Ukiah Electric Utility

WILDFIRE MITIGATION PLAN

December 4, 2019
Revision 1 - June 17, 2020
Revision 2 – December 16, 2020
Revision 3 – June 15, 2022

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1. OVERVIEW

A. POLICY STATEMENT

Ukiah Electric Utility has been operating its electric system for over one-hundred years. Public and employee safety is paramount in the operation, construction and maintenance of the electric system. Given recent, catastrophic wildfires in California, the state passed Senate Bill (SB) 901 in September 2018. The law requires utilities to prepare wildfire mitigation measures if the utility's overhead electrical lines and equipment are located in an area that has a significant risk of wildfire resulting from those electrical lines and equipment. The law requires the wildfire mitigation measures to incorporate specific information and procedures and requires the local publicly owned electric utility, before January 1, 2020, and annually thereafter, to prepare a wildfire mitigation plan. Portions of Ukiah Electric Utility's (UEU) electrical infrastructure is located in and adjacent to California Public Utilities Commission (CPUC) designated Tier 2 wildfire threat areas.

UEU's overarching goal is to provide safe, reliable, and economic electric service to its local community. In order to meet this goal, UEU constructs, maintains, and operates its electrical lines and equipment in a manner that minimizes the risk of catastrophic wildfire posed by its electrical lines and equipment.

B. PURPOSE OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan (WMP) describes the range of activities that UEU is taking or considering, to mitigate the threat of power-line ignited wildfires, including its various programs, policies, and procedures. This plan complies with the requirements of Public Utilities Code section 8387 for publicly owned electric utilities to prepare a wildfire mitigation plan by January 1, 2020, and annually thereafter. The Plan will be iterative, promote continuous improvement year-over-year, and represent best efforts to implement industry best practices in a prudent and reasonable manner.

UEU is a department within the City of Ukiah. For wildfire prevention and response, UEU is subordinate to the Ukiah Valley Fire Authority (UVFA) and the City of Ukiah Police Department (UPD).

The City of Ukiah adopted an Emergency Operations Plan (EOP) in 2021 and the Building Community Preparedness and Resilience Program in 2019. The UEU Wildfire Mitigation Plan supports the aspirational goals of these plans in the area of Wildland Fire. The objectives of the Plans specifically supported by this UEU Wildfire Mitigation Plan are as follows:

1. Educate the public about wildland fire dangers and the steps that can be taken to prevent or minimize their effects.

2. Maintain Emergency Operations Center for coordination of information and resources.

3. Reduce the potential for destructive actions of the fire should ignition occur, utilizing fire pre-plans, ensuring a properly trained, staffed, and equipped emergency response capability, and timely response to prevent the spread of the fire, minimizing risks to humans and property.

4. Ensure that adequate resources are available to plan for incidents that may occur in the high fire hazard severity zones within the City of Ukiah.

C. ORGANIZATION OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan includes the following elements:

Section 2 - Objectives of the Plan;
Section 3 - Roles and responsibilities for carrying out the Plan;
Section 4 - Identification of key wildfire risks and risk drivers;
Section 5 - Description of wildfire prevention, mitigation, and response strategies and programs;
Section 6 - Community outreach and education;
Section 7 - Restoration of service following a wildfire;
Section 8 - Metrics for evaluating the Performance of the WMP and identifying areas for improvement;
Section 9 - Independent audit of the Plan.

D. DEFINITIONS AND ACRONYMNS

a. COU or City – City of Ukiah
b. CPUC - California Public Utilities Commission is a regulatory agency that regulates privately owned public utilities in California.
c. ICS – Incident Command System is a standardized approach to the command, control and coordination of emergency response.
d. IR – Infrared technology that uses thermography to recognize hot spots in electrical equipment.
e. EOP – Emergency Operations Plan is a City Plan, formerly known as the Multi Hazard Emergency Response Plan that establishes communication, facilitates collaboration and ensures compliance with local, state and federal emergency management agencies.
f. LIDAR – Light detection and ranging is a remote sensing technology that uses light in the form of a pulsed laser to measure distances.
g. MTA – Mendocino Transit Authority
h. OES – Mendocino County Sheriff's Office of Emergency Services
i. SCADA – Supervisory Control and Data Acquisition is a computer system for gathering and analyzing real time data.
j. UEU – Ukiah Electric Utility.
k. UPD – Ukiah Police Department.
l. UVFA – Ukiah Valley Fire Authority.
m. WMP – Wildfire Mitigation Plan refers to this plan as ordered by Senate Bill 901.

2. OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

A. MINIMIZING SOURCES OF IGNITION

The primary goal of this WMP is to minimize the probability that UEU's transmission and distribution system may be the origin or contributing source for the ignition of a fire as well as to protect the system from wildfire damage.

UEU is in the process of evaluating prudent and cost-effective improvements to its physical assets, operations, and training to help meet this objective. UEU will implement these changes consistent with this WMP as staffing and budget allows.

B. RESILIENCY OF THE ELECTRIC GRID

The secondary goal of this WMP is to improve the resiliency of the electric grid. As part of the development and on-going implementation of this plan, UEU will assess new industry practices and technologies that will reduce the likelihood of an interruption (frequency) in service and improve the restoration of service.

Other resiliency efforts include mitigating fire fuels in areas that are a threat to our facilities and equipment along with reducing the chance that lives or property will be lost to wildfire. Additionally, improved fire coordination will improve resiliency and help avoid the need for public safety power shut off protocols during high fire threat weather. Fire fuels reduction and improved fire response will be addressed in the UEU Wildfire Prevention Program.

C. WILDFIRE PREVENTION STRATEGIES & PROGRAMS

1. Strategies

The following strategies are part of this Plan and described in more detail in Section 5.

- VEGETATION MANAGEMENT
  These strategies help to control vegetation near to UEU overhead transmission and distribution lines so they better adhere to clearance specifications. They also include fire fuels mitigation and other work in order to prevent our system from causing a fire and to protect our system from fire.

- ENHANCED INSPECTIONS
  These strategies consist of assessment and diagnostic activities as well as associated corrective actions. The practices in this category aim to ensure all infrastructure is in working condition and vegetation adheres to defined minimum distance specifications.

- SITUATIONAL AWARENESS
  These strategies consist of methods to improve system visualization and awareness of environmental conditions. The practices in this category aim to provide tools to improve the other components of the plan.

- OPERATIONAL PRACTICES
  These strategies consist of proactive, day-to-day actions taken to mitigate wildfire risks. The practices in this category aim to ensure UEU is prepared in high-risk situations, such as dry, windy environmental conditions.

- SYSTEM HARDENING
  These strategies consist of system, equipment, and structure design and technical upgrades. The practices in this category aim to improve system hardening to prevent contact between infrastructure and fuel sources, such as vegetation and animals. It also includes making the system more resilient to wildfire and other disasters.

- PUBLIC SAFETY AND NOTIFICATION
  These strategies will focus on ways to engage the community as partners in preventing and identifying wildfire risk. They include improving outage notification and other items in the interest of public safety.

- RECLOSING AND DEENERGIZATION
  These strategies include discussion of de-energization as well as circuit reclosing.

- WILDFIRE RESPONSE & RECOVERY
  These strategies consist of procedures to react to wildfire or other related emergency conditions. The practices aim to formalize protocols for these situations, so UEU can provide an adequate response and recovery.

2. Programs

The strategies above will, as budgetary constraints and staffing permit, be developed and implemented through the following programs that are either active or are being created and coordinated as part of this WMP and are described in more detail in Section 5.

- UEU Wildfire Prevention Program - Appendix A

- UEU Distribution Capital Improvement Program

- COU Emergency Response Plan (EOP)

UEU Wildfire Prevention Strategies and Program Matrix

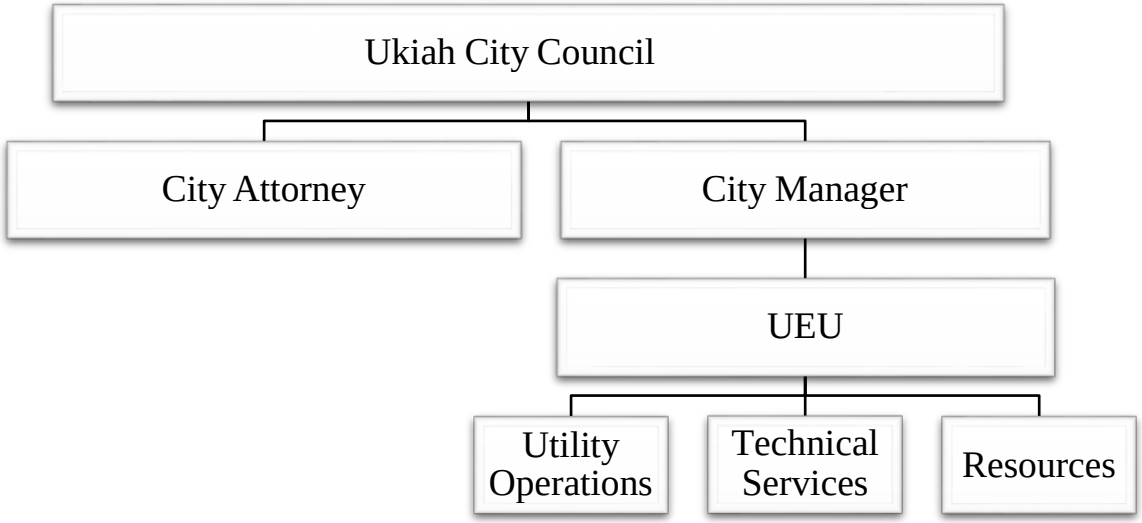
	Wildfire Prevention Plan	5-year Capital Improvement Plan	COU EOP
Vegetation Management	x		
Enhanced Inspections	x	x	
Situational Awareness		x	x
Operational Practices		x	x
System Hardening		x	
Public Safety & Notification	x		x
Reclosing & De-energization	x	x	x
Wildfire Response & Recovery	x		x

D. IDENTIFYING UNNECESSARY OR INEFFECTIVE ACTIONS

The final goal for this WMP is to measure the effectiveness of specific wildfire mitigation strategies. UEU will assess the merits of modifications. This plan will also help determine if more cost-effective measures would produce the same or improved results.

3. ROLES AND RESPONSIBILITIES

A. UEU GOVERNANCE STRUCTURE



This WMP is subject to the direct supervision by the Ukiah City Council (Council), and will be implemented by the UEU Director ("Director"). The City of Ukiah, a general law city, has a City Council - manager form of governance. The City Council is the Utility Commission for UEU.

B. ROLES AND RESPONSIBILITIES FOR PLAN EXECUTION

Executive Level Responsibility: The Director will oversee implementation and ensure that staff follow procedures and protocols. The Assistant Director will manage the execution of performance monitoring. This includes providing guidance to staff and leading the development of reports. The staff responsible for each metric area will aggregate relevant metrics at the direction of the Assistant Director.

1. Program Owners: The table below outlines the current assignments and are subject to change.

Program	Owner
UEU Wildfire Prevention Program	COU Fire Marshal's Office and UEU Director
UEU Distribution Capital Improvement Program	UEU Director
COU EOP	COU Office of Emergency Management Coordinator

2. Strategy Leads: The table below outlines the proposed assignments and are subject to change.

Strategy	Lead Personnel	Key Technical Personnel
Vegetation Management	Electric Superintendent	Senior Electrical Engineer
Enhanced Inspections	Electric Superintendent Electrical Technicians	Senior Electrical Engineer Electric Superintendent Foreman Electrical Technicians
Situational Awareness	EU Director	Senior Electrical Engineer Electric Superintendent
Operational Practices	Senior Electrical Engineer	Electric Superintendent
System Hardening	Senior Electrical Engineer	Senior Electrical Engineer Electric Superintendent
Public Safety & Notification	EU Director	EU Program Coordinator Management Analyst
Reclosing & De-energization	Senior Electrical Engineer	Senior Electrical Engineer Electric Superintendent Foreman
Wildfire Response & Recovery	Electric Superintendent	COU Fire Chief Senior Electrical Engineer Line Foremen

C. COORDINATION WITH JOINT POLE INFRASTRUCTURE PROVIDERS

For joint pole fire prevention, UEU takes the lead role and informs the subordinate providers when UEU identifies any compromised poles due to third-party attachments. UEU coordinates with communication and electric infrastructure providers throughout the year when work on the system effects their equipment and identifies safety issues. If UEU staff discovers a facility in need of repair owned by an entity, UEU may issue a notice to repair to the facility owner and work to ensure that necessary repairs are promptly completed. During emergencies, UEU assumes the primary role and informs providers when there is damage or risk to their equipment.

D. COORDINATION WITH CITY OF UKIAH DEPARTMENTS

Ukiah Valley Fire Authority

The Ukiah Valley Fire Authority is the lead agency in cooperation with UEU for implementation of the UEU Wildfire Prevention & Improved communication Program. UVFA is the City's lead for emergency operations and directs UEU regarding public safety priorities.

Ukiah Police Department
UEU coordinates with UPD and is subordinate for emergency and public safety issues. UEU will work closely with the UPD for situational awareness and other public safety issues related to this WMP.

Ukiah Public Works Department
UEU is investigating opportunities to harden the electrical system and increase survivability for traffic control, water and wastewater infrastructures. During wildfires and other public safety events, UEU closely will work with Public Works to ensure water/wastewater facilities and other critical infrastructure have power. These facilities are not only critical for defending the City from wildfire, but are essential for safe repopulation following any disaster. Additionally, the Mendocino Transit Authority (MTA) is a critical operation for evacuations during emergencies and will be part of planning and operational review process.

Ukiah Community Services Department
UEU is partnered with the COU Community Services Department as part of the UEU Wildfire Prevention Program for fire fuels mitigation as well as other programs and projects.

Other COU Departments and Administration
UEU, as a member of the City of Ukiah Team, will work to ensure information regarding warnings, alerts, and widespread outages are shared with other departments. The City's Communications Team will be an integral part of getting information out to the media and public and will be coordinated with either and/or both the City's Emergency Management Coordinator as well as any Incident Command in place.

E. CAL OES STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a utility department of the COU located in Mendocino County, UEU may participate in various emergency operation centers depending on the situation and lead agency. As a local governmental agency, COU has planning, communication, and coordination obligations pursuant to the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations, adopted in accordance with Government Code section 8607. The SEMS Regulations specify roles, responsibilities, and structures of communications at five different levels: field response, local government, operational area, regional, and state. The COU maintains a EOP that includes UEU. The COU works closely with Mendocino County to coordinate emergency operations, including the Mendocino County Sherriff's Office of Emergency Services (OES).

The Mendocino County Sheriff's Office of Emergency Services (OES) coordinates with Federal, State, and local agencies to prepare, respond, and recover from emergencies and natural disasters.

- OES is responsible for maintaining and updating the County Multi Hazard Mitigation Plan, which is an all hazards plan for Mendocino County.

- OES also coordinates and maintains the county Emergency Operation Center (EOC). The EOC can be used during a major incident to carry out the principles of emergency preparedness and emergency management between multiple agencies.

- The Office of Emergency Services provides technical advice to the Sheriff on local emergency declarations and his direct link to the California Governor's Office of Emergency Services during disasters or any other critical incident. In the event of a major incident OES can work with CAL OES to obtain a Presidential proclamation.

- OES works closely with other local agencies assisting them in preparing emergency plans and in disaster training. OES works as a point of contact for local agencies to the California Governor's Office of Emergency Services.

Pursuant to this structure, UEU coordinates and communicates with the relevant local, state and Federal agencies. This includes participating in City & County EOC exercises as well as providing annual safety meetings. Pursuant to the Emergency Operations Program, an UEU EOC Liaison will participate in the City or County EOC using the standardized Incident Command System (ICS).

4. WILDFIRE RISK AND RISK DRIVERS

A. BACKGROUND

Ukiah typically experiences cool, wet winters and hot, dry summers creating extreme fire weather conditions especially from May through October. Daily temperatures during fire seasons (June-October) can be above 90° Fahrenheit with a relative humidity of less than 30%. Typical vegetation within UEU's service territory include various types of trees including redwood, oak, pine and fir trees as well as annual grasses. Areas of dense brush and annual grasses are present, and result in high fire danger and significant fires especially during wind events. These conditions combine to create extreme fire danger. The risk of catastrophic wildfire in the area increases as the recent trend of drought conditions continue.

B. ENTERPRISE SAFETY AND WILDFIRE RISK METHODOLOGY

In order to ascertain the level of risk to our system, staff looked at our historic outages caused by animals, birds, vegetation, car-pole accidents, and overhead equipment failures as a way to assess wildfire risk. These events were selected because such events can create circumstances such as wire down or sparking that can result in an ignition source. Additionally, UEU will review historic fire records to see if there are other areas of risk that should be addressed.

C. SYSTEM AND OPERATIONAL RISK

UEU's designs and constructs its electric facilities to meet or exceed the relevant federal, state, or industry standards. UEU uses the CPUC General Order (GO) 95 as a key industry standard for design and construction standards for overhead electrical facilities and, as such, meets or exceeds all applicable standards in GO 95. Additionally, UEU monitors and follows, as appropriate, the National Electric Safety Code.

Risk drivers associated with design, construction, operations, and maintenance, within our 4.3 square mile service territory include CPUC Tier 2 high fire threat areas that account for approximately 10% of UEU's facilities.

D. GEOGRAPHICAL & CLIMATE RISK

Within UEU's service territory and the surrounding areas, the primary risk drivers associated with geography and climate for wildfire are the following:

a) Extended drought;
b) Vegetation type;
c) Vegetation density (especially the West side)
d) Weather;
e) High winds;
f) Terrain;
g) Low humidity;
h) Changing weather patterns
i) Community at risk
j) Fire history

E. CPUC HIGH FIRE THREAT DISTRICTS

UEU will incorporate the California Public Utility Commission's (CPUC) Fire Threat Map (Exhibit A) into its construction, inspection, maintenance, repair, and clearance practices, where applicable.

UEU reviews the CPUC Fire Threat Map annually to identify needed adjustments to hazard threat levels due to changes in urban development and/or vegetation conditions. When adjustments are identified, UEU collaborates with Ukiah Valley Fire Authority and City Departments and CAL FIRE to update the CPUC Fire Threat Map data and UEU's Fire Threat Map accordingly. The UEU's Fire Threat Map depicts the highest fire threat known.

5. WILDFIRE PREVENTION STRATEGY AND PROGRAMS

A. STRATEGY – VEGETATION MANAGEMENT

UEU meets or exceeds the minimum industry standard vegetation management practices. For both transmission and distribution level facilities, UEU meets: (1) GO 95 Rule 35; and (2) the GO 95 Appendix E Guidelines to Rule 35 (See table below). These standards require significantly increased clearances in the High Fire Threat areas. In identified high risk areas that boarder or are close to Tier 2 wildfire threat areas, the radial clearance of branches or foliage from bare conductors will be increased to 12'. The recommended time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities. UEU has developed a tree inventory to catalog existing trees and will use specific knowledge of growing conditions and tree species to determine the appropriate time of trim clearance in each circumstance. UEU performs this work with arborists and a contract for tree trimming services as needed. Additionally, vegetation clearing is completed at the base of poles to minimize potential sources of spread.

GO 95
Guidelines to Rule 35

The radial clearances shown below are recommended minimum clearances that should be established, at time of trimming, between the vegetation and the energized conductors and associated live parts where practicable. Reasonable vegetation management practices may make it advantageous for the purposes of public safety or service reliability to obtain greater clearances than those listed below to ensure compliance until the next scheduled maintenance. Each utility may determine and apply additional appropriate clearances beyond clearances listed below, which take into consideration various factors, including: line operating voltage, length of span, line sag, planned maintenance cycles, location of vegetation within the span, species type, experience with particular species, vegetation growth rate and characteristics, vegetation management standards and best practices, local climate, elevation, fire risk, and vegetation trimming requirements that are applicable to State Responsibility Area lands pursuant to Public Resource Code Sections 4102 and 4293.

Voltage of Lines	**Radial Clearance of Bare Line Conductors From Tree Branches or Foliage**
Radial clearances for any conductor of a line operating at 2,400 or more volts, but less than 72,000 volts	4 feet
Radial clearances for any conductor of a line operating at 72,000 or more volts, but less than 110,000 volts	6 feet
Radial clearances for any conductor of a line operating at 110,000 or more volts, but less than 300,000 volts	10 feet
Radial clearances for any conductor of a line operating at 300,000 or more volts	15 feet

In addition, UEU Wildfire Prevention Program (Appendix A)will include the following enhancements

- No vertical coverage allowed above UEU transmission lines;
- Provide vegetation control in a 30-foot perimeter around the Power Plant and substations conductors.
- For public land, provide easement clear from ground to sky adjacent to UEU facilities;
- Work with adjacent customers to get approval for wider clearance on their land. This could include tall, diseased, leaning trees that appear to be at risk of falling into our lines.
- Perform additional vegetation removal for fuels reduction in the easement on an annual rotation to ensure CPUC recommended clearances are maintained based on the fire hazard zone where each transmission and distribution line is located;
- Consider undergrounding areas where heritage trees are prevalent.

B. STRATEGY - ENHANCED INSPECTIONS

Inspection plays an important role in wildfire prevention. UEU currently follows the inspection cycles outlined in California General Order 95 and General Order 128. UEU's current inspection activities incorporate several components including annual infrared (IR) patrol of overhead lines and substations, inspection of wood poles, 115 KV lines and GIS data collection and sharing.

Some of the enhancements UEU has implemented the use of unmanned aerial vehicles with IR capability. The frequency of inspections will be increased in the high fire threat areas and when storms or other disasters have significantly impacted our system.

C. STRATEGY - SITUATIONAL AWARENESS

Presently UEU is evaluating to upgrade an automated control management system that can be used during outages. UEU is also investigating advanced metering infrastructure (AMI) technology that has the ability to track customer outages as part of an Outage management System.

Other efforts will include the following technology in collaboration with Ukiah PD and Ukiah Valley Fire Authority.:

- Use unmanned aerial vehicles during high fire threat days for early detection, infrared inspection of hard to reach areas, and other uses in the interest of public safety;
- Communication system upgrades for wildfire and disaster response and recovery;

D. STRATEGY - OPERATIONAL PRACTICES

UEU will operate the system in a manner that will minimize potential wildfire risks including taking all reasonable and practicable actions to minimize the risk of a catastrophic wildfire caused by UEU electric facilities. UEU will take corrective action for deficiencies when the staff witnesses or is notified of improperly install or maintained fire protection measures. In addition to those general principles, several new operational practices will help reduce the risk of wildfire

and improve the response time in the event of a fire including:

- During high wildfire, threat periods (red flag warnings) perform only essential work and light work that can be completed while performing observations in areas of concern. Staff may be placed at Orchard substation and Mendocino Hydroelectric power plant with an electrical technician or lineman, posting linemen in various parts of the city where the fire danger is higher, and having other field personnel patrolling the city. All personnel will directly report to Fire/Police any hazardous observations. All available UEU Staff placed on standby.

- Collect and maintain wildfire and system data necessary for the implementation and evaluation of this Wildfire Mitigation Plan.

E. STRATEGY - SYSTEM HARDENING

UEU's electric facilities are designed, constructed, and maintained to meet or exceed the relevant federal, state, or industry standard. UEU treats CPUC General Order (GO) 95 as a key industry standard for design and construction standards for overhead electrical facilities. UEU meets or exceeds all standards in GO 95. Additionally, UEU monitors and follows, as appropriate, the National Electric Safety Code. In addition to standards, UEU develops a 5-year capital improvement plan that is considering some or all of the following:

- Addition of remote-controlled field reclosers possibly with arc detection technology;
- Clearing poles with operating devices of flammable vegetation around them with a radius of 12'. Perform this for every wood pole with operating devices in the system for resiliency;
- Provide or clear additional access paths along power line easements and to ensure access and ability to perform maintenance.
- As 115KV transmission poles reach end of useful life for Tier 2 areas, replace with steel poles in kind.
- Engineering – Revise construction standards to implement arc suppression components, raptor framing, squirrel guards, tree wire, lightening arresters, and arc suppression fusing.
- Create design standards for new equipment for remote controlled reclosers and implement into the SCADA system.
- Convert overhead lines to underground as feasible and economic;
- Alternative Technologies- UEU will consider the feasibility of implementing alternative technologies, such as wire-break sensing and arc detection technology, as they become available and cost-effective.
- Replacement of overhead fuses with current limiting, non-arcing models in Tier 2 areas.

F. STRATEGY - PUBLIC SAFETY AND NOTIFICATION

The following is part of this WMP is to ensure a high level of communication with the community during high fire threat periods and disasters.

- Coordinate with UVFA and UPD through the City's EOC during emergencies or large

scale outages;

- Utilize communications protocol with County EOC and/or Health and Human Services for notifications to vulnerable groups by utilizing available resources such as reverse 911, Nixle and other City and County wide notification systems;
- Actively update social media using the COU Communications Team.

G. STRATEGY - RECLOSING AND DEENERGIZATION

Staff is evaluating and designing changes to our protection system so that during fire season circuits that are faulted do not attempt to reclose. UEU is currently in the process of designing and installing reclosers with radio communication to allow for remotely changing the reclose parameters. Currently three recloser locations are planned. **We will continue to shut off power when directed to by Ukiah Valley Fire, Police, Cal Fire, or other emergency responding agencies.** UEU will not preemptively shut off power during high fire threat periods for the following reasons:

- Our service territory is only 4.3 square miles and relatively compact and visible with proper technology;
- Turning off the power could put the community at higher risk to wildfire as it could impact water supplies and also create abnormal human activity that could increase opportunity for fire;
- We plan to have real-time information from staff located in areas identified as at risk of being subject to extreme weather conditions;
- We plan to use system hardening, situational awareness, vegetation management and the other strategies to avoid shutting off power.

H. STRATEGY - WILDFIRE RESPONSE & RECOVERY

- During a high fire threat event, stage fire protection equipment in a ready status and the COU EOC on standby;
- Staff critical assets for coverage and necessary shift changes during fire events;
- Wildfire Response: Execute the City's EOP
- The City of Ukiah Electric Utility is a member of the California Utility Emergency Association, which plays a key role in ensuring communications between utilities during emergencies including mutual aid. UEU also participate in the Western Energy Institute's Western Region Mutual Assistance Agreement, which is a mutual assistance agreement covering utilities across a number of western states.

I. PROGRAM – UEU WILDFIRE PREVENTION PROGRAM Appendix A

J. PROGRAM – UEU Capital Improvement Plan

K. PROGRAM – COU EMERGENCY OPERATIONS PLAN

6. COMMUNITY OUTREACH AND EDUCATION

COU, UVFA, UPD and UEU will maintain a proactive outreach and education strategy to create public awareness of fire threats, fire prevention, and available support during a wildfire or large power outages. Prior to an emergency, communication will include regular messages related to wildfire prevention, such as right-of-way management, tree trimming, line inspection, or other relevant topics. Methods of communication will include newsletters (Power Line Newsletter), website updates, social media posts, and public service announcements.

7. RESTORATION OF SERVICE

In the event of a wildfire or other emergency event, UEU will staff up to coordinate activities to restore service. UEU will restore power, following an event, in cooperation with UVFA, UPD, and COU Departments.

UEU management will oversee restoration and response activities. In the event that additional staff is needed, UEU may leverage mutual aid agencies, other City of Ukiah staff, and local aid organizations. The utility may also engage contractors on an as-needed basis.

The following describes the steps typically taken to begin the restoration process:

Assessment. UEU crews must patrol each line segment to determine the extent of damage that has occurred. The patrol involves assessing equipment access issues, any cleanup/debris removal issues and determining personal protective equipment requirements for the crews. UEU works with the local agency in charge of the fire to access impacted areas as soon as the area is deemed safe by fire officials.

Planning. After initial assessment, UEU supervisors, managers and engineers meet to plan the needed work. The team will work with system operations to prioritize the restoration efforts, targeting the circuits that serve the most critical infrastructure needs.

Mobilize. Based on the size and complexity of the rebuild/restoration efforts, UEU will coordinate the crews and material needs internally if possible. Mutual aid and contractors may be used on an "as needed" basis to provide additional support. Though UEU maintains a material vendor list and has contracts it can draw on for labor and material needs; though in instance of widespread catastrophic damage necessary materials and labor could experience shortages that may delay work.

Rebuild. The rebuild effort lead by UEU will commence as soon as areas become safe and accessible. The initial efforts will be to get the lines up and restore the damaged circuits.
Depending on the extent of damage, demolition may be performed concurrently or after crews start installing new facilities. UEU will incorporate new materials and technologies as indicated and available.

Restore. UEU, mutual aid, or contract crews will restore electric services to homes and businesses as soon as possible after the wildfire. Depending on the extent of damages, residential and business customers may have to perform repairs on their facilities and pass inspections by local agencies

prior to having full electric service restored.

In most cases, the following restoration priorities will be followed depending on the specific incident and available resources:

- Public safety in the affected areas;
- Worker safety in performing the restoration work;
- Life-support or critical customers;
- Critical infrastructure Hospitals, Key medical, City & County facilities and accounts; Sheriff's Department and jail, City Police and Fire Departments, other key utility facilities (e.g., water, sewage, gas, citywide communications), Incident Command Site or Base Camp, Incident Evacuation Centers, local broadcast and radio Stations, etc.);
- Major commercial activities/accounts critical to continuity of community services (e.g., gas stations, food stores, home supply stores, repair shops, eateries and lodging facilities, financial institutions, etc.;
- Reduce the total number of customers affected;
- Reduce the length of time customers have been without power.

In directing restoration efforts to best achieve the above priorities, UEU Operations Group personnel will generally find it most efficient to dedicate restoration resources to the following types of facilities in the following order of priority to optimally restore electric services:

- Transmission circuit (115 kV);
- Substation and Mendocino Power Plant Facilities;
- Distribution circuits (600 Amp -12 kV);
- Distribution feeders (200 Amp – 12 kV);
- Distribution transformers;
- Service lines.

8. EVALUATION OF THE PLAN

A. METRICS FOR MEASURING PLAN PERFORMANCE

UEU will track two metrics to measure the performance of this Wildfire Mitigation Plan: (1) number of fire ignitions; and (2) wires down within the service territory. Tracking the number of ignitions will assist in establishing if the strategies UEU is using for mitigation are working to decrease ignitions. Measuring the instances of wire down in the service territory will identify trends that could contribute to potential ignitions.

Metric 1: Fire Ignitions

For purposes of this metric, a fire ignition is defined as follows:

a) UEU facility was associated with the fire;
b) The fire was self-propagating and of a material other than electrical and/or communication facilities;
c) The resulting fire traveled greater than one linear meter from the ignition point; and

d) UEU has knowledge that the fire occurred.

In future Wildfire Mitigation Plans, UEU will provide the number of fires that occurred that were less than 1 acres in size. Any fires greater than 1 acres will be individually described.

UEU has no knowledge of any ignitions that meet the aforementioned criteria.

Metric 2: Wires Down

The second metric is the number of distribution and transmission wires downed within UEU's service territory. For purposes of this metric, a wires down event includes any instance where an electric transmission or primary distribution conductor falls to the ground or onto a foreign object. UEU will divide the wires down metric between wires down inside and outside of the High Fire Threat District. UEU will not normalize this metric by excluding unusual events, such as severe storms. Instead, UEU will supplement this metric with a qualitative description of any such unusual events.

B. IMPACT OF METRICS ON PLAN

In the initial years, UEU anticipates that there will be relatively limited data gathered through these metrics. However, as the data collection history becomes more robust, UEU will be able to identify areas of its operations and service territory that are disproportionately impacted. UEU will then evaluate potential improvements to the plan.

C. MONITORING AND AUDITING THE PLAN

Review of this WMP will occur annually and any lessons learned will have the highest priority for improving steps in the plan, any reference programs, and the process for implementation. UEU will present this plan to the Ukiah City Council on an annual basis. The comprehensiveness of this WMP will be assessed by and independent evaluator with experience in assessing the safe operation of electrical infrastructure. The independent evaluator shall issue a report that will be presented to the Ukiah City Council and be made available on the City's Website.

D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

UEU staff and qualified external stakeholders are encouraged to identify Wildfire Mitigation Plan deficiencies or potential deficiencies to the Electric Utility Director as soon as possible when observed. The Electric Utility Director shall evaluate each reported deficiency and, if the deficiency is determined to be a valid plan deficiency, it shall be entered into a log with the following information:

- Date the deficiency was discovered;
- Description of the deficiency;
- Source identifying the deficiency (e.g., Internal Audit);
- Priority based on deficiency severity;
- Assigned corrective action including the date when it must be completed by;
- Assigned staff responsible for completing the corrective action;

- Date corrective action completed.

The Electric Utility Director will go over the log at regularly scheduled Leadership and Supervisor Meetings.

E. MONITORING THE EFFECTIVENESS OF INSPECTIONS

UEU will perform inspections on either an annual, 5-year or 10-year cycle, based on GO 95 or fire mitigation recommendations. Any areas found that need improvement or appear hazardous will be documented with a work order, given a priority, and the work order will be tracked. When completed the work order will have a close date.

The Electric Utility Director will assign qualified internal staff or engage a third party to review and audit the equipment and line inspection programs called out in the Wildfire Mitigation Plan after the completion of the first six months of the plan. The assigned auditor will:

- Review records for the inspection programs;
- Interview staff performing inspections to assess their knowledge of the inspection programs;
- Monitor staff performing inspection activities;
- Review deficiencies noted in the programs;
- Identify systemic issues or problems;
- Note the timeliness of corrective actions;
- Pick a random sample of some completed corrective actions and verify the effectiveness of the corrective actions; and
- Issue a written report of findings.

The Superintendent of Utility Operations will review the audit findings and assign corrective action as applicable. A copy of the audit report will be routed to the Director.

9. INDEPENDENT AUDITOR

Public Utilities Code section 8387(c) requires UEU to contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of this Wildfire Mitigation Plan.

UEU had the Plan reviewed using Power Engineers in June of 2020 following initial approval of the City Council in November 2019.

The report from the independent evaluator is available on UEU's website. The results of the independent evaluator were presented to the Ukiah City Council at a public meeting on June 17, 2020.

Appendix A
Ukiah Electric Utility Wildfire Prevention Program

1. Introduction
   A. Purpose
      The purpose of the Ukiah Electric Utility (UEU) Wildfire Prevention Program is to establish a framework for the electric utility to conduct an effective, coordinated program to prevent catastrophic impacts to its infrastructure from wildfire. This program is a significant component of the UEU Wildfire Mitigation Plan required by SB901. The Program aims to prevent the start of wildfires from utility operations in and around the City of Ukiah.

   B. Goals & Objectives
      a. Prevent electric utility caused wildfire by identifying hazards that pose a potential threat of ignition.
      b. Prioritize prevention efforts by increasing inspections on overhead lines in tier 2 fire threat areas.
      c. Improve and increase fuel reduction activities conducted during inspections.
      d. Develop enhanced inspection techniques using Infrared Technology.
      e. Develop a drone inspection program for overhead lines.
      f. Create community awareness for utility wildfire prevention.

2. Strategy/Scope of Work
   A. Detailed Corrective Maintenance Program Inspections
      UEU performs a service territory-wide inspection of its electric distribution system on inspection cycles outlined by General Order 95 (GO95) and General Order 128 (GO128). In general, utilities must patrol their systems once a year in urban areas and conduct detailed inspections at a minimum of every three to five years. These inspections help mitigate wildfire risk by providing additional information about the electric distribution system and conditions that could result in ignition.

      UEU will implement a detailed inspection of facilities in the Tier 2 areas of the City on an annual basis, in late spring, and expanding the inspections to include additional fuels reduction and vegetation management in mid-summer. The following resources will be used to accomplish this:
      - UEU-CPUC Fire Threat Map
      - Department Inspection Checklist

      As part of its efforts to make its electric system more resistant to wildfires, UEU designed and actively maintains a vegetation management program aimed at keeping trees and brush clear of power lines. In areas where current GO95 rules are currently met, UEU is evaluating and assessing areas where vegetation management may need to exceed GO95 requirements, eliminating vegetation overhang near power lines and

increasing the clearance distances. In identified high risk areas that boarder or are close to Tier 2 wildfire threat areas, the radial clearance of branches or foliage from bare conductors will be increased to 12'.

UEU's strategy for conducting its vegetation management program focuses on annual, routine inspections. In 2020, UEU began an electronic tree database to project growth and cycles of trimming needed to maintain clearances. The database includes information pertaining to the tree including species, height, diameter, growth rate and clearance. This history provides UEU information on trimming cycles and which trees require work annually.

UEU's vegetation management operations are conducted in compliance with the City's Tree Management Guidelines and the City's Landmark Tree Program Guidelines and Policies. All debris associated with pruning operations are chipped and recycled.

B. UEU piloted a program utilizing infrared (IR) inspections for overhead distribution equipment in 2019 to identify potential issues on electrical equipment and connections that are not identifiable during visual inspections. These issues could potentially lead to wire down or result in ignition sources on the system. The program proved to be extremely successful identifying several instances that would have resulted in significant outage time and lead the Utility to extend the inspections to include underground facilities. Due to the success of the IR Pilot, UEU intends to create a formalized program for periodic IR inspections. The program will include the assembly of a thermography team that will be responsible for performing quality checks on equipment and facilities. These inspections will initially be performed annually in the high fire threat areas. Frequency of these inspections will be evaluated to determine if yearly inspections are warranted.

C. UEU has enhanced its existing inspection efforts by implementing and utilizing drones. In spring of 2022, UEU began IR inspections using a drone, providing an up close look at the system infrastructure. This innovative technology is capable of capturing imagery from multiple angles, including above and allows qualified personnel to gain visual perspective that cannot be gained from ground inspections. The images and data obtained by these inspections will be evaluated by engineering staff to assess risk, determine trends and patterns of infractions. Drone technology has the potential to rapidly detect problems before they become a safety issue.

D. UEU will coordinate with the City Manager's office to educate the public on the UEU's wildfire prevention activities. Dissemination of information will be done through a variety of channels such as UEU's quarterly newsletter, Facebook and the City's website.

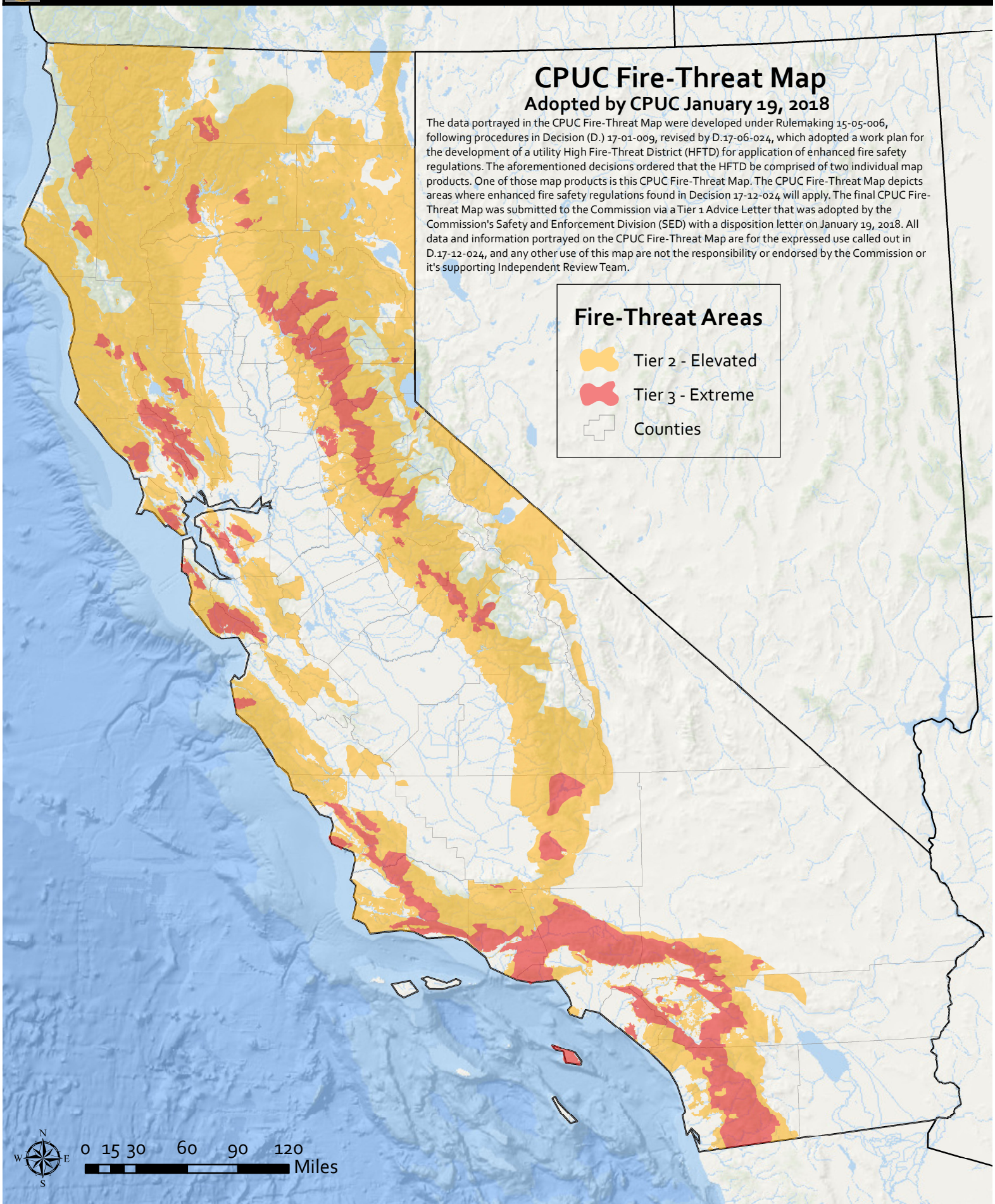
State of California - Public Utilities Commission

Exhibit A - UEU Fire Mitigation Plan

CPUC Fire-Threat Map

Adopted by CPUC January 19, 2018

The data portrayed in the CPUC Fire-Threat Map were developed under Rulemaking 15-05-006, following procedures in Decision (D.) 17-01-009, revised by D.17-06-024, which adopted a work plan for the development of a utility High Fire-Threat District (HFTD) for application of enhanced fire safety regulations. The aforementioned decisions ordered that the HFTD be comprised of two individual map products. One of those map products is this CPUC Fire-Threat Map. The CPUC Fire-Threat Map depicts areas where enhanced fire safety regulations found in Decision 17-12-024 will apply. The final CPUC Fire-Threat Map was submitted to the Commission via a Tier 1 Advice Letter that was adopted by the Commission's Safety and Enforcement Division (SED) with a disposition letter on January 19, 2018. All data and information portrayed on the CPUC Fire-Threat Map are for the expressed use called out in D.17-12-024, and any other use of this map are not the responsibility or endorsed by the Commission or it's supporting Independent Review Team.



For more information about the data and map depicted,
or other matters related to Utility wildfire safety,
please contact Terrie Prosper at Terrie.Prosper@cpuc.ca.gov
Basemap sourced from ESRI (World Oceans).