# KMPUD WILDFIRE MITIGATION PLAN

## VERSION 1.0

*December 13, 2019*

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# 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. ORGANIZATION OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan included 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; and
- Timelines.

# 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 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.

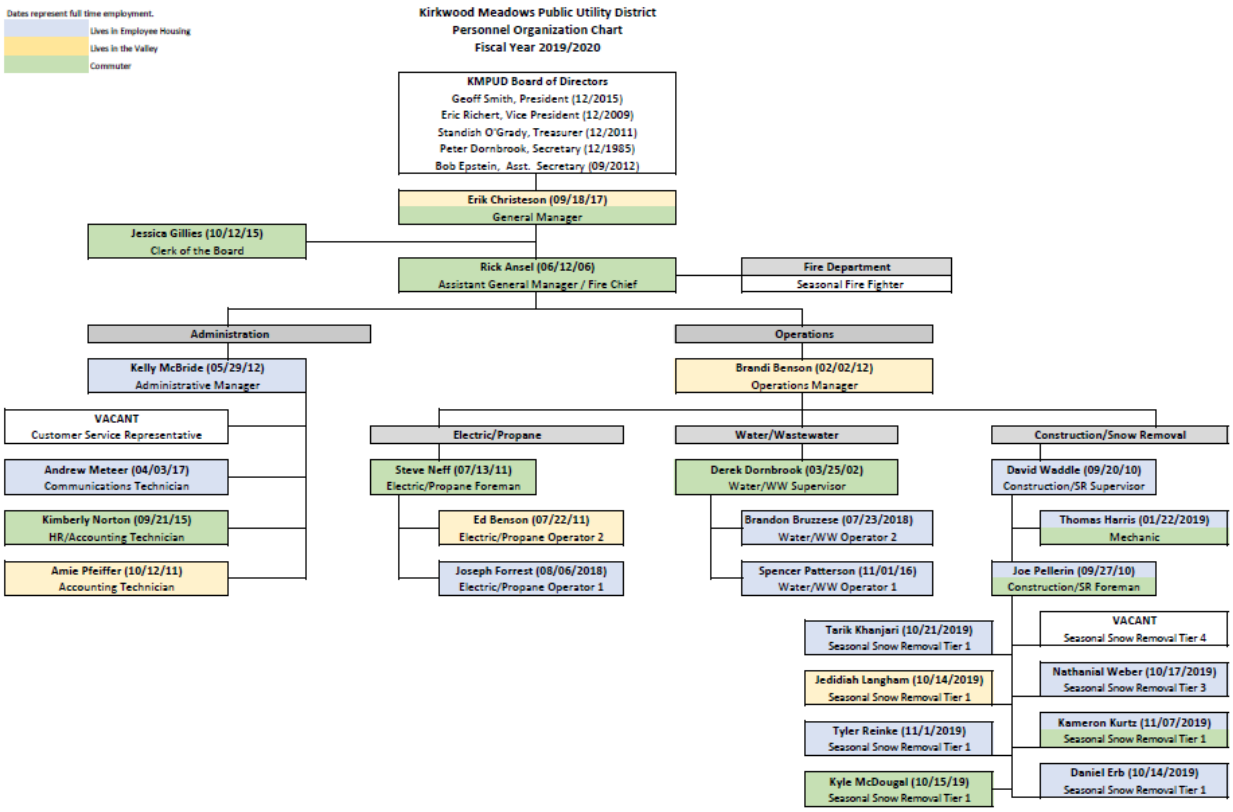
## C. IDENTIFYING UNNECESSARY OR INEFFECTIVE ACTIONS

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




## B. WILDFIRE PREVENTION

KMPUD utility 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.

### C. WILDFIRE RESPONSE AND RECOVERY

KMPUD utility 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 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 facilities are underground. The description of tiered fire threat zones are shown in Table 1, and the overlay over the CPUC fire threat map is shown in Figure1 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 1 -** Description of tiered fire threat zones

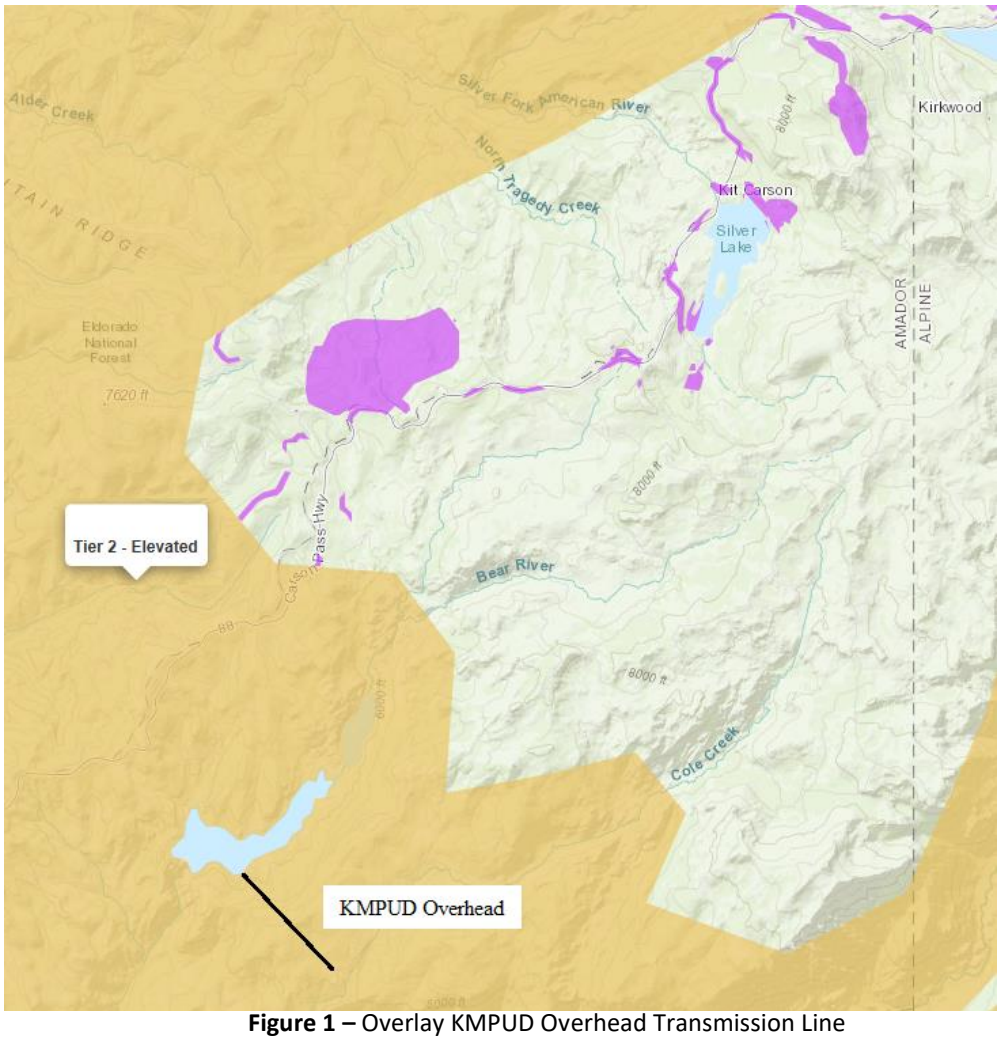



**Figure 1 –** Overlay KMPUD Overhead Transmission Line

### C. CHANGES TO CPUC FIRE THREAT MAP

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).

## V. WILDFIRE PREVENTATIVE STRATEGIES

### A. 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<br>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.

## B. 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.

## C. RECLOSING POLICY

KMPUD policy does not allow automatic reclosure of breakers on overhead lines during normal operation. KMPUD staff manually recloses breakers after a visual inspection of the line following the end of fire-threat conditions.

## D. 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; and
- Potential impacts to communities and customers

### 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 uses an emergency notification system 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

Following the shut off of the overhead transmission line due to elevated fire danger, KMPUD staff manually recloses breakers after a visual inspection of the line following the end of elevated fire danger conditions.

## 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; and
- 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.

## 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 qualified independent evaluator will present a report on this plan 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 action 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. The bulk of the audit should be performed on site at KMPUD's main office. 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.