

KMPUD WILDFIRE MITIGATION PLAN

VERSION 1.2

June 20th, 2022

TABLE OF CONTENTS

I.	Overview	4
A.	Policy Statement	4
B.	Purpose of the Wildfire Mitigation Plan	4
C.	Context setting information	4
D.	Statutory Cross Reference Table	6
E.	Organization of the Wildfire Mitigation Plan	9
F.	KMPUD Overview	9
II.	Objectives of the Wildfire Mitigation Plan	11
A.	Minimizing Sources of Ignition	11
B.	Resiliency of the Electric Grid	11
C.	Identifying Unnecessary or Ineffective Actions	11
III.	Roles and Responsibilities	12
A.	Utility Governance Structure	12
B.	WILDFIRE PREVENTION	13
C.	WILDFIRE RESPONSE AND RECOVERY	13
IV.	Wildfire Risks and Drivers associated with design, construction, operation, and maintenance	15
A.	Particular Risks and Risk Drivers Associated With Topographic and Climatological Risk Factors	15
B.	Enterprisewide Safety Risks	15
C.	Risk assessment methodology	17
D.	Changes to CPUC Fire Threat Map	17
V.	Wildfire Preventative Strategies	18
A.	Design standards	18

B.	Vegetation Management	18
C.	Inspections	20
D.	Reclosing Policy	20
E.	Deenergization.....	20
1.	Impacts to public safety	21
2.	Customer Notification Protocols.....	21
VI.	Restoration of Service.....	22
VII.	Evaluating of the Plan	23
A.	Metrics and Assumptions for Measuring Plan Performance	23
Metric 1:	Fire Ignitions	23
Metric 2:	Wires Down	23
B.	Impact of Metrics on Plan.....	24
C.	Monitoring and Auditing the Plan	24
D.	Identifying and correcting Deficiencies in the Plan	24
E.	Monitoring the effectiveness of inspections	24
VIII.	Independent Auditor	25

I. OVERVIEW

A. POLICY STATEMENT

The overarching goal of Kirkwood Meadows Public Utility District ('KMPUD') is to provide safe, reliable, and economic electric service to its local community. In order to meet this goal, KMPUD 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 describes the activities that KMPUD takes to mitigate the threat of power-line ignited wildfires, including its various programs, policies, and procedures. This plan is subject to direct supervision by the KMPUD Board of Directors and is implemented by the General Manager. 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.

KMPUD coordinates with local fire and safety officials in Alpine, Amador and El Dorado Counties. KMPUD staff reviewed the CPUC's Fire Threat Map to determine the wildfire risk associated with KMPUD's overhead electric lines and equipment. This information was used to develop additional wildfire mitigation measures which will be presented to the KMPUD Board of Directors annually.

C. CONTEXT SETTING INFORMATION

Table 1, below, is an informational table to assist the Staff and Board members in understand the unique characteristics of KMPUD.

Table 1: Context-Setting Information

Utility Name	[POU]	
Service Territory Size	[1.875] square miles	
Owned Assets	<input checked="" type="checkbox"/> Transmission <input checked="" type="checkbox"/> Distribution <input checked="" type="checkbox"/> Generation	
Number of Customers Served	[752] customer accounts	
Population Within Service Territory	[100-6,500] people	
Customer Class Makeup	<i>Number of Accounts</i>	<i>Share of Total Load (MWh)</i>
	[88]% Residential; [1]% Government; [0]% Agricultural; [0]% Small/Medium Business; [11]% Commercial/Industrial	[47]% Residential; [12]% Government; [0]% Agricultural; [0]% Small/Medium Business; [41]% Commercial/Industrial
Service Territory	[0]% Agriculture [10]% Barren/Other [42]% Conifer Forest	

Location/Topography¹	[0]% Conifer Woodland [0]% Desert [0]% Hardwood Forest [0]% Hardwood Woodland [31]% Herbaceous [4]% Shrub [10]% Urban [0]% Water
Service Territory Wildland Urban Interface² (based on total area)	[3]% Wildland Urban Interface; [7]% Wildland Urban Intermix;
Percent of Service Territory in CPUC High Fire Threat Districts (based on total area)	<input type="checkbox"/> Includes maps Tier 2: [0]% Tier 3: [0]%
Prevailing Wind Directions & Speeds by Season	<input type="checkbox"/> Includes maps Winter: Wind blows from the Southwest at 15mph during the day drops off at night. Winter storms can increase wind to 40mph. Spring: Wind blows from the Southwest at 15mph during the day drops off at night. Summer: Wind blows from the Southwest at 15mph during the morning drops off during the day. Fall: Wind blows from the Southwest at 15mph during the day drops off at night.
Miles of Owned Lines Underground and/or Overhead	Overhead Dist.: [0] miles Overhead Trans.: [1.7] miles Underground Dist.: [11.47] miles Underground Trans.: [25.69] miles
	Explanatory Note 1 - Methodology for Measuring "Miles": [e.g., circuit miles, line miles.]
	Explanatory Note 2 – Description of Unique Ownership Circumstances: [____]
	Explanatory Note 3 – Additional Relevant Context: [e.g., percentage of lines located outside service territory]
Percent of Owned Lines in CPUC High Fire Threat Districts	<i>Overhead Distribution Lines as % of Total Distribution System (Inside and Outside Service Territory)</i>
	Tier 2: [0]% Tier 3: [0]%
	<i>Overhead Transmission Lines as % of Total Transmission System (Inside and Outside Service Territory)</i>
	Tier 2: [100]% Tier 3: [0]%
	Explanatory Note 4 – Additional Relevant Context: [e.g., explain any difference from data reported in WMP due to different numerator used for this form]

¹ This data shall be based on the California Department of Forestry and Fire Protection, California Multi-Source Vegetation Layer Map, depicting WHR13 Types (Wildlife Habitat Relationship classes grouped into 13 major land cover types) available at: <https://www.arcgis.com/home/item.html?id=b7ec5d68d8114b1fb2bfbf4665989eb3>.

² This data shall be based on the definitions and maps maintained by the United States Department of Agriculture, as most recently assembled in *The 2010 Wildland-Urban Interface of the Conterminous United States*, available at https://www.fs.fed.us/nrs/pubs/rmap/rmap_nrs8.pdf.

<p>Customers have ever lost service due to an IOU PSPS event?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Customers have ever been notified of a potential loss of service to due to a forecasted IOU PSPS event?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Has previously pre-emptively shut off electricity in response to elevated wildfire risk?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, then provide the following data for calendar year 2020: <i>Number of shut-off events:</i> [____] <i>Customer Accounts that lost service for >10 minutes:</i> [____] <i>For prior response, average duration before service restored:</i> [____]</p>

D. STATUTORY CROSS REFERENCE TABLE

Table 2, below, outlines the Wildfire Mitigation Plan's compliance with Public Utilities Code section 8387.

Table 2 – Outline of PUC 8387 Compliance

PUC § 8387(b)	DESCRIPTION	PLAN SECTION NUMBER
(2) (A)	An accounting of the responsibilities of persons responsible for executing the plan.	III
(2) (B)	The objectives of the wildfire mitigation plan.	II

(2) (C)	A description of the preventative strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.	V
(2) (D)	A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.	VII
(2) (E)	A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.	VII
(2) (F)	Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.	V(D) ; VI
(2) (G)	Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider the need to notify, as a priority, critical first responders, health care facilities and operators of telecommunications infrastructure.	V(E)
(2) (H)	Plans for vegetation management.	V(B)
(2) (I)	Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	V(C)
(2) (J)	List that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited to both of the following:	IV
(2) (J) (i)	Risks and risk drivers associated with design, construction, operation and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.	V(A)
(2) (J) (ii)	Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.	IV(B)
(2) (K)	Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire threat district based on new information or changes to the environment.	IV(D)
(2) (L)	A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.	IV(C)
(2) (M)	A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.	VI

(2) (N)	A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:	VII
(2) (N) (i)	Monitor and audit the implementation of the wildfire mitigation plan.	VII(C)
(2) (N) (ii)	Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.	VII(D)
(2) (N) (iii)	Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors that are carried out under the plan, other applicable statutes or commission rules.	VII(E)

(3)	The local or publicly owned electric utility or electrical cooperative shall present each wildfire mitigation plan in an appropriately noticed public meeting. The local or publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies and interested parties, and shall verify that the WMP complies with all applicable rules, regulations, and standards as appropriate.	VII(D)
(3) (C)	The local publicly owned electric utility or electrical cooperative shall contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet web site of the local publicly owned electric utility or electrical cooperative and shall present the report at a public meeting of the local publicly owned electric utility's or electrical cooperative's governing board.	VIII

E. ORGANIZATION OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan includes the following elements:

- Objectives of the plan
- Roles and responsibilities for carrying out the plan
- Identification of key wildfire risks and risk drivers
- Description of wildfire prevention, mitigation, and response strategies and programs
- Community outreach and education
- Metrics for evaluating the performance of the plan and identifying areas for improvement
- Review and validation of the plan
- Timelines

F. KMPUD OVERVIEW

Established in 1985, the Kirkwood Meadows Public Utility District (KMPUD) was formed as a public municipal corporation providing water and wastewater services under the California Public Utilities Code after detachment from the El Dorado Irrigation District. KMPUD is located in a remote area in the Sierra Nevada mountains within Alpine, Amador, and El Dorado Counties. KMPUD's service area encompasses an area of approximately 1.875 square miles. Kirkwood, California is a resort-oriented community and includes the key facilities of Kirkwood Mountain Resort, one of the top ski mountains in North America.

KMPUD is governed by a five-member Board of Directors elected by registered voters to serve staggered, four-year terms. The Board appoints the General Manager who is responsible for enforcement of KMPUD ordinances, regulations, and master restrictions, as well as providing

executive oversight and management of KMPUD Departments. KMPUD serves approximately 752 customers with water, wastewater, electric, and/or propane service.

The community size and operation of the ski resort create a dynamic demand on utilities and services which differ substantially from summer to winter. Typical of a mountain resort community, peak activity and population occur during snow season. There are approximately 100 full-time residents living in Kirkwood, but seasonal daily population maximums may reach 6,500 persons.

The geographic isolation and small electric demand of Kirkwood resulted in an islanded electric system owned by the ski resort. Until 2014, the community was not connected to the national electric grid, but rather all electricity for the resort and community was generated on-site at a diesel-fired generation facility that was built in the 1970's. In 2011, KMPUD acquired the electric and propane infrastructure and with that acquisition became the sole provider of electric and propane services for the Kirkwood Valley. A new diesel generation facility was constructed to house three Caterpillar and five Volvo generators. During the summer of 2013, KMPUD began construction on a power line that connected the Kirkwood community to the regional electric grid. The construction project included approximately 25 miles of buried line extending from Kirkwood to the south side of Bear River Reservoir in Amador County. From this point, approximately 1.7 miles of overhead transmission line connect the KMPUD system to the PG&E transmission system at KM Green Substation. On November 1, 2014, KMPUD shut down the diesel fired generators at the Powerhouse and connected to the national electric power grid for the first time in Kirkwood history.

Since connecting to the grid, the diesel generation facility serves as a reliable backup in case of any interruption of power supply from the grid. In addition to the diesel generation facility, the KMPUD electric system consists of approximately 1.7 miles of 34.5kV overhead transmission lines, 25.69 miles of 34.5kV underground transmission lines, 11.47 miles of 12kV distribution lines, two substations, 170 transformers, six circuit routing switches and 37 underground vaults.

II. OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

A. MINIMIZING SOURCES OF IGNITION

The primary goal of this Wildfire Mitigation Plan is to minimize the probability that KMPUD's transmission and/or distribution system may be the origin or contributing source for the ignition of a fire. KMPUD has evaluated the prudent and cost-effective improvements to its physical assets, operations, and training that can help to meet this objective. KMPUD has implemented those changes consistent with this evaluation.

B. RESILIENCY OF THE ELECTRIC GRID

The secondary goal of this Wildfire Mitigation Plan is to improve the resiliency of the electric grid. As part of the development of this plan, KMPUD assesses new industry practices and technologies that will reduce the likelihood of an interruption (frequency) in service and improve the restoration (duration) of service.

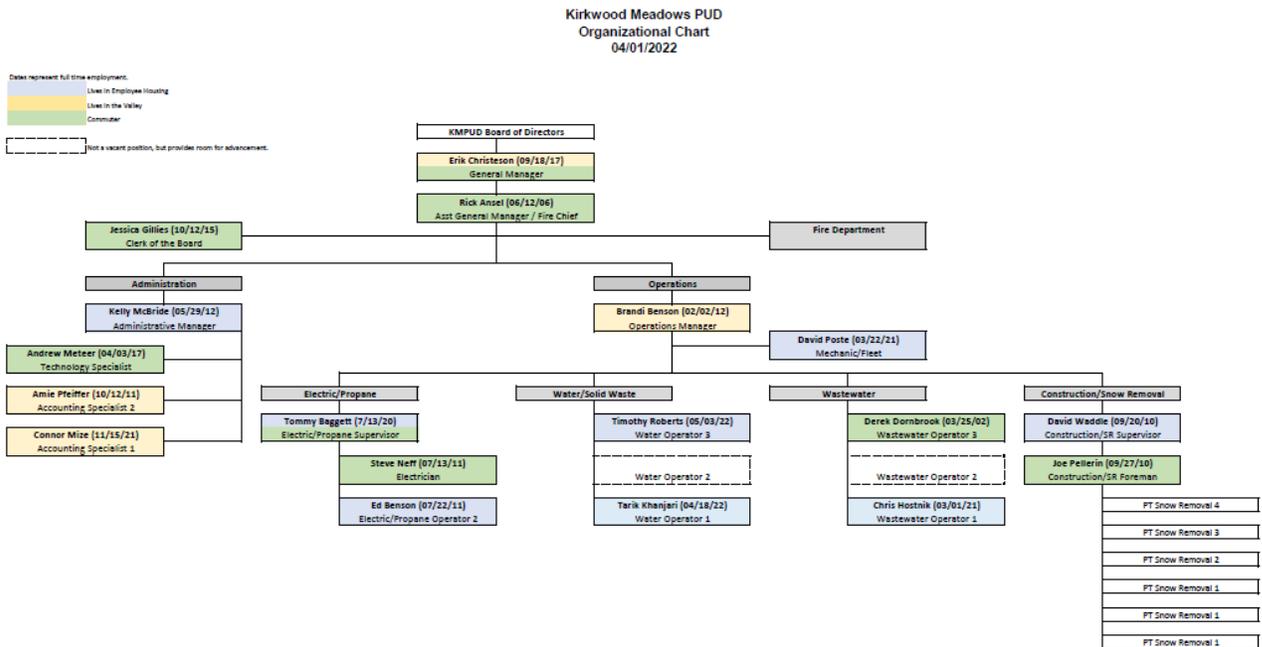
C. IDENTIFYING UNNECESSARY OR INEFFECTIVE ACTIONS

The final goal for this Wildfire Mitigation Plan is to measure the effectiveness of specific wildfire mitigation strategies. Where a particular action, program component, or protocol is determined to be unnecessary or ineffective, KMPUD will assess whether a modification or replacement is merited. This plan will also help determine if more cost-effective measures would produce the same or improved results.

III. ROLES AND RESPONSIBILITIES

A. UTILITY GOVERNANCE STRUCTURE

KMPUD is a Special District governed by a five member, publicly elected Board of Directors. The organizational structure of the KMPUD is shown below.



The Board of Directors makes policy decisions relative to the District and is responsible for approving and adopting the Wildfire Mitigation plan. The General Manager supervises management staff responsible for operations and administration and is responsible for District finances. The Operations Manager supervises the Electric/Propane staff and other Operations staff. The Administrative Manager supervises customer service and financial staff and provides human resources support and administrative assistance to the General Manager, Operations Manager and Board of Directors.

The General Manager is responsible for executing the Wildfire Mitigation plan. Staff will be directed as to their roles and responsibilities. The General Manager is responsible for communicating with public safety, media outlets, public agencies, first responders, local Office of Emergency Services and health agencies during an emergency or planned maintenance outages. The General Manager determines when and how to notify outside agencies in cases of wildfire emergency events.

B. WILDFIRE PREVENTION

KMPUD Operations staff have the following obligations regarding fire prevention:

- Operate system in a manner that will minimize potential wildfire risks.
- Take reasonable and practicable actions to minimize the risk of a catastrophic wildfire that could be caused by KMPUD electric facilities.
- Coordinate with federal, state, and local fire management personnel as necessary or appropriate to implement KMPUD's Wildfire Mitigation Plan.
- Immediately report fires, pursuant to existing KMPUD practices and the requirements of this Wildfire Mitigation Plan.
- Take corrective action when the staff witnesses or is notified that fire protection measures have not been properly installed or maintained.
- Comply with relevant federal, state, and industry standards.
- Monitor wildfire data necessary for the implementation of this Wildfire Mitigation Plan.
- Provide regular training programs for all employees having obligations for implementation of this Wildfire Mitigation Plan.

Table 2, below, identifies the specific staff member and/or department responsible for tracking and implementing the various components of the Wildfire Mitigation Plan.

ACTIVITY	RESPONSIBLE DEPARTMENT/STAFF
Risk Analysis	General Manager
Fire threat assessment in service territory	Operations Manager
Planned de-energization	Electric/Propane Department
Transmission line patrols Detailed line inspections	Electric/Propane Department
Substation visual and detailed inspections Substation infrared inspections	Electric/Propane Department
Vegetation management Line Patrols	Electric/Propane Department

Table 2 – Responsible Department/Staff

C. WILDFIRE RESPONSE AND RECOVERY

KMPUD Electric/Propane staff have the following obligations regarding fire prevention, response and investigation:

- Take all reasonable and practicable actions to prevent fires resulting from KMPUD electric facilities.
- Follow KMPUD protocols during Red Flag Warnings.

IV. WILDFIRE RISKS AND DRIVERS ASSOCIATED WITH DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE

A. PARTICULAR RISKS AND RISK DRIVERS ASSOCIATED WITH TOPOGRAPHIC AND CLIMATOLOGICAL RISK FACTORS

Within KMPUD's service territory and the surrounding areas, the primary risk drivers for wildfire are the following:

- Extended drought
- Vegetation type
- Vegetation density
- Weather
- High winds
- Terrain
- Changing weather patterns (climate change)
- Fire history

B. ENTERPRISEWIDE SAFETY RISKS

Over 95% of KMPUD electric lines are located underground. The underground portion of the system includes all distribution lines. The only KMPUD overhead electric lines, approximately 1.7 miles of 34.5KV transmission facilities, are located near Bear River Reservoir. A statewide fire threat map was adopted by CPUC to delineate the boundaries to identify, evaluate, and potentially adopt stricter fire-safety regulations that apply to overhead power lines, electric equipment, and communications lines located within those boundaries. An overlay of KMPUD's overhead transmission line was created to identify wildfire safety risks.

The transmission line near Bear River Reservoir is in a Tier 2 (elevated risk) area. All other KMPUD transmission facilities are underground and located in Tier 2 or Tier 1 (low risk) areas. All KMPUD distribution facilities are located underground in a Tier 1 (low risk) area. The description of tiered fire threat zones are shown in Table 3, and the overlay over the CPUC fire threat map is shown in Figure 1 below.

Zone Category Description	
Tier 3 Extreme	Wildland areas where exposure to overhead power lines, the availability of water resources, and emergency responder circulation routes affect response times to combat wildland fires.
Tier 2 Elevated	Elevated risk due to vegetation, high voltage regional transmission lines crossing the area, and adjacency to Tier 3 fire threat zones.
Tier 1 Low	Well developed areas, typically with underground high voltage circuitry.

Table 3 - Description of tiered fire threat zones

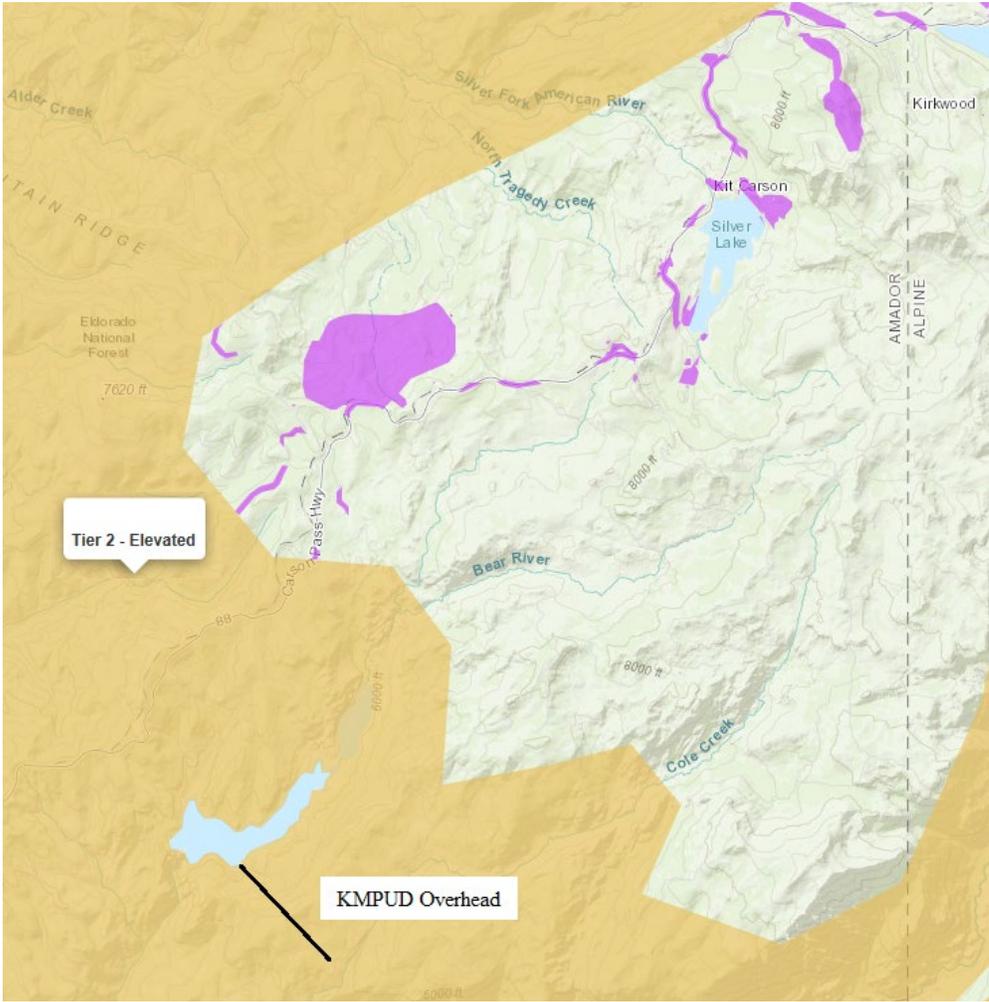


Figure 1 – Overlay KMPUD Overhead Transmission Line

The fourth California Climate Change Assessment has projected that climate change will make forests more susceptible to extreme wildfires. In the future, the Tier 2 area where KMPUD's transmission lines are located may be impacted by drought or greater intensity wildfires.

C. RISK ASSESSMENT METHODOLOGY

KMPUD's risk assessment process allows the General Manager, Operations Manager, key staff and stakeholders to collect information on potential and perceived risks. Relevant local plans, such as the Alpine County Wildfire Risk Mitigation Plan and the Amador County Local Hazard Mitigation Plan were reviewed for additional data.

There is no history of KMPUD equipment starting wildfires. The following table of risks reflecting hypothetical causes of wildfires caused by electrical equipment have been identified:

Risk	Potential Outcome	Potential Consequences
Bare Wire Contact	Wildfire Involving KMPUD Facilities	<ul style="list-style-type: none"> • Injury • Fatalities • Property Damage • Financial Liability • Environmental Impact Due to Running Diesel Generators
Wire Down		
Wire to Wire Contact		
Equipment Failure		

Table 4 – Identified Wildfire Risks

KMPUD assesses the likelihood of each risk and designs and implements best management practices based on this risk assessment.

D. CHANGES TO CPUC FIRE THREAT MAP

Based on KMPUD's knowledge of wildfire events, the existing environment and current information, KMPUD believes that the CPUC map approximately identifies the level of wildfire risks within KMPUD's operational and service territory. Currently KMPUD does not propose any changes to the borders of the High Fire Threat District boundaries as indicated in CPUC's fire threat map (adopted by the CPUC January 19, 2018). KMPUD will monitor CPUC guidance and update the Wildfire Mitigation Plan if changes to High Fire Threat District boundaries impact transmission facilities.

V. WILDFIRE PREVENTATIVE STRATEGIES

KMPUD employs five specific strategies to prevent wildfire:

- Design Standards – KMPUD adopts design standards for infrastructure with the goal of preventing contact between electric infrastructure and fuel sources.
- Vegetation Management – KMPUD employs vegetation management practices to minimize the risk of contact between electric infrastructure and fuel sources.
- Inspections – KMPUD follows the inspections guidelines set forth in CPUC GO 165 and CPUC GO 95, Rule 18.
- Reclosing Policy – KMPUD utilizes a reclosing policy that aims to prevent reclosing of breakers on a faulted circuit.
- De-energization – KMPUD has a policy that allows for de-energization of infrastructure, or Public Safety Power Shutoffs (PSPS), in response to fire-threat conditions.

A. DESIGN STANDARDS

KMPUD design standards require that all distribution lines be installed underground. Underground distribution lines have been the standard since the inception of the electric grid in Kirkwood, and all distribution lines are currently located underground. KMPUD's overhead infrastructure is limited to approximately 1.7 miles of 34.5KV transmission facilities installed in 2014. No expansion of overhead infrastructure is expected. As replacement or upgrade of overhead facilities is needed, design standards will be updated based on current best practices to prevent contact between infrastructure and fuel sources.

B. VEGETATION MANAGEMENT

KMPUD meets or exceeds the minimum industry standard vegetation management practices. For transmission-level facilities, KMPUD complies with NERC FAC-003-4, where applicable. For both transmission and distribution level facilities, KMPUD meets: (1) Public Resources Code section 4292; (2) Public Resources Code section 4293; (3) GO 95 Rule 35; and (4) the GO 95 Appendix E Guidelines to Rule 35. These standards require significantly increased clearances in the High Fire Threat District. The recommended time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities. KMPUD will use specific knowledge of growing conditions and tree species to determine the appropriate time of trim clearance in each circumstance.

GO 95, Rule 35, Table 1

Case	Type of Clearance	Trolley Contact, Feeder and Span Wires, 0-5kv	Supply Conductors and Supply Cables, 750 - 22,500 Volts	Supply Conductors and Supply Cables, 22.5 - 300 kV	Supply Conductors and Supply Cables, 300 - 550 kV (mm)
13	Radial clearance of bare line conductors from tree branches or foliage	18 inches	18 inches	¼ Pin Spacing	½ Pin Spacing
14	Radial clearance of bare line conductors from vegetation in the Fire-Threat District	18 inches	48 inches	48 inches	120 inches

**Appendix E
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	Case 13	Case 14
Radial clearances for any conductor of a line operating at 2,400 or more volts, but less than 72,000 volts	4 feet	12 feet
Radial clearances for any conductor of a line operating at 72,000 or more volts, but less than 110,000 volts	6 feet	20 feet
Radial clearances for any conductor of a line operating at 110,000 or more volts, but less than 300,000 volts	10 feet	30 feet
Radial clearances for any conductor of a line operating at 300,000 or more volts	15 feet	30 feet

Within the High Fire Threat District, KMPUD performs an evaluation of every tree that has the potential to strike overhead facilities on an annual basis. KMPUD performs more frequent and detailed inspections of any such trees, and in cases where “hazard trees” (Dead, Dying, Diseased or leaning) could strike the facilities, KMPUD will work with the land owner to remove the tree or portion of the tree that poses a risk.

C. INSPECTIONS

KMPUD meets or exceeds the minimum inspection requirements provided in CPUC GO 165 and CPUC GO 95, Rule 18. Pursuant to these rules, KMPUD inspects electric facilities in the High Fire Threat District more frequently than the other areas of its service territory. Additionally, KMPUD staff uses their knowledge of the specific environmental and geographical conditions to determine when areas outside of the High Fire Threat District require more frequent inspections.

If KMPUD staff discovers a facility in need of repair that is owned by an entity other than KMPUD, KMPUD will issue a notice to repair to the facility owner and work to ensure that necessary repairs are completed promptly.

KMPUD works to ensure that all inspections to be performed within the High Fire Threat District are completed before the beginning of the historic fire season, [typically September 1]. KMPUD monitors drought conditions and other relevant factors throughout the year to determine if inspections should be completed on a shorter timeframe.

D. RECLOSING POLICY

KMPUD policy does not allow automatic reclosure of breakers on overhead lines during normal operation. KMPUD owns and operates an emergency generation facility that automatically restores system-wide power to the distribution system and all customers within 3 minutes of a transmission outage. The transmission system remains deenergized, and the emergency generation facility remains online until the cause of the outage is investigated and any required transmission line repairs are completed. In the case of a transmission outage during fire-threat conditions, KMPUD staff manually recloses breakers after a visual inspection of the line, which occurs after fire-threat conditions abate.

E. DEENERGIZATION

KMPUD has the authority to preemptively shut off power due to fire-threat conditions; however, this option will only be used in extraordinary circumstances. KMPUD will make a case-by-case decision to shut off power based on the following considerations:

- Red Flag Warnings issued by the National Weather Service for fire weather zones that contain KMPUD overhead circuits
- KMPUD staff assessments of local conditions, including wind speed (sustained and gust), humidity and temperature, fuel moisture, fuel loading and data from weather stations

- Real-time information from staff located in areas identified as at risk of being subject to extreme weather conditions
- Input from local and state fire authorities regarding the potential consequences of wildfires in select locations
- Awareness of mandatory or voluntary evacuation orders in place
- Expected impact of de-energizing circuits on essential services
- Other operational considerations to minimize potential wildfire ignitions, including the blocking of reclosers on the identified circuit(s)
- On-going fire activity throughout KMPUD territory and California
- Ability to notify customers
- Notifications to local governments and public officials
- Potential impacts to communities and customers

In conditions where the fire-threat is limited to KMPUD's overhead transmission lines, KMPUD will de-energize the transmission line and use its emergency generation facility to restore power to the distribution system and all customers. No extended power outage for customers is expected, therefore, no additional public safety impacts are anticipated.

1. IMPACTS TO PUBLIC SAFETY

Pursuant to Public Utilities Code section 8387(b)(2), KMPUD has determined that it is not necessary to describe impacts to public safety in this Wildfire Mitigation Plan because of the unique characteristics of the service territory and operations of KMPUD, including KMPUD's ability to restore power to all customers using the KMPUD emergency generation facility and underground distribution system.

2. CUSTOMER NOTIFICATION PROTOCOLS

KMPUD has a small customer base of only 752 customers. In KMPUD's service territory, stakeholder assets include:

- Cell Towers and telecommunications facilities (Verizon and Volcano)
- Local Volunteer Fire Department (Kirkwood Volunteer Fire Department)
- Water/Wastewater Facilities (KMPUD)

No schools, medical facilities, law enforcement or other critical stakeholder groups are located within the KMPUD service territory.

KMPUD uses an emergency notification system, which is available to all customers, to notify customers of outages or other impacts to fire-threat conditions. Other notification protocols include the use of the KMPUD website (www.kmpud.com) and social media accounts.

VI. RESTORATION OF SERVICE

KMPUD does not have a PSPS operational practice since its emergency generation facility and distribution facilities are not located in an elevated fire-threat area. In the event that fire-threat conditions require the overhead transmission line to be de-energized, the emergency generation facility will be used to provide power to all customers for the duration of the fire-threat condition. Following the shut off of the overhead transmission line due to elevated fire danger, KMPUD staff manually recloses breakers to re-energize the transmission line after a patrol of the line following the end of elevated fire danger conditions. If equipment or transmission lines are damaged in a wildfire, assessment and/or repairs will be completed as needed prior to re-energization.

If an outside emergency management agency requests a power shutdown of the KMPUD distribution system, or if KMPUD elects to de-energize the distribution system due to extreme weather, KMPUD staff will patrol the entire distribution system before the system is re-energized. After the patrol, KMPUD staff manually recloses breakers to restore power to the distribution system. If equipment or distribution lines are damaged in a wildfire, assessment and/or repairs will be completed as needed prior to re-energization. Periodic customer updates of restoration status will be made.

The following steps are followed by KMPUD staff prior to re-energizing electrical equipment or lines de-energized due to fire danger:

1. Patrol – KMPUD crews will visually inspect de-energized equipment and/or lines following the end of elevated fire danger conditions for damage.
2. Repair – If any damage is noted, KMPUD will plan repair work to be completed as soon as the affected areas become safe. Prioritization will be given to the distribution system to ensure that customers receive power as soon as possible.
3. Test – After repairs are completed equipment and lines are energized for testing.
4. Restore – After successful testing power is restored to customers.

VII. EVALUATING OF THE PLAN

A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

KMPUD 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.

METRIC 1: FIRE IGNITIONS

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

- KMPUD facility was associated with the fire
- The fire was self-propagating and of a material other than electrical and/or communication facilities
- The resulting fire traveled greater than one linear meter from the ignition point
- KMPUD has knowledge that the fire occurred

In future Wildfire Mitigation Plans, KMPUD will provide the number of fires that occurred that were less than 10 acres in size. Any fires greater than 10 acres will be individually described.

METRIC 2: WIRES DOWN

The second metric is the number of distribution and transmission wires downed within KMPUD'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 on to a foreign object. KMPUD will divide the wires down metric between wires down inside and outside of the High Fire Threat District.

KMPUD will not normalize this metric by excluding unusual events, such as severe storms. Instead, KMPUD will supplement this metric with a qualitative description of any such unusual events.

KMPUD 2021 Performance Metrics

<u>Metric 1: Fire Ignitions</u>	<u>CY 2021</u>
# of Fire Ignitions in KMPUD Service Area	0
# of wildfires in City Boundaries NOT in KMPUD Service Area (<10 acres)	0
# of wildfires in City boundaries NOT in KMPUD Service Area (>10 acres)	0
<u>Metric 2: Wires Down</u>	
# of "Wires Down" events in KMPUD Service Area	0
# of Red Flag Warnings issued	0

B. IMPACT OF METRICS ON PLAN

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

C. MONITORING AND AUDITING THE PLAN

This Wildfire Mitigation Plan will be presented to the KMPUD Board of Directors on an annual basis. Additionally, a report prepared by a qualified independent evaluator will be presented to the KMPUD Board of Directors.

D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

The KMPUD Wildfire Mitigation Plan will be internally audited for completeness and effectiveness annually in preparation for the presentation to the KMPUD Board of Directors. Additionally, a third-party auditor will review the plan and provide feedback to KMPUD staff and Board of Directors as described in VIII.C. Findings from the above audits will be recorded by KMPUD's Operations Manager and appropriate corrections to the Wildfire Mitigation Plan will be made.

E. MONITORING THE EFFECTIVENESS OF INSPECTIONS

KMPUD utilizes the services of a Registered Professional Forester (RPF) to identify and mark hazard trees. Staff will be present during the annual inspection by the RPF. Results of the RPF's annual inspection will be submitted to the USFS as part of the KMPUD Vegetation Management Plan and permit. In addition, KMPUD Staff performs patrols and inspections referencing GO 165 as a guideline. The purpose of these inspections is to identify system issues and deficiencies. The results of these patrols and the associated corrective actions are recorded. The findings of these patrols together with any trending provided by the metrics tracked in VIII.A of this plan will provide evidence of the effectiveness of the KMPUD Wildfire Mitigation plan.

VIII. INDEPENDENT AUDITOR

Public Utilities Code section 8387(c) requires KMPUD 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. The independent evaluator must issue a report that is posted to KMPUD's website. This report must also be presented to KMPUD Board of Directors at a public meeting.

KMPUD will consult with local government officials and fire personnel when selecting an independent evaluator as required in PUC Section 8387 (c).

The above-referenced evaluator will perform an audit of the KMPUD Wildfire Mitigation Plan annually. The third-party evaluator will be provided the plan and given the opportunity to audit the KMPUD processes as necessary to complete the audit. Following the completion of the audit, the third-party evaluator shall provide a written report of findings which shall be presented to the KMPUD Board of Directors at a public meeting.

All records associated with these audits shall be retained by KMPUD for at least five years.