREEK AREA PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

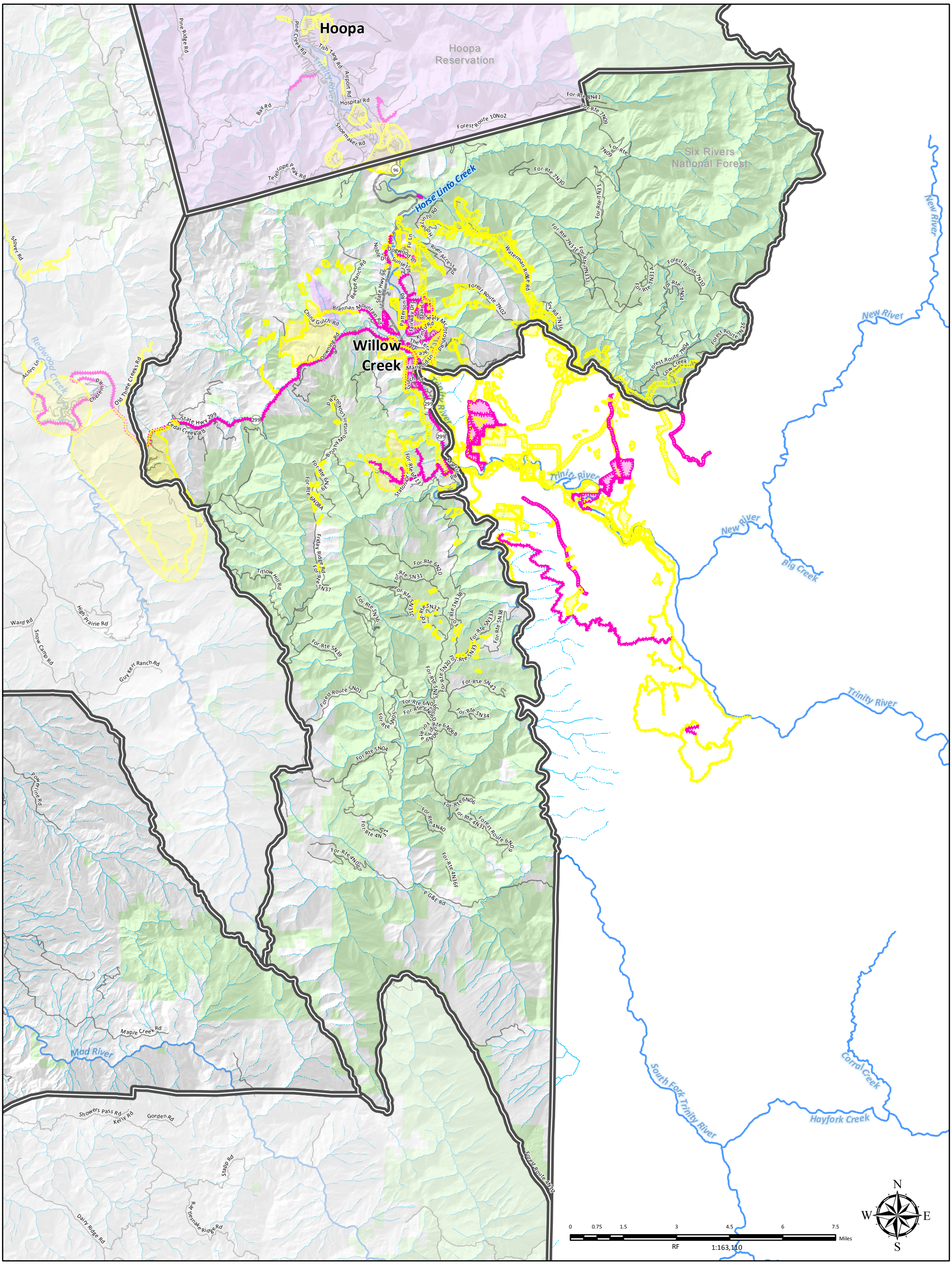
The map is intended for planning purposes and should not be used for precise measurement or navigation.

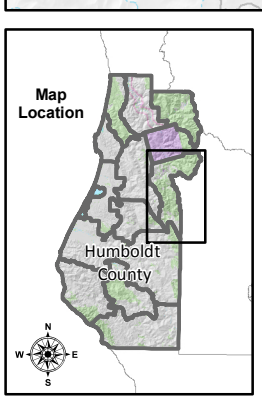
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.7.3 WILLOW CREEK AREA PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

- CWPP Planning Unit Boundary

Community-Identified Features

- Proposed Project
- Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

- Public Land
- Tribal Land
- Cities

Highways and Roads

- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography

- Major River or Stream
- Perennial Stream
- Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

HUMBOLDT BAY AREA PLANNING UNIT ACTION PLAN



Humboldt Bay. Photo: U.S. Army Corps of Engineers, Digital Visual Library.

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Helpful Links

UPPER JACOBY CREEK FIREWISE:	*https://humboldtgov.org/740/Upper-Jacoby-Creek*
ARCATA FIRE PROTECTION DISTRICT:	*https://www.arcatafire.org*
BLUE LAKE FIRE PROTECTION DISTRICT:	*http://bluelake.ca.gov/community/safety*
FIELDBROOK VOLUNTEER FIRE DEPARTMENT:	*https://sites.google.com/site/fieldbrookfireorg*
HUMBOLDT BAY FIRE:	*http://www.hbfire.org*
SAMOA PENINSULA VOLUNTEER FIRE DEPARTMENT:	*https://www.samoafire.org*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.8 HUMBOLDT BAY AREA PLANNING UNIT ACTION PLAN

4.8.1 HUMBOLDT BAY AREA PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.8.1, ***Humboldt Bay Area CWPP Unit.***

The Humboldt Bay Area Planning Unit encompasses over 143,700 acres situated along the central coast of Humboldt County and contains the most urbanized and populated areas within the county. The geography of the Unit is dominated by the Humboldt Bay, which spans approximately two-thirds of the Unit's coastline and is comprised of three sections: South Bay, Entrance Bay, and North Bay. Following the interior border of the Bay, is Highway 101—the primary transportation corridor through the Unit. Highway 299 provides eastward access and joins Highway 101 in the northern portion of the Unit. The Humboldt Bay Area *watershed* is comprised of four major waterways: Jacoby and Freshwater Creeks, which drain into the North Bay; Elk River, which flows into the Entrance Bay; and Salmon Creek, which meets the South Bay.

The cities of Eureka and Arcata surround Humboldt Bay and comprise the community population centers of this planning unit. The unincorporated town of McKinleyville to the north has experienced significant suburban growth in recent years and has become a populous community as well. The less populated City of Blue Lake is located east of Arcata along Highway 299. Several other distinct, smaller communities are interspersed throughout the Unit as well, mainly surrounding the central cities. Inland, located between Eureka and Arcata, are the communities of Freshwater, Indianola, and Bayside. Bayside is just south of and adjacent to Sunny Brae, a neighborhood on the southeastern side of the City of Arcata. Fieldbrook is located inland from McKinleyville and north of the community of Glendale, which is off Highway 299. Communities clustered along the coastal side of the Humboldt Bay inlet include Fairhaven, Samoa, and Manila.

The characteristics of these numerous communities vary widely, from distinctly urban locales, to small-town neighborhoods, rural residential areas, and more remote homes located in the *wildland-urban interface* (WUI). It is these communities located in the WUI, on the outskirts of the more populated areas, which experience the greatest risk of loss from wildfire.

> ***Watershed:*** All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.
>
> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Timber production is the dominant non-residential land use within this planning unit, and significant portions of land—especially in the southeastern portion—is managed by Humboldt Redwood Company and, to a lesser extent, Green Diamond Resource Company. Agricultural land use is also common within the Unit, involving mainly pasturelands for livestock grazing and dairy production, as well as a few lily bulb farms in Arcata

and McKinleyville.[1] Rural residential developments are scattered throughout the timber- and pasturelands, while urbanized development dominates the central population areas. On the coast, around the Bay, and in the interior of the Unit, the cities, County, Bureau of Land Management, CA Department of Fish and Wildlife, and U.S. Fish and Wildlife Service maintain numerous protected areas and parks for the benefit of wildlife and enjoyment of residents and visitors.

4.8.2 HUMBOLDT BAY AREA ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The assets at risk in this unit are numerous and diverse. The majority of assets include residential homes, communities, and farmsteads, along with a variety of commercial and service industries, community centers, schools, fire stations, medical and dental centers, churches, post offices, along with infrastructure components such as water treatment facilities, and cell towers. Some particularly noteworthy assets within this planning unit include Humboldt State University, College of the Redwoods, the Humboldt County Airport, Mad River Community Hospital, Blue Lake Casino, the Arcata Plaza, Redwood Acres Fairgrounds, and the Bayshore Mall. Agricultural lands, timber stands, and industrial facilities are also valuable assets at risk. An extensive oyster industry operates out of Humboldt Bay, and the harbor there is a major shipping center for the North Coast. Sites and facilities that support these industries are valuable assets as well.

This unit also contains an abundance of environmentally and culturally significant areas, with a range of recreational opportunities available as well, such as hiking, kayaking, surfing, and rock climbing. Notable swaths of greenspace interspersed throughout the Unit include BLM's Headwaters Forest Reserve; the Arcata, Jacoby Creek, and McKay Community Forests; and various state and county parks. Important coastal assets include Mad River and Clam Beach County Parks; Samoa, Manila, and Ma-le'l Dunes; and Mad River Slough and Elk River Wildlife Areas. Portions of the Humboldt Bay National Wildlife Refuge are located within this planning unit, as well. These environmentally significant areas hold great value for the communities that appreciate them and the wildlife that depend on them.

Map 4.8.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[2] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.8.1 HUMBOLDT BAY AREA: COMMUNITY-IDENTIFIED ASSETS AT RISK

Community	*Schools*
○ Bayside Community Hall, Old Community Hall, Post Office, Mistwood School Area	○ 7th Day Adventist School
○ Fieldbrook School & Church (historical)	○ Blue Lake School
○ Fieldbrook Firehouse & Store	○ Children of the Redwood Infant Toddler Center

[1] Dyett & Bhatia. (2002). Eureka Plain (Humboldt Bay) Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. Retrieved from *http://www.co.humboldt.ca.us/gpu/documentsbackground.aspx*

[2] Geographic Information Systems (GIS).

FIGURE 4.8.1 HUMBOLDT BAY AREA: COMMUNITY-IDENTIFIED ASSETS AT RISK, CONTINUED	
○ Fieldbrook Grange No. 771	○ College of the Redwoods
○ Humboldt Unitarian Fellowship/Community Farm	○ Humboldt State University
○ Manila Community Center	○ Jacoby Creek School
○ Redwood Acres	○ Samoa Peninsula School
○ Sequoia Park	
Greenspace	*Medical*
○ Arcata and Jacoby Creek Community Forests	○ Medical District
○ Arcata Marsh	○ Two Feathers Health Center
○ Humboldt Bay National Wildlife Refuge	○ Retirement Home
○ Local forest land/timber resources	○ Seaview Skilled Nursing Facility
○ Viewshed east of Sunnybrae	*Infrastructure*
○ Viewshed northeast of Arcata, north of Hwy 299	○ Blue Lake Sewer Lift Station
Industrial/Business	○ California Redwood Coast - Humboldt County Airport
○ Biomass Plant	○ Coast Guard Station
○ Blue Lake Industrial Area	○ Fairhaven Power Company
○ Fieldbrook Apple Farm	○ Humboldt Bay PG&E Substation
○ Kerman Industrial Park	○ Humboldt Bay Power Plant
○ Samoa Cookhouse	○ Humboldt Hill Communications Complex
○ Simpson Pulp Dock and Mill Site	○ Lyman Pump Station
○ Small Log Sawmill	○ Manila CSD & Tanks
○ Winery	○ Manila CSD Pumphouse
Tribal	○ PG&E Control Station
○ Blue Lake Casino & Tribal headquarters	○ Water Pumping Station

4.8.3 HUMBOLDT BAY AREA WILDFIRE ENVIRONMENT

The majority of the Humboldt Bay Area Planning Unit (68%) is zoned "High *Fire Hazard Severity*," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[3] However, approximately 17% of the Unit area, including many of the central communities, are zoned "Moderate Fire Hazard Severity," with less than 1% of the Unit zoned "Very High Fire Hazard Severity." Inland areas further from the coast tend to have a higher *wildfire risk.* A substantial portion of the more populated areas are within the *Local Responsibility Area* (LRA) and are therefore not zoned by CAL FIRE.

Local Responsibility Area (LRA): Lands in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the local jurisdiction.

Wildfire risk: The combination of vegetation, topography, weather, ignition sources, and fire history that leads to fire and/or ignition potential and danger in a given area.

[3] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

Humans and human-related activities are the main wildfire ignition sources in this area. Potential human-related fire causes include arson, equipment use, vehicle accidents, smoking, and unattended campfires and burn piles. Abandoned structures and vehicles are also ignition hazards because they present easy targets for arsonists. Lightning strikes and downed power lines are also potential fire-starters. This region is also seismically active, and the potential for earthquakes should always be considered in assessing fire risks.

For a closer look at fire hazard severity in this planning unit, see Map 4.8.2, ***Humboldt Bay Area Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Some of the early settlers in the late 1800s also used intentional burning in order to clear and maintain grasslands for pasture animals. A heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuel. Intense timber harvests, which were common during the 20th century, had substantial impacts on the forest ecosystems in this region. Timber operations left behind heavy amounts of logging slash, and the replacement of old growth stands with second growth redwoods altered stand compositions, making them less resilient to wildfires.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.



Blue Fire 2017, pine tree spot fire. Photo: Mark Nelson.

There have been very few major wildfire events in this planning unit within **recent decades**. The Luffenholtz Fire in 1908 is a noteworthy event that burned the town of Luffenholtz to the ground just

north of this planning unit. According to a September 25, 1908 article in the Sacramento Union, over 100 residents were left homeless, there were two deaths, thousands of acres of timberland were destroyed, and the Little River Mill burned. The southern edge of the community of Westhaven and neighborhoods along Crannell and Dows Prairie Roads now sit within the historic footprint of that devastating fire.

Despite the coastal influences and a moist climate, catastrophic wildfire has played, and could still play, a role in the local environment. There are periods within this planning unit of high fire risk when conditions are just right for a single fire ignition to have potentially devastating consequences. It is also becoming increasingly common that, during times of high fire danger within this planning unit, a large portion of local and state firefighting resources are committed to other incidents throughout the region. A wildfire ignition during one of these periods—when resources are stretched thin—could potentially spread quickly, threatening citizens' lives, as well as homes, schools, and businesses. The October 8, 2017, Blue Fire came very close to being the catastrophic event that local firefighters worry about. The fire started under Red Flag warning conditions[4] and began to grow quickly, primarily located north of Highway 299 but starting spot fires on the south side of the highway near the City of Blue Lake. Even though many local and state firefighting resources were away from the area, helping with wildfires in other counties, a quick and effective response was organized and the fire was suppressed before it reached homes and infrastructure. This close call underscores how important it is to be vigilant between June and October when conditions can be just right for a fire ignition to take off into a fast moving and hard to contain wildfire.

FIGURE 4.8.2 HUMBOLDT BAY AREA: FIRES OVER 10 ACRES 1908-2017[5]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Luffenholtz	Unknown/ Unidentified	1908	4,014	7,434
Bay	Miscellaneous	2008	57	57
Blue	Power Line	2017	12	12

Note: An interactive map of fire history through 1908 is available through the County Web GIS.

Structural Ignitability

Residences within this planning unit facing the greatest risk of *structural ignitability* are those located among communities in the remote hinterlands and within the wildland-urban interface (WUI). WUI communities and neighborhoods of particular concern include, but are not limited to, Humboldt Hill; Ridgewood Heights; East Fieldbrook and neighborhood off of Fieldbrook Road along Stolpe and Lyman Lanes and Sunny Acres Avenue; greater Blue Lake; Samoa, Fairhaven, and Manila; neighborhoods located along upper Jacoby Creek and Fickle Hill Roads; as well as residential areas off of Myrtle between Mitchell and Pigeon Point Roads. For homes located in the WUI, there is an increased likelihood that wildland fires will become structural fires and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were

Structural ignitability: The ease with which a home or other structure ignites.

Home Ignition Zone: The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

[4] A Red Flag Warning means warm temperatures, very low humidities, and stronger winds are expected to combine to produce an increased risk of fire.

[5] FRAP. (2018). State Fire Perimeters 1908-2017.

forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[6], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to structural ignitability. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Vegetation around structures in this unit vary; some residences may support farms and gardens, while other parcels may be largely forested or contain pastures in small to medium openings in the forest. Although private properties tend to be located on more gentle terrain, some homes are surrounded by steep slopes that can limit their defensible areas and put structures in the line of up-hill spreading wildfires.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[7]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.8.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

All of the cities and communities within this planning unit are provided with potable water and fire protection water by the Humboldt Bay Municipal Water District (HBMWD), which was formed in 1956 under the California Municipal Water Act of 1911. The HBMWD's facilities and operations include the R.W. Matthews Dam and the associated Gosselin Hydro-Electric Power House; diversion, pumping, and control facilities adjacent to the Mad River; storage and treatment facilities; and two separate pipeline systems for delivering drinking water and untreated, raw water to customers.[8] Numerous hydrants as well as city- and privately-owned water tanks are located throughout the cities of Arcata, Blue Lake, and Eureka as well as the larger communities within this planning unit.

There are areas within this planning unit that have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially overtaxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to

[6] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from *https://anrcatalog.ucanr.edu/pdf/8393.pdf*

[7] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

[8] Humboldt Bay Municipal Water District. (2012). About Us. Retrieved from *http://www.hbmwd.com/about*

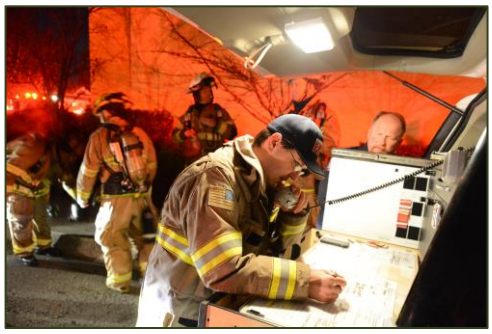
firefighters, and for community members to ensure that their water sources are properly outfitted for firefighting equipment.

Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.8.3 HUMBOLDT BAY AREA: FIRE PROTECTION WATER DRAFT SITES	
○ Baywood Golf Course ponds	○ Lane Pond
○ Blue Lake waste water ponds (helicopter)	○ Mad River
○ Davenport Pond	○ Manila CSD ponds
○ Doug's Pond (helicopter)	○ Morai's Pond
○ Essex Dipping Pond	○ Morrison Gulch drafting sites
○ Fraser Pond	○ Quarry Road drafting site
○ Guynup's Pond	○ Sampson's Pond (helicopter)
○ Kernan Pond	
Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.	

Map 4.8.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.8.4 HUMBOLDT BAY AREA FIRE PROTECTION CAPABILITIES





Top: Humboldt Bay Fire on the job.
Bottom: Unit-wide meeting of firefighters.
Photos: Humboldt Bay Fire.

Five fire related districts provide fire protection to the communities within this planning unit. All five fire protection service entities respond to structural fires as well as wildfires and provide emergency medical and rescue services. A substantial portion of this planning unit, including the cities of Arcata, Blue Lake, and Eureka, falls under the wildfire management jurisdiction of the Local Responsibility Area (LRA). The remaining area is State Responsibility Area (SRA) where wildfires are the responsibility of CAL FIRE. Fire departments associated with the local fire related districts work closely with CAL FIRE to suppress wildfires when they occur, responding with a combination of volunteer and career firefighters. An auto aid agreement allows all of the fire departments to efficiently respond to emergencies without the delay of waiting for an assistance request. This prearranged agreement helps facilitate a quick response to any area within the planning unit without leaving any one jurisdiction unprotected. Fire protection services for the Humboldt Bay Area Planning Unit are summarized in the table below.

FIGURE 4.8.4 HUMBOLDT BAY AREA: FIRE PROTECTION RESOURCES[9,10]			
PERSONNEL	SERVES		RESPONSE
	RESIDENTS	AREA (ACRES)	
HUMBOLDT BAY FIRE – PHONE: (707) 441-4000 **EMAIL: *info@HBFire.org* WEB: *HBFire.org***			
53 Career 5 Volunteers	56,000	40	○ Structural fires ○ Medical and rescue services ○ Urban Search & Rescue (USAR)
APPARATUS			
○ (6) Type-1 fire engines ○ (2) Type-3 fire engines ○ (2) Ladder trucks ○ Medium-duty rescue squad			○ Water tender, 2,000 gallons ○ Hazardous materials response unit ○ Urban Search & Rescue (USAR) truck ○ Cal-OES USAR trailer
ARCATA FIRE PROTECTION DISTRICT – PHONE: (707) 825-2000 **EMAIL: *jmcdonald@arcatafire.org* WEB: *arcatafire.org***			
22 Career 17 Volunteer 14 Auxiliary	37,000	62	○ Structural fires ○ Medical and rescue services ○ Fire prevention, education, and inspection services
APPARATUS			
○ (4) Type-1 engines ○ Type-3 engine ○ Rescue truck			○ Ladder truck ○ Water tender, 3,000 gallons ○ Multi-casualty Incident Response Trailer
SAMOA PENINSULA VOLUNTEER FIRE DEPARTMENT – PHONE: 707-443-9042 **EMAIL: *samoaVFD@gmail.com* WEB: *samoafire.org***			
17 Volunteer 3 Auxiliary	-	3	○ Structural fires ○ Medical and rescue services
APPARATUS			
○ Type-1 engine ○ Type-2 engine ○ Type-3 engine			○ Rescue truck ○ Pick-up truck, 4WD

[9] Humboldt County Fire Safe Council. (2018.) Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 33-34, 37-38). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

[10] Humboldt County Planning Division. Fire District Boundaries and Contact Information. [GIS data]. (2018).

FIGURE 4.8.4 HUMBOLDT BAY AREA: FIRE PROTECTION RESOURCES, CONTINUED			
PERSONNEL	SERVES		RESPONSE
	RESIDENTS	AREA (ACRES)	
BLUE LAKE VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 668-5765 **EMAIL: *blchief@suddenlinkmail.com***			
1 Career 21 Volunteer	3,000	District: 14 Out of District: 93[11]	○ Structural fires ○ Medical and rescue services ○ Fire prevention, education and inspections
APPARATUS			
○ (2) Type-1 engines ○ Type-3 engine ○ (2) Water tenders			○ Rescue truck ○ Mobile air refill and lighting trailer (regional resource)
FIELDBROOK VOLUNTEER FIRE DEPARTMENT– PHONE: (707) 839-0931 **EMAIL: *sheppardjack73@gmail.com* WEB: *fieldbrookfire.org***			
23 Volunteer 6 Auxiliary	1,235	9.4	○ Structural fires ○ Medical and rescue services
APPARATUS			
○ Quick-attack truck ○ (2) Pumper engines			○ Water tender

In November 2014, Humboldt County voters passed the Public Safety and Essential Services half-cent sales tax—Measure Z.[12] Each year since its approval the Humboldt County Fire Chiefs' Association has applied for and received Measure Z funding and used it to purchase much needed fire engines, personal protective gear, and other essential equipment. In 2018, voters expressed their desire to see continued improvement in the local level of service by renewing the Public Safety and Essential Services sales tax by passing Measure O, which did not include a sunset clause.

The primary challenge for the fire agencies in this planning unit is securing enough revenue to effectively and sustainably protect their respective communities. Recruiting and retaining career staff; volunteer firefighters and auxiliary members; and willing citizens to actively serve on jurisdictional boards is also a continual challenge. There is also always a need for increased community involvement and support.

In addition, providing services to out-of-district areas puts a strain on already limited resources. This is a particular burden for the Blue Lake Fire Protection District, which is consistently called to respond to an area outside of its jurisdiction that is nearly seven times the size of its district. Emergency response times to this area, as well as other areas on the outskirts of community



Eureka house fire. Photo: Humboldt Bay Fire.

[11] The Blue Lake Rancheria receives fire, medical, and rescue response from a MOU for services provided by Blue Lake Fire Protection District. There is also an agreement in place for service provided to the Korbel Mill.

[12] County of Humboldt. Measure Z – Phillipsville Volunteer Fire Company Safety/Essential Services. [Web]. Retrieved from *https://humboldtgov.org/1803/Measure-Z-Information*

centers, can be lengthy due to poor road access that requires emergency vehicles to traverse the roads slowly and with extreme caution. There is also a need to improve access to fire protection water in several of the more remote communities.

4.8.5 HUMBOLDT BAY AREA EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Humboldt Bay Area Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Evacuation will likely travel either north or south along Highway 101, or east on Highway 299. There are numerous smaller roads connecting residences and neighborhoods to Highway 101. The narrowness of smaller roads leading to these remote residences could create serious complications for emergency vehicle responses trying to gain access during simultaneous home evacuations. Some of these smaller routes are one-way-in, one-way-out roads, with no alternative route. Adequate ingress and egress along these roads is vital to a large portion of the population that may need to access the main highway evacuation route and for firefighters who will be using the roads to access wildfires burning in remote, upslope areas.

FIGURE 4.8.5 HUMBOLDT BAY AREA: EVACUATION ROUTES

PRIMARY EVACUATION ROUTES	ALTERNATIVE EVACUATION ROUTES
○ **Hwy 101,** Eureka, Arcata, McKinleyville, Trinidad, Westhaven, Big Lagoon, Orick	○ **Old Arcata Road/Myrtle Avenue** between Arcata and Eureka
○ **Hwy 299,** Arcata, Blue Lake	○ **Central Avenue** in McKinleyville
○ **Hwy 255,** Samoa and Manila	○ **Essex Lane** from 299 into McKinleyville
○ **Fieldbrook Road/Murray Road,** Fieldbrook	○ **Janes Road, Spear Avenue, and Alliance Road** through Arcata
○ **Walnut Drive, West Gate Drive, Ridgewood Drive, and Elk River Road**, to communities on the eastern outskirts of Eureka	○ **Jackson Ranch Road** leading from Highway 255 into the Arcata bottoms

Note: The suitability of these roads will need to be evaluated before they are included in evacuations plans or used during an emergency.

Maintaining proper clearance on these roads is extremely important for ensuring the safety of residents within far-removed neighborhoods; overgrown vegetation can create hazardous conditions for firefighting apparatuses seeking access to these areas and can also hinder evacuation of residents in emergency situations. Other evacuation impediments may include landslides, fallen trees, downed power lines, poorly marked streets and intersections, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles, or leave residents stranded should the roads become blocked.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they

can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[13] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

See Appendix H, ***Living with Wildfire*** *for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6,* ***Evacuation Preparedness*** *in Part 5,* ***Risk-Assessment Detail*** *for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (e.g. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.8.6 HUMBOLDT BAY AREA COMMUNITY PREPAREDNESS

Fire preparedness in these communities is abetted by the Humboldt County Fire Safe Council (HCFSC), which was formed in 2002 by the County Board of Supervisors. The HCFSC's goals, in addition to implementing measures outlined in the countywide Community Wildfire Protection Plan, include sharing fire-safety information, assessing fire risk, promoting community fire-safe planning and coordination, linking fire-prevention programs and providing support to local fire services and fire safe councils (FSC).[14] The HCFSC has helped several community groups in the county establish their own FSCs, and has assisted many more communities in achieving national *Firewise®* recognition, as well as helping these groups obtain grant funding for fire hazard mitigation activities such as fuel reduction projects.

Firewise® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Residents of the Jacoby Creek Road neighborhood—a community at risk of wildfire—formed the Upper Jacoby Creek Firewise® Committee after seeing a neighbor's home burn to the ground as the result of a chimney fire. At the end of 2012, this group produced a Community Assessment and an Action Plan, and successfully achieved national

[13] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

[14] County of Humboldt, Natural Resources Planning. (2018). Humboldt County Fire Safe Council homepage. Retrieved from *https://humboldtgov.org/FireSafeCouncil*

recognition as a Firewise® community.[15] Some successful Firewise® modifications include implementing the "Blue Dot Program", where water tanks are clearly labeled and outfitted with reflective blue dots, improving signage by replacing old markers with reflective address signs, and raising fire-safe awareness by hosting a Firewise® event and producing an informational brochure.

Other communities in this planning unit may choose to follow the example of the Upper Jacoby Creek neighborhood by following through with the process of becoming recognized as Firewise®, which includes a site-specific wildfire risk assessment, an action planning process, and an annual community educational event. Efforts to educate community members about fire safety and to improve emergency preparedness is also guided by the local fire protection services with some support from the Humboldt County FSC.

For those communities without a local Firewise® group or other community-level fire-planning entity, this Planning Unit Action Plan will provide a starting point for fire-planning efforts. To help guide and inspire wildfire preparedness in this planning unit, this CWPP provides a list of priority action recommendations reflective of the community concerns and ideas collected through the process described below. *See section 4.8.9, **Humboldt Bay Area Action Plan** for a list of priority actions recommended by this CWPP.*

FIGURE 4.8.6 HUMBOLDT BAY AREA: FIRE PREVENTION ACCOMPLISHMENTS

- Arcata Fire Department has developed plans for and is seeking funding to support both a training tower and a burn trailer that will be shared countywide.
- Fire departments from within this planning unit proudly assisted Sonoma and Ventura Counties during the 2017 fire season and Butte County in 2018. The experience gained from these assignments increases the local capacity for responding to similar events within this planning unit.
- The Blue Lake Fire Protection District successfully secured grant funds from Measure Z to support the high number of emergency calls outside of its boundaries (particularly along Highway 299) so that the burden of cost was not carried by tax payers within the District.
- The Fieldbrook CSD successfully annexed property into its fire service boundary to better match where the fire and rescue service of the VFD are being provided.
- Fire departments within this planning unit received much needed safety equipment through Humboldt County Fire Chiefs' Association Measure Z grants (Fieldbrook, Blue Lake, Samoa Peninsula).
- In 2013, the community of Fieldbrook voted to increase the special tax that supports fire protection services. The special tax is a vital revenue source that the Fieldbrook VFD depends on for its survival.
- The Samoa Peninsula Fire District successfully completed a reorganization process to become the Peninsula Community Services District in order to expanded municipal services to the community.

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resources Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

[15] Upper Jacoby Creek Firewise Committee. (2012). Upper Jacoby Creek Firewise Community Assessment and Action Plan. Retrieved from *https://humboldtgov.org/740/Upper-Jacoby-Creek*

Green Diamond Resource Company and Humboldt Redwood Company have substantial landholdings within this planning unit. In recent years, both companies have undertaken efforts to help reduce the risk of wildfire occurrences on their property and associated with their operations. Both companies treat logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, *broadcast burning*, *mastication* and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post-harvesting *biomass recovery* for power generation with the vegetative debris produced by these activities. State law requires firefighting equipment be maintained at logging operations and inside all vehicles; harvesting operations be suspended at specified levels of low relative humidity; and logging crews make daily fire inspections after work is done during the fire season. Green Diamond also maintains fire trucks and heavy equipment for wildland fire emergencies. Green Diamond Forestry staff and logging and maintenance crews are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. Humboldt Redwood Company has similar capabilities to assist CAL FIRE but depends more on contractors and does not maintain its own logging crews.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.
Mastication: Mastication treatment utilizes several different types of equipment to grind, chip, or break apart fuels such as brush, small trees and slash into small pieces.
Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

To better understand their vulnerability to fire, Humboldt Redwood Company recently completed a fire risk assessment model for their ownership. This model characterizes fire risk across the ownership utilizing inputs including, but not limited to, fuel composition, topography, weather, and ignition risks. This information is used by forest managers to focus the reduction of fuel loading in strategic areas to reduce the potential impacts of wildfire.

4.8.7 HUMBOLDT BAY AREA LOCAL WILDFIRE PREVENTION PLANS

This Planning Unit Action Plan is the primary wildfire prevention plan for the Humboldt Bay Area. Within this planning unit are various, smaller communities each with different needs. These communities are encouraged to pursue Firewise® recognition, and through that process adopt a Firewise® Action Plan that identifies and prioritizes actions that reduce the risk posed by wildfire. Upper Jacoby Creek is currently the only community in this planning unit to have successfully achieved Firewise® Recognition.

Upper Jacoby Creek Firewise® Action Plan

The Upper Jacoby Creek Firewise® Action Plan[16], completed in 2012 as part of the Firewise® certification process, was developed in collaboration between community members, CAL FIRE, and the Arcata Fire Department. The Action Plan contains the following short-term priorities:

- Host an Annual Firewise® Event.
- Maintain defensible space throughout the entire community.
- Make fire-safety information available to community members.
- Enhance fire protection water in the community.
- Create highly visible road and address signs using green, reflective signs.
- Improve road conditions for emergency access.
- Reduce hazardous fuels along roads and near power lines.

[16] Upper Jacoby Creek Firewise Committee. (2012). Upper Jacoby Creek Firewise Action Plan. Retrieved from *https://humboldtgov.org/740/Upper-Jacoby-Creek*

- Plan for evacuation through outreach and identification of evacuation sites.
- Plan for disaster by developing a Phone Tree List and exploring options for an alarm system.
- Prevent house fires.



Examples of Upper Jacoby Creek Firewise Community accomplishments include properly labeling and outfitting water tanks (left), adding house numbers to previously unmarked homes (middle), and supplementing homemade street signs with high visibility green reflective signs (right).

Humboldt Redwood Company Fire Plan

A fire plan is developed every operating season for all operations taking place on Humboldt Redwood Company land. This fire plan includes maps of all operating areas, anticipated operating schedules, firefighting equipment available on-site, and emergency communication procedures. This fire plan is presented to CAL FIRE, reviewed, and discussed every year during an annual pre-season fire meeting. In addition, a Burn Plan is prepared every season to identify all areas where prescribed fire operations will be conducted. This burn plan provides a description of the fuel type, necessary weather conditions needed to ignite a prescribed fire, minimum resources required, an ignition plan, a containment plan, a communications plan and emergency call down list. This plan is also provided to CAL FIRE annually.

4.8.8 HUMBOLDT BAY AREA COMMUNITY IDENTIFIED PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 16, 2017 at Green Point School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.8.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.8.7* and *4.8.8* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire

hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.8.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.8.7 HUMBOLDT BAY AREA: COMMUNITY-IDENTIFIED PROPOSED PROJECTS

- Outreach to senior living facilities about wildfire.
- Improve address and street signage.
- Address fire hazard posed by homeless encampments.

The local residents who attended the November 18, 2017 workshop identified the projects in the following table as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.8.8 HUMBOLDT BAY AREA: COMMUNITY-IDENTIFIED PRIORITY PROJECTS

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Arcata/Bayside/Jacoby Creek		
Sunnybrae: shaded fuel break & protection zone	Landscape	ARC035
Fickle Hill: shaded fuelbreak	Landscape	BAY032
Boynton Prairie Road: shaded fuel break between residences near community forest	Landscape	EUR071
McKinleyville/Fieldbrook		
Address fire hazard posed by homeless encampments	Non-geographic	-
Improve address signage throughout (particularly Murray Road Area; David, Lisby, Arthur, Elizabeth Roads; Park Avenue; Lime; A-B-1st)	Non-geographic	-
Address access issues in the Timmons Ranch/Essex Gulch Area	Access	-
Blue Lake Greater Area		
Liscomb Hill Neighborhood: defensible space, improve access	Defensible Space/Access	BLU057
Upper Blue Lake Blvd: roadside clearance, water tank development, defensible space	Defensible Space/Access	BLU061
Clearing fuels above freeway below Green Hill Road	Defensible Space	BLU050
Eureka Greater Area		
Elk River Court bridge: fix/engineer	Access	EUR047
Headwaters: fix access haul bridge	Access	EUR049
Indianola: post address/street signs, reduce fuels, improve access	Multiple	EUR058

4.8.9 HUMBOLDT BAY AREA ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of priority actions would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **E**valuate the feasibility of organizing a fire safe council to guide coordinated wildfire preparedness within this planning unit, specifically the WUI areas around McKinleyville, Fieldbrook, Arcata, Blue Lake, Eureka, Samoa, and Manila.
- **M**aintain the Upper Jacoby Creek Firewise Communities/USA® Site:
  - Actively implement and maintain the Firewise® action plan.
  - Focus activity on home hardening and defensible space.
  - Continue to host an annual Firewise® Day.
- **I**dentify other community organizations, tribes, and/or groups of individuals in neighborhoods adjacent to the wildland with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program.
  - This focus area could be added to already existing disaster preparedness groups.
  - Conduct a risk assessment with support from the HCFSC, local fire departments, and/or CAL FIRE and draft a Firewise® action plan (the existing Upper Jacoby Creek plan can be used as a resource for this).
  - Host a Firewise® Day to share findings and inspire action; Firewise activities could be added to an existing annual community event.
  - If necessary, seek funding to support this effort.

- Once implementation groups are formed, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Upper Jacoby Creek Firewise Action Plan*, as well as in this *Priority Action Recommendations* list and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - McKinleyville
        - Dows Prairie (EUR089)
        - Neighborhoods off of Sutter Road (EUR090)
    - Fieldbrook
        - East side – Burnt Stump and surrounding areas (FIE047) and Old Quarry (FIE046)
        - South side – Neighborhood off of Fieldbrook Road along Stolpe and Lyman Lanes and Sunny Acres Avenue (FIE057) and Essex (FIE051)
    - Blue Lake and greater area:
        - Neighborhoods north-east of the city above Highway 299 such as Liscomb Hill (BLU057), Green Hill (BLU050), and Jackson Hill / upper Blue Lake Boulevard (Highly ranked community-identified project BLU061)
        - Areas above Blue Lake Boulevard (BLU065)
    - Blue Lake Rancheria (BLU064)
    - Upper Fickle Hill Road (EUR091)
    - Samoa, Fairhaven, and Manila (SAM062, SAM063)
    - Neighborhoods off of north Myrtle Avenue (Mitchell, Mitchell Heights, Spears, and Pigeon Point Roads – EUR056)
    - Neighborhoods to the east of Walnut Drive and towards the end of Ridgewood Drive (Ridgewood Heights), adjacent to the McKay Tract/Community Forest (EUR092)
    - Humboldt Hill (particularly neighborhoods at the top of the hill that are vulnerable to wind driven wildfire in flashy fuels (EUR088)
    - Upper Jacoby Creek is a priority area that already participates in the Firewise® Program (multiple project codes)
- Although the majority of the population within this planning unit lives in areas of moderate fire hazard severity and within incorporated cities, there are WUI neighborhoods, a large number of dead-end roads leading to multiple residences, and a general lack of wildfire preparation. For those reasons and because it was one of the top concerns of community members who

participated in fire planning workshops, **evacuation planning** and education are a priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.

- Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches. Target the following priority areas:
  - Humboldt Hill
  - Upper Jacoby Creek
  - Liscomb Hill
  - End of Ridgewood Drive
  - Neighborhoods along Mitchell, Mitchell Heights, Spears, and Pigeon Point Roads and their associated offshoots
  - Other dead-end roads to WUI neighborhoods in the Greater Eureka Area and Greater Arcata Area
- Identify local community liaisons to work directly with emergency management officials.
- Identify and map local evacuation routes and sites.
- Develop an evacuation program for seniors and disabled persons.
- Notify community of evacuation center locations.
- Provide information on large animal evacuation.
- Host neighborhood evacuation preparedness block parties.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads for initial evaluation and outreach efforts include:
  - Liscomb Hill Road and offshoots
  - Upper Jacoby Creek and offshoots
  - Upper Fickle Hill Road and offshoots
  - Greenwood Heights Road
  - Mitchell, Mitchell Heights, Spears, and Pigeon Point Roads
- **C**reate community chipping programs.
  - Priority areas in this unit are those listed above and those adjacent to forested wildlands, particularly where there is a predominance of older pre-WUI building code construction and dead-end roads.
  - Work with local fire departments to identify additional priorities for targeted outreach.

- Work with green waste disposal businesses and agencies to negotiate reduced cost or free drop-off days for woodchips and yard waste resulting from creating and maintaining defensible space.

- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. Evaluate the following priority areas:
  - Between the forested area east of McKinleyville and the interface zones
  - Between Sunnybrae and the Sunnybrae Community Forest (ARC035)
  - Between Fickle Hill and the Sunnybrae Community Forest (BAY032)
  - Between Boynton Prairie Road and the Arcata Community Forest (EUR071)
  - Between adjacent neighborhoods and the McKay Community Forest
  - Clearing fuels above Highway 299 below Green Hill Road
  - Regularly clear fuels in empty lots in Fairhaven
- Work with commercial timberland owners such as Green Diamond Resource Company and Humboldt Redwood Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
  - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
    - Inform this process with Humboldt Redwood Company's recently completed fire risk assessment model generated for their ownership.
    - Priority areas for such project development include timberlands adjacent to the east side of McKinleyville, the west side of Fieldbrook, and neighborhoods within Ridgewood Heights and Lundbar Hills.
  - Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands.
- When new subdivisions are created within this planning unit, it should be a priority to include the development of secondary access routes in those plans.
- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
  - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
  - Target outreach to facilities serving sensitive populations such as senior citizens and the disabled.
  - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and

networks, local media outlets, and any means used by the local community to share important information.

- Include compelling stories about past coastal wildfire events to overcome apathy and denial that wildfire can threaten coastal communities.
- Encourage Boy Scouts of America and or other local volunteer/service organizations or schools to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.

- Continue to explore options and make progress on local fire service sustainability efforts such as:
  - Recruiting and retaining volunteers (firefighters as well as auxiliary volunteers);
  - Establishing/maintaining secure, consistent, and sustainable revenue sources to meet growing needs and costs;
  - Ensuring that all developed areas and areas with imminent plans for development are within the boundaries of a fire related district and that services are being provided through the most efficient, effective, and sustainable structure. This may involve fire related district annexations and consolidations;
  - Secure funding for a training tower and burn trailer that can be used to increase the capacity of countywide fire services.
  - Pursue funding to build structures for departments with inadequate storage for fire engines and equipment.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well. Focus initial efforts in the following areas:
  - McKinleyville: Murray Rd Area; David, Lisby, Arthur, Elizabeth Roads; Park Ave; Lime Avenue; A, B, and 1st Streets
  - Greater Eureka Area: Berta, Vista, Redmond Roads and their dead-end off shoots
  - Neighborhoods north of Myrtle Ave, Ryan-Freshwater Creeks, Redmond Road
- Address road conditions that inhibit effective access impediments. The following priority access issues were identified evacuation and access by emergency responders. Begin by systematically identifying and mitigating such at community workshops and are recommended for initial action in this plan:
  - Address the issue of dead-end roads by exploring the possibility of connecting existing roads to create a secondary access point. This is particularly important for:
    - Upper Jacoby Creek Community
    - Several roads in the communities of Fieldbrook and McKinleyville
    - Greater Eureka area neighborhoods, including Berta, Humboldt Hill; Mitchell, Mitchell Heights, Spears, and Pigeon Point Roads and their associated offshoots
  - Address access issues for the Elk River Court Bridge, Headwaters haul bridge, and McKay Tract Bridge.
  - Address slide out conditions reported on Mitchell Road.
  - Address access issues for the Timmons Ranch/Essex Gulch Area.

- Homeless encampments were identified by community members and fire service representatives as a fire ignition risk within this unit. To better understand and address that risk, identify homeless encampments that pose a fire hazard and work with law enforcement, the fire service and possibly social services to identify appropriate mitigation actions such as providing access to shelters and/or performing fuels reduction around frequently used campsites. There are many reasons to address these areas. Look for opportunities to tie in with other local organizations and efforts to achieve multiple benefits. In addition, develop educational materials and outreach strategies to inform the homeless population about fire prevention and safety.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response. See more about this action in *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Create community chipping programs. See more about this action in *Priority Action Recommendations* above.

- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Work with commercial timberland owners such as Barnum Timber, Boyle Forests, and Green Diamond Resources Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate. See more about this action in *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. See details in the *Priority Action Recommendations* above.
- Address road conditions that inhibit effective evacuation and access by emergency responders. See details in the *Priority Action Recommendations* above. Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members and timber companies should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot Program", which identifies the location of firefighting water sources by marking them with blue reflective dots. Community priority was placed on the following:
    - The Humboldt Bay Fire Chiefs' Association should coordinate to develop a Blue Dot program for priority areas within the Planning Unit. Priority areas will include neighborhoods not served by a community water system.
- Increase the availability of water for fire protection, especially in areas without municipal water service, by investing in more community water tanks and ensuring existing water tanks are

outfitted with fittings compatible with firefighting equipment. Priority water needs to evaluate include:

- Blue Lake: Ensure that all residents in the Liscomb Hill Road and Upper Blue Lake Boulevard areas have firefighting water sources with proper hookups.
- Enhance water systems to ensure sufficient emergency water supply for future development in the Freshwater and Ridgewood Areas.

Fire Protection

- **S**upport the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- **A**ssist in the development of recruitment and retention strategies for volunteer fire departments.
- **H**elp local fire departments raise funds by making donations directly and/or organizing fundraising events or efforts.

Restoration of Beneficial Fire

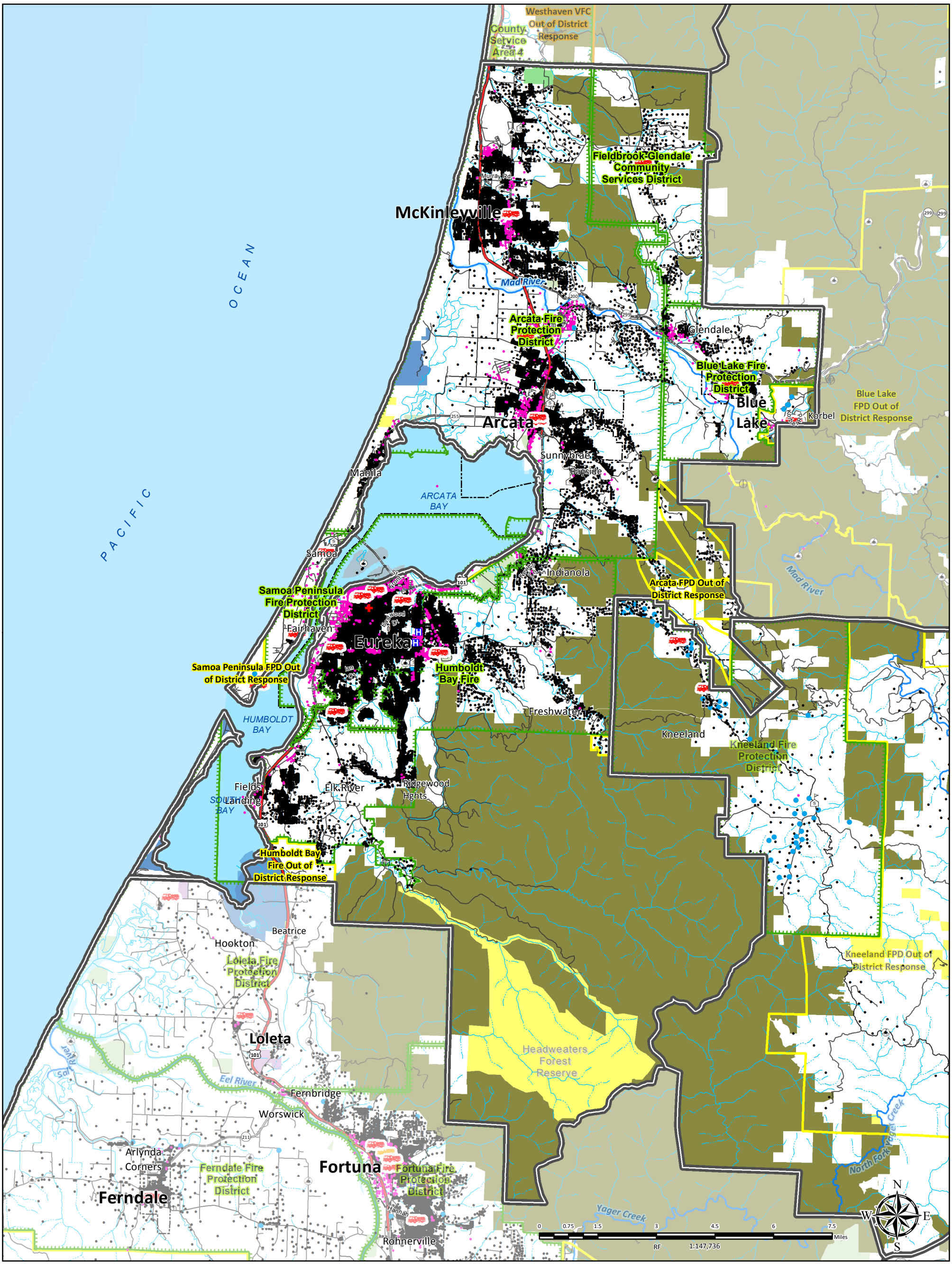
- **P**rovide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, and the Humboldt County Prescribed Burn Association.[17]
- **S**hare information about educational events that provide information about prescribed burning.
- **E**ncourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.

Integrated Planning

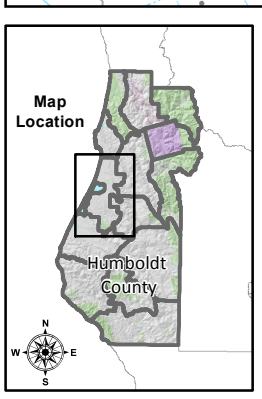
- **I**ntegrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- **I**nitiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland. See more about this action in *Priority Action Recommendations* above.
- **S**hare GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*).

[17] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.8.1 HUMBOLDT BAY AREA PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

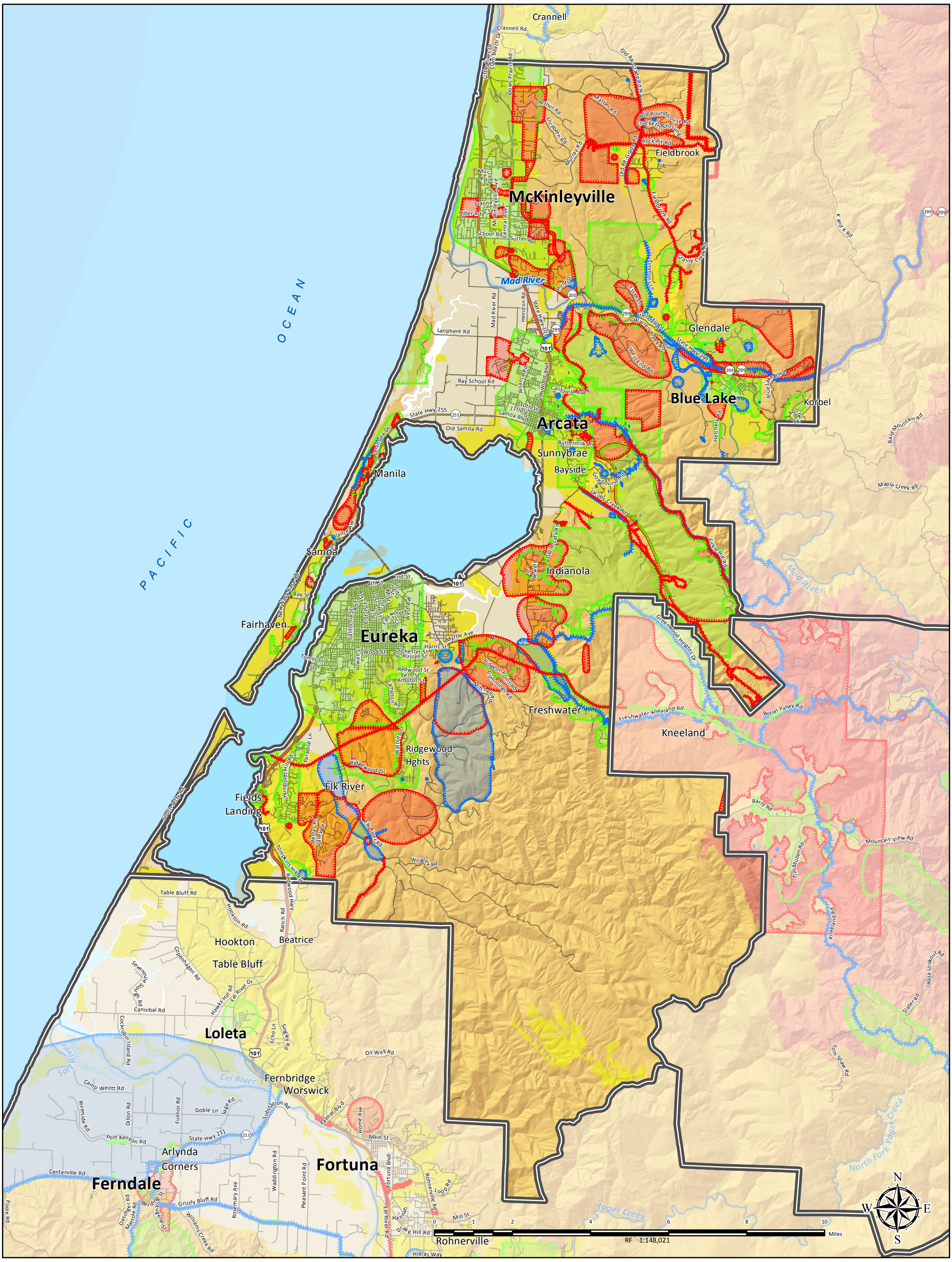
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

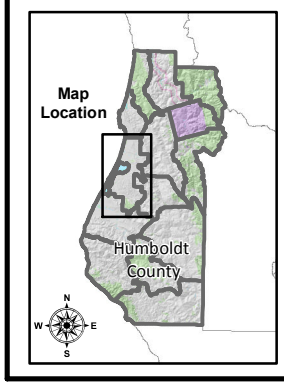
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.8.2 HUMBOLDT BAY AREA PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

- CWPP Planning Unit Boundary

Community-Identified Projects
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- High
- Moderate
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

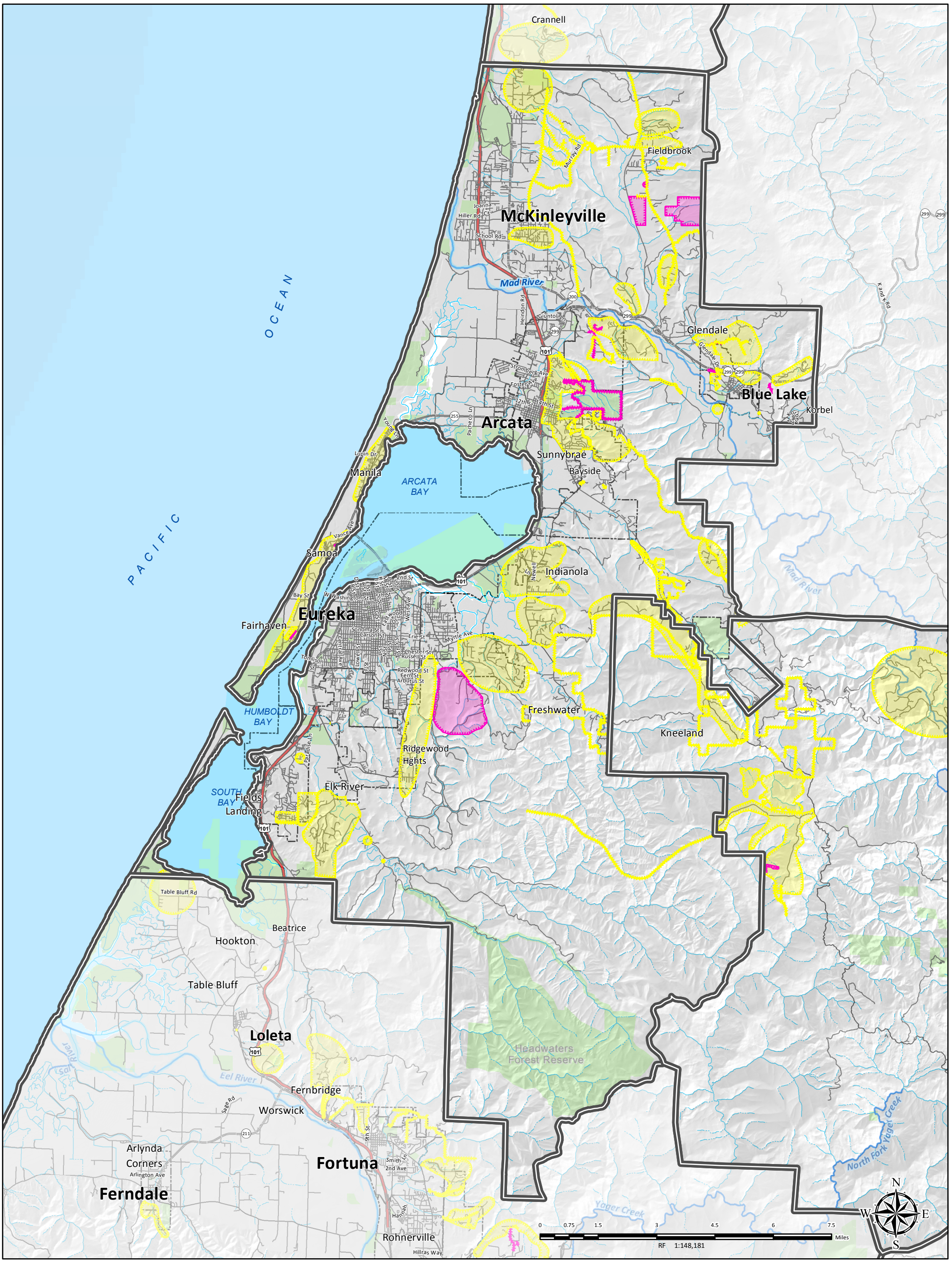
The map is intended for planning purposes and should not be used for precise measurement or navigation.

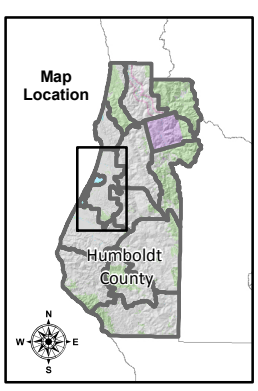
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.8.3 HUMBOLDT BAY AREA PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

- CWPP Planning Unit Boundary

Community-Identified Features

- Proposed Project
- Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

- Public Land
- Tribal Land
- Cities

Highways and Roads

- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography

- Major River or Stream
- Perennial Stream
- Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

KNEELAND–MAPLE CREEK PLANNING UNIT ACTION PLAN



Iaqua Ranch. Photo: Northcoast Regional Land Trust.

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Helpful Links

KNEELAND FIREWISE:	*https://humboldtgov.org/2425/Kneeland*
KNEELAND FIRE PROTECTION DISTRICT:	*http://kneelandfire.org*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.9 KNEELAND–MAPLE CREEK PLANNING UNIT ACTION PLAN

4.9.1 KNEELAND–MAPLE CREEK PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.9.1, ***Kneeland–Maple Creek Planning Unit***.

> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

The Kneeland–Maple Creek Planning Unit encompasses 123,233 acres situated in the geographic center of Humboldt County. The Unit lies east of Eureka and the Headwaters Forest Reserve, west of Six Rivers National Forest, with the City of Blue Lake located to the north, and Highway 36 to the south. Kneeland Road, Greenwood Heights Drive, and Fickle Hill Road are the primary transportation routes through this Unit, although Maple Creek and Butler Valley Roads are important routes as well. The Mad River is the central waterway, entering the Unit from the southeast and flowing north towards Arcata, where it meets the Pacific Ocean. Other water bodies include Maple Creek in the northern Unit area, Lawrence Creek in the southwestern portion, and the North Fork of Yager Creek in the southern region.

All residences in this Unit exist within the *wildland-urban interface* (WUI). Kneeland and Maple Creek comprise the main communities in this unit, however, there are residential properties scattered throughout the entire region. The majority of these rural homesteads and neighborhoods are located near Maple Creek, along Kneeland Road, and densely clustered along Greenwood Heights Drive. A small but dense neighborhood also exists along Tim Mullen Road, which branches off of Kneeland Road, en route to Bridgeville. Private land is the dominant ownership pattern; the Unit largely contains residential parcels, a few tracts of ranchland, and industrially owned timberlands to the north and south. A few parcels of Bureau of Land Management (BLM) land are distributed throughout the area, and a large section of the eastern portion of the Unit falls within the Six Rivers National Forest.

4.9.2 KNEELAND–MAPLE CREEK ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.



Kneeland Airstrip. Photo: CAL FIRE.

Assets at risk in this planning unit mainly include residential homes and neighborhood areas, as well as infrastructure components such as communication towers, power lines, and access roads. Many residents in these communities possess large farm animals and these, along with their associated structures, such as barns and stables, are considered assets at risk as well. Environmentally

significant assets at risk within this planning unit include the Iaqua Buttes, a viewshed with great ecological importance to the community, as well as timber resources located throughout the Unit.

Map 4.9.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[1] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.9.1 KNEELAND–MAPLE CREEK: ASSETS AT RISK	
○ CDF Station/Airport/Heliport/rare plant species	○ Kneeland School
○ Greenwood Heights/old Post Office building	○ Maple Creek School/Fire Station
○ Blue Slide Church Camp	○ Maple Creek swimming hole/recreation

4.9.3 KNEELAND–MAPLE CREEK WILDFIRE ENVIRONMENT

A detailed description of the local area and associated wildfire characteristics is provided in the Kneeland Firewise® Wildfire Risk Assessment.

Readers are encouraged to review that plan for more details about the wildfire environment. Visit *http://fire.hardinwebdesign.com/index.php/firewise* for more information about Kneeland Firewise® activities and to download the plan.

The majority (65%) of the Kneeland–Maple Creek Planning Unit is zoned "Very High *Fire Hazard Severity*," with 35% of the Unit area, particularly in the southern region of the Unit, zoned "High Fire Hazard Severity," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[2]

How is *Fire Hazard Severity* determined by CAL FIRE?
○ The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
○ Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
○ Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
○ While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

[1] Geographic Information Systems (GIS).

[2] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

Although Kneeland is close to the coastal population centers of Eureka and Arcata, the climate is hotter and drier in the summer. The wildfire environment changes significantly traveling from the northeastern parts of the Unit where Greenwood Heights Drive winds up from the greater Eureka area through the moist redwoods into the higher elevation grasslands and oak woodlands where wildfire hazard severity is higher. Population density also changes across the unit from west to east with many homes clustered along main roads closer to the cities and a more dispersed development pattern throughout the rest of the Planning Unit. Seventy-five percent of the Kneeland Fire District is private timberland and/or parcels greater than 400 acres. Fire service representatives report that nearly one-hundred percent of ignitions are generated from the remaining twenty-five percent of the district, or the areas comprised of homesteads on smaller parcels.

Possible ignition sources in this planning unit are primarily human-related, including arson, poorly maintained campfires or brush piles, smoking, equipment use, vehicles or vehicular accidents, and downed power lines. There has been a recurring problem of stolen or abandoned vehicles being torched in areas along Kneeland Road during the time school graduations happen, which often correlates with the beginning of fire season. Lightning is the primary source of naturally induced wildfire in this planning unit.

For a closer look at fire hazard severity in this planning unit, see Map 4.9.2, ***Kneeland–Maple Creek Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Some of the early agricultural settlers in the late 1800s used intentional burning to clear and maintain grasslands for pasture animals. A heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuels. Intense timber harvests during the 20th century further exacerbated damages to forest ecosystem health.

> ***Fire suppression:*** All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.
>
> ***Natural fire regime:*** A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Approximately 49% of the Kneeland–Maple Creek Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 20% of the area is condition class 2, or moderately altered from the historical range.

Despite its high fire hazard rating, recent large fire events have been limited to a few blazes and contained to a small range. Major fires in the last 20 years include only the Kneeland Fire in 2009, which burned 26 acres, and the Iaqua Fire in July 2008, which burned 42 acres.

FIGURE 4.9.2 KNEELAND–MAPLE CREEK: FIRES OVER 10 ACRES 1908-2017[3]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
L. Sibley	Unknown/Unidentified	1952	1,184	1,184
C. Wilson	Unknown/Unidentified	1960	393	393
L.M. Shaw	Unknown/Unidentified	1952	391	391
Pearson Lbr. Co.	Unknown/Unidentified	1956	350	350
Wilson	Debris	1936	189	189
New River Bluff	Smoking	1931	99	99
Cooper Ranch	Debris	1936	90	90
Iaqua	Lightning	2008	42	42
Kneeland	Lightning	2009	26	26
Rock	Debris	1936	10	48

Note: An interactive map of fire history through 1908 is available through the Web GIS.

Structural Ignitability

Homes in this planning unit exist within the WUI, which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[4], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

Home Ignition Zone: The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

Structural ignitability: The ease with which a home or other structure ignites.

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Although residential properties within this planning unit tend to be located

[3] FRAP. (2018). State Fire Perimeters 1908-2017.

[4] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

on more gentle terrain, some homes are surrounded by steep slopes that can limit their defensible space and put structures in the line of up-hill spreading wildfires.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[5]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Overgrown vegetation poses a threat not just to the property on which it is growing – it increases the ability of fire to spread, especially if it is encroaching on adjacent properties. Neighbors are encouraged to express their concerns to property owners whose properties do not currently meet defensible space standards. CAL FIRE can help inspire action by performing defensible space inspections on properties with hazardous fuels.

Map 4.9.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

Communities in this planning unit are not served by any community service districts, so residents obtain water through other means, such as drawing from nearby creeks and holding tanks. A number of water tanks located throughout the community are available for fire protection water. Community members identified four 2,500-3,000 gallon tanks, a 15,000 gallon tank, a 20,000 gallon tank, and a 30,000 gallon tank that could be made available for use by firefighters.

The communities in this unit have various needs associated with improving the availability of emergency water for wildfire protection. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters with visible markers, and for community members to ensure that their water sources are properly outfitted for firefighting equipment.

Community-identified locations from which fire protection water could be drawn are listed below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.9.3 KNEELAND–MAPLE CREEK: FIRE PROTECTION WATER DRAFT SITES	
○ A 1/2-acre pond – helicopter accessible	○ A 1/4-acre pond – helicopter accessible
○ Barry Road pond "B" – helicopter accessible	○ Barry Road pond "C" – helicopter accessible
Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.	

Map 4.9.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

[5] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

4.9.4 KNEELAND–MAPLE CREEK FIRE PROTECTION CAPABILITIES

Community fire protection within the Unit is provided by the Kneeland Fire Protection District (KFPD), which was established in 1990 and is served by the Kneeland *Volunteer Fire Department* (KVFD). The KVFD serves approximately 38 square miles; the out of district response area consists of buffer zones surrounding Freshwater, Maple Creek, Butler Valley Road, Fickle Hill Road, Bridgeville, and Showers Pass.[6] The KFPD has formal *mutual aid agreements* with CAL FIRE, Humboldt Bay Fire and Arcata Fire Protection District for giving and receiving additional assistance.

Volunteer fire department: A fire department associated with a local agency (either a city of a special district authorized to provide fire protection) that is comprised almost entirely of volunteer, unpaid, firefighters, whose primary objective is community fire protection.

Mutual aid agreements: A reciprocal aid agreement between two or more agencies that defines what resources each will provide to the other in response to certain predetermined types of emergencies. Mutual aid response is provided upon request.

Goodwill service: Fire protection services provided by a fire district to a location that is outside of the district's jurisdictional boundaries and for which no compensation is provided neither through direct payment nor through a tax base.

FIGURE 4.9.4 KNEELAND–MAPLE CREEK: FIRE PROTECTION RESOURCES[7]

PERSONNEL	SERVES		RESPONSE
	RESIDENTS	AREA (SQ. MI)	
KNEELAND VOLUNTEER FIRE DEPARTMENT (KVFD) – PHONE: (707) 442-3252 WEB: *www.kneelandfire.org*			
9 Volunteer 3 Auxiliary	712	District: 38 Out of District: 65+	○ Structure and vegetation fires ○ Emergency medical and rescue services
FIRE APPARATUS			
○ (2) Type-1 engine, 600 and 750 gallon ○ Type-2 engine, 800 gallon			○ Water tender, 2,000 gallon ○ Rescue mini-pumper truck, 250 gallon ○ Chief's pick-up truck, 100 gallon

CAL FIRE is responsible for responding to wildland fires in the Unit. However, due to the remoteness of the area, the KVFD is often the first to respond to wildfires; however, volunteers' equipment and training experience limits their ability to contain large wildfires. In these instances, volunteer firefighters prioritize the protection of lives and structures while doing what they can to address the fire until assistance from CAL FIRE arrives. The Kneeland Helitack Base is also located within this planning unit. The Base provides wildfire air support to areas as far away as Oregon, Mendocino, and Weaverville and is maintained by CAL FIRE.

The KFPD is in the process of building a new fire station, which will also serve as the Kneeland Community Center. This effort was given a boost by local voters in 2014 when 82% of those casting a vote supported a supplemental property tax, which increased District revenue – revenue that has been used for facility upgrades, maintenance, and equipment replacement. The biggest challenge faced by the department is volunteer recruitment and retention. Volunteers are greatly needed, for firefighting especially, but for administration, fundraising, and maintenance activities as well.

[6] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 35). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

[7] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017.

The volunteer fire department in Maple Creek was forced to close due to insufficient funding and volunteers. Now the community relies on seasonal wildfire response from CAL FIRE and the *goodwill service* of fire protection resources in neighboring communities, such as the Kneeland and Blue Lake fire protection districts. Responding to the Maple Creek area and other neighborhoods outside of the KFPD boundary puts a strain on the operating budget and impacts the service life of equipment.





(Left to Right) KVFD presenting to Kneeland students, Measure Z funded fire engine, laying the foundation of the Kneeland firehall. Photos: KFPD.

4.9.5 KNEELAND–MAPLE CREEK EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Kneeland–Maple Creek Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Evacuation routes may travel northwest along either Kneeland Road, Greenwood Heights Drive, or Fickle Hill Road towards Arcata, or south along Kneeland Road towards Bridgeville. The main roads are somewhat interconnected, though remote, and all of them are windy and narrow in parts. There are a number of smaller roads connecting residences and neighborhoods to these primary transportation routes. The narrowness of many of these roads could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. Overgrowth of vegetation along roads and driveways and inadequate vehicle turn around spaces could create problems as well. Poor or complete lack of signage at roads and intersections pose potential problems for emergency ingress and egress.

FIGURE 4.9.5 KNEELAND–MAPLE CREEK: POTENTIAL EVACUATION ROUTES
○ Northwest along **Kneeland Road, Greenwood Heights Drive**.
○ **Fickle Hill Road** towards Arcata, or south along **Kneeland Road** towards Bridgeville.
○ **Barry, Paddock,** and **Tim Mullen Roads** connect several neighborhoods to **Kneeland Road**.
○ **Mountain View Road** provides an alternative route south from **Kneeland Road.**
○ **Butler Valley Road** is necessary for connecting Maple Creek to main roads leading west, while **Maple Creek Road** provides northern access to Blue Lake, approximately nine miles away. **Powerline Road** could potentially enable eastern access, with assistance and permission from the U.S. Forest Service.

Other ingress and egress impediments may include steep road sections, fallen trees and power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation

and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could inhibit access, particularly if wildfires were initiated by a severe earthquake.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[8] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**

4.9.6 KNEELAND–MAPLE CREEK COMMUNITY PREPAREDNESS

No local fire safe councils (FSC) currently exist in this planning unit. However, Kneeland was recognized as a Firewise® community in 2015 and has successfully maintained this status since then and serves many of the functions of a FSC. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. As part of the certification process, a committee developed the Kneeland Community Assessment and Firewise® Action Plan, described in *section 4.9.7*.

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resource Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space

[8] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

Green Diamond Resource Company and Humboldt Redwood Company have substantial landholdings within this planning unit. In recent years, both companies have undertaken efforts to help reduce the risk of wildfire occurrences on their property and associated with their operations. Both companies treat logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, *broadcast burning*, *mastication* and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post-harvesting *biomass recovery* for power generation with the vegetative debris produced by these activities. State law requires firefighting equipment be maintained at logging operations and inside all vehicles; harvesting operations be suspended at specified levels of low relative humidity; and logging crews make daily fire inspections after work is done during the fire season. Green Diamond also maintains fire trucks and heavy equipment for wildland fire emergencies. Green Diamond Forestry staff and logging and maintenance crews are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. Humboldt Redwood Company has similar capabilities to assist CAL FIRE but depends more on contractors and does not maintain its own logging crews.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.

Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

To better understand their vulnerability to fire, Humboldt Redwood Company recently completed a fire risk assessment model for their ownership. This model characterizes fire risk across the ownership utilizing inputs including, but not limited to, fuel composition, topography, weather, and ignition risks. This information is used by forest managers to focus the reduction of fuel loading in strategic areas to reduce the potential impacts of wildfire.

Since the last update of the Humboldt County CWPP, the Kneeland–Maple Creek community has increased their fire preparedness by completing a number of projects through the Firewise® program and the Kneeland Volunteer Fire Department. These accomplishments are listed in the following table.

FIGURE 4.9.6 KNEELAND–MAPLE CREEK: FIRE PREVENTION ACCOMPLISHMENTS

2015-Present
○ Gained recognition as a Firewise® Community in 2015 by completing the Kneeland Community Wildfire Risk Assessment and Action Plan.
○ Began hosting annual Firewise® Days and developed fire safety handouts.
○ Upgraded and purchased two new fire engines and new turnout gear.
○ Broke ground on the firehouse foundation and ushered firehouse planning to the bid solicitation stage.
○ Began regular communications on Kneeland Next Door "Kneeland Fire Thought You Would Like to Know".
○ Published a new webpage for Kneeland Firewise® (*http://fire.hardinwebdesign.com/index.php/firewise*).
○ Continues to explore options for addressing out-of-district service demand. Received Measure Z funding to support such service for the short term.

FIGURE 4.9.7 KNEELAND–MAPLE CREEK: FIRE PREVENTION ACCOMPLISHMENTS, CONTINUED
2014-2015
○ Intensive fuels treatment was completed on over 21 acres across eight properties, through the Fire-adapted Landscapes and Safe Homes or "FLASH" program.
○ Multiple landowners partnered with USFWS and NRCS to conduct fuels reduction on their properties.
2013
○ Voters passed Measure L to provide additional funding for the Kneeland Fire Protection District to support sustainable fire and rescue services.

4.9.7 KNEELAND–MAPLE CREEK LOCAL WILDFIRE PREVENTION PLANS

The Kneeland Firewise® Action Plan[9], completed in 2015 as part of the Firewise® certification process, was developed in collaboration between community members, the Kneeland Volunteer Fire Department, CAL FIRE, and Humboldt County.[10] The Action Plan contains the following short-term priorities:

- Address lack of community participation by:
  - Hosting an annual Firewise® Day each year.
  - Following through with plans to construct Kneeland Firehouse.
  - Enhancing education and outreach.
- Ensure adequate volunteer capacity, water, and equipment for firefighting by:
  - Enhancing recruitment of volunteer firefighters.
  - Evaluating and replacing firefighting equipment, as needed.
  - Establishing a community
- Address the buildup of fuels by:
  - Reaching out to and educating landowners regarding defensible space and safe pile burning.
  - Seeking funding for fuels reduction projects.
  - Evaluating the feasibility of reinstating controlled burns in Kneeland.

In addition to the Kneeland Firewise® Action plan, this Planning Unit Action Plan will help guide the development of additional projects and priorities aimed at increasing wildfire preparedness in this planning unit. This CWPP provides a list of priority action recommendations reflective of the community concerns and ideas collected through the process described below. *See section 4.9.9, **Kneeland–Maple Creek Action Plan** for a list of priority actions recommended by this CWPP.*

4.9.8 KNEELAND–MAPLE CREEK COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on October 26, 2017 at Kneeland Elementary School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

[9] Kneeland Firewise Action Plan. (2015). Retrieved from https://humboldtgov.org/2425/Kneeland

[10] Visit http://fire.hardinwebdesign.com/index.php/firewise to learn more about Kneeland's Firewise® activities.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes a number of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.9.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.9.7* and *4.9.8* in this section. *For more information on the mapping exercise, see Appendix B.5,* ***Mapping Exercise Instructions****.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.9.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.9.8 KNEELAND–MAPLE CREEK: PROPOSED PROJECTS

- Improve signage – home addresses and road names.
- Conduct a fuel reduction and slash collection weekend event; inquire with Humboldt Redwood Company about possible funding.
- Translate the fire department's hand-written maps of the area into a more sophisticated, bound and laminated map book for emergency responders.

The local residents who attended the October 26, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.9.9 KNEELAND–MAPLE CREEK: COMMUNITY-IDENTIFIED PRIORITY PROJECTS

PROJECT DESCRIPTION	PROJECT NUMBER
Top Priorities	
Increase KVFD/Citizen Auxiliary recruiting	Non-geographic
Complete the firehouse	Non-geographic
Increase Blue Dot participation	Non-geographic
Purchase community chipper	Non-geographic
Increase burn day signage & education	Non-geographic
Geographic Priorities	
Greenwood Heights Drive defensible space and roadside clearance (tunnel vegetation)	KNE047
Tim Mullen Road roadside clearance and defensible space	KNE056, KNE043
Barry Road defensible space	KNE056
Foss Road roadside clearance	KNE056, KNE043
Green Road roadside clearance (tunnel vegetation)	KNE060

4.9.9 KNEELAND–MAPLE CREEK ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of priority actions would best serve as a starting place towards the fire safety of the communities in this planning unit.

- The residents of the Kneeland-Maple Creek Planning Unit are fortunate to live in an area with an active Firewise Communities/USA® Site. One of the highest priorities for this planning unit is to maintain and support the Kneeland Firewise® program to facilitate continued community wildfire preparedness and mitigation:
  - Actively implement and maintain the Firewise® action plan on an annual schedule.
  - Focus activity on home hardening and defensible space.
  - Continue to host an annual Firewise® Day.
  - Consider adding the development of a community chipper program and the development of a strategy to abate hazardous vegetation on vacant lots into action plan updates.
  - Reach out to establish increased participation from residents and Humboldt Redwood Company and Green Diamond Resource Company.
  - Inspire more community involvement and support with continued outreach about what the group does and how to get involved.
- Identify other community organizations, Tribes, or groups of individuals with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program, particularly in the Maple Creek area.

- Conduct a risk assessment with support from the HCFSC, the KFPD, and/or CAL FIRE and draft a Firewise® action plan (the existing Kneeland plan as well as this planning unit action plan can be used as resources).
- Host a Firewise® Day to share findings and inspire action; Firewise activities could be added to an existing annual community event.
- If necessary, seek funding to support this effort.

- Evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for actions identified in the *Kneeland Firewise Action Plan*, this *Priority Action Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- Priority areas within this planning unit for fuels reduction are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Neighborhood clustered along Greenwood Heights Drive (KNE047), and associated driveways and spur roads including, McGlosket Road, Tree and Splendor Lanes, and Green Road and Prairie Lane (KNE060).
    - Tim Mullen Road/Barry Road/Foss Road neighborhood (including KNE043, KNE056)
    - Residences in the area of Mountain View and Jack Shaw Roads.
    - The community of Maple Creek; residences along and off of primary roads and offshoots.
    - Residences along and off of Kneeland Road, roughly between the intersection with Butler Valley Road and the Kneeland School (KNE071).
    - Purchase community chippers to support wildfire preparedness in these areas.
- The high fire danger, a dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a general lack of wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness and the identification of local evacuation routes and sites. (Generally, the Sheriff's Office is responsible for conducting evacuations, while the fire service focuses on wildfire management.) Work together to review best practices as well as emerging new approaches.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites.

- Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
- Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads for initial evaluation and outreach efforts include:
  - Tim Mullen Road
  - Foss Road
  - Barry Road
  - Kneeland Road
  - Greenwood Heights Drive
  - Upper Fickle Hill Road
  - Green Road
  - Maple Creek Road
  - Butler Valley Road
  - Powerline Road
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.
  - Implement vegetation treatment on fire suppression ridges.
  - Bring together landowners to cooperatively implement prescribed burns on private lands throughout this planning unit.
    - Encourage large property owners to participate in the Humboldt County Prescribed Burn Association.
    - Emphasize the restoration of oak woodlands.
    - Explore partnerships with timber companies.
    - Distribute information and provide resources to help residents understand how to use prescribed fire to reduce fuels on their properties.
    - See additional prescribed fire ideas in the *Action Catalogue* below under "Restoration of Beneficial Fire".
- **W**ork with commercial timberland owners such as Humboldt Redwood Company and Green Diamond Resource Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
  - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
    - Inform this process with Humboldt Redwood Company's recently completed fire risk assessment model generated for their ownership.
  - Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands.

- Shaded fuelbreak near northern Humboldt Redwood Company boundary, near Freshwater and Kneeland Road. (PAC002)

- **C**oordinate with CAL FIRE, the KVFD, and the local Firewise® group to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
  - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
  - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
  - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
  - Contact the HCFSC for more details and examples of how to address this situation.
- **C**ontinue to explore options and make progress on local fire service sustainability efforts such as:
  - Completing construction of the new Kneeland Fire Hall and Community Center.
  - Recruiting and retaining volunteers (firefighters as well as citizen auxiliary volunteers).
  - Update the fire department run books (digitize handwritten maps).
  - Exploring potential options for providing local fire protection to the community of Maple Creek. This may include expanding the Kneeland Fire Protection District boundary to include the community of Maple Creek. This Plan recommends that voter approval of a special tax or assessment accompany any expansion so that the fire service is financially supported.
  - Educate community members about burn day requirements to reduce wildfire ignition risk.
- **I**nform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with the local fire department. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- **I**ncrease the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment.
- **W**ork with the HCFSC to share successful local strategies to help inspire similar action throughout the county.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- **I**mplement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- **U**se *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- **I**dentify primary ignition sources in the local community and focus prevention efforts on reducing them.
- **I**ncrease community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- **I**nform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- **D**evelop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information (such as Kneeland Next Door).
    - Include compelling stories about past wildfire events.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- **P**rovide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- **C**ollaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- **W**ork with PG&E and local landowners to reduce fuels along power line easements.

- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot spots for Sudden Oak Death infected trees in the area. Conduct fuels reduction projects as needed to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners such as Barnum Timber, Boyle Forests, Green Diamond Resources Company, and Humboldt Redwood Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Work with the County Office of Emergency Services (OES) and local fire service to engage community members in evacuation preparedness. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.

- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression. See details in the *Priority Action Recommendations* above.
- Increase the availability of water for fire protection. See details in the *Priority Action Recommendations* above.

Fire Protection

- Support the local fire department by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

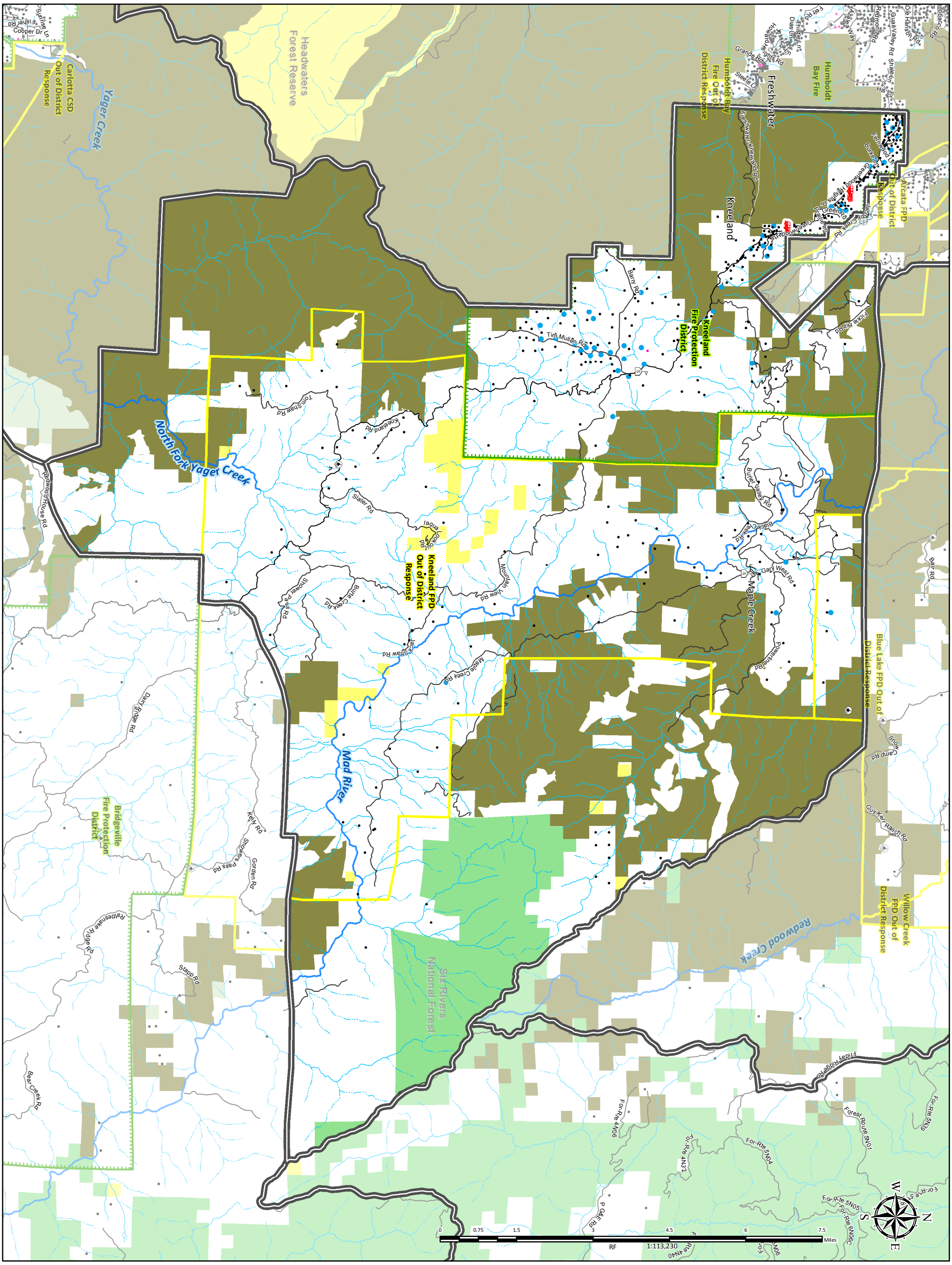
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[11]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

Integrated Planning

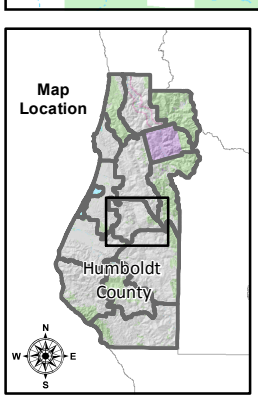
- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Continue to maintain participation in the Firewise Communities/USA® Recognition Program. See details in *Priority Action Recommendations* above.
- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

[11] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.9.1 KNEELAND PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

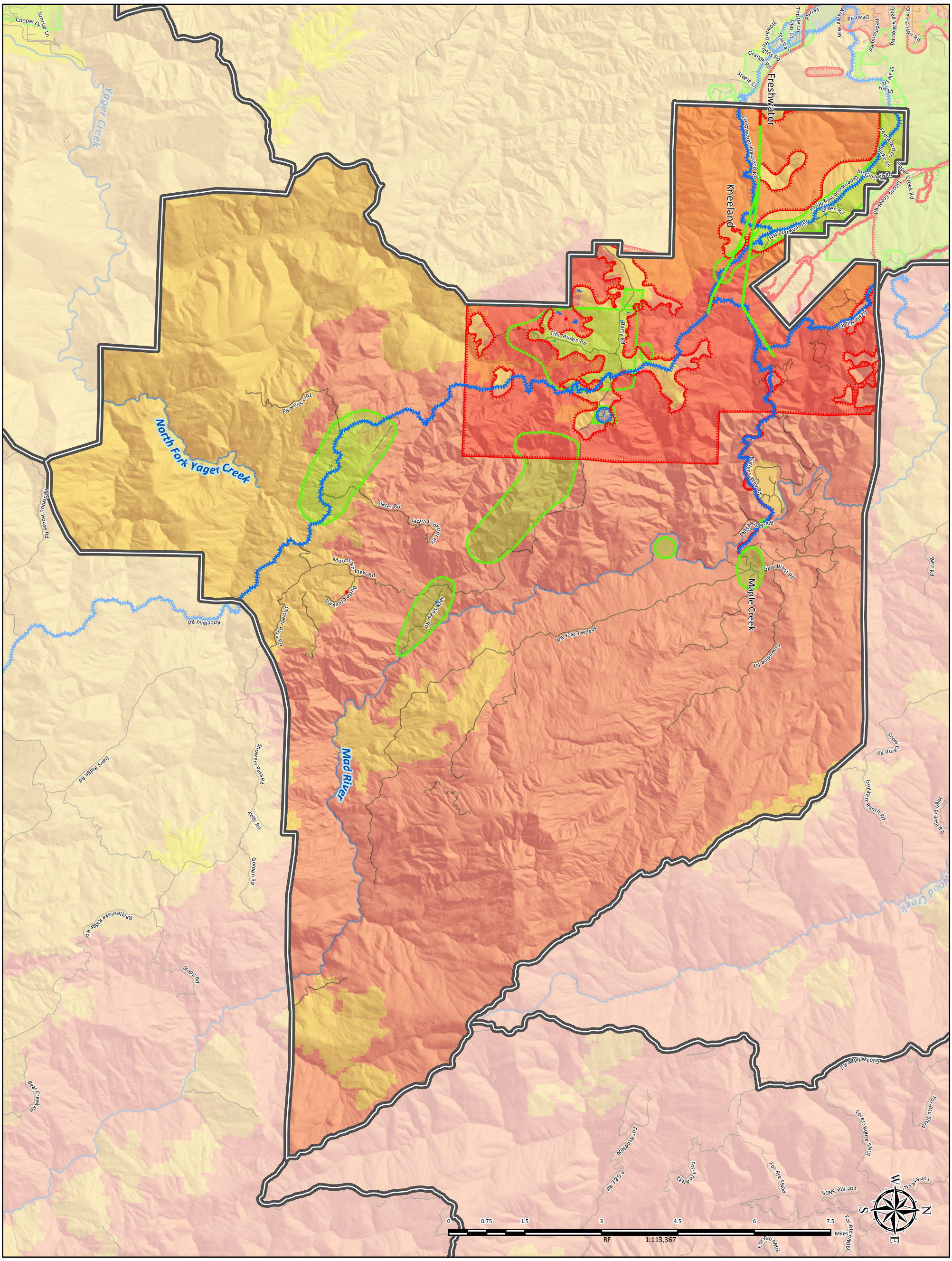
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

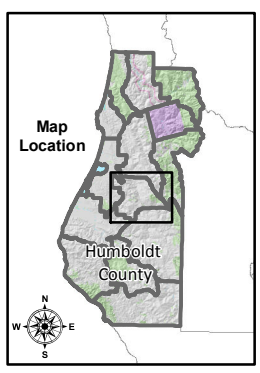
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan. The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.9.2 KNEELAND–MAPLE CREEK PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

- CWPP Planning Unit Boundary

Community-Identified Projects
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- High
- Moderate
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Humboldt County FireSafe Council

County of Humboldt — "We're Home of the Redwoods"

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

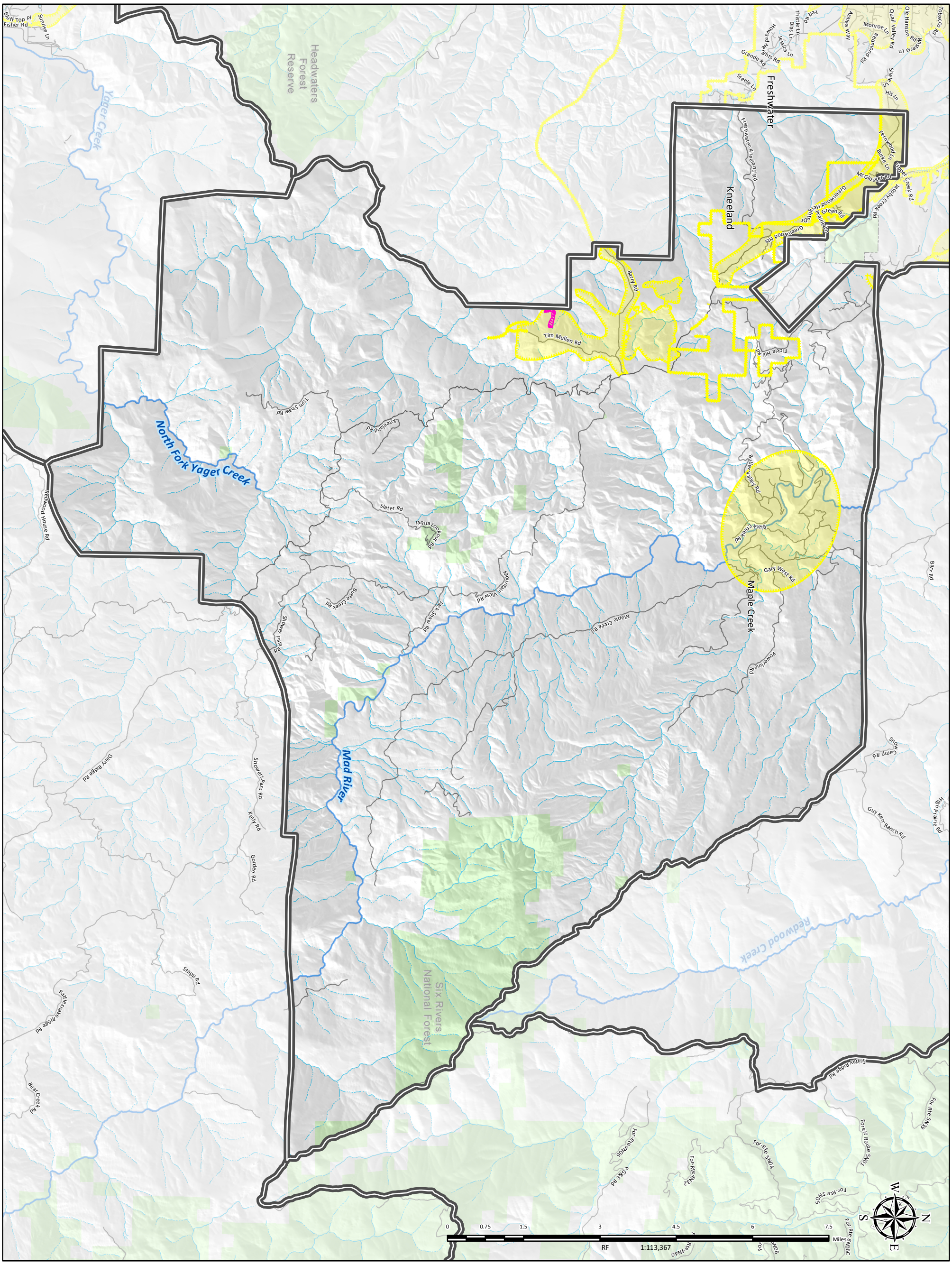
The map is intended for planning purposes and should not be used for precise measurement or navigation.

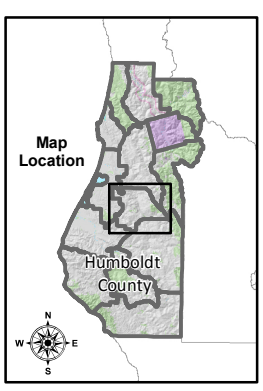
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.9.3 KNEELAND–MAPLE CREEK PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

- Proposed Project
- Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

- Public Land
- Tribal Land
- Cities

Highways and Roads

- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography

- Major River or Stream
- Perennial Stream
- Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

EEL PLANNING UNIT ACTION PLAN



Eel River. Photo: A River's Last Chance (documentary, 2017).

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Helpful Links

HYDESVILLE FIREWISE WEBPAGE:	*https://humboldtgov.org/2426/Hydesville*
FERNDALE VOLUNTEER FIRE DEPARTMENT	*www.ferndalefire.org*
FORTUNA VOLUNTEER FIRE DEPARTMENT	*www.fortunafire.org*
RIO DELL VOLUNTEER FIRE DEPARTMENT	*www.riodellfire.org*
SCOTIA VOLUNTEER FIRE DEPARTMENT	*www.svfdfire.org*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.10 EEL PLANNING UNIT ACTION PLAN

4.10.1 EEL PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.10.1, ***Eel Planning Unit****.*

> ***Watershed****:* All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

The Eel Planning Unit encompasses over 222,000 acres situated in the south-western portion of Humboldt County. This unit contains some of the more populated areas of Humboldt County, apart from the Greater Eureka Area. The geography of the Unit is dominated by the lower portion of the Eel River basin and its tributary *watersheds*. A major confluence of primary waterways and transportation routes takes place just south of Fortuna near the community of Alton where the Van Duzen River, which is paralleled by Highway 36, joins the Eel River, which is paralleled by Highway 101.

The community population centers of this planning unit include the cities of Fortuna, Rio Dell, and Ferndale, as well as the communities of Alton, Carlotta, Hydesville, Loleta, and Scotia. Also included within this planning unit is the Table Bluff Rancheria of Wiyot Indians which is located in Table Bluff, northwest of Loleta, where the Tribe occupies an 88 acre reservation. An additional 20 acres known as the "Old Reservation", is located a mile away. Over 600 members make up today's Wiyot Tribe.[1]

The Bear River Band of Rohnerville Rancheria is located off Highway 101 just north of Fortuna. The Bear River Band is a federally recognized tribe of the Mattole and Eel River, Bear River and Wiyot People of Humboldt County. Bear River has 619 Enrolled Tribal Citizens, a status that is based on residency on the Rohnerville Rancheria and being a lineal descent of those residents.[2]

Private land is the prevailing ownership pattern within this planning unit. Rural-residential parcels dominate the areas surrounding Fortuna and Ferndale, with dense clusters of development amassed around the main roads and community centers, while most of the southwestern area of the Planning Unit is comprised of large ranchlands, with properties dispersed more widely. Rio Dell and the communities to the south are surrounded by land managed primarily by Humboldt Redwood Company, along with some parcels owned by Green Diamond Resource Company and other timber companies. Agriculture and timber production are the primary industries within this planning unit.

4.10.2 EEL ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

[1] Wiyot Tribe. (n.d.). Cultural. [Web page]. Retrieved from http://wiyot.us/cultural
[2] Bear River Band. Our History. [Web page]. Retrieved from http://www.brb-nsn.gov/our-story

The majority of assets at risk in this planning unit are residential homes and communities, along with a variety of commercial and service industries, community centers, medical and dental clinics, schools, churches, museums, as well as infrastructure components, such as water treatment plants. The Bear River Casino and Rohnerville Airport are noteworthy assets as well. The ranching, agricultural, dairy, and timber industries within the Unit are also considered assets at risk. The Unit also contains a few city parks, an industrial park, and RV parks scattered among the various communities.

Map 4.10.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[3] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.10.1 EEL: COMMUNITY-IDENTIFIED ASSETS AT RISK

○ Carlotta Fire Stations	○ Golf Course, Redwood Empire ○ (potential shelter)
○ Carlotta School	○ Humboldt Creamery Association
○ Cookhouse Ranch Capetown – Historical	○ LDS Church (potential shelter)
○ Crab Park	○ Miranda's Rescue (potential animal shelter)
○ Ferndale Churches	○ Mount Pierce Communications Site
○ Ferndale Elementary School	○ Old South Maid Ranch house – Historical
○ Ferndale High School	○ Pacific Lumber Mills, Scotia and Carlotta
○ Ferndale, Main Street	○ PG&E Substation, Waddington
○ Eel River	○ Russ Park
○ Eel River Wildlife Area	○ Table Bluff County Park
○ Eel River Sawmills	○ Wiyot Reservation, Table Bluff
○ Frances Creek Watershed	

The Eel River itself is a an environmentally significant asset; it supports the largest remaining native coho salmon population in California, as well as fall-run Chinook salmon, steelhead trout, coastal cutthroat trout, green sturgeon, and Pacific Lamprey.[4] The Eel River Wildlife Area also has significant ecological value; its diverse array of habitats support an abundance of wildlife, such as river otters, harbor seals, tundra swans, bald eagles, egrets, herons, salmon and steelhead trout.[5] Other notable wildlife species within the Unit include black tailed deer, beaver, mink, gray fox, ringtails, weasels, coyote, and bobcats.[6]

[3] Geographic Information Systems (GIS).

[4] Dyett & Bhatia. (2002). Lower Eel River Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. Retrieved from *http://www.co.humboldt.ca.us/gpu/documentsbackground.aspx*

[5] The Wildlands Conservancy. (2012). Eel River Estuary Preserve. Retrieved from *http://www.wildlandsconservancy.org/preserve_eelriver.html*

[6] Dyett & Bhatia. (2002). Lower Eel River Watershed. (p.17).

4.10.3 EEL WILDFIRE ENVIRONMENT

The majority of the Eel Planning Unit (70%) is zoned "High Fire Hazard Severity," as determined by CAL FIRE.[7] However, approximately 13% of the Unit area is zoned "Moderate Fire Hazard Severity," including the more populated areas surrounding towns and the main transportation corridors. A portion of the Unit, primarily land to the west of Fortuna and surrounding Ferndale, falls within *Local Responsibility Area (LRA*), which is outside of CAL FIRE's jurisdiction and is therefore not zoned for Fire Hazard Severity; this accounts for 15% of the Unit acreage.

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, smoking, playing with fire, poorly maintained brush pile burns, and incendiary burning are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources. Lightning is the most probable natural cause of fire starts within this unit.

For a closer look at fire hazard severity in this planning unit, see Map 4.10.2, ***Eel Community-Identified Protection Resources, Values/Assets, & Risks/ Hazards****.*

Local Responsibility Area (LRA): Lands in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the local jurisdiction.

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Fire History

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Communities in this planning unit are known for having a long history of ranching and agricultural practices; some of the early settlers in the late 1800s used intentional burning to clear and maintain grasslands for pasture animals. A heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuel. Intense

[7] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps

timber harvests during the 20th century further exacerbated damages to forest ecosystem health by contributing large quantities of slash to the fuel load and disrupting species and age-class distribution within the forests.

Recent fire history on the Wiyot Reservation includes a five-acre fire that occurred adjacent to the Reservation (1996) which was extinguished by the Loleta Volunteer Fire Department within ten feet of the Reservation boundary and fifty feet from the nearest house—a small fire, but noteworthy as a close call. Another five-acre fire occurred in the pasturelands on the Reservation (2008), nearly thirty feet from the nearest tribal home and ten feet from neighboring pasturelands before being extinguished by the Loleta Volunteer Fire Department and CAL FIRE.

FIGURE 4.10.2 EEL: FIRES OVER 10 ACRES 1908-2017[8]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Mendes	Unknown/Unidentified	1958	1,588	1,588
Jaunarena	Unknown/Unidentified	1980	539	539
Capetown Series	Unknown/Unidentified	1980	433	433
Roadside State #10	Unknown/Unidentified	1965	218	218
Yager	Escaped Prescribed Burn	2011	55	55
Stafford	Unknown/Unidentified	2016	24	24

Note: An interactive map of fire history through 1908 is available through the County WebGIS.

Structural Ignitability

Wildland-Urban Interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Wildland fire: A non-structure (i.e. non-home) fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.

Structural Ignitability: The ease with which a home or other structure ignites.

Although the majority of communities in this unit reside within the "fog belt" and experience an abundance of precipitation, residents must not be lured into a false sense of security regarding their risk of wildfire. Many homes exist within the *wildland-urban interface* (WUI) in which *wildland fires* can easily become structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[9], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

[8] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.

[9] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

Wildfire risk is exacerbated by the presence of dense vegetation growing in the Home Ignition Zone and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[10]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.10.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

The central cities of Ferndale, Fortuna, and Rio Dell provide potable water and fire protection water to the majority of the population within this unit. The City of Ferndale serves a population of approximately 1,400; the City of Fortuna serves a population of approximately 11,200; and the City of Rio Dell serves a population of approximately 3,250. The Scotia and Carlotta Community Service Districts also provide their communities with water. Residents outside of the cities and service districts obtain water through other means, such as drawing from nearby creeks and holding tanks.

Many communities in this unit have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially overtaxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters, and for community members to ensure that their water sources are properly outfitted for firefighting equipment.

Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.10.3 EEL: FIRE PROTECTION WATER DRAFT SITES

○ Bear River drafting area	○ Elinor Flat river drafting
○ Blue Slide Road river drafting	○ Three drafting locations on Humboldt Redwood Co. Log Pond
○ Carlotta Mill	○ Price Creek drafting areas
○ Eel River tributaries drafting locations	○ Yager Creek

Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.

Map 4.10.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP.

[10] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

4.10.4 EEL FIRE PROTECTION CAPABILITIES

Six *volunteer fire departments* (VFDs) and *volunteer fire companies* (VFCs) collaborate to provide fire protection to the communities within this planning unit. The fire chiefs from these six organizations, in addition to the chief of the Bridgeville Volunteer Fire Department (included in *4.6 Mad—Van Duzen*), comprise the Eel River Valley Fire Chiefs' Association. This group meets on a quarterly basis to discuss and coordinate issues in the Eel River Valley and along Highway 36.

The fire protection service entities in this planning unit respond to structural fires as well as wildfires. Fire agencies in this planning unit also provide emergency medical and rescue services. A substantial portion of the Unit, particularly the area west of Highway 101 surrounding Ferndale, falls under the wildfire management jurisdiction of the Local Responsibility Area (LRA). The remaining area is State Responsibility Area (SRA) where wildfires are the responsibility of CAL FIRE. The CAL FIRE – Humboldt-Del Norte Unit (CAL FIRE-HUU) Administrative Headquarters is located in Fortuna and houses the primary dispatch center in Humboldt: the Fortuna Interagency Command Center. Staffing at the Fortuna CAL FIRE station varies throughout the year, but remains adequate for emergency response most of the year.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

Volunteer Fire Department vs. Volunteer Fire Company

Volunteer fire departments are associated with a local agency (either a city or a special district authorized to provide fire protection) and receive revenue from a tax or fee gathered within a mapped boundary. Volunteer companies, on the other hand, have no such association with a local agency and instead are funded primarily through fundraisers and donations. Both are comprised of volunteer, unpaid, firefighters, whose primary objective is community fire protection.

FIGURE 4.10.4 EEL: FIRE PROTECTION RESOURCES[11]

PERSONNEL	SERVES		FIRE APPARATUS
	RESIDENTS	AREA (SQ/M)	
LOLETA VFD – PHONE: (707) 845-3090 EMAIL: *loletafire@suddenlink.net*			
23 Volunteer	1,500	48	○ Type-1 engine ○ (2) Type-2 engines ○ Type-3 engine ○ Water tender, 4,000 gallon ○ Quick-attack off-road Gator with pump
FERNDALE VFD – PHONE: (707) 786-9909 OR (707) 845-7399 EMAIL: *chief@ferndalefire.org* WEB: *www.ferndalefire.org*			
29 Volunteer 16 Auxiliary	2,745	45	○ (2) Type-1 engines ○ Type-2 engine ○ Type-4 quick attack truck ○ Rescue truck ○ (2) Water tenders, 5,000 gallons each
FORTUNA VFD – PHONE: (707) 725-5021 EMAIL: *info@fortunafire.com* WEB: *www.fortunafire.com*			
3 Career, 77 Volunteer, 22 Auxiliary	15,000	29	○ (6) Fire engines ○ (2) Ladder trucks ○ (2) Water tenders ○ (2) Rescue trucks ○ (3) Command vehicles

[11] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 6, 8, 11, 16-17, 25). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

FIGURE 4.10.4 EEL: FIRE PROTECTION RESOURCES[11]			
PERSONNEL	SERVES		FIRE APPARATUS
	RESIDENTS	AREA (SQ/M)	
RIO DELL VFD – PHONE: (707) 764-3329 EMAIL: *info@riodellfire.com* WEB: *www.riodellfire.com*			
27 Volunteer 4 Auxiliary	3,300	District: 2.5 Out of District: 62	○ Type-1 engine, 1,000 gallon ○ (2) Type-3 engine, 750 gallons each ○ Type-4 rescue truck, 250 gallon ○ Water tender, 4,000 gallon ○ Incident Command vehicle
CARLOTTA VFD – PHONE: (707) 768-1714 EMAIL: *kaburke61@hughes.net*			
13	-	46	○ (2) Pumper engines ○ (2) Rescue trucks ○ Utility truck ○ (2) Water tenders
SCOTIA VOLUNTEER FIRE COMPANY – PHONE: (707) 764-4322 OR (707) 845-2995 EMAIL: *jbroadstock@townofscotia.com* WEB: *www.svfdfire.com*			
10 Volunteer, 3 Auxiliary	800	1	○ (2) Type-1 engines ○ Mini pumper engine ○ Medical response vehicle ○ Chief Command Vehicle (Pickup) ○ Rescue trailer with equipment ○ UTV vehicle

In November 2014, Humboldt County passed Measure Z, a half-cent sales tax to provide funding for public safety services.[12] This tax has enabled those local fire departments who applied to receive the funding, to purchase new fire engines, personal protective gear, and other essential equipment.

The primary challenge for the fire agencies in this planning unit is a lack of volunteers. This overarching need is summarized by the Fortuna Fire Department in the 2017 Humboldt County Fire Chiefs' Association Annual Report:

> "We, like all volunteer fire service agencies, continue to struggle with not only recruiting new volunteers but retaining them as well. The demands that we are forced to put on our volunteers due to mandates as well as routine training to assure their efficiency and safety are, for many, overwhelming. For those that stick it out and become one of the "fire family", the benefits realized are unmeasurable. For the communities they serve, they are a true blessing and an extremely valuable asset."[13]

Emergency responders in this unit are also challenged by a lack of proper signage throughout some of the more remote neighborhoods. Poorly visible or missing signage can make it difficult for firefighters to locate incident sites and can also hinder emergency response times. Difficulty accessing residences is exacerbated in areas where narrow roads are grown over with vegetation and have insufficient width to accommodate firefighting apparatuses.

The fire protection entities within this planning unit do their best to provide their communities with fire protection as well as medical and rescue services. However, individually, these departments struggle with staffing levels and volunteer retention, time, and funding to support the more specialized goal of

[12] Humboldt County. (n.d.). Measure Z – Public Safety/Essential Services [Web]. Retrieved from *https://humboldtgov.org/1803/Measure-Z-Information*

[13] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 17). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

rescue services. This is why the fire chiefs of the Van Duzen and lower Eel River Valley areas came together to form the Eel River Valley Technical Resource Team (ERVTRT). Participating fire departments include Bridgeville, Carlotta, Ferndale, Fortuna, Loleta, Rio Dell, and Scotia. The ultimate goal of the ERVTRT is, through the pooling of resources, to have the ability to provide a higher level of rescue operations to their communities. These operations include low and high angle rope rescue, confined space and trench rescue, collapse and water rescue, as well as providing additional personnel and equipment as needed during any emergency event. Operations and training are overseen by one team leader, while each department has a squad leader who oversees their individual squads, in turn. The ERVTRT is dispatched by the CAL FIRE Command Center.

4.10.5 EEL EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire.** The determination for the location of these sites is normally made by Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Eel Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Highway 101 and Highway 36 are the central ingress and egress routes, with numerous smaller roads connecting residences and neighborhoods to these central corridors. Adequate ingress and egress along these smaller roads is vital to a large portion of the community that may need to access primary evacuation routes and for firefighters who will be using the roads to access wildfire incidents. Poor or complete lack of signage at roads and intersections pose potential problems for ingress and egress; this is especially true for more remote residences that are further away from the main towns and cities. The narrowness of smaller roads leading to remote residences could create serious complications for firefighting apparatuses trying to gain access during simultaneous home evacuations.

Other ingress and egress impediments may include steep road sections, fallen trees or power lines, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

FIGURE 4.10.5 EEL: POTENTIAL EVACUATION ROUTES

- Southeast or northwest along **Highway 101.**
- East on **Highway 36.**
- Ferndale residents will connect to Highway 101 either by traveling north on **Highway 211** or southeast on **Grizzly Bluff Rd**, which becomes **Blue Slide Road**.

Note: The suitability of these roads will need to be evaluated before they are included in evacuations plans or used during an emergency.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens,

community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[14] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

See Appendix H, ***Living with Wildfire*** *for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6,* ***Evacuation Preparedness*** *in Part 5,* ***Risk-Assessment Detail*** *for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.10.6 EEL COMMUNITY PREPAREDNESS

No local *fire safe councils* (FSC) exist in this planning unit. Hydesville is the only community within this planning unit to achieve Firewise Communities/USA® recognition. This recognition was received in 2015 and has been maintained to this date. The process of becoming recognized as Firewise® includes a site specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. The Firewise® process would be beneficial for more communities and neighborhoods within this planning unit.

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Efforts to educate community members about fire safety and to improve emergency preparedness is also guided by the local fire protection services with some support from the Humboldt County FSC (HCFSC). In addition, Community Emergency Response Team (CERT) training took place within this unit to equip community members with basic disaster response skills for dealing with a variety of emergency

[14] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

situations. Such skills become extremely valuable in situations where professional responders cannot act immediately. CERT participants gain experience implementing collaborative problem solving and develop a greater sense of community cohesion.

The Fortuna VFD provides fire prevention and safety services through their Fire Prevention Division and Public Education Division. Their efforts include implementing and maintaining community outreach programs that educate and inform the public about fire prevention; in addition to giving safety presentations on a range of topics, the Fortuna VFD also distributes informational materials at local community events. The Fortuna VFD is also committed to enhancing public safety by conducting fire safety inspections at businesses, residences, schools, as well as children's day cares and senior residential care units.

The Wiyot Tribe is working to increase fire protection capabilities on the Table Bluff Reservation and to better prepare their Tribal members for wildfire. The Loleta Volunteer Fire Department provides fire services to the Reservation but is located five and half miles away—a distance that could prove critical during a fast moving fire. Being so remote, the Tribe recognizes the necessity of taking proactive measures to protect their community. In 2016, the Tribe secured a large grant from the Department of Homeland Security that provided funding for vital disaster preparedness equipment. The new equipment includes a generator for the community center—which will help increase the Tribe's capacity to act as an evacuation shelter—and a 150-gallon mini-pumper and brush hog that will aid in fire suppression, mitigation, and prevention.[15] The Tribe is also currently fulfilling a Wildland Urban Interface (WUI) grant funded by the Bureau of Indian Affairs (BIA) to remove fuels and maintain defensible space around Tribal residential developments.[16] This project will address the heavy concentrations of annual and perennial grasses built up around the Reservation. These grasses, dried over the summer season, pose a serious fire hazard, especially on the windy days common on the bluff. Another focus of fuel management on the Reservation has been on the "back-40" or the half of the Reservation on which the ceremonial dance grounds are located. Even as they carry out fuels reduction activities, the Tribe is working to keep nature intact to preserve the natural beauty of the dance grounds. Moving forward, the Tribe will continue to pursue funding to expand fire protection resources on the Table Bluff Reservation.

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resources Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

Green Diamond Resource Company and Humboldt Redwood Company have substantial landholdings within this planning unit. In recent years, both companies have undertaken efforts to help reduce the risk of wildfire occurrences on their property and associated with their operations. Both companies treat logging slash in a variety of ways to help reduce fire hazards. Their methods include piling and burning, *broadcast burning*, *mastication* and on-site chipping. As market conditions have allowed, Green Diamond has also conducted post- harvesting *biomass recovery* for power generation with the vegetative debris produced by these activities. State law requires firefighting equipment be maintained at logging

[15] U.S. Department of Homeland Security. Fiscal Year 2016 Tribal Homeland Security Grant Program: Overview. [PDF]. Retrieved from *https://www.fema.gov/media-library-data/1467230939915-0fd9be75ebaa139535540126d08f4403/FY_2016_THSGP_Fact_Sheet_Final.pdf*

[16] Wiyot Tribe. (n.d.). Hazardous Fuels Removal [Web]. Retrieved from *http://www.wiyot.us/180/Hazardous-Fuels-Removal*

operations and inside all vehicles; harvesting operations be suspended at specified levels of low relative humidity; and logging crews make daily fire inspections after work is done during the fire season. Green Diamond also maintains fire trucks and heavy equipment for wildland fire emergencies. Green Diamond Forestry staff and logging and maintenance crews are available to respond to fire emergencies on the company's timberlands and to assist CAL FIRE at their request. Humboldt Redwood Company has similar capabilities to assist CAL FIRE but depends more on contractors and does not maintain its own logging crews.

Broadcast burning: A controlled burn, where the fire is intentionally ignited and allowed to proceed over a designated area within well-defined boundaries for the reduction of fuel hazard, as a resource management treatment, or both.

Biomass utilization/recovery: The harvest, sale, offer, trade, or utilization of woody biomass to produce bioenergy and the full range of bio-based products including lumber, composites, paper and pulp, furniture, housing components, round wood, ethanol and other liquids, chemicals, and energy feedstocks.

To better understand their vulnerability to fire, Humboldt Redwood Company recently completed a fire risk assessment model for their ownership. This model characterizes fire risk across the ownership utilizing inputs including, but not limited to, fuel composition, topography, weather, and ignition risks. This information is used by forest managers to focus the reduction of fuel loading in strategic areas to reduce the potential impacts of wildfire.

Some of the communities in this planning unit have made significant progress in increasing their wildfire preparedness over the past five years. A summary of some of these accomplishments are summarized in the table below.

FIGURE 4.10.6 EEL: FIRE PREVENTION ACCOMPLISHMENTS

General Accomplishments
○ Most fire departments within this planning unit host annual events and fundraisers where residents are provided with the opportunity to support fire and rescue services and learn about their local department. Many of these events offer fire prevention information.
○ The Eel River Valley Fire Chiefs' Association has made significant progress towards improving and streamlining administrative and operational objectives with a major focus on interoperability. The collaboration of this group has led to various auto-aid agreements, communications plans, and fire pre-plans throughout the area. The Eel River Fire Academy was born out of this group and provides training opportunities for firefighters throughout the county. In addition, the group hosts driver-operator training, company officer training, and various other trainings including live-fire training focused on the valley as a whole. This group is also responsible for the development and direction of the Eel River Valley Technical Rescue Team. In addition, through the Boy Scouts of America, the Eel River Valley Fire Chiefs support the Explorer Learning for Life Program—a career education program that is open to youth ranging from 14 to 20 years of age.
○ Ferndale VFD continues their Annual Fund Drive, during which they visit every home and business in the district, checking smoke detectors, and providing information about the department.
○ Loleta VFD has successfully graduated firefighters from the Explorer program to active members of the fire department.
○ The Wiyot Tribe secured WUI and Homeland Security funds to support efforts to prepare for wildfire.
2018
○ Successfully applied for a received Measure Z funding for new fire protection equipment for many of the fire departments within the planning unit.
○ Hydesville Firewise Committee meet to discuss 2018 projects
○ Brushing of North Fisher Road and South Fisher Road (4,000' of road)

FIGURE 4.10.6 EEL: FIRE PREVENTION ACCOMPLISHMENTS, CONTINUED
2017
○ Successfully applied for a received Measure Z funding for new fire protection equipment for many of the fire departments within the planning unit.
○ Hydesville Firewise Committee meet to discuss 2017 projects
○ Firewise Hydesville Open House 2017 (14+ Participants)
○ Brushed Hill Lane (2,500' of road)
2016
○ Successfully applied for a received Measure Z funding for new fire protection equipment for many of the fire departments within the planning unit.
○ Hydesville Firewise Committee meet to discuss 2016 projects
○ Firewise Hydesville Open House 2016 (12+ participants)
○ Brushed Tawndale Fire Lane (500'of fire lane)
2015
○ Successfully applied for a received Measure Z funding for new fire protection equipment for many of the fire departments within the planning unit.
○ Rio Dell VFD was able to use assessment funds approved by voters in 2014, to purchase a new engine.
○ Formed a Hydesville Firewise Committee
○ Developed Hydesville Action Plan
○ Firewise Hydesville Open House (15+ participants)
○ Brushed Quail Hill Lane (1400' of road)
○ Hydesville recognized as a Firewise® Community
2014
○ The Ferndale VFD installed reflective address signs for most homes outside the city limits which reportedly improved emergency response times.
○ Rio Dell voters approved a new assessment to support the fire department.

4.10.7 EEL LOCAL WILDFIRE PREVENTION PLANS

As of the date of this CWPP, there are no completed local CWPPs in this planning unit. This Planning Unit Action Plan may be used as the equivalent of a local CWPP. To help guide and inspire wildfire preparedness in this planning unit, the HCFSC has, in collaboration with local fire service representatives and stakeholders, developed a list of priority actions reflective of the community concerns and ideas collected through the process described below. *See section 4.10.9, **Eel Action Plan** for a list of priority actions recommended by this CWPP.*

Any community within this planning unit may choose to pursue Firewise® recognition, and through that process would adopt a Firewise® Action Plan that identifies and prioritizes actions intended to reduce the risk posed by wildfire in the Eel Unit. Alternatively, a local fire safe council could facilitate the writing and implementation of a community-level wildfire protection plan. As a first step, a point person or group of individuals must come forward to lead these efforts from within the community.

Hydesville Firewise® Action Plan

As part of the initial Firewise® certification process in 2015, a Firewise® Action Plan was developed by the Hydesville Firewise Committee.[17] The Committee developed the action plan with guidance from CAL FIRE and Humboldt County staff.

[17] Hydesville Firewise Action Plan. (2015). Retrieved from https://humboldtgov.org/2426/Hydesville

Multiple priority actions were identified in the Plan under the following categories:

- Conduct Firewise education and outreach (including hosting an annual Firewise event for community residents).
- Reduce hazardous fuels throughout the community (Specific priority locations were identified).
- Enhance fire protection water supplies in the community.
- Improve signage and road conditions for emergency responders.
- Emergency evacuation and disaster planning.

4.10.8 EEL COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to update this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 27, 2017 at the Fortuna Fire Hall with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.10.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.10.7* and *4.10.8* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.10.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.10.7 EEL: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Host neighborhood evacuation preparedness block parties.
○ Develop an evacuation and fuel reduction assistance program for seniors and disabled persons.
○ Map and mitigate homeless encampments that pose a fire hazard.
○ Notify community of evacuation center locations; provide information on large animal evacuation.

FIGURE 4.10.7 EEL: COMMUNITY-IDENTIFIED PROPOSED PROJECTS, CONTINUED
○ Provide education and outreach about living in an area vulnerable to wildfires. Include compelling stories about past coastal wildfire events. Send this information out with various already occurring mailers.
○ Post more address and road signs in some areas.
○ Identify roads that are impassable with fire trucks. Ferndale is considering posting a red reflective strip at the bottom of roads that cannot accommodate their fire trucks.
○ Include a link to the County Fire Safe Council and State Fire Safe Council websites on all fire department websites.
○ Use Facebook and other popular social networking tools to get the fire safe message out to more people.
○ Encourage Boy Scouts of America to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
○ Partner with the California Conservation Corps to treat hazardous vegetation in priority locations.

The local residents who attended the November 27, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.10.8 EEL: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Fisher Road - Hydesville (Pending project with CCC)	Roadside Clearance	BRD120
WUI; fuel treatment buffer between residence and wildland: NE boundary Fortuna/timber lands	Landscape	PAC007
Install address and Rd signs. Public education and outreach: Tompkins Hill Rd, Fortuna	Access	PAC011
Install address and Rd signs. Public education and outreach: Mill St (single access), Fortuna	Access	PAC013
Widen Redwood Avenue & improve bridge crossing for fire truck access (Near Rio Dell)	Access	RIO083

4.10.9 EEL ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **E**valuate the feasibility of organizing a fire safe council to guide coordinated wildfire preparedness within this planning unit. The Eel River Valley Fire Chiefs' Association could be a good starting point for this effort.
- **M**aintain the Hydesville Firewise Communities/USA® Site:
    - Actively implement and maintain the Firewise® action plan.
    - Focus activity on home hardening and defensible space in partnership with residents of Hydesville.
    - Continue to host an annual Firewise® Day.
- **I**dentify other community organizations, Tribes, and/or groups of individuals in neighborhoods adjacent to the wildland with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness activity.
    - This focus area could be added to already existing disaster preparedness groups.
    - Conduct a risk assessment with support from the HCFSC, local fire departments, and/or CAL FIRE and draft a Firewise® action plan (the existing Hydesville plan can be used as a resource for this).
    - Host a Firewise® Day to share findings and inspire action; Firewise activities could be added to an existing annual community event.
    - If necessary, seek funding to support this effort.

- Once local groups are organized, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for actions identified in the *Hydesville Firewise Action Plan*, as well as in this *Priority Action Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Near Fortuna: Tompkins Hill (PAC011), Loop Road neighborhood (PAC012), top of Home Avenue (PAC015), and Mill Street (PAC013)
    - Hydesville neighborhoods interface areas (RIO101)
    - Near Carlotta:
        - Interface areas north of Highway 36 (BRD107)
        - Neighborhood along Church Lane, Southeast of Carlotta (BRD082)
        - Riverside neighborhood (FER053)
        - Neighborhoods along/at the ends of Cummings Creek (BRD076) and Fox Creek roads (BRD078)
    - Near Ferndale: William Creek Road (FER050) and Eugene Street (FER051)
    - Near Rio Dell: Price Creek, Monument Road (RIO099), Rio Vista Lane (RIO100), and newer development at end of John Deere Road (BRD132)
    - Table Bluff Reservation (FER052)
    - Bear River Band of Rohnerville Rancheria (FER054)
- Although the majority of the population within this planning unit lives in areas of moderate fire hazard severity and within incorporated cities, there are WUI neighborhoods, a large number of dead-end roads leading to multiple residences, and a general lack of wildfire preparation. For those reasons and because it was one of the top concerns of community members who participated in fire planning workshops, **evacuation planning** and education are a priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches. Target the following priority areas:
        - Fortuna: Tompkins Hill Road, Home Avenue, Mill Street, and Pinecrest Drive.
        - Ferndale: Eugene Street and Williams Creek Road.
        - Carlotta: Cummings Creek Road and Fox Creek Road.
        - Rio Dell: Monument Road and Rio Vista Lane.

- Identify local community liaisons to work directly with emergency management officials.
- Identify and map local evacuation routes and sites.
- Develop an evacuation program for seniors and disabled persons.
- Notify community of evacuation center locations.
- Provide information on large animal evacuation.
- Host neighborhood evacuation preparedness block parties.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation, especially those roads used by the highest number of residents. Priority roads to evaluate include:
    - Fisher Road (Highly ranked community priority – BRD120)
    - Williams Creek Road
    - Cummings Creek Road
    - Church Lane
    - Fox Creek Road
    - Highway 36 where needed
    - H-Line (Old lumber company haul road)
    - Monument Road
- **W**ork with commercial timberland owners such as Humboldt Redwood Company and Green Diamond Resource Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
    - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads. Evaluate the following priority areas:
        - A buffer between timberlands and WUI neighborhoods along the northeast side of Fortuna (Highly ranked community identified project – PAC007).
        - A buffer between timberlands and neighborhoods in Palmer Creek (North Fortuna – PAC014).
        - A buffer between timberlands and neighborhoods along Highway 36 Southeast of Carlotta (Including but not limited to, Church Lane, Riverside, Fox Creek, and Cummings).
- **P**artner with the California Conservation Corps and CAL FIRE to treat hazardous vegetation in priority locations.
- **C**oordinate with CAL FIRE, local fire departments, the local FSC and Firewise group to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a

neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
- Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
- As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
- Contact the HCFSC for more details and examples of how to address this situation.

- Continue to explore options and make progress on local fire service sustainability efforts such as:
  - Recruiting and retaining volunteers (firefighters as well as auxiliary volunteers);
  - Establishing/maintaining secure, consistent, and sustainable revenue sources to meet growing needs and costs;
  - Completing fire district annexations and consolidations including the annexation of the Carlotta, Ferndale, Rio Dell, and Scotia out of district response areas.
  - Evaluating the potential consolidation of Rio Dell and Scotia and the expansion of the associated jurisdictional boundary is a priority.
  - Determining if Redcrest and Shively should be included in any consolidation process. These two communities are currently included in the Avenue of the Giants Planning Unit and have been participating in a consolidation feasibility analysis in that area but may also fit into something similar to the north.
  - Increase the firefighting capacity of the Wiyot Tribe on the Table Bluff Reservation by seeking out fireline training for members of the Tribe and pursuing funding for a fire engine or water tender.
  - Pursue funding for expansion of Rio Dell fire station facilities.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well. Focus initial efforts in the following areas:
  - Fortuna: Tompkins Hill Road, Loop Road and offshoots, and Mill Street.
  - Ferndale: Eugene Street.
  - Rio Dell: Monument Road.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
  - Consider posting a red reflective strip at the bottom of roads that cannot accommodate fire trucks.
  - The following priority access issue is a community-identified priority and this Plan recommends evaluation and action as necessary:
    - Widen Redwood Avenue near Rio Dell and improve the bridge crossing for fire truck access (RIO083).
- Homeless encampments were identified by community members in Fortuna as a fire ignition risk. To better understand and address that risk, map homeless encampments that pose a fire hazard and work with law enforcement, the fire service and possibly social services to identify appropriate mitigation actions such as providing access to shelters and/or performing fuels

reduction around frequently used campsites. There are many reasons to address these areas. Look for opportunities to tie in with other local organizations and efforts to achieve multiple benefits. In addition, develop educational materials and outreach strategies to inform the homeless population about fire prevention and safety.

- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment. Priority water needs to evaluate include:
    - Pepper Tree Lane, north of Rio Dell and west of Highway 101.
    - Price Creek, north of Rio Dell and west of Highway 101.
    - Monument Road, southwest of Rio Dell.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide Action Plan goal categories outlined in Part 3 of this CWPP. Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the HCFSC. To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us.*

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and

networks, local media outlets, and any means used by the local community to share important information.
    - Include a link to the County Fire Safe Council and State Fire Safe Council websites on all fire department websites.
- Include compelling stories about past coastal wildfire events.
- Encourage Boy Scouts of America and other service organizations to perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.

- **P**rovide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- **C**ollaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- **W**ork with PG&E and local landowners to reduce fuels along power line easements.
- **S**upport or create community chipping programs.
- **C**ompile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- **R**aise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot-spots for sudden oak death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- **W**ork with commercial timberland owners such as Humboldt Redwood Company and Green Diamond Resource Company to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.

Disaster Preparedness

- **E**vacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- **I**mprove community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.

- Work with a local fire or law enforcement agency to form more Community Emergency Response Teams or CERTs. Coordinate with the Humboldt CERT Coalition and use the existing Fortuna CERT as a resource.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. See details in the *Priority Action Recommendations* above.
- Address road conditions that inhibit effective evacuation and access by emergency responders. See details in the *Priority Action Recommendations* above.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection. See details in *Priority Action Recommendations* above.

Fire Protection

- Support the local fire departments[18] by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[19]

[18] All local fire departments within this unit are listed above with their contact information in the "Fire Protection Capabilities" section.

[19] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call

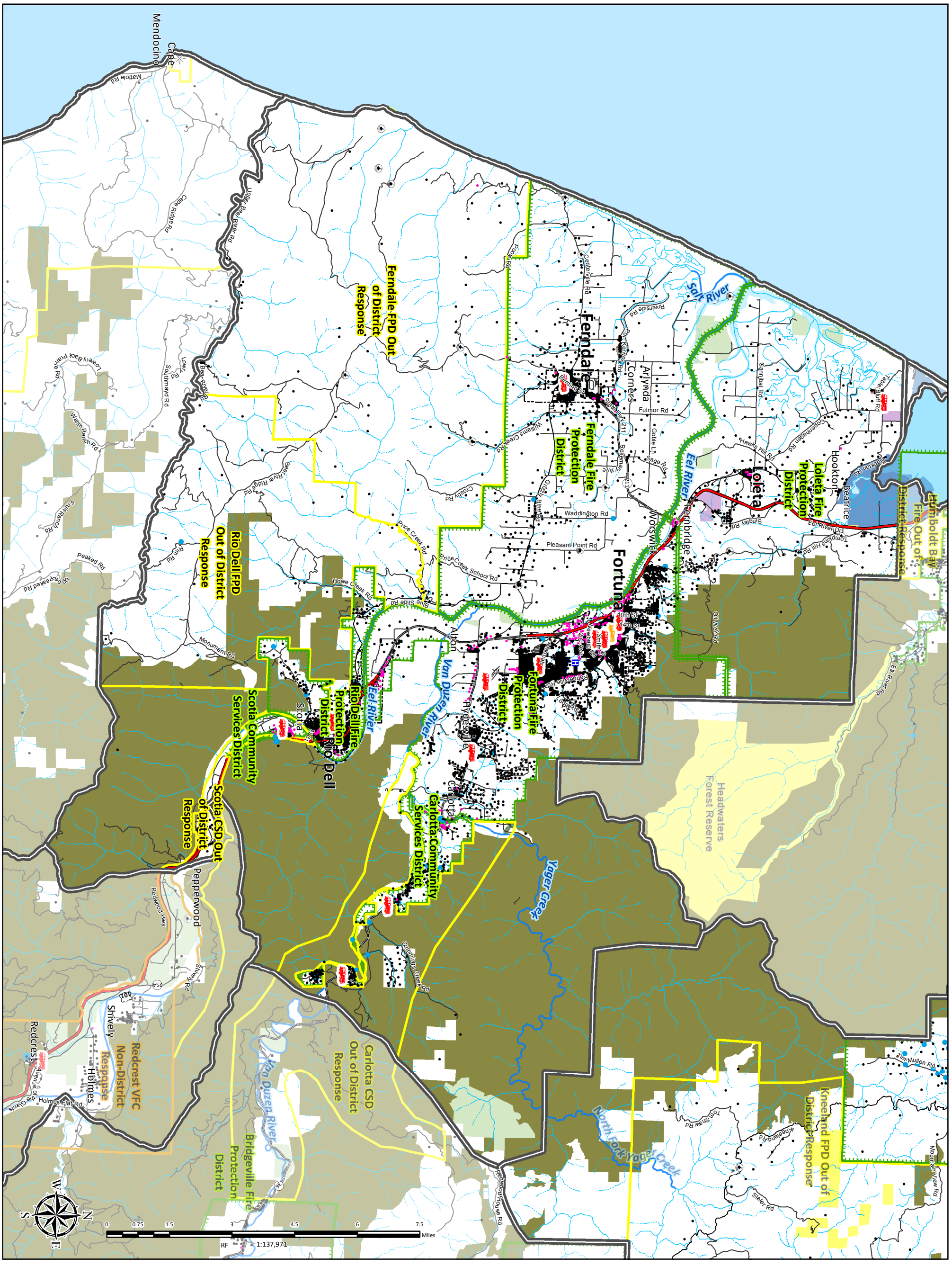
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.

Integrated Planning

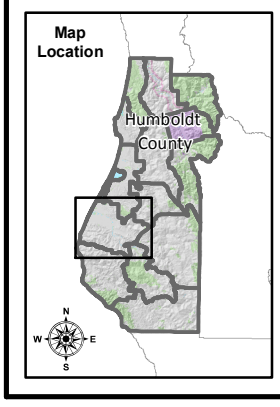
- Integrate the evaluation, development, and implementation of all relevant planning documents. See details in *Priority Action Recommendations* above.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program with neighborhood groups in developed areas adjacent to the wildland. See details in *Priority Action Recommendations* above.
- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.10.1 EEL PLANNING UNIT



PLANNING UNIT MAP



CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

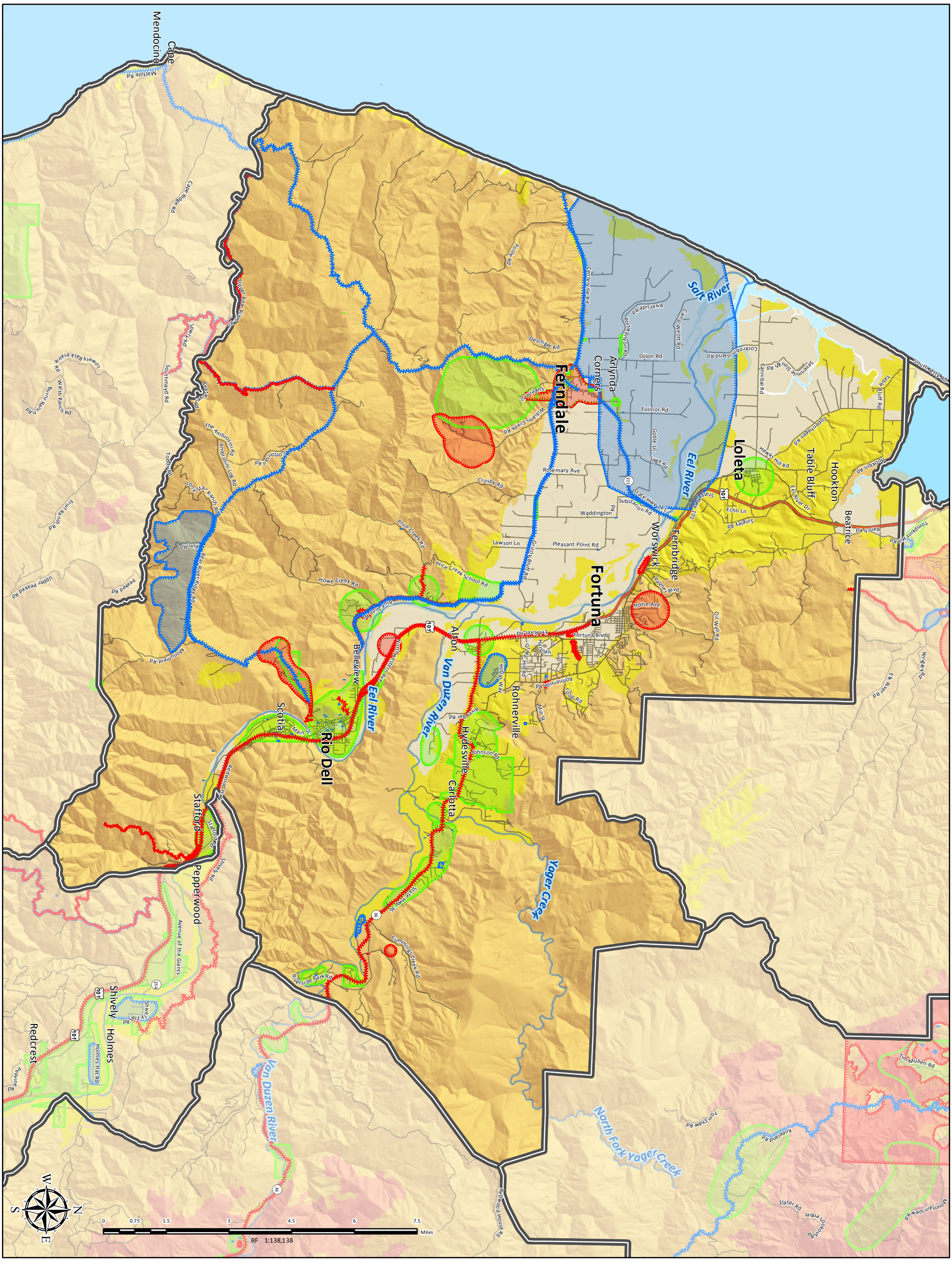
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

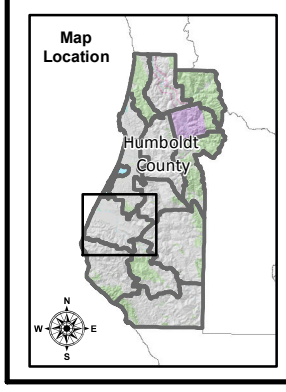
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.10.2 EEL PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Projects
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- High
- Moderate
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

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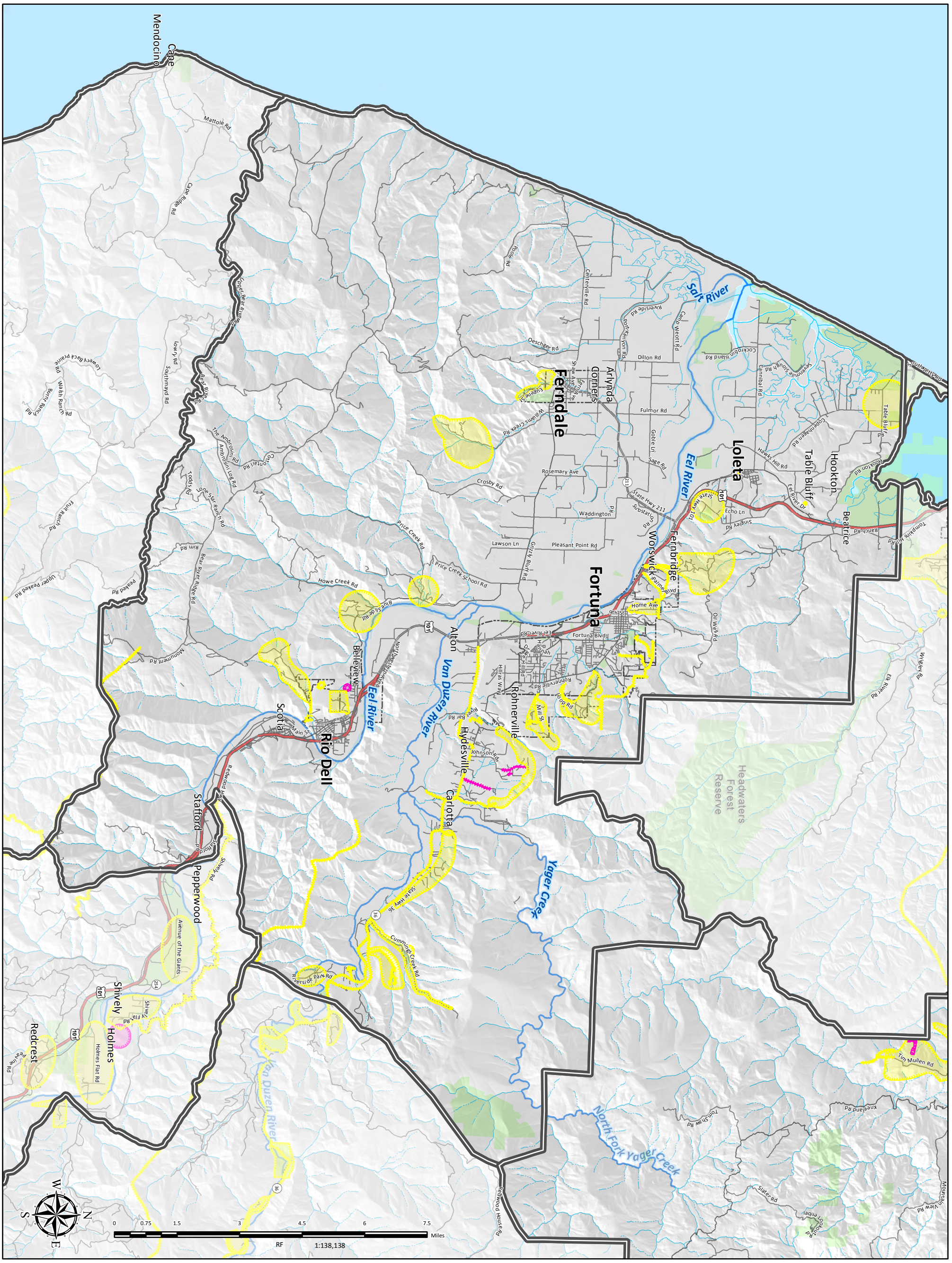
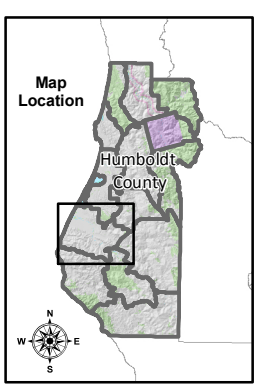
For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.10.3 EEL PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

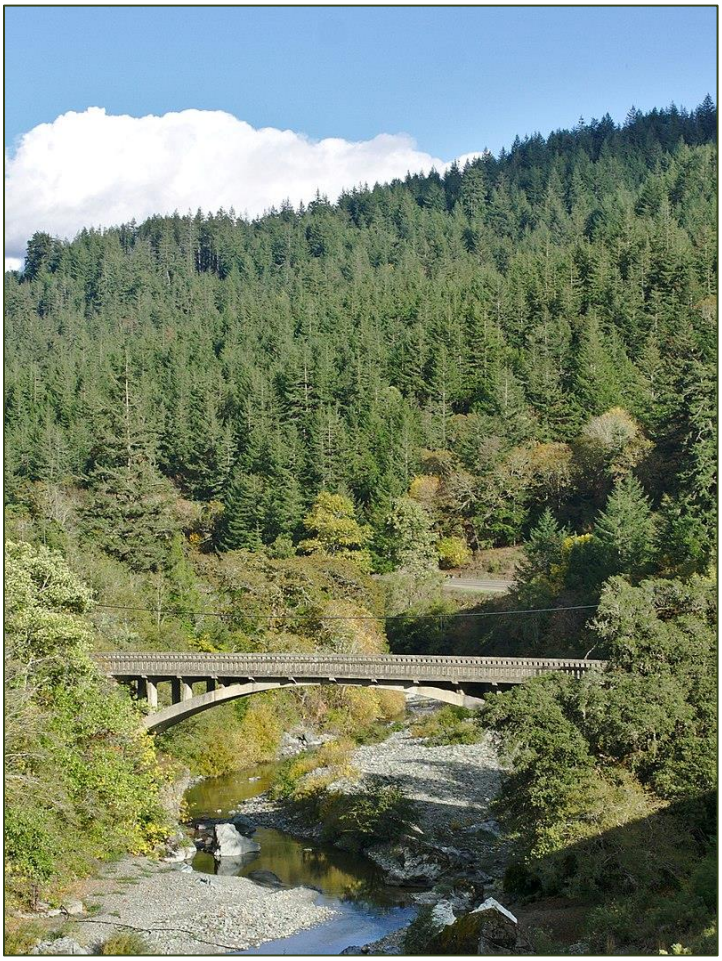
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAD–VAN DUZEN PLANNING UNIT ACTION PLAN



Bridge over the Van Duzen River near Bridgeville. Photo: Alexander Klink.

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Helpful Links

VAN DUZEN WATERSHED FIRE SAFE COUNCIL:	*https://humboldtgov.org/1887/Van-Duzen-Watershed-FSC*
BRIDGEVILLE FIREWISE:	*https://humboldtgov.org/725/Bridgeville*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.11 MAD–VAN DUZEN PLANNING UNIT ACTION PLAN

4.11.1 MAD–VAN DUZEN PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.11.1, ***Mad–Van Duzen CWPP Unit.***

The Mad–Van Duzen Planning Unit encompasses 300,661 acres situated in the southeastern region of Humboldt County. The cities of Fortuna and Rio Dell and Humboldt Redwoods State Park are located to the west, while Trinity County and Six Rivers National Forest border the eastern side of the Unit. Highway 36 is the primary transportation route through the Unit; it is paralleled by the Van Duzen River, which is one of the last remaining free-flowing rivers in California. The river and highway travel across the center of the Unit in a westward direction. Kneeland and Alderpoint Roads provide access to the north and south, respectively. The Unit contains portions of both the Van Duzen River *watershed* and the Mad River watershed. The topography includes steep canyons formed by the rivers and their tributaries, which include Indian Creek, Larabee Creek, the Little Van Duzen River, Butte Creek, East Creek and Pilot Creek, to name a few.

> ***Watershed:*** All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

Bridgeville, a privately owned town, comprises the main community center within this planning unit. It is located at the point where the three primary transportation routes—Highway 36, Kneeland Road and Alderpoint Road intersect. Other communities within the Unit include Dinsmore in the east, and Blocksburg in the southern region. Other distinct neighborhood groupings exist near Coyote Flat and Homestead Roads, and in the Golden Gate and Deerfield Ranch subdivisions as well. The communities within this planning unit were established upon a resource-based lifestyle; agriculture, along with timber and non-timber forest products, continue to play an important role in the local economies. The area supports a variety of cottage industries, fine art trade, and social services as well.[1] Over the past decade, the marijuana economy has left a deep imprint on the community. An increase in traffic on rural roads and water diversion issues are two such impacts that increase the Planning Unit's wildfire risk.

Private land is the dominant ownership pattern in this unit. The composition of land uses includes farms and rural residences in the lower floodplain and near the river; large- and medium-sized swaths of ranchland; residential parcels concentrated along the main roads; and a few parcels of timberland managed primarily by Humboldt Redwood Company. The majority of residential properties lie along Highway 36, and around and in between Bridgeville and Dinsmore. Several clusters of residential property are also located to the south along Alderpoint Road and near Blocksburg. Residential parcel sizes span a wide range, "from standard house lots, 40- to 100-acres parcels, ranches with 1,000 acres or

[1] County of Humboldt, Department of Community Development Services. (2003). Bridgeville Area Community Action Plan. (pp. 5-6). Retrieved from http://www.co.humboldt.ca.us/planning/planning/documents/action_plans/2003_plans/brdg_web.pdf

more, to small trailer parks."[2] Large portions of land along the eastern edge of the Unit fall within Six Rivers National Forest and are managed by the US Forest Service. A few small areas of Bureau of Land Management Land (BLM) exist to the south of Highway 36 as well.

4.11.2 MAD–VAN DUZEN ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The majority of assets at risk in this planning unit are residential homes and communities, along with a variety of commercial and service industries, community centers, medical and dental clinics, schools, fire stations, churches, as well as infrastructure components, such as cell phone towers and access roads. The ranching, agricultural, and timber industries within the Unit are also considered assets at risk. The Six Rivers National Forest, Grizzly Creek Campgrounds and State Park, and Robinson Rock comprise some of the environmentally significant areas within this unit. These areas, along with the wide swaths of undeveloped ranchlands throughout the region, provide breathtaking vistas and important habitat for wildlife species.

Map 4.11.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[3] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.11.1 MAD–VAN DUZEN: COMMUNITY-IDENTIFIED ASSETS AT RISK	
○ Bridgeville downtown/bridge for evacuation	○ Power plant (Casterlin & Alderpoint)
○ Casterlin School	○ Pratt Mountain Lookout
○ CDF Fire Station	○ Train Station, Fort Seward
○ Dinsmore Airport	○ Triumphant Life Camp
○ First Baptist Church	○ Robinson Rock (nature area/viewshed)
○ Historic Blocksburg	○ Swain's Flat Houses/Market
○ McClellan Mountain cell tower	○ Swimmer's Delight/Van Duzen Park
○ PG&E Substation/Caltrans yard	○ Weekender (area)

4.11.3 MAD–VAN DUZEN WILDFIRE ENVIRONMENT

Approximately 62% of the Mad–Van Duzen Planning Unit is zoned "Very High Fire Hazard Severity," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[4] Thirty-seven percent of the Unit, including a substantial portion of the western area, is zoned "High Fire Hazard

[2] Firewise Communities/USA® Recognition Program. (2010). Bridgeville Community Assessment. (p. 4).

[3] Geographic Information Systems (GIS).

[4] CAL FIRE. (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

Severity," while one very small patch of land near Indian Creek (which encompasses less than 1% of the entire Unit area) is zoned "Moderate Fire Hazard Severity."

For a closer look at fire hazard severity in this planning unit, see Map 4.11.2, ***Mad–Van Duzen Community-Identified Protection Resources, Values/Assets, & Risks/Hazards.***

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, smoking, playing with fire, poorly maintained debris burning, ignitions associated with marijuana cultivation and processing, and arson are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources.

Ignitions from vehicles, particularly along Highway 36, have a variety of potential starts, such as vehicles dragging chains, hot mufflers or catalytic converters on vehicles parked over grasses by the side of the road, vandals torching abandoned vehicles on the roadside, or vehicles hitting the side of a bank or rolling down a ravine. Unfortunately, these are common occurrences along the Highway. The growing cannabis industry is another source of numerous ignition hazards, including illegal wiring and unsafe use of generators and storage of fuels. Vacant or unmaintained structures throughout the communities in this planning unit are potential fire hazards as well—presenting easy targets for arsonists.

Lightning is the most probable natural cause of fire starts within this planning unit. Several large wildfires have been started by lightning during thunderstorms that ignited more fires than firefighting resources could keep up with. The steep topography of this planning unit can accelerate the rate of fire spread and make access for firefighters very difficult. This, combined with local weather patterns, high fuel loads, and homesteads spread across the landscape, creates a potentially dangerous wildfire environment.

This area is one of the largest open rangeland-type wildlands in the region, made up of grasslands and oak savannah. Observations of many areas throughout this unit indicate that Douglas fir is invading meadows and oak woodlands, eventually shading out the white and black oaks and other hardwoods. Conversion of oak woodlands to conifer forest can result in a significant loss of wildlife habitat, range values, cultural uses, biodiversity, and other ecosystem services.

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Beginning as early as the late 1800s, the ranching community in this area used

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

intentional burning to clear and maintain grasslands for pasture animals. However, this activity has lessened over the past few decades as development—and associated liability issues—have increased. In the forestlands, a heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems accustomed to low-intensity fires that would burn off brush and newer starts in the understory become threatened by overcrowded forests and accumulated fuels. Intense timber harvests during the 20th century further exacerbated damages to forest ecosystem health. The area is now experiencing a resurgence of prescribed fire as the community begins to recognize (or rather, remember) that fire is a vital component of the landscape in which they live and can be used proactively to prevent catastrophic wildfires from occurring. See *4.11.6 Community Preparedness* for a description of recent efforts.

The table below lists recent large (over 10 acres) wildfires and their causes. In June of 2008, after three years of drought, thunderstorms accompanied by dry lightning strikes ignited over 2,000 fires in Northern and Central California. This planning unit did not escape the impacts of those storms and subsequent fires. Even more significant for this area were the fire ignitions caused by lightning strikes associated with thunderstorms that occurred in the summer of 2015.

FIGURE 4.11.2 MAD–VAN DUZEN: WILDFIRES OVER 10 ACRES 1997-2017[5]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Blake	Lightning	2015	8,997	11,439
Lassics	Lightning	2015	7,353	18,192
Johnson	Lightning	2015	3,722	17,821
Pine 1-44	Lightning	2015	1,629	1,773
Buck	Lightning	2015	1,297	1,420
Pilot	Playing with Fire	2004	287	287
Blocksburg 1-58	Lightning	2015	284	284
Pilot	Equipment Use	2004	283	283
Tierney	Lightning	2015	248	248
Iagua	Equipment Use	2009	148	148
Carson	Lightning	2008	65	65
Blocksburg	Power Line	2017	33	33
Larabee 3	Lightning	2008	25	29
House	Arson	2014	25	25
McClean	Unknown/ Unidentified	2014	17	17
Bridge	Power Line	2014	17	17

Note: An interactive map of fire history through 1908 is available through the County WebGIS.

[5] FRAP. (2018). State Fire Perimeters 1908-2017.

The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Approximately 52% of the Mad–Van Duzen Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 20% of the area is condition class 2, or moderately altered from the historical range.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. Fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

Structural Ignitability

Neighborhoods in this unit exist within the *wildland-urban interface* (WUI), which increases the risk of *wildland fires* becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[6], published by the University of California Agriculture and Natural Resources. Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.

Wildland fire: A non-structure (i.e. non-home) fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.
Wildland-urban interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.
Structural ignitability: The ease with which a home or other structure ignites.

Wildfire risk in this unit is exacerbated by the fact that "many homes have large amounts of dense vegetation growing in the Home Ignition Zone and flammable items in direct contact with the structure."[7] Dead plant matter with low moisture levels within 100-150 feet of the homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden gates, fences, latticework and stacks of firewood located near or against structures add significantly to this risk, as does the presence of wooden decks, particularly those with dead plant matter accumulated beneath them.

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[8]. By reducing the intensity and rate of spread of a

[6] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

[7] Firewise Communities/USA® Recognition Program. (2010). Bridgeville Community Assessment. (p. 12).

[8] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.11.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

Water for fire protection is extremely limited in this unit and there are various needs associated with improving the availability of emergency water for wildfire protection. There are no fire hydrants in these communities and the water storage in residential water tanks often falls short of what is anticipated for fire suppression needs. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters, and for community members to ensure that their water sources are properly outfitted for firefighting equipment. Community members have raised the concern that significant water withdrawal from the Van Duzen River associated with cannabis cultivation has reduced the availability of water at common drafting sites used by firefighters.

Community-identified locations from which fire protection water could be drawn are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.11.3 MAD–VAN DUZEN: FIRE PROTECTION WATER DRAFT SITES

○ Van Duzen River	○ Sanderson Pond (dry in the Fall)
○ Sweasey Lake (new name Forest Lake)	○ Murphy Pond
○ Root Creek	○ McCann, Eel River
○ Little Larabee Creek	○ Dyerville river drafting site
○ McClellan Mountain Ranch pond	

Note: Locations identified at community workshops and will need to be vetted further with local firefighting personnel.

Map 4.11.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.11.4 MAD–VAN DUZEN FIRE PROTECTION CAPABILITIES

The Bridgeville Volunteer Fire Department (BVFD) began operating in 2005 providing fire suppression, rescue services, emergency medical services, and hazardous material response to the community of Bridgeville and the Van Duzen watershed. In August 2012, the Bridgeville Fire Protection District (BFPD) was formed to establish an ongoing revenue source to support the delivery of fire protection and emergency services by BVFD. The BFPD covers 196 square miles and approximately 126,000 acres—the largest district in the County of Humboldt. The BVFD serves many micro-communities within the District,

as well as coverage of State Highway 36, a high-pressure natural gas pipeline, and adjacent US Forest Service and Bureau of Land Management lands, which present a high risk of wildfire.[9]

As reported in the 2017 Fire Chiefs' Association Annual Report, the BVFD is made up of 12 trained volunteer firefighting members, two EMTs (Emergency Medical Technicians), and all others trained as first responders. The BVFD Fire Chief serves as a member of the Eel River Valley Fire Chiefs' Association, which meets on a quarterly basis to discuss and coordinate fire service issues in the Eel River Valley and along Highway 36. In addition, members of the department participate on the Eel River Valley Technical Resource Team (ERVTRT), which was formed to address the many risks that area departments face (water rescue, collapse rescue, confined space rescue and more). Participating fire departments include Bridgeville, Carlotta, Ferndale, Fortuna, Loleta, Rio Dell, and Scotia. The ultimate goal of the ERVTRT is, through the pooling of resources, to have the ability to provide a higher level of rescue operations to their communities. These operations include low and high angle rope rescue, confined space and trench rescue, collapse and water rescue, as well as providing additional personnel and equipment as needed during any emergency event. Operations and training are overseen by one team leader, while each department has a squad leader who oversees their individual squads, in turn. The ERVTRT is dispatched by the CAL FIRE Command Center.

FIGURE 4.11.4 MAD–VAN DUZEN: FIRE PROTECTION RESOURCES[10]

PERSONNEL	SERVES		FIRE APPARATUS	RESPONSE
	RESIDENTS	AREA (SQ. MI.)		
BRIDGEVILLE VOLUNTEER FIRE DEPARTMENT (BVFD) – PHONE: (707) 777-3424				
12 Volunteer	1,200	196	○ (3) 750 gallon pumpers ○ (1) Rescue wagon	○ Structural and wildland firefighting ○ Emergency medical and rescue

The ability for the BVFD to provide effective emergency service is sometimes hampered by unmarked roads, missing addresses, inadequate or unmarked firefighting water storage, and outdated equipment. The BVFD uses a vehicle storage barn as a fire apparatus garage. This has been deemed inadequate for their needs and it has been difficult to secure funding to support construction of a fire station. It has also been reported that local, state, and federal fire service training requirements are increasing, which makes recruitment and retention of volunteers more challenging. An additional challenge for fire services in this unit are the fires started by marijuana operations. These ignitions are not tracked, however, and so it is difficult to document the extent of this impact.

CAL FIRE is responsible for addressing wildland fires in this unit. There is a CAL FIRE station in Bridgeville that is staffed seasonally, during the declared fire season. CAL FIRE resources also frequently respond out of their fire station in Fortuna.

The CAL FIRE Bridgeville Station can be reached by calling **(707) 777-3636**.

4.11.5 MAD–VAN DUZEN EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can

[9] Humboldt County Fire Chiefs' Association Annual Report, 2017. (2018). (p. 15). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

[10] Humboldt County Fire Chiefs' Association Annual Report, 2017. (p. 15).

go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Mad–Van Duzen Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Highway 36 is the central ingress and egress route, with several smaller roads connecting residences and neighborhoods to it. Few alternative routes exist for accessing neighborhoods in this unit. The eastern town of Dinsmore may be reached via Bear Creek Road to the north. Egress from Blocksburg could potentially be achieved via a US Forest Service road connected to Church Street; however, utilization of this route would likely necessitate permission and assistance from the US Forest Service. Some neighborhoods in the Unit, like the one west of Blocksburg near Homestead Road, depend on a closed network of smaller roads. Adequate ingress and egress along these roads is vital to a large portion of the community that may need to access the main highway evacuation route and for firefighters who will be using the roads to access wildfires burning in these areas.

FIGURE 4.11.5 MAD–VAN DUZEN: POTENTIAL EVACUATION ROUTES
○ East or west along **Highway 36.**
○ North on **Kneeland Road.**
○ South on **Alderpoint Road.**

Roadside fuels, which increase the risk of ignitions, are not uncommon along these access routes. Given the topography of the region, the majority of roads in this unit are windy and often narrow. The narrowness of smaller roads leading to remote residences could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. In addition, some properties may lack adequate turn around spaces for emergency vehicles and locked gates could delay response. Other ingress and egress impediments may include steep road sections, fallen trees or power lines, vehicle accidents blocking the road, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[11] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

[11] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.11.6 MAD–VAN DUZEN COMMUNITY PREPAREDNESS

Van Duzen Watershed Fire Safe Council

Communities in this unit are assisted by the efforts of the Van Duzen Watershed *Fire Safe Council* (FSC), which was founded in 2004 and operates under the umbrella of the Bridgeville Community Center. The mission of the Van Duzen Watershed FSC is:

> To protect and preserve our homes, forests and waterways from the dangers of wildfires by actively performing fuel reduction work, creating a working fire plan, educating and motivating residents to be fire safe, coordinating funding and action plans with government agencies, detailed mapping and risk assessment and creating an emergency response system for our community.[12]

Fire safe council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

Van Duzen Watershed FSC has garnered over a million dollars in grant funding for projects to improve fire safety within this planning unit. Successful projects have included constructing fuelbreaks in and around residential areas and on Forest Service lands, creating defensible space around homes, conducting roadside clearance, and providing community members with educational materials to improve their fire awareness. The FSC has also been involved with the County in implementing the Fire-adapted Landscapes and Safe Homes (FLASH) program. FLASH is a rebate program that reimburses property owners for hazardous vegetation management completed around their homes, along access

[12] Van Duzen Watershed Fire Safe Council (2012). Van Duzen Watershed Council Facebook page. Retrieved from *http://www.facebook.com/pages/Van-Duzen-Watershed-Fire-Safe-Council/382176151812405*

routes, and in particularly hazardous areas. A free wildfire home risk assessment is also offered through the program.

Bridgeville Firewise

Bridgeville was nationally recognized as a Firewise® community in 2010. The process of becoming recognized as Firewise® includes a site-specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. Over the years, the group has held several Fire Safety Days that provided an opportunity to educate the community about fire emergency preparation and fire prevention while enjoying live music and festivities. Since gaining Firewise® recognition, there have been several meaningful fire safety modifications throughout the community. These projects have focused on reducing hazardous fuels around vacant buildings and roadsides, creating defensible space around homes, and improving emergency vehicle access on roads and driveways.[13]

Maintaining the Van Duzen Watershed FSC and Bridgeville Firewise group has been challenging and there is a need to rebuild these critical local wildfire preparedness organizations. During the process associated with this CWPP update, several community members stepped up and offered to provide their support to this effort. Developing a strategy to reenergize FSC and Firewise activities will be a priority over the next five years.

Yager Van Duzen Environmental Stewards

Yager Van Duzen Environmental Stewards (YES) is a collaborative of ranching landowners in the Yager Creek and Van Duzen watersheds that has worked, for two decades, to implement what they call "community-based conservation".[14] In practice, this has resulted in many dozens of projects primarily aimed at addressing sites contributing excess sediment to the Van Duzen River and its tributaries. Having enjoyed great successes related to sediment reduction, YES has begun to branch out to address other resource issues affecting working lands, including bringing fire back to the landscape. Recently, YES has collaborated with CAL FIRE, the Northern California Prescribed Fire Council, and the Humboldt County Prescribed Burn Association to increase burning on private lands.

YES, along with other local, state, and federal agencies, is interested and invested in restoring the area's expansive oak woodlands, much of which is privately held. Essential to this work is the curtailment of conifer encroachment within stands of oak. Aside from the many ecological benefits to be gained, reducing or eliminating conifers in these historically oak-dominated landscapes helps restore the natural fuel regime and can potentially reduce the severity of wildfire. In 2016, the University of California Cooperative Extension (UCCE), along with seven other partners including YES, was awarded $2.6 million from the Natural Resource Conservation Service to restore deciduous oak-dominated stand structure and ecosystem resilience.[15] Private landowners in this planning unit will receive technical assistance and resources to restore oak woodlands on their land using prescribed fire or manual/mechanical treatments.

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[13] Firewise Communities/USA® Recognition Program. (2010). Bridgeville Community Assessment. (pp. 13-17.)

[14] Yager Van Duzen Environmental Stewards. (2011). 2011 Report. Retrieved from *https://www.partnersforconservation.org/our-landscapes/van-duzen-river*

[15] University of California, Division of Agriculture and Natural Resources News. Partnership brings $2.6 million to North Coast to restore oak woodlands. Retrieved from *https://ucanr.edu/?blogpost=20276&blogasset=81020*

As resources are available, CAL FIRE conducts defensible space inspections within this planning unit as part of their Fire Safety Education Program. These inspections are intended to determine and encourage compliance with Public Resource Code 4291, which requires residents of California to provide and maintain 100 feet of defensible space around all property structures. These inspections can be a valuable source of information about what a property owner can do to improve their defensible space and increase the odds that their home will survive a wildfire. Inspections usually take place in the spring but special arrangements can be made by contacting CAL FIRE directly.

CAL-FIRE HUU can be reached by calling **(707) 725-4413** or visiting ***http://www.fire.ca.gov/HUU***.

In the last five years, communities within the Mad—Van Duzen Planning Unit have made some notable accomplishments, some of which are listed in the table below.

FIGURE 4.11.6 MAD–VAN DUZEN: FIRE PREVENTION ACCOMPLISHMENTS

○ In 2017, Bridgeville Fire Protection District received Measure Z funding for a new rescue truck and additional basic equipment.
○ Between 2014 and 2018, 28 acres were treated under the FLASH program and 25 site visits including a wildfire home risk assessment were conducted by FSC staff.

4.11.7 MAD–VAN DUZEN LOCAL WILDFIRE PREVENTION PLANS

Bridgeville Firewise® Action Plan

In 2010, Bridgeville was officially recognized as a Firewise® Community. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. As part of the certification process, the Bridgeville Firewise® Board/FSC developed the Bridgeville Community Assessment and Firewise® Action Plan. The following list summarizes action items developed to reduce fire risk in the community.

- Post road or driveway signs on at least ten currently unmarked locations.
- Look for property owners to outfit large water storage tanks with fittings compatible with fire department equipment.
- Complete wildfire hazard reduction work funded through the Humboldt County Fire-adapted Landscapes and Safe Homes (FLASH) program. A home risk assessment is provided with this program and mitigation recommendations are made for reducing fire hazards in the home ignition zone. The County received funds for this program from the USDA Forest Service.
- Host the "Bridgeville Fire Safe Day" – Bridgeville's annual Firewise® event. This day showcases strategies that residents can use to reduce their risk to loss from wildfire and highlights community Firewise® projects and accomplishments.
- Create a mapbook for emergency response personnel (also called a Runbook).
- Host Neighborhood Cleanup Days. Assist property owners with the task of removing the byproduct debris from reducing flammable vegetation on their lots. A CAL FIRE chipper will be used where possible to chip material on location. These days will also be used as an opportunity to hand out educational materials and offer free home risk assessments.
- Prepare a manual on principles of shaded canopy fuel reduction.

4.11.8 MAD–VAN DUZEN COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 30, 2017 at Bridgeville Elementary School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes, dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.11.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.11.7* and *4.11.8* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.11.2*) reflect information generated by these community workshop mapping exercises as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility. These ideas build off the 2013 iteration of this CWPP based off the 2017 process, and incorporate actions identified in the 2010 Bridgeville Firewise® Action Plan.

FIGURE 4.11.7 MAD–VAN DUZEN: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Work with Sierra Pacific to create a fuelbreak around Swain's Flat Community.
○ Develop a strategy to address concerns about properties that are consistently unmaintained and pose a wildfire threat to neighboring properties (vacant and developed properties).
○ Encourage residents to provide lock or Knox Box codes to firefighters and CAL FIRE dispatch so that emergency response is not slowed by locked gates.
○ Write letters to the Board of Supervisors urging funding for fire protection.
○ Purchase a water tender for the BVFD.
○ Establish a Blue Dot program to mark firefighting water sources and notify local fire department and CAL FIRE.

The local residents who attended the November 30, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.11.8 MAD–VAN DUZEN: COMMUNITY-IDENTIFIED PRIORITY PROJECTS

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Revisit, thinning/chipping in Bridgeville town	Defensible Space	BRD067
Revisit, 10 years+ since treatment; Roadside demonstration project in Golden Gate Subdivision	Roadside Clearance	BRD022a
Fuel reduction along Swains Flat and Highway 36	Landscape	BRD023
Landscape fuelbreak around Golden Gate Subdivision	Landscape	BRD139

4.11.9 MAD–VAN DUZEN ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **M**aintain/rebuild and support the Van Duzen Watershed FSC to facilitate community wildfire preparedness and mitigation.
  - Inspire more community involvement in and support of the FSC with outreach about what they do and how to get involved.
  - Develop a campaign to increase membership and effectiveness.
  - Ensure that the Van Duzen Watershed FSC is represented on the Humboldt County FSC.
- **A**ctively maintain or, if necessary, reinstate the Bridgeville Firewise Communities/USA® Site:
  - Actively implement and maintain the Firewise® action plan.
  - Focus activity on home hardening and defensible space.
  - Continue to host an annual Firewise® Day.
- **O**nce implementation groups are re-established, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Bridgeville Firewise Action Plan*, as well as in this *Priority Action Recommendation* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.

- Priority areas within this planning unit for fuels reduction and associated maintenance are included in the list below. Activities might include creating/maintaining defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - The town of Bridgeville. (Highly ranked community identified priority. Maintain previously treated area – BRD067)
    - Landscape surrounding historic buildings in Blocksburg. (ALD035)
    - Landscape surrounding Casterlin School, on Alderpoint Road and Pine Mountain Road. (ALD036)
    - Swains Flat area (BRD023)
    - Golden Gate Subdivision (BRD155, BRD022a, BRD139)
    - Cobb Road (BRD156)
    - Bear Creek Road (BRD157)
    - Larabee Subdivision (BRD158)
    - Upper Little Larabee Road (BRD159)
    - Muddy Creek neighborhood, south of HWY 36 (BRD160)
    - Meadow Road/Hidden Valley Road (BRD161)
- The high fire danger, a dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a need for increased wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites.
    - Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
        - Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
    - See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single

access roads, and roads leading to remote-hard to access residences. Priority roads for initial evaluation and outreach efforts include:

- Golden Gate Drive and offshoots (highly ranked community identified priority. Maintain exiting roadside demonstration project – BRD022a)
- Sunset Ridge Road
- Homestead Road (Maintain previously treated area – ALD034)
- Homestead/Browning/Sylvan Glad (Maintain previously treated area – ALD014)
- Kergerson Lake Road (BRD087)
- Redwood House Road (BRD031)
- Bear Creek Road (Maintain previously treated area – BRD083)
- Burr Valley Road (Maintain previously treated area – BRD090)
- McClellan Mountain Road (BRD148, BRD080, BRD066)
- Upper Little Larabee Road (BRD065), BRD086)

- **C**ollaborate with Humboldt County Road Maintenance to strategically identify priority road maintenance and vegetation management projects in areas where conditions are impacting, or have the potential to impact, emergency response and safe evacuation. Review the Humboldt County Rural Transportation and Access Partnership program for applicability to local issues.[16]
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. Evaluate the following priority areas:
    - Fuelbreak around Golden Gate Subdivision (highly ranked community identified priority – BRD139)
    - Ridgetop and lateral fuelbreaks around Lost Flat Ranch, along Alderpoint Road.
    - Reduce fuels in Grizzly Creek Campground areas.
    - Reduce fuels surrounding the Carlotta Pump site.
    - Reduce fuels around Swimmer's Delight/Van Duzen Park area.
- **W**ork with commercial timberland owners such as Humboldt Redwood Company, Green Diamond Resource Company, and Sierra Pacific Industries to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
    - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
        - Priority areas for such project development include timberlands adjacent to the Swain's Flat community along Highway 36.
        - Seek opportunities to collaborate on vegetation management projects where public roads or private roads, leading to residences, transect timberlands.
- **W**ork with the HCFSC to secure more funding to continue and expand the highly successful FLASH reimbursement program (or a similar program), which has promoted hundreds of acres of fuels reduction work around homes and access roads. Continue to educate landowners about fire hazard reduction and fire safety around homes.

[16] Contact County Roads for more information: *https://humboldtgov.org/1405/Road-Equipment-Maintenance*

- Coordinate with CAL FIRE, the BVFD, and the local FSC and Firewise groups to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
    - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
    - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
    - Contact the HCFSC for more details and examples of how to address this situation.
- Work with local organizations, the Humboldt County Board of Supervisors, Humboldt County FSC and GIS staff, state legislators, CAL FIRE, and/or utilities to address communications challenges including the lack of internet access in some areas; radio repeater dead zones; confusion about road names and local addresses; and more.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Continue to explore options and make progress on local fire service sustainability efforts such as:
    - Recruiting and retaining volunteers (firefighters as well as auxiliary volunteers).
        - Communicate to the Humboldt County Board of Supervisors the importance of funding for the fire service.
    - Maintaining secure, consistent, and sustainable revenue sources to meet growing needs and costs.
    - Securing resources to build a fire station for the BFPD/BVFD and purchase a new water tender.
- Coordinate with the HCFSC Wildfire Ignition Prevention Work Group to provide input to the process of finding and/or developing informational materials and outreach strategies for marijuana/cannabis cultivators and processors to reduce ignitions and water source impacts associated with that industry and to educate their seasonal workers.[17]
- Coordinate with local FSCs, fire departments, CAL FIRE, and the County to develop a method of determining whether fire ignitions and risk are declining as a result of the regulation of marijuana/cannabis cultivation and processing; make recommendations as appropriate.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with the local fire department. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.

[17] See countywide action plan *3.1 Wildfire Ignition Prevention* for more details.

- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing tanks are outfitted with fittings compatible with firefighting equipment.

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- Implement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- Use *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- Identify primary ignition sources in the local community and focus prevention efforts on reducing them.
- Increase community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies that could result in an unintended wildfire.
- Inform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- Develop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about past wildfire events.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.

- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot spots for Sudden Oak Death infected trees in the area. Conduct fuels reduction projects as needed to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. See details in the *Priority Action Recommendations* above.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.

- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression. Included in the *Priority Action Recommendations* above.
- Increase the availability of water for fire protection. Included in the *Priority Action Recommendations* above.

Fire Protection

- Support the local fire department by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[18]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

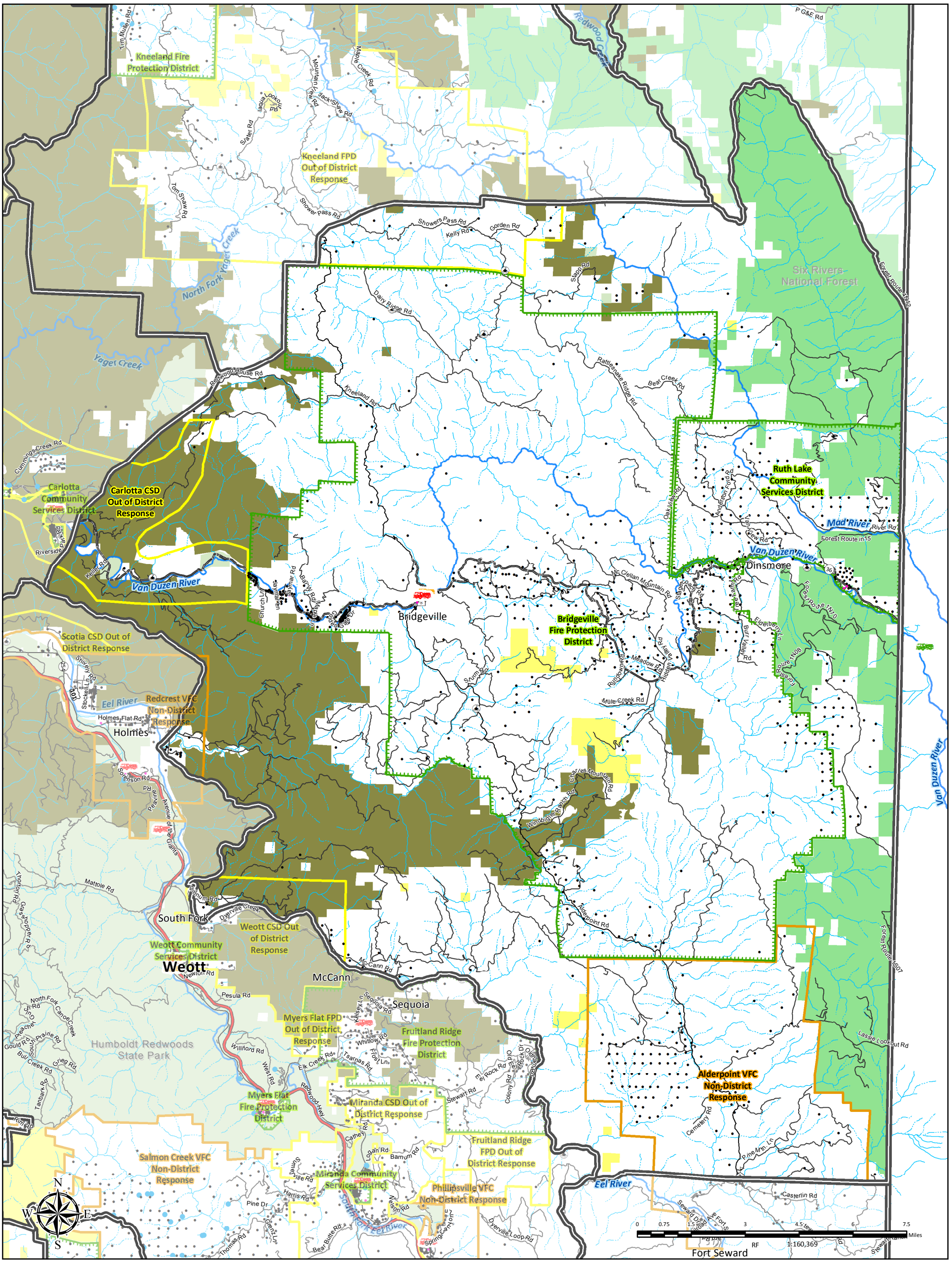
Integrated Planning

- Integrate, where there are mutual benefits, the community preparedness and wildfire resiliency efforts of the Van Duzen Watershed FSC, Bridgeville Firewise, Bridgeville Community Center, Bridgeville Fire District, Bridgeville United, and YES.
- Continue to maintain participation in the Firewise Communities/USA® Recognition Program. This will include active implementation and maintenance of the Bridgeville Firewise® Action Plan and continuing to host the annual "Bridgeville Fire Safe Day".

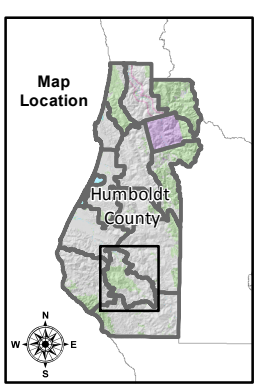
[18] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at lquinndavidson@ucanr.edu or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at chris.ramey@fire.ca.gov or call him at (707) 726-1206.

- Share GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

MAP 4.11.1 MAD—VAN DUZEN PLANNING UNIT



PLANNING UNIT MAP



CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

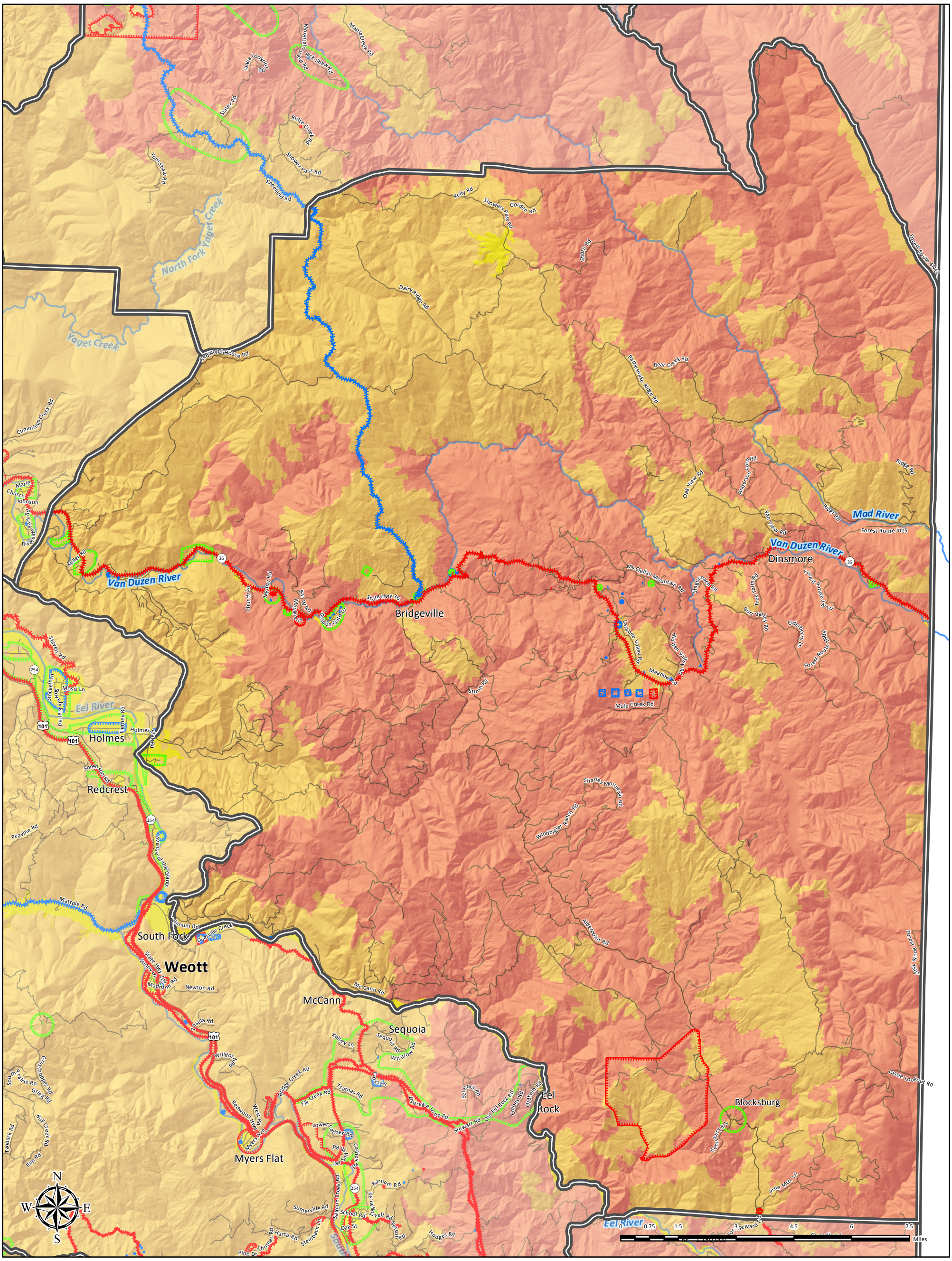
The map is intended for planning purposes and should not be used for precise measurement or navigation.

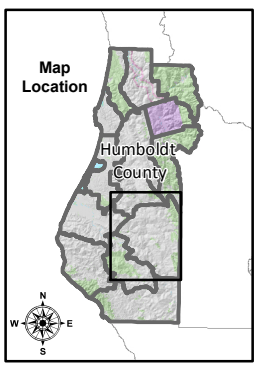
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.11.2 MAD–VAN DUZEN PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
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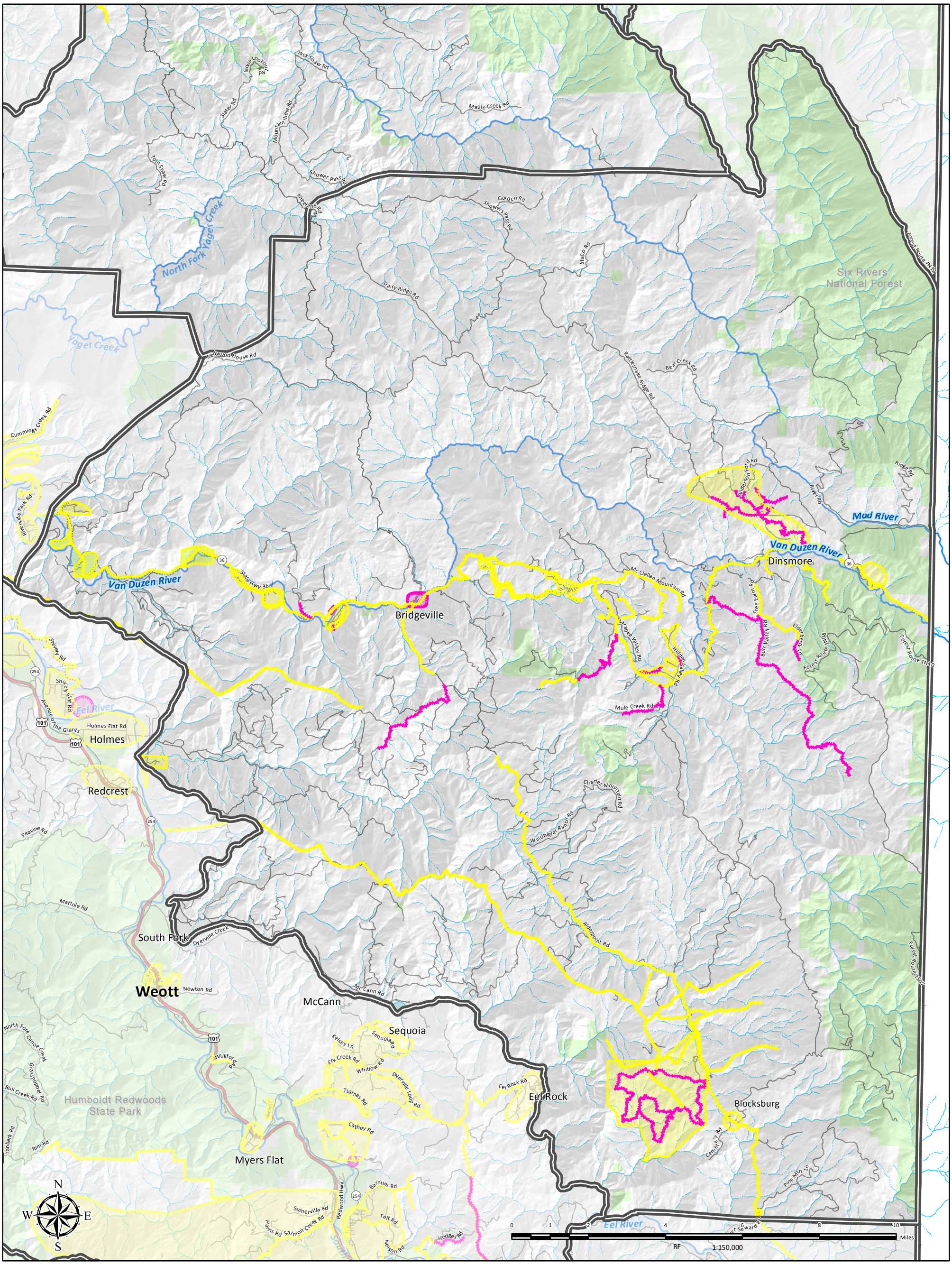
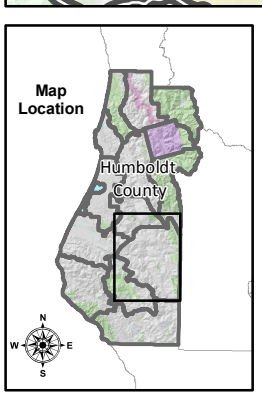
Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.11.3 MAD–VAN DUZEN PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MATTOLE–LOST COAST PLANNING UNIT ACTION PLAN



Mattole River. Photo: Mattole Restoration Council.

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Helpful Links	
MATTOLE RESTORATION COUNCIL:	*http://www.mattole.org*
LOWER MATTOLE FIRE SAFE COUNCIL:	*https://humboldtgov.org/640/Lower-Mattole-FSC*
HONEYDEW FIREWISE:	*https://humboldtgov.org/727/Honeydew*
PETROLIA FIREWISE:	*https://humboldtgov.org/739/Petrolia*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEBGIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.12 MATTOLE–LOST COAST PLANNING UNIT ACTION PLAN

4.12.1 MATTOLE–LOST COAST PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.12.1, ***Mattole–Lost Coast Planning Unit****.*

Watershed: All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

The Mattole–Lost Coast Planning Unit encompasses over 200,000 acres situated in the southwestern coastal region of Humboldt County, located west of the Humboldt Redwoods State Park. Although no major highways exist in this planning unit, both routine and emergency transportation needs are served by three separate, distinct, and interconnected county roads. These three roads are "Mattole," "Bull Creek," and "Wilder Ridge," with the town of Honeydew at the origin or terminus of all three. The Unit is part of the Mattole *watershed*, which is characterized as "an extremely geologically active and unstable watershed."[1] The terrain is mostly mountainous with steep valleys formed by tributaries of the Mattole River. The Mattole River comes into the Unit south of Honeydew, flows alongside Mattole Road, and joins the Pacific Ocean just south of Petrolia.

Petrolia and Honeydew are the community centers shown on most maps within this planning unit, with populations of about 500 and 600, respectively. However, there are other significant neighborhood clusters and individual homesteads scattered throughout the Unit. Well-known neighborhoods located along, or on offshoots of, the three primary roads listed above include Wilder Ridge, Panther Gap, Windy Nip/Doreen Drive, Green Fir/New Jerusalem, Conklin Creek, Lower North Fork, Lighthouse Road, and Prosper Ridge.[2] Many of the residences associated with these neighborhoods are located miles off of the main transportation corridors, along rough gravel roads.

Private lands are the dominant ownership pattern in this unit; these include residential parcels, medium to large tracts of ranchland, and land owned by industrial timber companies in the northeastern portion of the Unit (primarily Humboldt Redwood Company with a scattering of properties owned by R.H. Emmerson & Son LLC). This unit also contains a large portion of public land belonging to the Bureau of Land Management (BLM)—the King Range National Conservation Area—which dominates the southwestern quadrant of the Unit. The Conservation Area is an environmentally significant area managed by the Arcata Field Office, which is responsible for the administration of natural resources, lands, and mineral programs.[3] It is worth noting that the Humboldt Redwoods State Park is adjacent to the eastern boundary of this planning unit and wildfire activity and mitigation projects will have a direct impact on the residents and landscape of the Mattole-Lost Coast planning Unit.

[1] Firewise Communities/USA® Recognition Program. (2011). Petrolia Community Assessment. (p. 4).

[2] Lower Mattole Fire Safe Council. (2016) Lower Mattole Community Wildfire Protection Plan. Retrieved from http://www.mattole.org/resources/fire-fuels

[3] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 20).

4.12.2 MATTOLE–LOST COAST ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air and water quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being. The majority of assets at risk in this planning unit are residential homes and communities, along with a variety of commercial and service industries, community centers, medical clinics, schools, fire stations, churches, as well as infrastructure components, such as power lines and access roads.

Significant recreation areas in the Unit include the Mattole Campground, the A.W. Way County Park, and the King Range National Conservation Area. Shell mounds of historical and cultural significance are in the westernmost part of the Unit. The Mattole River has important ecological significance as the Unit's primary freshwater body; it is part of a federally and state-designated Area of Special Biological Significance and drains into a Critical Coastal Area and Marine Protected Area. Sensitive and listed species in this region include steelhead trout, Chinook salmon, coho salmon, martens, fishers, and northern spotted owls—to name a few. [4] Hardwood and coniferous forests are assets within this unit as well; they are valuable for subsistence, commercial livelihood, and ecological resources. Some areas, especially near Wilder Ridge, Panther Gap, Lighthouse Road, and the Lower and Upper North Fork, contain many of the last remaining old-growth forests in the lower Mattole Watershed.[5]

Map 4.12.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[6] Portal: *webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Community-identified assets at risk can be categorized as shown in the figure below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.12.1 MATTOLE–LOST COAST: COMMUNITY-IDENTIFIED ASSETS AT RISK

○ A.W. Way Park	○ Mattole Valley Community Center
○ CAL FIRE Mattole Station	○ Mattole Valley Resource Center
○ Church of Scientology	○ Mill Creek Forest
○ Etter Enterprise Zone	○ Mount Pierce Communication Site
○ Gilham Butte Forest	○ Old South Maid Ranch House – Historical
○ Honeydew Fire Stations	○ Open Door satellite clinic
○ Honeydew Store and Post Office	○ Petrolia Fire Department
○ Mattole Camp	○ Petrolia Store and Post Office
○ Mattole Campground	○ Rainbow Ridge Cell tower repeater
○ Mattole Grange	○ Seven Day Adventist Church
○ Mattole Union School Campus (Triple Junction High and Honeydew Elementary)	○ St. Patrick's Church
○ Mattole Salmon Group offices	○ Wilder Ridge fire house

[4] Mattole River and Range Partnership. (2009). Mattole Integrated Coastal Watershed Management Plan. Foresight 2020. [PDF]. Retrieved from *http://www.mattolesalmon.org/joomla/images/stories/Documents/Reports/MSG/SOS/MICWMP_090901.pdf*

[5] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 50).

[6] Geographic Information Systems (GIS).

4.12.3 MATTOLE–LOST COAST WILDFIRE ENVIRONMENT

A detailed wildfire risk assessment is included in the Lower Mattole Community Wildfire Protection Plan.

Readers are encouraged to review that plan for more details about the **wildfire environment.**

The plan can be downloaded and more information about wildfire preparedness can be found on the Mattole Restoration Council's webpage: *http://www.mattole.org/resources/fire-fuels*

Approximately 90% of the Mattole–Lost Coast Planning Unit is zoned "High Fire Hazard Severity," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[7] However, 3% of the Unit, including some locations near Petrolia and along portions of Mattole Road are zoned "Moderate Fire Hazard Severity," while approximately 7% of the Unit, including sections of and adjacent to the King Range National Conservation Area and land surrounding the Lighthouse and Prosper Ridge neighborhoods, are zoned "Very High Fire Hazard Severity."

For a closer look at fire hazard severity in this planning unit, see Map 4.12.2, ***Mattole–Lost Coast Community-Identified Protection Resources, Values/Assets, & Risks/Hazards.***

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, vehicles dragging chains while towing or issues with tires that throw sparks, smoking, playing with fire, poorly maintained debris burning or camp fires, ignitions associated with marijuana cultivation and processing, and arson are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources. Lightning is the most probable natural cause of fire starts within this planning unit. Other factors that are likely to have a future impact on fire risk within this unit include climate change, which is likely to extend the dry season. This, combined with local weather patterns, high fuel loads, and homesteads spread across the landscape, creates a potentially dangerous wildfire environment.

Some fire service personnel report that they have seen an increase in marijuana fire ignitions and risks over the past decade. This includes spark-generating equipment such as vehicles and generators,

[7] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

faulty wiring, and extraction labs, some using explosive butane. These ignition sources are not only a wildfire risk but can create dangerous conditions for responding firefighters.

The number of fires started by or associated with marijuana operations is not tracked, so it is difficult to document the extent of this impact. It is also unclear how the legalization and regulation of this industry will impact associated wildfire risks. However, there is enough concern to warrant prioritizing wildfire preparedness outreach to the associated population. In addition, it will be important to develop strategies to better track marijuana-related fire ignitions and determine if associated regulation and permitting result in a reduction or change in the number of ignitions. This Plan recommends monitoring regulatory effectiveness in this regard and making changes as necessary.

Fire History

> ***Fire suppression:*** All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Traditionally, fire has been an integral part of the ecosystems in this region. Forest management by indigenous tribes included low-intensity, intentional burns to help enhance forest ecosystems, keep ridgelines open for travel, ensure vitality of Tribal plant communities, and prevent the accumulation of high fuel loads. Some of the early settlers in the late 1800s also used intentional burning to maintain grasslands for pasture animals. There is still some burning taking place on larger landownerships and the practice is starting to make a comeback. However, a heavy *fire suppression* campaign beginning in the 1930s has disturbed the fire-adapted ecosystems within this unit and altered stand composition. Intense timber harvests, which were followed by the land being sold and subdivided during the 20th century, further exacerbated damages to forest ecosystem health:

> “The unprecedented combination of widespread logging and heavy fire suppression resulted in the dense second growth forests of Douglas fir and tanoak that are found throughout Mattole today.[8]”

These heavy fuel loads allow small fires that would otherwise burn through the understory to reach into the tree tops, increasing the likelihood of wildfires destroying whole trees and swaths of forest. In addition, the Douglas fir, unchecked by low intensity fires, is rapidly encroaching into oak woodlands, grasslands, and hardwoods in mixed conifer forests. This process is threatening ecosystems, wildlife habitat, and negatively impacting the forests' resiliency to wildfire. The extent that the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical natural fire regime. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area. **Approximately 50% of the Mattole–Lost Coast Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range;** and approximately 18% of the area is condition class 2, or moderately altered from the historical range.

The BLM lands within this planning unit have had a very active history of large wildfires, some of which spread into private property. Although wildfires have occurred in and around the populated areas of this planning unit, they were kept relatively small. Based on this history, it is clear that there is potential for wildfire ignition within this planning unit and there are neighborhoods located in historical wildfire footprints where fuel loads have been increasing. The conditions for wildfire are ripe and it is essential that the hazard mitigation actions already in progress continue and expand in scope. The following table lists recent large (over 10 acres) wildfires and their causes.

[8] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 24).

FIGURE 4.12.2 MATTOLE–LOST COAST: FIRES OVER 10 ACRES 1997-2017[9]				
Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Honeydew	Lightning	2003	10,098	11,794
Spanish	Equipment Use	2011	524	524
Flat	Campfire	2001	308	317
Buckeye	Equipment Use	2010	202	202
Ranch	Escaped Prescribed Burn	2009	125	125
Spanish	Campfire	2012	122	122
Chambers	Arson	2007	55	55
Driftwood	Unknown/ Unidentified	2007	52	53
Cooskie	Campfire	2013	36	36
Rainbow	Unknown/ Unidentified	2003	16	11,794
Note: An interactive map of fire history through 1908 is available through the County WebGIS.				

Structural Ignitability

> ***Structural ignitability:*** The ease with which a home or other structure ignites.
>
> ***Wildland-urban interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Neighborhoods in this unit exist within the *wildland-urban interface* (WUI), which increases the risk of wildland fires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[10], published by the University of California Agriculture and Natural Resources.

It is a well-known fact—albeit difficult to quantify—that there are many homes built in this planning unit without permits. There are also many homes that were built before building code compliance was required; building codes include standards intended to harden homes against damage from wildfire. In addition, alternative owner-builder permit procedures can be used in some instances; many of the standard permit requirements do not apply, including those intended to harden homes against wildfire. Many of these unpermitted, pre-code, and alternative owner-builder permitted homes are especially vulnerable to wildfire ignition. That being said, and based on recent examples in neighboring counties, all homes in this planning unit have vulnerabilities to wildfire and steps should be taken to mitigate

[9] FRAP. (2018). State Fire Perimeters 1908-2017.

[10] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

wildfire impacts. In an effort to incentivize building permit compliance for existing unpermitted structures, the Humboldt County Planning and Building Department is administering the Safe Homes Program.[11] Through December 31, 2022, the Humboldt County Planning and Building Department and the Humboldt County Division of Environmental Health will waive penalty fees associated with construction permits; all customary permit fees will still apply.

SAFE HOMES PROGRAM

For additional information and submittal requirements contact:

Humboldt County Planning & Building: **707-445-7541**

https://humboldtgov.org/156/Planning-Building

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability* and can limit the ability of firefighters to ensure the safety of structures. The degree to which residents maintain defensible space around their homes varies greatly from house to house among the neighborhoods. Many houses have dense vegetation growing in the home ignition zone, ladder fuels in nearby trees, or trees close to roofs. Another common issue is the buildup of highly flammable debris such as leaves, needles, and moss, on rooftops or in gutters. Flammable roofing and siding are also a concern for homes in this area.

Home Ignition Zone: The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.

Structural ignitability: The ease with which a home or other structure ignites.

> Observations have been made in the planning area of homes with wood piles, fences, gates, and wood lattice in contact with structures. Dead leaves under decks or along foundations of structures were also observed in some cases. These items are generally more susceptible to combustion from embers or radiant heat and, if lighted, could lead a fire to the rest of the home.[12]

Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[13]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.12.2, found at the end of this Planning Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

[11] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

[12] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 47).

[13] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

Water Sources

A lack of available water for fire protection is a very serious safety issue in this planning unit, particularly in the more remote neighborhoods. Because there are no municipal water services or hydrants, residents must obtain water through other means, such as drawing from nearby creeks and holding tanks. Water availability is a limiting factor for the safety of many neighborhoods in this unit, particularly the more remote communities. Although a few community water tanks have been placed in these neighborhoods, their contents can fall short of what is needed for fire suppression, posing a challenge for firefighters. Ensuring that existing water tanks are committed to fire, maintained, and functioning properly is a high priority for community members in these neighborhoods.

Fire protection water may be drafted from the Mattole River and main tributaries. However, this has become problematic in late summer months because of the impact that withdrawing water from the river can have on endangered salmon and steelhead populations.

Map 4.12.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions can be found on the Humboldt County Web GIS Portal: *webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.12.4 MATTOLE–LOST COAST FIRE PROTECTION CAPABILITIES

Community fire protection within the Unit is provided by the Petrolia Volunteer Fire Department (PVFD), which provides all risk protection services for the Petrolia Fire Protection District, and the Honeydew Volunteer Fire Company (HVFC).

Mutual aid agreements are in place with neighboring jurisdictions, such that all local departments often respond to calls inside and outside of their response areas. However, due to the rural nature of the area, additional help can take a long time to reach its destination. CAL FIRE also responds to wildland fires in the Unit, but the Mattole station is only in operation during declared fire season, which usually begins in June and lasts through October. The CAL FIRE Weott station can also send equipment and personnel to the Unit area when extended service is needed. Response times from the Weott station often require 60 minutes or more, depending on the location of the incident.

> ***Mutual aid agreement:*** A reciprocal aid agreement between two or more agencies that defines what resources each will provide to the other in response to certain predetermined types of emergencies. Mutual aid response is provided upon request.

The CAL FIRE Mattole Station can be reached by calling **(707) 629-3344**.

Fire protection agencies in this unit are benefited by convenient access to helpful and pertinent information compiled in the Mattole Fire Atlas. It has become a primary emergency resource as other map sources are not as accurate.

> ‘The Lower Mattole Fire Atlas identifies firefighting resources like fire stations and trucks, and water tanks and ponds. The Fire Atlas also shows the known locations of structures.[14]’

The lower sections of the Mattole Fire Atlas were updated in 2011 and copies were given to the PVFD, HVFC, CAL FIRE, and the Mattole Restoration Council (MRC) as a work in progress. Future projects include updates to the remaining areas in the upper Mattole river watershed after disseminated copies are adjusted. Copies will be provided to the Telegraph Ridge, Whitethorn, Shelter Cove, and Whale Gulch fire departments as well as to the BLM fire station in Whitethorn. These fire service entities may submit corrections and additions to the Atlas.

[14] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 61).

FIGURE 4.12.3 MATTOLE–LOST COAST: FIRE PROTECTION RESOURCES[15]			
PERSONNEL	SERVES		RESPONSE
	RESIDENTS	AREA (SQ. MI)	
PETROLIA VOLUNTEER FIRE DEPARTMENT (PVFD) – PHONE: (707) 629-3558 **EMAIL: *petroliafire@frontier.net***			
22 Volunteer 4 Auxiliary	500	150	○ Structure defense and wildland fire ○ Emergency medical and rescue services ○ Services provided from fire station in Downtown Petrolia
FIRE APPARATUS			
○ Water tender, 2,100-gallon ○ Type-1 engine, 750-gallon ○ (2) Type-3 engines, 500 gallons each			○ BLS medical rescue van ○ All-terrain vehicle (ATV) with a winch and a "Side-x-Side" set up for medical rescue ○ Quick attack pick-up truck
HONEYDEW VOLUNTEER FIRE COMPANY (HVFC) – PHONE: 707-986-7688 (DISPATCH) **EMAIL: *honeydew@asis.com* WEB: *www.honeydewfire.com***			
14 Volunteer 4 Auxiliary	600	100	○ Structure defense and wildland fire ○ Emergency medical and rescue services ○ Services provided from three strategically located fire stations
FIRE APPARATUS			
○ (3) Type-6 wildland "quick-attack" engines			○ Water tender, 6WD, 1100 gallons

4.12.5 MATTOLE–LOST COAST EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites will be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** However, it should be noted that safe evacuation places, given current California wildfire events, could be outside of the unit or at the beach. The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team, which will include local volunteer firefighters. Local fire departments, NEST list coordinators, and the Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*), phone lists, and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation support from county and other outside resources could be delayed because of the remote location of this planning unit. The worst case scenario of a large earthquake igniting wildfires could result in the residents of this area being completely cut off from the rest of the county for a significant period of time. Local fire department volunteers and community members understand this and have been taking proactive measures. For example, two local emergency communication resources are maintained: a Neighborhood Emergency Service Teams (NEST) list and the Humboldt County Office of Emergency Services (OES) deputy coordinators, one of which is stationed in Petrolia and the other near Honeydew.

[15] Humboldt Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

The NEST list was generated after an earthquake in 1992 to provide a structure for emergency communication in and around Petrolia. The NEST system organizes smaller, discrete groups of residents into autonomous units, each with a designated leader. Currently, there are 27 recognized NESTs within the larger Unit, however, there are still neighborhoods along Bull Creek Road and Wilder Ridge Road which are neither organized nor represented. Ideally, there would be a backup communication system to phones such as CB radios, especially for all NEST leaders.

> Through the NEST and the local volunteer fire departments, the OES representatives are the line of communication between emergency community needs and OES [County and State OES].[16]

Both the NEST and the local OES coordinator systems are valuable community communication and evacuation resources and need to be maintained, supported, and expanded. They also need to be supplemented by additional communication systems. The OES coordinator system also needs to be reviewed and updated as necessary.

Fire behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography. Common terms used to describe behavior include smoldering, creeping, running, spotting, torching, and crowning.

Evacuation routes in the Mattole–Lost Coast Planning Unit will depend on the location of the community at risk and law enforcement/fire service recommendations based on *fire behavior*, wind patterns, traffic, and ingress of emergency vehicles. The Mattole Road runs in what is generally held to be an east-west direction, and connects the Unit with Ferndale and eventually with Highway 101 at Fernbridge. The Bull Creek Road generally follows a northeast-southwest direction, and connects the Unit with the Highway 101 corridor at Dyerville Loop Road. The Wilder Ridge Road runs in what is generally held to be a north-south direction, and connects the Unit with Ettersburg and, farther, with Highway 101 in Redway/Garberville. There are numerous smaller roads connecting residences to neighborhoods on Mattole Road. Adequate ingress and egress along these roads is vital to a large portion of the community that may need to access the main evacuation route and for firefighters who will be using the roads to access wildfires burning in up-slope areas. It is important to note that the segment of road stretching between Honeydew and Highway 101 at Dyeville Loop Road is referred to on many county maps and likely in other important locations, as the Mattole Road. This section of road, as mentioned above, is referred to in this plan as Bull Creek Road. This discrepancy is confusing and potentially dangerous and needs to be officially addressed.

FIGURE 4.12.4 MATTOLE–LOST COAST: POTENTIAL EVACUATION ROUTES

- **Mattole Road,** west towards Petrolia, Pacific Ocean and Ferndale or east toward Honeydew.
- **Bull Creek,** north toward Humboldt Redwoods State Park and Highway 101 or south toward Honeydew.
- **Wilder Ridge Road**, north toward Honeydew or south towards Ettersburg.

The condition of the county roads was identified through this planning process as a top concern related to evacuation and emergency response safety. Road surfaces are hazardous for travelers under normal circumstances and during an emergency, these conditions could slow down evacuees as well as emergency responders. Residents identified the need to resurface large segments of road, replace culverts, and address safety concerns related to multiple one-lane bridges and segments of road.

Some neighborhoods in this unit are very remote and contain homes that are only accessible via narrow, steep, dirt roads, with few turnouts, some of which have no alternate exit route. Even close to town there are dense neighborhoods where access is difficult if not dangerous in an emergency. "Many roads are not maintained properly to allow access to firefighting apparatus, nor are they labeled with

[16] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 63).

addresses or water storage."[17] Poor or complete lack of signage at roads and intersections pose potential problems for emergency ingress and egress; this is especially true for more remote residences that are further from the towns. The narrowness of smaller roads leading to these remote residences could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. Routes may also be grown over with vegetation, and many properties have inadequate turn around spaces. The potential for landslides, fallen trees, downed powerlines, and ignition of roadside fuels in this area could also inhibit access or evacuation of residents. One-way-in and one-way-out roads are also a primary concern.

Severe, gusty winds common to this Unit can raise the threat level quickly. Neighborhoods must prepare, pre-plan, and practice for an emergency situation. Extreme wildfire weather is common throughout the summer in most of the Unit. Two essential areas of community concern are the need for seamless and reliable communications and the identification of suitable evacuation sites.

Preparations for and the execution of community evacuations associated with wildfire, are complex and multifaceted. Responsibilities for safe evacuations are shared by many players. The individual resident is the highest priority and, in the most remote areas, may need to depend on their own resourcefulness. This point was clearly articulated by Peter Marshal, a member of HVFC:

> "Within the context of wildfire, evacuation is defined as the movement of people from a place of imminent danger to a place of relative safety. Within the context of strategic planning for action in a wildfire, fire planners, ranging from the Initial Attack by our local Volunteers all the way up to out-of-area Incident Management Teams, always consider the protection of human life as the highest priority, exceeding the second highest priority of protecting homes, and far exceeding the third highest priority of protecting forestlands. Evacuation is best accomplished through thorough understanding of fire behavior, seamless and reliable communication and awareness of a rapidly evolving situation, and complete pre-planning and preparations. In all of these prerequisites, the individual is the foremost "player". Fire, law enforcement, and emergency service agencies serve only to assist the individual and the community in safe and timely evacuation…
>
> Law enforcement cannot compel an individual or neighborhood to evacuate their home, even if that is unquestionably a reasonable course of action. For this reason, it is imperative that individuals and neighborhoods have complete understanding of the situation, confidence in the actions of emergency personnel and communications with them, adequate pre-planned preparations, and a relatively safe location to which they can evacuate. If all of these imperatives are in place, it is more likely that individuals and neighborhoods will evacuate early on in an evolving situation and in a relatively safe manner. If these imperatives have not been put in place, evacuation is likely to take place at the last moment in a panicked, chaotic manner, quite possibly with catastrophic outcomes."

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites, particularly if they our outside the planning unit. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[18] If residents are forced to take shelter, the horrific

[17] Firewise Communities/USA® Recognition Program. (2011). Petrolia Community Firewise® Assessment. Retrieved from *https://humboldtgov.org/739/Petrolia*

[18] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.12.6 MATTOLE–LOST COAST COMMUNITY PREPAREDNESS

Fire awareness within communities in this unit is abetted by the Lower Mattole Community Wildfire Protection Plan (LMCWPP), which was collaboratively developed with involvement from local, state, and federal land and fire management agencies, as well as officials from CAL FIRE, State Parks, the Mattole Restoration Council (MRC), and from the Lower Mattole Fire Safe Council (LMFSC). The LMCWPP was last updated in 2016.

The LMFSC was founded in 2002 and aims to:

> "Reduce risks and minimize damage to life, property, and the environment from wildfire, by coordinating efforts to fund and implement fire-safe education and projects in the Lower Mattole.[19]"

LMFSC goals and objectives include reducing fuel loads in and around neighborhoods; increasing availability of water sources; assisting local fire protection agencies; educating landowners on fire-safe practices; improving community and emergency response communication networks; and promoting healthy forest and rangeland ecosystems.

The LMFSC can be reached by calling **(707) 629-3514**, or by email at: *mrc@mattole.org*.

Since its inception, the LMFSC has partnered with the MRC on fuels reduction and fire safety projects. The MRC supports the efforts of the LMFSC and manages the Fuels Reduction and Fire Planning program. The MRC works with landowners and public resources to create shaded fuel breaks along key public and private access roads, connects landowners with resources for conducting their own fire safe measures, and provides services for fuels reduction including a chipper with crew[20]. The MRC has also contracted with the County of Humboldt to implement the Fire-adapted Landscapes and Safe Homes (FLASH) program in an ongoing effort to assist community members with wildfire mitigation efforts. FLASH is a rebate program that reimburses property owners for hazardous vegetation management completed around their homes, along access routes, and in particularly hazardous areas.

[19] Lower Mattole Fire Safe Council. (2016). 2016 Lower Mattole CWPP. (p. 17).

[20] Mattole Restoration Council. (n.d.). Fuels Reduction and Fire Planning [Web]. Retrieved from *http://www.mattole.org/programs/land-management/fire*

Petrolia and Honeydew both received national Firewise Communities/USA® recognition in 2011. The process of becoming recognized as Firewise® includes a site specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire.

The Petrolia Firewise® Area includes the town of Petrolia, as well as sections of Mattole Road to the north and southeast of Petrolia, a portion of Conklin Creek Road, and the Lighthouse Road neighborhood. Successful Firewise® modifications around Petrolia include improving signage and defensible space for residents; fuels reduction along roads, schools, community center, and in neighborhoods; and increasing water storage tanks in the area.[21]

The Honeydew Firewise® Area includes the town, areas to the north and east of the town, along Bull Creek Road and Applewood Road, a large portion of Mattole Road to the west, and the Wilder Ridge Road neighborhood to the south. Some Firewise® modifications accomplished within the community include improving defensible space around homes, posting clearly marked addresses and water storage signs, and fuels reduction along roads and in neighborhoods.[22]

An emerging community preparedness need is the identification and provision of Clean Air Refuges during periods of impaired air quality as a result of wildfire smoke inflow into the Unit. There are very limited resources presently that can be considered refuges for sensitive groups. When local Clean Air Refuges are at capacity, real-time information is needed about where refuges can be found outside the Unit.

FIGURE 4.12.5 MATTOLE–LOST COAST: FIRE PREVENTION ACCOMPLISHMENTS

- Completed the 2016 *Lower Mattole Community Wildfire Protection Plan*, an update to the *Lower Mattole Fire Plan* of 2002.
- Maintained Firewise® recognition for Petrolia and Honeydew through Action Plan implementation and hosting an annual Firewise® Day.
- Continue to hold at least two annual public meetings of the Lower Mattole Fire Safe Council since 2002.
- Shaded Fuel Break Projects MRC completed with USDA funding in the watershed:
  - Chemise Mountain/Usal Road Fuels Reduction for Neighborhood Safety - 36 acres completed in two phases by 2011
  - Telegraph Ridge Fuels Reduction for Neighborhood Safety I and II - 85 acres completed (2008)
  - Wilder Ridge Fuels Reduction for Neighborhood Safety I and II - 65 acres, 8 miles (2003 and 2005)
  - Prosper Ridge Fuel Reduction Project - 2 miles (Phase 1 - completed in 2005)
- Prairie/Ridgeline Clearing for Fire Safety:
  - Mill Creek Ridge and Road Fuel Break, funded by USDA and CA FSC Clearinghouse - Completed treatment of 55 acres
  - Prosper Ridge/North King Prairie on BLM land, federally funded - Treated 110 acres
  - Prosper Ridge Fuels Reduction Project Phase II, funded by USDA and CA FSC Clearinghouse - Treated 80 acres, Completed 2013
- Defensible Space Projects:
  - Lincoln Neighborhood Safety Project and Defensible Space for Neighbors in Need, Two Title 3 funded grants (USDA), funded through Humboldt County with support from Petrolia and Honeydew Fire Companies - Treated four parcels, three completed 2014 and one in 2016
  - Mattole Chipper Days, SRA funded in 2016 - Treated 15 residences with help from PG&E funding

[21] Firewise Communities/USA® Recognition Program. (2011). Petrolia Community Assessment.

[22] Firewise Communities/USA® Recognition Program. (2011). Honeydew Community Assessment.

FIGURE 4.12.5 MATTOLE–LOST COAST: FIRE PREVENTION ACCOMPLISHMENTS, CONTINUED
○ Between 2011 and 2017 over 277 acres were treated under the FLASH program involving approximately 97 separate parcels.
○ MRC assisted CCC shaded fuel break work along 2.5 miles Mattole Road, 2 miles on middle Bull Creek Road, and 4 miles along Wilder Ridge Road.
○ Since the development of the Lower Mattole Fire Safe Council in 2002 and with the help of sponsored projects by the Mattole Restoration Council, hundreds of homes have now been treated in the home ignition zone to provide defensible space. The Unit's communities are more educated than ever before on the need to reduce fuel loads.
○ Support has been provided to the local fire service through Measure Z, a half-cent sales tax passed by Humboldt County voters in 2014. These funds have been used to purchase radios, self-contained breathing apparatus or SCBAs, personal protective equipment, a fire engine, fire hose, and to pay fees for dispatch.
○ Local landowners have begun to collaborate with the Humboldt County Prescribed Burn Association and CAL FIRE to increase burning on private lands as a wildfire adaptation and resiliency strategy.

4.12.7 MATTOLE–LOST COAST LOCAL WILDFIRE PREVENTION PLANS

A tremendous amount of work related to fire-planning has been completed in this planning unit including the publication of the 2016 Lower Mattole CWPP, which is narrower in scope than this county-level CWPP. In addition, the Lower Mattole communities of Petrolia and Honeydew have each completed a Firewise® Action Plan, as part of the Firewise® certification process. The lists below summarize the specific actions and projects recommended by the complimentary plans.

Lower Mattole CWPP Action Items

The Lower Mattole CWPP lists and outlines various types of projects that have been proposed to improve fire safety in the area in a five to ten year action plan. These projects fall under the following categories:

- Empowering Residents
- Reducing Structural Ignitability
- Reducing Fuels
- Enhancing Fire Protection
- Community Emergency Preparedness and Planning
- Fire Ecology and Conservation/Restoration Efforts

A complete copy of the Lower Mattole CWPP, including the details of each of the above categories, can be found on the MRC[23] and Humboldt County FSC[24] websites.

Petrolia and Honeydew Firewise® Action Plans

The Petrolia Firewise® Action Plan and Honeydew Firewise® Action Plan were first completed in 2011, as a result of the community Firewise® assessments conducted in their respective communities. The two Plans each contain a list of short-term actions with measurable objectives that can be done within the home ignition zone, within high risk community areas, and the community at large. The actions laid out in both plans are identical, given the common fire risks these neighboring communities face and the common resources they have at their disposal. These actions are consistent with implementation of the Lower Mattole CWPP. To view the full plans, visit the Humboldt County FSC website.

[23] Lower Mattole Fire Safe Council. (2016). Lower Mattole Community Wildfire Protection Plan. Retrieved from *http://www.mattole.org/resources/fire-fuels*

[24] Humboldt County Fire Safe Council. (2016). Lower Mattole FSC. [Webpage]. Retrieved from *https://humboldtgov.org/640/Lower-Mattole-FSC*

4.12.8 MATTOLE–LOST COAST COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 28, 2017 at the Mattole Grange with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan *(Map 4.12.3).* New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.12.6* and *4.12.7* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions.*** The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.12.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

All of the geographic community-identified project information is cataloged in the Humboldt County Web GIS Portal described above as well as in the Lower Mattole CWPP. This County CWPP incorporates that information by reference here. This information will continue to be made available as a resource for capturing grant funds and continued project implementation tracking. Also note that the Mattole Fire Atlas contains locally confirmed features such as firefighting resources like fire stations and trucks, water tanks and ponds, as well as the known locations of structures. The integration of these mapping tools is identified as a priority action in this plan.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.12.6 MATTOLE–LOST COAST: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Increase participation by California State Parks and BLM in the Lower Mattole FSC.
○ Multi-lingual outreach regarding vegetation management/defensible space.
○ Identify and name roads and ridges currently unnamed for ease of emergency response.

The local residents who attended the November 28, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community-identified projects can be found in the CWPP Web GIS Portal described above. For a more complete list of priority projects, refer to the Lower Mattole CWPP 2016 update.

FIGURE 4.12.7 MATTOLE–LOST COAST: COMMUNITY-IDENTIFIED PRIORITY PROJECTS

PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Chambers Road eucalyptus grove forest cleanup and roadside clearing	Roadside Clearance	PET065
System of ridgetop fuel breaks/prescribed burns	Non-geographic	-
Water tank at Honeydew School	Water	PET284
Chambers Road bridge repair for emergency access	Infrastructure	PET272
Cooskie Ridge Road Shaded Fuel Break	Roadside Clearance	PET067
Crane Hill cypress fuel reduction	Landscape	PET271
Bull Creek Fuel Break	Landscape	PET072

4.12.9 MATTOLE–LOST COAST ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of priority actions would best serve as a starting place towards the fire safety of the communities in this planning unit.

- The residents of the Mattole-Lost Coast Planning Unit are fortunate to live in an area with an active group that supports efforts to prepare for and protect them from wildfire and make progress towards community wildfire resilience. For that reason, it is a top priority of this plan to maintain and support the LMFSC.
    - Maintain the supportive relationship between the MRC and the LMFSC and work together to implement the Lower Mattole CWPP and local Firewise® action plans.
    - Reach out to establish increased participation from Humboldt Redwoods State Parks, BLM, and unrepresented neighborhoods.
    - Enhance outreach and education programs by developing multi-lingual materials.
    - Inspire more community involvement in and support of the LMFSC with outreach about what they do and how to get involved.
    - Ensure that the LMFSC continues to be represented on the Humboldt County FSC.
- Maintain the Petrolia and Honeydew Firewise Communities/USA® sites:
    - Actively implement and maintain the Firewise® action plans.
    - Focus activity on home hardening and defensible space.
    - Continue to host an annual Firewise® Day.

- Evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above and all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Petrolia* and *Honeydew Firewise Action Plans*, the *Lower Mattole CWPP*, this *Priority Action Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values. Coordinate this work among the members of the LMFSC, the PVFD and HVFC, the MRC, and other community groups.
- Support and expand the fire and fuels resources offered by the MRC through the Fire and Fuels Program.
    - Continue to work with landowners to plan and implement shaded fuel breaks along roadways and around infrastructure, plan large-scale fuel breaks and community safety projects in the Mattole Watershed.
    - Continue to offer the chipper program through MRC.
    - Continue to provide defensible space incentives and/or grant-funded work.
    - Work with the HCFSC to secure more funding to continue and expand the highly successful FLASH reimbursement program (or a similar program), which has promoted hundreds of acres of fuels reduction work around homes and access roads. Continue to educate landowners about fire hazard reduction and fire safety around homes.
- Priority areas within this planning unit for fuels reduction are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Prosper Ridge (PET295)
    - Evergreen Way (PET068)
    - Petrolia and greater area (PET294)
    - Neighborhoods off of the Mattole Road near AW Way park (Cooskie and Green Fir Roads, Miner Lane, and Mattole Camp) (PET296)
    - Honeydew and greater area / Bull Creek Road neighborhoods (PET298)
    - Wilder Ridge (PET297)
    - Panther Gap (PET299)
- The high fire danger, a large and dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a need for increased wildfire preparedness combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life. The importance of being prepared and evacuating early during extreme wildfire events cannot be overemphasized.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness. Work

together to review best practices as well as emerging new approaches. Areas of high priority include:

- Prosper Ridge
- Chambers Road
- Conklin Creek Road
- Evergreen Way
- Green Fir Road
- Neighborhoods located down one-way-in and one-way-out spur roads off of Bull Creek Road (some county maps refer to this road as “Mattole Road”), Wilder Ridge Road, and Mattole Road.

- Promote the study of and widely distribute documents such as "Ready-Set-Go", Living with Wildfire", "Ready for Wildfire", and others that are readily available. With this information, residents can begin to identify, evaluate, and mitigate those dangerous impediments to their safe evacuation, broaden their understanding of what is meant by 'extreme' wildfire weather and 'extreme' wildfire behavior, and sharpen their situational awareness.
- Identify local community liaisons to work directly with emergency management officials.
- Identify and map local evacuation routes and sites. The locally-produced Mattole Fire Atlas will be an important resource for this.
- Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
- Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under “Disaster Preparedness”.

- **D**evelop an improved disaster communication strategy.
  - Expand the NEST phone tree area, confirm participation and functionality, and diversify communication methods. Increase/initiate participation in the following areas:
    - Wilder Ridge and connecting spur roads
    - Bull Creek
    - Panther Gap
  - Both the NEST and the local OES coordinator systems are valuable community communication and evacuation resources and need to be maintained, supported, and expanded. They also need to be supplemented by additional communication systems. The OES coordinator system also needs to be reviewed and updated as necessary.
  - Confirm existing and or train new community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.

- Coordinate this work with the Humboldt County Office of Emergency Services (OES), CAL FIRE, and other applicable entities.
- Lobby for more cell and high band repeaters, especially on Cooskie Mountain to cover Petrolia and the King Range coastline.

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads for initial evaluation and outreach efforts include:
  - Chambers Road eucalyptus grove cleanup and roadside clearing (Highly ranked community-identified priority – PET065)
  - Cooskie Ridge Road (Highly ranked community-identified priority – PET067)
  - Green Fir Road
  - Old Hindley Road
  - Bull Creek Road (some county maps refer to this road as "Mattole Road") and spur roads to clusters of residences:
    - Meaux Road
    - Doreen Drive
    - Cartwright Road
    - Cathey's Peak Road
  - Wilder Ridge Road and spur roads to clusters of residences
  - Panther Gap
  - Lighthouse Road
  - Conklin Creek Road
- Work with residents to ensure adequate road and home address signage for more efficient emergency response.
  - Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
  - Work with County Planning and Building to ensure all residences have an assigned physical address—information that is vital to emergency response personnel.
- Collaborate with the Humboldt County Road Maintenance to strategically identify priority areas where **county** road conditions or overgrown vegetation is impacting or has the potential to impact emergency response and safe evacuation.
  - Repair Chambers Road bridge to ensure access for firefighting engines and water tankers. The current bridge is temporary and unrated for heavy loads (Highly ranked community-identified priority to be evaluated for need and feasibility – PET272)
  - Develop a prioritized list of county roads that need resurfacing.
  - The segment of road between Honeydew and Horse Mountain was identified as a particular area of concern for road surface conditions.
  - Address the evacuation hazards associated with the one-lane bridges near A.W. Way Park, Honeydew, and Ettersburg.

- Review the Humboldt County Rural Transportation and Access Partnership program for applicability to local issues.[25]
- Improve Panther Gap Road conditions and restore areas affected by landslides.

- **A**ddress road conditions on **private** roads that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments, starting with the following roads:
  - Prosper Ridge Road
  - Conklin Creek Road
  - Evergreen Way
  - Green Fir Road
  - Cartwright Road
  - Meaux Road
  - Cathey's Peak Road
  - Doreen Drive/Hilde Lane
- **C**ollaborate with local fire departments, CAL FIRE, emergency dispatch centers, Humboldt County Planning and Building, and the Humboldt County Road Maintenance to develop a strategy to address confusion about official road names.
  - Seek final resolution and correction of the road segment between Honeydew and Highway 101 (Bull Creek Road vs. Mattole Road).
- **C**ollaborate with agency and local partners and landowners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing. Evaluate the following priority areas for feasibility:
  - Bull Creek/Mattole Road fuel break (Highly ranked community-identified priority – PET072)
  - Crane Hill cypress fuel reduction (Highly ranked community-identified priority – PET271)
  - Shenanigan Ridge
  - Prosper Ridge
  - Appletree Ridge
  - Boots Canyon Ridgeline
  - Cooskie Ridge
- **C**ontinue to work with and expand participation in the Humboldt County Prescribed Burn Association to conduct prescribed burns on private lands.
- **T**ake part in fire ecology and conservation/restoration efforts designed to restore fire to Mattole ecosystems without damaging natural and community resources.
- **W**ork with Humboldt Redwood Company to identify priority areas for strategic vegetation treatments as described in the action item above.

[25] Contact County Roads for more information: *https://humboldtgov.org/1405/Road-Equipment-Maintenance*

- Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
- Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands.
- Organize dialogue to share community concerns about the use of herbicides to kill hardwood tree species and leaving them as standing snags. This practice is commonly referred to as "hack n' squirt" or "frilling". The objective of the dialogue will be to find common ground for reducing the associated wildfire hazards within this planning unit.

- Continue to explore options and make progress on local fire service sustainability efforts such as:
  - Developing recruitment and retention strategies for the Petrolia and Honeydew volunteer fire departments.
  - Establishing consistent and sustainable revenue sources.
  - Ensuring that all appropriate areas are within the boundaries of a fire-related district through district formation, annexation, and/or consolidation. To this end:
    - Continue to evaluate the feasibility of establishing the HVFC as an official fire protection district supported by consistent and dependable revenue sources and/or the feasibility of a consolidation with the Petrolia Fire Protection District.
    - Reevaluate the feasibility of Petrolia Fire Protection District annexing out of district response areas.
  - Support the HVFC's effort to purchase a much needed fire truck (funds have been raised and now the right truck needs to be located).
  - Develop a HVFC Panther Gap satellite station.
- Coordinate with local FSCs, fire departments, CAL FIRE, and the County to develop a method of determining whether fire ignitions and risks are declining as a result of the regulation of marijuana/cannabis cultivation and processing; make recommendations as appropriate.
- Share GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*) or other appropriate platform.
  - Compare GIS fire planning datasets, including planned and completed fuels reduction work compiled by the MRC, CAL FIRE, other local groups and agencies with GIS capacity, and the County and determine an appropriate sharing and maintenance process to ensure that the most up-to-date and accurate information is provided through the County Web GIS Portal or other appropriate platform.
  - Secure resources to update, maintain, and expand the Mattole Fire Atlas and coordinate the associate GIS data layers with other fire planning mapping products.
    - Work with partners in the Southern Humboldt Planning Unit to update the Upper Mattole Fire Atlas in the Upper Mattole communities of Ettersburg, Whitethorn, and Whale Gulch.

        - Map the areas north of Petrolia, including Humboldt Redwood Company lands in the Mattole, and residents and infrastructure all the way to Cape Mendocino.
    - Coordinate this effort with the work of the Humboldt County Fire Safe Council to implement the Integrated Planning, Fire-Planning Data Management priority action of the Countywide Action Plan (*Chapter 3, Section 3.6.4*).
- **I**ncrease the availability of water for fire protection by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment. Priority water needs to evaluate include:
    - Water tank at the Honeydew School (Highly ranked community-identified priority – PET284)
    - Water tank on Lighthouse Road
- **E**ncourage residents with unpermitted structures or additions on their property to participate in the Humboldt County Planning & Building Department's Safe Homes Program.[26] Educate those residents about the benefits of upgrading structures and/or bringing structures into compliance with current building codes.
- **W**ork with the HCFSC to share successful local strategies to help inspire similar action throughout the county.
- **W**ork with the North Coast Unified Air Quality Management District to pre-plan the distribution of Clean Air Refuges during periods of impaired air quality as a result of wildfire smoke and develop clear communication plans for helping residents find refuges if they need to go outside of this planning unit.

[26] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide Action Plan goal categories outlined in Part 3 of this CWPP. Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*. In addition, the Lower Mattole CWPP and local Firewise Action Plans provide detailed recommendations similar to the general guidance listed on the following pages. To guide local action, review those plans first.

Wildfire Ignition Prevention

- **I**mplement One Less Spark education: *readyforwildfire.org/one-less-spark-campaign*.
- **U**se *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *humboldtgov.org/livingwithwildfire*.
- **I**dentify primary ignition sources in the local community and focus prevention efforts on reducing them.
- **I**ncrease community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies in order to avoid an unintended wildfire.
- **I**nform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- **D**evelop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories about past coastal wildfire events.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- **P**rovide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- **C**ollaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot-spots for Sudden Oak Death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. See details in the *Priority Action Recommendations* above.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. See details in the *Priority Action Recommendations* above.
- Address road conditions that inhibit effective evacuation and access by emergency responders. See details in the *Priority Action Recommendations* above.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped and identifiable water sources for fire suppression, and to share that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection. See details in *Priority Action Recommendations* above.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local

fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.

- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

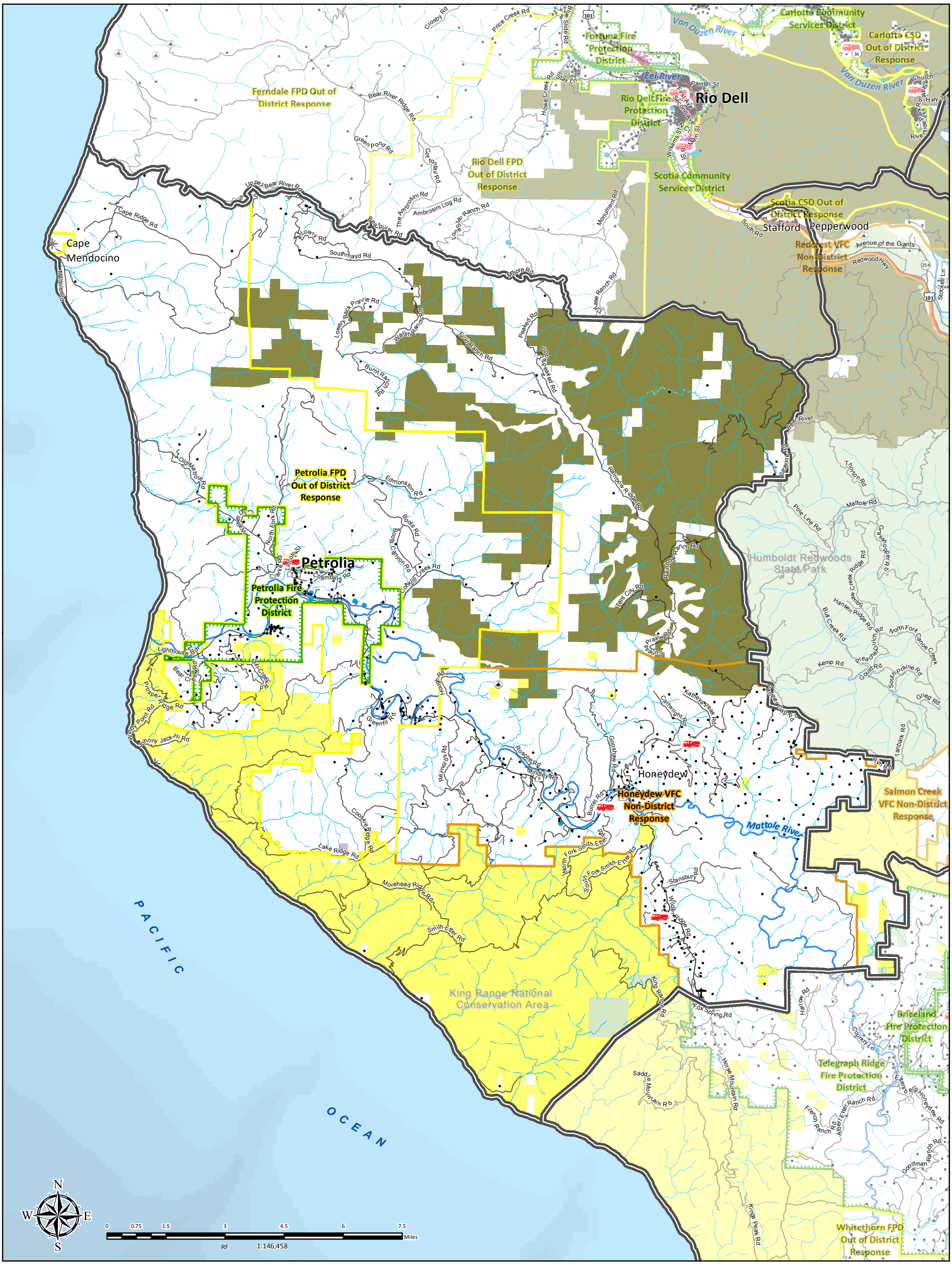
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[27]
- Share information about educational events that provide information about prescribed burning.
- Help federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

Integrated Planning

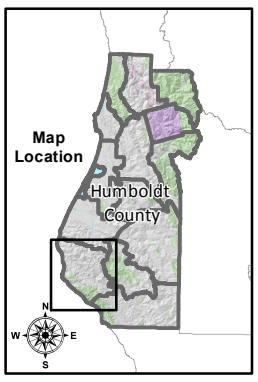
- Integrate, where there are mutual benefits, the community preparedness and wildfire resiliency efforts of the Lower Mattole FSC, Mattole Restoration Council, Firewise® groups, local fire departments, and other applicable agencies and organizations.
- Maintain participation in the Firewise Communities/USA® Recognition Program. See details in *Priority Action Recommendations* above.
- Share GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). See details in the *Priority Action Recommendations* above.

[27] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.12.1 MATTOLE–LOST COAST PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

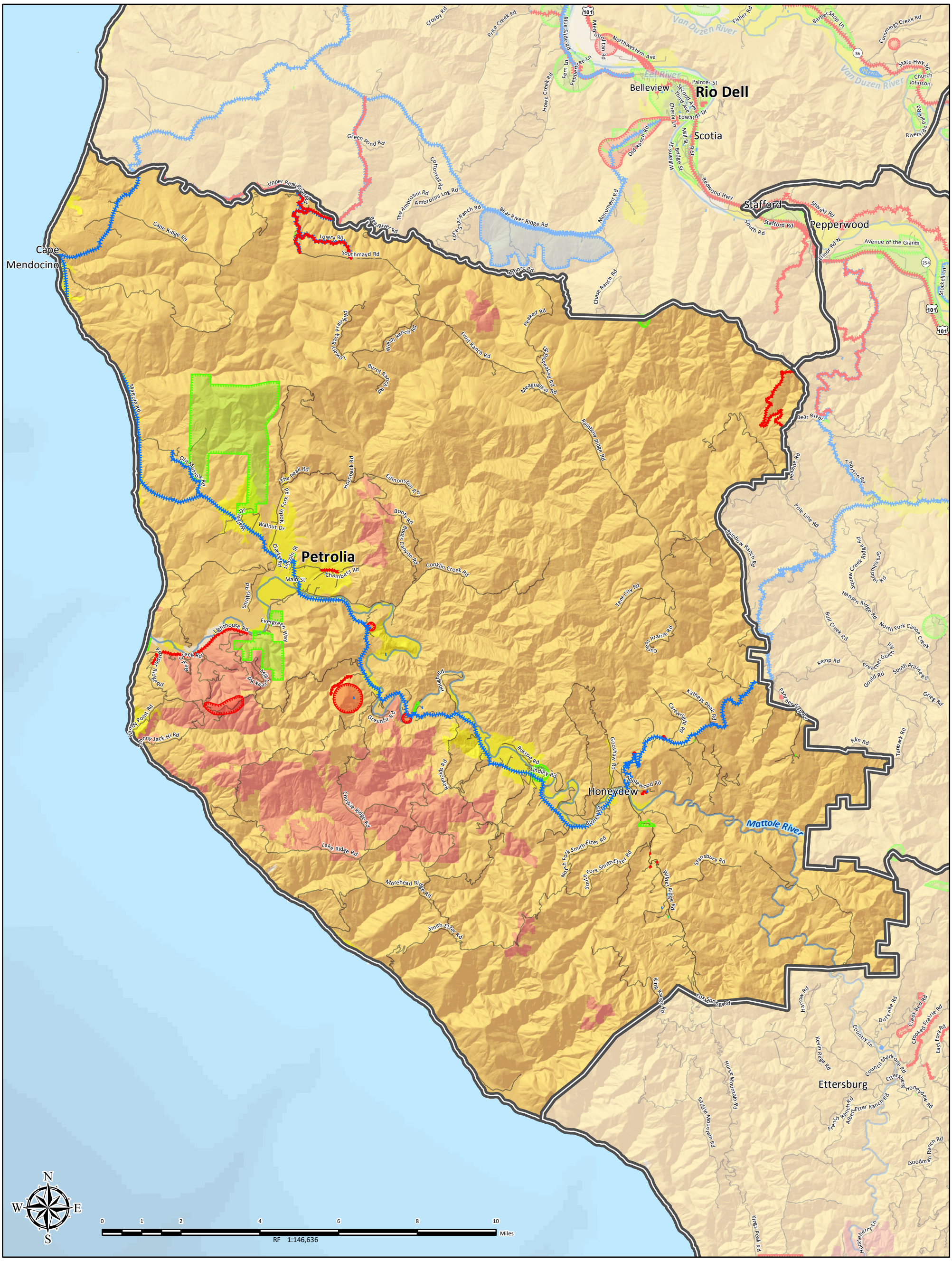
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

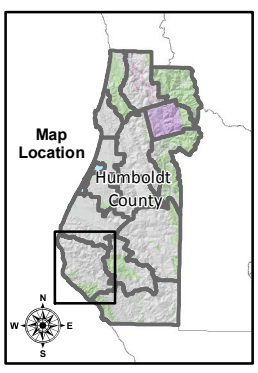
Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.12.2 MATTOLE–LOST COAST PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Projects
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- High
- Moderate
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

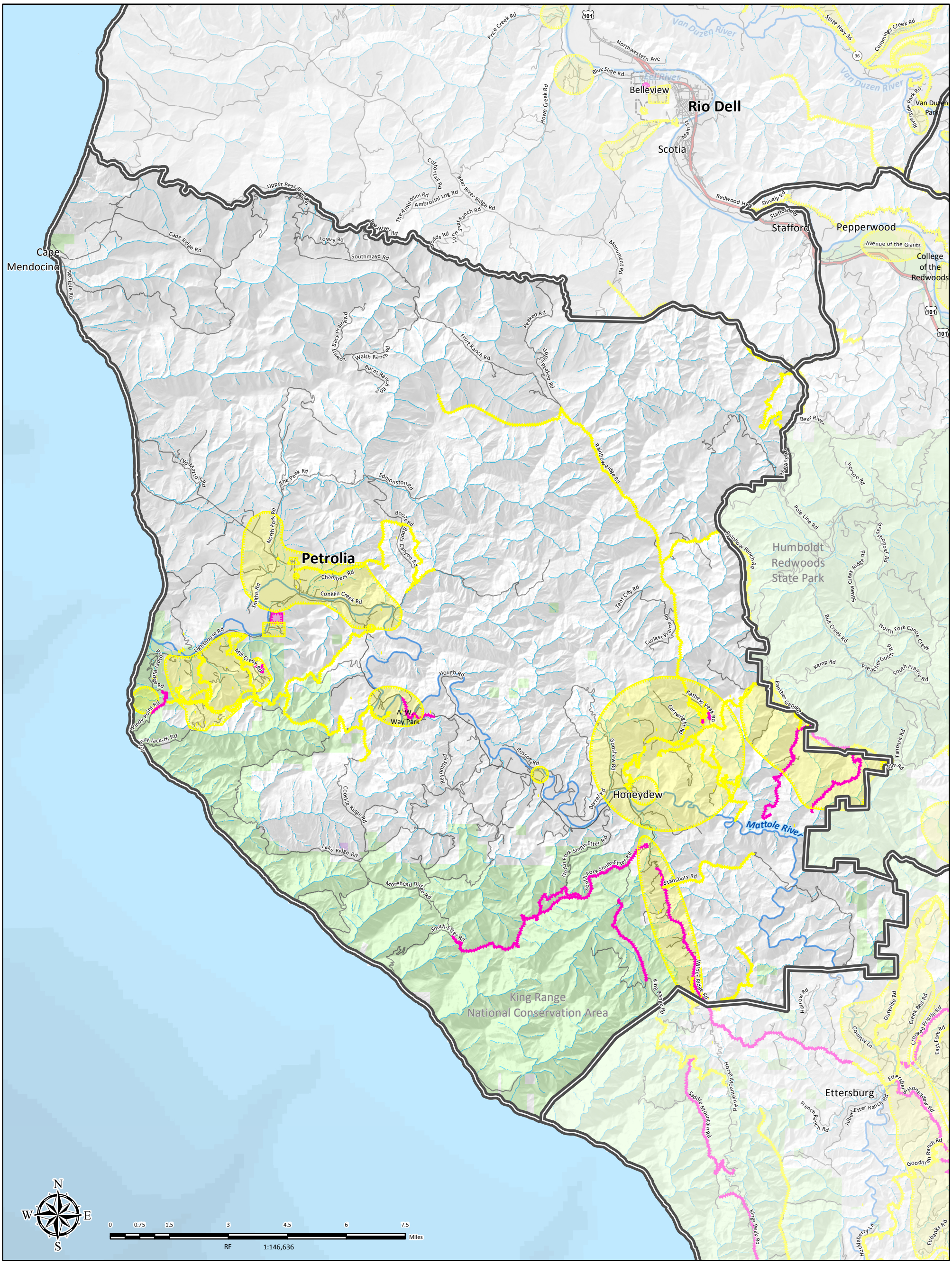
The map is intended for planning purposes and should not be used for precise measurement or navigation.

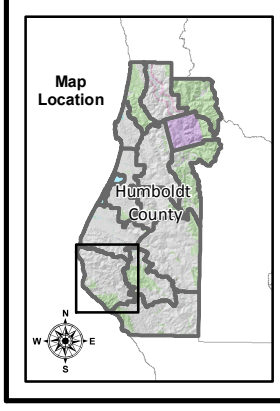
Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.12.3 MATTOLE–LOST COAST PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Cities

Land Ownership

Public Land

Tribal Land

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit: https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

SOUTHERN HUMBOLDT PLANNING UNIT ACTION PLAN



Example of fuel conditions in the King Range, Southern Humboldt. Photo: Southern Humboldt Fire Safe Council.

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Helpful Links

SOUTHERN HUMBOLDT FIRE SAFE COUNCIL:	*https://humboldtgov.org/1888/Southern-Humboldt-FSC*
SOUTHERN HUMBOLDT FIRE CHIEFS' ASSOCIATION:	*https://www.facebook.com/sohumchiefs*
SHELTER COVE FIREWISE:	*https://humboldtgov.org/1928/Shelter-Cove*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

SEE *FIGURE 4.13.5* FOR WEB LINKS TO LOCAL FIRE ORGANIZATIONS WHERE THEY EXIST.

4.13 SOUTHERN HUMBOLDT PLANNING UNIT ACTION PLAN

4.13.1 SOUTHERN HUMBOLDT PLANNING UNIT DESCRIPTION



A larger map of this Planning Unit can be viewed in Map 4.13.1, ***Southern Humboldt Planning Unit.***

The Southern Humboldt Planning Unit encompasses a large portion of the southern half of Humboldt County, totaling over 255,000 acres, with a wide range of land uses and geographical types.

The Southern Humboldt region is one of the most spectacularly rugged and difficult to access areas in California. A series of four major northwest trending ridges reflect the geologic grain of the region. Rising to 4,000 feet above the Pacific Ocean the rugged King Range forms the western margin of the Southern Humboldt Planning Unit. This "Lost Coast" is so rugged that coastal Highway 1 was ended just to the south. Each year the spectacularly beautiful King Range National Conservation Area, Shelter Cove, and the adjacent Sinkyone Wilderness State Park attract increasing numbers of people hiking, backpacking, mountain biking, surfing, boating, fishing, sightseeing, and car camping.

Just inland from the coast, the Mattole River flows north between the Kings Range and 1,500 foot high Telegraph/Gibson Ridge. Farther to the east is 2-3,000 foot high Elk Ridge, followed by the north trending South Fork Eel River in the center of the unit. Highway 101 follows this valley and is the major lifeline of access to the region. Twenty five hundred foot high Mail Ridge separates the South Fork of the Eel River from the Wild and Scenic Eel River Canyon, a mecca in the spring and early summer for white water rafting and canoeing. East of the Eel River, is an area of rolling hills with large ranches, extending about eight miles east to the Humboldt — Trinity County line.

The Southern Humboldt community designation comes from its isolated position between Eureka to the north and Willits to the south, as well as the links provided by east-west trending county roads from Shelter Cove on the coast, and from Alderpoint further inland, that feed into the commercial hub of Redway/Garberville. Secondary spur roads off of these roads serve a wide area to the north to the Salmon Creek Watershed and south to the area partly defined by the Humboldt County boundary just south of Richardson Grove State Park.

Whale Gulch is a community located in Mendocino County, outside of this planning unit, but primarily accessed from the Humboldt County side with its population orienting towards Redway and Garberville for services. Although Whale Gulch is not included in this countywide Community Wildfire Protection Plan (CWPP), it is a planning area within the area of Southern Humboldt Fire Safe Council (SHFSC) activity. The SHFSC also serves a narrow strip of Trinity County between Palo Verde and the Eel River. *To learn more about the Southern Humboldt FSC, see section 4.13.6,* ***Community Preparedness*** *below.*

> ***Watershed:*** All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.

FIGURE 4.13.1
SOUTHERN HUMBOLDT COMMUNITIES

Alderpoint	Harris
Benbow	Palo Verde
Briceland	Redway/ Garberville
Ettersburg	Shelter Cove
Fort Seward	Whitethorn

Wildland-urban interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

In addition to the larger population centers of Redway, Garberville, Benbow, and Shelter Cove, there are a number of smaller communities within the planning area. To the east of Highway 101 are Alderpoint, Rancho Sequoia, Fort Seward, and Palo Verde; to the west are Briceland, Whitethorn, and Ettersburg. Throughout the planning unit are small rural homesteads formed by the subdivision of ranches into many parcels 20 to 60 acres in size on average. This, combined with a scattering of miscellaneous homesteads and rural homes is where the categorization of the *wildland urban interface* or WUI really applies.

West of Highway 101 is a large populated area resulting from the subdivision of several ranches. This area includes most of the Redwood Creek Watershed and extends northward into the Blue Slide Watershed, Crooked Prairie, and Dutyville. This same pattern continues along Telegraph Ridge and south past Whitethorn to Whale Gulch. Several medium-sized, intact ranches dominate the area around Ettersburg to the north. The King Range National Conservation area along the western margin of the Unit is managed by the Bureau of Land Management (BLM). A large unpopulated area of Sproul Creek Watershed, along the south boundary of the Planning Unit, is owned by Barnum Timber Company. The Nielson Ranch subdivision is located between this Barnum land and Richardson Grove State Park along Highway 101. The area to the east of the populated areas along Highway 101 is more sparsely populated with much of the area devoted to large ranches; this area includes Harris, Rancho Sequoia, and Palo Verde.

It should be noted that a new planning unit—the Avenue of the Giants Planning Unit—has been created to facilitate planning and cooperation up and down the Avenue from Shively, south to Phillipsville. This has changed the Southern Humboldt Planning Unit boundary to eliminate Phillipsville, Miranda, and Weott along the Avenue, and the associated watershed of Salmon Creek, as well as Humboldt Redwoods State Park.

4.13.2 SOUTHERN HUMBOLDT ASSETS AND VALUES AT RISK

Wildfire: An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out. See also: Wildland Fire.

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The assets at risk in this planning unit are as diverse as the land uses within the region. The majority of community assets at risk include residential homes and neighborhoods, along with a variety of commercial and service industries, community centers, schools, fire stations, churches, historic sites, post offices, medical and dental clinics, municipal buildings as well as infrastructure components, such as water treatment plants and a communication site. The ranching, agricultural, and timber industries within this planning unit are also considered assets at risk. This planning unit also contains several campgrounds and RV Parks.

The Southern Humboldt Planning Unit contains many areas of great environmental significance. The South Fork Eel River and its tributaries are ecologically valuable for the fish they support, including coho and Chinook salmon, and steelhead trout. However, the ability of these populations to reproduce successfully has been negatively affected by heavy sedimentation in the river. The South Fork Eel River Watershed is listed as an impaired water under section 303(d) of the Clean Water Act due to impairment

and/or threat of impairment to water quality by sediment and temperature.[1] The river also provides numerous recreational opportunities for communities in the area. Many culturally sensitive sites of special importance to Native Americans also exist throughout the Planning Unit.

Map 4.13.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[2] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Over 300 features have been identified as values or assets within the Southern Humboldt Planning Unit. Most of the community-identified assets at risk can be categorized as shown in the figure below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.13.2 SOUTHERN HUMBOLDT: COMMUNITY-IDENTIFIED ASSETS AT RISK

- Community services (i.e. community centers, post offices, schools, and churches)
- Infrastructure (i.e. power stations, treatment plants, gas stations)
- Recreation (i.e. campgrounds and state parks)
- Historic (i.e. hotels, ranches, general stores)
- Fire Stations

4.13.3 SOUTHERN HUMBOLDT WILDFIRE ENVIRONMENT

Approximately 76% of the Southern Humboldt Planning Unit is zoned "High *Fire Hazard Severity*," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[3] Approximately 23% of the Unit, including much of the northeastern portion and areas surrounding Garberville and Shelter Cove are zoned "Very High Fire Hazard Severity," with only about 1% of the Unit zoned "Moderate Fire Hazard Severity". *For a closer look at fire hazard severity, see Map 4.13.2,* ***Southern Humboldt Protection Resources, Values/Assets, and Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?

- The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
- Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
- Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
- While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

[1] North Coast Regional Water Quality Control Board. (2017). Eel River, South Fork TMDL: Federal Status. Retrieved from *https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/eel_river_south_fork*

[2] Geographic Information Systems (GIS).

[3] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, vehicles dragging chains while towing or issues with tires that throw sparks, smoking, playing with fire, poorly maintained debris burning or camp fires, ignitions associated with marijuana cultivation and processing, and arson are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources. Lightning is the most probable natural cause of fire starts within this planning unit. Several large wildfires have been started by lightning during thunderstorms that ignited more fires than firefighting resources could keep up with.

Other factors that are likely to have a future impact on fire risk within this unit include climate change, which is likely to extend the dry season and large fuel increases resulting from the spread of *Sudden Oak Death (SOD)*—which has already been detected in areas of the watershed. The steep topography of this planning unit can also accelerate the rate of fire spread and make access for firefighters very difficult. This, combined with local weather patterns, high fuel loads, and homesteads spread across the landscape, creates a potentially dangerous wildfire environment.

This region has a Mediterranean climate with wet winters and hot, dry summers. The coastal fog zone has a moderating influence on summer temperatures. The northeast part of the Planning Unit is also often within the summer-time fog incursion up the Eel River. Average annual rainfall decreases eastward, ranging from about 89 inches per year in the Shelter Cove area to about 55 inches around Alderpoint. There is a Remote Automated Weather Station (RAWS) at the Eel River Conservation Camp near Redway and another near Alderpoint. Real time data from these stations includes the current day's hourly records for wind speed and direction, temperature, dew-point, relative humidity, precipitation, fuel temperature, and fuel moisture.[4] This data is critical for monitoring air quality, predicting fire behavior, and rating fire danger.



Open grassland and Douglas fir forest are interspersed across Southern Humboldt. Pictured above, young fir trees colonize oak woodland/grass savannah. Photo: Linda Stansberry for North Coast Journal.

The vegetation found within this planning unit (*see cover photo*) follows a loose general pattern of dense young Douglas fir and tan oak dominated forests in the west, to more open oak woodlands, mixed conifer forests, and prairies in the east. Coast redwood forests are found in the fog incursion areas of the South Fork of the Eel River and the upper Mattole River. Upslope and drier areas support mixed conifer forest with Douglas fir, and hardwoods; the more common hardwoods being tan oak, madrone, black oak, white oak, and canyon live oak. Many of the ridgetops and much of the area on Mail Ridge were historically characterized by extensive areas of oak woodlands and prairies.

Tan oak bark removal in the early 1900s and timber harvesting into the 1960s left many areas, which were previously dominated by conifers, in a depleted condition. These areas are often now dominated by hardwoods, especially tan oak and madrone. High intensity fires, fueled by logging slash, have further contributed to unhealthy conditions. The resulting dense young forest stands pose a very serious fire risk, especially in the area from Briceland, west to the coast.

[4] General information about this system may be found at *https://raws.nifc.gov*. For the Eel River Conservation Camp RAWS and Alderpoint RAWS data go to: *https://raws.dri.edu/wraws/ncaF.html*. The National Weather Service office in Eureka has a fire weather page with the latest fire related predictions for Northwestern California: *http://www.wrh.noaa.gov/eka*. NOAA's Wildfire Weather Safety page may also be of interest: *https://www.weather.gov/safety/wildfire*.

Another ongoing change in forest composition is the encroachment of Douglas fir into oak woodlands. According to Tom Keter, a Six Rivers National Forest researcher, between 1865 and 1985, oak woodland area along the North Fork of the Eel River (just east of this planning unit), decreased from 38% to 8% and Douglas fir increased from 6% to 38%. Keter attributes this change to the cessation of Native American burning. Observations of many areas throughout this unit indicate that Douglas fir is invading meadows and oak woodlands, eventually shading out the oaks and other hardwoods. With timber production being a primary source of income for many in the region, there has been a general acceptance of the invasion of fir trees among many landowners. However, as knowledge of fire ecology and the wildlife value of oak woodlands and meadows increases, more landowners are beginning to question the spread of the fir forest. The importance of protecting white, black, and canyon live oaks, as well as other hardwoods from encroaching Douglas fir, is gaining recognition.

On the one hand, there are areas of oak woodland and prairie that are rapidly being taken over by Douglas fir, and on the other hand, there are large areas of cutover conifer land now often dominated by hardwoods. The latter situation is particularly problematic for landowners involved in timber production. Some forest managers feel they can't wait for conifers to reestablish dominance and have resorted to the use of herbicides to kill hardwood competition. In either situation, the average small landowner is not engaging in active forest management, except perhaps for some fire hazard reduction work around homes and along driveways.

A further confounding factor related to wildfire hazards is the spread of *Sudden Oak Death* (SOD), which kills tanoak and oak species. The trees provide valuable acorn forage for an array of wildlife but once killed, they represent a significant fire hazard by creating a patchwork of dry fuel within the forest. It was first identified in Humboldt County in 2002 in the Redway area. It has since spread throughout Southern Humboldt and has appeared in parts of Humboldt County. As of late 2018, SOD has spread from the Redway area west to the Mattole Watershed; north to Redwood Creek; south to Piercy; and east to Trinity County. The disease cycles with warm abundant rains and has pulse years of mortality. Research has shown that the disease significantly elevates the fire risk.[5]

Sudden Oak Death (SOD): A disease in oak trees that is a caused by *Phytophthora ramorum*, an invasive forest pathogen introduced to California in the mid-1990s through the horticultural plant trade. Affected areas can have a significantly higher fire hazard due to higher proportions of dead fuels of all sizes and prevalence of snags.

Communities within the Southern Humboldt Planning Unit are increasingly vulnerable to damage from wildfire and the process of adapting to living safely within a wildfire environment is going to take significant time and effort. Few current residents truly understand defensible space and fewer still the crucial and underappreciated concept of fire-hardened homes. The buildup of fuel has increased the potential for higher intensity fires, loss of life and property, and higher wildfire suppression costs. Many communities within this planning unit have been included in the list of communities at risk created as a fundamental step in implementing the National Fire Plan.[6] Furthermore, the increasing subdivision of timber- and ranchlands throughout the planning unit area has generated an increase in the number of homes that exist in the wildland-urban interface (WUI), which increases the likelihood that wildfires will spread to structures, and vice versa.

Local fire service representatives and residents have reported that there is a shift in landownership and uses that could increase the risk of wildfire ignitions. There are reports of people selling their land because they do not anticipate being able to financially survive the shift to a legal marijuana or cannabis economy. It is unclear what this will mean for future ownership trends but some surmise that new

[5] Find out more about SOD and impacts on local watersheds at: http://cehumboldt.ucanr.edu/Programs/Forestry/Sudden_Oak_Death

[6] CAL FIRE. (2001). Communities at Risk List. Retrieved from http://osfm.fire.ca.gov/fireplan/fireplanning_communities_at_risk

landowners, unaccustomed to living in the WUI and/or perhaps engaging in hazardous activities such as marijuana cultivation and processing, could increase wildfire ignition risk. The influx of seasonal workers associated with marijuana production increases human activity that could contribute to an increased wildfire ignition risk during the height of fire season.

Some fire service personnel report that they have seen an increase in marijuana fire ignitions and risks over the past decade. This includes spark-generating equipment such as vehicles and generators, faulty wiring, and extraction labs, some using explosive butane. These ignition sources are not only a wildfire risk but can create dangerous conditions for responding firefighters.

The number of fires started by or associated with marijuana operations is not tracked, so it is difficult to document the extent of this impact. It is also unclear how the legalization and regulation of this industry will impact associated wildfire risks. However, there is enough concern to warrant prioritizing wildfire preparedness outreach to the associated population. In addition, it will be important to develop strategies to better track marijuana related fire ignitions and determine if associated regulation and permitting result in a reduction or change in the number of ignitions. This Plan recommends monitoring regulatory effectiveness in this regard and making changes as necessary.

Garberville and Redway, the population and commerce centers of this planning unit, have adjacent forested areas to the north and east. Warm fire winds from the northeast could easily spread embers across one of the towns, starting multiple fires, and overwhelming firefighting efforts. In Garberville, the SHFSC helped organize a CAL FIRE inmate crew to build a fuelbreak along the top of Bear Creek Canyon, directly adjacent to the north edge of Garberville—a good start, but much more of this work is needed. The worst case scenario of a large summer earthquake simultaneously blocking access/escape routes and starting wildfires would be devastating for the dispersed neighborhoods of the Southern Humboldt Planning Unit. Preparing for every possible scenario, including the worst case, is going to be essential for survival and will support efforts to bring balance back to the wildfire environment.

Fire History

Fire scar tree ring data show that several hundred years ago, fires in this region occurred at least as often as every ten years. These wildfires appear to have been mostly low-intensity burns that did not kill larger trees in the forests. Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. The local Native American people were Athabascan tribes that lived in the area that is now Southern Humboldt, Western Trinity, and northern Mendocino Counties. The Sinkyone[7] tribal territory extended from the ocean to about the South Fork of the Eel River, and from the Bear River to the north, to beyond Whitethorn to the south. In winter, the Sinkyone lived in small villages of relatives and in summer, they scattered into smaller groups on the ridges and at the ocean. The Wailaki[8] tribe lived to the east of the Eel River.

While lightning likely caused some of the frequent fires, it is believed that Native Americans were responsible for most of them. The sophisticated fire management techniques used by California Native Americans have been well documented by Thomas Blackburn and Kat Anderson in *Before the Wilderness, Environmental Management by Native Californians* and by Kat Anderson in *Tending the Wild, Native American Knowledge and the Management of California's Natural Resources*. Burning was conducted to promote edible plants, produce quality basketry materials, control oak diseases, reduce

[7] Information about the Sinkyone can be found in *Sinkyone Notes*, by Gladys Ayer Nomland; a compilation of information gathered in 1928-1929 from the last three surviving full-blooded Sinkyone, Jack Woodman, Sally Bell, and Jenny Young, all of whom lived in the Briceland area.

[8] A good source of information about the Wailaki tribe can be found in the interviews of Lucy Young at *http://www.blocksburg.com/history.php*.

fire danger, promote forage, and keep the forest open for travel and hunting. When European settlers moved in, Native Americans often clashed with them over continuing their burning practices.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. Fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

Some of the early agricultural settlers in the mid-1800s used intentional burning to clear and maintain grasslands for pasture animals. However, a heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable vegetation in forest understories, which increases the risk of high-intensity wildfires. Overcrowded forests, packed with accumulated fuel, threaten forest ecosystems accustomed to low-intensity fires that burn off brush and young saplings competing in the understory. Timber harvests during the 20th century further exacerbated damages to forest ecosystem health. Douglas fir, unchecked by low intensity fires, is rapidly encroaching into oak woodlands, grasslands, and hardwoods in mixed conifer forests. This process is threatening ecosystems, wildlife habitat, and negatively impacting the forests' resiliency to wildfire. The extent to which the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area. **Approximately 49% of the Southern Humboldt Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 16% of the area is condition class 2, or moderately altered from the historical range.**

Two fire weather patterns have historically caused or spread the largest and most dangerous wildfires in the Southern Humboldt Planning Unit. These weather patterns are warm, dry Santa Ana-type interior winds out of the northeast, and dry regional summer-time lightning storms that sometimes start hundreds of fires over a large area. These fire weather events both have the potential to overwhelm emergency response by igniting many fires at one time or spreading fires very rapidly.

The classic example of a wind driven fire is the 1973, 13,500 acre, Finley Creek Fire that burned 10,000 acres from the Ettersburg area to Shelter Cove in one day! Today this burn area contains hundreds of homes in a young, brushy forest that is at least as hazardous as it was in 1973. The photo to the right shows a home located on upper Telegraph Creek Road in Shelter Cove within the footprint of the Finley Creek Fire. Note the fir snag created by the Finley Creek Fire.



Home built in the footprint of the Finley Creek Fire. Photo: SHFSC.

More recently, on August 3, 2017, the Saw Fire erupted when a vehicle caused the ignition of roadside vegetation. The quickly moving fire threatened residences above Garberville in the Upper Sawmill and Lower Sawmill Road neighborhoods where evacuation orders were enacted. The Saw Fire came very close to being the catastrophic event that local firefighters worry about. The fire started under hot and dry conditions and began to grow quickly, primarily located off Alderpoint Road and Lower Sawmill Road but starting spot fires nearby, as well. Even though local and state firefighting resources were simultaneously involved in suppressing a second fire in the Blocksburg area and many were helping with wildfires in other counties, a quick and effective response was organized and the fire was contained at 53 acres before it reached homes and infrastructure. This close call underscores how important it is to be vigilant between June and October when conditions can be just right for a fire ignition to take off into a fast moving and hard to contain wildfire.



The 2008 Paradise Fire, with the smoke plume blowing toward Shelter Cove, a few miles to the southwest. Note the dense forest of young tan oak and second growth fir.

In June of 2008, a dry lightning storm ignited more than 2,000 fires in northern and central California. Firefighting capacity was overwhelmed. Local resources, including volunteer firefighters, worked to suppress the fires for the first few days until reinforcements could be brought in. The California National Guard and firefighters from southern California, other states, and even foreign countries were brought in to help. One of these fires, the Paradise Fire (photo at left), occurred a few miles northeast of Shelter Cove, causing concern that another Finley Creek Fire was about to happen. A large amount of firefighting resources were immediately dispatched to this fire and it was contained at 981 acres, sparing Shelter Cove. Severe fires of this type will certainly occur again in populated areas of Southern Humboldt—a fact that very few of the new wildland residents fully understand. It is truly a miracle that neither homes nor lives have been lost to any recent fires in the area.

The wildfires described above are testament to the area's very active wildfire history. Although wildfires have occurred in and around the populated areas of this planning unit, most of them were kept relatively small. Based on this history, it is clear that there is potential for wildfire ignition within this planning unit and there are neighborhoods located in historical wildfire footprints where fuel loads have been increasing. The conditions for wildfire are ripe and it is essential that the hazard mitigation actions already in progress continue and expand in scope. The table below lists recent large (over 10 acres) wildfires and their causes.

FIGURE 4.13.3 SOUTHERN HUMBOLDT: FIRES OVER 10 ACRES 1997-2017[9]				
Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Honeydew	Lightning	2003	1,696	11,794
Steelhead 1-54	Lightning	2015	1,403	1,403
Paradise	Lightning	2008	1,072	1,072
Dobbyn 1-57	Lightning	2015	787	787
Wildcat 1-51	Lightning	2015	283	283
"10"	Lightning	2003	213	213
Winchester 1-47	Lightning	2015	147	147
Horse	Unknown/ Unidentified	2015	146	146
Pratt	Equipment Use	2009	142	142
Stewart	Power Line	2008	68	169
Saw	Vehicle	2017	53	53
Casterlin	Power Line	2006	34	34
Miller	Power Line	2017	34	34
French	Unknown/ Unidentified	2009	27	27
Buck	Equipment Use	2015	16	16
Goodman	Equipment Use	2009	13	13
Note: An interactive map of fire history through 1908 is available through the County Web GIS.				

Structural Ignitability

Structural ignitability: The ease with which a home or other structure ignites.
Wildland-urban interface (WUI): The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.

Neighborhoods in this unit exist within the *wildland-urban interface* (WUI), which increases the risk of wildfires becoming structural fires, and vice versa. Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, fire hardening the home is at least as important as creating defensible space and should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[10], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes located in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

[9] CAL FIRE. (2018). FRAP. State Fire Perimeters 1908-2017.
[10] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

It is a well-known fact—albeit difficult to quantify—that there are many homes built in this planning unit without permits. There are also many homes that were built before building code compliance was required; building codes include standards intended to harden homes against damage from wildfire. In addition, in some instances, alternative owner-builder permit procedures can be used, for which many of the standard permit requirements do not apply, including those intended to harden homes against wildfire. Many of these unpermitted, pre-code, and alternative owner-builder permitted homes are especially vulnerable to wildfire ignition. That being said, and based on recent examples in neighboring counties, all homes in this planning unit have vulnerabilities to wildfire and steps should be taken to mitigate wildfire impacts. In an effort to incentivize building permit compliance for existing unpermitted structures, the Humboldt County Planning and Building Department is administering the Safe Homes Program.[11] Through December 31, 2022, the Humboldt County Planning and Building Department and the Humboldt County Division of Environmental Health will waive penalty fees associated with construction permits; all customary permit fees will still apply and applicable codes and regulations will need to be met.

SAFE HOMES PROGRAM

For additional information and submittal requirements contact:

Humboldt County Planning & Building: **707-445-7541**

https://humboldtgov.org/156/Planning-Building

Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to structural ignitability. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and siding add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[12]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Map 4.13.2, found at the end of this Unit Action Plan, illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

Potable water and fire protection water are provided to the majority of communities in this unit by a number of special districts including the Garberville Sanitary District branch of the Garberville/Redway Community Services District; the Alderpoint County Water District, which covers approximately 370 acres[13]; and the Shelter Cove Resort Improvement District. Water in Benbow is provided by the Benbow District which is owned by Del Oro Water Company, an investor-owned utility regulated by the California Public Utility Commission that provides water to a number of communities throughout Northern California. The Briceland Community Services District serves just 70 acres and in recent years has struggled to meet demand due to poor facility conditions.[14]

[11] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

[12] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

[13] Humboldt Local Agency Formation Commission. (Adopted 2009). Alderpoint County Water District Municipal Service Review. Retrieved from *https://humboldtlafco.org/msr-soi-reports*

[14] Humboldt Local Agency Formation Commission. (Adopted 2016). South County Regional Fire Services Municipal Service Review. Retrieved from *https://humboldtlafco.org/msr-soi-reports*

Residents outside of these service districts obtain water through other means, such as drawing from nearby creeks, springs, and wells. Creeks and swimming holes, such as Delta Hole, are also drawn upon by firefighters to draft water for fire protection.

There are areas within this planning unit that have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially overtaxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters, and for community members to ensure that their water sources are properly outfitted.

Community-identified locations from which fire protection water could be drawn are listed below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.13.4 SOUTHERN HUMBOLDT: FIRE PROTECTION WATER DRAFT SITES	
○ Lauffer Ranch Ponds	○ Fort Seward – East Side River Access
○ Barnes Pond	○ Water Drafting Spots on River near Benbow
○ Duggans Mill	○ Miller's Pond - Sprowel Creek
○ Hans Ponds	○ Heartwood Pond
○ Sprowel Creek culvert on West Moody Road	○ Heartwood Pool
Note: Locations identified at community workshops will need to be vetted further with local firefighting personnel.	

Map 4.13.2, found at the end of this Planning Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

4.13.4 SOUTHERN HUMBOLDT FIRE PROTECTION CAPABILITIES

There are various special districts that provide fire protection within this planning unit, including a resort improvement district, a community services district, and fire protection districts (FPD). These districts are financially supported by revenue generated from a variety of sources that can include property taxes, special taxes and assessments, donations, fundraisers, and payments from the state for CAL FIRE station coverage or wildfire assignments. Fire protection services within these districts are provided by volunteer fire departments (VFDs), which supply the communities in this unit with fire protection, as well as medical and rescue services. There are also several non-tax supported fire companies, which do not have a designated jurisdictional boundary. These companies are supported by donations, grants, and CAL FIRE station coverage or wildfire assignments.

In November 2014, Humboldt County passed Measure Z, a half-cent sales tax to provide funding for public safety services. The Humboldt County Fire Chiefs' Association secured funding from the tax, distributing it to local fire departments to purchase new fire engines, personal protective gear, and other essential equipment. Voters expressed their desire to see continued improvement in the local level of service by passing Measure O in 2018, which continues the half-cent sales tax indefinitely.

Even with the aid of Measure Z funds, the local fire and rescue services within this planning unit still face issues with inadequate facilities and equipment and have an ongoing need for more volunteers. Reports from fire service personnel indicate that a continued challenge is convincing absentee property owners, particularly in the Shelter Cove area, to reduce fuel loads on their undeveloped lots. The clean-up and prevention of illegal marijuana grows that can involve toxic substances is another ongoing challenge. The number of fires started by marijuana operations is not tracked, so it is difficult to document the extent of this impact.

FIGURE 4.13.5 SOUTHERN HUMBOLDT: FIRE PROTECTION RESOURCES (SPECIAL DISTRICT, TAX OR FEE SUPPORTED)[15]			
PERSONNEL	RESIDENTS	AREA (SQ. MI.)	FIRE APPARATUS
BRICELAND FIRE PROTECTION DISTRICT – PHONE: (707) 923-7204/0023 EMAIL: *bricelandfire@gmail.com* ● WEB: *bricelandfire.org*			
19 Volunteer 17 Auxiliary	650	40	○ Type-1 4WD engine ○ (2) Type-3 4WD engines ○ (2) Type-6 4WD engines ○ Type-S3 water tender, 1,500 gallons ○ 4WD Command/EMS vehicle
GARBERVILLE VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 923-3196 ● EMAIL: *GFPDPublic@gmail.com*			
15 Volunteer 6 Auxiliary	847	702	○ (2) Type-2 engine, 1,000 gallons ○ Type-2 engine, 750 gallons ○ Utility truck ○ Rescue vehicle
REDWAY FIRE PROTECTION DISTRICT – PHONE: (707) 923-2617 ● EMAIL: *redwayfire@gmail.com*			
13 Volunteer	1,024	12	○ (2) Type-1 engines ○ Type-4 quick attack engine ○ Water tender, 2,000 gallons ○ Utility vehicle
SHELTER COVE VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 986-7507 EMAIL: *scfd@sheltercove-ca.gov* ● WEB: *sheltercove-ca.gov/fire/fire.htm*			
16 Volunteer 1 Auxiliary	693	49	○ Type-1 engine, 1,000 gallon ○ Type-3 engine, 300 gallon ○ Type-4 engine, 200 gallon ○ Type-1 pumper, 750 gallon ○ ALS/BLS 4x4 ambulance ○ (2) ATV rescue units ○ (2) Ocean rescue units
TELEGRAPH RIDGE FIRE PROTECTION DISTRICT – PHONE: (707) 986-7488 OR (707) 223-3262 EMAIL: *peter@asis.com*			
12 Volunteer 2 Auxiliary	235	36	○ 4WD pumper, 500 gallon ○ 2WD pumper ○ (3) Type-4 quick attack engines
WHITETHORN FIRE PROTECTION DISTRICT – PHONE: (707) 986-4103 EMAIL: *whitethorn.fire@gmail.com*			
11 Volunteer	300	24	○ (2) Wildland Type-3 engines ○ Quick attack pick-up ○ Type-2 pumper, 1,000 gallons ○ BSL/Rescue Ambulance

[15] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 13-14, 19, 22, 24, 27-28). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

FIGURE 4.13.6 SOUTHERN HUMBOLDT: FIRE PROTECTION RESOURCES (NON-DISTRICT, NON TAX-BASED)[16]			
PERSONNEL	RESIDENTS	AREA (SQ. MI.)	FIRE APPARATUS
ALDERPOINT VOLUNTEER FIRE COMPANY – PHONE: (707) 926-5486			
17 Volunteer 3 Auxiliary	186	128	○ Type-2 engine, 750 gallons ○ Type-3 engine, 500 gallons
PALO VERDE VOLUNTEER FIRE COMPANY – PHONE: (707) 499-7570 OR (707) 498-0182			
30 Volunteer 10 Auxiliary	-	115* *includes Mendocino and Trinity County	○ Type-3 engine ○ Quick attack/medical response truck ○ Water tender, 2,500 gallons
SPROWEL CREEK VOLUNTEER FIRE COMPANY – PHONE: (707) 223-3399/1070/1449			
20+ Volunteer	Neilson Ranch subdivision, Garberville	4	○ Type-2 engine, 2WD, 350 gallons ○ (2) Type-2 engines, 4WD, 300 gal. ea. ○ (2) Type-3 engine, 2WD, 700 gallons ○ (2) 4WD trucks
WHALE GULCH VOLUNTEER FIRE COMPANY – PHONE: (707) 986-1219 OR (707) 986-7356			
22 Volunteer	-	11 Total, 2.5 in Humboldt County	○ (2) Type-3 engines, 500 gallons each ○ Quick Attack, 280 gallons
Note: Non-district VFCs rely largely on donations and various fundraising efforts from within their communities. These entities provide fire protection, as well as medical and rescue services.			

CAL FIRE also has several stations located throughout the Planning Unit. Staffing levels at the Garberville station vary throughout the year, but remain adequate for emergency response during most of the year. Other stations, located in Alderpoint and Whitethorn (Thorn) are only staffed seasonally, during the declared fire season. CAL FIRE also operates the Eel River Conservation Camp in the Unit, located in Redway. The Camp provides five hand crews for firefighting purposes, and each crew is made up of up to 17 firefighters and a captain. These crews and camp assets are an all-risk resource used both within Humboldt County and on a statewide basis year-round. During non-emergency response, these crews are deployed to work on fuel reduction projects and projects requested by other public agencies throughout the year. These crews are trained in emergency responses including, but not limited to, fire, flood, earthquake, medical, and vehicle accidents. The Bureau of Land Management (BLM) King Range Fire Station near Whitethorn also operates seasonally with response from one wildland fire engine.

FIGURE 4.13.7 SOUTHERN HUMBOLDT: AGENCY FIRE STATION DIRECTORY	
CAL FIRE Garberville	(707) 923-2645
CAL FIRE Alderpoint	(707) 926-5353
CAL FIRE Thorn (Whitethorn)	(707) 986-7553
BLM Thorn (Whitethorn)	(707) 986-5400

[16] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 13-14, 19, 22, 24, 27-28).

The Southern Humboldt Fire Chiefs' Association (SHFCA) is a venue for fire departments and community organizations in the Unit to collaborate for preparedness. The SHFCA is a chapter of the Humboldt County Fire Chiefs' Association, a 501(c) 3, and comprises firefighters from all the departments and companies located in this planning unit as well as departments from the Mattole—Lost Coast and the Avenue of the Giants planning units.

The initial purpose of the SHFCA was to provide a stronger voice for fire departments to bring more training opportunities to the Unit, increase communication between local departments and with CAL FIRE, and create a stronger fire department identification and numbering system. Successful implementation of those goals over the last 18 years has grown the SHFCA to include representatives from the SHFSC, the Humboldt County Fire Safe Council (HCFSC), the Red Cross, the Southern Humboldt Emergency Preparedness Team (SHEPT), the County Radio Dispatch Co-op, CAL-EMA, Humboldt County OES, and other emergency preparedness groups.

The SHFCA sponsors the Southern Humboldt Technical Rescue Team. The Team is comprised of 12 volunteers from departments within the Unit who specialize in rope, water, and wilderness rescue. Team members are highly dedicated firefighters who train and respond to rescues in addition to the normal training and duties of their respective fire departments. The Team operates with two 4WD light rescue trucks with swift water equipment and an inflatable boat.

Southern Humboldt Technical Rescue can be reached by calling **(707) 223-0042** or emailing ***SoHumTechRescue@gmail.com***.

Another aspect of fire protection capabilities the SHFCA seeks to expand involves training and even equipping rural homeowners so that they are able to safely address small fires on their own and/or be of maximum help to fire personnel. While it is important to prepare for the large, worst case scenario wildfire and know when and how to evacuate, it is also important to know how and when to act on one's own. Isolated landowners may find themselves facing fire on their own, without proper tools or knowledge of how to use them. Providing basic information on fire behavior and management techniques (similar to the training provided to Community Emergency Response Teams or CERTs) could help keep small fires small and avoid undue injury and loss.

4.13.5 SOUTHERN HUMBOLDT EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter. FM radios are also recognized by the public as a means of getting current emergency information. The KMUD FM radio Community Emergency Response Team receives information from sources such as the SHFCA Public Information Team, CAL FIRE, the California Highway Patrol, and the Humboldt County Office of Emergency Services, and relays that information using live on-air broadcasts and internet updates.

Evacuation routes in the Southern Humboldt Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Communities in the western portion of the planning unit will rely on Briceland Thorne Road and Shelter Cove Road for evacuation; few alternative routes exist for these communities, with the exception of Wilder Ridge Road, which leads northwest towards Honeydew. Communities in the eastern portion of the Unit depend on the Alderpoint Road and Bell Springs Road for

evacuating during emergencies. The critical necessity of these routes for many of the communities within this planning unit highlights the importance of maintaining these roads (road surfaces and adjacent vegetation).

FIGURE 4.13.8 SOUTHERN HUMBOLDT: POTENTIAL EVACUATION ROUTES	
○ Alderpoint Road	○ Shelter Cove Road
○ Briceland Thorne Road	○ Bell Springs Road
○ Dyerville Loop Road	○ Usal Road
○ Wilder Ridge Road to Ettersburg Road	

Shelter Cove is perhaps the most isolated population center in the planning unit, with nearly 700 residents—a population that expands during the summer months with seasonal residents and recreational visitors. The community is situated at the end of Shelter Cove Road, which is the primary means of ingress and egress. Given their proximity to the coast, residents could evacuate to the beach or airstrip, if Shelter Cove Road is inaccessible, depending on the severity of the fire.

As discussed in the *Wildfire Environment* section above, the subdivision of timberlands and subsequent sale to homesteaders has created fragmented, unmanaged forests intermixed with homes—a landscape vulnerable to damaging wildfire and difficult to convert back to natural fire regimes. The narrowness and disrepair of many private, often gravel roads leading to these remote homesteads could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. The condition of the county roads was also identified as an evacuation and emergency response safety concern. Many county road surfaces are hazardous for travelers under normal circumstances and during an emergency these conditions could slow down evacuees as well as emergency responders.

Many roads and driveways within this planning unit are overgrown with flammable vegetation and have inadequate turn around spaces. Poorly or inaccurately marked streets and intersections may also present a challenge for emergency responders. This is in addition to a lack of posted street addresses and the proliferation of heavy-duty gates with shielded lock guards that resist bolt cutters. In some cases, just one or two locked gates can impede access to many miles of road that could be used for evacuation. Navigation by GPS is often unreliable, which adds to the challenge for non-local emergency responders. Other ingress and egress impediments may include steep road sections, fallen trees, wooden bridges susceptible to burning, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles or leave residents stranded should the roads become blocked. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

Based on local reports and information gathered at community meetings, the risk of wildfire is not a primary concern of many residents. This attitude likely exists because the area has had the good fortune of avoiding significant losses of homes and lives to wildfire in recent history. However, the importance of being prepared to evacuate quickly and safely is growing each fire season. There are many neighborhoods where alternative evacuation routes need to be explored and conditions evaluated for safe evacuation should access to primary roads be impeded. **Residents should not wait to do this during a large wildfire event.**

The need for evacuation preparedness is made even more critical because of shifting land ownerships and the influx of seasonal workers and visitors during the fire season. During the time of highest wildfire risk, this planning unit is host to an increased population that is unfamiliar with the area, the roads, the hazards, and the precautions that need to be taken to avoid wildfire ignitions. These temporary residents, visitors, and newcomers may not be prepared for evacuation, which could put their lives as well as the lives of firefighters at risk.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[17] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.13.6 SOUTHERN HUMBOLDT COMMUNITY PREPAREDNESS

Communities within the Southern Humboldt Planning Unit are informed and abetted by the SHFSC, which operates throughout the entire Unit. The SHFSC was formed in 2002 by residents in the region who recognize the potential for community devastation by wildfire.

> ‘The mission of the SHFSC is to protect the region's natural and manmade resources by mobilizing our community to make their homes, neighborhoods, and communities fire safe.’

Over the years, the SHFSC has met irregularly and participation has been widespread throughout the Unit, with more than forty individuals including periodic representation from volunteer fire departments, rural residents, and landowners. Participation has also included personnel from the Institute for Sustainable Forestry (ISF), Sanctuary Forest, CAL FIRE, BLM, California State Parks, the Mattole Restoration Council (MRC), and the HCFSC. Projects during this period included five large shaded fuelbreaks protecting important access roads, fire education events, and work toward drafting a local CWPP. Several members also regularly appear on the local radio station to talk about fire related issues.

The SHFSC has been successful in collaborating with a variety of fire and forestry organizations to achieve its goals; these organizations include Beginnings Inc., ISF, Ancient Forest International, Sanctuary Forest, and the Humboldt Fire Chiefs' Association, with cooperation from the California Department of Forestry and Fire Protection's Garberville Battalion Chief and other personnel from CAL FIRE's Humboldt-Del Norte Unit in Fortuna as well. Some of the SHFSC's primary objectives are to educate the public about fire safety, create extensive fuelbreaks, initiate a prescribed burning program, increase communication

[17] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

among residents as well as volunteer fire departments (VFDs), improve training for emergency response teams, and conduct fundraising for these efforts. The SHFSC also attempts to coordinate their activities with other fire prevention efforts by networking with entities such as the BLM, the MRC, and SHFCA.

Collaboration with ISF, MRC, and the County of Humboldt has led to the implementation of the Fire Adapted Landscapes and Safe Homes (FLASH) program throughout the Planning Unit. FLASH is a rebate program that reimburses property owners for hazardous vegetation management completed around their homes, along access routes, and in particularly hazardous areas. Many participating landowners also receive a free home wildfire risk assessment through which they receive wildfire mitigation recommendations tailored to their specific circumstances. This program has been successful in terms of spreading fire safe information and hazard reduction examples over a wide area. FLASH also funded a CAL FIRE Inmate crew project, facilitated by SHFSC, that constructed a critical fuelbreak along the northern edge of Garberville adjacent to Bear Creek Canyon, as well as a maintenance project on the Elk Ridge Road fuelbreak.

Recently, participation in SHFSC activities from the groups mentioned above has dwindled and the focus has shifted primarily to implementing the FLASH rebate program, providing information via radio and newspaper interviews, letter writing, and maintaining representation on the HCFSC. The SHFSC plans to reorganize in 2018 and 2019 to increase membership and broaden the wildfire preparedness services offered to the area.

SHFSC can be reached by calling **(707) 923-9109** or emailing **bille@asis.com**.

The Crooked Prairie Fire Safe Council (CPFSC) also exists within this planning unit. Located in the Ettersburg area, the CPFSC encompasses approximately four square miles with about 30 homesteads. It was established in 2005 as the result of the dissolution of the Crooked Prairie Fire Crew. The organization of the CPFSC is intentionally small and simple; it is an all-volunteer group that meets approximately once a year and obtains all of its funding from donations and fundraisers. Though small, they have been capable of some major contributions to improving fire safety in their community.

CPFSC can be reached by emailing **kweber@asis.com**.

The Shelter Cove Resort Improvement District is the only community within the Southern Humboldt Planning Unit to achieve Firewise Communities/USA® recognition. More details about the Shelter Cove community risk assessment and action plan are provided below. The process of becoming recognized as Firewise® includes a site specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. The Firewise® process would be beneficial for more communities and neighborhoods within this planning unit.

To find out more about the Shelter Cove Firewise program call **707-986-7447** or email **sue@sheltercove-ca.gov**.

Another important organization that supports community wildfire preparedness is the Southern Humboldt Emergency Preparedness Team or SHEPT. Representatives from the Red Cross, Office of Emergency Services, health care organizations, public agencies, the media, service groups, and more participate in SHEPT. The group provides networking and educational opportunities and works to secure resources to support emergency preparedness and disaster coordination and communication readiness. SHEPT focuses on all potential disasters, including wildfire.

SHEPT can be reached by calling **(707) 223-1560** or emailing **shept.info@gmail.com**.

In order to be better prepared, community members need to be informed about issues surrounding wildfires, emergencies, and disaster management. One of the tools used to inform the public in this planning unit is the "Burning Issues" fire and rescue radio talk show on KMUD FM radio. This show provides local fire service representatives an opportunity to voice information to the public about training, prevention, standards, legislation, grant writing, and new initiatives and innovations.

The communities in this planning unit have made a number of significant accomplishments over the past five years, in large part due to the work of the groups described above. A number of these accomplishments are described in the table below.

FIGURE 4.13.9 SOUTHERN HUMBOLDT: FIRE PREVENTION ACCOMPLISHMENTS

○ Since 2013, the SHFSC FLASH program has facilitated 185 acres of fire hazard reduction work for 60 landowners throughout the unit, including 50 fire-safe home inspections, and 136 site visits. The FLASH program also supported fuels reduction projects in coordination with CAL FIRE crews in the Bear Creek Canyon near Garberville and along Elk Ridge Road in Briceland.
○ SHFSC consulted with dozens of landowners in Southern Humboldt.
○ In late 2017 and early 2018, SHFSC representative Dave Kahan was featured on three local radio shows and called in to several others to share lessons from the October North Bay fires and inform and encourage residents and landowners to implement defensible space and fire harden homes.
○ CPFSC Accomplishments: The installation of a 5,000 gallon water tank adjacent to a firehouse with a grant acquired through the MRC; hosting an informative workshop on Sudden Oak Death; equipping firefighters with personal protection equipment (PPE); and participation in the FLASH rebate program.
○ Boundary expansion for the Telegraph Ridge Fire Protection District through a formal annexation process. The annexed areas are now contributing revenue to support the fire services they receive. In addition, the District was successful in its effort to buy the Ettersburg School property for the home of the new fire house.
○ Support has been provided to the local fire service through Measure Z, a half-cent sales tax passed by Humboldt County voters in 2014. These funds have been used to purchase equipment, make progress on establishing secure structures to house fire engines, and pay fees for dispatch.
○ The Shelter Cove Resort Improvement District No. 1 (RID) earned Firewise® recognition in 2014. Through its Firewise® program and State Responsibility Area grant funding, the RID completed over 200 acres of understory vegetation management to reduce wildfire hazards in northeastern areas of the community. They have successfully renewed their Firewise recognition status annually since 2014. The Firewise® Committee hosts a Firewise® Day in conjunction with the community's annual 4th of July celebration and provides educational information to attendees.
○ In 2017, the Shelter Cove Fire Department successfully increased their revenue through a voter approved tax measure. The additional funding is being used for equipment, training, and improvement of fire protection and emergency medical response services. The department improved their Insurance Services Office (ISO) Public Protection Classification from a 5 to a 4, just a few points shy of a 3. This change is attributed to water supply, staffing, and training improvements. This could result in insurance premium reductions for residents of the area.
○ Fire departments from within this planning unit proudly participated on a Humboldt local government strike team to assist with the suppression of California wildfires during the 2017 and 2018 fire seasons. The experience gained from these assignments increases the local capacity for responding to similar events within this planning unit.
○ Most fire departments within this planning unit host annual events and fundraisers where residents are provided with the opportunity to support fire and rescue services and learn about their local department. Many of these events offer fire prevention information.

4.13.7 SOUTHERN HUMBOLDT LOCAL WILDFIRE PREVENTION PLANS

Members of the SHFSC worked with County staff to design this Southern Humboldt Unit Plan so that it may serve as the equivalent to a local CWPP for the SHFSC. This plan can provide a starting point for local groups, such as the SHFSC and fire departments, to strategically organize fire-planning efforts.

A list of priority action recommendations reflective of the community concerns and ideas collected through the process described in *section 4.13.8* was developed by the HCFSC in collaboration with the SHFSC to help guide and inspire wildfire preparedness in this planning unit. *See section 4.13.9, **Southern Humboldt Action Plan** for a list of priority actions recommended by this CWPP.*

Shelter Cove Firewise Action Plan

As part of the initial Firewise® certification process in 2014, a Firewise® Action Plan was developed by the Shelter Cove Firewise Committee, which consisted of the Shelter Cove Resort Improvement District No. 1 (RID), Shelter Cove Fire Department, and the Shelter Cove Community Emergency Response Team.[18] CAL FIRE and Humboldt County staff provided guidance for the development of the action plan.

The priority actions identified in the Plan are as follows:

- Assign wildfire planning to RID and the existing CERT.
- Host a Firewise workshop for community residents.
- Organize a community-wide wildfire hazard reduction workday.
- Maintain a fuelbreak between the King Range National Conservation Area, managed by BLM, and the Shelter Cove community.
- Distribute informational resources, including Living with Wildfire, a flammable plants list, and a homeowner's checklist.
- RID will annually review the Action Plan, invest in its implementation, and maintain detailed records of funding, progress, and needs.

4.13.8 SOUTHERN HUMBOLDT COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 9, 2017 at the Redway Fire Hall with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.13.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.13.10* and *4.13.11* in this section. *For more information on the*

[18] Shelter Cove Firewise Committee. Shelter Cove Firewise Action Plan. (2014). Retrieved from humboldtgov.org/1928/Shelter-Cove

mapping exercise, see Appendix B.5, ***Mapping Exercise Instructions****.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.13.2*) reflect information generated by these community workshop mapping exercises as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed in the GIS layers within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.13.10 SOUTHERN HUMBOLDT: COMMUNITY-IDENTIFIED PROPOSED PROJECTS
○ Be proactive in abatement of abandoned vehicles (often burned).
○ Enforce against roadside camping/no overnight parking
○ Enforce against homeless campfires.
○ Ask County to perform a roads survey of streets for width/clearance for emergency vehicles.
○ Be proactive in abatement of marijuana grows in residential areas.
○ Map safety zones and distribute to community.

The local residents who attended the November 9, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.13.11 SOUTHERN HUMBOLDT: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
Fuelbreak along China Creek and Blueslide Roads from Briceland Thorn Road	Roadside Clearance	BRC125
County should be more proactive in abatement of abandoned vehicles (which are often burned)	Other	-
Ettersburg School Fire Station	Other	-
Enforce against homeless campfires	Other	-
Shaded fuelbreak along Briceland Thorn Road from Redway to Whitethorn Junction (evacuation route)	Roadside Clearance	BRC188
Enforce against homeless camp fires	Other	-
Fuelbreak from Ettersburg Road up Dutyville Road	Roadside Clearance	BRC185, 186
China Creek Road/Blueslide Road Fuelbreak	Roadside Clearance	BRC133
Controlled Burns at Lauffer Ranch	Landscape	PV056
Fuelbreak along Briceland Thorn Road from Redway to Whitethorn Junction	Roadside Clearance	BRC188
Shaded fuel break along Huckleberry Lane/Goodman Ranch Road	Roadside Clearance	BRC190
King Range Road fuelbreak	Roadside Clearance	PET063

4.13.9 SOUTHERN HUMBOLDT ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **M**aintain and support the SHFSC and CPFSC to facilitate community wildfire preparedness and mitigation. This Plan encourages more collaboration between these two active local FSCs.
    - Inspire more community involvement in and support of the SHFSC and CPFSC with outreach about what they do and how to get involved.
    - Develop a campaign to increase membership and effectiveness.
    - Emphasize the recruitment of representatives from more remote neighborhoods.
    - Reach out to establish increased participation from Humboldt Redwoods State Park, BLM, and unrepresented communities/neighborhoods.
    - Work to build up the Southern Humboldt Emergency Preparedness Team (SHEPT) in tandem with the local FSCs.
    - Ensure that the SHFSC continues to be represented on the Humboldt County FSC.
- **M**aintain Shelter Cove's participation in the Firewise Communities/USA® Recognition Program:
    - Actively implement and maintain the Firewise® action plan.
    - Focus activity on home hardening and defensible space in partnership with residents of Shelter Cove.
    - Continue to host an annual Firewise® Day.
    - Consider adding the development of a community chipper program and the development of a strategy to abate hazardous vegetation on vacant lots into action plan updates.

- Identify other community organizations, Tribes, and/or groups of individuals in neighborhoods adjacent to the wildland with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program.
    - This focus area could be added to already existing disaster preparedness groups.
    - Conduct a risk assessment with support from the HCFSC, SHFSC, local fire departments, and/or CAL FIRE and draft a Firewise® action plan (the existing Shelter Cove plan can be used as a resource for this).
    - Host a Firewise® Day to share findings and inspire action; Firewise activities could be added to an existing annual community event.
    - If necessary, seek funding to support this effort.
- Once local groups are organized, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in the *Shelter Cove Firewise Action Plan*, as well as in this *Priority Actions Recommendations* list, and the *Action Catalogue* below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.
- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Alderpoint (ALD044)
    - Briceland (BRC244)
    - Ettersburg (BRC245)
    - Redway (GAR072)
    - Garberville (GAR073)
    - Benbow (GAR075)
    - Whitethorn (GAR074)
    - Sprowel Creek (GAR076)
    - Palo Verde (PV091)
    - Shelter Cove (this area sustains an active Firewise® Program) (SC051)
- The high fire danger, a large and dispersed WUI population, the large number of dead-end roads leading to multiple residences, and a general lack of wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
    - Promote the study of and widely distribute documents such as "Ready-Set-Go ", Living with Wildfire", "Ready for Wildfire", and others that are readily available. With this information, residents can begin to identify, evaluate, and mitigate those dangerous impediments to their safe evacuation, broaden their understanding of

what is meant by 'extreme' wildfire weather and 'extreme' wildfire behavior, and sharpen their situational awareness.

- Identify local community liaisons to work directly with emergency management officials.
- Identify and map local evacuation routes and sites. The Briceland VFD/SHFSC produced Fire Atlas will be an important resource for this.
- Given the large number of residences located on long, dead end roads, residents, law enforcement, local fire departments, and FSCs should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire.
- Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads. Areas of high priority include:
  - Shelter Cove
  - High density neighborhoods on spur roads off of Briceland Thorn Road and the Ettersburg Honeydew Road.
- See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".

- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote-hard to access residences. Priority roads for initial evaluation and outreach efforts include:
  - Blue Slide Creek Road
  - Dutyville Road
  - East Branch Road
  - Elk Ridge Road
  - Miller Creek Road
  - Perry Meadow
  - Reed Mountain Road
  - Upper and Lower Sawmill Roads
  - Seely Creek Road
  - Shelter Cove Road
  - Sprowel Creek Road
  - China Creek Road
  - Crooked Prairie Road
- **C**ollaborate with the Humboldt County Road Maintenance to strategically identify priority **county** road maintenance and vegetation management in areas where conditions are impacting or have the potential to impact emergency response and safe evacuation.
  - Develop a prioritized list of county roads that need resurfacing.
  - Review the Humboldt County Rural Transportation and Access Partnership program for applicability to local issues.[19]
- **A**ddress road conditions on **private** roads that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments
- **C**ollaborate with local fire departments, the HCFSC, CAL FIRE, emergency dispatch centers, Humboldt County Planning and Building, and Humboldt County Road Maintenance to develop a strategy to address confusion about official road names.
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and

[19] Contact County Roads for more information: *https://humboldtgov.org/1405/Road-Equipment-Maintenance*

regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.

- Work with commercial timberland owners such as Barnum Timber and Boyle Forests to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
    - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
        - Priority areas for such project development include timberlands adjacent to developed areas east of Whitethorn, south of Briceland, and in the Sprowel Creek area.
    - Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands.
    - Organize dialogue to share community concerns about the practice of killing hardwood species and leaving them as standing snags with the objective of reducing wildfire hazards within this planning unit.
- Work with the HCFSC to secure more funding to continue and expand the highly successful FLASH reimbursement program (or a similar program), which has promoted hundreds of acres of fuels reduction work around homes and access roads. Continue to educate landowners about fire hazard reduction and fire safety around homes.
- Coordinate with CAL FIRE, local fire departments, local FSCs, and Firewise groups to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
    - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
    - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
    - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
    - Contact the HCFSC for more details and examples of how to address this situation.
- Work with SHEPT and OES to establish more CERTS and emphasize basic wildfire behavior and firefighting techniques into their training. Also encourage neighborhood CERTS (or other groups of neighbors such as road associations) to establish equipment caches in case of isolation to ensure the availability of emergency supplies. Depending on the severity of the disaster, it could be days or even weeks before professional emergency services reach some areas.
- Work with local organizations, the Humboldt County Board of Supervisors, Humboldt County FSC and GIS staff, state legislators, CAL FIRE, and/or utilities to address communications challenges including the lack of internet access in some areas; radio repeater dead zones; confusion about road names and local addresses; and more.

- Through SHFSC's fire education work, continue to emphasize fire safety techniques (e.g. obtaining and following the requirements on burn permits, being aware of changing weather when burning, not driving on dry grass, etc.). Potential workshop topics include:
    - An educational workshop for landowners on how to create and maintain defensible spaces around homes. This workshop should include information on the importance of defensible spaces for protecting structures, a discussion of fire safe landscaping techniques, and a hands-on demonstration of proper techniques for thinning vegetation and removing brush piles.
    - A presentation by CAL FIRE showing wildfire in action, supplemented with photos and video clips. There is potential to conjoin the efforts of this workshop with a fundraiser event for the SHFSC.
    - Other outreach strategies may include developing fire safety education posters to be displayed at community events; reaching out to local businesses for support; and sending announcement flyers home with students from school.
- Continue to explore options and make progress on local fire service sustainability efforts such as:
    - Recruiting and retaining volunteers;
    - Establishing consistent and sustainable revenue sources;
    - Ensuring that all appropriate areas are within the boundaries of a fire related district through district formation, annexation, and consolidation;
    - Pursuing funding to complete the Briceland fire station and to build a training facility in Redway that will benefit all fire departments in the unit;
    - Supporting the purchase and modification of the Ettersburg School for the Telegraph Ridge fire station;
    - Exploring the feasibility of establishing and funding a Rural Fire and Rescue Coordinator or Coordinators to keep their finger on the pulse of the larger fire service;
    - Helping local fire chiefs meet increasing requirements;
    - Facilitating collaboration on efforts that benefit all Southern Humboldt fire departments and companies;
    - Staying abreast of rural funding opportunities and offering guidance and administrative support to help with their acquisition; and more.
- Establish a firefighting water supply outreach program including:
    - The identification, creation (if necessary), and distribution of educational materials with clear instructions about how to develop and maintain water sources accessible to firefighters.
    - Coordination with local businesses to display models of proper fire water hookups and encourage the purchase of tanks and fittings through discount and/or rebate programs.
- Address the water supply and infrastructure challenges faced by the Briceland CSD from the perspective of fire flow needs. The Briceland CSD water system is in poor condition, source capacity is unable to meet current maximum day demands, and storage capacity is barely able to meet even one day of maximum day demands.[20]
- Work with local businesses to encourage residents to purchase firefighting tools and personal safety equipment through discount and/or rebate programs. Tailor the programs particularly for

[20] See the Humboldt County General Plan Update, Environmental Impact Report for more details: *https://ca-humboldtcounty.civicplus.com/DocumentCenter/View/58832/Section-33-Utilities-and-Services-Revised-DEIR-PDF*

the more remote homesteaders who have a higher likelihood of getting trapped on their own and include educational materials about how to use the tools and equipment.

- Coordinate with the HCFSC Wildfire Ignition Prevention Work Group to provide input to the process of finding and/or developing informational materials and outreach strategies for marijuana/cannabis cultivators and processors to reduce ignitions associated with that industry and to educate their seasonal workers.[21]
- Coordinate with local FSCs, fire departments, CAL FIRE, and the County to develop a method of determining whether fire ignitions and risk are declining as a result of the regulation of marijuana/cannabis cultivation and processing; make recommendations as appropriate.
- Encourage residents with unpermitted structures or additions on their property to participate in the Humboldt County Planning & Building Department's Safe Homes Program.[22] Educate those residents about the benefits of upgrading structures and/or bringing structures into compliance with current building codes.
- Share GIS datasets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*) or other appropriate platform.
    - Compare GIS fire planning datasets compiled by the SHFSC, other local groups with GIS capacity, and the County and determine an appropriate sharing and maintenance process to ensure that the most up-to-date and accurate information is provided through the County Web GIS Portal or other appropriate platform.
    - Integrate this effort, as feasible and appropriate, with the SHFSC's plans to continue GIS mapping of the road network and locations of features such as homes, water sources, gates, etc. Special emphasis will be placed on defining and in some cases, encouraging the opening of evacuation routes.
    - Coordinate this effort with the work of the Humboldt County Fire Safe Council to implement the Integrated Planning, Fire-Planning Data Management priority action of the Countywide Action Plan (*Chapter 3, Section 3.6.4*).
- Homeless campfires were identified by community members as a wildfire ignition risk. To better understand and address that risk, identify homeless encampments that pose a fire hazard and work with law enforcement, the fire service, and possibly social services to identify appropriate mitigation actions such as providing access to shelters and/or performing fuels reduction around frequently used campsites. There are many reasons to address these areas. Look for opportunities to tie in with other local organizations and efforts to achieve multiple benefits. In addition, develop educational materials and outreach strategies to inform the homeless population about fire prevention and safety.
- Work with the HCFSC to share successful local strategies and programs to help inspire similar action throughout the county.

[21] See countywide action plan *3.1 Wildfire Ignition Prevention* for more details.
[22] Humboldt County, Building Inspection Division Homepage: *https://humboldtgov.org/153/Building-Inspection*

Action Catalogue:

This Action Catalogue lists wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the HCFSC. To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- **I**mplement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- **U**se *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *www.humboldtgov.org/livingwithwildfire*.
- **I**dentify primary ignition sources in the local community and focus prevention efforts on reducing them.
    - Community concerns were raised about the fire ignition risk of abandoned vehicles. Evaluate that risk and explore solutions with law enforcement and local leaders.
- **I**ncrease community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies in order to avoid an unintended wildfire.
- **I**nform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- **D**evelop a wide range of opportunities for community education on preparing for wildfire.
    - This effort should involve the production and distribution of a variety of informational materials such as:
        - A “Before and After Fuels Reduction” pamphlet, describing and illustrating the process and benefits of reducing hazardous fuels around homes, in neighborhoods, and along access roads.
        - A “Constructing a Shaded Fuelbreak” guide that outlines the value and process of creating shaded fuelbreaks.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.

- Provide residents with information about ways to reduce structural ignitability and maintain adequate defensible space around their homes.
- Collaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.
- Do a yearly field trip to a site that emphasizes the need for and results of fuel reduction. Demonstrate fuel reduction tools and techniques.
- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation. See details in the *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Identify hot-spots for Sudden Oak Death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension.
- Work with commercial timberland owners such as Barnum Timber and Boyle Forests to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See details in the *Priority Action Recommendations* above.
- Collaborate with agency and local partners to plan and fund landscape level fuels reduction and management. See details in the *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Improve community communication networks and explore way to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
- Work with a local fire or law enforcement agency to form Community Emergency Response Teams or CERTs. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. See details in the *Priority Action Recommendations* above.
- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members should consider providing a key or access code to the local fire department.

- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection by investing in more community water tanks and ensuring existing tanks are outfitted with fittings compatible with firefighting equipment.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restore Beneficial Fire

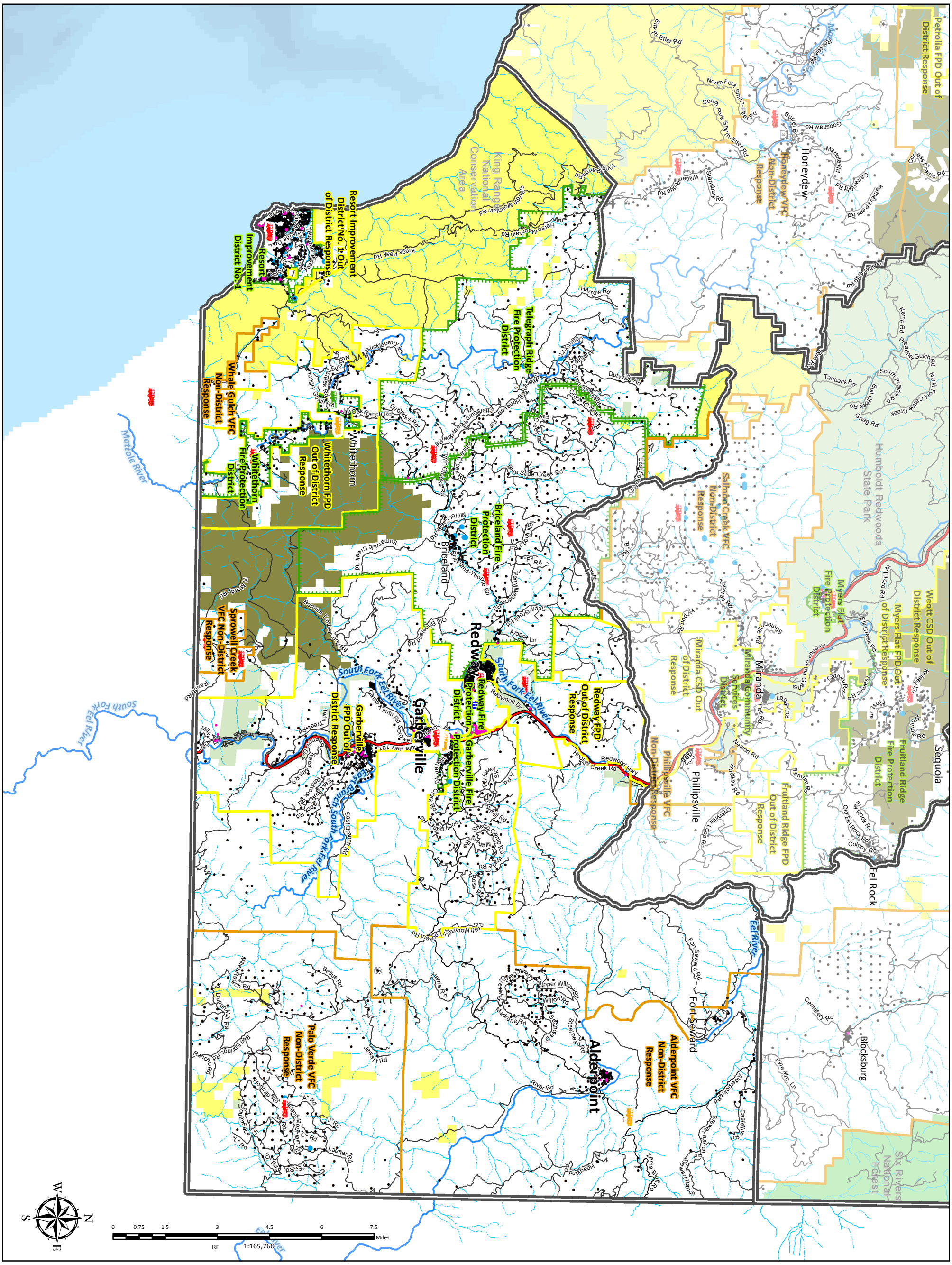
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[23]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal and state land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

Integrated Planning

- Integrate, where there are mutual benefits, the community preparedness and wildfire resiliency efforts of the Southern Humboldt Fire Chiefs' Association, Southern Humboldt FSC, Crooked Prairie FSC, and other applicable agencies and organizations.
- Share GIS data sets between local representatives and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). See details in the *Priority Action Recommendations* above.
- Initiate and maintain participation in the Firewise Communities/USA® Recognition Program other neighborhood groups in developed areas adjacent to the wildland. See details in *Priority Action Recommendations* above.

[23] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at *lquinndavidson@ucanr.edu* or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at *chris.ramey@fire.ca.gov* or call him at (707) 726-1206.

MAP 4.13.1 SOUTHERN HUMBOLDT PLANNING UNIT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Resort Improvement District No. 1 Out of District Response
Whale Gulch VFC Non-District Response
Whitethorn Fire Protection District
Whitethorn FPD Out of District Response
Whitethorn
Telegraph Ridge Fire Protection District
King Range National Conservation Area
Honeydew VFC Non-District Response
Honeydew
Petrolia FPD Out of District Response
Briceland Fire Protection District
Briceland
Sprowell Creek VFC Non-District Response
Redway Fire Protection District
Redway FPD Out of District Response
Garberville
Garberville Fire Protection District
Garberville FPD Out of District Response
Miranda CSD Out of District Response
Miranda Community Services District
Miranda
Weott CSD Out of District Response
Myers Flat Fire Protection District
Myers Flat FPD Out of District Response
Fruitland Ridge Fire Protection District
Fruitland Ridge FPD Out of District Response
Salmon Creek VFC Non-District Response
Phillipsville VFC Non-District Response
Phillipsville
Palo Verde VFC Non-District Response
Alderpoint VFC Non-District Response
Alderpoint
Fort Seward
Blocksburg
Eel Rock
Sequoia
Humboldt Redwoods State Park
Six Rivers National Forest
Mattole River
South Fork Eel River
South Fork Eel River
East Branch South Fork Eel River
Eel River
Eel River
Redwood Hwy
Avenue of the Giants
Honeydew Rd
Briceland-Thorne Rd
Redwood Dr
Hooker Creek Rd
Alderpoint Rd
Fort Seward Rd
Blocksburg Rd
Miranda Rd
Myers Flat Rd
Weott Rd
Elk Creek Rd
Bull Creek Rd
Grieg Rd
Tanbark Rd
Pearch Gulch Rd
Kemp Rd
Cuneo Creek Rd
Dutchville Rd
Harrow Rd
Kings Peak Rd
Saddle Mountain Rd
Horse Mountain Rd
Stanbury Rd
Wilder Ridge Rd
Carnahan Rd
Maple Rd
Goosnaw Rd
Burel Rd
Rossow Rd
North Fork Smith-Ellet Rd
South Fork Smith-Ellet Rd
Smith-Ellet Rd
Curless Prairie Rd
Kanally Peak Rd
Panther Gap Rd
Huckleberry Ln
Hungry Gulch Rd
Hayfork Ranch Rd
Lay Darks Rd
Thorn Creek Rd
Twin Creeks Rd
Blue Slide Creek Rd
Elk Ridge Rd
Sweetwater Rd
Mail Rd
Sumerville Creek Rd
Barnum Timber Land Rd
Old Briceland Rd
Seely Creek Rd
Perry Meadow Rd
Ajapor Ln
Camp Timmu Rd
Redway Dr
Tenmile Rd
Twin Rocks Rd
Mail Ridge Rd
Briceland Rd
Shelter Cove Rd
Shelter Cove
Whitethorn Rd
Dyerville Loop Rd
Dyerville
Bamum Rd
Nelson Rd
Hobbes Rd
Old Eel River Rd
Colony Rd
Cemetery Rd
Pine Mtn. Ln
Cashen Ln
Kelsey Ln
Wilson Rd
Zig Zag Ln
Logan Rd
Cahill Rd
Thomas Rd
Williford Rd
Kapoor Rd
Summerville Rd
Lawrence Ln
Steelhead Rd
Willow Rd
Upper Willow Rd
Madrone Rd
Harris Rd
Bellus Rd
Jewett Rd
Ball Springs Rd
Dugan Mill Rd
Mineral Ranch Rd
Hoagland Rd
Lenia Bluff Rd
Stewart Ranch Rd
Laufter Rd
Hodgdon Rd
Island Mountain Rd
Pine Tree Ln
Ridge Rd
Mail Mountain Lookout Rd
Mail Rd
Camp Rd
Ross Rd
Wade Rd
Mail Ridge Rd
Mail Creek Rd
Mail Ridge Rd
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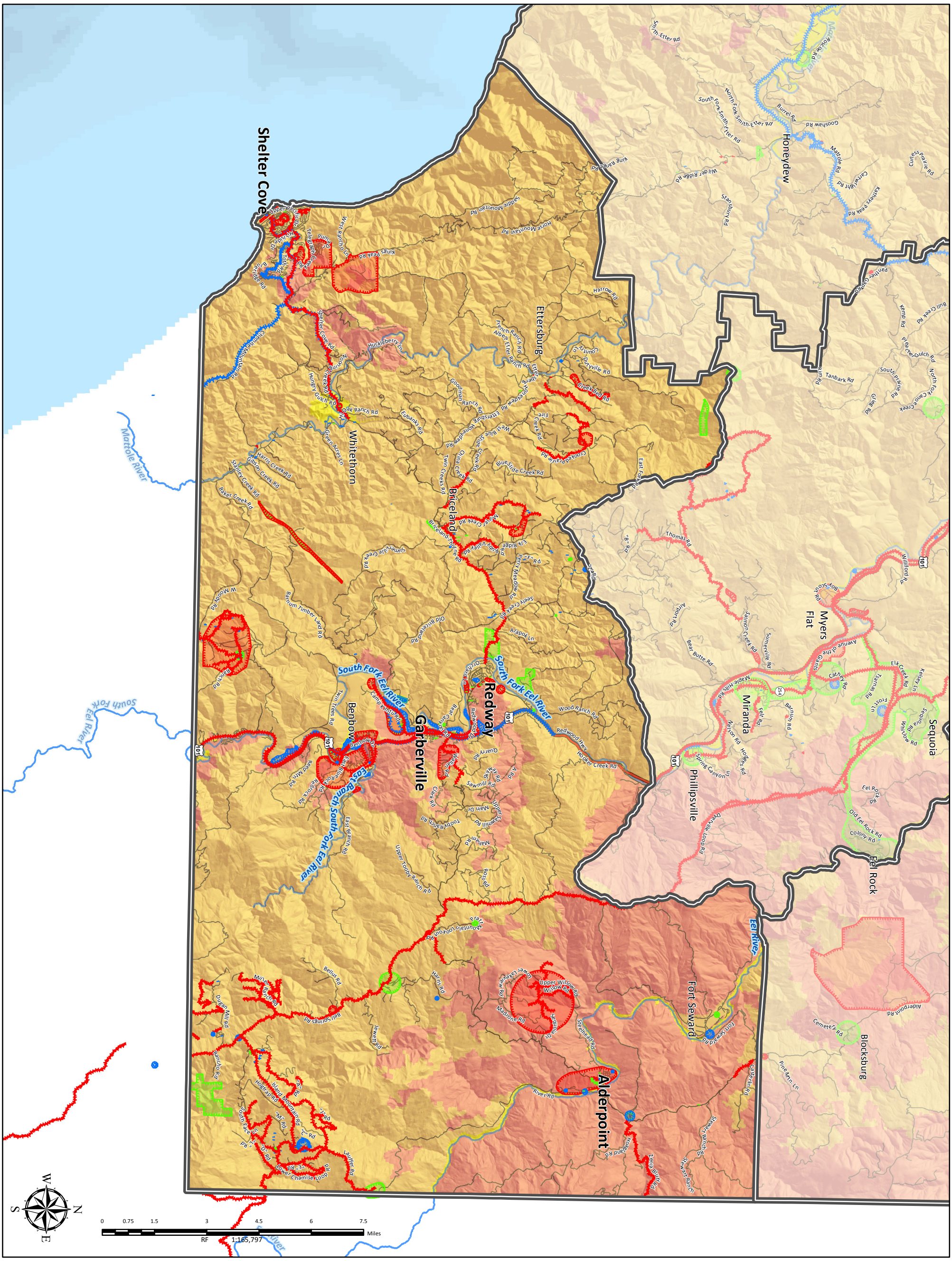
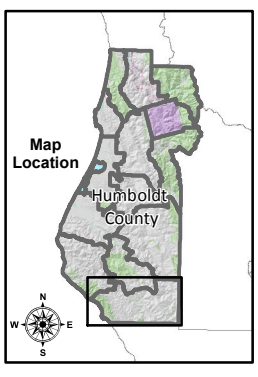
MAP 4.13.2 SOUTHERN HUMBOLDT PLANNING UNIT





COMMUNITY-IDENTIFIED PROTECTION RESOURCES, VALUES/ASSETS, & RISKS/HAZARDS

CWPP Planning Unit Boundary

Community-Identified Features
- Protection
- Value/Asset
- Risk/Hazard

Fire Hazard Severity Zones
- Moderate
- High
- Very High

Land Ownership
- Cities

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

Humboldt County FireSafe Council

County of Humboldt — The Home of the Redwoods

Infrastructure data was compiled by the County of Humboldt. FHSZ data retrieved from CAL FIRE. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

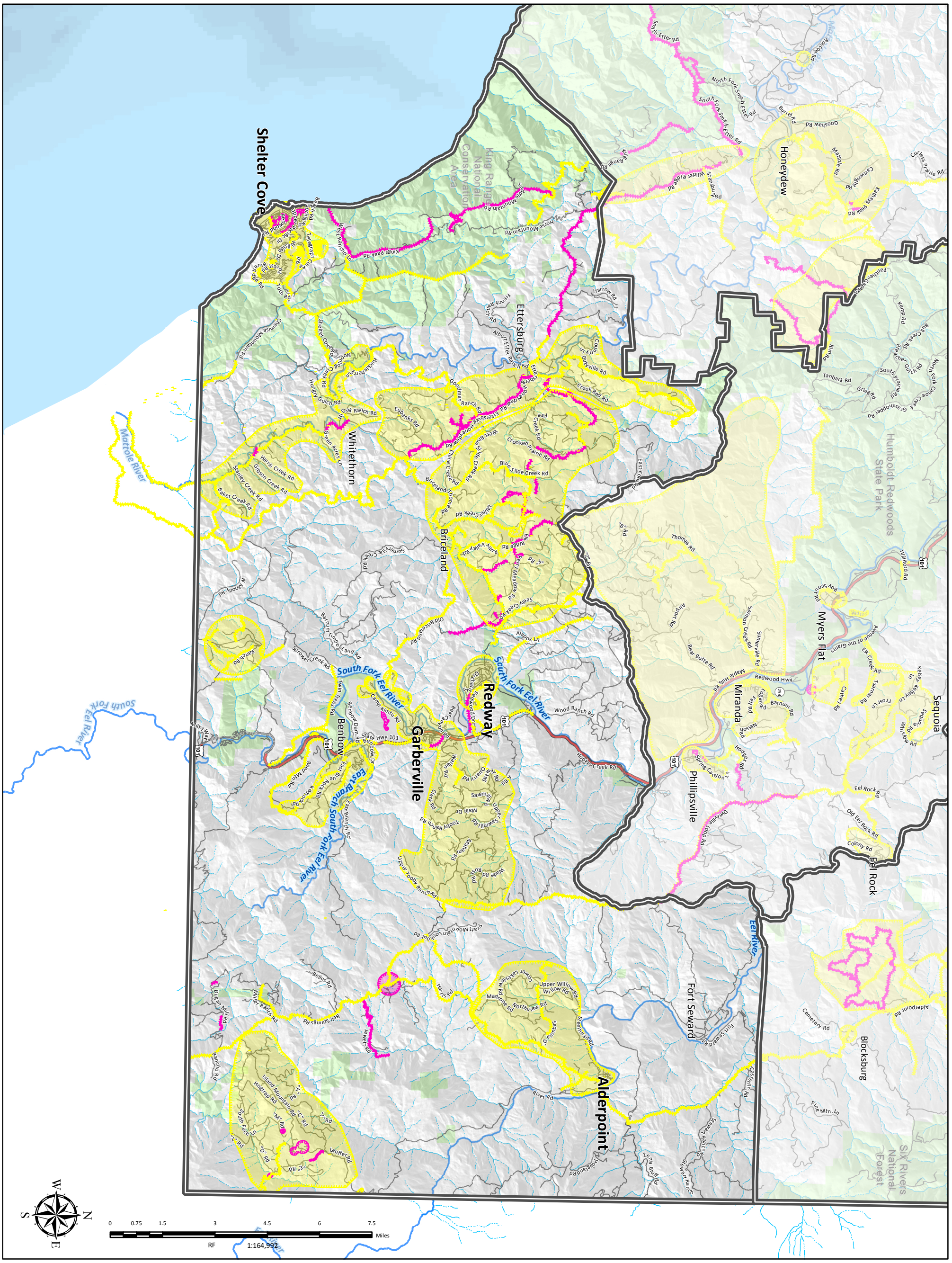
The map is intended for planning purposes and should not be used for precise measurement or navigation.

Map compiled by County of Humboldt, July 2018.

For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP

Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.13.3 SOUTHERN HUMBOLDT PLANNING UNIT


Shelter Cove
Whitethorn
Ettersburg
Honeydew
Briceland
Redway
Garberville
Benbow
Miranda
Myers Flat
Phillipsville
Fort Seward
Alderpoint
Blocksburg
Sequoia
Eel Rock
King Range National Conservation Area
Humboldt Redwoods State Park
Six Rivers National Forest
Mattole River
South Fork Eel River
Eel River
East Branch South Fork Eel River
Shelter Cove Rd
Whitethorn Rd
Ettersburg Honeydew Rd
Briceland-Thorne Rd
Old Briceland Rd
South Fork Eel River
Redway Dr
Benbow Dr
State Hwy 101
Redwood Hwy
Miranda Rd
Myers Flat Loop Rd
Avenue of the Giants
Wood Ranch Rd
Hooker Creek Rd
Phillipsville Rd
Eel Rock Rd
Old Eel Rock Rd
Colony Rd
Fort Seward Rd
Alderpoint Rd
River Rd
Briceland Rd
Thomas Rd
Williford Rd
Tanbark Rd
Grieg Rd
Harris Rd
Madrone Rd
Northview Rd
Upper Willow Rd
Lower Lakeview Rd
Bell Springs Rd
Jewett Rd
Miller Ranch Rd
Dugan Mill Rd
Island Mountain Rd
Hogtrap Rd
Lauffer Rd
Laufer Rd
Bellus Rd
Cemetery Rd
Pine Mtn. Ln
Alderpoint Rd
Blocksburg
Fort Seward
Phillipsville
Miranda
Myers Flat
Sequoia
Eel Rock
Redway
Garberville
Benbow
Briceland
Whitethorn
Ettersburg
Honeydew
Shelter Cove
Humboldt Redwoods State Park
Six Rivers National Forest
Mattole River
South Fork Eel River
Eel River
East Branch South Fork Eel River
Shelter Cove Rd
Whitethorn Rd
Ettersburg Honeydew Rd
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Old Briceland Rd
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Redway Dr
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Hooker Creek Rd
Phillipsville Rd
Eel Rock Rd
Old Eel Rock Rd
Colony Rd
Fort Seward Rd
Alderpoint Rd
River Rd
Briceland Rd
Thomas Rd
Williford Rd
Tanbark Rd
Grieg Rd
Harris Rd
Madrone Rd
Northview Rd
Upper Willow Rd
Lower Lakeview Rd
Bell Springs Rd
Jewett Rd
Miller Ranch Rd
Dugan Mill Rd
Island Mountain Rd
Hogtrap Rd
Lauff

AVENUE OF THE GIANTS PLANNING UNIT ACTION PLAN



Avenue of the Giants Scenic Drive. Photo: Eureka-Humboldt Visitors Bureau.

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Helpful Links

LOOK FOR LOCAL FIRE ORGANIZATIONS ON FACEBOOK:	*https://www.facebook.com*
HUMBOLDT REDWOODS STATE PARK	*https://www.parks.ca.gov/?page_id=425*
CAL FIRE HUMBOLDT-DEL NORTE UNIT:	*http://www.fire.ca.gov/HUU*
HUMBOLDT COUNTY WEB GIS:	*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*
HUMBOLDT COUNTY FIRE SAFE COUNCIL (HCFSC):	*https://humboldtgov.org/FireSafeCouncil*
HCFSC REPRESENTATIVE, CYBELLE IMMITT:	*cimmit@co.humboldt.ca.us*

4.14 AVENUE OF THE GIANTS PLANNING UNIT ACTION PLAN

4.14.1 AVENUE OF THE GIANTS PLANNING UNIT DESCRIPTION



A larger map of this planning unit can be viewed in Map 4.14.1, ***Avenue of the Giants CWPP Unit.***

FIGURE 4.14.1 HWY 101 COMMUNITIES	
Fruitland Ridge	Phillipsville
Holmes	Redcrest
Miranda	Salmon Creek
Myers Flat	Shively
Pepperwood	Weott

The Avenue of the Giants Planning Unit encompasses over 147,000 acres in the southern portion of Humboldt County. The famous Avenue of the Giants (also known as Highway 254) runs the length of the Unit, featuring some of the most breathtaking old growth redwoods still in existence today.

Highway 101 acts as the main transportation corridor through the Unit, along which there are a number of distinct, widely dispersed communities. The highway follows the inland valley formed by the path of the South Fork of the Eel River, which traverses the Unit in a north-to-south orientation and veers slightly westward as it continues north past Phillipsville. The main stem of the Eel River also passes through this unit from the southeast corner running northwest until it is joined by the South Fork Eel River at the town aptly named "South Fork". Notable tributary watersheds that feed into the South Fork Eel within this unit include Salmon Creek and Bull Creek.

The Avenue of the Giants Planning Unit contains a variety of land uses and ownership patterns, which include residential parcels, ranchlands of various sizes, lands managed by timber companies, and state park areas. Rich, agricultural flatlands lie adjacent to the Eel River in the northern portion of the Unit. This area has a long history of productivity that has, in recent years, seen a resurgence of small-scale organic farming within the communities of Pepperwood, Holmes, and Redcrest. About a third of this planning unit is dominated by Humboldt Redwoods State Park, which encompasses 53,000 acres. Highway 254—or the "Avenue of the Giants"—stretches from the Unit's northern border, touring across 32 miles along the State Park's eastern edge, providing a scenic, alternative route to Highway 101 that draws thousands of visitors every year.[1]

4.14.2 AVENUE OF THE GIANTS ASSETS AND VALUES AT RISK

Assets and values at risk are those things that are important to quality of life that can be threatened with destruction or loss from wildfire. These include a variety of things such as homes, businesses, critical infrastructure, cultural sites, wildlife habitat, natural resources, air quality, recreational facilities and areas, historical structures, and any other important attribute that individual communities rely on for their well-being.

The assets at risk in this planning unit are as diverse as the land uses within the region. The majority of community assets at risk include residential homes and neighborhoods, along with a variety of commercial and service industries, community centers, schools, fire stations, churches, historic sites, post offices, medical and dental clinics, municipal buildings as well as infrastructure components, such as water

[1] Humboldt Redwoods State Park. Park Info [Webpage]. Retrieved from https://www.parks.ca.gov/?page_id=425

treatment plants and a communication site. The ranching, agricultural, and timber industries within the Unit are also considered assets at risk. The Unit also contains several campgrounds and RV Parks.

The Unit contains many areas of great environmental significance as well. The Avenue of the Giants and Humboldt Redwoods State Park hold some of the last remaining stands of old growth redwoods in the county. These areas provide valuable habitat for the wildlife species that depend on this unique ecosystem type. The South Fork Eel River and its tributaries are also ecologically valuable for the fish they support, including coho and Chinook salmon, and steelhead trout. However, the ability of these populations to reproduce successfully has been negatively affected by heavy sedimentation of the river, which has been exacerbated by certain timber harvest practices and road building activities.[2] The river also provides numerous recreational opportunities for communities in the Unit. Many culturally sensitive sites of special importance to Native Americans exist throughout the Unit, as well.

Map 4.14.2, found at the end of this Unit Action Plan, illustrates assets and values at risk to wildfire identified by community members at public workshops. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS[3] Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Some of the key community-identified assets at risk within this unit are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' concerns.

FIGURE 4.14.2 AVENUE OF THE GIANTS: COMMUNITY-IDENTIFIED ASSETS AT RISK	
Schools	*Infrastructure*
○ Agnes J. Johnson School (Weott)	○ County Maintenance Yard – Elk Creek Rd.
○ Excelsior School	○ Electrical Substation (Pepperwood)
○ Miranda Junior High School	○ Grasshopper Lookout repeater
○ Salmon Creek Community School	○ PG&E Substation – Elk Creek Rd.
○ South Fork High School	○ Phone building (Weott)
○ Weott School	○ Water and Sewer Treatment Plants (Weott)
Fire Protection/Community Services	*Other*
○ Fruitland Ridge Volunteer Fire Station	○ Burlington Ranger Station / Visitor Center (Humboldt Redwoods State Park)
○ Miranda Community Services District (CSD) water facility	○ CAL FIRE High Rock Conservation Camp
○ Miranda Fire Station	○ Faith Chapel Assembly of God (Weott)
○ Myers Flat water tank	○ Fruitland Community Church
○ Phillipsville CSD water tank	○ Gilham Butte (nature area)
○ Phillipsville Fire Department	○ Grasshopper Lookout (nature area)
○ Salmon Creek VFD	○ Humboldt Redwoods State Park & Avenue of the Giants
○ Weott CDF	○ Weott Christian Church
○ Redcrest Community Center	○ Weott General Store (River's Edge Market)
○ Weott Community Center	○ Weott Post Office

[2] Dyett & Bhatia. (2002). South Fork of the Eel River Watershed. Humboldt 2025 General Plan Update: Natural Resources and Hazards; Vol. 2: Detailed Watershed Characteristics and Regulatory Framework Analysis. Retrieved from *http://www.co.humboldt.ca.us/gpu/documentsbackground.aspx*

[3] Geographic Information Systems (GIS).

4.14.3 AVENUE OF THE GIANTS WILDFIRE ENVIRONMENT

Approximately 82% of the Avenue of the Giants Planning Unit is zoned "High Fire Hazard Severity," as determined by the California Department of Forestry and Fire Protection (CAL FIRE).[4] Approximately 13% of the Unit, including much of the northeastern portion and areas surrounding Garberville and Shelter Cove zoned "Very High Fire Hazard Severity," with only about 5% of the Unit zoned "Moderate Fire Hazard Severity."

Humans are the most likely ignition source for fires in this planning unit. Vehicle accidents, smoking, playing with fire, poorly maintained debris burning, arson, and ignitions associated with marijuana cultivation and processing are just a few potential causes. Various types of equipment use and downed power lines can also be potential ignition sources. Tourism along the scenic Avenue of the Giants has increased over time. Lonely Planet, a top travel guide publisher, gave the Redwood Coast its number-one tourism destination for 2018.[5] While this publicity is a welcome boost to the tourism industry of the area, more visitors can equate to a higher risk of wildfire ignition.

Lightning is the most probable natural cause of fire starts within this unit. Several large wildfires have been started by lightning during thunderstorms that ignited more fires than firefighting resources could keep up with. The steep topography of this planning unit can accelerate the rate of fire spread and make access for firefighters very difficult. This, combined with local weather patterns, high fuel loads, and homesteads spread across the landscape (particularly in the Salmon Creek and Fruitland Ridge areas), creates a potentially dangerous wildfire environment.

For a closer look at fire hazard severity in this unit, see Map 4.14.2, ***Avenue of the Giants Community-Identified Protection Resources, Values/Assets, & Risks/Hazards****.*

How is *Fire Hazard Severity* determined by CAL FIRE?
○ The classification of a zone as moderate, high, or very high fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings.
○ Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildland areas.
○ Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.
○ While FHS zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern.

Fire History

Traditionally, fire was an integral part of the ecosystems in this region. Forest management by indigenous tribes often included low-intensity, intentional burns that helped enhance forest ecosystems and prevent the accumulation of high fuel loads. Some of the early agricultural settlers in the mid-1800s used intentional burning to clear and maintain grasslands for pasture animals. However, a heavy *fire suppression* campaign beginning in the 1930s has allowed the accumulation of dense, flammable

[4] CAL FIRE (California Department of Forestry and Fire Protection). (2007). Fire Resources Assessment Program (FRAP). [Map showing Fire Hazard Severity Zone ratings within various geographic areas, mapped by county]. Fire Hazard Severity Zones Map. Retrieved from *http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps*

[5] Forgione, M. (2018). Lonely Planet chooses California's Redwood Coast as top U.S. place to go in 2018. Los Angeles Times. Retrieved from *http://www.latimes.com/travel/la-tr-california-redwood-coast-selected-lonely-planet-top-destination-20180205-story.html*

vegetation in forest understories, which acts as fuel and increases the risk of high-intensity wildfires. Forest ecosystems, accustomed to low-intensity fires that would burn off brush and newer starts in the understory, become threatened by overcrowded forests and accumulated fuel. Intense timber harvests during the 20th century further exacerbated damages to forest ecosystem health. Encroachment of Douglas fir, which was sown into many logged areas, has contributed to alterations in stand compositions in redwood forests. Douglas fir encroachment is also an issue in oak woodlands and grassland areas as well, threatening ecosystems, wildlife habitat, and the forests' resiliency to wildfire. The extent to which the landscape has been altered as a result of fire suppression is reflected in the condition class of the Unit area. Condition class describes the degree of departure from the historical *natural fire regime*. Where the condition class indicates that fire has been absent for an unnaturally long time, the hazard and potential damages are high to both the environment and human developments in the area.

Fire suppression: All the work and activities connected with control and fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Natural fire regime: (1) A natural fire regime is a classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. Fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation.

Approximately 49% of the Avenue of the Giants Planning Unit is condition class 3, meaning the fire regime is significantly altered from the historical range; and approximately 16% of the area is condition class 2, or moderately altered from the historical range.

FIGURE 4.14.3 AVENUE OF THE GIANTS: FIRES OVER 10 ACRES 1997-2017[6]

Fire Name	*Cause*	*Year*	*Acres*	
			In Unit	*Total*
Canoe	Lightning	2003	11,044	11,044
Colony	Arson	2008	155	155
Redcrest 2	Lightning	2008	30	30
High	Lightning	2008	29	29
Bushnell	Equipment Use	2013	22	22
Brown	Equipment Use	2007	19	19
Brown	Equipment Use	2013	15	15
Larabee 3	Lightning	2008	3	29
Stafford	Unknown/Unidentified	2016	0.05	24

Note: An interactive map of fire history through 1908 is available through the County Web GIS.



Scenes from the Canoe Fire (2003). Previously logged and Douglas-fir dominant slopes burned especially hot. Photos: USFS.

[6] FRAP. (2018). State Fire Perimeters 1908-2017.

Structural Ignitability

Communities within the Avenue of the Giants Planning Unit are increasingly vulnerable to damage from wildfire. The buildup of fuel has increased the potential for higher intensity of fires, loss of life and property, and higher wildfire suppression costs. The California Fire Alliance has listed many communities at risk within this planning unit. Furthermore, the increasing subdivision of timber- and ranchlands throughout the Unit area has generated an increase in the number of homes that exist in the *wildland-urban interface* (WUI), which increases the likelihood that *wildland fires* will spread to structures, and vice versa.

> ***Wildland-Urban Interface (WUI):*** The zone where structures and other human developments meet, or intermingle with, undeveloped wildlands.
>
> ***Wildland fire:*** A non-structure (i.e. non-home) fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.
>
> ***Home Ignition Zone:*** The home and area out to approximately 100 feet, where local conditions affect the potential ignitability of a home during a wildfire.
>
> ***Structural ignitability:*** The ease with which a home or other structure ignites.

Embers carried on the wind from nearby wildfires—even miles away—could ignite homes within this planning unit. This was made all too clear during recent, catastrophic wildfire events in Northern California that claimed thousands of homes. Many of the homes lost burned from the inside out, as embers were forced inside by strong winds, or sucked in through ventilation systems. For this reason, home hardening should be a top priority for homeowners concerned about their fire resiliency. Roofs and eaves, windows, vents, and siding are all components that can be upgraded to reduce a home's vulnerability to loss. Resources for homeowners ready to take this leap in fire preparedness include *Appendix L, Living with Wildfire* and *Home Survival in Wildfire-Prone Areas*[7], published by the University of California Agriculture and Natural Resources. **Based on field observations, there are many homes in this planning unit where steps need to be taken to ensure structure survival when wildfire is nearby.**

Wildfire risk is exacerbated by the presence of dense vegetation growing in the *Home Ignition Zone* and flammable items in direct contact with the structure. Dead plant matter and vegetation with low moisture levels within 100-150 feet of homesteads pose some of the greatest threats to *structural ignitability*. Of particular concern are houses with needles and leaves accumulating on rooftops or in rain gutters. Houses with wooden rooftops and sidings add to this risk, as do the presence of wooden decks, particularly those with dead plant matter accumulated beneath them. Managing fuels for at least 100 feet of defensible space is highly recommended by this CWPP and is mandated by California Public Resources Code 4291[8]. By reducing the intensity and rate of spread of a fire, defensible space provides suppression personnel the option to deploy their resources to defend the home; it also reduces the likelihood that a house fire will spread outwards. Likewise, managing fuels along access roads provides safer escape routes for both residents and suppression personnel.

Some community members have expressed concern over the fire risk posed by *Sudden Oak Death*, which can greatly increase fuel loads as trees and tree limbs die off. While the disease is not yet widespread within the Unit, landowners should be aware of the risks and vigilant about removing afflicted trees on their property in order to prevent spread.

> ***Sudden oak death (SOD):*** A disease in oak trees that is a caused by *Phytophthora ramorum*, an invasive forest pathogen introduced to California in the mid-1990s through the horticultural plant trade. Affected areas can have a significantly higher fire hazard due to higher proportions of dead fuels of all sizes and prevalence of snags.

[7] Quarles, S.L., Valachovic, Y., Nakamura, G.M., Nader G.A., & De Lasaux, M.J. (2010). Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations. University of California, Agriculture and Natural Resources. ANR Publication 8393. [PDF]. Retrieved from https://anrcatalog.ucanr.edu/pdf/8393.pdf

[8] California Public Resources Code 4291 is provided as *Appendix K* of this CWPP.

Map 4.14.2, found at the end of this Planning Unit Action Plan illustrates risks and hazards identified by community members at public workshops with an underlay map of fire hazard severity zones. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.

Water Sources

Potable water and fire protection water are provided to the majority of communities in this unit by a number of special districts; they include the Phillipsville, Miranda, and Weott Community Service Districts (CSD). Weott CSD distributes water sourced from the wilderness areas of the State Park across the Eel River, after it has been fed through the Weott water treatment plant. The Myers Flat Mutual Water Company provides water from two wells and a surface water source on Pete's Creek to the Myers Flat community.[9] Residents outside of these service districts obtain water through other means, such as drawing from nearby creeks and holding tanks. Firefighters also draw upon creeks and swimming holes for fire protection.

There are areas within this planning unit that have various needs associated with improving the availability of emergency water for wildfire protection. There are some locations where firefighting water is not available or where emergency water storage is needed to supplement the potentially overtaxed municipal water supply. Many existing water sources are in need of maintenance, protection, or improvements. There is also a need to make the location of existing water sources more apparent to firefighters, and for community members to ensure that their water sources are properly outfitted for firefighting equipment.

Community-identified fire protection water draft sites are listed in the table below. This list is not intended to be comprehensive and illustrates participating community members' knowledge.

FIGURE 4.14.4 AVENUE OF THE GIANTS: FIRE PROTECTION WATER DRAFT SITES

○ Bear Creek	○ Myers Flat, Eel River drafting site
○ Holmes Flat, Eel River drafting site	○ Williams Grove, Eel River drafting site
○ McCann, Eel River drafting site	○ Debra Lake Pond (150,000 gallons)

Note: Locations identified at community workshops, and will need to be vetted further by firefighting personnel.

Map 4.14.2, found at the end of this Unit Action Plan, illustrates these drafting sites as well as other community-identified wildfire protection resources. More detailed descriptions of community-identified fire planning features can be found on the Humboldt County Web GIS Portal: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*.



Panoramic View of the Bull Creek Area. Photo: David Baselt, Redwood Hikes.

[9] Local Agency Formation Committee: Humboldt County. (2016). South County Regional Fire Services Municipal Service Review. [PDF]. Retrieved from *http://humboldtlafco.org/wp-content/uploads/Regional-FPD-MSR_South-County_ADOPTED-7.20.16.pdf*

4.14.4 AVENUE OF THE GIANTS FIRE PROTECTION CAPABILITIES

There are various special districts that provide fire protection within this planning unit, including a community services district and two fire protection districts (FPD). These districts are financially supported by revenue generated from a variety of sources that can include property taxes, special taxes and assessments, donations, fundraisers, and payments from the state for CAL FIRE station coverage or wildfire assignments. Fire protection services within these districts are provided by volunteer fire departments (VFDs). There are also several non-tax supported volunteer fire companies (VFCs), which do not have a designated jurisdictional boundary. These companies are supported by donations, grants, and, in some cases, CAL FIRE station coverage or wildfire assignments. The local VFDs and VFCs provide protection from structural fires and wildfires, as well as medical and rescue services.

FIGURE 4.14.5 AVENUE OF THE GIANTS: FIRE PROTECTION RESOURCES[10,11]

PERSONNEL	SERVES		FIRE APPARATUS
	RESIDENTS	AREA (SQ. MI.)	
FRUITLAND RIDGE FIRE PROTECTION DISTRICT – PHONE: (707) 943-3402 EMAIL: *lake95554@yahoo.com*			
7 Volunteer 10 Auxiliary	338	20	○ Freightliner water tender, 2,250 gallon ○ International fire engine, 900 gallon ○ Quick attack and rescue vehicle
MIRANDA VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 223-3246 EMAIL: *rrdawg911@yahoo.com*			
16	520	9	○ Type-1 engine ○ (2) Type-3 engines, 500 gallons each ○ Type-6, 250 gallons ○ Spartan engine, 750 gallons ○ Freightliner water tender, 2,070 gallons
MYERS FLAT VOLUNTEER FIRE DEPARTMENT – PHONE: (707) 223-3175 OR (707) 273-9552 EMAIL: *jake@asis.com*			
1	146	2.2	○ (2) Type-3 engine ○ Full set of stabilization struts, cribbing, and Sager Emergency Fracture Response System; other medical equipment
PHILLIPSVILLE VOLUNTEER FIRE COMPANY – PHONE: (707) 616-3107			
3 Volunteer 3 Auxiliary	140	6.5	○ Type-2 engine, 2,000 gallons ○ Type-1 engine ○ Type-4 engine
SALMON CREEK VOLUNTEER FIRE COMPANY – PHONE: (707) 943-3502 OR (707) 322-6516 EMAIL: *salmoncreekfire@gmail.com*			
12	300 homes	39	○ Type-3 water tender, 1,800 gallon ○ Type-2 fire engine ○ Type-4 quick attack engine
REDCREST VOLUNTEER FIRE COMPANY – PHONE: (707) 672-5840 EMAIL: *j.olander@kazandassoc.com*			
6	Redcrest, Holmes, Larabee, Shively, Stafford, and Pepperwood	26	○ Type-1 engine, 500 gallons ○ 4WD Utility Truck with medical equipment ○ There is a satellite fire station located in Shively with associated equipment.

[10] Humboldt County Fire Safe Council. (2018). Humboldt County Fire Chiefs' Association Annual Report, 2017. (pp. 10, 18, 20-21, 23, 26). Retrieved from *https://humboldtgov.org/Archive.aspx?AMID=75*

[11] Humboldt Local Agency Formation Commission. (2016). South County Regional Fire Services Municipal Service Review. Retrieved from *http://humboldtlafco.org/msr-soi-reports*

There have been numerous successes in this planning unit over the last five years. In November 2014, Humboldt County voters passed the Public Safety and Essential Services half-cent sales tax—Measure Z.[12] Each year since its approval the Humboldt County Fire Chiefs' Association has applied for and received Measure Z funding and used it to purchase much needed fire engines, personal protective gear, and other essential equipment. The purchase of new fire engines or rescue vehicles can present a significant financial obstacle for small volunteer departments. Luckily, Fruitland Ridge was able to acquire a Quick Attack and Rescue Vehicle; and Redcrest VFC was able to purchase a new fire engine, and is now working to build a firehouse adjacent to the Redcrest Community Center, where the apparatus can be safely stored and sheltered from the elements. A firehouse will also provide a focal point for training and for bringing volunteers together. In 2018, voters expressed their desire to see continued improvement in the local level of service by renewing the Public Safety and Essential Services sales tax by passing Measure O, which did not include a sunset clause.

Fruitland Ridge successfully became a Fire Protection District in 2016 by passing a $60 parcel tax, giving the new district a reliable source of revenue to sustain their department. The Phillipsville Volunteer Fire Company is also looking into the possibility of becoming a Fire Protection District.

Of course, there have been challenges, as well. **Many of the local fire protection service groups in this planning unit have a need for more volunteer firefighters as well as volunteers willing to provide administrative, fundraising, or maintenance services.** Even with the aid of Measure Z funds, many of the fire departments still face issues with inadequate facilities and equipment. In addition, providing services to out-of-district areas puts a strain on already limited resources. There will be a continued need to improve the local level of service with support from a variety of revenue sources and efficiency strategies.

Emergency response can also be hindered by residential areas within the Unit that have poor signage and contain roads and driveways with insufficient clearance for firefighting apparatuses. The clean-up and prevention of illegal marijuana grows that can involve toxic substances is another ongoing challenge. The number of fires started by marijuana operations is not tracked, so it is difficult to document the extent of this impact.

The Weott Volunteer Fire Department, which had been in operation since 1964, disbanded in 2016. The community could not afford to rent or purchase the land on which their firehouse was located after the property was acquired by new owners. This loss, in addition to an inability to recruit and maintain a sufficient number of volunteers, led the Weott Community Services District Board to close the fire department and initiate the termination of fire services associated with the District. Representatives of the District will continue to work to identify and pursue options for providing services to the residents of Weott.

In response to the growing challenges faced by the departments in this unit, the Avenue Fire Cooperative was established to develop collaborative solutions that ensure long-term sustainability. The Cooperative is currently exploring the potential for the formation of a regional fire district or some other organizational change that will support sustainable services. Combining the assets of multiple departments into a regional district could enhance response capabilities and increase budgetary efficiency. The Cooperative has been receiving technical support from a planning team, funded through the Humboldt County Fire Chiefs' Association Measure Z grant.

AVENUE FIRE COOPERATIVE PARTICIPANTS
○ Redcrest Volunteer Fire Company
○ Shively Volunteer Fire Company
○ Weott Community Services District
○ Myers Flat Fire Protection District
○ Fruitland Ridge Fire Protection District
○ Miranda Volunteer Fire Department
○ Phillipsville Volunteer Fire Company
○ Salmon Creek Volunteer Fire Company

[12] County of Humboldt. Measure Z – Phillipsville Volunteer Fire Company Safety/Essential Services [Web]. Retrieved from *https://humboldtgov.org/1803/Measure-Z-Information*

The planning team and the greater Cooperative will continue to evaluate the political will and capacity to support several regional options designed to address challenges within this planning unit.

CAL FIRE also has several stations located throughout the Planning Unit. Staffing levels at the CAL FIRE stations in Weott vary throughout the year, but remain adequate for emergency response during most of the year. CAL FIRE also operates a Conservation Camp in the Unit: High Rock Camp, located between Redcrest and Weott. The camp provides five hand crews for firefighting purposes, and each crew has up to 17 firefighters and a captain. These crews are an all-risk department resource used both within Humboldt County and on a statewide basis year-round. During non-emergency response, these crews are deployed to work on fuel reduction projects and projects requested by other public agencies throughout the year. These crews are trained in emergency responses including, but not limited to, fire, flood, earthquake, medical, and vehicle accidents.

The CAL FIRE Weott Station can be reached by calling **(707) 946-2215** and the High Rock Camp can be reached by calling **(707) 946-2343.**

4.14.5 AVENUE OF THE GIANTS EVACUATION

When wildfires have the potential to become disasters by threatening life and safety, procedures are initiated to support the safe evacuation of people, domestic animals, and livestock from potentially hazardous areas. During such events, community evacuation sites may be established where residents can go to survive a wildfire. **Evacuation sites will be established in different locations depending on the anticipated path of the wildfire and location of the affected population.** The determination for the location of these sites is normally made by the Humboldt County Emergency Operations Center Incident Commander in cooperation with an Incident Management Team. The Humboldt County Sheriff and Emergency Officials will use the Humboldt Alert mass communication system (*https://humboldtgov.org/alerts*) and door-to-door methods to inform residents about the threat and where residents should go to take shelter.

Evacuation routes in the Avenue of the Giants Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles. Highway 101 is the central ingress and egress route. Several secondary roads connect smaller communities and residential roads to the central highway.

As discussed in the *Wildfire Environment* section above, the subdivision of timberlands and subsequent sale to homesteaders has created fragmented, unmanaged forests intermixed with homes—a landscape vulnerable to damaging wildfire and difficult to convert back to natural fire regimes. The narrowness and disrepair of many private, often gravel roads leading to these remote homesteads could create serious complications for emergency vehicle response trying to gain access during simultaneous home evacuations. Poor or complete lack of signage at roads and intersections pose potential problems for ingress and egress; this is especially true for more remote residences that are further away from the main towns. Problems with poor signage are exacerbated by ambiguity of road names and partial addresses used throughout the Unit. Many roads and driveways may also be overgrown with flammable vegetation, and have inadequate turn around spaces. The potential for landslides in the area could also inhibit access, particularly if wildfires were initiated by a severe earthquake.

Other evacuation impediments may include dense, steep road sections, landslides, fallen trees or power lines, overgrown vegetation preventing emergency vehicle access, and one-way-in, one-way-out roads that could inhibit evacuation and emergency response vehicles, or leave residents stranded should the roads become blocked.

If a catastrophic event occurs, residents and visitors may not be able to reach designated evacuation sites. In such cases, people may need to make decisions on their own about seeking shelter where they can survive the passage of the wildfire. Residents should seek shelter as a last resort, when evacuation is not an option. It can be very difficult to determine the right thing to do as the fire approaches, which is

why it is so critical to **have a plan** and to **evacuate early**, if possible. Before a wildfire threatens, community members should research options and talk to fire and emergency service representatives about evacuation procedures, expected fire behavior in their neighborhood, and what to do if they get trapped.[13] If residents are forced to take shelter, the horrific sound, smoke, and heat of a passing wildfire may be physically and emotionally difficult to endure. It may bring some solace and may help combat the natural urge to flee knowing that all possible measures have been taken to increase the odds of survival.

*See Appendix H, **Living with Wildfire** for more information on preparing for safe evacuation, and evacuation planning for pets and livestock. See also Chapter 5.4.6, **Evacuation Preparedness** in Part 5, **Risk-Assessment Detail** for information about evacuation procedures and challenges in Humboldt County.*

Humboldt Alert: Humboldt County's Mass-Notification System

- The best way for emergency personnel to alert you of an emergency in your geographic area. You may choose to be contacted by email, text message, landline, or cellphone – or all four.
- It is geographically targeted. You will only receive alerts relevant to your geographic area, which is based on the address(es) you provide. The system can hold multiple addresses under one account (ex. home, office, child's school).
- The service is completely free of charge.
- To sign-up visit: ***https://humboldtgov.org/alerts*** or contact the Humboldt County Office of Emergency Services **(707) 268-2500**.

4.14.6 AVENUE OF THE GIANTS COMMUNITY PREPAREDNESS

None of the communities within the Avenue of the Giants Planning Unit have yet achieved *Firewise Communities/USA®* recognition. The process of becoming recognized as Firewise® includes a site-specific wildfire risk assessment, an action planning process, and an annual community educational event. The Firewise Communities/USA® Recognition Program teaches people living within the WUI how to adapt to living with wildfire by preparing for a fire before it occurs. This program empowers communities with tools and resources for reducing their wildfire risk and encourages neighbors to work together to take action to minimize losses from wildfire. Community members have expressed interest, through this CWPP update process, in pursuing Firewise® recognition for the Miranda community as well as for the Pepperwood, Holmes, and Redcrest area. The Firewise® process would also be beneficial for more communities and neighborhoods within this planning unit. The Avenue Fire Cooperative and Southern Humboldt Fire Chiefs' Association are two local resources that may be able to aid in this process.

Firewise®/Firewise Communities/USA® Recognition Program: (1) A national, multi-agency effort designed to reach beyond the fire service by involving homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. (2) Firewise® offers a series of practical steps that individuals and communities can take to minimize wildfire risks to people, property, and natural resources. It emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home evacuation and design, landscaping and maintenance.

[13] CAL FIRE and Idaho Firewise offer advice on what to do if you become trapped: *http://www.readyforwildfire.org/What-To-Do-If-Trapped* and *http://idahofirewise.org/evacuation/if-you-get-trapped*.

Fire prevention accomplishments within this unit over the past five years are summarized below.

FIGURE 4.14.6 AVENUE OF THE GIANTS: FIRE PREVENTION ACCOMPLISHMENTS
○ Support has been provided to the local fire service through Measure Z, a half-cent sales tax passed by Humboldt County voters in 2014. These funds have been used to purchase equipment, make progress on establishing secure structures to house fire engines, and pay fees for dispatch.
○ Redcrest VFC made significant progress on planning and building a fire station at the Redcrest Community Center site. This effort is being supported by funding from Measure Z and community fundraising.
○ The residents of Shively have been working hard and making great progress on developing local community fire protection capacity. Volunteers have received training, equipment has been donated, and Redcrest VFC is currently providing an organizational umbrella for the service.
○ Fruitland Ridge VFD successfully passed a $60 parcel tax, which will provide a reliable source of revenue for the department.
○ Members of the Miranda VFD proudly participated in a Humboldt local government strike team to assist with the suppression of California wildfires during the 2017 and 2018 fire seasons. The experience gained from these assignments increases the local capacity for responding to similar events within this planning unit.

4.14.7 AVENUE OF THE GIANTS LOCAL WILDFIRE PREVENTION PLANS

As of the date of this CWPP, there were no completed local planning documents such as a CWPP or Firewise® Assessment in this planning unit. Communities and/or neighborhoods may choose to pursue Firewise® recognition, and through that process would adopt Firewise® Action Plans that identify and prioritize actions which reduce the risk posed by wildfire. Alternatively, a local *fire safe council* could facilitate the writing and implementation of a community-level wildfire protection plan. As a first step, a point person or group of individuals must come forward to lead these efforts from within the community.

This Planning Unit Action Plan will provide a starting point or may serve as the equivalent to a local CWPP for these fire-planning efforts. A list of priority action recommendations reflective of the community concerns and ideas collected through the process described in *section 4.14.8* was developed by the HCFSC to help guide and inspire wildfire preparedness in this planning unit. *See section 4.14.9, **Avenue of the Giants Action Plan** for a list of priority actions recommended by this CWPP.*

Fire Safe Council (FSC): Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel-reduction projects, and more. Visit ***www.firesafecouncil.org***.

Humboldt Redwoods State Park Plans

The Humboldt Redwoods State Park (HRSP) developed the Unit Prescribed Fire Management Plan[14] in 1993 to support its Prescribed Burn Program. The Plan and the Program are founded on the understanding that fire plays a vital role in the native ecosystem. Recognizing the negative impacts of its absence in recent decades, the Plan lays out a number of management strategies aimed at reintroducing fire into the park. The overarching goals of the Prescribed Burn Program are to protect the resources of the park from unwanted and unnaturally intense fires; to re-establish the natural vegetative seral stages, mosaics, and fuel loading; and to generate data that will facilitate setting further objectives or adjust stated objectives.

[14] California Department of Parks and Recreation, North Coast Redwoods District. (1993). Humboldt Redwoods State Park Unit Prescribed Fire Management Plan. Prepared by J. Stuart, L. Fox III, and Gary Emery of the Humboldt State University Dept. of Forestry.

Since 1998, HRSP has successfully utilized this plan to complete 16 prescribed burns in five different units within the park for a total of 3,011 acres. Additional units are being developed, each of which is burned every 2-4 years. Most burns were conducted in grasslands and adjacent forests to discourage woody vegetation from encroaching into grasslands. Approximately half of the grasslands within HRSP have been converted to forest or shrubland due to a lack of fire. In addition to restoring native grassland, these burns are aimed at reducing fuel loads that encourage high severity fire, maintaining fire dependent ecosystems such as oak woodlands, and restoring fire as an ecological process.

In 1998, the Park rolled out a Wildfire Management Plan[15]. In contrast to the plan discussed above, the Wildfire Management Plan is focused on clarifying the policies, responsibilities, and objectives of the Park as they relate to unwanted fire—before, during, and after. It also identifies sensitive park resources that should be protected such as cultural sites, recreational areas, sensitive plant communities, and power lines. As the primary fire protection agency for the park, CAL FIRE is a signatory of the Plan. The land management objectives related to wildfire are to prevent unwanted fire; to protect life, property, and resources; to take initial control actions on all fires that threaten the park; to minimize resource damage; and to identify appropriate mitigation actions after the fire. An update to the Plan was in progress at the time of this CWPP's publication.

4.14.8 AVENUE OF THE GIANTS COMMUNITY IDENTIFIED POTENTIAL PROJECTS

As part of the larger collaborative planning process to create this CWPP, 14 community wildfire preparedness workshops were held throughout the County. *See Chapter 1.2, **Collaborative Planning Process** and Appendix B, **Planning Process Details** for more information.* The workshop for this planning unit was held on November 6, 2017 at South Fork High School with the following goals:

Provide information:

- Fire protection capabilities and needs.
- Prevention of unplanned human-caused wildfires.
- Wildfire and emergency preparedness.
- The role of wildfire in our local environment.
- The Humboldt County Community Wildfire Protection Plan (CWPP).

Seek Information:

- Obtain local knowledge and concerns regarding assets and hazards.
- Provide an opportunity for direct input into priorities for community fire safety.

Through the initial 2004-2005 fire-planning process and the 2012 and 2017 CWPP update processes dozens of projects were identified for this planning unit through a community workshop mapping exercise. These projects are illustrated on the community-identified projects map found at the end of this Unit Action Plan (*Map 4.14.3*). New or confirmed existing project ideas proposed during the 2017 update process are summarized in *Figure 4.14.7* and *4.14.8* in this section. *For more information on the mapping exercise, see Appendix B.5, **Mapping Exercise Instructions**.* The community-identified fire hazards, protection resources, and assets and values at risk discussed throughout this Planning Unit Action Plan (*Map 4.14.2*) reflect information generated by these community workshop mapping exercises, as well as information resulting from direct outreach to local fire departments and residents.

The data collected through these planning processes can also be viewed within the fire-planning GIS Portal. The GIS Portal allows users to search for and view specific community-identified fire-planning features by location or to zoom into a desired area from an aerial view. The GIS Portal also provides descriptions of each planning feature. To access the Portal, go to: *https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*. For a copy of fire-planning feature descriptions in table format, please contact the Office of Natural Resources Planning by phone **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

[15] California Department of Parks and Recreation, North Coast Redwoods District. (1998). Wildfire Management Plan.

The following community-identified project ideas have been identified through the planning process described above and will not be found on the maps or in the GIS Portal but are important to note and evaluate for feasibility.

FIGURE 4.14.7 AVENUE OF THE GIANTS: COMMUNITY-IDENTIFIED PROJECTS
○ Increase redundancy of communication system.
○ Perform more regular maintenance of fire hydrants.
○ Enhance public outreach. Topics should include Blue Dot, defensible space, and locked gates.
○ Collaborate with the Parks to accomplish fuel reduction projects.
○ Create an alternate evacuation route out of the Salmon Creek community.

The local residents who attended the November 6, 2017 workshop identified the following projects as their top priority projects to be evaluated for feasibility and implemented over the next five years. The rest of the community identified projects can be found in the CWPP Web GIS Portal described above.

FIGURE 4.14.8 AVENUE OF THE GIANTS: COMMUNITY-IDENTIFIED PRIORITY PROJECTS		
PROJECT DESCRIPTION	PROJECT TYPE	PROJECT ID
Miranda State Park fuel break/buffer	Landscape	MIR050
Miranda defensible space/road access	Defensible Space	MIR154
Salmon Creek Road to Thomas Road shaded fuel break	Roadside Clearance	MIR140
Barnum Road fuel treatment	Roadside Clearance	MIR170

4.14.9 AVENUE OF THE GIANTS ACTION PLAN

Ideally, everything recommended in this action plan will be implemented. However, feasibility analysis and implementation will be subject to the availability of funds and other resources, and the willingness and ability of community members and plan partners to take action. This action plan can be used to guide the action of community members, organizations, and agencies working and living within each of the 14 planning units within Humboldt County. It is the intention of the HCFSC that one or more local groups be sustained within each planning unit to lead local action. It is understood that some units have more capacity than others. The HCFSC, with individual members from higher-capacity areas and partner agencies, can provide guidance for building capacity where needed.

Any recommended vegetation treatments in this CWPP must be undertaken with the consent and involvement of the property owner and the observance of all applicable local, Tribal, state, and federal laws and regulations. Please work closely with the applicable regulatory and permitting authority as projects are developed, particularly if public funds are being used and/or the project will take place on public lands or in public right-of-ways. For more information about how to ensure regulatory compliance, refer to *Appendix I, Regulations and Compliance*.

The following Action Plan is intended as a resource to guide and inspire action, as well as to cite in grant applications to leverage implementation funds.

Priority Action Recommendations:

The following recommendations are based on a review and evaluation of community-identified fire planning features, local fire planning documents where they exist, and findings from this Humboldt County CWPP risk assessment. Given the results of this analysis, a growing understanding of local capacity, and potential supporting resources, it was determined that the following list of **priority actions** would best serve as a starting place towards the fire safety of the communities in this planning unit.

- **E**valuate the feasibility of organizing an Avenue of the Giants fire safe council to guide coordinated wildfire preparedness within this planning unit. The Avenue Fire Cooperative could be a good starting point for this effort.
- **I**dentify community organizations or groups of individuals in neighborhoods adjacent to the wildland with the interest and capacity to facilitate participation in the Firewise Communities/USA® Recognition Program or other similar wildfire preparedness program.
    - This focus area could be added to already existing disaster preparedness groups.
    - Conduct a community risk assessment with support from CAL FIRE, the Avenue Fire Cooperative or individual fire departments, and the HCFSC, and draft a Firewise® action plan. Use information from this unit action plan as a starting point for the development of community assessments and action plans.
    - Actively implement and maintain the Firewise® action plans on an annual schedule.
    - Host a Firewise® Day to share findings and inspire action; Firewise® activities could be added to an existing annual community event.
    - If necessary, seek funding to support this effort.
- **O**nce implementation groups are formed, evaluate, further develop, seek funding for, and implement—as appropriate and feasible—the community-identified priority actions listed above as well as all community-identified potential projects stored in the Web GIS Portal. Perform this same process for the actions identified in this *Priority Action Recommendations* list, and the

Action Catalogue below. Pursue activities that align with available resources, community values, and the highest wildfire risks to local assets and values.

- Priority areas within this planning unit for fuels reduction and potential Firewise® programs are included in the list below. Activities might include creating defensible space, roadside clearance, chipper programs, and/or landscape treatments, as well as education and assistance for addressing structural ignitability through home hardening and evacuation preparedness. Most of these areas will benefit from close coordination and collaboration with Humboldt Redwoods State Park and Humboldt Redwood Company. Emphasize outreach to sensitive populations such as the elderly, disabled, and/or low income within these areas:
    - Miranda (Particularly in the Forest Grove neighborhood, as well as dispersed residences in the outskirts of the town. Highly ranked community identified priority – MIR154)
    - Salmon Creek (MIR184)
    - Shively (RIO096)
    - Eel Rock (located in a Very High Fire Hazard Severity Zone – MIR164)
    - Fruitland Ridge (MIR0157)
    - Neighborhood along Cathey Road (MIR159)
    - Pepperwood/Holmes/Redcrest (MIR187, 186, 185)
- The high fire danger, a large and dispersed WUI population, and a need for increased wildfire preparation combine to make **evacuation planning** and education a top priority in this planning unit. Based on observations of construction design and home siting in many areas throughout this planning unit, many homes are vulnerable to ignition from wildfires (even embers from far off fires). This plan recommends that residents stay vigilant and evacuate as early as possible to avoid loss of life.
    - Work with the County Office of Emergency Services (OES), local fire service, and law enforcement to engage community members in evacuation preparedness (generally, the Sheriff's Office is responsible for conducting evacuations while the fire service focuses on wildfire management). Work together to review best practices as well as emerging new approaches.
    - Identify local community liaisons to work directly with emergency management officials.
    - Identify and map local evacuation routes and sites.
    - Given the large number of residences located on long, dead end roads, residents, law enforcement, and local fire departments should work together to identify alternative paths that may be taken or actions to initiate if primary routes become inaccessible during a wildfire. The highest priority area is:
        - Salmon Creek – a priority for this area is to create and/or confirm and ensure that residents are aware of an alternate evacuation route out of the Salmon Creek community.
    - Identify and actively maintain areas to shelter as a last resort if safe evacuation is blocked by wildfire, especially in areas with one-way-in, one-way-out roads. Areas of high priority include:
        - Shively
        - Salmon Creek

        - Residences along Spring Canyon Lane near Phillipsville
        - Eel Rock
    - Improve community communication networks and explore ways to increase redundancy. This might include developing a community phone tree list and/or compiling a list of contacts to call in case of emergency or when help is needed from (or in) other areas. As another form of emergency communication, consider training or identifying a few community members to use HAM radios and secure funds to purchase radios and store them strategically throughout the community.
    - Work with local organizations, the Humboldt County Board of Supervisors, Humboldt County FSC and GIS staff, state legislators, CAL FIRE, and/or utilities to address communications challenges including the lack of internet access in some areas; radio repeater dead zones; confusion about road names and local addresses; and more.
    - See additional evacuation preparedness ideas in the *Action Catalogue* below under "Disaster Preparedness".
- **F**ocus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response, especially those roads used by the highest number of residents, single access roads, and roads leading to remote, hard to access residences. Priority roads for initial evaluation and outreach efforts include:
    - Salmon Creek Road/Thomas Road and offshoots leading to residences (Highly ranked community identified priority – MIR140)
    - Barnum Road and dead-end off shoots (Miranda; Highly ranked community identified priority – MIR170)
    - Felt Road and dead-end off shoots (Miranda)
    - Eel Rock Road and other roads in the Eel Rock neighborhood
    - Shively Road, Larabee Creek Road, and Johnson Lane
    - Dyerville Loop Road and Elk Creek Road (egress and ingress to and through Fruitland Ridge) as well as offshoots leading to residences
    - Cathey Road (East of Myers Flat)
    - Spring Canyon Lane, leading to dispersed residences near Phillipsville
    - Sequoia Road (Myers Flat)
    - Frost Lane (Myers Flat)
    - Newton Road (Upper Weott)
    - Madrone Road (Upper Weott)
- **C**ollaborate with agency and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. Match the site with the best method of treatment to meet forest resiliency and community protection goals, including prescribed fire, forest thinning, landscape pruning, mowing, or targeted grazing.
    - Evaluate the following priority areas for potential collaboration between community members, local fire service, CAL FIRE, and Humboldt Redwoods State Park:

- Miranda, where state park lands are adjacent to private property (Highly ranked community identified priority – MIR050).
- Myers Flat
- Salmon Creek, where state park lands are adjacent to private property.
- Redcrest
- Pepperwood
- Weott

- CAL FIRE and Humboldt Redwoods State Park staff should conduct outreach in neighboring communities to increase understanding of and support for the use of prescribed fire on park lands.

- Work with commercial timberland owners such as Humboldt Redwood Company and Sierra Pacific Industries to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire.
  - Design projects to buffer residences from wildfires that originate from the timberlands and to protect timber resources and ecological values from fires that start in adjacent developed areas and along roads.
    - Inform this process with Humboldt Redwood Company's recently completed fire risk assessment model generated for their ownership.
    - Priority areas for such project development include timberlands adjacent to Redcrest and Shively.
  - Seek opportunities to collaborate on roadside vegetation management projects where public roads or private roads, leading to residences, transect timberlands. Initial areas to evaluate include Dyerville Loop Road and Shively Road.
  - Organize dialogue to share community concerns about the use of herbicides to kill hardwood tree species and leaving them as standing snags. This practice is commonly referred to as "hack n' squirt" or "frilling". The objective of the dialogue will be to find common ground for reducing the associated wildfire hazards within this planning unit.
- Coordinate with CAL FIRE, local fire departments, and community members and/or groups to develop a strategy to ensure that unmaintained vegetation on parcels that pose a wildfire threat to neighboring homes is abated.
  - Start by reaching out to the property owner(s) with the goal of helping them understand the fire danger and the importance of working across property lines to reduce wildfire hazards. If there are many properties of concern, consider organizing a neighborhood meeting to discuss the issue; invite CAL FIRE, local fire department representatives, and/or fire safe council/Firewise® community representatives.
  - Request assistance from the local fire agency (for vacant properties, if there is a local ordinance) or CAL FIRE (for properties with a structure) and ask for an inspection.
  - As a last resort, send a certified letter that describes the hazard, including photos, and states that if a fire that originates on their property spreads to yours, resulting in damage, legal action will be taken.
  - Contact the HCFSC for more details and examples of how to address this situation.

- Organize community workshops that demonstrate best practices for mitigating fire hazard risks including how to create and maintain defensible space, ensure firefighter access, and set up firefighting water sources. CAL FIRE could participate by presenting on the effects of wildfire.
- Encourage Humboldt Redwoods State Parks to increase their outreach to visitors regarding ignition prevention. This could include information at the Visitor Center, signage, or pamphlets.
- Continue the work of the Avenue Fire Cooperative to explore options and make progress on local fire service sustainability efforts such as:
    - Recruiting and retaining volunteers (firefighters as well as auxiliary volunteers);
    - Establishing/maintaining secure, consistent, and sustainable revenue sources to meet growing needs and costs;
    - Continuing to develop the capacity of the Shively Fire Company;
    - Pursuing funding to construct a Redcrest Fire Station, repair Fruitland Ridge facilities, and build an addition to the Miranda station to accommodate all fire trucks;
    - Increasing the regularity of fire hydrant maintenance within this planning unit;
    - Establishing strategies for industrial timber companies and the state park to support the survival of local fire departments;
    - Ensuring that all developed areas and areas with imminent plans for development are within the boundaries of a fire related district and that services are being provided through the most efficient, effective, and sustainable structure. This may involve fire related district annexations, formations, and consolidations;
    - Exploring the feasibility of establishing and funding a Rural Fire and Rescue Coordinator or Coordinators to keep their finger on the pulse of the larger fire service;
    - Helping local fire chiefs meet increasing requirements;
    - Facilitating collaboration on efforts that benefit all fire departments and companies that participate in the Southern Humboldt Fire Chiefs' Association;
    - Staying abreast of rural funding opportunities and offering guidance and administrative support to help with their acquisition; and more.
- Increase the availability of water for fire protection, especially in areas without municipal water service, by investing in more community water tanks and ensuring existing water tanks are outfitted with fittings compatible with firefighting equipment. Priority water needs to evaluate include:
    - Salmon Creek
    - Cathey Road Neighborhood
    - Fruitland Ridge
    - Eel Rock

Action Catalogue:

This Action Catalogue lists additional wildfire mitigation actions that can be selected in addition to, or to compliment, the priority actions above. Action items are organized under each of the six countywide goal categories outlined in *Part 3, **Countywide Action Plan**.* Local groups are encouraged to implement these actions within their communities wherever possible and to actively seek opportunities to engage with and benefit from the associated work being done countywide by the Humboldt County Fire Safe Council (HCFSC). To contact the HCFSC, call **(707) 267-9542**, or email *cimmitt@co.humboldt.ca.us*.

Wildfire Ignition Prevention

- **I**mplement One Less Spark education: *www.readyforwildfire.org/One-Less-Spark-Campaign*.
- **U**se *Living with Wildfire in Northwestern California* as a primary outreach tool and distribute widely: *https://humboldtgov.org/livingwithwildfire*.
- **I**dentify primary ignition sources in the local community and focus prevention efforts on reducing them.
- **I**ncrease community awareness and access to information about proper methods for safe pile-burning, prescribed fire, and other fuel reduction strategies in order to avoid an unintended wildfire.
- **I**nform residents about the importance of vigilance and caution during Red Flag conditions when a small ignition has a higher probability of growing into a large fire.

Wildfire Preparedness

- **D**evelop a wide range of opportunities for community education on preparing for wildfire. This effort should involve the production and/or distribution of a variety of informational materials.
    - Use existing materials as much as possible and develop materials tailored to the local community as needed and able. Examples of new materials include locally based before-after fuel treatment and or home hardening pamphlet with high quality photographs.
    - Distribute materials through mailers (including already occurring mailers such as local utility bills); via community hubs such as the post office; at all community events; on community bulletin boards; through the use of social media and networks, local media outlets, and any means used by the local community to share important information.
    - Include compelling stories of past wildfire events.
    - Encourage local volunteer/service organizations or schools to help perform community service activities including delivering literature to homeowners or clearing around and painting fire hydrants.
- **P**rovide residents with information about and assistance with reducing structural ignitability and maintaining adequate defensible space around their homes.
- **C**ollaborate to maintain defensible space for elderly, disabled, and low-income residents who are unable to do or fund the work themselves.

- Focus roadside fuel reduction efforts on priority ingress and egress routes for safe evacuation and emergency response. See more about this action in *Priority Action Recommendations* above.
- Work with PG&E and local landowners to reduce fuels along power line easements.
- Support or create community chipping programs.
- Compile a directory of brushing crews and other resources for landowners seeking to reduce fuels on their property.
- Raise awareness of Sudden Oak Death and the fire hazard that afflicted trees pose. Determine whether there are hot-spots for Sudden Oak Death infected trees. Conduct fuels reduction projects in those areas to prevent spread and mitigate fire hazard. Seek guidance from organizations such as University of California Cooperative Extension. Focus efforts on the following area:
    - Salmon Creek Road (evaluate area near the beginning of the road)
- Work with commercial timberland owners to identify priority areas for strategic vegetation treatments to increase forest resiliency to wildfire. See more about this action in *Priority Action Recommendations* above.
- Collaborate with state park and local partners to plan and fund landscape level fuels reduction and management where appropriate and in observance of applicable environmental laws and regulations. See more about this action in *Priority Action Recommendations* above.

Disaster Preparedness

- Evacuation preparedness and the identification of local evacuation routes and sites is a priority for this unit. See details in the *Priority Action Recommendations* above.
- Work with the County Office of Emergency Services (OES) and local fire service to engage community members in evacuation preparedness. See more about this action in *Priority Action Recommendations* above.
- Improve community communication networks and explore ways to increase redundancy. See more about this action in *Priority Action Recommendations* above.
- Work with a local fire or law enforcement agency to form a Community Emergency Response Team or CERT. Coordinate with the Humboldt CERT Coalition.
- Promote the creation of family disaster and evacuation plans.
- Inform residents about Humboldt Alert and encourage them to sign up to receive emergency notifications at *https://humboldtgov.org/alerts*.
- Work with residents to ensure adequate road and home address signage for more efficient emergency response. Signs should be large, reflective, and have lettering at least three-inches in height. Less noticeable but more sentimental address signs may remain but it is important to post reflective signs as well.
- Address road conditions that inhibit effective evacuation and access by emergency responders. Begin by systematically identifying and mitigating such access impediments.

- Inform residents about the importance of keeping gates open or accessible during Red Flag conditions. Community members and timber companies should consider providing a key or access code to the local fire department.
- Inform residents of the need to have accessible, mapped, and identifiable water sources for fire suppression, and the importance of sharing that information with local fire departments/companies. This type of activity can be supported by a "Blue Dot" program, which identifies the location of firefighting water sources by marking them with blue reflective dots.
- Increase the availability of water for fire protection. See details in *Priority Action Recommendations* above.

Fire Protection

- Support the local fire departments by becoming a volunteer. Volunteer firefighters and volunteers who are emergency medical service (EMS) trained are essential to a functional local fire service. In addition, volunteers are needed for non-firefighting and EMS duties such as logistical support, traffic control, administration, fundraising, public education, and fire prevention.
- Assist in the development of recruitment and retention strategies for volunteer fire departments.
- Help local fire departments raise funds by making donations directly and/or organizing fundraising events or campaigns.

Restoration of Beneficial Fire

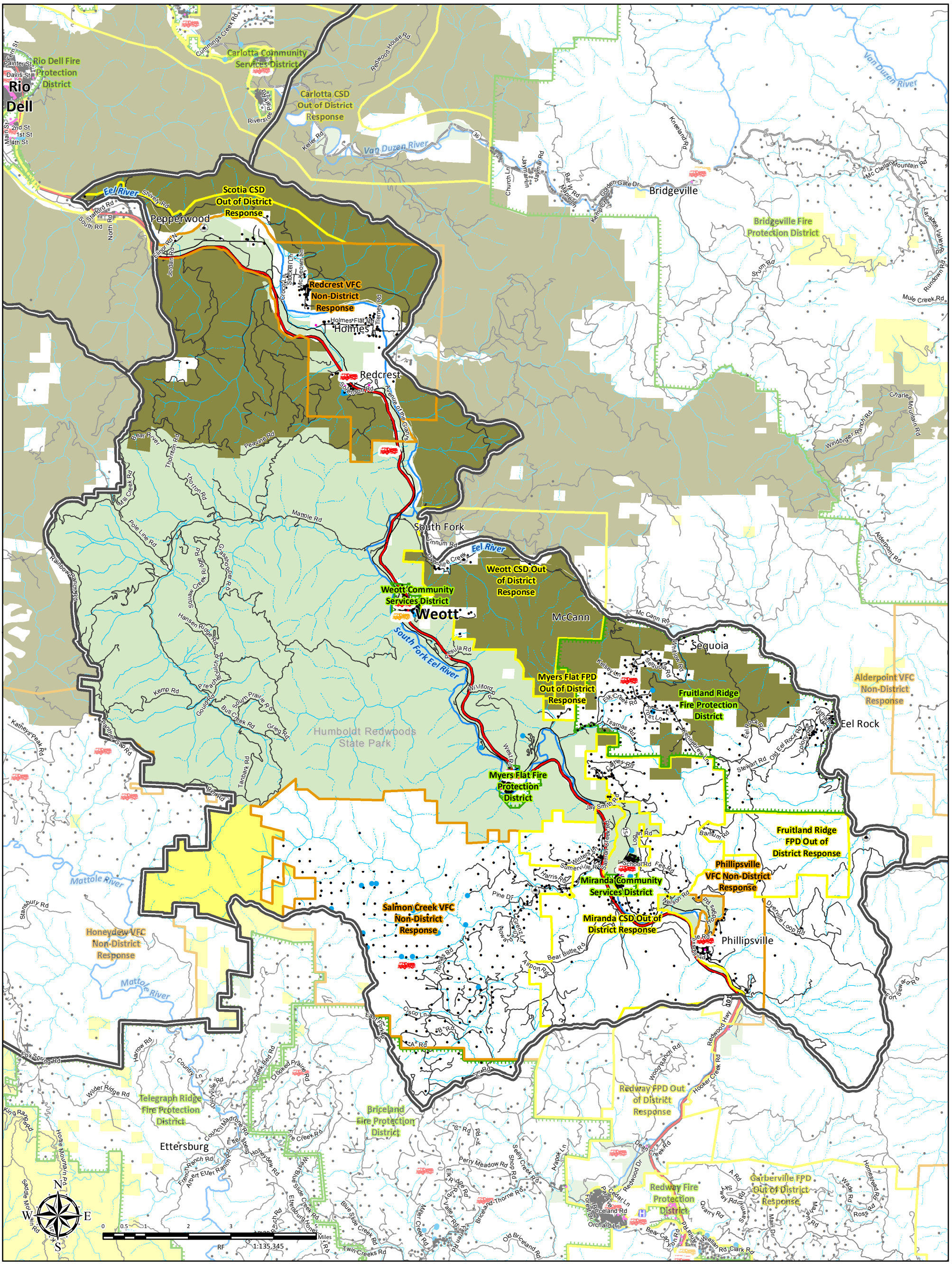
- Collaborate with Humboldt Redwoods State Park to create a buffer zone between the park and communities using prescribed fire.
- Provide resources to private landowners interested in implementing prescribed burns on their property, including the contact information for CAL FIRE, UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council.[16]
- Share information about educational events that provide information about prescribed burning.
- Encourage landowners with larger acreages to work with the Humboldt County Prescribed Burn Association to conduct prescribed burns on their lands.
- Help federal land managers garner local support for using prescribed fire or managed wildfire on the public lands they manage.

[16] To learn more about UC Cooperative Extension, the Humboldt County Prescribed Burn Association, and the Northern California Prescribed Fire Council, contact Lenya Quinn-Davidson at lquinndavidson@ucanr.edu or call her at (707) 445-7351. To learn about CAL FIRE prescribed fire programs and support, contact Chris Ramey at chris.ramey@fire.ca.gov or call him at (707) 726-1206.

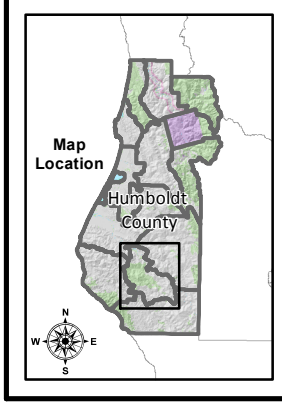
Integrated Planning

- **I**ntegrate, where there are mutual benefits, the community preparedness and wildfire resiliency efforts of the Avenue Fire Cooperative, Humboldt Redwoods State Park, local fire departments, and future Firewise® groups. See details in *Priority Action Recommendations* above.
- **I**nitiate and maintain participation in the Firewise Communities/USA® Recognition Program. See more about this action in *Priority Action Recommendations* above.
- **S**hare GIS data sets between representatives within the Planning Unit and County staff to maintain the fire planning features included in the County Web GIS Portal (*https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP*). In the absence of GIS data, share geographic information/descriptions about project planning and implementation so that it can be digitized and incorporated into the Web GIS Portal.

MAP 4.14.1 AVENUE OF THE GIANTS PLANNING UNIT



PLANNING UNIT MAP



- CWPP Planning Unit Boundary

Emergency Response
- Local Fire Station
- CAL Fire Station
- Six Rivers Fire Station

Hospitals and Clinics
- Hospital/Medical Center
- Red Cross

Lookouts, Lights and Radio
- Lighthouse
- School

Local Fire Organization Response Area
- District
- Out of District
- Non-Tax (Volunteer Fire Company (VFC))
- Proposed Annexation Area

Improved Parcels
- Improved Parcel (not actual location)
- Commercial or Industrial Lot (not actual location)

Airports
- Landing Strip

Highways and Roads
- HWY 101
- State HWY
- HWY or Secondary Road
- Local Road or Street

Hydrography
- Major River or Stream

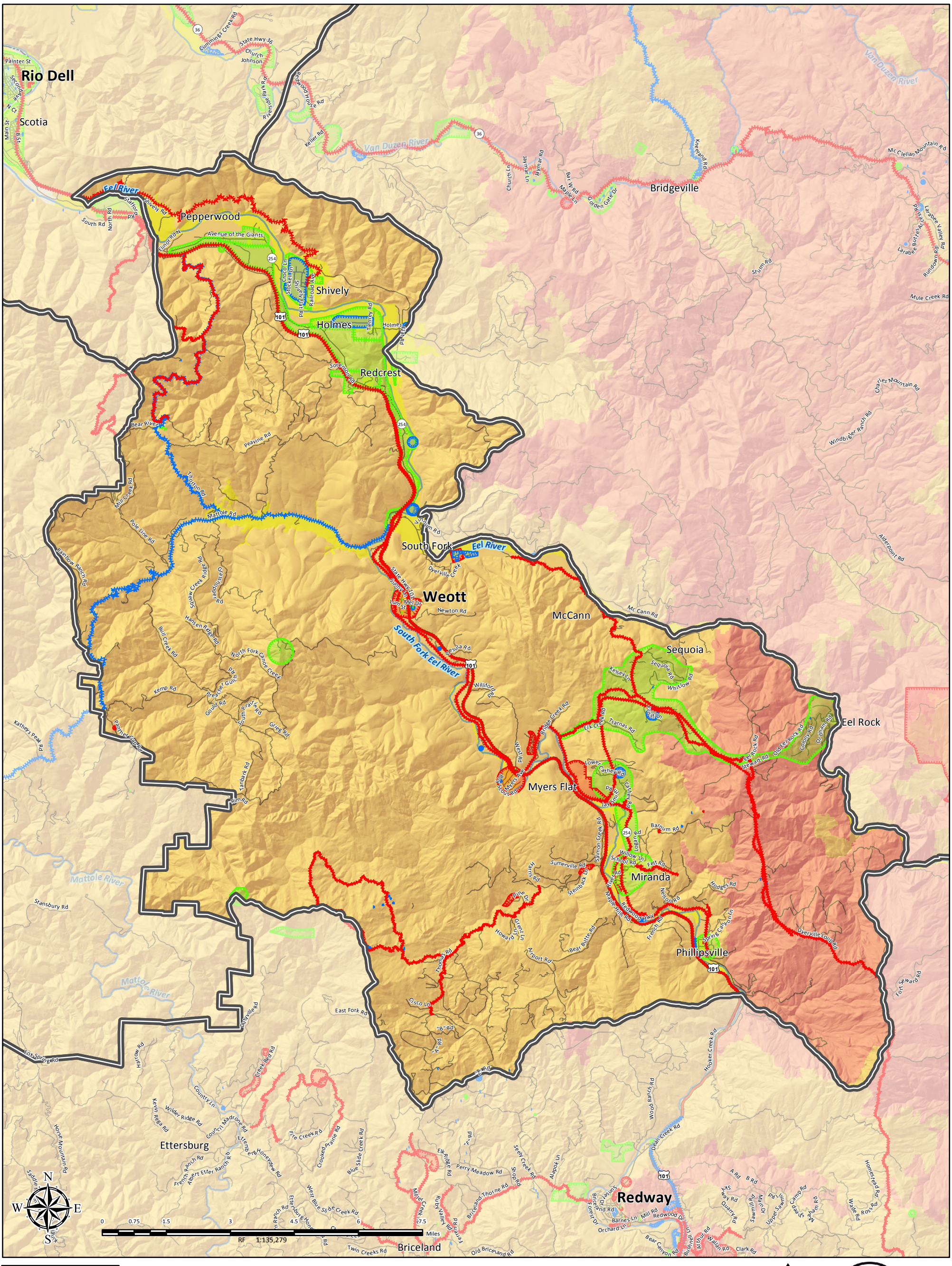
Infrastructure
- Gauging Station
- Water Tank or Source
- Historic Locations

Land Ownership
- Bureau of Land Management
- National Park Service
- State Park or Other State Lands
- Six Rivers National Forest
- U.S. Fish and Wildlife Service
- Tribal Lands
- Private
- Industrial Timber
- Cities

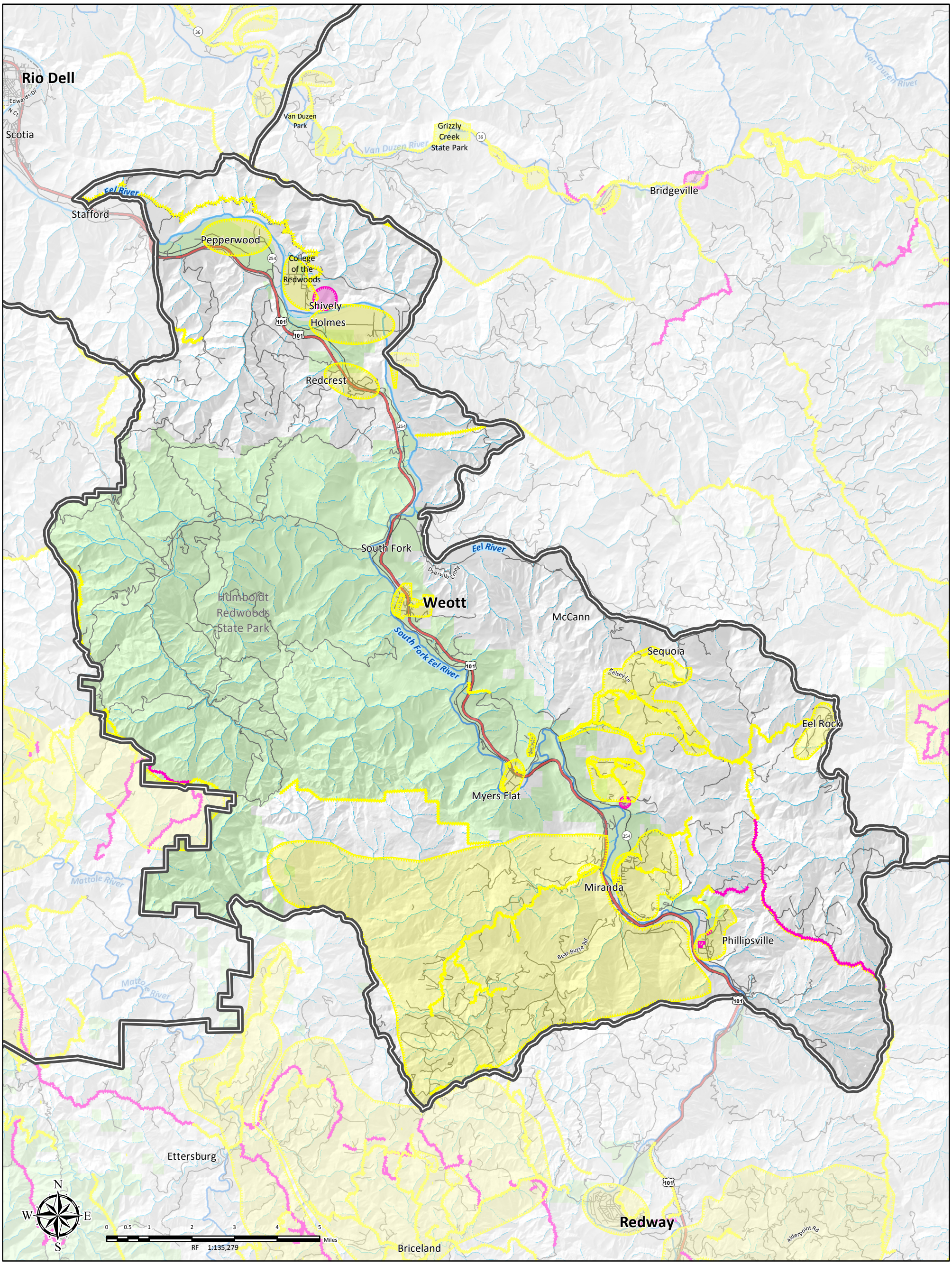
Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.
The map is intended for planning purposes and should not be used for precise measurement or navigation.

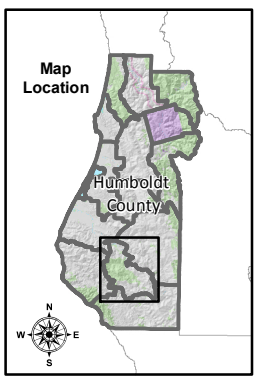
Map compiled by County of Humboldt, July 2018.
For online maps and fire planning feature details, visit:
https://webgis.co.humboldt.ca.us/HCEGIS2.6_CWPP
Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us

MAP 4.14.2 AVENUE OF THE GIANTS PLANNING UNIT


Rio Dell
Scotia
Pepperwood
Shively
Holmes
Redcrest
Bridgeville
Weott
South Fork
McCann
Sequoia
Eel Rock
Myers Flat
Miranda
Phillipsville
Redway
Briceland
Ettersburg
Eel River
South Fork Eel River
Van Duzen River
Mattole River
Avenue of the Giants
Mattole Rd
Shively Rd
Elinor Rd N
Railroad Ave
Holmes
Tiernley Rd
Redcrest Rd
Bridgeville-Shelter Cove Rd
Alderpoint Rd
Briceland-Thorne Rd
Perry Meadow Rd
Seely Creek Rd
Elk Ridge Rd
Wilder Ridge Rd
Kemp Rd
Bull Creek Rd
Hansen Ridge Rd
Squaw Creek Rd
Thorton Rd
Pole Line Rd
Rainbow Ranch Rd
Mill Creek Rd
Kathys Peak Rd
Panther Gap Rd
Fox Spring Rd
Harrow Rd
Horse Mountain Rd
Saddle Mountain Rd
Kings Peak Rd
Stansbury Rd
Dyerville Rd
East Fork Rd
Wood Ranch Rd
Hooker Creek Rd
Dean Creek Rd
Homestead Rd
Wade Ross Rd
Fort Seward Rd
Mc Clellan Mountain Rd
Larabee Valley Rd
Rundown Rd
Mule Creek Rd
Charles Mountain Rd
Windbigler Ranch Rd
Dyerville Loop Rd
Mc Cann Rd
Newton Rd
Williford Rd
Bridge Creek Rd
Elk Creek Rd
Tsarnas Rd
Stewart Rd
Old Eel Rock Rd
Cathey Rd
Barnum Rd
Sumerville Rd
Steinback Ln
Maple Hills Rd
Redwood Hwy
Nelson Rd
Hodges Rd
French Rd
Sprowl Creek Rd
Bear Butte Rd
Airport Rd
Thomas Rd
Howard Ln
Pine Dr
Ferris Rd
Cisco Ln
"A" Rd
"B" Rd
"F" Rd
Briceland Rd
Briceland Forest Dr
Orchard Ln
Barnes Ln
Mill Rd
Redwood Dr
Bear Canyon Rd
Arthur Rd
Walan Rd
Clark Rd
Old Briceland Rd
Twin Creeks Rd
Miller Creek Rd
Ruth Valley Rd
Fire Creek Rd
Crooked Prairie Rd
Blue Slide Creek Rd
West Blue Slide Creek Rd
Ettersburg Honeydew Rd
Ettersburg Rd
French Ranch Rd
Albert Etter Ranch Rd
Kevin Rega Rd
Country Ln
Council Madrone Rd
Creek Bed Rd
Greig Rd
Tanbark Rd
Kelsey Ln
Sequoia Rd
Whitlow Rd
Frost Ln
Gothard Rd
Orchard Rd
Jay Smith Rd
Lowe Rd
Myers Ave
Railroad Ave
Shively Flat Rd
Croco Ln
Stockel Ln
Second Ave
Painter St
Main St
B St
N Ct
Stafford Rd
South Rd
North Rd
Elinor Rd
Cummings Creek Rd
State Hwy 36
Church
Johnson
Rivers Edge Park Rd
Peanut Hollow Rd
Keller Rd
Church Ln
Jaynar Ln
Jaynar Rd
Bar W Rd
Maple Ln
Golden Gate Dr
Knee Land Rd
Larabee Butte Rd
Stump Rd
Peavine Rd
Bear River Rd
Mattole Rd
Pole Line Rd
Dyerville Creek
Summit Dr
Mad Dr
Lum St
State Hwy 101
Newton Rd
Williford Rd
Bridge Creek Rd
Elk Creek Rd
Tsarnas Rd
Stewart Rd
Old Eel Rock Rd
Cathey

MAP 4.14.3 AVENUE OF THE GIANTS PLANNING UNIT





COMMUNITY-IDENTIFIED PROJECTS

CWPP Planning Unit Boundary

Community-Identified Features

Proposed Project

Treated Project

In order to be effective, all Treated Projects will require continual maintenance.

Land Ownership

Public Land

Tribal Land

Cities

Highways and Roads

HWY 101

State HWY

HWY or Secondary Road

Local Road or Street

Hydrography

Major River or Stream

Perennial Stream

Intermittent Stream

Land ownership and infrastructure data was compiled by the County of Humboldt. Fire planning features identified at community workshops by residents; local, state, and federal fire service and prevention partners; and Humboldt County staff. Other data sources include the 2006 and 2013 editions of the Humboldt County Community Wildfire Protection Plan.

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Contact: cimmit@co.humboldt.ca.us or jvondohlen@co.humboldt.ca.us