Colusa County

Community Wildfire Protection Plan

2021

Report to the Colusa County Board of Supervisors and CAL FIRE Sonoma-Lake-Napa Unit

Prepared for the Colusa County Resource Conservation District
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ACRONYMS

Acronym	Definition
BOR	U.S. Bureau of Reclamation
BLM	Bureau of Land Management
CAL FIRE	California Department of Forestry and Fire Protection
CCCWPP	Colusa County Wildfire Protection Plan
CCRCD	Colusa County Resource Conservation District
CCPWD	Colusa County Public works Department
CEQA	California Environmental Quality Act
DFPZ	Defensible Fuel Profile Zone
DOI	Department of Interior
DWR	California Department of Water Resources
EIR	Environmental Impact Report
FSC	Fire Safe Council
GCRCD	Glenn County Resource Conservation District
LRA	Local Responsibility Area
MNF	Mendocino National Forest (administered by the United States Forest Service)
NEPA	National Environmental Policy Act
LNU Unit	Sonoma-Lake-Napa CAL FIRE Unit
RCDTC	Resource Conservation District of Tehama County
SRA	State Responsibility Area
TICP	Tactical Interoperable Communications Plan
TAC	Technical Advisory Committee
TGFSC	Tehama-Glenn Fire Safe Council
THP	Timber Harvest Plan
USFWS	United States Fish and Wildlife Service
VTP	Vegetation Treatment Program (a CAL FIRE program formerly referred to as the Vegetation Management Program)
WUI	Wildland Urban Interface

Acknowledgements

The Colusa County Resource Conservation District would like to extend special thanks to Colusa County Community Wildfire Protection Plan stakeholders. Technical Advisory Committee (TAC) and Landowner/Community Advisory Committee (L/CAC) meetings were held to gather valuable information that is included in this working document. The collective contribution of time, technical knowledge, and personal histories by attendees was invaluable. TAC members are listed in **"Table 1 Community Fire Plan Stakeholders"** shown on page 17. L/CAC members were not listed in order to respect their privacy.

A special thanks is also owed to others who generously provided their time and assistance to this project including Dan Lang, Grant Manager of the California Fire Safe Council and CALFIRE staff who were generous with their time and technical assistance. Additional thanks is given to Vicky Dawley, Steve Osenton, Brin Greer and Tom McCubbins of the Resource Conservation District of Tehama County who provided technical support and expertise, as well as document, map and graphics preparation services. The guidance and dedication provide by all public and private participants into this planning effort proved valuable beyond measure. Finally, funding for this project was made possible by federal financial assistance provided to the California Fires Safe Council and the Colusa County Title III dollars.

EXECUTIVE SUMMARY

Introduction

Societal pressures place increasing demands upon the environment. Expansion of residences and urban areas into natural landscapes, along with the increased utilization of natural resources, requires the control of environmental interactions that have developed over millennia. As a result, natural processes can be pushed out of balance. The hazard from wildfire exemplifies the dramatic effect that human occupation has had on the environment. In order to more intensively utilize landscapes and the resources they contain; wildfire has in the recent past been largely excluded from western landscapes. This control however has impacted the equilibrium between fire and vegetation. It has also indirectly affected other natural systems such as hydrologic and wildlife interactions. In many areas affected by human influence, stands of live and dead vegetation have developed to unnatural levels. Now, when wildfires occur, their intensity and the severity with which they affect landscapes are often extreme.

Hazardous Fuel Conditions

A large portion of Colusa County, like much of Northern California, is at very high risk of experiencing catastrophic wildfire. The Colusa County's westside area is largely rural or in the wildland/urban interface between urban development and those lands managed for ranching, timber production, open space, and watershed resources. Landscapes within various U.S. Fish and Wildlife Service (USFWS) refuges located in the County as well as those along and immediately adjacent to the Sacramento River remain in a more natural condition with abundant native vegetation and related wildland fuels. Over the past 90 years, many of the landscapes within Western Colusa County have developed high levels of fuel loading due to aggressive fire suppression on both public and private lands. Lands within federal wildlife refuges and wildland areas along the Sacramento River can develop unnatural amounts of live and dead fuels unless managed in order to reduce fire risk and the impact of wildfire on adjacent developed areas. These high fuel loads can without management, increased the potential for large wildfires that could destroy an array of natural resources and cause millions of dollars in damage to public and private property. The problem of hazardous fuel conditions continues to grow each year as more people move into and utilize the area's grasslands, oak woodlands, chaparral and forestlands. Greater recreational use of Mendocino National Forest (MNF), U.S. Bureau of Reclamation (BOR), and Bureau of Land Management (BLM) parcels located within western Colusa County has also contributed to an increase in the threat of wildfire on these public lands and on adjacent private parcels.

Community Wildfire Protection Plan

The Colusa County Community Wildfire Protection Plan was developed as a means of describing current fire and fuels conditions within various portions of Colusa County, identifying public and private assets at risk from wildfire, assessing currently in-place infrastructure that have been developed in order to protect these assets and to design efforts that improve current conditions. The planning document also provides background information necessary for local organizations to obtain grants and secure funding for future fuel reduction projects and other mitigation measures. The extent for the Colusa County CWPP planning area is discussed further in the following sections.

INTRODUCTION

Human-Wildland Interactions and Communities at Risk within Colusa County

Throughout Colusa County and in California as a whole, communities adjacent to and within the state's wildlands have experienced growth and an increase in public access and use. Development in these areas has taken a number of forms. Remote residences and areas of development are often created without many of the infrastructure components and fire safety features that are integral to fire protection. Significant among these deficiencies are insufficient access on two lane roads for ingress and egress of firefighting equipment, roads that dead end reducing escape opportunities, inadequate water supply systems, and the presence of mobile homes as residences on small rural parcels. Considering that mobile homes are often installed with insufficient vegetation removal and control, this type of residence is at an increased risk from fast moving wildland fires.

Communities at Risk

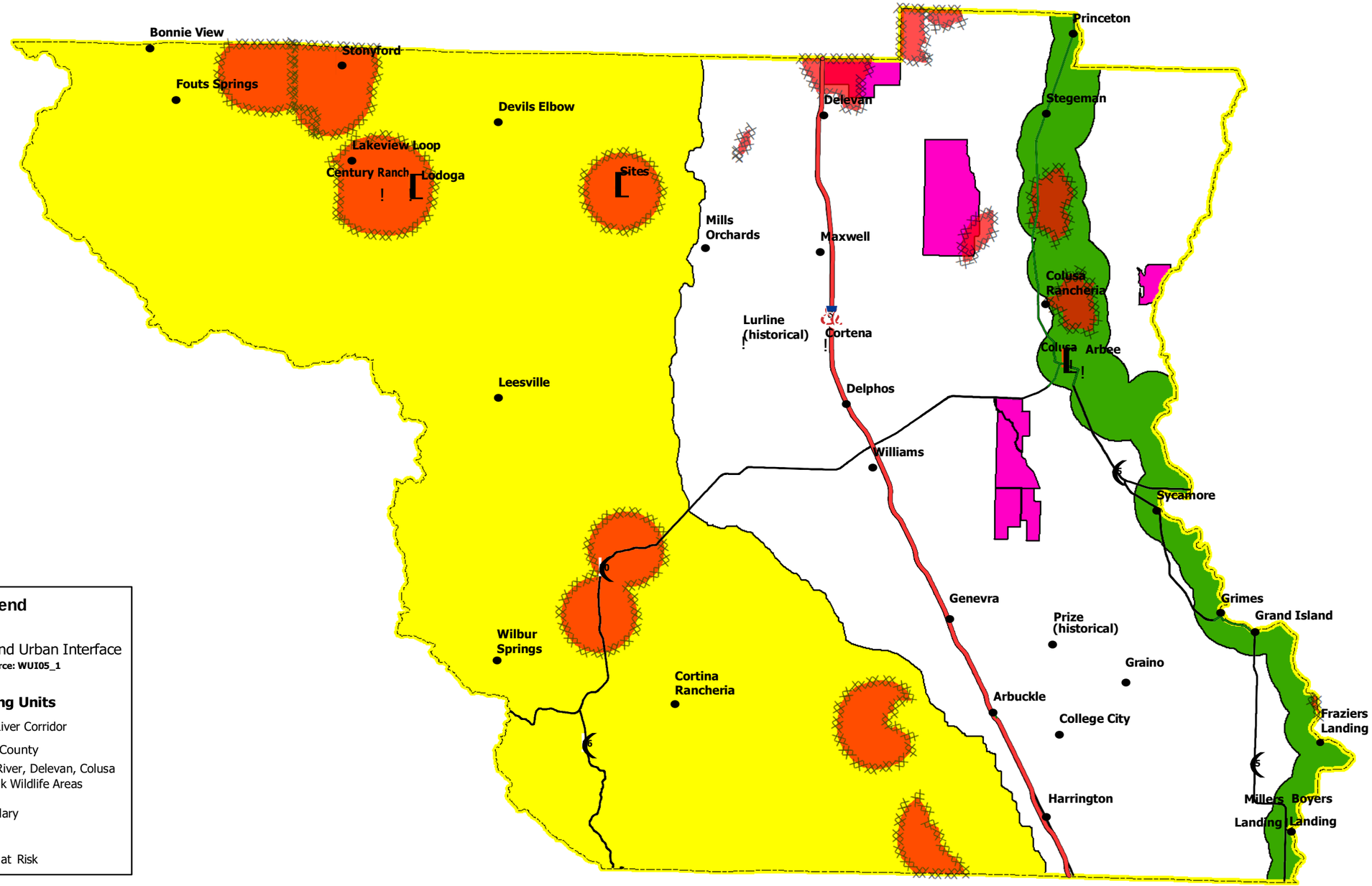
Within Colusa County, remote communities and residences at risk from fires originating within wildlands areas are primarily located within the County's grasslands and oak woodlands. These developed areas include Stonyford, Lodoga, the Cortina Rancheria, Century Ranch development and Sites developed area. Additional scattered development of individual homes and other domestic structures are found within or near the Mendocino National Forest such as Fouts Springs, Wilbur Springs and Leesville. In terms of wildfire threat, these areas of rural development have been described as points where the fuel feeding a wildfire changes from natural (wildland) to manmade fuel, such as structures, crops, and urban debris. **"Figure A Wildland Urban Interface Within Colusa County"** shows these "Wildland Urban Interface" (WUI) areas in red with Colusa County in the center of the frame. This intermingling of wildland and manmade fuel has made the control of wildland fires more difficult and costly. It has also dramatically increased the danger and potential destruction caused by wildfire.

Much of the Colusa County CWPP's Western Colusa County Planning Unit is steep and rocky, making construction difficult if not impossible. These physical characteristics have focused much of the area's current development and residences onto sites within the westside's grass and oak woodlands that are relatively flat. During large wildfire events, widely scattered residences and development requires firefighting forces to disperse in order to protect isolated structures. As a result, manpower and other resources necessary to initiate attack on a fire front are difficult to organize, allowing fires the potential to spread and build in intensity much more rapidly. In addition, this dispersal of development makes rescue and evacuation efforts during wildfire and other emergencies more difficult, dangerous, and time consuming. Of equal importance is that scattered rural development patterns make the efficient use of prescribed burning and other vegetation treatments at a landscape scale more expensive and riskier. Smoke from prescribed burns can damage homes and fire escape can destroy remote residences and at-risk communities, increasing the cost of liability claims made against land management entities. The level of fire threat for Colusa County as determined by CAL FIRE's Fire and Resource Assessment Program is shown below in "**Figure B Map of Fire Threat Within Colusa County"**. The fire threat methodology used to create this map examines a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These factors are combined to create three threat classes shown on the map moderate (yellow on the map), high (orange), and very high (red).

Other Significant Wildfire Issues

In addition to the fire threats facing WUI areas within Colusa County, several other significant wildfire issues confront County residents. Among these are highly flammable invasive fuels (Arundo donax and Tamarisk) within a number of streams located on the valley floor. The potential for fire within this dense, often desiccated vegetation threatens developed sites, ranchlands and farms. In addition, high vegetative fuel levels are found along the Sacramento River corridor and within U.S. Fish and Wildlife Service National Wildlife Refuge lands located throughout portions of Colusa County on the valley floor.

Figure A: Wildland Urban Interface Within Colusa County



Legend

Wildland Urban Interface
Data Source: WUI05_1

Planning Units

- Sacramento River Corridor
- West Colusa County
- Sacramento River, Delevan, Colusa and Butte Sink Wildlife Areas
- County Boundary
- Communities
- Communities at Risk

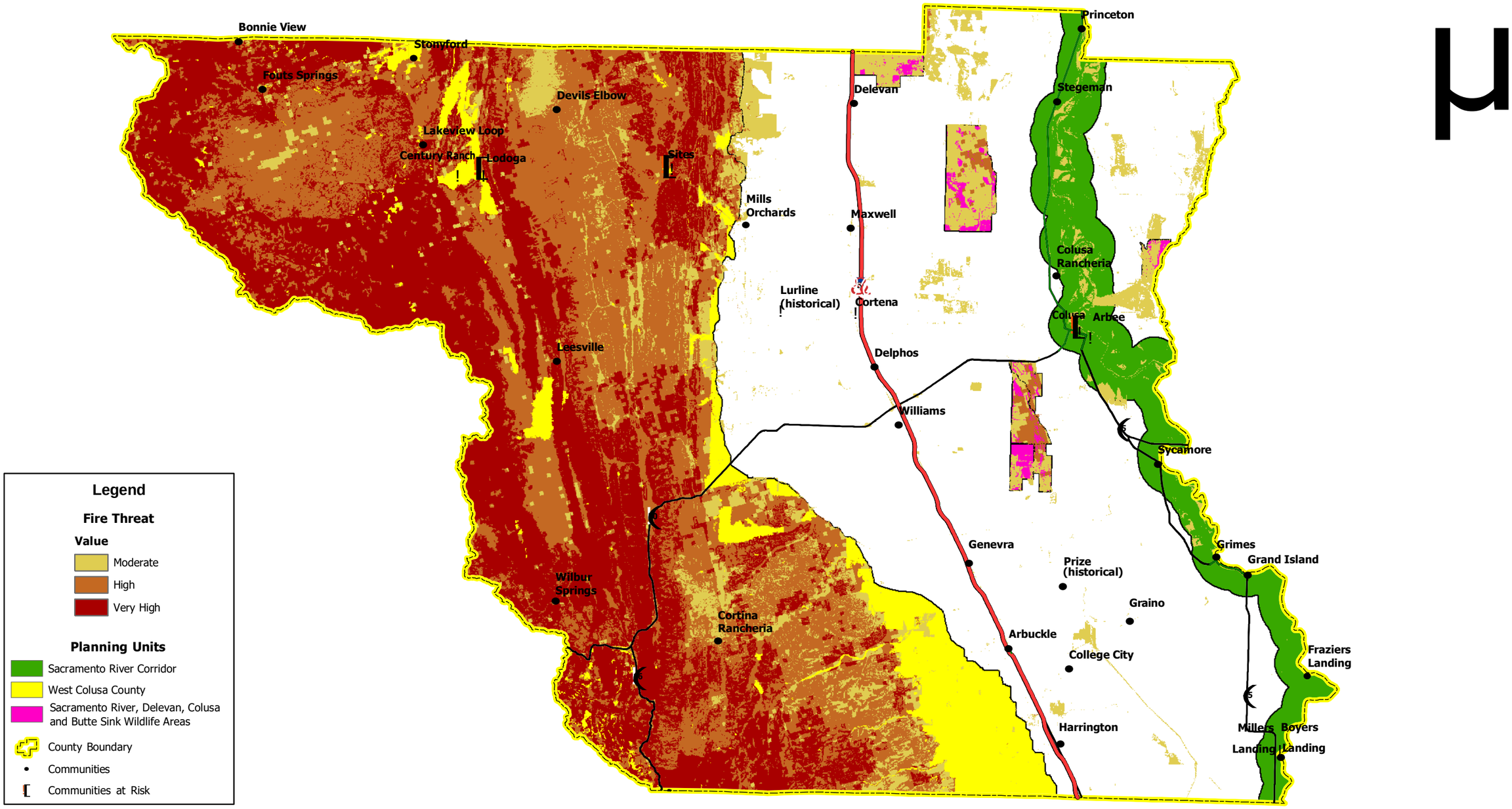
Wildland Urban Interface Within Colusa County

0 2.5 5 10 Miles

Figure A

Drawn by: S. Osenton, August 2020
RCD of Tehama County
Datum: NAD 83

Figure B: Map of Fire Threat Within Colusa County



Fire Threat Within Colusa County

Figure B

0 2.5 5 10 Miles

Drawn by: S. Osenton, August 2020
RCD of Tehama County
Datum: NAD 83

PROJECT BACKGROUND

Increasing Wildfire Threats

In discussions with the Resource Conservation District of Tehama County (RCDTC) and the Glenn County Resource Conservation District (GCRCD), the Colusa County Resource Conservation District (CCRCD) has expressed concern about the increasing threat of wildland fire throughout Colusa County attributable to continually increasing volumes of wildland fuels together with increasing development on public and private lands. The CCRCD is also cognizant of the increasing cost to fight wildfires and the need to plan, develop, and conduct fire and fuels management projects. These cost increases are impacting the financial wellbeing of federal, state, and local government entities and are having a negative impact on the continued implementation of important resource protection work.

Community Wildfire Protection Plan

The Colusa County Community Wildfire Protection Plan document was modeled after the format and planning process developed by the California Fire Plan Workgroup's "Community Fire Plan Template," otherwise known as the Community Wildfire Protection Plan. In general, these fire planning documents are developed as a means of describing current fire related conditions within specific planning units discussed below under **"Colusa County Community Wildfire Protection Plan Unit Descriptions"**. These planning tools also identify public and private assets at risk from wildfire and assess currently in-place infrastructure that has been developed in order to protect those assets. During the CCCWPP planning process, project work and other efforts designed to improve current conditions were developed by local public and private stakeholders listed below in **"Table 1 Community Fire Plan Stakeholders"** below. This CWPP document also provides background information necessary for local organizations to obtain grants and secure funding for future fuel reduction projects and other mitigation measures.

CWPP's are considered working documents that need to be updated in order to remain relevant. To accomplish this, a yearly review of changes in the County's three fire planning unit's current fuels conditions, assets at risk and wildfire protection infrastructure will be made by CAL FIRE pre-fire engineering staff, local fire authorities, Colusa County RCD personnel, along with members of the local Fire Safe Council (FSC) that represents Colusa County stakeholders. Through this process of updating the Plan's content, information about local fire conditions can be maintained in a current condition resulting in better decision making by landowners, land managers and agency personnel.

Broadly Based Policies and Plans for At-Risk Communities

In an attempt to reduce the effects of wildfire upon urban areas, federal fire managers authorized State Foresters to determine which communities adjacent to federal lands are exposed to a significant threat from wildland fire originating on public property. Three main factors were used to determine fire threats to WUI areas throughout the State:

- Fuel hazard ranking (ranking vegetation types by their potential fire behavior during a wildfire)
- Assessing the probability of fire (the annual likelihood that a large damaging wildfire would occur within a particular vegetation type)
- Assessing housing densities in WUI areas (areas where humans and their development meet or intermix with wildland fuels)

Out of this statewide assessment, a list of 1,283 fire threatened communities was developed. Of these threatened developed areas, 843 were found to be adjacent to or surrounded by federal lands. Developed areas that are formally recognized by CAL FIRE as at risk to wildfire and located within one of the three planning units described in this CWPP include Stonyford, Sites and Lodoga. Outside of a CCCWPP planning area, Colusa, Williams and Arbuckle are included on the list as well. As discussed under **"Proposed Countywide Projects"** below, a number of other developed areas within Colusa County's

Wildland Urban Interface area should be considered for inclusion on the list of at risk communities including the Cortina Rancheria, Century Ranch development, Leesville, Wilbur Springs and Fouts Spring, along with several developed inholding within the MNF.

GOAL AND OBJECTIVES OF THE COLUSA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN PROCESS

The primary goals of the Colusa County Community Wildfire Protection Plan process are to 1) reduce the risk of catastrophic wildfire and promote ecosystem health and 2) reduce home losses and provide for the safety of residents and firefighters during wildfire events. To achieve these equal goals the Colusa County CWPP was developed with the follow objectives in mind:

- Assist stakeholders and communities in identifying and prioritizing areas for hazardous fuel reduction treatments on federal lands and in determining the types and methods of treatment that, if completed, would reduce the risk to the communities.

- Assist stakeholders, communities and landowners in identifying and prioritizing areas for voluntary hazardous fuel reduction treatments on private lands utilizing either public or private project dollars. This assistance also includes determining the types and methods of treatment that, if completed, would reduce the risk to the private lands and communities.

- In a collaborative manner and using an array of local stakeholders, execute a Countywide CWPP process that assesses fire related ecosystems and addresses fire related issues and needs on a landscape basis, regardless of political and administrative boundaries.

- Obtain agreement on the contents of the Plan by local and state fire agencies.

- Provide comprehensive wildland fire planning and prioritization of project work that focuses on the protection of at-risk communities and watersheds, or that implement recommendations developed in the planning process and listed in the CWPP.

- Develop a mechanism for federal agencies to provide leadership in the fire planning process that provide meaningful consideration to community priorities, and incorporate these federal efforts in the CWPP.

- Open community debate regarding management options.

- Provide communities with maximum flexibility for determining the substance and detail of their plans.

- Merge the goals and objectives of the landowners with the needs and expectations of the community regarding fire risk reduction.

- Coordinate fire protection strategies across property boundaries

- Improve the natural environmental systems found in Colusa County that have developed within fire based landscapes, including: improved forage and habitat for wildlife and livestock; increased stream flows and ground water yields; and development of more natural ecosystems containing native plants that have adapted to fire.

- Protection of lands whose primary purpose is for the production of environmental resources, including recreational opportunities.

- Protection of lands whose primary purpose is related to agriculture production.

- Provide funding priority to projects and activities identified in the CWPP and coordinate grant funding and federal program budgets necessary to achieve the most effective results utilizing limited funding.

- Assist in the identification and federal listing of newly identified communities at risk of wildfire.

- Identify structures at risk from wildfire, as well as shortcomings in local, County, and state development and building codes.

Colusa County CWPP Priorities

Based upon input from local stakeholders as well the goals and objectives established for the Colusa County CWPP, the top priority for project work and other efforts is the protection of residents and firefighters, as well as public and private property. To address these priorities, proposed project work and initiatives has been ranked in significance as follows:

- Projects that provide immediate and direct impact on the threat and intensity of wildfires, such as fuel breaks and fuel reduction projects.

- Projects that result in improvements to firefighting and fire protection infrastructure including access for firefighting forces, egress of residents, water storage, and water delivery system upgrades.

- Projects that involve regulatory matters, such as changes in laws, ordinances, and codes that relate to fire safety and fire management.

- Projects that entail planning endeavors, such as the development of coordination plans for maintenance and vegetation management projects along Interstate 5, State Route 16 and State Route 20 along with heavily used County maintained road. Importantly, such planning efforts should include the development of long term funding sources.

Description of Processes and Methodology

Technical and Landowner/Community Stakeholder Input Processes.

The Colusa County CWPP has been designed to allow the incorporation of significant professional and community input into the planning process. To accomplish this, a Technical Advisory Committee (TAC) was established. Members of the TAC included staff from U.S. Fish and Wildlife Service, US Forest Service Mendocino National Forest, Bureau of Land Management, US Bureau of Reclamation, Natural Resources Conservation Service, CAL FIRE, local fire departments, Colusa County Planning Department, Colusa County Public Works Department (CCPWD), Colusa County Board of Supervisors along with CCRCD and Glenn County RCD personnel. RCD of Tehama County personnel provided technical support to this effort's planning process and document preparation. TAC members provided guidance and rigorous technical review of the planning processes used to develop the Plan, reviewed the planning document itself and considered the feasibility of measures designed to implement the Plan's recommendations. In addition to input from TAC members, other residents and private landowners were provided an opportunity to help shape the direction of the planning document by providing background information and suggestions for project ideas as well as critiquing the draft plan prior to the preparation of the final public release version

of that document. "**Table 1 Colusa County Community Wildfire Plan Stakeholders**" lists TAC members, project stakeholders and participants.

Colusa County Community Wildfire Protection Plan Stakeholders

Table 1: Colusa County CWPP Stakeholders

Involved Federal Agencies	Representative
US Forest Service	Christine Hill
US Forest Service	Sandra Moore
US Forest Service	Lauren Henderson
US Forest Service	Curtis Coots
US Forest Service	Chris Mallek
US Forest Service	Angela Chongpinitchai
Bureau of Land Management	Jennifer Mata
Bureau of Land Management	Jeff Tunnel
Bureau of Land Management	Pardee Bardwell
U.S. Fish and Wildlife Service	Dale Shipplehoute
U.S. Fish and Wildlife Service	Frank Alves
Natural Resource Conservation Service	Wendy Krehbiel
U.S. Bureau of Reclamation	
Involved State Agencies	**Representative**
CAL FIRE	Tom Knecht
CAL FIRE	Chris Waters
CAL FIRE	Shana Jones
CAL FIRE	Miguel Watson
California Department of Fish and Wildlife	Henry Lomeli
State Office of Emergency Services	Pat Titus
State Office of Emergency Services	Kyle Noderer
Involved Local Agencies and Private Land Entities	**Representative**
Colusa County Air Pollution Control District	Casey Ryan
Colusa County Board of Supervisors	Gary Evans
Colusa County Board of Supervisors	Kent Boes
Colusa County Board of Supervisors	Wendy Tyler
Colusa County Office of Emergency Services	Janice Bell
Colusa County Public Works Department	Mike Azavedo
Arbuckle Fire Department	Casey Cox
Williams Fire Department	Jeff Gilbert
Maxwell Fire Department	Kenny Coen
Colusa Fire Department	Logan Conley
Bear Valley/Indian Valley Fire Department	Barney Cook
Bear Valley/Indian Valley Fire Department	Sandy Corbin

Bear Valley/Indian Valley Fire Department	Frank Pendell
Sacramento River Fire Protection District	Jeff Winters
Princeton Fire Protection District	Jim Zoller
Colusa County Sheriffs Department	Joe Garofalo
Colusa County Office of Emergency Services	Janice Bell
Local Landowners	
Tom Hickok Jay Huttman Barbra Leach Jean Bailey Roy Steward Ken Cook Judy and Frank Elliott Bill Rossi Miranda Wycott	
Other Participants	
Colusa County Cattlemen's Association	Dave Forster
Cortina Rancheria	Brett Matzke
Century Ranch Homeowners Association	David Wills
Century Ranch Homeowners Association	Paul McDowell
PG&E	Mike Weaver
PG&E	David Hotchkiss
Colusa County RCD[1]	Elizabeth Harper
RCD of Tehama County[2]	Vicky Dawley
RCD of Tehama County[3]	Tom McCubbins
Colusa County Resource Advisory Committee Members	
Colusa County Chamber of Commerce	

[1]Project Manager [2]RCD of Tehama County Project Manager [3]Project Consultant

Stakeholder Meetings

During 2019 and 2020, three Technical Advisory Committee and two public stakeholder meetings were conducted during the development of the Colusa County CWPP. The first TAC meeting was used to develop an initial set of issues and to gather information pertaining to natural and community resources found within the various planning units. A second meeting was held midway through the planning process in order to refine this information and further shape the technical direction of the Plan. A final meeting allowed for a communitywide review of the draft document in preparation for production of the final plan. A summary of these TAC and stakeholder meetings is included in Appendix A TAC and Community Meeting Notes and Documents. The final planning document was submitted to CAL FIRE, the Colusa County Board of Supervisors and the Colusa County RCD Board of Directors for their review, comment, approval and certification as a formal Community Wildfire Protection Plan. In order to assure wide distribution of the information contained in the Plan, copies were distributed to public agencies, the academic community, public libraries, and the general public. The document was also posted on the CCRCD and RCDTC websites.

Planning Methodology

The methodology used in developing the Colusa County CWPP consisted of the following steps:

- Collect available information for the overall Colusa County CWPP planning area pertaining to the natural and developed environment, fire hazards, wildland fuels, assets at risk, and local fire policies, along with that describing currently in-place fire protection features and infrastructure (fire/fuels management projects), in written, digital, and Geographic Information System formats. Included among these data types was that related to planning unit demographics, ecological communities, topography, hydrology, fuel types, community infrastructure, and fire history. Also collected was information pertaining to fire related regulations, along with agency polices that impact land management and fire project implementation within Colusa County

- Planning unit specific data and information related to existing fire/fuels management projects that are planned/proposed, in process, or have been completed within Colusa County.

- Obtain input from local landowners, land managers, and other stakeholders regarding undocumented assets at risk and fire protection infrastructure.

- Verify fuel types, assets at risk, and project work related to fire management and fuels reduction efforts.

- Develop a Countywide Base Map that identifies fuel types, assets at risk, fire protection infrastructure fire/fuels management projects that are planned/proposed, in process, or have been completed throughout Colusa County.

- Develop a list of recommendations for fuel reduction and fire safety projects (fire/fuels management efforts).

- Encourage ongoing maintenance of completed fuels projects in order to protect the in place network of fire protection infrastructure. Identify funding sources for project development and maintenance.

- The Colusa County CWPP was developed using current fire management data obtained from the CAL FIRE, Fire and Resource Assessment Program, USFS and other public and private organizations along with that provided by local stakeholders. Recommended fuel reduction project locations were developed from a combination of analyses using existing geographic information; consultations with the fire professionals of CAL FIRE, the MNF, BLM, and Colusa County Fire Departments; members of the Tehama-Glenn Fire Safe Council (TGFSC); and meetings with local landowners and other private land stakeholders.

Summary of Fire and Fuel Risk Strategy and Development of Mitigation Projects

Introduction

In addition to endangering the lives of residents and firefighters as well as public and private property, wildfire threatens the economy and natural resources of Colusa County as a whole. Efforts to protect the residents and resources of the area come at a considerable public expense. In order to reduce the occurrence and negative impacts of wildfire, solutions to this problem must be multifaceted. Development of measures to reduce both wildfire risk and the impact of fire on local landscapes is a significant component of the Colusa County CWPP. These mitigation measures take a number of forms, from very specific and localized to broadly based Countywide efforts. They also range from basic “on the ground” fuels manipulations to

landscape scale planning efforts and changes in State and local laws that currently have a negative impact on fire hazard and fire safety conditions within Colusa County.

Project Categories

The projects that have been considered during the Colusa County CWPP planning process or proposed in CWPP planning document generally fall into three categories: organizational improvements, infrastructure development and improvement, and fuels reduction/vegetation manipulation. Projects in the organizational improvement category included improvements in the structure and organization of those entities that provide fire protection services. Also included are efforts to improve the organization and operation of nongovernmental entities that develop, promote, and advocate for changes in the human environment that impact fire related issues. In Colusa County, these types of nongovernmental entities include the Tehama-Glenn Fire Safe Council whose current members include entities from Colusa County, the Colusa County RCD and community advocacy organizations. With regard to infrastructure development and improvement efforts, projects include construction and improvement of those manmade features that provide fire safety and fire control. Fuels reduction and vegetation manipulation projects are efforts that attempt to impact the current arrangement and composition of vegetation and manmade fuels at a single location or throughout an entire landscape.

End Products of Fire Planning

Through the Colusa County CWPP process, a considerable amount of knowledge and insight has been developed regarding the natural and manmade resources found within Colusa County. The process has also shed useful light on the threats from catastrophic wildfire facing the area's communities and resources. In addition, a number of tangible end products have been developed which are expected to aid in future efforts to better manage wildfires and to reestablish more natural, beneficial fire regimes within the County's landscapes, including the following:

- A Community Wildfire Protection Plan covering 447,544 (700 Sq Miles) of Colusa County's 740,383 total acres of grasslands, chaparral, oak woodlands, forest lands and riparian areas located throughout Colusa County. Out of this planning effort, a number of improvements to the local wildfire situation have been suggested.

- Improved efficiency in the use of fire management resources between partners in order to achieve common community and resource protection goals.

- Identification, cataloging, and risk assessment of various natural and manmade assets at risk from wildfire.

- Identification and cataloging of in-place measures to protect these assets and a determination of their vulnerability.

- Identification and assessment of gaps and shortcomings in protective measures in order to develop improvements and additions that increase their effectiveness in protecting at risk assets.

- Determination of WUI area boundary accuracy and if necessary, modification of boundaries in order to focus financial and other resources to those urban areas at greatest risk of wildland fire.

- Identification of specific methods to improve current protection measures to a level of detail that would expedite the preparation of work scopes.

Countywide Base Map

Another means of achieving improved project effectiveness and cost efficiency developed through the

current fire planning process was the development of a Countywide Base Map **(See Figure C Colusa County CWPP Countywide Base Map)**. Onto this Countywide map are displayed all fire related projects described in the Colusa County CWPP along with the resources these efforts are intended to protect. The map allows public and private land managers, community groups, and government agencies to visually demonstrate the relationship between their proposed, in progress, and completed projects and the fire and fuels management efforts being conducted by other entities. This visual information is expected to help those developing fuels reduction efforts in creating superior project designs and work scopes. It is also anticipated that this information will better demonstrate the value of proposed project work in relation to other fuels reduction efforts in the creation of landscape scale protection against catastrophic wildfire. Through this explanation and visual demonstration of the interconnectedness between individual projects, applications for permits or funding have an increased chance of receiving approval. Consequently, the Countywide Base Map is considered a key component and outcome of the Colusa County CWPP process.

Through the combined efforts of various land management entities in reducing wildfire and fuel hazards, landscape scale protection of area resources can be achieved. The CWPP planning document's risk assessment and project development process along with the creation of the County Base Map are expected to result in the following outcomes:

- **Improved Fire Regime Condition Class.** This outcome is expected to occur as stakeholders implement prescribed fire and other fuels treatments identified in the CWPP. In addition, new projects will be developed that improve wildfire protection and management within the planning units.
- **Reduced hazardous fuels and associated fire risk.** This outcome is expected to be attained as an increased number of acres are treated for hazardous fuels and associated fire risks.
- **Fewer community assets destroyed in wildfires.** The achievement of this outcome is tied to an improved wildfire response plan, reduced hazardous fuels, and improved Fire Regime Condition Class.
- **Improved long-term sustainability of watershed function.** This outcome will be achieved when environmental characteristics such as rates of erosion and invasion of non-native species are reduced. Non-native species frequency of occurrence will be monitored by partners involved in rangeland and watershed management.

Figure C: Colusa County CWPP Countywide Base Map

Colusa County CWPP Countywide Base Map

Figure C

1:75,000

0 4.5 9 18 Miles

Drawn By: S. Oxenton, RCD of Tehama County. November, 2020
Map Datum: NAD 83

Disclaimer:
This map and the data contained herein is intended for visualization purposes only and should not be used as a navigational aid.

Legend

Planning Units
- West Colusa County
- Sacramento River Corridor
- Delevan, Colusa and Butte Sink
- Colusa County Line
- Communities at Risk
- Communities
- Project Labels
- Project Areas
- Ridgetop Fuelbreaks
- Roadside Fuelbreaks
- CSA WaterTanks

Roads
- Interstate
- State Highway
- County Road
- Major Road
- Forest Road
- Railroad

Hydrology
- Tehama/Colusa Canal
- Lakes
- Rivers
- Streams

Electrical Transmission Lines
- 500
- 230-287
- 100-161
- Under 100

Ownership
- USDA Forest Service
- US Fish and Wildlife Service
- Bureau of Land Management
- Bureau of Indian Affairs
- Bureau of Reclamation
- CA Dept. of Fish and Wildlife
- CA Dept. of Parks and Recreation
- Other State Lands
- Non-Profit Conservancies and Trusts
- Wildlife Management Area

ENVIRONMENTAL REVIEW

This section of the Colusa County Community Wildfire Protection Plan discusses the environmental review protocol pertinent to the implementation of future project work generated through the CWPP process. Except for a small number of high impact projects, it is anticipated that fuels reduction efforts conducted by area stakeholders will require a minimum level of environmental review. This would include an assessment of potential project impacts relative to the Endangered Species Act, the National Historic Preservation Act, and the Migratory Bird Treaty Act. As part of this effort, area stakeholders would also need to conduct a review through the California Natural Diversity Database to verify findings of Special Status Species within a particular project area and would need to conduct a literature search of existing information available through the local archaeological clearinghouse (California State University Chico Northeast Information Center) in order to determine the presence of any archaeological or historic resources within a project site. If through this review process a particular Special Status plant or animal species is found or an archaeological or historic resource is discovered at a project site, mitigation would be required that would likely include delaying work to another period of the year or physically working around the particular species or cultural resource. Low impact projects, such as chipping, hand piling, and burning around homes or other already developed sites would normally be exempt from environmental review due to past disturbances resulting from construction and other impactive activities. In all cases, work would stop and a plant or animal survey conducted if a special status species were found during project work. An archeological site survey would be conducted if a possible cultural site was discovered.

Federal Environmental Compliance Process in Project Execution

National Environmental Policy Act

Since January 1, 1970, federal agencies such as the United States Forest Service and Bureau of Land Management among others have been directed by the United States Congress to carry out regulations, policies, and programs in accordance with the National Environmental Policy Act (NEPA). As specified in 42 U.S.C 4322; 40 C.F.R. 1500.2, the act requires projects financed through federal grant funding as well as those occurring on federal lands to have some level of environmental review completed prior to execution of project work. As a result, some of the projects currently in process or recommended for implementation in this planning document would be subject to the NEPA process. The parameters of this review would be dictated by federal agencies at the time a grant is solicited and an initial evaluation of possible impacts is conducted.

State Environmental Compliance Process in Project Execution California Environmental Quality Act (CEQA)

The California Environmental Quality Act is a set of laws designed to develop and maintain a high-quality environment and prevent environmental damage. If an activity sponsored by a nongovernmental organization needs non-federal governmental approval or financing, or if such efforts are directly undertaken by a State or local public agency, CEQA compliance would need to be addressed. CEQA compliance responsibility is determined by a State or local public agency in collaboration with the applicant organization and would take the form of a CEQA Exemption, Negative Declaration, or on rare occasions an Environmental Impact Report (EIR).

CEQA Exemptions

After a fuels reduction activity has been determined to be a "project" subject to CEQA review, the lead

public agency involved in the activity determines if the project is exempt under CEQA guidelines. The project may be exempt if it falls into one of the following categories:

Statutory Exemption
This exemption applies to activities specifically identified by the legislature as being exempt from CEQA review and includes burning and Air District permits for smoke management among others.

Categorical Exemption
This form of exemption would apply to projects that have no possible significant effect on the environment and includes minor alterations to land (Article 19, Sec. 15304). This Section specifically exempts fuels reduction activities within 30' (or 100' if authorized by a local fire protection authority) of a structure.

Negative Declarations
After a fuels reduction activity has been determined to be a "project" subject to CEQA review and that an exemption is not applicable, the lead public agency may choose to prepare a Negative Declaration if environmental impacts are considered insignificant. This is a written statement based on an Environmental Checklist that describes the reasons that a proposed project will not have a significant effect on the environment and therefore does not require the preparation of an Environmental Impact Report. The Negative Declaration requires a public comment period of 30 days. A Mitigated Negative Declaration may be required if some impacts are deemed significant but can be resolved in the Environmental Checklist rather than in an Environmental Impact Report.

Environmental Impact Reports
Large fuels reduction projects with impacts that cannot be fully addressed in a Negative Declaration must comply with CEQA requirements through the preparation of an Environmental Impact Report. EIRs can be lengthy, expensive and generally involve a complicated analysis of impacts to biological resources, hydrology, air quality, greenhouse gas production, traffic, geology/soils, aesthetics, cultural and tribal resources, cumulative impacts, and impacts to other resources as identified through the EIR process. Mitigation Measures are developed during the EIR process in order to address impacts created by the project's implementation. Public review and comments are important elements of an EIR. Fuels reduction projects conducted by small landowners generally do not require environmental analysis documents subject to CEQA review unless the project includes removal of timber for commercial sale or otherwise involves CAL FIRE or other California public agency administration and/or support. Large property owners such as timber companies, utilities operations, ranchers or groups of small property owners such as homeowners' associations or watershed groups may request the support of CAL FIRE in conducting fuels reduction projects through that agency's Vegetation Treatment Program (VTP). Resources made available through the VTP include information on environmental resources in the area that have the potential for being impacted by the project, advice on fuel treatment methods, stand-by fire suppression equipment and manpower, along with hand labor for cutting, piling, and burning of vegetation. Of considerable importance, the VTP provides state indemnification to landowners in the event of a fire escape. CEQA equivalent documentation is generally required for each VTP project which is completed by CAL FIRE through the preparation of that organization's Environmental Review Report for an Exempt Project document. All CEQA or CAL FIRE environmental documentation prepared for projects that have received federal funding must be reviewed by the federal entity in order to assure State of California documentation meets the intent of NEPA.

Timber Harvest Plans

Fuels reduction projects in stands of timber may involve the removal of timber or solid wood forest products that landowners sell in the open market to recover the costs of fuels reduction work or to achieve a profit. Projects may include the creation of a fire line that removes all timber and vegetation, or "shaded fuel breaks" where understory vegetation and some dominant trees are removed to create areas of discontinuous fuels. These projects involve the use of heavy equipment to remove the timber and transport it out of the forest. Impacts associated with timber harvest operations on private timberlands would be addressed in a Timber Harvest Plan (THP). These plans must be prepared by a Registered Professional Forester and comply with the rules and regulations of the California Forest Practice Act (CFPA) as they apply to THP's. The purpose of these forest practice rules is to implement the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 in a manner consistent with other laws, including among others, the Timberland Productivity Act of 1982, CEQA, the Porter Cologne Water Quality Act, and the California Endangered Species Act. The provisions of these rules must be followed by an RPF in preparing THPs and by the CAL FIRE Director of Forestry in reviewing such plans.

The Timber Harvest Plan process substitutes the EIR process under CEQA as this timber harvest regulatory program has been certified pursuant to PRC Section 21080.5. If either CAL FIRE or the Director of Forestry believes that there are significant adverse environmental impacts not covered in existing rules, those matters are referred to the Board of Forestry. The sale of commercial timber that has been harvested during a fuels reduction project can be used for the future maintenance of a fuel break or to expand current efforts over time. This may be a viable tool for some communities in which many small landowners are involved with a fuel break that extends over multiple parcels. Fuels reduction projects that remove trees on private and state timberlands may be exempt from THP requirements under an Exemption process of the California Forest Practice Rules. The cutting and removal of trees in compliance with the CFPR, which eliminates the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns, is covered under the THP exemption process. An exemption form must be completed and submitted to the Director of CAL FIRE prior to commencement of operations.

COLUSA COUNTY CWPP PLANNING UNIT DESCRIPTIONS

Location, Geographic and Environmental Conditions

Where possible, the planning units described in the Colusa County Community Wildfire Protection Plan are based largely upon entire major watersheds and include all portions of these areas located within Colusa County. The use of watershed boundaries as the primary delineator of planning units as compared to administrative or other legal delineations was based upon wildfire behavior as it relates to topography, slope aspect and vegetation. Using watershed boundaries also better demonstrates the impact that large, intense wildfires have on watershed health and functioning as well as water quality and the resulting safety and wellbeing of communities. Consequently, adequate fire protection and prevention measures have been developed based upon a landscape perspective as well as community needs and the organizational interrelationships between fire and land management entities.

Development of Colusa County CWPP Planning Units

During the Colusa County CWPP planning process, those areas of Colusa County at highest risk of wildfire were divided into three planning units. In order of decreasing acreage, these include the Western

Colusa County Planning Unit, (380,162 acres/594 Sq. Miles), Sacramento River Corridor Planning Unit (42,889 acres/67 Sq. Miles), and the Sacramento Valley, Delevan, Colusa and Butte Sink Wildlife Area Planning Unit (13,358 acres/21 Sq Miles). The Western Colusa County Planning Unit generally includes those portions of Western Colusa County containing conifer forests, chaparral, oak woodlands, open grasslands, and riparian vegetation. Lands within wildlife refuges located in Colusa County along with lands adjacent to the Sacramento River were included due to their relatively natural condition, often significant fuel loadings, and potential to burn. In developing CWPP planning units and analyzing fire risk in each of these areas, a number of critical factors related to fire behavior were analyzed including:

- The fire behavior variables of fuels, topography, access, water supply, assets at risk, and fire history;
- Urban development, including formally classified at-risk communities, WUI areas, unclassified areas of development, known utilities routes, and fire protection features such as water supply infrastructure and large fuel breaks along with sources of ignition, including population centers and transportation routes.

Based upon input from CAL FIRE Sonoma-Lake-Napa Unit (LNU) personnel, debris burning, power lines and vehicle use were the major sources of ignition throughout the LNU Unit which includes Colusa County. Consequently, the location of various area and linear features that represent potential sources of ignition were considered in the creation of all planning units. Planning unit boundaries are shown on the map labeled **"Figure D Colusa County CWPP Planning Units and USGS Topographic Map Coverage"**. Details of project area topographic mapping is described in **Tables 2, 3, and 4** "**USGS 7.5 Minute Quadrangles Contained Within the Colusa County CWPP Planning Area"** below:

USGS 7.5 Minute Quadrangles Contained Within the Colusa County CWPP Planning Area

Table 2: USGS 7.5 Minute Quadrangles - West Colusa Planning Unit

Crockett Peak	Saint John Mountain	Stonyford	Rail Canyon	Sites
Potato Hill	Fouts Springs	Gilmore Peak	Lodoga	Sites
Bartlett Springs	Hough Springs	Leesville	Manor Springs	Wilbur Springs
Salt Canyon	Cortina Creek	Arbuckle	Glascock Mountain	Rumsey
Wildwood School				

Table 3: USGS 7.5 Minute Quadrangles - Sacramento River Planning Unit

Princeton	Butte City	Moulton Weir	Sanborn Slough	Colusa
Meridian	Grimes	Tisdale Weir	Kirkville	

Table 4: USGS 7.5 Minute Quadrangles - Sacramento Valley, Delevan, Colusa and Butte Sink Wildlife Areas Planning Unit

Logandale	Maxwell	Moulton Weir	Sanborn Slough	Colusa
Meridian	Arbuckle			

Western Colusa County Planning Unit
(594 SQUARE MILES)
(See Figure D: Colusa County CWPP Planning Units and USGS Topographic Map Coverage)

The Western Colusa County Planning Unit includes that portion of the County's watersheds located between the Tehama-Colusa Canal at the valley floor west to the Lake County boundary, north to the Glenn County boundary and south to the Yolo County boundary. Major Watersheds within this Planning Unit include the Middle Fork of Stony Creek and its tributary Paradise Creek, South Fork Stony Creek and its major tributaries Trout Creek, Mill Creek and Minor Creek, along with Little Stony Creek and its major tributary the Sullivan Creek system. Little Stony Creek and Hyphus Creek flow directly into East Park Reservoir, a major water storage facility. Other significant streams within the Planning Unit that flow out of the foothills immediately west of the valley floor include Grapevine Creek, Stone Corral Creek, Lurline Creek, Antelope Creek, Calvin's Creek, Freshwater Creek and Logan Creek.

Communities within the Planning Unit include Stonyford, Lodoga, Cortina Rancheria and the Century Ranch development. Other developed sites include, Leesville, Sites, Wilbur Springs, Fouts Springs. Residential development can also be found along the Elk Creek Stonyford Road, Stonyford-Lodoga Road, Maxwell-Sites Road, and Lake View Loop. Western Colusa County also contains considerable acres of private inholdings surrounded by Mendocino National Forest lands where homes, cabins and other structures have been constructed. Inholding areas also contain a number of large and small timber and grazing lands. Major environmental resources found within the Western Colusa County Planning Unit include lands managed by the MNF including a significant portion of the Snow Mountain Wilderness and the Frenzel Creek Research Natural Area. In addition, the Bureau of Land Management is responsible for roughly 37,879 acres of land under Department of Interior (DOI) jurisdiction located east of the Mendocino National Forest. The California Department of Parks and Recreation manages lands and various recreation facilities adjacent to the East Park Reservoir. This Planning Unit includes significant acreages of privately managed grazing and farm lands.

North: Glenn County Boundary
East: Tehama-Colusa Canal
South: Yolo County Boundary
West: Lake County Boundary

Sacramento River Corridor Planning Unit
(67 SQUARE MILES)
(See Figure D: Colusa County CWPP Planning Units and USGS Topographic Map Coverage)

The Sacramento River Corridor Planning Unit encompasses lands along and to within one mile of the Sacramento River's east and west banks including adjacent weirs and bypasses. Communities located within this Planning Unit include Princeton, Colusa, Meridian and Grimes. Other developed sites located within the Planning Unit include Sycamore, Grand Island, Cranmore and Millers Landing. Major parcels within this Planning Unit include the 115 acre Boggs Bend Unit of the Sacramento River National Wildlife Area managed by the U.S. Fish and Wildlife Service.

North: Glenn County Line
East: One mile east of the Sacramento River east bank

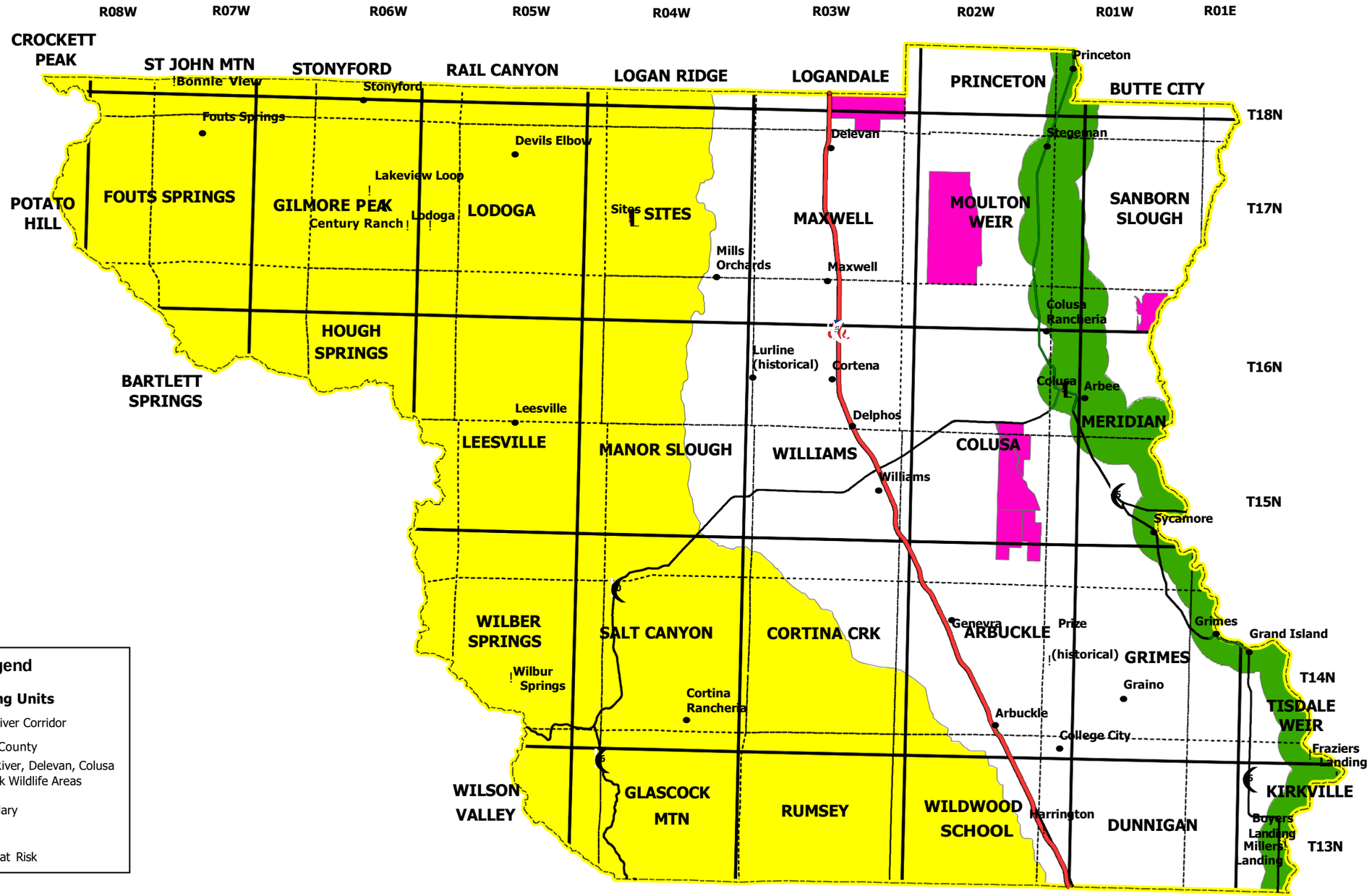
South: Yolo County Line
West: One mile west of the Sacramento River west bank

Sacramento Valley, Delevan, Colusa And Butte Sink Wildlife Areas Planning Unit
(21 SQUARE MILES)
(See Figure D: Colusa County CWPP Planning Units and USGS Topographic Map Coverage)

The Sacramento Valley, Delevan, Colusa and Butte Sink Wildlife Areas Planning Unit consists of four wildlife management units that are under jurisdiction of the USFWS. These components of this Planning Unit include that portion of the Sacramento National Wildlife Area in Colusa County (approximately 2,173 acres). The remaining 8,646 acres of this wildlife area were not evaluated as these lands were analyzed in the Glenn County CWPP prepared by the Glenn County Resource Conservation District in 2011 and currently under revision. That portion of the Sacramento Wildlife Area in Colusa County is located adjacent to Interstate 5 near the developed site of Norman in southernmost Glenn County to Delevan in northern Colusa County. The 5,704 acre Delevan National Wildlife Area is located approximately 4 miles east of Interstate 5. The Colusa National Wildlife Area covers an area of roughly 4,611 and is located due west of Colusa along State Route 20. The Butte Sink Wildlife Area consists of approximately 11,000 acres of land owned either in fee title or managed under USFWS established conservation easements. Approximately 820 acres of these easements are located in Colusa County approximately 8 miles east of Colusa near the Colusa/Sutter County line.

These properties are managed for wildlife and contain a variety of habitats that provide food, water, and cover for a variety of species endemic to the Sacramento Valley. Significant among these are seasonal marshes containing cattail, round stem bulrush, alkali bulrush, swamp timothy, and smartweed, all of which can create a significant fire threat when desiccated. They also contain permanent ponds whose habitat value can be decreased if they become overgrown with decadent stands of cattail, roundstem bulrush, various pond weeds, and watergrass. Refuge ponds also provide a reliable source of firefighting water during wildfire events. A number of riparian areas are located within refuge parcels and are considered to support the greatest diversity of wildlife within these lands. An array of tree, scrub, and grass species are found within refuge parcels that provide cover to a variety of avian and terrestrial species. Among the major species found in these streamside sites are cottonwoods, valley oaks, sycamores, willows, box elders, elderberry, and wild rose, which offer fish and aquatic animals cooling shade. Finally, this USFWS property contains upland areas with annual grasses and vernal pools, which can be impacted by high intensity wildfire.

Figure D: Colusa County CWPP Planning Units and USGS Topographic Map Coverage



Legend

Planning Units

- Sacramento River Corridor
- West Colusa County
- Sacramento River, Delevan, Colusa and Butte Sink Wildlife Areas
- County Boundary
- Communities
- Communities at Risk

COLUSA COUNTY RESOURCE CONSERVATION DISTRICT

0 2.5 5 10 Miles

Colusa County CWPP Planing Units
USGS Topographic Map Coverage

Figure D

Drawn by: S. Osenton, August 2020
RCD of Tehama County
Datum: NAD 83

RESOURCE CONSERVATION DISTRICT OF TEHAMA COUNTY

COLUSA COUNTY'S PLANNING AREA LANDSCAPES, DEMOGRAPHICS AND FIRE SHAPED ECOSYSTEMS

Planning Area Landscapes

The overall Colusa County CWPP planning area includes an array of terrains and landscapes that can be divided into three primary landforms: The Coast Range, Coast Range Foothills, and valley floor. Elevations within CCCWPP planning units range from 7,043' at the summit of Snow Mountain East to 190' along the Sacramento River. Correspondingly, precipitation rates range from approximately 60" at the highest elevations within the Mendocino National Forest to 25" on the valley floor. As a result, the area's vegetation forms a continuum from upper and lower elevation conifer forests, glades, chaparral and oak woodlands within the westernmost third of Colusa County to grasslands, wetlands and riparian areas on the valley floor. Peak flows from Planning Unit watersheds are dominated by rain with the exception of snowfall occurring at upper elevations of the Western Colusa County Planning Unit. The combination of varied geology and vegetation help to support approximately twenty five different habitat types within planning unit watersheds.

Traditionally, forests and rangelands within the area's watersheds have supported local and regional economies. Almost all of the forest lands within the Western Colusa County Planning Unit are under federal management, and at the present time logging output from the Westside has been significantly reduced. The production capacity of Westside rangelands has also been reduced, due primarily to the spread of non-native invasive plants. Ranching does, however, contribute to Colusa County's beef industry and provides limited employment to its economic base. Recreational activities within the three planning unit's watersheds have increased over the past few decades attributable to an increase in the region's population as well as the current mobility of the American recreating public. MNF, BLM, USFWS and California Department of Parks and Recreation lands are a major source of recreational opportunities within Colusa County. In addition, aquatic resources and water quality of the Sacramento River and its major tributaries within Colusa County are of regional significance. Various anadromous species utilize the mainstem of the Sacramento River. In addition, Stony Creek together with its major tributaries are significant contributors of spawning gravel and water into the Sacramento River system.

Demographics

At the present time, the three planning units remain largely rural in nature. A number of unincorporated communities including Stonyford, Lodoga, the Cortina Rancheria and the Century Ranch development are located within the Western Colusa County Planning Unit. A number of smaller developed sites within or adjacent to the Western Colusa County Planning Unit have been included in the Colusa County CWPP planning process. These including Leesville, Sites, and Wilbur Springs, along with Fouts Springs and Board Camp which are inholdings within the Mendocino National Forest. The town of Colusa is located within the Sacramento River Planning Unit along with a number of small farm communities. Similarly developed sites are located within the Sacramento Valley, Delevan, Colusa and Butte Sink Wildlife Areas Planning Unit.

Fire Shaped Ecosystems

Fire has been an integral force within many Northern California ecosystems since the Pleistocene. From

the mixed conifer forests of the Coast Range, to the chaparral and grasslands of the County's inland foothills and valley floor, fire is in some instances the dominant factor controlling ecological change within many local landscapes. In addition to renewing vegetation and recycling nutrients from live and dead plant material in the form of ash, the numerous low intensity burns of the past are suspected to have been a major factor in the environmental determination of plant structure and distribution as well as the composition of vegetative communities. Grassland, oak woodland, and chaparral landscapes are found in abundance within Colusa County's westside foothills and uplands and are among the County's largest fire dependent ecosystems. Within an elevation belt ranging between 500' to 5,000', fire has historically swept through the vast stands of chaparral vegetation on roughly a 20 to 30 year basis, removing old, decadent plant material with low vegetative and forage production. The County's grasslands and oak woodlands experience the impacts of wildfire on an even more frequent basis.

As a result of wildfire impacts, these chaparral ecosystems are frequently returned to an earlier stage of development. Repeated fires reduce the competition of dominant brush species which can, if not controlled, develop into single species stands that can attain heights of ten feet or more. Many chaparral species are particularly well adapted to fire, having developed an ability to produce root sprouts after burning. Fire improves brush stands as forage for large mammals by replacing woody, unpalatable vegetation of low nutrient value with new, more palatable root sprouts having a higher nutritional value. The newly opened crowns of these brush fields allow more sunlight to reach the soil, resulting in the production of grasses, forbs, and those plants that develop from fire germinated seeds. In addition, the removal of dominant brush species by fire or other means often results in more complex plant communities. Among the varieties of brush species that develop after a wildfire event are Toyon, Deer Brush, Red Bud, Common Manzanita, and Chaparral Whitethorn.

The pine and mixed conifer forests found within that portion of the Coast Range within Colusa County are another example of an ecosystem that has been shaped largely by fire. Tree ring studies and charcoal analysis indicate that fires passed through many of these stands every 6 to 32 years. Prior to the early 20th Century, the frequency of these low intensity blazes provided a mechanism for thinning of the forest's understory, which prevented the development of extensive forested areas containing dense, slow growing, even-aged stands that often result after high intensity wildfires. Instead, early accounts of Northern California forests describe a patchwork of dense thickets containing trees and brush as well as more open, park-like stands.

Low impact fires also provided a suitable bed for pine seeds that normally do not germinate successfully in heavy forest litter. Without fire, species such as White Fir, Douglas Fir, and Incense Cedar crowd out less competitive, shade intolerant, young pines even in their primary habitat range at lower elevations, changing the vegetative composition of these forests. Without continuous low intensity fires that clear forest stands, rapidly growing brush species compete with seedlings of forest trees species, reducing their rate of survival. In addition, naturally occurring low intensity wildfires aid in the maintenance of high elevation meadows and glades through the removal of encroaching brush and tree species. Overcrowding in forest stands also tends to weaken large pines, making them susceptible to insect attack. A reduction of young understory vegetation removes developing ladder fuels through which ground fires can move into forest crowns. Once this occurs, wildfires can spread quickly and become much more intense.

Perennial and annual grasses as well as forb species dominate the grassland communities found within the three planning units. Within these ecosystems, plant density and air temperatures are normally high enough to carry regularly occurring, fast moving, low intensity fires which are a major agent of change within this biotic community. A major impact of wildfire in grassland ecosystems is its effect on the distribution and form of individual plants, as well as the composition of the entire vegetative community. Grassland fires also impact the population and distribution of wildlife that inhabit these environments. As with other fire-based ecosystems, the exclusion of naturally occurring wildfire within grasslands can have significant and often negative impacts on the ecological functioning of these landscapes. Intense, widespread wildfires can significantly reduce naturally occurring mulch and can reduce the depth of humus in the organic layer of grassland soils, resulting in a reduction of preferred grass and forbs species.

Non-native invasive species and noxious weeds that are ill adapted to frequent fires have an opportunity to become established, increase in numbers, and spread throughout an ecosystem, threatening plant diversity and forage values. These non-native invasive plant species can also adversely impact native vegetative communities by altering patterns of nutrient recycling, hydrologic processes, and the intensity of fire. Many of the species considered to be invasive within the planning area are annuals. A large number of these plants remain green and produce viable seed long after native perennial species have matured and cured. Other important and well disbursed non-native species include the perennials Arundo donax and Tamarisk that are entirely dependent upon seed production for yearly propagation. Frequent fires have the opportunity to kill invasive annual species prior to seed germination thus reducing seed counts and the potential for future development. Invasive plant pests are defined by law, regulation, and technical organizations. Weed control methods include physical control (e.g., burning and hand pulling), chemical control (e.g., selective or non-selective herbicides), and biological control (e.g., insects that eat the pest). The use of fire to control invasive species, particularly starthistle and medusahead, has been utilized in surrounding counties to varying degrees of success.

FIRE RISK ENVIRONMENT OF COLUSA COUNTY

The three major components of the wildland fire environment are weather, topography and fuels. Local weather conditions such as wind direction, wind speed, precipitation, and humidity are important in predicting how a fire will behave. Within the lower elevations of the Colusa County CWPP planning area, winds blow predominately from the north during the early part of summer and from the south during the latter part of the summer season. Within the County's western foothills, winds tend to blow up the canyons and along hillsides during early morning hours and downslope in the late afternoon and evening. In the valley, wind patterns push wildfire in a northerly or southerly direction, while in foothill areas winds trend in a westerly direction. During the fire season (June to October), daily temperatures within the project area are often in excess of 90° Fahrenheit, and relative humidity is typically less than 30 percent. The majority of the area's precipitation occurs between October and April.

Topography can affect the direction and rate of fire spread. Topographic factors important to fire behavior are elevation, aspect, steepness, and shape of slopes. When fire crews are considering fire suppression methods, topography is always critical in determining the safest and most effective plan of attack. When

accessible, ridge lines are very important features from which to conduct fire suppression activities and can be a strategic area to conduct fuels management activities.

Of the three components affecting fire threat, fuel is the only factor that can be controlled. Fuel characteristics that influence fire behavior are fuel moisture, loading, size, compactness, horizontal or vertical continuity, and chemical content. Fuel moisture is the amount of water in vegetative fuel and is expressed as a percentage of its oven dry weight. Fuel loading is defined as the oven dry weight of fuels within a given area, usually expressed in bone dry tons, or 2,000 pounds of vegetation when rated at zero percent moisture content. Fuel size refers to the dimension of fuels, and compactness refers to the spacing between fuel particles. Continuity is defined as the proximity of fuels to each other, vertically or horizontally which governs a fire's capability to sustain itself. Chemical content in fuels such as oils or other flammable compounds can either retard or increase the rate of combustion. All of these factors will influence the amount of heat delivered and its duration, flame length, along with a fire's rate of fire spread and are considered prior to developing fire prevention projects or initiating fire suppression activities.

One of the primary goals developed for of the Colusa County Community Wildfire Protection Plan project is to identify areas of high fuel loading. CAL FIRE has developed a Fuel Rank assessment methodology to aid in the prioritization of pre-fire projects that reduce the potential for large catastrophic fires. The fuel ranking methodology assigns ranks based on expected fire behavior for unique combinations of topography and vegetative fuels under a given severe weather condition (wind speed, humidity, and temperature). CAL FIRE methodology requires an initial assessment of fuel rank based upon an assigned fuel model and slope. Fuels have been classified into four groups: grasses, low foothill shrubs, moderate density shrubs such as those found in chaparral regions, and hardwood forest stands containing litter, slash, and understory vegetation. This fuel ranking also incorporates the amount of ladder and/or crown fuel present to arrive at a final fuel rank. CAL FIRE pre-fire engineers verify these rankings and use this fuel rank assessment in conjunction with assessments for weather, assets at risk, and level of service in order to develop the fuel ranking system shown below in **"Table 5 Fuel Rank Descriptions"**.

Table 5: Fuel Rank Descriptions

Fuel Rank	
Rank	**Description**
1	Moderate
2	High
3	Very High

This fuel ranking system was used along with anecdotal information provided by stakeholders in identifying high fire hazard areas and their relationship to project area assets at risk. These sources of information pertaining to high fire hazard areas were also used in developing suggested future fire and fuels management projects to either protect specific at-risk assets or to increase the effectiveness and efficiency of those protective features that are already in place.

Human-Wildland Interactions within the Colusa County CWPP Project Area

Communities adjacent to and within the state's wildlands have experienced dramatic growth that has taken

a number of forms. In addition to the simple expansion of the urban fringe, rural subdivisions, homes, and small ranches located far from urban centers have developed from lot splits which create residential densities that approach those of urban areas. These scattered areas of development are often created without many of the infrastructure components and fire safety features that are integral to fire protection.

Significant among these deficiencies are:

- Access to two lane roads for escape by residents and ingress by firefighting equipment
- Dead-end roads that prevent two way escape from wildfire
- Lack of water supply systems having the capacity to provide adequate fire protection
- Parks or other large areas of cleared space between developed lots as are often found within and at the perimeter of urban subdivisions
- Older mobile homes manufactured with highly flammable components that are placed on small lots with poor vegetation maintenance

Within Colusa County's Westside area, the conversion of formerly wildland areas into residential sites is currently scattered largely within the County's oak woodlands and grasslands. In terms of wildfire threat, these areas of rural development have been described as a point where the fuel feeding a wildfire changes from natural (wildland) to manmade fuel such as structures, crops, and urban debris. This intermingling of wildland and manmade fuel, often referred to as the wildland-urban interface/intermix, has made the control of wildland fires more difficult and costly. It has also dramatically increased the danger and potential destruction caused by wildfire.

During a large wildfire event, widely scattered development requires firefighting forces to disperse in order to protect numerous isolated structures. Consequently, manpower and other resources necessary to initiate attack on a fire front cannot be organized thus allowing wildfires to spread and build in intensity much more rapidly within undeveloped areas which include both public and private lands. As a result, significant impacts to watershed resources can quickly expand to a much larger area. In addition, this scattering of residential uses makes rescue and evacuation efforts during such emergencies more difficult, dangerous, and time consuming. Also, of importance is that scattered residential development patterns make the efficient use prescribed fire and other vegetation treatments at a large, cost efficient scale more expensive and riskier. Smoke from prescribed burns can damage homes, and burn escapes near more densely populated landscapes can destroy residential developments. As a result, the cost of major liability claims made against land management entities involved in fuels reduction projects is dramatically increased. At the present time, this risk of significant liability is a major factor in the lack of prescribed fire use on both public and private lands.

History of Fire and Fuels Management in Colusa County

Wildfire history for the three Colusa County CWPP Planning Units and the County as a whole is shown below in **"Figure E Map of Colusa County Fire History"**. With the creation of the USFS in the early 20th Century and the California Department of Forestry and Fire Protection (CAL FIRE) in 1885, federal

and State infrastructure was created to prevent and suppress all wildfires within the State. As of 1905, statewide efforts had established full suppression of wildfires throughout Colusa County and the rest of the North State. Fire suppression success was defined in terms of an overall decline in the number and size of wildfires. At the same time, it was becoming apparent that when wildfires did occur, they were often more intense, resulting in large areas of severe vegetation destruction. The increase in fire occurrence and intensity was becoming particularly acute in forested areas where large expanses containing substantial amounts of vegetative debris, brush, and dense thickets of small trees had developed as a result of logging and other resource extraction activities. The occurrence and intensity of wildfire was also found to be increasing in open wildland areas where naturally occurring fires were being extinguished without exception in order to protect manmade resources and to maintain vegetative cover in watersheds.

Interagency Approach to Firefighting in Colusa County

Wildland fires ignore civil boundaries. Consequently, it is necessary for cities, counties, special districts, as well as State and federal agencies to work together in order to minimize the adverse impacts of wildfires. This interagency array of firefighting forces is dispatched through the 911 system with the nearest appropriate firefighting resources responding to a particular incident regardless of jurisdiction.

Overview of Colusa County Fire Protection Organizations

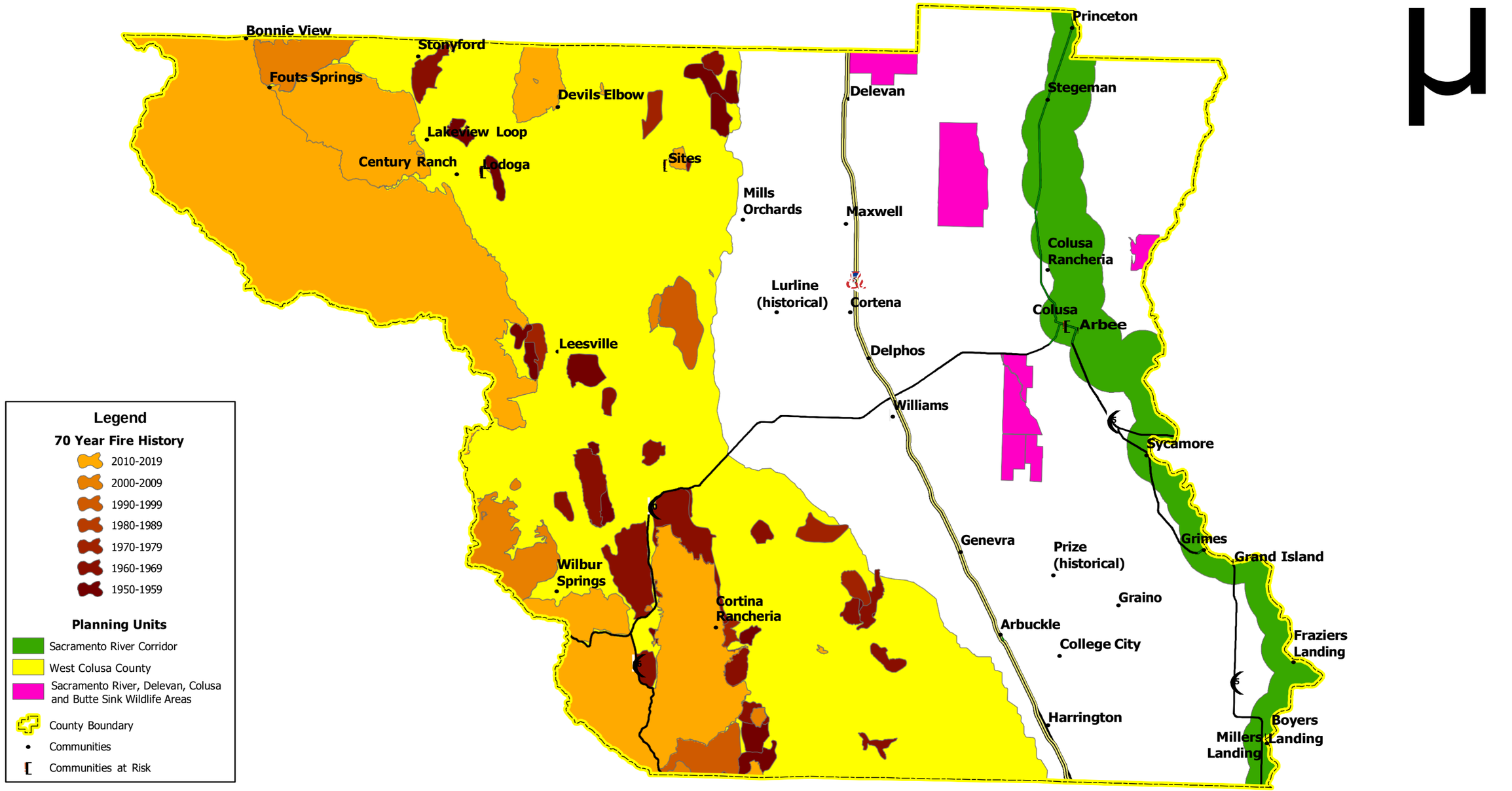
As shown in "**Table 6 Fire Facilities Within Colusa County**," Firefighting responsibilities in Colusa County are divided into a number of organizational units and whose responsibilities are described in detail below.

Description of Fire Fighting Organizations Within and Adjacent to Colusa County CWPP Planning Units

Colusa Fire Department

The Colusa Fire Department is a combination of paid and volunteer personnel including a paid staff of four and a volunteer roster of twenty-five members. The Department serves the incorporated area of Colusa with one station and has established an interagency response agreement with other fire service organizations to respond as appropriate to fires outside the Colusa City limits.

Figure E: Map of Colusa County Fire History



COLUSA COUNTY RESOURCE CONSERVATION DISTRICT

0 2.5 5 10 Miles

Colusa County Fire History

Figure E

Drawn by: S. Osenton, August 2020
RCD of Tehama County
Datum: NAD 83

RESOURCE CONSERVATION DISTRICT OF TEHAMA COUNTY

Fire Facilities within Colusa County

Table 6: Fire Facilities within Colusa County

Department	City
Colusa Fire Department	Colusa
Williams Fire Protection Authority/Williams Volunteer Firefighters Association	Williams
Arbuckle-College City Fire Protection District	Arbuckle
Maxwell Fire Protection District	Maxwell
Princeton Fire Protection District	Princeton
Bear Valley Indian Valley Fire Protection District	Stonyford Lodoga
Sacramento River Fire Protection District	Colusa Grimes
CAL FIRE	Leesville Wilbur Springs
Mendocino National Forest	Stonyford Elk Creek Alder Springs
Bureau of Land Management	Ukiah

Williams Fire Protection Authority/Williams Volunteer Firefighters Association

The Williams Fire Protection Authority is a Joint Powers Authority between the City of Williams and the Williams Fire Protection District of Colusa County. This firefighting organization is staffed on a 24 hour a day, seven day a week basis by a paid firefighter along with more than 40 trained volunteers and a duty officer. The Authority maintains an interagency agreement with CAL FIRE's Sonoma-Lake-Napa Unit which allows both entities to operate within State Responsibility Area (SRA) and Local Responsibility Area (LRA) lands.

Arbuckle-College City Fire Protection District

Personnel of the Arbuckle-College City Fire Protection District is a combination of career and volunteer members serving unincorporated areas of Colusa County including the communities of Arbuckle, and College City. The district operates one station and has a service area of approximately 210 square miles thus providing fire and emergency services to roughly 3,000 residents.

Maxwell Fire Protection District

Maxwell Fire Protection District personnel is a combination of career and volunteer fire fighting

personnel. The District serves the community of Maxwell and the surrounding area. The District covers 120 square miles and protects a population of approximately 1,500 residents.

Princeton Fire Protection District

The Princeton Fire Protection District is a volunteer fire department serving the community of Princeton and the surrounding area. The protection district covers 31 square miles in Colusa County east of Interstate 5.

Bear Valley/Indian Valley Fire Protection District

The Bear Valley/Indian Valley Fire Protection District is a volunteer fire department serving unincorporated areas of Colusa and Glenn Counties including the communities of Stonyford and Lodoga. The district covers 270 square miles.

Sacramento River Fire Protection District

The Sacramento River Fire Protection District provides service to unincorporated areas surrounding the city of Colusa including the community of Grimes. The district covers 212 square miles with 184 square miles in Colusa County and 28 square miles in Glenn County. The Sacramento River Fire District personnel consist of one career firefighter and 47 volunteer members who operate two fire stations located in Colusa and Grimes.

CAL FIRE

CAL FIRE is responsible for preventing and suppressing wildland fires on SRA lands throughout Colusa County which is under the jurisdiction of the Sonoma-Lake-Napa Unit. CAL FIRE has fiscal responsibility over additional acres of SRA lands which are directly protected by the Mendocino National Forest. All lands managed by the BLM Ukiah Field Office are under the direct protection of CAL FIRE. California Public Resources Code 4125 establishes that local and federal agencies have primary responsibility for fire prevention and suppression in all County areas not classified as SRA. Every five years, CAL FIRE reissues maps identifying the boundaries of the SRA with any modifications approved by the Board of Forestry. In addition to the stations within Colusa County that CAL FIRE operates or for which CAL FIRE is responsible, other firefighting resources are available in neighboring fire districts and other counties including aerial attack bases.

Historic catastrophic losses of structures within California's Wildland Urban Interface Area has resulted in the establishment of various laws and regulations designed to protect the public. These State Fire Safe Regulations constitute the basic wildland fire protection standards of the California Board of Forestry. On a yearly basis, each CAL FIRE Battalion, including the Sonoma-Lake-Napa Unit perform LE100 clearance inspections around structures (Public Resource Code 4291) in order to aid residents in understanding and complying with the regulations that affect the impact of wildfire events. Items identified include basic road access, signage and building numbering, private water supply reserves for emergency fire use, and vegetation modification. In addition, Unit personnel attend stakeholder meetings in order to aid the public with information and possible resources for fuel management projects in high priority fire hazard areas.

United States Forest Service/Mendocino National Forest

The Mendocino National Forest manages a significant portion of those chaparral and forest lands within the westernmost portion of the Western Colusa County Planning Unit. With regard to fire, the primary responsibility of this agency is for the control and suppression of wildland fires (not structural fires) on federal land. In additional to the Forest Supervisors office in Willows, USFS fire personnel are housed at facilities located in Stonyford, along with Elk Creek and Alder Springs in Glenn County. A number of remote facilities within the National Forest were closed and staff reassigned to these larger facilities. USFS crews and equipment are also available at stations located within other National Forests located to the north and east. In addition, the agency has access to substantial firefighting personnel and equipment throughout the region utilizing operating agreements established between other National Forests.

Bureau of Land Management

At the present time either the U.S. Forest Service or CAL FIRE conducts all fire suppression operations on BLM lands. In the event of a wildfire, BLM fire management and fuels personnel would serve as duty officers and agency representatives to an interagency team.

Community ISO Rating

As a means of standardizing the rating of communities in terms of their ability to protect homes and other structures from fire, the Insurance Service Office (ISO) system was developed by the firefighting and fire insurance communities. The ISO system rates the following fire protection criteria:

- Fire protection level of service or lack of service in terms of proximity to paid firefighting personnel
- Level and quality of emergency communications systems
- Quality and capacity of community emergency water delivery systems.

The "10 point" rating system (with 1 being the lowest risk and 10 being the highest) is often used by insurers in order to determine the availability and rate of fire insurance policies. "**Table 7 ISO Ratings for Major Communities Within the Colusa County CWPP Project Area"** lists the current ISO ratings of major communities within the Colusa County CWPP planning area.

Table 7: ISO Ratings for Major Communities within Colusa County CWPP Project Area

Community	ISO Rating
Colusa	3
Stonyford	6
Lodoga	6
Century Ranch	9

The rural areas under the jurisdiction of these fire districts have ISO ratings of 9.

Overview of Developed and Natural Assets at Risk Within the Colusa County CWPP Planning Area

Mendocino National Forest

Approximately 74,239 acres of the Mendocino National Forest are located within Colusa County. Included within this portion of Mendocino National Forest managed lands are 7,108 acres within the Snow Mountain Wilderness Area which contains the headwaters of the Stony Creek system. Within the Wilderness Area, Stony Creek has a self-sustaining population of wild rainbow trout. More than 500 species of plants and 122 species of wildlife have been identified there as well. The highest elevations within the MNF have a subalpine environment containing barren, rocky slopes and stunted red fir trees. Middle elevation landscapes contain stands of mixed conifers such as Ponderosa Pine, Sugar Pine, Jeffery Pine, White Fire, Douglas fir, and Incense Cedar along with scattered black oak stands and individuals. Mountain Mahogany grows on exposed ridges in the wilderness and is a food source for the black-tailed deer. Rare native plants include Sonoma Manzanita (Arctostaphylos canescens ssp. sonomensis) on Snow Mountain East and the endemic annual herb Bentflower Fiddleneck (Amsinckia lunaris) on St. John's Mountain. In addition, the Wilderness Area provides habitat for species such as the Northern Spotted Owl, marten, fisher, goshawk, black bear, mountain lion, and game birds like California quail, sooty grouse, and bandtailed pigeon.

Bureau of Land Management Parcels

The Bureau of Land Management provides oversight on approximately 4,130 acres of land within Colusa County. In additional to wildlife habitat, these properties provide rangelands for livestock grazing, sites for electronic communication facilities, mineral extraction sites, and off-road vehicle use areas.

Community of Stonyford and its Wildland Urban Interface Area

This community of Stonyford has a population of approximately 149 residents and is formally recognized as a federally listed at-risk community. The urban core contains a number of commercial establishments, post office, community hall, church and a MNF work station. Electrical and water utility infrastructure such as pumping facilities are located in the community’s urban core. The community and the surrounding area are served by a volunteer fire company along with the Wilbur Springs and Bear Valley CAL FIRE stations.

Communities of Lodoga and Sites

These two small developed areas are listed as formally recognized federally listed at-risk communities. The Lodoga community has a population of approximately 17. These develop areas are served by a volunteer fire company along with the Wilbur Springs and Bear Valley CAL FIRE stations.

State Route 20, 16 and 45

State Route 20 passes through the northern boundary of the Colusa National Wildlife Refuge component of the Sacramento, Delevan, Colusa and Butte Sink Wildlife Area Planning Unit along with the southern quarter of the Western Colusa County Planning Unit. State Route 16 passes through the southwestern quarter of the Western Colusa Planning Unit from north to south. State Route 45 traverses the eastside of Colusa County from north to south and separates farmlands on the valley floor from wildland areas immediately adjacent to the Sacramento River that are located within the Sacramento River Planning Unit. Along these State highway segments, vegetation within the highway right-of-way is controlled through a combination of herbicide, hand treatments and occasionally prescribed burning.

Major County Roads

Roads are an essential part of fire safety, fire management, and fuels reduction planning. These linear features provide access to communities, homes, and wildlands, as well as escape routes in the event of wildfire or other disasters. In addition, roads of all types provide a defensible space from which firefighters can conduct direct attack on wildfires and provide a strategic location for roadside fuel breaks. These significant routes are listed in "**Table 8 Colusa County Road Classifications"** below.

Minor Roads and Trails

In addition to developed roads, Colusa County contains a large number of minor roads and primitive jeep trails that access public and private forest and ranch lands. Many of these roads are unmapped, gated, and/or locked and therefore do not provide reliable ingress or egress for fire fighters and local residents. This array of wildland roads could provide a network of emergency evacuation routes that would protect Colusa County's rural residents during wildfire events. If properly developed, these roads could become linear fire/fuels management features that link scattered fuels reduction projects located throughout the various planning units. Unfortunately, these same roads often pass through areas containing large amounts of hazardous fuels providing an extensive area along which sources of roadside ignition could create fire starts thus requiring special attention.

Table 8: Colusa County Road Classifications

Road Name	Primary Road Type
Interstate 5	Interstate Freeway
State Highway 20	State Highway
State Highway 45	State Highway
Maxwell-Sites Road	County Road
Sites-Lodoga Road	County Road
Stonyford-Lodoga Road	County Road
East Park Reservoir Rd,	County Road
Indian Springs Road	County Road
Fouts Springs Rd	County Road
Lake View Loop (entire road loop)	Private Road
Goat Mountain Road (County Road M-42)	County Road
Rail Canyon Road (County Road M-401)	County Road
Bear Valley Road	County Road
Wilbur Springs Road	County Road
Walker Ridge Road	County Road
Leesville Road	County Road

Utility Infrastructure

Numerous power lines, gas lines, and water conveyance infrastructure features are found throughout the three Colusa County CWPP Planning Units. When such features are constructed, a considerable amount of vegetation is often removed within the utility right-of-way that continues to be maintained in order to allow access and to reduce the potential for these features to become a fire threat. A number of such linear features traverse more than one planning unit. Significant among these are PG&E steel tower lines that traverse Colusa County from north to south. A number of smaller power and gas transmission lines are also

found within the various CCCWPP Planning units. These large and small manmade features could, with some additional treatments, have the potential to be developed into linear fuel breaks or ingress routes for firefighting forces.

Hydrologic Features and Watersheds

South Fork Stony Creek and Little Stony Creek

The South Fork Stony Creek and Little Stony Creek watersheds are the largest within the Western Colusa County Planning Unit. South Fork Stony Creek originates at the crest of the South Coast Range separating Colusa County from Lake County. A significant portion of the creek's headwaters are generated within the Snow Mountain Wilderness. The headwaters of Little Stony Creek originate at the southern end of Colusa County within the Mendocino National Forest. The creek's mainstem then flows to the northeast where it enters along with Hyphus Creek, East Park Reservoir, the largest water feature within the Planning Unit. Little Stony Creek then joins South Fork Stony Creek approximately four miles north of the reservoir creating the upper reach of Stony Creek's mainstem which flows north into Glenn County where it enters the Stony Gorge Reservoir located east of Elk Creek. 100% of the South Fork Stony Creek and Little Stony Creek watersheds are located within the Western Colusa County Planning Unit. Other major creeks within the Western Colusa County Planning Unit include Paradise Creek, Trout Creek, Miner Creek, Mill Creek, Sullivan Creek, South Fork of Spanish Creek and Bear Creek.

Other Significant Assets

Business and Commercial Development

The economy of rural Colusa County is based largely upon crop and livestock production. Within the Western Colusa County area, agricultural operations include dry crop farming and livestock production. Elsewhere within the County, field and orchard crops are grown and processed. Rural areas at the urban fringe contain numerous hobby ranches. Several specialized agricultural processing facilities are found in the valley floor potions of the County as well.

Cultural Resources

Various communities found within the Colusa County CWPP area contain an array of cultural resources that are shared by local residents. Among these are community buildings, infrastructure, and parks. In addition, Colusa County contains both historic and prehistoric cultural resources that could be impacted, damaged, or destroyed by wildfire or fire management activities if effective protection and mitigation measures were not implemented.

Air Quality

During Colusa County's late spring, summer, and fall fire season, smoke dispersing winds are often absent and an inversion layer above the Sacramento Valley is present much of the time. As a result, the often large volumes of smoke generated in connection with wildfires or prescribed fire treatments within the County's lower elevations can be trapped and drift toward developed areas containing an array of sensitive sites such as hospitals, schools, rest homes, and other facilities. These environmental characteristics and impacts of smoke and winds also limit the ability of agriculturalists located on the valley floor to use fire in reducing agriculture debris such as rice stubble and orchard trimmings. Land managers within Colusa County's forestlands grasslands, oak woodlands and chaparral often find themselves at odds with the Sacramento Valley agricultural community as they vie for air space in which to deposit smoke from vegetation management operations. Impacts caused by drifting smoke include soiling of property, public nuisance,

visibility loss, and related traffic safety issues. In order to reduce the impact of wildfire on air quality, it is critically important to reduce the threat of uncontrolled fires through a combination of fire safety, fire management, and reduction of hazardous fuels in a manner which allows the controlled release of smoke emissions.

U.S. Fish & Wildlife Service Critical Habitat, Vernal Pools and Listed Species

Within the Western Colusa County Planning Unit are approximately 980 acers of lands containing vernal pool habitat which have been classified as USFWS critical habitat for vernal pool listed and endangered species such as the Vernal Pool Tadpole Shrimp, Fairy Shrimp, and Hairy Orcutt grass. Although these landscapes have developed under regimes of frequent fire, such sensitive ecosystems can be negatively impacted by excessive high intensity wildfire at critical times of the year. At the present time, land management entities are attempting to understand and recreate natural rates and intensities of fire within many of these vernal pool areas in order to sustain and improve such habitats. The USFWS also maintains critical habitat for listed species within its various wildlife refuges which have been designated as planning units in the Colusa County CWPP.

In addition to the assets described above, the following, general categories of significant resources are also found within the Colusa County CWPP planning area:

- Lands used for commercial purposes such as grazing, dry crop production, and timber production.
- Riparian habitats along watercourses.
- Properly functioning aquatic ecosystems.
- Unique landscapes, such as the South Coast Range's serpentine belt, which support an array of rare and endangered plant species along with those found in the MNF managed Frenzel Creek Research Natural Area.
- Sites of cultural and historical significance, including ranches, home sites, the Cortina Rancheria and other areas of human occupation.

COMPLETED, PROPOSED AND IN PROCESS EFFORTS IDENTIFIED DURING THE COLUSA COUNTY CWPP PLANNING PROCESS

Introduction

In order to implement the fire protection, fire management, and fuels reduction goals recommended in the Colusa County CWPP, a number of completed, in process and proposed fire/fuels management projects and other initiatives have been identified by the Colusa County CWPP, TAC and other stakeholders. Regardless of spatial extent, the following objectives were utilized to direct the recognition, design and implementation of project work and are in addition to this planning effort's overarching intent of protecting lives and property:

- Proposed efforts should provide a method to assess the potential for linking with other fire and fuels management infrastructure and project work in order to maximize the efficiency, cost effectiveness

and continuity of project work.

- A mechanism should be provided in all fuels modification projects to assure that project work is continually maintained and adequately conducted through self-financing.
- Projects should maximize the responsibility of individual landowners to protect their own properties from wildfire.

Project Categories

The prioritized projects in the Colusa County CWPP generally fall into three categories: fuels reduction/vegetation manipulation, infrastructure development and improvement and organizational improvements. Fuels reduction and vegetation manipulation projects include efforts that attempt to impact the current volume, arrangement and composition of vegetation and manmade fuels either at a single location or throughout a larger landscape. Infrastructure projects include construction and improvement of those manmade structures that provide fire safety and fire control. Organizational improvements entail increasing information exchange and collaboration among public and private stakeholders involved with fire/fuels management issues. Such efforts include the development or expansion of local Fire Safe Councils, watershed groups and other community/stakeholder organizations among other initiatives. The techniques often used to manipulate the volume and arrangement of vegetative fuels is discussed in the following paragraphs.

Shaded Fuel Breaks

This form of vegetative fuel modification involves the thinning of forest crowns as well as the reduction of surface and ladder fuels. If successfully developed, this type of vegetative manipulation maintains sufficient crown cover to effectively shade out shrubs and other vegetation that grow in the forest understory that create ground and ladder fuels.

Defensible Fuel Profile Zone (DFPZ)

Defensible Fuel Profile Zones are strategically located linear fuel reduction treatments and fire protection areas within forested areas that are generally constructed one-quarter mile wide along significant public and private roads as well as along strategic ridgetops. DFPZ's are also designed to traverse communities, watersheds, or other areas of special concern. Within the DFPZ, hazardous surface, ladder, and canopy fuels are mechanically treated to levels that are less overstocked and closer to historical conditions. These developed features allow firefighters to quickly, safely, and effectively attack and suppress oncoming wildfire or to initiate prescribed fire operations. The linear nature of the DFPZ network allow the development of connectivity between fire protection and fuels reduction projects on adjoining properties throughout a watershed. As a result, more extensive and effective fire protection is developed than can be achieved through the creation of numerous unconnected fire related projects. Among the benefits of DFPZs are:

- Protection of communities, forest resources, watersheds, and wildlife
- Addressing excessive fuel loading and overstocked timber stands at an appropriate pace and scale
- Providing opportunities for adjoining landowners to extend and leverage fuels reduction projects thus increasing the protective capabilities of each participant's project work
- Providing an effective means to reduce roadside fire ignitions

Roadside Clearings

Roadside clearings generally follow roads that are important for emergency evacuation, firefighting access, and fuel break development. These clearings can vary in width and the degree of vegetation removal based upon landowner cooperation, fuel density, and fire threat. Often, a 25' to 150' width is established from the road edge as a minimum objective for this type of project. The general prescription for a roadside clearing would be to remove all concentrations of brush and smaller trees (generally less than eight inches in diameter) away from the road edge. Larger trees are normally spaced to the maximum extent allowed by the property owner and pruned to at least 10' from the soil surface.

Summary of Results from Project Prioritization Process

In prioritizing project recommendations, the protection of residents and firefighters was of primary importance. The protection of development and infrastructure on rural public and private property as well as National Forest inholdings were also considered of major significance. As is the case throughout the Colusa County CWPP planning area, the protection of watershed plant and animal species and critical habitat were given special consideration in the process of project development. Projects protecting cultural and historical resources were considered as well. The following descriptions and discussions of projects and their protection goals reflect the prioritization values of the three planning unit's stakeholders and project participants. The location of these in place, proposed and in process projects are depicted on "**Figure C Colusa County CWPP Countywide Base Map**," shown on page 22. Completed project prioritization ranking sheets used by stakeholders to prioritize proposed projects are found in under **Appendix B: Project Prioritization Ranking Sheets**.

COUNTYWIDE COMPLETED, IN PROGRESS, AND PLANNED/PROPOSED FIRE AND FUELS MANAGEMENT PROJECTS

In the process of developing the Colusa County Wildfire Protection Plan, a number of initiatives were identified or developed that would positively impact fire safety, fire management, wildfire and fire ecology conditions throughout Colusa County or within more than one planning unit. These recommended actions generally entail large scale efforts conducted by federal, state, and local governments.

Completed Efforts

CAL FIRE Napa-Lake-Sonoma CAL FIRE Unit Strategic Fire Plan

The CAL FIRE Sonoma-Lake-Napa Unit Strategic Fire Plan is a cooperative effort between State and local stakeholders focused on fire and fuels management within, Napa, Lake, Sonoma, Solano, Yolo and Colusa Counties. The LNU Unit's Pre-Fire Engineer is responsible for updating the multi-county fire plan through the incorporation of current fire policies at the State level and identification of new and in-progress project work that will impact fire hazards thus advancing the fire and fuels management agenda of the Unit. Local stakeholders to that planning process included fire personnel, other public agency staff and members of the public who provided input related to local conditions.

The overall goal of the LNU Unit planning process is to identify public and private assets at risk of wildfire throughout the CAL FIRE Unit's area of responsibility. The plan utilizes specific CAL FIRE

methodology for defining assets to be protected and their degree of risk from wildfire. The assets at risk addressed in the plan are life and safety of citizens and firefighters, rural communities, property in the form of structures, watersheds and water quality, timber, wildlife and wildlife habitat (including rare and endangered species), unique areas (scenic, cultural, and historic), recreation, range, and air quality. The planning document identifies strategic areas for pre-fire planning, fuels treatments and preparation of fuels evaluations. The plan also develops an array of measures to protect at-risk assets including a combination of fuel modification, ignition management and fire-wise planning.

Predevelopment planning is another significant component of the LNU Unit's overall fire planning process and includes changes to local building codes and zoning ordinances, creation of educational and public information programs, and recommendations for improvement of firefighting infrastructure such as new or improved fire stations and water systems. The pre-fire management prescriptions identified in the LNU Unit Plan also identify those who will benefit from such work and thus should share in project costs. With this information and a prioritized list of projects, the CAL FIRE unit and stakeholders can be more successful in applying for funding or when seeking approval of project work that has been developed by consensus in a collaborative environment. As a result of these cooperative efforts among stakeholders, recommended fire and fuels management projects can be conducted on a landscape basis with a greater chance of success. These State fire planning efforts and the creation of a Colusa County CWPP are also expected to support the land use and safety elements of the County's general plan. The current Unit Plan was completed and approved in 2022 and a revised planning document can be found online here: https://osfm.fire.ca.gov/media/s1vdava4/2022-sonoma-lake-napa-solano-yolo-colusa-unit-fire-plan.pdf.

Glenn County Community Wildfire Protection Plan

Like Western Colusa County and much of Northern California, Glenn County is at very high risk of experiencing catastrophic wildfire. Conditions within the west side of both counties are similar in terms of topography, vegetation, and development. Similarities between the two Counites' landscapes also exist within USFWS refuges as well as those located along the Sacramento River. At the present time, considerable effort is being made by public and private land managers within Glenn County including areas adjacent to Colusa County's northern boundary to manage wildland vegetation in order to reduce the threat of uncontrolled wildfire and to recreate natural fire return intervals throughout the County. These efforts have included an array of prescribed burns, shaded fuel breaks, and other fuel reduction practices developed on public and private lands.

Like the Colusa County Community Wildfire Protection Plan, the Glenn County CWPP was developed to better coordinate the project activities of individual stakeholders, thus maximizing their value and cost effectiveness. Out of this planning process, an array of projects was recommended that impact wildfire conditions within Glenn County including work at or adjacent to the Colusa County line. A number of proposed efforts are located to the north of Stonyford that with additional work could be connected with similar efforts developed for northwestern Glenn County. Similarly, project work within those portions of the Sacramento Wildlife Refuge and riverside areas of the Sacramento River in Colusa County could be connected to adjacent efforts in Glenn County.

Colusa County Sherriff's Department Rapid Notify Emergency Communications System

Colusa County now operates the "RAVE Mobile Safety" emergency response system to contact and inform County residents during wildfire or other emergency events. In addition, the Colusa County Sheriff's

Department supports the County with ten other methods of emergency notification. Information and registration for the RAVE Mobile Safety system can be obtained by accessing the County of Colusa website, www.countyofcolusa.org. Users then scroll down to the "Notify Me" box on the right side of the page and then click on the "Emergency Preparedness RAVE Mobile Safety" link on the lower left-hand blue column. The messaging system cannot be access unless users are signed up.

In Progress Efforts

CAL FIRE Vegetation Treatment Program

The CAL FIRE Vegetation Treatment Program is an ongoing cost-sharing initiative between private landowners and CAL FIRE which takes the role of project administrator. The program focuses on the use of prescribed burns along with manual and mechanical fuel reduction in order to reduce the presence of fire prone vegetation on State Responsibility Area lands. Throughout the Napa-Lake Sonoma Unit which includes Colusa County, project work completed under this program has traditionally taken the form of prescribed burns completed in order to achieve gross wildland fuels reduction. The Vegetation Treatment Program allows private landowners to enter into a cost sharing contract with CAL FIRE to use prescribed fire and other means to accomplish a combination of fire protection and resource management goals of both the landowner and CAL FIRE.

Implementation of VTP projects is by local CAL FIRE units who develop appropriate project treatments, burn plans for prescribed fire projects and related environmental impact assessment documents. Unit personnel also provide fire control equipment and ignition/containment crews along with a burn boss who oversees ignition control and mop up operations. Importantly, the VTP program provides indemnification to landowners in the event of fire escape. The fuels reduction projects that are completed first are those that are identified through the CAL FIRE planning process and subsequently developed and prioritized in individual Community Wildfire Protection Plans. " **Table 9 Vegetation Treatment Program Completed Fuels Projects"** describes recently completed VTM work within Colusa County. It is recommended that CCRCD personnel discuss with appropriate CAL FIRE staff the possibility of expanding the VTP program within Colusa County in order to expand the number of acres treated throughout the County on a yearly basis.

Table 9: Vegetation Treatment Program Completed Fuels Projects

Project Number/Cal Mapper Number and Alternative	Project Name	Status	Estimated Completion Year	Project Type	Net Acres
CalMAPPER ID: 1400-2017-FPL-008 Alternative ID: CALNUT 140020	Wiggins Burn/Class	Completed and in maintenance	2017	Burn	413

CAL FIRE Cal Mapper Program

Since 2009 CAL FIRE Units have developed and compiled Geographic Information System data on various fire and fuels management projects that have been completed, are currently in process or have been proposed within Unit areas. This spatial information allows CAL FIRE to prepare maps of projects throughout large geographical areas. Using this spatial data, CAL FIRE and other users can better understand the spatial relationships between fuel treatment areas in order to more effectively utilize previously completed project work when developing new treatments. As a result, the impact of newly developed fuel treatment and fire management projects can in many instances, be greatly increased. CAL FIRE Cal Mapper data was used by the CCRCD and RCDTC in the development of a Countywide Base Map for Colusa County shown in "**Figure C Colusa County CWPP Countywide Base Map**," that shows community and wildland resources in need of protection along with the completed, in progress, and planned vegetation treatments developed to protect those resources. Given the positive and negative impacts that forest stand thinning through timber harvest can have on fire spread, it is recommended that data related to large and small timber operations reported to CAL FIRE be incorporated into the Cal Mapper system.

I-5 Fuel Break

Project work for this ongoing fuel treatment project is completed on a yearly basis within the Cal Trans right-of-way along both sides of Interstate 5 as well as the freeway center divide throughout Colusa County. Annually, vegetation within and along freeway infrastructure is mowed by Cal Trans District 3 personal or in some circumstances hand cut by CAL FIRE/California Department of Corrections Conservation Camp crews in order to prevent roadside ignitions from spreading onto adjacent grasslands or agricultural operations.

CAL FIRE/Colusa County Fire Defensible Space Inspections

Changes to Public Resources Code (PRC) 4291 expand the defensible space clearance requirement maintained around buildings and structures within SRAs from 30' to 100'. CAL FIRE personnel conduct random fire inspections on residences located within Colusa County's SRA lands in order to determine whether defensible space has been established and maintained around structures in accordance with these regulations.

Colusa County Office of Emergency Services Tactical Interoperable Communications Plan (TICP)

At the present time the Colusa County Office of Emergency Services maintains a Tactical Interoperable Communications Plan. This communications plan is intended for use by first responders and may be used by governmental or non- governmental organizations and personnel requiring communications or coordination during an incident or planned event. The TICP is intended to document the interoperable communications resources available within a designated area, who controls each resource, and what policies or operational procedures exist for the deployment and demobilization of each resource.

Planned/Proposed Efforts

Roadside Fuel Treatments on County Roads Within Colusa County's Local Responsibility Area and State Responsibility Areas

It is recommended that the Colusa County RCD or a County agency survey County maintained roads within Colusa County's LRA and SRA lands in order to identify those road segments that are currently in

need of vegetation treatment. Once these treatments were completed, it is anticipated that roadside ignition and fire spread risk could be significantly decreased, and sight lines improved. The data collected would include road name, the number of road miles in need of vegetation treatment, recommended treatment type and the location of treatment sites. As proposed, such roadside treatments would be completed by the Colusa County Road Department. The CCRCD or County government could apply for grant dollars available through the California Fire Safe Council or other funding entity to complete such treatments in high priority areas.

Fire Hazard Reduction Coordination with Colusa County Public Works Department

The Colusa County Public Works Department is responsible for maintaining the vegetation within road rights-of-way under its jurisdiction, especially those with increased wildfire risk. Properly maintained roads can act as effective and cost-efficient fuel breaks over large areas and can be used to connect and expand the impact of non-linear vegetation treatments or as hard points from which prescribed fire efforts can be initiated. It is recommended that the road maintenance manager of the CCPWD be advised whenever fire hazard reduction projects are conducted within the vicinity of County maintained road infrastructure. Through collaboration between the CCPWD, landowners and land management agencies, the positive impact of fire and fuels management project work can affect much larger areas by connecting scattered projects with ongoing roadside vegetation treatments, increasing fire protection benefits to area stakeholders.

Coordination of Vegetation Treatments Between Cal Trans, Colusa County Road Department, CAL FIRE, Local Fire Districts and Adjacent Landowners in Connection with Fuel Treatments Conducted Along State Route 20, 16 and 45

The vegetation along State Highways is continually treated in order to improve the safety of highway infrastructure, reduce roadside ignitions and improve sightlines. State Route 20 and State Route 16 pass through extensive areas of Colusa County wildlands that are at a high risk of ignition and fire spread. State Route 45 divides wildland areas adjacent to the Sacramento River from farmlands located west of the highway right-of-way. Vegetation maintenance along this route protects both native vegetation and crops from ignition risk and fire spread. Through improved coordination between Caltrans District 3 maintenance personnel, the Colusa County Road Department, CAL FIRE, local fire districts and adjacent landowners, highway infrastructure could be better leveraged in the development of a fuel break network. These major well-maintained routes could create a framework from which a large interconnected fuel break network is developed. Such coordination could be established through the Colusa County RCD and the Tehama-Glenn Fire Safe Council or a local Fire Safe Council if created for Colusa County.

Development of Formal Evacuation Routes, Pre-Designated Candidate Fire Safety Zone Sites and Related Maps for the Communities within CCCWPP Planning units

In the event of a large, fast moving wildfire in the vicinity of rural communities or other populated portions of Colusa County, various escape routes may become blocked, preventing egress to safe areas in other parts of the County or to neighboring counties. In such an event, the creation of formal emergency evacuation routes along with safety zones defined as areas where people and equipment can take refuge without fear of death, injury, or damage/destruction would be invaluable. Recommended safety routes would need to include fairly well-developed roads that could accommodate low clearance vehicles. They would also need to be established with the concurrence of law enforcement agencies who would act as

enforcement officials given that these entities are tasked with issuing and managing evacuation operations and road closures.

Currently, safety zones are established by fire and public safety entities during wildfire events on a case by case basis depending upon weather conditions, fire behavior and wildland fuel conditions. Such safety zones also require significant removal of vegetation and other wildfire fuel in areas far away from and out of the path of a fire. Since expected fire behavior dictates the size and location of safety zones, it is not realistic to identify and establish pre-fire established safety zones. Rather, it is recommended that federal, State and local fire organizations predesignate an array of candidate safety zones sites that could be quickly developed in a manner that provided safe refuge to residents according to current wildfire direction location and behavior. If formally designated evacuation routes and fire safety zones candidate sites were established, these would need to be included on CAL FIRE evacuation maps. Hard copy and online maps would need to be distributed to local fire agencies and made available to the public.

Fire Hazard Reduction Coordination with PG&E

PG&E is required by law to maintain vegetation clearances along the rights-of-way of its primary and secondary power transmission lines. It is recommended that future fire hazard reduction projects proposed for implementation near powerlines or other power transmission rights-of-way be coordinated with PG&E vegetation management personnel. As result of such coordination, planned/proposed vegetation treatments on lands adjacent to the utility's rights-of-way could be better leveraged with in process, proposed and completed power infrastructure fuel treatments.

Fuel Hazard Reduction Coordination with Utility Providers

Throughout Colusa County, various utility operators (phone, electric, gas, etc.) maintain underground service cables and pipelines. During installation of these linear features, vegetation is removed, and portions of the utility company right-of-way is maintained clear of vegetation and wildland fuels. If vegetation was managed along the entire length of utility rights-of-ways, these linear features could provide access for firefighters and their equipment as well as the framework for a more extensive fuel break network within a significant portion of the three planning units. It is recommended that the CCRCD and other County entities involved with fire/fuels management issues collaborate with utility providers to identify and map utility rights-of-way and increase clearance along this underground infrastructure. As a result of such collaboration and coordination, planned/proposed vegetation treatments on lands adjacent to all utility rights-of-way could be better leveraged with in process fuel treatments along underground utility infrastructure.

Map of "Fire Protection Existing Benefit Rating Criteria" for Roads within the Grindstone District of the Mendocino National Forest

In 2003, the Mendocino National Forest initiated a Roads Analysis Process for the entire National Forest. In connection with that effort, it is recommended that Grindstone Ranger District personnel utilize USFS "Fire Protection Existing Benefit Rating Criteria". These criteria would be used to identify various fire/fuels management benefits provided by different road segments in the Forest's eastside front range and forestland areas including those within Colusa County. The analysis prepared for these federal lands would be defined using the following classification of benefits to fire protection:

0 = Unknown Benefit of road for fuels management or fire suppression activities is unknown. More

information is needed.

1 = Little to No Benefit Road is located in drainage bottom. Low or no prior fire history. Poor location for a DFPZ.

2 = Low Benefit to Fire Road is located on lower slopes on north suppression or east aspects. Fire history reflects few fuels management fires or mainly low intensity fires. Poor location for DFPZ.

3 = Moderate Benefit Road is located on lower slope with south or west aspect or on mid-slope with north or east aspects. Fire history shows a higher frequency of fire occurrence or moderate to high intensity fires. There are benefits to DFPZ locations. Road provides access to a large area.

4 = High Benefit Road is located mid-slope with south or west aspects or on ridgetops. Fire history shows high fire occurrence or high intensity fires. Good location for DFPZ. Road provides exclusive access to a large area.

5 = Highest Benefit Same as 4, plus road is currently along existing or proposed DFPZ. Fuel loading is moderate to high. DFPZ maintenance is required. The road is used to access structures (property) or there are structures in the area.

Once the classification of road segments within the Grindstone District have been completed, highly rated roads could be recommended for fuels reduction projects including shaded fuel breaks or other linear treatments. Roads recommended for such actions would have significant physical characteristics that directly benefit the effectiveness of proposed roadside vegetation manipulation. Through the implementation of such liner fuel treatments, future fire control and fuels management projects completed on nearby parcels could be made more effective and cost efficient by leveraging in place Forest Service roadside work. Road mapping would also aid in the development of fuel treatments on private inholdings within the Mendocino National Forest as well as lands adjacent to the National Forest's eastern boundary. In addition, detailed information about superior locations for road treatments could be incorporated into USFS, CCRCD or other entities' federal State a non-government organization grant application.

Installation of Water Tanks with High Volume Fill Spout Fittings

Portions of Western Colusa County contain rural communities that lack water storage, handling and delivery capacity sufficient to fight wildfires. As a result, rural homes can be put at risk if wildfire disrupts electrical service and water cannot be generated on site. During wildfire emergencies, drafting of water from ditches and streams can be time consuming. In addition, roads adjacent to developed and natural water sources can become cut off from firefighting vehicles, limiting the number of sources available for fire containment. Consequently, an important recommendation by CCCWPP stakeholders is for the development of supplemental water sources for use in firefighting efforts. Fifty thousand (50,000) gallon water tanks are recommended for installation in communities that have a single urban core where most homes and other structures are located in a central location. Ten thousand (10,000) gallon tanks are recommended along State highways and secondary roads as well as disbursed communities covering large areas such as the community of Leesville. The recommended tank size per community is provided in **Tables 10 and 11** below. All tank sites would need to be situated in secure locations where tank structures can be protected from vandalism. Collaborative efforts between the CCRCD, CAL FIRE, the Colusa County Planning Department, local citizens, and community groups should be encouraged to identify additional needs for water storage capacity and tank sites in addition to those listed below. This group of stakeholders could also

assist in the identification of private, public and philanthropic sources of funding to finance the development of Colusa County's wildland fire water storage infrastructure. CCCWPP stakeholders in the Westside area provided the following list of specific water tank sizes and locations. These locations are displayed in **Appendix C Hydrant Locations Within the Western Colusa County Planning Unit**.

Table 10: Recommended 50,00 Gallon Tank Installations

Stonyford
Lodoga
Century Ranch Development
Cortina Rancheria

Table 11: Recommended 10,00 Gallon Tank Installations

Route Name	Route Classification
State Highway 20	**State Highway**
State Highway 45	**State Highway**
Maxwell-Sites Road	**County Road**
Sites-Lodoga Road	**County Road**
Stonyford-Lodoga Road	**County Road**
East Park Reservoir Rd,	**County Road**
Indian Springs Road	**County Road**
Fouts Springs Rd	**County Road**
Lake View Loop (entire road loop)	**Private Road**
Goat Mountain Road (County Road M-42)	**County Road**
Rail Canyon Road (County Road M-401)	**County Road**
Bear Valley Road	**County Road**
Wilbur Springs Road	**County Road**
Walker Ridge Road	**County Road**
Leesville Road	**County Road**
Sites	**Bonnie View**
Fouts Springs	**Wilbur Springs**

Mapping of Secondary Ranch Roads

A number of ranch roads and other wildland routes are located throughout the Colusa County CWPP project planning area that could be used for both access to remote areas by firefighting personnel as well as for egress by area traffic during a significant wildfire event. Gates across these routes would require the installation of combination locks or those that could be keyed in a manner that would give firefighting personnel, land managers, and local rural residents the ability to open them rapidly in the event of a fire or other emergency. Route maps would need to be developed and issued to firefighting and other emergency personnel in order to expedite emergency response and escape.

Vegetation Treatments Around Cell Towers Throughout Colusa County

Numerous cell towers are located throughout Colusa County which can be put at risk during wildfire events. It is recommended that all cell tower locations within Colusa County be located and incorporated into the Colusa County RCD's Countywide Base Map prepared in connection with development of this CWPP document which displays at risk assets. With this information, inspection of these sites can be made by County fire authorities or CAL FIRE (depending upon their location) with necessary follow-up

treatments completed.

Fuel Treatments Permit Coordination Program

It is recommended that the CCRCD or other entity having an ability to become CEQA Lead Agency develop a fuel treatments permit coordination program and related programmatic CEQA environmental analysis document (Programmatic Initial Study/Mitigated Negative Declaration). The goal of such an effort would be to assess the potential impact of common fuels/vegetation treatments that are often employed by private landowners within a specific assessment area located in Western Colusa County. Through the pre-approval of specific fuel treatment techniques, it is anticipated that development of fire management infrastructure and implementation of fire/fuels and watershed management projects can be completed in a timely and cost-efficient manner thus increasing the pace and scale of such projects' implementation. In order to reduce the impact of these activities to a less than significant level, an array of Mitigation Measures and Best Management Practices would need to be developed and then approved by regulatory entities. In addition, applications for programmatic permits required by resource agencies would need to be developed and approved in order to execute the activities approved under this permitting program.

Through the development and negotiation of CEQA environmental analysis and programmatic permits with agencies having oversight, the CCRCD or other County entity could become a one stop source of permits and environmental analysis that are often required to implement those activities that could be approved under such a permitting program as long as they occurred within the specific area that was accessed for environmental impacts in the Programmatic CEQA document. The approval and certification of the environmental analysis conducted to assess the impact of the program and the implementation of approved practices would result in the Programmatic CEQA document serving as a functional equivalent to the incremental environmental analysis and permits that are required of participants if they completed fuel treatments individually outside of such a permitting program's regulatory processes.

Colusa County Community and Agency Participation in Fire Safe Councils

Over the past 20 years, the Resource Conservation District of Tehama County has coordinated the proceedings of the TGFSC whose members represent federal, State, local and private land managers including those in Colusa County. Through regular meetings, Council members exchange information related to fire regulations, sources of public and private implementation dollars along with discussions regarding completed, in process and proposed fire/fuels management and fire ecology projects. Once proposed projects that improve current conditions within Tehama, Glenn and Colusa Counties have been identified, the RCD of Tehama County, Glenn County RCD, Colusa County RCD or other implementing entity as appropriate, develop recommended project work scopes along with project budgets and schedules. Applicable funding programs for these detailed project ideas are then identified and funding applications prepared by the potential implementing entity.

RCD of Tehama County, GCRCD and Colusa County RCD personnel continue to expand membership of the TGFSC with stakeholders located throughout the tri-county area. At the present time, MNF and Bureau of Land Management personnel along with other State and federal agency personnel operating within Colusa County attend TGFSC meetings providing input and expertise. Community discussions conducted during development of the Colusa County CWPP indicate interest by a number of agency personnel, individual landowners and land owner organizations in formally joining the Tehama-Glenn FSC, creating a separate FSC for Colusa County or developing an FSC for the Glenn/Colusa County area. As a result, of

such organizational efforts, the Colusa County community could better utilize the benefits of that can be provided by the California Fire Safe Council in terms of funding, advocacy and technical assistance.

Review of Colusa County Building, Land Development, and Zoning Codes

In order to reduce structural ignitability, the Colusa County building and land development codes should be reviewed in order to determine if all current building and land development standards incorporate fire safe standards. Recommended changes would include updated regulations and standards for new construction, as well as building retrofits in order to make them less prone to loss from wildfire attributable to embers, radiated heat, or surface fire spread. Specific suggestions for code changes are discussed below.

Incorporate Fire Safe Principles in County Land Use and Zoning Ordinances

The Colusa County Planning Department should consider reviewing its land use and zoning ordinances in order to assure that these codes adequately, efficiently, and effectively promote fire safety and structure survival in the event of catastrophic wildfire. Among zoning issues that can impact the safety of rural residents are:

- Rural residential zoning that takes into consideration the expected density and number of homes in addition to parcel size when requiring fire protection measures.

- Rural residential zoning that takes into consideration natural fuel loadings and topographic features that can make a site more susceptible to wildfire threat (e.g., building sites on steep slopes in the chaparral belt of Western Colusa County).

- Reassessment of workloads and response times of current fire facilities when analyzing requests for zone changes to higher density development.

Elimination of Wood Shake Roofs within the Portions of Colusa County Classified as a High Fire Threat

Efforts should be made to eliminate wood shake roofs within the areas of Colusa County classified as having a high fire threat. Research shows that homes with noncombustible roofs and clearance of at least 30’ to 60’ have a 95% chance of survival in a wildfire. In order to promote this effort, the TGFSC or local FSC if developed along with the CCRCD should work with the Colusa County Building Department to educate residents about the importance of replacing shake roofs. In addition, County officials should consider the following changes in building regulations and polices:

- Establishment of a reduced or no-fee permit for the replacement of shake roofs.
- Required replacement of shake roofs upon sale of a home.
- Financial assistance programs for wood shake roof replacement among qualifying low-income homeowners and first-time home buyers.

County Incentives for Fire Safe Landscaping

In addition to constructing homes and other structures that are capable of surviving catastrophic wildfire events, the Colusa County Building Department should review building and development codes in order to assure that all landscaping requirements are fire safe. Consideration should also be given to developing an array of incentives for homeowners and other rural property owners to utilize fire safe landscaping techniques and plant materials.

Support of Colusa County Fire Districts and Departments

It is recommended that the TGFSC (or locally established FSC) and CCRCD, develop efforts that would assist the various County fire districts and departments. Importantly, this could include development of grant funding for increased/improved firefighting assets and training.

Formal Classification of Communities as Federal at-risk Communities

The 10-Year Comprehensive Strategy Implementation Plan prepared jointly by the Secretaries of Agriculture and Interior in May of 2002 created a mandate that the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior work with state governors on a long term strategy to deal with the wildland fire and fuels situation and the urgent need for habitat restoration and rehabilitation after wildfire. To this end, attention was focused on areas adjacent to federal lands that were within the Wildland Urban Interface. More specifically, this partnership between the federal government and the states was tasked with the responsibility of creating "…broad, nationally compatible standards for identifying and prioritizing communities at risk." In identifying these communities, agency officials were to remain cognizant of three basic tenets:

- Include all lands and all ownerships
- Use a collaborative process that is consistent with the complexity of land ownership patterns, resource management issues, and the number of interested stakeholders
- Set priorities through project evaluation, not by ranking communities.

An initial step in the classification process was the establishment of a formal definition for "Urban Wildland Interface Community." On January 4, 2001, the Federal Resister published an initial definition of interface areas in order to focus fire protection and fire reductions efforts on those communities within at-risk areas. According to the official federal definition, urban wildland interface communities are those lands where "…humans and their development meet or intermix with wildland fuel." Further, the federal definition establishes three categories of communities that meet this description, of which Categories 1 and 2 are of special importance to federal officials, described below.

- **Category 1. Interface Community:** The Interface Community exists where structures are directly adjacent to wildland fuels and there is a clear line of demarcation between residential, business, and public structures and wildland vegetation. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually 3 or more structures per acre, with shared municipal services. Fire protection is generally provided by a local government fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire. An alternative definition of the interface community emphasizes a population density of 250 or more people per square mile.

- **Category 2. Intermix Community:** The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The development density in the intermix zone ranges from structures very close together to 1 structure per 40 acres. Fire protection districts funded by various taxing authorities normally provide life and property fire protection and may also have wildland fire protection responsibilities. An alternative definition of intermix community emphasizes a population density of between 28 to 250 people per square mile.

- **Category 3. Occluded Community:** The Occluded Community generally exists in a situation, often within a city, where structures abut an island of wildland fuels (e.g., park or open space). There is a clear line of demarcation between structures and wildland fuels. The development density for an occluded community is usually similar to those found in the interface community however, the occluded area is usually less than 1,000 acres in size. Fire protection is normally provided by local government fire departments.

  In addition to the spatial relationship between urban development and areas containing wildland fuels, a number of fire behavior and urban development criteria were converted to factors that needed to be considered when making a determination that a community was at risk of wildfire threat. The January 4, 2001 Federal Register described these significant factors through example with descriptions of situations of decreasing severity that impact landscapes.

  - **Risk Factor 1: Fire Behavior Potential:**
    - Situation 1: In these communities, continuous fuels are in close proximity to structures. The composition of surrounding fuels is conducive to crown fires or high intensity surface fires. There are steep slopes, predominantly south aspects, dense fuels, heavy duff, prevailing wind exposure and/or ladder fuels that reduce firefighting effectiveness. There is a history of large fires and/or high fire occurrence.

    - Situation 2: In these communities, there are moderate slopes, broken moderate fuels, and some ladder fuels. The composition of surrounding fuels is conducive to torching and spotting. These conditions may lead to moderate firefighting effectiveness. There is a history of some large fires and/or moderate fire occurrence.

    - Situation 3: In these communities, grass and/or sparse fuels surround structures. There is infrequent wind exposure, flat terrain with little slope and/or predominantly a north aspect. There is no large fire history and/or low fire occurrence. Firefighting generally is highly effective.

  - **Risk Factor 2: Values at Risk:**
    - Situation 1: This situation most closely represents a community in an urban interface setting. The setting contains a high density of homes, businesses, and other facilities that continue across the interface. There is a lack of defensible space where personnel can safely work to provide protection. The community watershed for municipal water is at high risk of being burned compared to other watersheds within that geographic region. There is a high potential for economic loss to the community and likely loss of housing units and/or businesses. There are unique cultural, historical or natural heritage values at risk.

    - Situation 2: This situation represents an intermix or occluded setting, with scattered areas of high-density homes, summer homes, youth camps, or campgrounds that are less than a mile apart. This situation would cover the presence of lands at risk that are described under state designations such as impaired watersheds, or scenic by-ways. There is a risk of erosion or flooding in the community if vegetation burns.

- **Risk Factor 3: Infrastructure:**
    - Situation 1: In these communities, there are narrow dead end roads, steep grades, one way in and/or out routes, and minimal firefighting capacity, no fire hydrants, no surface water, no pressure water systems, and no emergency operations group and no evacuation plan in an area surrounded by a fire-conducive landscape.

    - Situation 2: In these communities, there are limited access routes, moderate grades, limited water supply, and limited firefighting capability in an area surrounded by scattered fire-conducive landscape.

    - Situation 3: In these communities, there are multiple entrances and exits that are well equipped for fire trucks, wide loop roads, fire hydrants, open water sources (pools, creeks, and lakes), an active emergency operations group, and an evacuation plan in place in an area surrounded by a fireproof landscape.

Since its initial publication, the federal list of at-risk communities has expanded to include all lands in the vicinity of wildland fuels, not just those adjacent to federally managed lands. As a result, the initial list of 843 communities increased to 1,283. In addition, the California State Forester has assigned the role of maintaining the current list of at-risk communities to the California Fire Alliance who developed a process whereby communities can be added or removed from the formal designation as an at-risk community. Given the significance that classification as an at-risk community has on project funding and prioritization, it is of critical importance that communities within the purview of the Colusa County CWPP are assessed as to their potential for such classification.

Development of A Countywide Public Outreach and Fire Safe Education

The residents of Colusa County have already benefited from the public outreach and public information efforts of the local fire departments, local Fire Safe Councils and their member organizations. These efforts have included fire safety and fire ecology information distributed at community meetings. In addition, council members have participated in Wildfire Awareness Week programs. With the exception of labor hours contributed by agency personnel and publicly funded watershed coordinators, these outreach and education projects have been accomplished at little or no public expense. In order to increase public awareness of fire hazards and the need for continued fire management and fuels reduction project work, the Tehama-Glenn FSC or locally developed FSC, should further develop a program of public education and outreach. These increased efforts could be supported by the current outreach programs of the CCRCD, Mendocino National Forest, Bureau of Land Management, CAL FIRE and local fire entities. Such additional public outreach and fire safe education efforts could include the following activities among others:

- Fire safe education workshops for developers, realtors, contractors, home builders, building inspectors and citizens concerning prevention of wildfires, preparation for the inevitable occurrence of wildfire events, methods to ensure structural and landscaping survival following a wildfire, and the impacts of environmental features on the development of fire safe home sites.

- Public education advertisements that inform the public regarding:

- New open space requirements
- Fire safe building materials
- The role of fire in maintaining fire safe landscapes within Colusa County in order to educate homeowners, ranchers and other residents about current changes in open space requirements.

- Reports about new and ongoing efforts to manage wildfire and wildland fuels as well as the need for citizen input into the fire planning process.
- Creation and distribution of a Colusa County residents guide to fire preparedness and evacuation
- Creation and distribution of vegetation best management practices for landowners living within high fire hazard areas of Colusa County.

Colusa County Residents Guide to Wildfire Preparedness and Evacuation

Based upon a guide prepared by the Contra Costa County Fire Department and Contra Costa Sheriff's Department as shown in "**APPENDIX D Example of Countywide Residents Guide to Wildfire Preparedness and Evacuation**" it is recommended that a similar preparedness and evacuation guide be developed and distributed to residents of Colusa County. The information included in such a document is intended to provide County residents with an overview of the steps they can take to prepare themselves, their families and neighbors should an evacuation become necessary.

Establishment of Colusa County Prescribe Burn Association

Prescribed burn associations are organized groups of landowners who complete their own prescribed burn projects utilizing guidance from fire agencies. Such groups also share the cost and upkeep of an equipment cache containing burn implementation, safety and communications equipment. In addition, the creation of such organizations can result in the development of coordinated fire/fuels management projects among a number of landowners. As a result, the cost of project implementation and permitting required by regulatory entities could be reduce by dividing it among participating landowners.

Review and Critique of Colusa County Sheriff's Department Issuance and Implementation of Evacuation Orders

At a 2019 Colusa County CWPP community meeting, a number of participants mentioned perceived shortcomings in the protocols and implementation of the Colusa County Sheriff's Department evacuation orders. These were particularly noted during the 2018 Ranch Fire. It is recommended that the CCRCD, Colusa County Board of Supervisors or other local entity develop a process for community and County government review of the County's emergency evacuation order process.

County Advocacy of Emergency Power Sources to Cell Towers

A recommendation was made for the Colusa County Board of Supervisors or other County entity to advocate among communications utility providers for the provision of emergency power to cell towers. It was noted that during large wildfires, cell phone towers can become inoperable due to a loss of power resulting in residents unable to contact or be contacted by emergency response personnel.

WESTERN COLUSA COUNTY PLANNING UNIT

Completed Projects in the Western Colusa Planning Unit

Project WCCP−1 Mendocino National Forest Prescribed Burn Program

The Grindstone District of the Mendocino National Forest conducts an on-going program of fuel treatments on forestlands grasslands and chaparral throughout the Forest's eastside area. At the present time, burns have been completed in a number of locations along the eastern crest of the Coast Range.

Project WCCP−2 Fuels Management Component of the Colusa Wind Energy (aka Walker Ridge) Project

The Colusa Wind Energy Project entails the development of a wind turbine energy farm with up to 42 wind turbines to be located on approximately 2,270 acres of public land managed by the Bureau of Land Management along Walker Ridge in Lake and Colusa counties. In order to complete project work, Walker Ridge Road and Bartlett Springs Road will need to be widen and upgraded with adjacent vegetation removed. In addition, vegetation will need to be cleared for the installation of overhead transmission lines along with a buried collection line that will connect with in place PG&E transmission infrastructure. Access roads will also need to be developed in order to connect individual wind towers with Walker Ridge Road and Bartlett Springs Road **(see Figure C Colusa County CWPP Countywide Base Map)**. The proposed project area traverses a major ridgeline that has provided an area where large fuel breaks and fire lines were developed during past wildfire events. It is anticipated that through the implementation of infrastructure development and related vegetation treatments, the creation of the Colusa Wind Energy Project will create a permanently developed fuel break along this major ridgeline in Colusa and Lake Counties.

In Progress Projects in the Western Colusa County Planning Unit

Project WCIP-1 BLM Sheep Grazing at Payne Ranch Site

At the present time, the BLM is conducting sheep grazing vegetation management operations at the Payne Ranch site south and west of State Route 20 and 16. Up to 4,000 acres of meadows sites will be treated in this manner in order to reduce hazardous fuels and control invasive weeds (Yellow Star Thistle, Barb goat grass and Medusa head.) These grazing operations are follow-up treatments to a smaller prescribed burn project that was completed in the area a number of years ago.

Project WCIP-2 Programmatic National Environmental Policy Act Analysis of Prescribed Fire Projects Conducted on Private Lands Located Within the Mendocino National Forest

Per the provisions of the National Environmental Policy Act, US Forest Service personnel are in the process of developing a programmatic environmental analysis document related to the future implementation of prescribed fire projects conducted on private lands located within Mendocino National Forest boundaries. This landscape scale analysis effort is a collaboration between the US Forest Service, private inholders within MNF boundaries and various other federal, State and local government regulatory entities. As a result of this pre project analysis, prescribed fire projects on private National Forest inholdings that met the parameters and conditions of this environmental analysis process could be completed in timelier and more cost-efficient manner as project specific environmental analysis would not be necessary. Such cost savings from landowners not having to complete environmental analysis on a

project by project basis could be utilized to increase the size and extent of prescribed fire projects thus increasing their impact on South Coast Range landscapes. In addition, such landscape level analysis would result in improve identification of cumulative impacts related to the implementation of multiple projects within the same watershed. With knowledge of potential impacts identified prior to project development and implementation, mitigation measures could be incorporated into project work scopes during their earliest stages of design thus avowing project delays and negative impacts to watershed resources.

Proposed Projects in the Western Colusa Planning Unit

Project WCPP-1: M5 Roadside Hazard Project/M10 Roadside Hazard Project

The M5 (650 acres of timber harvest and 1,300 fuel treatment acres) and M10 (1,900 acres of timber harvesting and 3,800 fuel treatment acres) Roadside Hazard Projects address fire-killed and fire-injured trees along roadways. The marking guidelines established for this effort address live and dead trees that may impact roads and infrastructure. The goal of these projects is to allow the Mendocino National Forest an ability to continue providing safe ingress/egress of the National Forest's transportation system to the public, local in-holders as well as USFS employees. Implementation of project work include the removal of sawtimber and biomass size classes of trees.

Project WCPP-2: Upper Stony Creek Project

The Upper Stony Project is currently under Mendocino National Forest NEPA environmental analysis. Project work entails removal of salvage sawtimber and biomass along with site preparation and reforestation efforts within a 4,200 acre project of the Upper Stony Creek watershed. Removing sawtimber and biomass within the project area will provide site preparation for future restoration efforts as the removal of dead overstory trees facilitates the creation of safe working environments. Logging operations will facilitate soil scarification, slash removal and micro-siting that are critical for the survival of seedlings that will be planted. In addition, project work will result in reforestation within roadside areas that are a part of the MNF's current road maintenance program. It is anticipated that project work will provide sites where strategic shaded fuel breaks can be created in the future.

Project WCPP-3: Processing of Fuels Around Cabins Within the Snow Mountain Wilderness Area

At the present time, large volumes of trees and cut bush have been cut and stacked around cabins located within the Snow Mountain Wilderness. It is recommended that this material be treated or removed as soon as possible by responsible entities.

Project WCPP-4: CCRCD and Colusa County Fire Department Development of a Countywide Outreach and Education Program

Working in collaboration with CAL FIRE's Sonoma-Lake-Napa Unit's outreach and education personnel, it is suggested that the RCD of Colusa County and Colusa County Fire Department develop a local program of public education materials and events to better inform landowners and others residents in maintaining their properties in a fire safe condition. To accomplish this, The CCRCD and County Fire Department could utilize materials and programs available through CAL FIRE along with those of the "Ready for Wildfire" Program.

Project WCPP-5: CCRCD, CAL FIRE and Colusa County Fire District Development Firewise

Communities Within Western Colusa County

In addition to local education and outreach efforts, a recommendation was made for the Colusa County RCD, CAL FIRE and other County fire entities to pursue development of numerous Firewise Communities through a formal process established by the National Fire Protection Association's Firewise USA® program. The goal of this initiative is to educate landowners and other members of the public about adapting to and living with wildfire. The program also encourages neighbors to work together and take action that will prevent future fire losses. Through recognition as a Firewise Community, property owners are sometimes offered a reduced rate for homeowner or fire related insurance coverage depending upon the insurance carrier.

Project WCPP-6: Investment by Local Water Provider to Install Improved Fire Water Delivery System Within and Around the Stonyford Area

At the present time insufficient fire water delivery systems in and around the Stonyford Community result local residents having an inadequate water supply during wildfire events. Deficiencies in the current water infrastructure and recommended improvements to the current delivery system are described below:

- Poorly Operating Fire Hydrants Along Stonyford-Lodoga Road
  At the present time fire hydrants adjacent to residents in Century Ranch along Stonyford-Lodoga Road are inoperable as the supply line is undersized (2.5" pipe serving 10 residents across Little Stony Creek). These hydrants are located throughout the Century Ranch development on the north side of the Stonyford-Lodoga road between Stonyford and County Service Area 1. This service area provides water services to the residents of the Century Ranch development and is overseen by the Colusa County Board of Supervisors. Management is provided by the Colusa County Department of Public Works.

- Undersized Distribution Water Line from the Stonyford Water Tank County Service Area 2 Stonyford.
  At the present time, a distribution line from Stonyford's community water tank contains pipe segments of varying diameters which decreases both the line's capacity and delivery pressure into the community. In addition, the current line contains asbestos which could pose health risks and future disposal issues. It is recommended that Stonyford's water provider seek loans or other sources of funding to replace these undersized and poorly operating delivery lines thus improving water delivery during wildfire events. County Service Area 2 Stonyford serves the citizens of Stonyford and is overseen by the Colusa County Board of Supervisors. Management is provided by the Colusa County Department of Public Works.

Project WCPP-7: Development and/or Improvement of Roadside Fuel Breaks

The following County maintained roads are considered high ignition zones due to adjacent flammable vegetation, traffic volumes and population within the area. At the present time a number of these routes have had no vegetation treatments and those where treatments have occurred are in need of maintenance. These roads include:

- Maxwell-Sites Road
  Spot treatments along both road edges between the Stone Corral Bridge west to the road's junction with the Lodoga-Sites Road

- Sites-Lodoga Road
  Spot treatments along both road edges between Huffmaster Road west to the road's junction with the Lodoga-Stonyford Road

- Stonyford-Lodoga Road
  Spot treatments along both road edges between the road's junction with the Sites Lodoga Road to the Glenn County line where project work would connect with that proposed for Glenn County Road 306 (Elk Creek Stonyford Road) as described in the Glenn County Community Wildfire Protection Plan. Along the Stonyford-Lodoga Road adjacent to the Century Ranch development, the yearly development of dry grass poses a significant risk of fire spread from roadside ignition sources. It is recommended that a disked fuel break be developed and maintained on yearly basis along this portion of the Stonyford-Lodoga Road. At the present time, the Colusa County Road Department permits the Century Ranch Homeowners Association to create fuel breaks along the Stonyford-Lodoga Road adjacent to Association managed parcels.

- East Park Reservoir Road
  Spot treatments along both road edges between the Chisholm Cove Campground and the road's junction with the Sites-Lodoga Road.

- Indian Springs Road (County Road M-18)
  Spot treatments along both road edges between the road's junction with the Elk Creek-Stonyford Road to the Mendocino National Forest boundary.

- Fouts Springs Rd (County Road M-10)
  Spot treatments along both road edges between the road's junction with the Lodoga-Stonyford Road to the Mendocino National Forest boundary.

- Lake View Loop (entire road loop)
  Recommended treatments entail some combination of hand cutting and chipping, cutting chipping and pile burning, mastication, prescribed fire or prescribed grazing as appropriate and according to landowner specification. The width of these treatment would be based upon the needs of individual landowners but would range from 4' to 150' both sides of the road edge.

- Goat Mountain Road (County Road 42)
  Spot treatments along both road edges between the road's junction with the Lodoga-Stonyford Road to the Mendocino National Forest boundary.

- Rail Canyon Road (County Road 401)
  Spot treatments along both road edges between the road's junction with the Sites-Lodoga Road to the Colusa/Glenn County Line.

- Lodoga-Leesville Road
  Spot treatments along both road edges between the Lodoga community and develop sites at Leesville.

- Bear Valley Road
  Spot treatments along both road edges between Highway 20 to the road's junction with the Ladoga-Leesville Road.

- Brim Road
  Spot treatments along both road edges between Bear Valley Road and Bartlett Springs Road (Rd 303) with treatments focused on those road segments within chaparral stands, other brushlands and oak woodlands.

- Wilbur Springs Road
  Spot treatments along both road edges between the Road's junction with Bear Valley Road to the Road's junction with Sulfur Springs Road. Road treatments in the vicinity of the Wilbur Springs development could be expanded to develop a fuel break around structures.

- Walker Ridge Road
  Project work along Walker Ridge Road would require collaboration between the Colusa and Lake County Public Works Departments and the Bureau of Land Management whose agency lands the road passes. As proposed, spot treatments would be completed along both road edges between the Road's junction with Brim/Bartlett Springs Road to Highway 20.

- Leesville Road
  Spot treatments along both road edges between the junction of Leesville Road and Old Leesville Grade to the junction of Leesville Road, Leesville-Lodaga Road and Bear Valley Road.

- King Road
  Roadside mowing and herbicide applications along grassland road segments both sides of the road prism.

- Spring Valley Road/Manzanita Road
  Roadside mowing along Spring Valley Road and Manzanita Road between Walnut Drive to the north, to the developed area in the vicinity of Look Out Drive and Live Oak Street to the south. In addition to mowing, spot treatments of brush are recommended along with herbicide applications within the road right-of-way.

<u>Project WCPP-8: Creation of Green Road as An Auxiliary Road/Emergency</u>
Green Road is an abandoned, unpaved County road with gates and locks across the road prism as it passes through private parcels. A recommendation was made for CAL FIRE, the Colusa County Road Department or other appropriate entity to develop an emergency use agreement for ingress/egress by members of the Kletsel Dehe Wintun Nation. Such an agreement would require road repair and maintenance in order for low clearance and non-four-wheel vehicles to pass.

<u>Project WCPP-9: Creation of A Fire Safety Plan for Lands Under Control of the Kletsel Dehe Wintun Nation</u>
Representatives from the Kletsel Dehe Wintun Nation recommended that a fire safety plan be created in cooperation between Nation members, CAL FIRE, the local fire district and the Colusa County RCD.

Project WCPP-10: Upgrading of Emergency Water Infrastructure Within Land Under Control of the Kletsel Dehe Wintun Nation

A recommendation was made for improvements and upgrades to be made on the fire/emergency water system within lands under control of the Kletsel Dehe Wintun Nation in order to increase member protection during wildlife events.

Project WCPP-11: Establishment of A Colusa County Sheriff's Department Liaison with the Kletsel Dehe Wintun Nation

Kletsel Dehe Wintun Nation representatives recommended that the Colusa County Sheriff's Department create a formal County Liaison with that community who could meet and coordinate outreach with Nation members and become its designated contact with County Government.

Project WCPP-12: Improved Enforcement of State Defensible Space Requirements Through Increased CAL FIRE/Colusa County Fire Department Inspections

Adjacent to a number of County maintained roads and State highways within the three CCCWPP planning units are found properties some under absentee ownership, that are in need of fuel treatments. CAL FIRE Units currently have inspection and enforcement personnel assigned to enforce State defensible space regulations within SRA lands. These inspections assure that all property owners are either in compliance or are remediating conditions that are in violation of State law. It is recommended that the CCRCD collaborate with appropriate CAL FIRE Fire personnel and Colusa County fire districts to develop strategies and initiatives that result in increased inspections and enforcement of vegetation clearance requirements by both on site and absentee landowners within SRA and LRA lands.

Project WCPP-13: Defensible Space Assistance and Community Chipping Program for Elderly, Disabled and Low-Income Property Owners

Based upon input at community meetings conducted in connection with the Colusa County CWPP fire planning effort, it was noted that numerous elderly, disabled and low income persons live within rural communities and outlying areas of Colusa County such as the Lake View Loop area and the Century Ranch development near Stonyford. A recommendation was made for the CCRCD or another local entity to develop a work program and seek funding for wildfire education efforts and fuels management assistance. This assistance program would be directed towards community members who are unable to treat vegetation in order to obtain compliance with State Defensible Space regulations. As proposed, this effort would entail conducting various community specific fire safety workshops which showcase the principles of defensible space. The program could also sponsor a number of chipping days in which residents located in fire prone areas could cut and stack vegetation along roadways with this material processed using a professional chipper and blown back onto treatment sites.

Such a program could also include a wildfire defensible space assistance component that would provide no cost assistance in developing appropriate defensible space around homes and related structures. Eligible participants could include the elderly (65 and older) along with those who are physically and/or financially unable to maintain mandated defensible space around their property. This service could also be extended to absentee landowners in the form of no cost inspections with treatments completed on a fee-for-service basis once land ownership had been established and access permission granted. Through increased compliance with State mandated clearance requirements, it is anticipated that the probability of

catastrophic loss of structures and life, public health concerns regarding smoke inhalation, watershed impacts and the release of GHG emissions in the event of a wildfire can be significantly reduced.

Project WCPP-14: Establishment, Development and Maintenance of a Multi-Parcel Fuel Break Surrounding the Communities of Stonyford and Lodoga

In order to better protect the Stonyford and Lodoga communities along with surrounding developed and wildland areas from fire, it is recommended that the Colusa County RCD, CAL FIRE, local fire agencies, and landowners create a collaborative public/private group to establish routes and boundaries for a series of fuel breaks that protect these developed areas. In creating such a landscape feature, multiple landowners over whose property the fuel break would be developed and continuously maintained would need to be contacted to obtain a signed access agreement allowing initial entry onto treatment parcels. An agreement that would allow future access by project personnel or commitment by landowners to personally maintain vegetation would be needed to sustain the viability of these vegetation treatments. Local or other sources of funding would need to be secured to initially develop the fuel break and continuously retreat the project area on those parcels in which landowners didn't provide maintenance treatments.

Project WCPP-15: Ridge Top Fuel Break East of East Park Reservoir.

Several miles east of the East Park Reservoir between the Sites-Ladoga Road and the reservoir is a north/south trending ridge located within a large Bureau of Land Management parcel, Thought the improvement and maintenance of a ridge top fuel break located along this ridgeline, private lands east of the ridge would be protected from wildfire that developed within heavily used State Park facilities to the west, along the shore of East Park Reservoir. Similarly, these State managed lands would be protected from fire wildfire that occurred on private range and wildlands east of the ridge.

Project WCPP-16: Watershed Assessments

Watershed analysis is required prior to the implementation of watershed treatments within National Forest riparian reserves and other watershed lands. The recommendation was made that such analysis be completed of unassessed watersheds within that portion of the Mendocino National Forest located in Colusa County. Assessments could be completed by USFS personnel or other appropriate entity's staff according to U.S. Forest Service Region 5 protocols and format. With such analysis completed, Mendocino National Forest resource personnel would be able to develop and implement project work that improve current conditions once specific work scopes and NEPA environmental analysis had been completed. This analysis could be used by the Mendocino National Forest, CCRCD and other implementing entities when developing project proposals for federally funded fuels work outside but adjacent to MNF lands. Such analysis could also be used to identify issues and implement successful watershed protection/implementation efforts using State or private foundation dollars.

At the present time USFS personnel have completed analyses of the Middle Fork Stony Creek and Little Stony Creek watersheds. An assessment of the Bear Creek watershed system completed in cooperation between Bureau of Land Management and Mendocino National Forest personnel is under consideration as well. It is recommended that the MNF and BLM complete a watershed assessment of the Bear Creek system and consider developing similar assessments within all major watersheds of Colusa County having headwaters within National Forest or BLM property boundaries.

Project WCPP-17: Upper Watershed Vegetation/Fuels Management Actions That Protect the Watersheds

and Water Quality of Those Streams Within the Mendocino National Forest that are Significant Water Sources for Western Colusa County

Related to Project WCPP-16**:** above, a recommendation was made for the Colusa County RCD and other County stakeholders to collaborate with Mendocino National Forest personnel in the develop of projects that would protect water quality and habitat conditions within those major watersheds located on National Forest lands that provide significant amounts of stream flow and groundwater to Western Colusa County. Among these important watersheds are Big Stony Creek, Little Stony Creek, and Mill Creek among others having issues that are identified through formal watershed assessment processes.

Project WCPP-18: Ridgetop Fuel Breaks and Large-Scale Prescribed Burns

In addition to roadside fuel breaks, other fire/fuels management techniques are available with which to control wildfire and wildland fuels, as well as their impacts on communities and landscapes. Significant among these are ridgetop fuel breaks and large prescribed burns such as those sponsored and conducted by CAL FIRE through their Vegetation Treatment Program described above. It is also recommended that CCRCD personnel discuss with MNF administrative staff, development of collaborative ridgetop and prescribed burn projects that entail treatments on public and private lands including inholding parcels and those adjacent to the Mendocino National Forest's eastern boundary west of the Stonyford-Lodoga Road. Similar discussion should also be had with BLM personnel located at the agency's Ukiah office.

Project WCPP-19: Fuels Reduction on Private Lands Adjacent to Mendocino National Forest Boundaries Utilizing Wyden Amendment Legislation

The Wyden Amendment (Public Law 109-54, Section 434) authorizes the USFS to enter into cooperative agreements in order to benefit resources within watersheds on National Forest System lands. Agreements must be with willing federal, tribal, state and local governments, private and non-profit entities, and landowners in order to conduct activities on private lands adjacent to National Forests for the following purposes:

- Protection, restoration, and enhancement of fish and wildlife habitat and other resources;
- Reduction of risk for natural disaster where public safety is threatened; or
- A combination of both.

A recommendation was made by local stakeholders for MNF administration to collaborate with local FSC's, the CCRCD and other County stakeholders in expediting implementation of the authorizations provided by Wyden Amendment legislation in order to direct USFS financial and technical resources related to fuel reduction efforts. Through such action, the goals and objectives for National Forest fire and fuels management efforts would more closely match those of the landowners and communities located adjacent to the National Forest boundary.

Project WCPP-20: Community Preparedness Rehearsals, Information and Evacuation Plans.

Recommendations by community members included trainings and rehearsals of emergency procedures in the event of wildfire. Other recommendations included the creation of a comprehensive list of fire prevention and firefighting resources that should be maintained around the home or ranch such as fire swatters and other tools to be used in the event of ignitions and fire spread. It was also recommended that a list of items to be included in personal fire preparedness kits be distributed to residents. Finally, it was

suggested that households and ranches prepare an evacuation plan for domestic animals and livestock that are based upon CAL FIRE recommendations.

Project WCPP-21: Map and Database of Natural Fire Management Units.

Communication between concerned parties is particularly important during wildfire events and when conducting fuels management projects. In order to facilitate communication between fire agencies, land managers, land owners, and other area stakeholders, it is recommended that a map and database of natural fire management units be developed that are based upon topography and natural fire breaks that directly affect fire behavior. As proposed, management units could include entire watersheds, large drainages and canyons thus spanning multiple agency jurisdictions.

As a result of such efforts, landscape scale fire and fuels management strategies could be developed that better reflect development and ecological realties of this CWPP's planning units. Examples of fire management units use include the identification and cataloging of homes and other structures as well as critical stream segments containing important riparian and aquatic resources. In addition, areas containing threatened and endangered species can be mapped and included in the database in order to assure protection during controlled and uncontrolled burns. Fire management applications include the mapping of watering holes and tanker fills. This kind of resource and wildfire management information would greatly assist out-of-area firefighting units in managing fires in a manner that promotes expeditious containment and maximum resource protection. With fire management units delineated and mapped, the process of identifying and cataloguing assets at risk and fire management infrastructure into a corresponding database could begin. Importantly, newly developed information would need to be continually incorporated into the database as received from landowners, agency personnel, and other land managers.

Project WCPP-22: Development of Mendocino National Forest Type Conversion Data Layers into Publicly Available Maps

At the present time, Mendocino National Forest personnel are in the process of converting areas containing artificially high levels of chaparral fuels and overstocked timber stands into more natural systems. This effort is being accomplished by increasing fire return intervals utilizing techniques such as prescribed fire, type conversion and other vegetation manipulation methods. Areas where conversions have either occurred or have been planned are on data layers that could be developed into maps. If made available to landowners, this visual information could help owners of private lands adjacent to the MNF direct their resources to areas where adjacent Forest Service fuels work has already been completed or is planned, thus increasing the overall effectiveness of both public and private efforts.

SACRAMENTO RIVER CORRIDOR PLANNING UNIT

(Project numbers refer to the Countywide Fire Plan Base Map)

Completed Projects in Sacramento River Corridor Planning Unit

Project SRC-1 Brushing of Roberts Road within the Colusa-Sacramento River State Recreation Area

Roadside brushing has been completed by the City of Colusa in order to open Roberts Road located on the westside of the Colusa-Sacramento River State Recreation Area. These treatments not only improve passage along the road, but they also create a fuel break between undeveloped park lands and adjacent developed sites and agricultural operations.

In Progress Projects in Sacramento River Corridor Planning Unit

Project SRIP-1 Reclamation District 108 Yearly Levee Maintenance

On a yearly basis, Reclamation District 108 personnel complete burning of grassy vegetation established along levees under its jurisdiction adjacent to the Sacramento River. In addition, a 10' wide disked area is created at the levee toe on the riverside in order to prevent fire that could occur on the levee from spreading into dense riverside vegetation.

Project SRIP-2 River Partners Riparian Grassland Maintenance

At Willow Bend along the Sacramento River, River Partners owns several parcels in which native riparian habitat is being developed. In order to a maintain grassland health and to reduce the risk of ignition and fire spread, these lands are mowed one or twice per year.

Project SRIP-3 California Department of Water Resources Habitat and Maintenance Unit Vegetation Treatments Within the Colusa Bypass Area

Vegetation in the Colusa Bypass area is managed by the California Department of Water Resources Habitat and Maintenance unit located in Sutter County. On a yearly basis, DWR personnel mow vegetation to allow for adequate flood flows. These treatments also reduce fire ignition risk and spread within the river's riparian zone

Project SRIP-4 U.S. Fish and Wildlife Service Vegetation Mowing on Agency Managed Parcels Adjacent to the Sacramento River

The USFWS manages a number of parcels adjacent to the Sacramento River including those in Colusa County. In order to improve habitat conditions and reduce fire ignition and spread risk, annual mowing of vegetation within these areas is completed.

Planned/Proposed Projects in Sacramento River Corridor Planning Unit

Project SRPP-1 U.S. Fish and Wildlife Service Sacramento River-Boggs Bend Unit Prescribed Burn

2 acres of piled flood debris will be burned in the Sacramento River-Boggs Bend Unit to remove heavy dead and down fuels from riparian and oak woodland stands reducing fire risk and severity in the event fire moved through these sites.

SACRAMENTO, DELEVAN, COLUSA AND BUTTE SINK WILDLIFE AREAS

(Project numbers refer to the Countywide Fire Plan Base Map)

Completed Projects in Delevan, Colusa, and Butte Sink Wildlife Areas Planning Unit

None Identified

In Progress Projects in the Delevan, Colusa, and Butte Sink Wildlife Areas Planning Unit

Project DCBSIP-1 USFWS Roadside Mowing Along National Wildlife Refuge Boundaries
On a yearly basis, U.S. Fish and Wildlife Service personnel complete roadside mowing along public road edges adjacent to Delevan, Colusa, and Butte Sink Wildlife Area managed lands. These treatments are conducted in order to reduce the risk of roadside ignitions spreading onto these federally managed parcels. They also create a temporary fuel break in the event wildfire occurs on either side of public roadways. In addition, flooding of various Wildlife Area tracts is completed during the growing season in order to control invasive plants as well as provide or improve wildlife habitat. This application of water provides these USFWS lands with additional protection from wildfire.

Planned/Proposed Projects in the Delevan, Colusa, and Butte Sink Wildlife Areas Planning Unit

Project DCBSPP-1 Prescribed Burns Within Wildlife Area Lands Adjacent to State Route 20 and Maxwell Road (USFWS Project Name Colusa T4) Proposed project work entails burning 69 acres of upland grass along Highway 20 and Maxwell Road in order to promote native grasses and reduce hazardous fuels.

Project DCBSPP-2 Prescribed Burns Within Wildlife Area Lands Adjacent to Abel Road (USFWS Project Name T27:1) Colusa National Wildlife Area lands along Abel Road are burned on a rotational basis in order to promote tricolor black bird nesting sites and to reduce hazardous fuels on these USFWS lands in eastern Colusa County.

Project DCBSPP-3 Prescribed Burns of Round Stem Tules Within Wildlife Area Lands Adjacent to Abel Road (USFWS Project Name Colusa T27.2) As proposed, 54 acres of round stem tule will be burned thus adding to 44 acres of similar vegetation treatments on Colusa Wildlife Area to the north several years ago.

Project DCBSPP-4 Prescribed Burns of Upland Grass Within Delevan Wildlife Area Lands Adjacent to 4 Mile Road (USFWS Project Name Delevan T1:1) 40 acres of upland grass along 4 Mile Road adjacent to the Delevan Wildlife Refuge will be burned in order to promote native grasses. These vegetation treatments will also act as a fuel break in the event of future fire starts.

Project DCBSPP-5 Sacramento NWR Fire Break This fire break would extend along the length of the Sacramento River National Wildlife Refuge from north to south with treatment areas located a short distance from Highway 99W to nearby railroad tracks. Only a small section of the project area's south end would be located in Colusa County.

SUMMARY AND CONCLUSIONS

In establishing priorities for fire and fuels management projects to be completed within Colusa County, the lives of area stakeholders and firefighters as well as public and private property were of primary consideration. Those projects that provided immediate and direct impact on the threat and intensity of wildfire were given the highest priority. Among these critically important projects were those that entailed fuels reduction and infrastructure improvements particularly those involving access for firefighting forces and egress of residents. In addition, water storage and water delivery projects were

considered of equal importance. Projects of somewhat less urgency were those involving regulatory matters such as changes in laws, ordinances, and codes that related to fire safety and fire management. Projects considered important but not urgent were initiatives to formally classify a number of small communities as officially recognized communities at risk as well as the development of new Wildland Urban Interface areas within Colusa County. From this prioritization process, the following broad action items were developed by the CCRCD with extensive input from the project's work group, the Tehema-Glenn Fire Safe Council and other CCCWPP stakeholders:

- The CCRCD and CCCWPP Technical Advisory Committee should develop a list of all currently unfunded or partially funded fire and fuels management projects described in this planning document.

- The Colusa County RCD with assistance from other CCCWPP stakeholders should identify possible sources of public and private funding for unfunded or underfunded project work. Funding sources could include public and private grants, self-funding through the sale of biomass products, the assessment of fees and taxes, contributions by participating landowners along with other revenue sources. Proceeds from such funding could be used to finance both the initial completion of project work as well as the permanent maintenance of already completed vegetation treatments. CCRCD personnel will also begin developing work scopes, project funding proposals (as sources of project dollars are identified) and providing financial management of project work once project dollars are secured.

- The CCRCD in conjunction with CAL FIRE and County regulatory agencies should establish a work group to review those local ordinances that impact fire safety and development within fire prone areas throughout Colusa County.

- The CCRCD should work with the CAL FIRE Sonoma-Lake-Napa Unit Pre-Fire Engineer to establish a process for officially incorporating this planning document and its yearly update into the LNU Unit Fire Plan. These efforts would need to be completed by December 31 of each year.

- The CCRCD and other County stakeholders should discuss whether Colusa County should continue participation in the Tehama-Glenn Fire Safe Council, create a standalone Colusa County FSC or join with Glenn County in creating and Glenn-Colusa County FSC.

PLAN UPDATES

The overall goal in developing the Colusa County Community Wildfire Protection Plan is to promote and expedite Countywide coordination of fire/fuels management related projects and policies. With the completion of the Colusa County CWPP documents and maps, recommendations generated through the planning process will be incorporated either by reference or directly into the current CAL FIRE Sonoma-Lake-Napa Unit Fire Plan which is updated annually. On a yearly basis, CCRCD personnel

CCCWPP stakeholders will work with the CAL FIRE LNU Unit Pre-Fire Engineer to update the Unit Fire Plan document's list of newly developed projects throughout Colusa County. This project information will be used to update the CCRCD's online map and database of fire and fuels management projects. In order for newly developed project work to be officially incorporated into the Colusa County CWPP by reference, project work scopes will need to be submitted for approval by LNU Unit personnel, the Colusa County Board of Supervisors, the CCRCD Board of Directors and the Coordinator of the local FSC for their review and approval. In addition, Colusa County CWPP participants will be canvassed for input regarding changes to federal, state, and local policies as well as laws and ordnances that pertain to fire safety, fire management, and fuels reduction.

APPENDIX A: TAC and Community Meeting Notes and Documents

Ranch Fire Community Meeting: April 23, 2019 | Stonyford Community Hall

Action Items

1. Community members can download the communication app from the Sheriff's Office.
2. Wendy Tyler (Colusa County) will arrange to have the "Rapid Notify" emergency communications option added back to the Colusa County home page for people to sign up on.
3. Within 30 days (May 23) of this meeting, Colusa County will conduct a test of the Rapid Notify system to ensure it is operating effectively. Interested community members should sign-up for Rapid Notify prior May 23 to get the emergency notification.
4. The Colusa County Emergency Communication Plan is going to the Board of Supervisors (Board) soon. Wendy Tyler will inform meeting participants when it is provided to the Board, when it can be reviewed for comments by the public and when Board discussions will be held.
5. Colusa Fire chief meeting on April 24 at 2:00pm in Williams. Dave Ceppos (Sacramento State) will follow up with Chris Waters (CalFire) on next steps re; communications and follow up meetings between CalFire and the Stonyford Volunteer Fire Department.
6. The United States Forest Service's (USFS) website has a Ranch Fire closure page that describes information about area and road closures and pending re-openings. Information is also available on the USFS's social media pages such as Twitter and Facebook. Stakeholders are encouraged to view these sites for current information.
7. Regarding visitors to private properties that are within a closure area, Visitor Access forms are available at the Stonyford and Willows' USFS offices.
8. Regarding boundaries of closure areas that affect private properties, property owners are encouraged to contact Christine Hill (USFS) at (530) 934-1250 to get discuss if closure boundaries can be adjusted.
9. Barney Cook, Stonyford Fire Department Chief will speak with Christine Hill (USFS) at the Colusa Fire Chief's meeting on April 24th in Williams to discuss how USFS and the local community can work better together.
10. Participants should contact Chris Waters at (707) 292-3348 or Chris.waters@fire.ca.gov to address concerns related to fire break mitigation.

Welcome and Introductions

Garry Evans, Colusa County Supervisor welcomed attendees to the community discussion on the recent Ranch Fire. He emphasized the meeting's goal to be results oriented, and introduced Dave Ceppos, a neutral meeting facilitator from California State University, Sacramento.

Mr. Ceppos underscored Mr. Evans' point on hearing from the community and discussed his role to ensure all participants have the opportunity to comment. He outlined the agenda and the meeting's purpose to have a community discussion about experiences and concerns related to the Ranch Fire, the recovery process and the community's role in recovery efforts. Lastly, Mr. Ceppos highlighted the Community Wildfire Protection Plan headed by Elizabeth Harper, Assistant Executive Director of the Colusa County Resource Conservation District who would discuss opportunities for local participation later in the meeting.

Brief Update on Recovery Steps

Christine Hill, District Ranger, USFS, introduced herself and thanked all for attending. She reviewed the work done by USFS to date. USFS completed the burned area emergency response and treatment. The assessment began in September 2018 and included suppression repair and employed an extended team to work on a rapid assessment and burned area emergency treatments. USFS received 2 million for burned area

emergency treatments, and funds were predominantly allocated for areas burned with high and moderate severity. There were no funds for low burned areas. The 2 million was apportioned for burned area emergency treatment and to maintain the functionality and safe use of roads and trails, and to protect cultural resources. More than half of the funds went towards road repair and $125,000 towards trails to prevent the spread of invasive species and to protect cultural resources.
Shana Jones, CalFire Unit Chief, reflected on how CalFire was consecutively busy in the area since 2015. She outlined the type of work CalFire is involved in such as fireline suppression repair. Before leaving an incident and before a local unit comes, CalFire works on the dozer lines and connects with local land owners to control erosion. CalFire does not manage property but comes in to protect the community's property. CalFire looks at dozer lines put in to see if they are on ridge tops and is working with land owners for permits to do so. She expressed hope that current projects would also work with fire safety councils.

Michael Azevedo, Assistant Director, Colusa County Public Works, stated that the roads are in good shape. He noted Fox Creek Road and Butte Mountain Road are closed to the general public, but both roads are open to local residents. Problems with drainage water systems from fire suppression efforts are addressed and remedial work is underway. Systems are up and running.
Mr. Ceppos transitioned the meeting to the open discussion portion for community members to ask questions and discuss their experiences during the Ranch Fire.

<u>Open Discussion, Question and Answers on Community Ranch Fire Experiences</u>
Several key themes emerged through the question and answer period. The summary reviews comments by topic area rather than in sequential order of when the public comment was made.

Evacuations

- An individual discussed the lack of evacuation plans and expressed that having people announcing necessary evacuations in an alarmist and disorganized way was problematic. He added that there needs to be a plan describing where individuals go when they evacuate. Evacuations should be done in stages. He noted the current approach of all or nothing for evacuations needs to change.
- Another individual commented how better communication is crucial. The Sheriff's Department should have a reverse 911 cellphone notification system. He added that the law needs to change, so the Sheriff's Department can keep out those who do not live in the area. Many are afraid that once they leave they will not be able to return. Another individual later in the meeting added that Glen County Sheriff's office created a code red mobile alert system during the fire. He received the alert in real time, and it was easy to get.
    - Mike Bradwell, Sergeant with Colusa County Sheriff's Department stated the County has a communication plan in place with County Health and Human Services. He added that the Sheriff's office has a communication app available to download. See **Action Item 1**.
    - Wendy Tyler, Chief Administrative Officer, Colusa County added that the Board of Supervisors is working on a communication plan for emergencies. **See Action Item 2**. Currently there is the Rapid Notify program where community members can sign-up for to receive alerts. **See Action Item 3**. Colusa County can add the rapid notify information to the County home page and test the alert system. **See Action Item 4.**
- Another individual recalled when the fire was on the mountain south of Ladoga where there was smoke in the valley. 911 was called and it was a back fire. Colusa County was not notified about the back fire and were taken off of the 911 contact list. The community had the resources to put out the fire but were told to evacuate 6 days before the back burn occurred. There was no communication to the local fire department.

- Mr. Bradwell mentioned the Sheriff's Department relies heavily on CalFire for determining evacuations timing and procedures. The Department employed both mandatory and voluntary evacuations in the past such as during the Mill Fire.
- Mr. Waters noted in such situations there is a management team that works to create a risk assessment and determine how evacuations will occur under the Sheriff's leadership. Incident teams are used, and the situations are complex. Somewhere along the way, someone dropped the ball with communication. It is on agencies to do a better job at holding cooperator meetings and to advise those implementing operations on the ground to better communicate to the community.

- One individual stated that Stonyford this is their town; make use of local responders and volunteers that know the area and people. He added that the local Fire Department was sent home because USFS and CalFire did not let local fire fighters assist.
  - Mr. Waters responded that sending local firefighters home instead using them to protect the town should not happen again. Advance discussions need to take place, so everyone knows what their role can/will be during an incident. Local relationships will drive what is happening on the ground.

CalFire invited attendees to the Colusa Fire Chief meeting at the Fire House in Williams. This took place on April 24th. See **Action Item 5.**

Action Items related to Evacuations:

1. The Sherriff's Department has a communication app available to download from__ **Action Item 1.**
2. Colusa County will add Rapid Notify to the County's home page. **Action Item 2.**
3. Colusa County will post the Rapid Notify test their Rapid Notify alert system within 30-days. Action Item **3.**
4. Wendy Tyler will confirm when Communication Plan will be reviewed by the Board and when it will be available for comments from the public. **Action Item 4.**
5. Colusa fire chief meeting on April 24th at 2:00pm. Dave Ceppos will follow up with Chris Waters for next steps. **Action Item 5.**

Fire Suppression

- An individual recalled seeing fires burn out every year. In the night time, fires would die down and the local department would take care of it. She questioned why individuals from L.A. and other places who do not understand the local land were telling the local fire department how to put out the fires? Another individual expressed a similar sentiment regarding a 15-acre fire in Lake County, which he noted could have been put out within an hour by local crews.
  - Mr. Waters explained how California is coming out of a 7-year drought and droughts have a delaying affect as fuel accumulated for 6 to 7 years because a significant hazard. CalFire works to prioritize as there are too many fires and not enough equipment. Extremely large fires are becoming more prevalent, and it takes lots of equipment and personnel in unprecedented amounts to contain and suppress these fires.
- One individual expressed the need for more prescribed burns in November and December and stated the best way to get rid of fuel is move it out or to burn it. Although landowners take proper precautions to prevent fires, once a fire gets into the trees, containment solutions are very difficult. Therefore, early prescribed burns are essential.
  - Ms. Harper stated that funding for the Community Wildfire Protection Plan (CWPP) requires that the CWPP identify and prioritize areas for fuel reduction and also treatment to reduce fuel. This would include controlled burning activities.

- A question was addressed to CalFire. The individual noted they have fire breaks on their property, which were supposed to be mitigated before fire crews left the area. Nothing was done. He called USFS, but never received a call back. The fire breaks led to roads getting washed out and filled with silt and gravel. CalFire told residents they would be back to mitigate these breaks before they before left but that didn't happen. When will it be addressed?
    - Mr. Waters responded he will personally address this problem in the next couple of weeks. Other properties have same issue. **Action Item 9.**

Action Item on Fire Suppression:

1. Individuals with concerns related to fire breaks mitigation can contact Chris Waters at (707)292-3348 or by e-mail at chris.waters@fire.ca.gov. **Action Item 9.**

Land Management

- It was stated that logging has gone on for years in a row on Goat Mountain Road. Controls came, and piles of brush and logs were all left behind on cleared areas. The piles are fuel for another fire and the speaker therefore would like to know if such examples are being cleaned up.
- Another attendee added that logging is on multiple private properties. Some piles are the size of the Stonyford community center room. He noted regulations, which require piles to be scattered and to be 100 feet from public roads and added that most property owners must go through Natural Resources Conservation Service or CalFire to follow practices on prepping the ground and to reforest for trees. Seed banks are very thin, and property owners struggle to find ponderosa seeds. He summarized that the problem goes back to marketing as the only market for local forestation is Sierra Pacific, but contracts will be shut off in June. Infrastructure is needed, and logging is incrementally going out of business.
- An individual asked if there are plans for reforestation and whether there is inventory and funding available for stock, seedlings or seed. If there is not funding, why?
    - Ms. Carson responded that USFS has areas to replant. This includes the Little Stony Restoration project and the Lake View Restoration project. One seed source is Chico Seed Orchard. Ms. Carson invited attendees to a Stewardship on April 24, 2019 to discuss this. **Action Item 8.**
- A question was asked regarding the removal of burnt trees as most coming off of the hill are all private. This was the same for the Mill Fire. The USFS sold them off. He added later in the conversation how there was value in logging activity occurring in the area.
    - Ms. Carson noted there were already timber deck sales underway of material from the dozer lines. The map, *Mendocino National Forest Hazard Tree Removal Project Areas*, identifies hazardous trees to be cut and sold as projects. The first project is Bartlett Springs which will occur at the end of May. There is a sense of urgency on harvesting.
    - Ms. Hill added for 2019, USFS has Felkner, M3 and M5 salvage sales and roadside hazard tree abatement that USFS is hoping to sell in 2019. They average 6-8 million board feet and 4 million board feet. The hope is for another in 2020.

Action Item on Land Management:

2. Barney Cook, Colusa County Fire Chief will contact Christine Hill at the Stewardship meeting on April 24th in Williams to discuss with Ms. Hill on what can be done in the future for the community to work better. **Action Item 8.**

Road and Public Land Closures

- What is the timeframe of opening portions of David's Flat, which were not burned?

    - Ms. Carson noted a three phased approach to opening OHV trail systems. Included in the first phase is opening Nails Flat, David's flat and the Flats Spring area. The middle to the end of May is the first phase. The subsequent phases will be 6 months out identified on the *Motor Vehicle Opportunities in the Stonyford Area* map and will occur hopefully in September. The final and larger loop system will most likely be addressed in 2020.
- What are cultural resources and how much money is allocated towards it?
    - Ms. Hill stated that cultural resources are archeological and heritage sites. Trail stabilization was less than $125,000 dollars. Funds are used to monitor and mitigate effects and to address the affects from suppression activities on said resources.
- A person stated that over a 25-year time span, they observed more roads were closed and not reopened. How much grant money was provided to fix the roads and to then put up locked gates on the roads after the fire?
    - Ms. Carson stated that is working to use inmate crews, the OHV club and volunteer days to assist with maintenance. She stated that $100,000 dollars was allocated towards closing roads (repair and gating) due to deferred maintenance.
- One individual remembered how 30 years ago, there were only 35 people who managed to fix trails. He stated roads should have been fixed before the Ranch Fire occurred, and asked how USFS will be efficient with the 2 million dollars allocated to them?
    - Ms. Carson mentioned USFS does not have the same level of funding for road maintenance. There is only one roads engineer on the forest and no road crew. Funds are used to rotate around different roads on a 5 to 10-year cycle depending on the road conditions and funding.
- An individual noted the community already gives money to USFS, and that money used for meetings could be used for fixing roads.
    - Ms. Carson discussed how USFS's budget decreased for road maintenance and recreation trails. She highlighted how community involvement with the USFS will help determine priorities and the kind of road systems needed and how all can come together by signing agreements, sharing money and working across public and private boundaries.
- An individual recalled how in past fires such as the Trout Fire and Porter Ranch Fire, USFS acted quickly, used volunteers and other associations to help recover. Why were public lands closed for 2 years? People want to use the forest, and closed lands hurts the local economy. The individual recalled how discretion was used in the past where hazards were flagged, and people still enjoyed their visits. In 2001, the Trout Fire burned an off-highway vehicle (OHV) station and it was reopened by Thanksgiving.
    - Ms. Carson explained the forest would not be closed for 2 years. Already this week closures are being modified. Pillsbury, Fouts Campground and the Nail Track OVH trail will be opened. Once an area is treated and the risk is reduced more places will be reopened. The first area is Bartlett Springs near Upper Lake. USFS is working on reopening roads that are primarily traveled such as M10, M1, M5 and M3.

Permits

- An individual discussed how he went to visit his friend at Snow Mountain in an area that was not burned by the fire, which was behind the road closure signage. He was informed he needed a permit to see his friend.
    - Ms. Hill responded land owners have permission to go to their homes and designate someone to help with clean-up efforts. That designee would have access to go onto the land, but those without permits would need permission until the closure has changed. She mentioned property owners can learn more on road and public land closures, by reaching

out to Punky Moore, United States Department of Agriculture, Public Affairs Officer at (530) 934-1137, visit USFS's website under the Ranch Fire Closure tab and the USFS Facebook page to learn when locations will be reopened. Individuals can sign-up for the e-mail distribution list. Volunteer clean-up days will also be underway.

Action Items related to permits:
Private landowners who live in closed areas can go to the Stonyford and the Willows office for permits. Individuals can request USFS to change the closure boundary by contacting Christine Hill at (530) 934-1250. **See Action Item 7.**

Community Involvement and Volunteerism

- An individual recalled the devastation halfway up to Snow Mountain. He noted how when water breaks fill up and stays on the road, it leads to roads being shut down. People have the knowledge to fix the road, so it would not go out every year.
    - Ms. Carson stated that all public lands are covered under the National Environmental Policy Act (NEPA), and that some level of NEPA analysis has to be done before the USFS can start a project so they can comply with federal law and ensure there are no unintended environmental impacts with projects, even projects intended to improve road conditions. USFS can meet with the community regarding how to use volunteers and what equipment might be available. Maintenance can be done fairly easily. She added she hears the desire to access Snow Mountain loud and clear and will review the maps to determine if it is listed as a priority area for hazardous removal.
- An individual remembered how previously, motorcycle clubs volunteered and were allowed to camp at and clean the trails. Now their help is not wanted, and a closed forest is financially hurting the Elk Creek community.
- One individual noted the potential for opportunities and recalled in the past how the OHV community, the hiking, mountain bike, and back country horseman all had a strong volunteering community. USFS lost volunteerism. Volunteering in the forest is vital, and in order to protect public lands Californians need to volunteer and take ownership by working on trails.

Community Wildfire Protection Plan
Elizabeth Harper reviewed the CWPP, and the process to prepare one. She stressed the value of understanding community concerns and history and reiterated the goal to create relationships with locals to obtain local insight and knowledge as well as utilize lessons learned from the Ranch Fire and other fires. Ms. Harper noted the plan can create opportunities for collaboration communication and knowledge sharing. CWPP planning will include the local community and will be informed by the community. The Resource Conservation District will lead the effort, and core decision makers include local government agencies such as the Board of Supervisors, utilities, and the Sheriff's Department. Local fire authorities can play a key role in developing and prioritizing fuel reduction projects and as well as other initiatives. She mentioned that projects developed from the CWPP could use County funds as well as apply for additional funding through grants.

Individuals interested in participating in the CWPP can reach Liz Harper at (530) 458-5131 Ext. 117 or at Liz@colusarcd.org. Mr. Evans thanked attendees for coming and commented on how being a participant helps individuals to be part of the solution.

CWPP Meeting: May 14, 2019 | Colusa County RCD

Present: Jeff Gilbert- Williams Fire, Christopher Mallek- USFS, Curtis Coots- USFS, Chris Waters-

CalFire, Janice Bell- OES/Sherriff Dept., Logan Conley-Colusa Fire, Mike Bradwell-Sherriff Dept., Dave Forster-Glenn-Colusa Cattlemen's Assc., Gary Evans- BOS, Mike Azevedo-Public Works, Dale Shippelhoute- FWS, Liz Harper- CCRCD.

1. Why is CWPP important? - Chris Waters, CalFire
    a. CWPPs are project plans developed by the community and approved by government agencies such as CalFire, USFS and USFWS
    b. Grant applications always have a question, "Do you have a CWPP?" as it is seen as an essential pre-approved plan
2. CWPP Meeting Discussions
    a. Review Planning Units and Boundaries (map)-Decide Boundaries
        i. Western Colusa County-county lines and Tehama-Colusa Canal as Eastern Boundary
        ii. Sacramento River Corridor- 1 Mile on either side and/or county lines
            1. Including Weirs/Bypasses
            2. Easements-privately owned wetlands that interface with refuges and river
        iii. National Refuges: Sac, Delevan, Butte Sink and Colusa -refuge boundaries
    b. Who are the key players (land mgmt., fire authority, local governance, current fire infrastructure/jurisdictions) in each unit?
        i. Western Colusa County: Rangeland, Forest, Grassland and Oak woodlands
            1. Private landowners/In-holders
            2. Local Fire Authorities: BVIV, Williams, Arbuckle, Maxwell
            3. CalFire
            4. USFS
            5. BLM
            6. Cortina Rancheria
        ii. Wildlife Refuges and Management Areas: Wetlands
            1. USFWS-Fire Plan
            2. Local authority for County Roads, Highways, and Easements
        iii. Sacramento River Corridor: Riparian
            1. Individual Landowner/Farms
            2. Local Fire Authorities: Colusa, Sac River, Princeton
            3. Nature Conservancy
            4. River Partners
            5. Reclamation Districts
            6. CDFW
            7. USFW
    c. Fire Hazard Severity Zones- CalFire FHSZ and County Map
        i. Mapping is an essential part of CWPPs bc it can visually communicate several things at once- Especially why projects are important by their proximity to several "assets". Below is a list of asset categories to better inform your project descriptions and planning. Location, Location, Location will one of the most important determining factors when it comes to Prioritizing Projects. Consider each of these assets in your project and their wildfire risk, and current conditions.
            1. High Risk Areas on map- Western-High, Others-Moderate
            2. WUIs/Community-Residences
                a. COMMUNITIES AT RISK on the Federal Register

i. Stonyford
ii. Sites
iii. Williams
iv. Lodoga
v. Arbuckle
vi. Colusa

b. Community/Residences/WUIS
i. Century Ranch -high priority
ii. Lake View Loop-20 residents
iii. Leesville
iv. Bear Valley
v. Indian Valley
vi. Wilber Springs
vii. Rancheria
viii. Sand Creek Homes in foothills
ix. Board Camp- 20 flats
x. Snow Mountain
xi. Bonnie View
xii. Happy Camp
xiii. Fout's Springs Rd

3. Special Populations
i. Schools/daycares
ii. Hospitals
iii. Senior Living
4. Critical Utilities
i. Water treatment, power plants, utility lines
ii. Discussion led to having a plan to how to function without power, 3 experiences of no power for 2-7 days
iii. Sherriff's Dept- "Power Project"- Provides generators to those in critical need (life support, etc) when power goes out
iv. Number of power storage, substations and plants- Janice to provide
v. What do fire prevention projects look like around critical utilities? Must include PG&E in planning
5. Communication Sites-radio, TV, E911
6. Roads/Evacuation Routes- think about current conditions and land these roadways go through
a. HWYS
i. 16
ii. 20
iii. 45
b. FRWYS
i. I-5
c. COUNTY RDS
d. Residential Roads
e. EVAC Routes

7. Other- Cultural Sites, Natural Resources, Economic Sites (tourism), and Scenic areas-

3. Project Planning- Packet provided will act as a planning guide. Contents include: Management Practices List, Project Examples taken from other CWPPs and Project Planning Worksheet
    a. Three types of projects included in CWPP:
        i. Organizational Projects
            1. County-Wide
                a. Homeowner and community outreach and education
                b. Pre-attack Planning project
                c. Creation of Fire Safe Council
                d. Prescribed Burn Association- Chris Mallek discussed the organization of private landowners to perform their own burns with guidance from agencies but it limits the amount of permitting required for agency projects.
                    i. PBAs equipment include: safety trailer, radio communication devices
                    ii. FireScape Mendocino will discuss Prescribed Burn Associations- date yet to be determined
        ii. Infrastructure Improvement Projects
            1. Western CC
            2. Sac River
            3. Refuges
        iii. Fuels and Veg Management Projects
            1. Western CC
                a. Grazing on Goat Mountain
            2. Sac River
            3. Refuges

<u>Deliverables</u>:

5/20-6/11

1. Harper to reach out to local fire authorities for more detailed project/infrastructure/organization information:
    -Chief Gilbert will be point person for Maxwell, Cortina Rancheria and Arbuckle- will organize project and meet with Harper
    - Colusa and Sac River
    - Indian Valley Bear Valley

2. Harper will follow up with Agencies to get previous & current projects/plans/reports/assets to leverage local CWPP and limit repetition
    - USFS- Damage Report with Shape Files of Snow Mountain and WUIs within Mendocino
    -CalFire- current projects, unit plan updates
    - Sherriff's Department- Local Hazard Mitigation Plan (LHMP), other supportive plans/projects for the CWPP
    -USFWS- Fire Plan and current projects

6/11-6/30

1. Harper get info to RCD of Tehama County and work through draft with technical writer

2. Follow up with individuals based on need
3. Draft complete by 6/30
4. Plan Next meeting
    a. Harper give week notice to Chief Gilbert to reserve City Hall meeting room
    b. Harper to contact individuals to attend next meeting
        i. PG&E: Mike Weaver 1-530-356-2197
        ii. Cortina Rancheria: Brett Matzke
        iii. NRCS: Wendy Kriebel- District Conservationist
        iv. Air Resources Board
        v. Century Ranch HOA President: David Wills 530-619-9408
        vi. BLM: Jeff Tunnel

CWPP Meeting Minutes: Core Decision Makers and TAC | August 13, 2019 | Williams City Hall |

Objective: Review Draft Community Wildfire Protection Plan
Attendees**:** Lauren Johnson, Mendocino NF; Martin Spannaus, Glenn County RCD; David Hotchkiss, PG&E; Kyle Naderer, CalOES, Inland Region; David Wills, Century Ranch HOA; Chris Waters, CALFire; Ken Cohen, Maxwell Fire; Jeff Gilbert, Williams Fire; Wendy Krehbiel, NRCS; Liz Harper, Colusa County Resource Conservation District

Introductions and Sign in (Sign-in sheet provided below)
Harper set out meeting objectives: 1. Review draft 2. Fill in data gaps and delegate collection 3. Go over projects look for revisions, refinements or additions, 4. Begin planning Community Meeting

Information still Needed

Mapping-

Harper went over mapping to date and what still needs to be added to the maps which include significant roads, water infrastructure, project information (past, present, proposed). Maps already have WUIs and community's, Land Management delineations between Federal, State, and local.

Janice Bell recommended to combine Century Ranch and Lake View as one community. All agreed. Harper will change map.

County-wide-

Total acres of all planning units and each individual planning unit. Harper can pull area information from mapping tool.

County Map of Fire History- We can use the map created for the LHMP.
All county fire protection authorities (page 38)- Harper will send out email to Colusa County Fire Authorities to update contact information.

Sherriff's Department is still developing the Cell Phone Application for Emergency Communication.

Fire Safe Council- Investigate what it would take to join Tehama Glenn Fire Safe Council. Find out when the next meeting is and send some Colusa County folks to observe. Would it be beneficial for Tehama and Glenn as well as Colusa? Should it be a intermediary FSC until Colusa can create its own or with directly adjacent counties like Glenn or Yolo?

Planning Units

1. **Western Colusa County**- Total Square Miles- Harper will pull from mapping data

Locations of fire hydrants needing maintenance or replacement- Dave Wills and Janice Bell will collect

information at HOA Board Meeting today on locations and functionality of fire hydrants for Century Ranch. Harper will follow up with other community members in Stonyford.

Location of under sized water infrastructure- Harper to follow up, These will also be good questions to present at the community meeting.

All ponds, mainlines, tanks used for fire protection need to be identified and noted on map- Harper will follow up with Fire Authorities in BVIV

BLM Acres – Need to get in touch with BLM for acreage and Harper can pull from mapping tool.

Does any communities in Western Colusa County need tanks for firefighting? Need Tank sizes and locations- Harper will contact Stonyford community members and will be a good question for community meeting.

Information on the "Code Red" Program- Code Red system is the emergency communication platform Glenn county uses. The Colusa County Sheriffs Office has "Rapid Notify" with is an emergency notification system that uses 11 different forms of communication including cell.

Water provider for communities in Western CC? Still need- Harper will ask County Public Works.
Is East Park Reservoir Rd also called Campground Rd?- It is called East Park Road if it from Stonyford out to the campgrounds past the rodeo stadium.

2. **Sacramento River Corridor-** Square Miles- Harper will get from mapping tool

Need for a community meeting? Harper discuss with Sac River and Colusa Fire.
Sac River Fire Protection Jurisdiction boundaries including communities- Harper to get from Sac Fire
Major landowners along the sac river for follow up and project identification- Harper already has a list from parcels but will review with Sac River Fire

3. **Refuges/Protected Wildlife Areas-** Square Miles- Harper can get from mapping tool.

Sac Refuge- Acreage in Colusa County and total acres of refuge- Harper will talk with USFWS and pull data from mapping software too.

Easement Acres and land managers – Harper will get in collaboration with NRCS and mapping tool

<u>Project Review by County and Planning Units</u>

County wide

Proposed Project comments:

1. Pre-attack plan with Evac plan, routes, map of roads and area, meeting areas for both communities to take responsibility for their own safety, law enforcement and fire fighters to have one general information platform of the area.CalFire has not created on for the SRA in Colusa County but potentially could assist with development along with Sheriff's Department
2. Fuel breaks and reduction work along main artery roads like in Glenn County where there is a 3-year project along rd 306 and 102
3. Community Education and Outreach remains a huge need in the community
4. Multiparcel Fuel Management- enable Landowners to take on the responsibility for their own fire protection on their property and communities through programs like VMPs through CalFire or by

Private/Prescribed Burn Associations. The importance of landowners coming together in addressing fire protection is key.

5. County permitted Century Ranch to make their own fuel breaks along the Stonyford-Lodoga Road.

Additions:
1. Cell Tower Protection- get cell tower location and ownership, figure out fire practices;
2. Create and Distribute Contrition in Fire Hazard Areas Best Management Practices.
3. Creation of Colusa County Residents Guide to Fire Preparedness and Evacuation

Western Colusa County

Proposed Project Comments:
Watershed Assessments- USFS will follow up with reports and Harper will email PDF of Bear Valley Watershed Assessment to USFS

Additions:

1. Spring Valley Road to be added to roadside fuel breaks
2. Add Vacant and/or Absent Landowner to Defensible Space Assistance and Community Chipping Program for Elderly, Disabled, and Low-Income Properties

Community Meeting
Date

October or Early November--Discussion on the date was to get a season where community members had more time (after harvest) and before the holidays. For fire authorities, flexibility is needed if the fire season is long.

Location: Century Ranch Club House

Agenda/Presentations Preliminary Outline

1. Welcome and Introductions of Technical Advisory and Core Decision Makers
2. What is a CWPP and introduction to the Process- Chris Water, CAL FIRE
3. CCRCD Powerpoint Presentation to Review CWPP
    a. Review of Planning Units-
    b. Communities at risk/assets at risk-Review Maps
    c. Overview of projects- Review Maps- Harper will create Power Point presentations
4. WHAT HAVE WE MISSED?
        1. Assets missed
        2. Infrastructure needs
        3. project prioritization – CCRCD will create Project Prioritization Worksheet
        4. Open Comment Period end date

COLUSA COUNTY
RESOURCE

Colusa County Community Wildfire Protection Plan

Technical Advisory Committee and Core Decisionmakers

August 13th, 2019@ 10am

Williams City Hall, 810 E St, Williams, CA 95987

Name	Organization
Lauren Johnson	Mendocino [illegible]
MARTIN SPANNAUS	Glenn Co. RCD
DAVID HOTCHKISS	PG&E
Kyle Noderer	CalOES, Inland Region
David Mills	[illegible] Ranch
Chris Waters	[illegible]
Ken Cohen	Maxwell Fire
Jeff Gilbert	Williams Fire
Wendy Krehbiel	USDA - NRCS

CCRCD Meeting Minutes: November 8, 2019 | Stonyford Town Hall |

Attendees: (Sign-in sheet provided below)

- Welcome and introduction of technical advisory committee members present.
    - Agenda packet
    - Survey to be filled out online or mailed in by December 31st, 2019
    - Project details for county and Western Colusa County packets
- Overview of CWPP from Harper and CalFire Battalion Chief Watson

Plan components

- Review of planning units: this meeting focused on Western Colusa County projects
- Communities at Risks in the Western CC planning unit are: Stonyford, Lodoga, Century Ranch, Lake view loop, private inholders in the forest, Sites, Wilbur Springs, Cortina Rancheria, Leesville, Bear Valley
- Organizational and Infrastructure Projects I
    - Establishment of Colusa County Prescribed Burn Association
    - Development of Formal Evacuation Routes/Safety Zones and Related Maps for the Communities within CCCWPP Planning units
    - CCRCD and Colusa County Fire Department Development of a Countywide Outreach and Education Program
    - CCRCD, CAL FIRE and Colusa County Fire District's Development Firewise Communities Within Western Colusa County
    - Investment by Local Water Provider to Install Improved Fire Water Delivery System Within and Around the Stonyford Area
    - Improved Enforcement of State Defensible Space Requirements Through Increased CAL FIRE/Colusa County Fire Department Inspections
    - Watershed Assessments
    - Community Preparedness Rehearsals, Information and Evacuation Plans
    - Map and Database of Natural Fire Management Units
    - Development of Mendocino National Forest Type Conversion Data Layers into Publicly Available Maps

Community Comments

- Add Good Neighbor Authority to Wyden Legislation for private inholders in the forest. USFS suggestion.
- USFS is working on a PROGRAMMATIC NEPA document that will allow prescribed burning on private lands within the MNF.
- Suggestion for Century Ranch to be a fire wise community
- Create A fire safe council was high priority for fire authorities and CAL FIRE
- Information gaps throughout county need to be addressed: Mailings (assessor's data or census data) sending information to Board of Supervisors, post meeting info at Post offices and libraries throughout the county and general store in stonyford
- Discussion on Sheriff's evacuation orders and protocol and revisted how it was handled in the Ranch fire
    - The Sheriff's office is updating contact info for residents in Beat 5 (Stonyford area) and Local Fire Station is assisting in getting info updated. Info includes those who

need immediate attention or assistance in a power outage, emergency event, evacuation etc.

- Concern with insurance companies raising costs- Fire Wise community could control insurance costs
- Emergency plan- cocreated by fire and sheriff's department because when electronics/ communication fails there needs to be a plan in place
- Increase CAL FIRE Inspections in the county- LE 100s
- Pre-attack plan would include water sources, electricity, bridges and roadway with maps
- Need for "home hardening"
- Invest in Water Supply through Hazard Mitigation Funding?
- USFS Shared Stewardship and Partners to consider (map from Chief Coots)
- Emergency dependable power to cell tower

Fuel Management Projects

- Establishment, Development and Maintenance of a Multi-Parcel Fuel Break Surrounding the Communities of Stonyford and Lodoga
- Defensible Space Assistance and Community Chipping Program for Elderly, Disabled and Low-Income Property Owners
- Ridge Top Fuel Break East of East Park Reservoir
- Upper Stony Creek Project
- M5 Roadside Hazard Project/M10 Roadside Hazard Project
- Upper Watershed Vegetation/Fuels Management Actions That Protect the Watersheds and Water Quality of Those Streams Within the Mendocino National Forest that are Water Sources for Colusa, Glenn Yolo and Solano Counties
- Ridgetop Fuel Breaks and Vegetation Management Program Prescribed Burn
- Fuels Reduction on Private Lands Adjacent to Mendocino National Forest Boundaries Utilizing Wyden Amendment Legislation

Community Comments

- Bring sheep/goat grazing into public forest, shrub and grassland
- Private grazing on property- need agency coordination with letters to landowners and contracts/funding for grazing
- Letters to absent landowners for any fuel reduction opportunities
- Absent landowner fuels reduction is a high priority
- URGENT NEED: To reduce fuels on Snow Mtn- Cabins; brush and trees are stacked and need to be addressed and removed.
- RCD has coordinated prescribed burns in past
- Need for PG&E to clear and cut under power lines

COLUSA COUNTY

RESOURCE

Community Wildfire Protection Plan
Landowner and Community Member Meeting
Stonyford, CA November 8th, 2019 6pm- 8pm

Name	Organization/Contact Info
Harliss Henrikson	Indian Valley Fire
Curtis Coots	MNF / USFS
Janice Bell	Colusa Sheriff / OES
Jose Ruiz	Colusa Sheriff
Frank Pendell	BSVFD
Barney Cook	BVIVFD
Babs Cook	"
Judy Elliott	BVIVFD
Frank Elliott	BVIVFD
Greg Plucker	County of Colusa
Wendy Tyler	County of Colusa
Mike Azevedo	[illegible]
Gary Evans	Colusa BOS
Miguel Watson	[illegible]
Sandra Corbin	[illegible]
Brennen Ruggieri	Williams Ave. [illegible] Ave.
Trish DeCarlo	Stonyford Store
Anita Worthe[illegible]	Stonyford
[illegible]	BVIVFD

CWPP COMMUNITY FEEDBACK DURING COMMENT PERIOD November-December 2019 | Colusa County RCD

Sacramento River Corridor Landowners

Landowners along the Sacramento river don't see an immediate need for fuels management unless they butt up against wildlands/public lands, many suggest goat grazing the understory. Many manage their own properties and property lines with roads or other developments that would impede the spread of fire from wildlands into their private lands.

Meeting with Tribal Councilman, Charlie Wright, for the Kletsel Dehe Wintun Nation

- Tribe community housing is in Western Colusa County off of Spring Valley Rd along the western foothills between Williams and Arbuckle. It is identified as a WUI. The tribal land is 640 acres yet only 80 acres is residential. Oak woodland with annual grasses in residential flat land with oak woodland/chamise on hillside.
- Past Projects: WUI Grant in 2012 to reduce grass and limb fuels in residential areas creating defensible space from road and homes. Upkeep from year to year is a challenge due to finding contract labor that is available and timing the work between end of grass growth and pre fire season.
- In 2016 the Complex Fire swept through the land and the defensible space work prior to the fire event helped with controlling the fire and no homes/property was damaged.
- Due to the WUI projects, the NEPA, cultural resources are done on the area for fuel reduction projects.
- Funding sources are secured for fuels projects but contracting and time constraints play a big factor in limiting fuels reduction from year to year.
- Proposed Projects include:
    - Interest in prescribed burn association
        - Interested in participating in Fire Safe Council especially if CCRCD partners with Yolo RCD to create FSC for areas outside of the Stonyford/Lodoga/Forest area because of land similarities and tribal connections.
        - Need to create auxiliary road/emergency route: Green Rd is an unpaved abandoned county road with gates and locks because it passes through private land. Perhaps there needs to be an emergency use agreement for ingress/egress for tribal members. Tribe has money for road repair and maintenance if needed so cars with no 4 wheel or AWD can drive on.
    - Interested in participating in education and outreach events
    - Creating a fire safety plan
        - Interested in defensible space assistance for elderly tribal member that live in the Mendo forest on an individual allotment of public domain. The Tribal member is unable to create defensible space around his property.
    - Interested in becoming a fire safe community
        - Need infrastructure for fire water or emergency water. Current domestic lines are being retrofitted and updated to fit needs of residents, but current emergency water needs to be upgraded and updated for protection.
        - There are tribal grants the tribe can apply to for assistance with fire guarding their property (ie better roofing material, clearing garbage and debris from around homes).
        - Organizational need for County Liaison from sheriff's department to meet and coordinate outreach for community members to know and have a point person.

- Other considerations create plans and strategies for power outages, especially a communication plan and meeting place.

APPENDIX B: Project Prioritization Ranking Sheets

Colusa County Community Wildfire Protection Plan
Project Prioritization

Project prioritization was developed by the CCRCD through stakeholder input during meetings and individual conversations, surveys, and feedback.

Organizational and Infrastructure Projects
(1= Most Important 12=Least Important)

1. Formation of a Fire Safe Council
2. Community Preparedness Rehearsals, Information and Evacuation Plans Development of Formal Evacuation Routes/Safety Zones and Related Maps for the Communities within CCCWPP Planning units
3. Emergency Communication Plan (including dependable power to cell tower)
4. County Liaison from sheriff's department for the communities in Western Colusa County and the Cortina Rancheria
5. Create Pre-attack Plan (include water sources, electricity, bridges and roadway with maps)
6. In project development utilize of the Good Neighbor Authority to Wyden Legislation for private in-holders in the forest.
7. CCRCD, CAL FIRE and Colusa County Fire District's Development Fire Wise Communities Within Western Colusa County namely the communities of Century Ranch and the Cortina Rancheria
8. CCRCD and Colusa County Fire Department Development of a Countywide Outreach and Education Program example would include "home hardening"
9. Develop reliable Fire Water Delivery System Within and Around the Stonyford Area and the Cortina Rancheria
10. Improved Enforcement of State Defensible Space Requirements Through Increased CAL FIRE/Colusa County Fire Department Inspections
11. Establishment Prescribed Burn Association
12. Map and Database of Natural Fire Management Units

Project Prioritization

Fuel reduction and Management Projects
(1= Most Important;9=Least Important)

1. Upper Stony Creek Restoration Project post Ranch Fire

2. Cortina Rancheria Auxiliary/Emergency Road

3. Fuels Reduction on Private and/or Public Lands Adjacent to Mendocino National Forest Boundaries Utilizing Wyden Amendment Legislation

4. Defensible Space Assistance and Community Chipping Program for Elderly, Disabled and Low-Income Property Owners

5. Engage with Absent Landowners on Vegetation Management Plans and Assist with Fuels Management Work

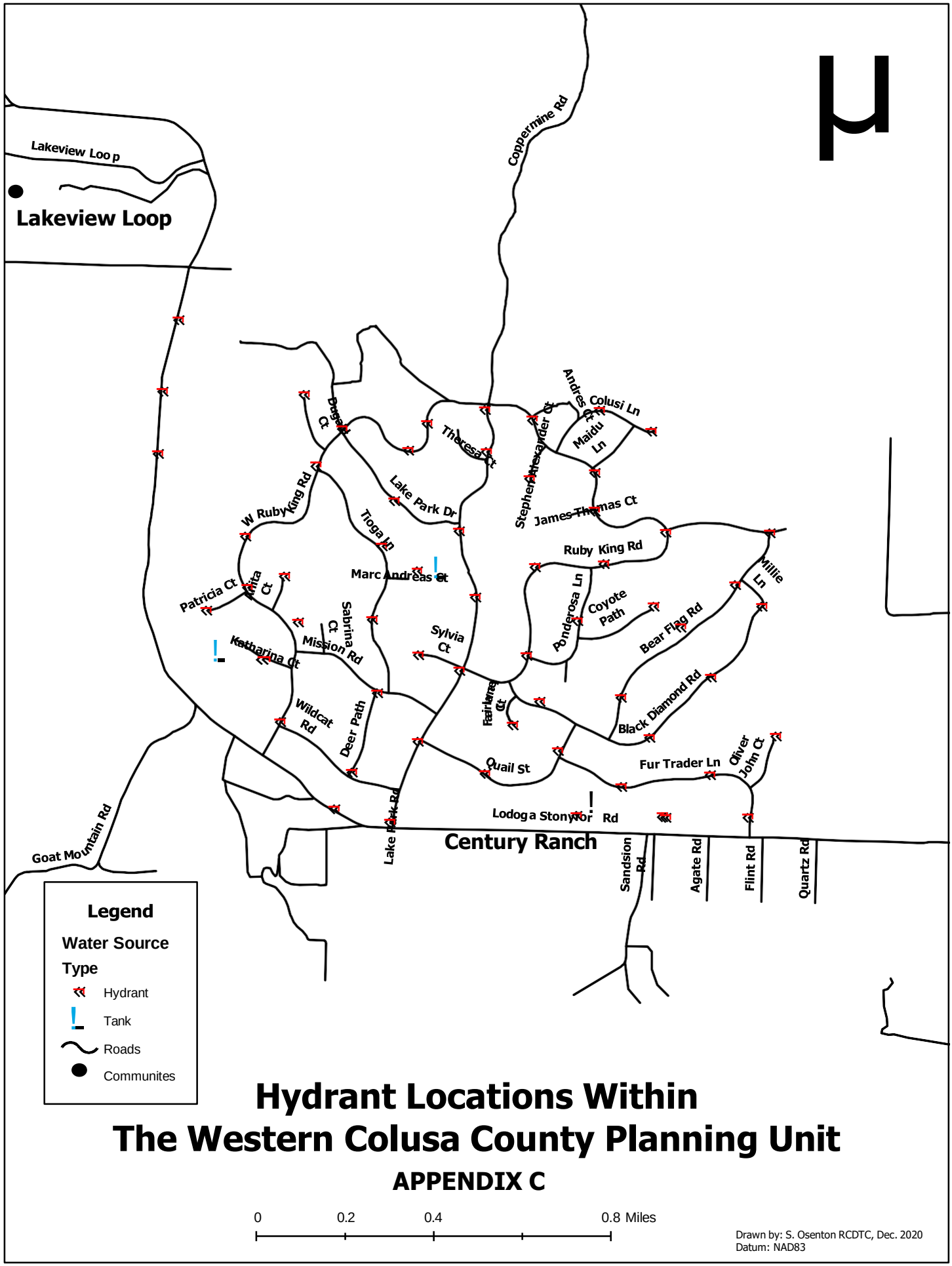
6. Create Vegetation Management Plans, Grazing Management Plans and Burn Plans and Oversee Implementation, Provide Technical and Financial Assistance.

7. Development and/or Improvement of Roadside Fuel Breaks [Maxwell-Sites Road, Sites-Lodoga Road , Stonyford-Lodoga Road East Park Reservoir Rd, Indian Springs Road (County Road M-18), Fouts Springs Rd (County Road M-10), Lake View Loop (entire road loop), Goat Mountain Road (County Road M-42), Rail Canyon Road (County Road M-401), Bear Valley Road, Wilbur Springs Road, Walker Ridge Road, Leesville Road, Spring Valley Road/Manzanita Road]

8. Establishment, Development and Maintenance of a Multi-Parcel Fuel Break Surrounding the Communities of Stonyford and Lodoga

9. Upper Watershed Vegetation/Fuels Management Actions That Protect the Watersheds and Water Quality of Those Streams Within the Mendocino National Forest that are Water Sources for Colusa, Glenn Yolo and Solano Counties

APPENDIX C: Hydrant Locations Within the Western Colusa County Planning Unit



Hydrant Locations Within The Western Colusa County Planning Unit

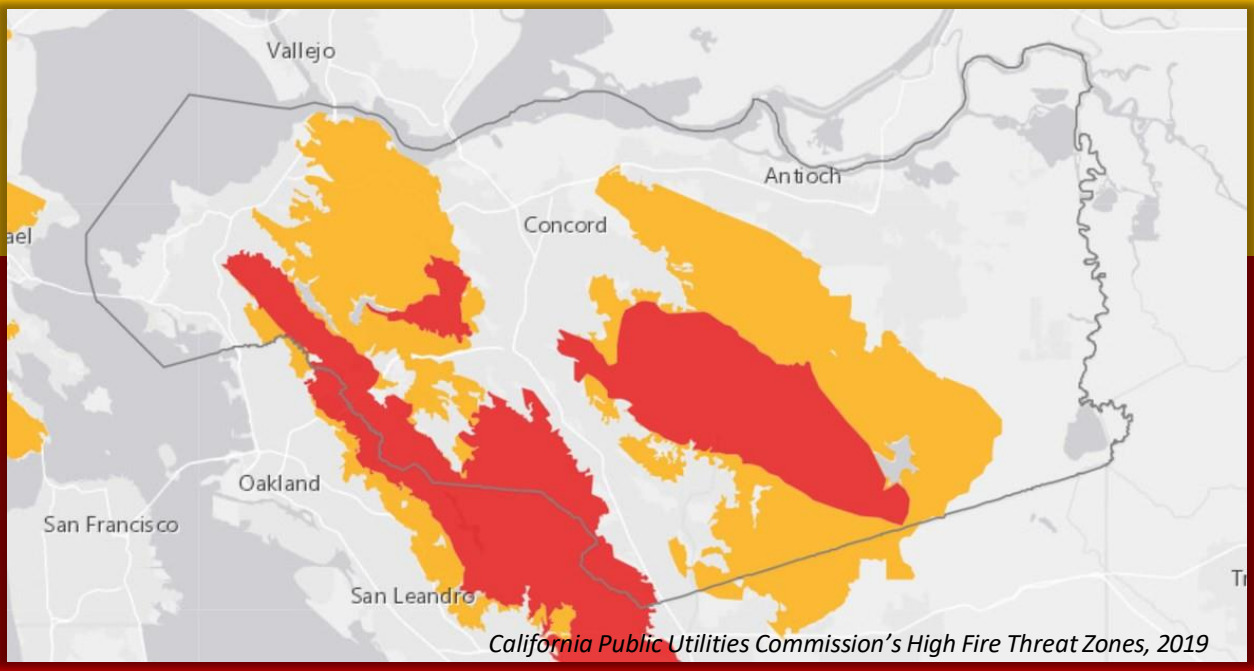
APPENDIX C

APPENDIX D: Example of Countywide Residents Guide to Wildfire Preparedness and Evacuation

Contra Costa County Residents Guide to

WILDFIRE

Preparedness & Evacuation



California Public Utilities Commission's High Fire Threat Zones, 2019

PREPARE YOUR HOME ***How will you ready your home?***

HAVE A PLAN ***What will you do?***

MAKE A KIT ***What do you need?***

STAY INFORMED ***How will you get information?***

KNOW YOUR NEIGHBORS ***How will you work together?***

-ABOUT THIS DOCUMENT-

Over the past few years, California has experienced a dramatic rise in both the number and severity of wildland fires. These fires have ravaged wildland-urban interface areas taking lives, destroying homes and obliterating infrastructure. Six of the 20 largest fires in California's recorded history have burned in the last five years and 10 of California's most destructive wildfires have occurred since 2015.

The information included here is intended to provide Contra Costa County residents with an overview of the steps they can take to prepare themselves, their families and neighbors should an evacuation become necessary. Please heed the recommendations here; register your cellphones with the Contra Costa Community Warning System (CWS), prepare your home by removing excess fuel from around your structures and be ready to evacuate when wildfire threatens.

For more information on any of the topics referenced in this guide visit

- *Ready.gov*
- *CalOES.ca.gov*
- *Cchealth.org*
- *Fire.ca.gov*
- *Red Cross.org*

www.cccfpd.org

www.cococws.us

www.cocosheriff.org

*Thanks to **Lamorinda Community Emergency Response Team**, Lafayette **Police Department** and the **Contra Costa County Fire Protection District** for their guidance in producing this document.*

Understand these

TERMS

Current Fire Weather Watches and Red Flag Warnings:
https://www.wrh.noaa.gov/fire2/cafw/index.php

FIRE WEATHER WATCH Upcoming weather conditions could result in extensive wildland fire occurrence or extreme fire behavior. A watch means critical fire weather conditions are possible but not imminent or occurring.

RED FLAG WARNING Be extremely careful with open flames. The National Weather Service issues a Red Flag Warning when fire conditions are ongoing or expected to occur shortly. During these times, residents must use extreme caution. A simple spark could cause a major fire.

EVACUATION WARNING Alerts people in an affected area of potential threat to life and property. People who need additional time may consider evacuating at this time.

EVACUATION ORDER Requires the **immediate** movement of people out of an affected area due to an imminent threat to life. Choosing to stay could result in loss of life. Staying may also impede the work of emergency personnel.

SHELTER-IN-PLACE Advises people to stay secure at their current location by remaining in place as evacuating will cause a higher potential for loss of life.

RESCUE and RECOVERY Emergency actions taken within the affected area to recover and remove injured or trapped citizens.

SAFETY ZONE A place that may provide temporary refuge to residents who become trapped or are unable to evacuate to safety

If you feel you are in danger, don't wait: EVACUATE!

During a Red Flag Warning

one less SPARK means one less WILDFIRE

About 95% of all wildfires in California are caused by people. Help prevent wildfires by following these guidelines.

Current Fire Weather Watches and Red Flag Warnings: https://www.wrh.noaa.gov/fire2/cafw/index.php

EQUIPMENT USE

- Mow before 10 a.m., but never when it's windy or excessively dry
- Mowers are designed to mow lawns, not weeds or dry grass
- Metal blades striking rocks can create sparks and start fires
- Don't drive your vehicle onto dry grass or brush

Hot exhaust pipes and mufflers can start fires

CAMPFIRE SAFETY

- Obtain a campfire permit and understand campfire safety: http://www.preventwildfireca.org/Campfires/

VEHICLE MAINTENANCE

- Secure chains
- No dragging parts
- Check tire pressure
- Properly maintain brakes

DEBRIS BURNING

- Learn how and when to safely burn debris: http://www.preventwildfireca.org/Debris-Burning/

Prepare your Home

DEFENSIBLE SPACE *The buffer you create between a building on your property and the grass, trees, shrubs, or any wildland area that surrounds it. This space is needed to slow or stop the spread of wildfire and it protects your home from catching fire*

ZONE ONE
-30 feet from building-

How will you ready your home for a wildfire?

- Remove all dead and dying vegetation from around the house, roof, gutters, and decks
- Keep tree limbs 10 feet from structures and other trees
- Choose fire resistant plant species
- Have a roof made of composition, metal, or tile
- Cover vents to home with a fine mesh to keep out embers

Always

- Have your go kit by the door
- Back your car in when parking
- Battery backup for your garage door opener, or
- Know how to manually open your garage door, or
- Plan ahead for assistance opening your garage door

PREPARE YOUR HOME

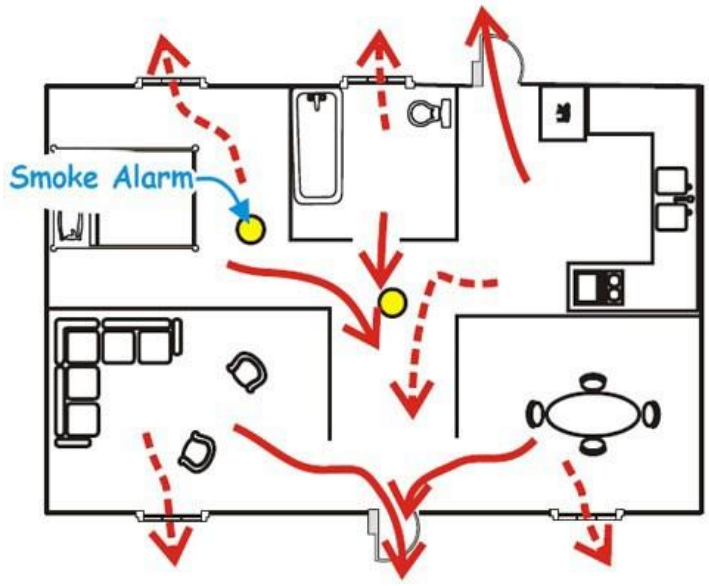
Learn more about Contra Costa County Fire Protection District's Minimum Weed Abatement Standards : www.cccfpd.org/exterior-hazards

ZONE TWO
30 –100 from buildings

- Remove dead and dying vegetation
- Keep woodpiles and combustibles in this zone
- Cut grass and clear brush
- Keep wood fencing and decks away from the home

Make sure your smoke your smoke alarms and fire extinguisher are functional and appropriately placed. If you require assistance contact the American Red Cross at getasmokealarm.org, or visit www.cccfpd.org/education-programs.

Have a Plan



PREPARE

YOUR HOME

YOUR FAMILY

YOURSELF

- **Where will you go and how will you get there?**

Have multiple escape routes from your home and community

- **How will you get alerted and continue to receive information?**

Register with the Community Warning System

- **How will you contact loved ones?**

Plan to text an out-of-area contact to check in with friends and family

- **What will you bring with you?**

You know best what you will need to bring

- **Coordinate with your neighbors to share vehicles and resources in an emergency requiring evacuation**
- **Plan for the possibility of an extended power outage related to wildfire risk (refer to the Power Outage Preparedness Fact Sheet at the end of this guide)**
- **Know how to open your garage door manually or have a plan for asking for assistance**
- **Make sure your home has working smoke alarms and fire extinguishers**

Individuals with Access and Functional Needs (AFN) can work with family, friends and neighbors to plan for emergencies including those requiring evacuation. Remember to register for the Community Warning System and choose to receive alerts in the way that makes sense for you. Planning today with our AFN community members prepares us for a disaster tomorrow.

Plan for your animals

- Have pet food and supplies in a go-bag
- Keep pets indoors if there is smoke outside
- Collar and confine cats in a single room so they can be easily caught in the event that an evacuation is necessary
- Microchip your animals
- Have photos of yourself with your animal to prove ownership should you become separated
- For larger animals, have a pre-designated place for them out of the area
- Be prepared to transport or shelter your animals in place
- Keep carriers or trailers accessible

Try to take your pets with you but don't become a fatality trying to save them

INCLUDE

PETS IN YOUR PLAN

PREPARE

YOUR PET EMERGENCY KIT

PRACTICE

YOUR PLAN

Make an Evacuation Go Bag

You know best what you will need in an evacuation






- Neighborhood map with local resources
- NOAA weather radio
- Food and water
- Whistle
- First aid kit
- Important documents
- Flashlight, extra batteries
- Moist towelettes, garbage bags, hand sanitizer
- Cell phone with backup powerpack and chargers
- Medicine, medical equipment
- Blankets
- Pet supplies

HAVE A KIT *for each member of your household including pets*

Documents *stored on the cloud or a memory stick*

Type	Document
Housing	Title
	Lease or rental agreement
	Insurance policy
Personal	Birth certificate
	Passport
	Driver's License
	Resident card
	Social Security
	Military DD-214
	Will and/or Trust
Health	Insurance policy
	Medical record
	Medicare ID
	Prescriptions
Auto	Insurance
	Title for each vehicle
	Loan for each vehicle
Other	Photographs of household belongings

Get Alerted, Stay Informed

How will you get information about an evacuation?

Register for the Community Warning System

In an emergency, timely information can save your life! The Contra Costa County Community Warning System (CWS), maintained by the Office of the Sheriff, is an all-hazards system, designed to ALERT the community of an EMERGENCY through multiple communication tools. To receive CWS alerts you must register your cell phone number or home phone number, home address, and email address. Your information will be kept confidential and will not be used for any other purpose other than for emergency alerts. To register for CWS visit ***www.cococws.us***, or call 925-313-9622 Today! In addition to official CWS messages for evacuations, shelter-in-place orders and the like, local traditional and online media can be good sources

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For other information about an incident

Follow on Twitter

CWS: @CoCoCWS
Fire: @Contracostafire
Sheriff: @cocosopio

Contra Costa County Fire

Contra Costa Crisis Center

211.org

Tune your radio to KCBS 740 AM

American Red Cross

Red Cross.org

Call 9-1-1 in a life threatening emergency **Call 2-1-1 for non-emergency information**

Know your Neighbors

How will your community work together ?

- **Create defensible space for your mutual protection: Work together on vegetation clearance in and around shared spaces**
- **Map and share information about the location of neighborhood resources such as sources of water, routes to safety and the location of hazards**
- **Identify and support neighbors who require assistance creating defensible space, registering for emergency alerts, or preparing to evacuate**
- **Communicate with neighbors who may have Access or Functional Needs (AFN) and engage them in planning efforts. Ask them *What assistance do they require to safely evacuate?***
- **Include caregivers for AFN individuals in neighborhood planning efforts**
- **Meet with first responders before a disaster to clarify expectations and build relationships**
- **If you are home bound, make sure you identify a family member or friend or church or community group member to check on you during an emergency**
- **Work together to identify *safety zones* where you can shelter together if you are trapped or unable to evacuate**
  - ⇒ *Any area without flammable vegetation*
  - ⇒ *Large parking lots*
  - ⇒ *School/athletic fields*
  - ⇒ *Parks with open, grassy areas*

Access and functional needs (AFN) refers to individuals who are or have:

- Physical, developmental or intellectual disabilities
- Chronic conditions or injuries
- Limited English proficiency
- Older adults
- Children
- Low income, homeless and/or transportation disadvantaged (i.e., dependent on public transit)
- Pregnant women

If you feel you are in danger, don't wait: Evacuate!

Evacuation Tips

What will you do in an evacuation?

Go!

- When in danger, evacuate immediately! Don't wait to be told
- Leave early! Take a neighbor with you who needs assistance
- Grab your go bag with important items and documents
- Leave inside and outside lights on for first responders
- Close and lock windows and doors
- Drive safely and cautiously out of the area with headlights on
- Leave gates open for first responder access / allow any remaining animals to escape on their own
- Avoid all downed power lines
- Communicate by text or call to your out-of-area contact that you are safe

If Trapped

- If you are in your car, park in an area clear of vegetation, close all windows and vents, cover yourself with a flame-resistant blanket (from your auto preparedness kit) and lie on the floor
- If you are on foot, look for a safe building or swimming pool along your path
- If you are in your home, fill tubs with water to submerge in and place wet towels under doors to keep smoke and embers out
- Use your home fire extinguisher for small fires (no larger than a small trash can).

For more evacuation tips, visit Ready, Set, Go!

www.readyforwildfire.org

Evacuation Tips

Returning home

Pay close attention to any directions given by your local authorities. When they say it's safe to return to your home, keep these tips in mind to make the transition as smooth as possible.

After you evacuate, let your loved ones know you are safe.

*Register with the American Red Cross **Safe and Well** Program:*

https://safeandwell.communityos.org/cms/index.php

- **Expect and prepare for disruptions to daily activities, and remember that returning home before debris is cleared can be dangerous**
- **Let friends and family know before you leave and when you arrive**
- **Gather some basic supplies to make your return a safe one. Most of these items can be picked up at your nearest hardware or grocery store if you don't have them on hand:**

⇒ Gloves	⇒ A flashlight
⇒ Goggles	⇒ Bottled water
⇒ Closed-toe shoes	⇒ Garbage bags
⇒ A cell phone (with camera)	⇒ A first aid kit

- **Avoid downed power or utility lines; they may be live with deadly voltage**
- **Walk the perimeter** before you go inside. Take note of any out-of-place electrical wiring, gas smells, or loose debris that may fall
- If you have to use a generator, a charcoal grill, or another fuel-burning device, make sure you keep it outdoors, and in a well-ventilated area
- **When in doubt, throw it out.** Food and drinks inside your fridge or freezer may need to be tossed when you return home — especially if your house lost power or was exposed to heat, ash, smoke, or any of the chemicals used to put out fires

Help your first responders: Place this sign in a clearly visible location if you cannot evacuate

HELP

Preparing for a Power Outage during Fire Season

What should you be doing?

May disrupt communications, water, transportation

May close retail businesses, grocery stores, gas stations, ATMs, banks, and other services

Can cause food spoilage, water contamination

Can prevent use of medical devices

Before

Register for alerts from *cococws.us*

Update your contact information with PG&E *pge.com/wildfiresafety*

Take an inventory of the items you use that rely on electricity

Plan for your family and pet medical needs

Keep mobile phones charged

Identify backup charging methods for phones and electronics

Store water and non-perishable food

Install home carbon monoxide detectors with battery backups

Know how to use the manual release on your garage door or plan for assistance

Keep gas tanks full

Talk to your family and neighbors and share your plan

During

Keep freezers and refrigerators closed

Monitor freezer and refrigerator temperatures with a thermometer

Use perishable food supplies first

Use generators, stoves and grills outdoors away from windows

Disconnect appliances and electronics to avoid damage

Check on neighbors, animals and family

After

When in doubt, throw it out! Throw away food exposed to temperatures above 41 degrees for more than four hours

Check with your pharmacist about refrigerated medications

Home Shelter-in-Place Kit

Consider keeping these items at your home in case of a power outage

- Neighborhood map with local resources
- Battery-powered or hand crank NOAA Weather Radio
- Portable generator
- Carbon monoxide detector, smoke detector and fire extinguisher
- Method for cooking food without electricity
- Surge protectors for appliances and devices
- Consider keeping cash on hand in case ATM and credit cards cannot be used
- Flashlight, extra batteries
- First aid kit
- Whistle to signal for help
- Moist towelettes, garbage bags, hand sanitizer
- Cell phone with backup powerpack
- Medicine, medical equipment
- Important documents
- Water: one gallon per person per day of water
- Non-perishable food for one week
- Pet supplies
- Blankets
- Whatever YOU think you will need for yourself, your household and your animals

Preparing for Other Hazards

While this is a wildland fire preparation guide, much of the information included here can help you prepare for other disasters, such as earthquakes, that may occur in Contra Costa County. Fires, power disruption, landslides and tsunamis are all hazards that may result from an earthquake.

Before an Earthquake

- Practice **Drop, Cover, then Hold On**
- Secure items, such as bookcases, refrigerators, televisions and objects that hang on walls. Store heavy and breakable objects on low shelves
- Create a family emergency communications plan. Plan where to meet if you get separated
- Consider obtaining an earthquake insurance policy. A standard homeowner's insurance policy does not cover earthquake damage

During

- Drop, cover and hold on!
- If you are in a vehicle, pull over and stop. Set your parking brake
- If you are in bed, turn face down and cover your head and neck with a pillow
- If you are outdoors, stay outdoors away from buildings. Do not get in a doorway or run outside

After

- Expect aftershocks
- Anticipate hazards such as damage to the building, leaking gas and water lines, or downed power lines. Do not enter damaged buildings
- Check yourself to see if you are hurt and help others if you have training
- If trapped, protect your mouth, nose and eyes from dust. Send a text, bang on a pipe or wall, or use a whistle instead of shouting so that rescuers can locate you
- If you are in an area that may experience tsunamis, go inland or to higher ground immediately after the shaking stops
- Text messages may be more reliable than phone calls

Visit www.EarthquakeCountry.org/step5 for tips and videos.

APPENDIX E: Glossary

The following is a list of fire related terms that are in common usage among members of the fire and fuels management community and that are found in much of the literature pertaining to wildfire issues.

Aerial Fuels: All live and dead vegetation in the forest canopy or above surface fuels, including tree branches, twigs and cones, snags, moss, and high brush.

Aerial Ignition: Ignition of fuels by dropping incendiary devices or materials from aircraft.

Air Tanker: A fixed-wing aircraft equipped to drop fire retardants or suppressants.

Agency: Any federal, state, or county government organization participating with jurisdictional responsibilities.

Anchor Point: An advantageous location, usually a barrier to fire spread, from which to start building a fire line. An anchor point is used to reduce the chance of firefighters being flanked by fire.

Aramid: The generic name for a high-strength, flame-resistant synthetic fabric used in the shirts and jeans of firefighters. Nomex, a brand name for aramid fabric, is the term commonly used by firefighters.

Aspect: Direction toward which a slope faces.

Backfire: A fire set along the inner edge of a fire line to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column.

Backpack Pump: A portable sprayer with hand-pump, fed from a liquid-filled container fitted with straps, used mainly in fire and pest control. (See also Bladder Bag.)

Bambi Bucket: A collapsible bucket slung below a helicopter. Used to dip water from a variety of sources for fire suppression.

Behave: A system of interactive computer programs for modeling fuel and fire behavior that consists of two systems: BURN and FUEL.

Bladder Bag: A collapsible backpack portable sprayer made of neoprene or high-strength nylon fabric fitted with a pump. (See also Backpack Pump.)

Blow-up: A sudden increase in fire intensity or rate of spread strong enough to prevent direct control or to upset control plans. Blow-ups are often accompanied by violent convection and may have other characteristics of a fire storm. (See Flare-up.)

Brush: A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

Brush Fire: A fire burning in vegetation that is predominantly shrubs, brush and scrub growth.

Bucket Drops: The dropping of fire retardants or suppressants from specially designed buckets slung below a helicopter.

Buffer Zones: An area of reduced vegetation that separates wildlands from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

Bump-up Method: A progressive method of building a fire line on a wildfire without changing relative positions in the line. Work is begun with a suitable space between workers. Whenever one worker overtakes another, all workers ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until completing his or her space.

Burn Out: Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

Burning Ban: A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

Burning Conditions: The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

Burning Index: An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

Burning Period: That part of each 24-hour period when fires spread most rapidly, typically from 10:00 a.m. to sundown.

Campfire: As used to classify the cause of a wildland fire, a fire that was started for cooking or warming that spreads sufficiently from its source to require action by a fire control agency.

Candle or Candling: A single tree or a very small clump of trees which is burning from the bottom up.

Chain: A unit of linear measurement equal to 66'.

Closure: Legal restriction, but not necessarily elimination of specified activities such as smoking, camping, or entry that might cause fires in a given area.

Cold Front: The leading edge of a relatively cold air mass that displaces warmer air. The heavier cold air may cause some of the warm air to be lifted. If the lifted air contains enough moisture, the result may be cloudiness, precipitation, and thunderstorms. If both air masses are dry, no clouds may form. Following the passage of a cold front in the Northern Hemisphere, westerly or northwesterly winds of 15 to 30 or more miles per hour often continue for 12 to 24 hours.

Cold Trailing: A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand for heat to detect any fire, digging out every live spot, and trenching any live edge.

Command Staff: The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have assistants.

Complex: Two or more individual incidents located in the same general area which are assigned to a single incident commander or unified command.

Contain a fire: A fuel break around the fire has been completed. This break may include natural barriers or manually and/or mechanically constructed line.

Control a fire: The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through this line.

Control Line: All built or natural fire barriers and treated fire edge used to control a fire.

Cooperating Agency: An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, telephone company, etc.

Coyote Tactics: A progressive line construction duty involving self-sufficient crews that build fire line until the end of the operational period, remain at or near the point while off duty, and begin building fire line again the next operational period where they left off.

Creeping Fire: Fire burning with a low flame and spreading slowly.

Crew Boss: A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

Crown Fire: (Crowning): The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

Curing: Drying and browning of herbaceous vegetation or slash.

Dead Fuels: Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

Debris Burning: A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

Defensible Space: An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area a minimum of 30’ around a structure that is cleared of flammable brush or vegetation.

Deployment: See Fire Shelter Deployment.

Detection: The act or system of discovering and locating fires.

Direct Attack: Any treatment of burning fuel, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

Dispatch: The implementation of a command decision to move a resource or resources from one place to another.

Dispatcher: A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control in first attack, and sends them to the proper place.

Dispatch Center: A facility from which resources are directly assigned to an incident.

Division: Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the Incident Command System organization between the branch and the task force/strike team.

Dozer: Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

Dozer Line: Fire line constructed by the front blade of a dozer.

Drip Torch: Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

Drop Zone: Target area for air tankers, helitankers, and cargo dropping.

Drought Index: A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

Dry Lightning Storm: Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

Energy Release Component: The computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire.

Engine: Any ground vehicle providing specified levels of pumping, water and hose capacity.

Engine Crew: Firefighters assigned to an engine. The Fireline Handbook defines the minimum crew makeup by engine type.

Entrapment: A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

Environmental Assessment (EA): EAs were authorized by the National Environmental Policy Act (NEPA) of 1969. They are concise, analytical documents prepared with public participation that determine if an Environmental Impact Statement (EIS) is needed for a particular project or action. If an EA determines an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.

Environmental Impact Statement (EIS): EISs were authorized by the National Environmental Policy Act (NEPA) of 1969. Prepared with public participation, they assist decision makers by providing information, analysis and an array of action alternatives, allowing managers to see the probable effects of decisions on the environment. Generally, EISs are written for large-scale actions or geographical areas.

Equilibrium Moisture Content: Moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle reaches equilibrium moisture content, net exchange of moisture between it and the environment is zero.

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that won't burn, natural rocky area that is large enough to take refuge without being burned. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

Escaped Fire: A fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

Extended Attack Incident: A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, in route, or being ordered by the initial attack incident commander.

Extreme Fire Behavior: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One of more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

Faller: A person who fells trees. Also called a sawyer or cutter.

Field Observer: Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.

Fine (Light) Fuels: Fast-drying fuels, generally with a comparatively high surface area-to volume ratio, which are less than ¼" in diameter and have a time lag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Fingers of a Fire: The long narrow extensions of a fire projecting from the main body.

Fire Behavior: The manner in which a fire reacts to the influences of fuel, weather and topography.

Fire Behavior Forecast: Prediction of probable fire behavior, usually prepared by a Fire Behavior Officer, in support of fire suppression or prescribed burning operations.

Fire Behavior Specialist: A person responsible to the Planning Section Chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuel, weather and topography.

Fire Break: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

Fire Cache: A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

Fire Crew: An organized group of firefighters under the leadership of a crew leader or other designated official.

Fire Front: The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire, front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Intensity: A general term relating to the heat energy released by a fire.

Fire Line: A linear fire barrier that is scraped or dug to mineral soil.

Fire Load: The number and size of fires historically experienced on a specified unit over a specified period (usually one day) at a specified index of fire danger.

Fire Management Plan (FMP): A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is

supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

Fire Perimeter: The entire outer edge or boundary of a fire.

Fire Regime Condition Class:

The Fire Regime Condition Class (FRCC) describes the amount of departure of an area or landscape from the historic to present conditions. This departure from the natural state may be a result of changes in one or more ecosystem components such as fuel composition, fire frequency, or other ecological disturbances. The FRCC classification system and other considerations are used in the fire management program to rank existing ecosystem conditions and prioritize areas for fuels treatment. As taken from the Cohesive Implementation Strategy, FRCC is defined as follows:

FRCC1: "…fire regimes in this condition class are within historical ranges. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low. Maintenance management such as prescribed fire, mechanical treatments, or preventing the invasion of non-native weeds, is required to prevent these lands from becoming degraded."

FRCC2: "Fire Regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified in these lands. To restore their historical CAL FIRE regimes, these lands may require some level of restoration as through prescribed fire, mechanical or chemical treatments, and the subsequent reintroduction of native plants."

FRCC3: "These lands have been significantly altered from their historical range. Because fire regimes have been extensively altered, risk of losing key ecosystem components from fire is high. Consequently, these lands verge on the greatest risk of ecological collapse. To restore their historical CAL FIRE regimes before prescribed fire can be utilized to manage fuel or obtain other desired benefits these lands may require multiple mechanical or chemical restoration treatments, or reseeding."

Fire Season: 1) Period(s) of the year during which wildland fires are likely to occur, spread, and affect resource values sufficient to warrant organized fire management activities. 2) A legally enacted time during which burning activities are regulated by state or local authority.

Fire Shelter: An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life-threatening situations, as a last resort.

Fire Shelter Deployment: The removing of a fire shelter from its case and using it as protection against fire.

Fire Storm: Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface in-drafts, near and beyond the perimeter, and sometimes by tornado-like whirls.

Fire Triangle: Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

Fire Use Module (Prescribed Fire Module): A team of skilled and mobile personnel dedicated primarily

to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, that can ignite, hold and monitor prescribed fires.

Fire Weather: Weather conditions that influence fire ignition, behavior and suppression.

Fire Weather Watch: A term used by fire weather forecasters to notify using agencies, usually 24 to 72 hours ahead of the event, that current and developing meteorological conditions may evolve into dangerous fire weather.

Fire Whirl: Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than one foot to more than 500'in diameter. Large fire whirls have the intensity of a small tornado.

Firefighting Resources: All people and major items of equipment that can or potentially could be assigned to fires.

Flame Height: The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

Flame Length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Flaming Front: The zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. Also called fire front.

Flanks of a Fire: The parts of a fire's perimeter that are roughly parallel to the main direction of spread.

Flare-up: Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

Flash Fuels: Fuels such as grass, leaves, draped pine needles, fern, tree moss and some kinds of slash, that ignite readily and are consumed rapidly when dry. Also called fine fuels.

Forb: A plant with a soft, rather than permanent woody stem, that is not a grass or grass-like plant.

Fuel: Combustible material. Includes, vegetation, such as grass, leaves, ground litter, plants, shrubs and trees that feed a fire. (See Surface Fuels.)

Fuel Bed: An array of fuels usually constructed with specific loading, depth and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

Fuel Loading: The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

Fuel Model: Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Fuel Moisture (Fuel Moisture Content): The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

Fuel Reduction: Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Fusee: A colored flare designed as a railway warning device and widely used to ignite suppression and prescription fires.

General Staff: The group of incident management personnel reporting to the incident commander. They may each have a deputy, as needed. Staff consists of operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

Geographic Area: A political boundary designated by the wildland fire protection agencies, where these agencies work together in the coordination and effective utilization

Ground Fuel: All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust that normally support a glowing combustion without flame.

Haines Index: An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

Hand Line: A fireline built with hand tools.

Hazard Reduction: Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Head of a Fire: The side of the fire having the fastest rate of spread.

Heavy Fuels: Fuels of large diameter such as snags, logs, large limb wood, that ignite and are consumed more slowly than flash fuels.

Helibase: The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

Helispot: A temporary landing spot for helicopters.

Helitack: The use of helicopters to transport crews, equipment, and fire retardants or suppressants to the fire line during the initial stages of a fire.

Helitack Crew: A group of firefighters trained in the technical and logistical use of helicopters for fire suppression.

Holding Actions: Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.

Holding Resources: Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.

Hose Lay: Arrangement of connected lengths of fire hose and accessories on the ground, beginning at the first pumping unit and ending at the point of water delivery.

Hotshot Crew: A highly trained fire crew used mainly to build fireline by hand.

Hotspot: A particular active part of a fire.

Hotspotting: Reducing or stopping the spread of fire at points of particularly rapid rate of spread or special threat, generally the first step in prompt control, with emphasis on first priorities.

Historic Fire Regime: The Historic Fire Regime (HFR) represents the fire return interval prior to Euro-American settlement and are calculated and classified by analyzing natural vegetation, known fire cycles, and fire history data. Based on the FRCC and HFR classifications, the Cohesive Strategy established the following national priorities for implementing vegetation treatments: Treat vegetation types within HFR Groups I, II, and III; Treat lands that have been either significantly altered (CC3) or moderately altered (CC2) from their historic range, and; Treat at least 2% of an agency's administered lands annually.

Incident: A human-caused or natural occurrence, such as wildland fire, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.

Incident Action Plan (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Command Post (ICP): Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Incident Management Team: The incident commander and appropriate general or command staff personnel assigned to manage an incident.

Incident Objectives: Statements of guidance and direction necessary for selection of appropriate strategy(ies), and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

Infrared Detection: The use of heat sensing equipment, known as Infrared Scanners, for detection of heat sources that are not visually detectable by the normal surveillance methods of either ground or air patrols.

Initial Attack: The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

Job Hazard Analysis: This analysis of a project is completed by staff to identify hazards to employees and the public. It identifies hazards, corrective actions and the required safety equipment to ensure public and employee safety.

Jump Spot: Selected landing area for smokejumpers.

Jump Suit: Approved protection suite work by smokejumpers.

Keech Byram Drought Index (KBDI): Commonly-used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought).

Knock Down: To reduce the flame or heat on the more vigorously burning parts of a fire edge.

Ladder Fuels: Fuels which provide vertical continuity between strata, thereby allowing 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.

Large Fire: 1) For statistical purposes, a fire burning more than a specified area of land, e.g., 300 acres. 2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

Lead Plane: Aircraft with pilot used to make dry runs over the target area to check wing and smoke conditions and topography and to lead air tankers to targets and supervise their drops.

Light (Fine) Fuels: Fast-drying fuels, generally with a comparatively high surface area-to volume ratio, which are less than ¼" in diameter and have a time lag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

Lightning Activity Level (LAL): A number, on a scale of 1 to 6 that reflects frequency and character of cloud-to-ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

Line Scout: A firefighter who determines the location of a fire line.

Litter: Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Live Fuels: Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

Micro-Remote Environmental Monitoring System (Micro-REMS): Mobile weather monitoring station. A Micro-REMS usually accompanies an incident meteorologist and ATMU to an incident.

Mineral Soil: Soil layers below the predominantly organic horizons; soil with little combustible material.

Mobilization: The process and procedures used by all organizations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Modular Airborne Firefighting System (MAFFS): A manufactured unit consisting of five interconnecting tanks, a control pallet, and a nozzle pallet, with a capacity of 3,000 gallons, designed to be rapidly mounted inside an unmodified C-130 (Hercules) cargo aircraft for use in dropping retardant on wildland fires.

Mop-up: To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they won't roll downhill.

Multi-Agency Coordination (MAC): A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

Mutual Aid Agreement: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

National Environmental Policy Act (NEPA): NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help federal managers make decisions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Wildfire Coordinating Group: A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of wildland fire activities and provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Nomex ®: Trade name for a fire resistant synthetic material used in the manufacturing of flight suits and pants and shirts used by firefighters (see Aramid).

Normal Fire Season: 1) A season when weather, fire danger, and number and distribution of fires are about average. 2) Period of the year that normally comprises the fire season.

Operations Branch Director: Person under the direction of the operations section chief who is responsible for implementing that portion of the incident action plan appropriate to the branch.

Operational Period: The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

Overhead: People assigned to supervisory positions, including incident commanders, command staff, general staff, directors, supervisors, and unit leaders.

Pack Test: Used to determine the aerobic capacity of fire suppression and support personnel and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

Paracargo: Anything dropped, or intended for dropping, from an aircraft by parachute, by other retarding devices, or by free fall.

Peak Fire Season: That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

Personnel Protective Equipment (PPE): All firefighting personnel must be equipped with proper equipment and clothing in order to mitigate the risk of injury from, or exposure to, hazardous conditions encountered while working. PPE includes, but is not limited to: 8" high laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves and individual first aid kits.

Preparedness: Condition or degree of being ready to cope with a potential fire situation

Prescribed Fire: Any fire ignited by management actions under certain, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescribed Fire Plan (Burn Plan): This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

Prescription: Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Prevention: Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

Project Fire: A fire of such size or complexity that a large organization and prolonged activity is required to suppress it.

Pulaski: A combination chopping and trenching tool, which combines a single-bitted axe blade with a narrow adze-like trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.

Radiant Burn: A burn received from a radiant heat source.

Radiant Heat Flux: The amount of heat flowing through a given area in a given time, usually expressed as calories/square centimeter/second.

Rappelling: Technique of landing specifically trained firefighters from hovering helicopters; involves sliding down ropes with the aid of friction-producing devices.

Rate of Spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history.

Reburn: The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has reburned.

Red Card: Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions in a large fire suppression or incident organization.

Red Flag Warning: Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical CAL FIRE weather pattern.

Rehabilitation: The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

Relative Humidity (Rh): The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

Remote Automatic Weather Station (RAWS): An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is re-transmitted to an earth-receiving station for use in the National Fire Danger Rating System.

Resources: 1) Personnel, equipment, services and supplies available, or potentially available, for assignment to incidents. 2) The natural resources of an area, such as timber, crass, watershed values, recreation values, and wildlife habitat.

Resource Management Plan (RMP): A document prepared by field office staff with public participation and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

Resource Order: An order placed for firefighting or support resources.

Retardant: A substance or chemical agent which reduced the flammability of combustibles.

Run (of a fire): The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

Running: A rapidly spreading surface fire with a well-defined head.

Safety Zone: An area cleared of flammable materials used for escape in the event the line is outflanked or

in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of a blowup in the vicinity.

Scratch Line: An unfinished preliminary fire line hastily established or built as an emergency measure to check the spread of fire.

Severity Funding: Funds provided to increase wildland fire suppression response capability necessitated by abnormal weather patterns, extended drought, or other events causing abnormal increase in the fire potential and/or danger.

Single Resource: An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

Size-up: To evaluate a fire to determine a course of action for fire suppression.

Slash: Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps and broken understory trees or brush.

Sling Load: Any cargo carried beneath a helicopter and attached by a lead line and swivel.

Slop-over: A fire edge that crosses a control line or natural barrier intended to contain the fire.

Smokejumper: A firefighter who travels to fires by aircraft and parachute.

Smoke Management: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

Smoldering Fire: A fire burning without flame and barely spreading.

Snag: A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

Spark Arrester: A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

Spot Fire: A fire ignited outside the perimeter of the main fire by flying sparks or embers.

Spot Weather Forecast: A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

Spotter: In smoke jumping, the person responsible for selecting drop targets and supervising all aspects of dropping smokejumpers.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Staging Area: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

Strategy: The science and art of command as applied to the overall planning and conduct of an incident.

Strike Team: Specified combinations of the same kind and type of resources, with common communications, and a leader.

Strike Team Leader: Person responsible to a division/group supervisor for performing tactical assignments given to the strike team.

Structure Fire: Fire originating in and burning any part or all of any building, shelter, or other structure.

Suppressant: An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when direction applied to burning fuels.

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

Surface Fuels: Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.

Swamper: (1) A worker who assists fallers and/or sawyers by clearing away brush, limbs and small trees. Carries fuel, oil and tools and watches for dangerous situations. (2) A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire.

Tactics: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

Temporary Flight Restrictions (TFR): A restriction requested by an agency and put into effect by the Federal Aviation Administration in the vicinity of an incident which restricts the operation of nonessential aircraft in the airspace around that incident.

Terra Torch ®: Device for throwing a stream of flaming liquid, used to facilitate rapid ignition during burn out operations on a wildland fire or during a prescribed fire operation.

Test Fire: A small fire ignited within the planned burn unit to determine the characteristic of the prescribed fire, such as fire behavior, detection performance and control measures.

Time lag: Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four time lag periods.

Torching: The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

Two-way Radio: Radio equipment with transmitters in mobile units on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.

Type: The capability of a firefighting resource in comparison to another type. Type 1 usually means a greater capability due to power, size, or capacity.

Uncontrolled Fire: Any fire which threatens to destroy life, property, or natural resources, and

Underburn: A fire that consumes surface fuels but not trees or shrubs. (See Surface Fuels.)

Vectors: Directions of fire spread as related to rate of spread calculations (in degrees from upslope).

Volunteer Fire Department (VFD): A fire department of which some or all members are unpaid.

Water Tender: A ground vehicle capable of transporting specified quantities of water.

Weather Information and Management System (WIMS): An interactive computer system designed to accommodate the weather information needs of all federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).

Wet Line: A line of water, or water and chemical retardant, sprayed along the ground, that serves as a temporary control line from which to ignite or stop a low-intensity fire.

Wildland Fire: Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Implementation Plan (WFIP): A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

Wildland Fire Situation Analysis (WFSA): A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions.

Wildland Fire Use: The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

Wildland Urban Interface: The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Wind Vectors: Wind directions used to calculate fire behavior.

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