

LASSEN MUNICIPAL UTILITY DISTRICT

2019 WILDFIRE

MITIGATION

PLAN

October 16, 2019

TABLE OF CONTENTS

I.	Overview	1
A.	Policy Statement.....	1
B.	Purpose of the Wildfire Mitigation Plan.....	1
C.	Organization of the Wildfire Mitigation Plan.....	2
II.	Objectives of the Wildfire Mitigation Plan.....	3
A.	Minimizing Sources of Ignition	3
B.	Resiliency of the Electric Grid	3
C.	Identifying Unnecessary or Ineffective Actions	3
III.	Roles and Responsibilities	5
A.	Utility Governance Structure	5
B.	WILDFIRE PREVENTION	5
C.	WILDFIRE RESPONSE AND RECOVERY.....	6
D.	Coordination with Water Utilities/Department	7
E.	Coordination With Communication Infrastructure Providers	7
F.	Standardized Emergency Management System.....	7
IV.	Wildfire Risks and Drivers associated with design, construction, operation, and maintenance	9
A.	Particular Risks and Risk Drivers Associated With Topographic and Climatological Risk Factors	9
B.	Enterprisewide Safety Risks.....	9
C.	Changes to CPUC Fire Threat Map.....	10
D.	High Fire Threat District.....	10
E.	Weather Monitoring.....	10
F.	Design and Construction Standards.....	11
G.	Vegetation Management.....	11

H.	Inspections	12
I.	Workforce training	13
J.	Reclosing Policy	13
K.	Deenergization.....	13
L.	Equipment Changes and Modifications.....	12
1.	Impacts to Public Safety	15
2.	Customer Notification Protocols.....	15
V.	Community Outreach and Public Awareness	15
VI.	Restoration of Service	17
VII.	Evaluating of the Plan.....	19
A.	Metrics and Assumptions for Measuring Plan Performance.....	19
	Metric 1: Fire Ignitions.....	19
	Metric 2: Wires Down.....	19
B.	Impact of Metrics on Plan.....	19
C.	Monitoring and Auditing the Plan	199
D.	Identifying and correcting Deficiencies in the Plan	20
E.	Monitoring the Effectiveness of inspections	20
XIII.	Independent Auditor	21

I. OVERVIEW

A. POLICY STATEMENT

Lassen Municipal Utility District's (LMUD's) overarching goal is to provide safe, reliable, and economic electric service to its local community. System safety is paramount to LMUD's operations. With recent wildfire events in Northern California and around the state, measures have been put in place that require Utilities to develop and maintain Wildfire Mitigation Plans. These plans are intended to prepare procedures to minimize the chance of electrically caused wildfires as well as to establish communications with the Public, Emergency Responders, operators of critical systems such as hospitals, emergency communications centers. In order to meet these goals, LMUD 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. This includes extensive tree trimming programs to maintain clearance between trees and bare electrical conductors, pole brushing (clearing around every pole with electrical installed devices such as switches, fuses, reclosers). Many other measures involving equipment selection and settings are also part of our on-going efforts.

LMUD's objective is to provide safe, reliable, and economic service to our customers. LMUD operates its electrical system in a manner that minimizes the risk of wildfire posed by electrical lines and equipment.

B. PURPOSE OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan describes the range of activities that LMUD is taking 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 LMUD Board of Directors and is implemented by the General Manager and the Staff of LMUD. 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.

LMUD is a locally governed Utility overseen by an elected Board of Directors. This Plan is has been coordinated with The City, County and State agencies that have responsibilities during an emergency. LMUD serves the City of Susanville, and many communities throughout Lassen County. Service territory is 1900 square miles and approximately 10,600 metered services. LMUD communicates with our customers, communities and local and state fire agencies by attending public meetings, preparing publications in both print and on social media, and presentations at official meetings of City, and County organizations along with the Lassen County Fire Safe Committee, Office of Emergency Services Local Representatives. LMUD has sought and incorporated input from stakeholders on this plan and we will annually review the plan to update and adjust as necessary.

After development of the draft plan in consultation with stakeholders in the community and throughout the service territory we presented the plan to the LMUD Board of Directors for approval.

C. 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; 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 LMUD's transmission and distribution system may be the origin or contributing source for the ignition of a fire. LMUD has evaluated the prudent and cost-effective improvements to its physical assets, operations, and training that can help to meet this objective. LMUD 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, LMUD assesses new industry practices and technologies that will reduce the likelihood of an interruption (frequency) in service and improve the restoration (duration) of service.

Other efforts include establishing a demonstration project in cooperation with W.M. Beatty & Associates land that includes an LMUD right of way on a small portion of our transmission line from Westwood to Susanville. The Right of Way will be cleared for a total width of 100 feet, 50 feet from centerline. There have been no ignitions due to contact with trees on this line. This practice could assist in reducing contact between lines and trees or limbs during high wind events. We will review the project on completion and determine if further right of way widening work is warranted and effective.

C. WILDFIRE PREVENTION STRATEGIES AND PROGRAMS

1. **Strategies**

Approaches and strategies for reducing wildfire risk includes the following and are described in more detail in Section 5.

- **Vegetation Management**
Tree trimming and pole brushing programs are fundamental to reduction of fire potential around LMUD facilities, equipment and overhead transmission and distribution lines.
- **Enhanced Inspections**
LMUD conducts complete system inspections (patrolling) on an annual cycle. Plans and budget resources have been added for drone inspection in 2019-2020. This existing inspection program ensures that equipment is in good operating condition and line clearances are adequate. A systematic tree trimming program and schedule ensures that all overhead lines and equipment are maintain with proper clearances.
- **Awareness of Electric System and Weather Conditions**
Monitoring of system conditions and weather will be enhanced further in 2019-2020 which also includes the planned drone patrolling addition. Weather monitoring and conditions on the ground will be monitored with existing weather resources using NWS

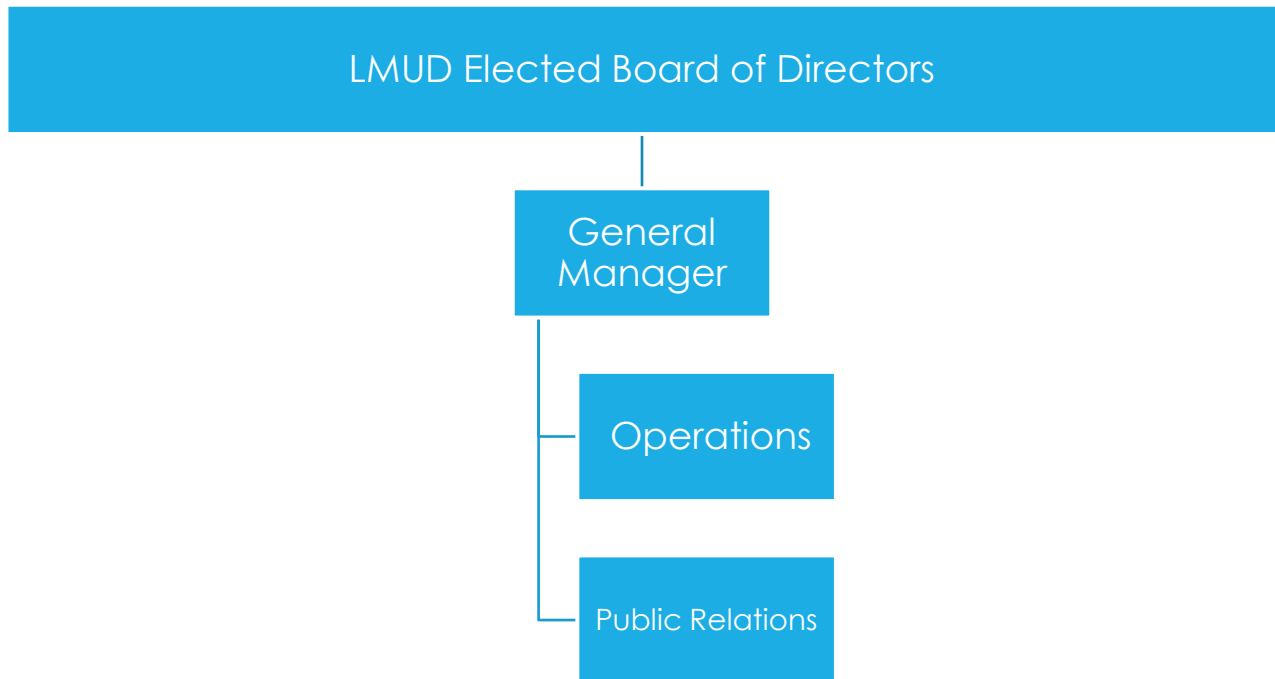
weather stations, USFS, CalFire local cameras as available and CalTrans publicly available camera locations.

- **Operational Practices**
These day to day operational practices in connection with monitoring and weather awareness help to manage and minimize wildfire risks. This could involve equipment control settings such as recloser/breaker functions.
- **System Hardening and Resiliency**
These actions consist of system, equipment, and structure design and upgrades. Hardening refers to changes that would make transmission or distribution lines and equipment more resistant to fire such as steel poles compared to wood poles, insulated high voltage wire, underground construction, etc. These potential actions will be evaluated for use at various points in our system based on their estimated effectiveness and costs.
- **Public Safety and Notification**
Communications to our customers and local agencies is very important in coordinating preparations and plans for minimization of wildfire risk and increasing awareness of necessary actions that many involved public agencies and emergency response agencies may have to implement. Our first level of communication is a text alert system that our customers sign up for that allows up to the minute information to be provided to customers in our service territory. Additionally, LMUD has a contact procedure with PG&E and critical emergency response agencies in the event that Public Safety Power Shutoffs by PG&E become possible due to high fire danger weather conditions.
- **Reclosing and Circuit Shut-off**
This refers to how reclosers (breakers) for individual circuits are managed. The recloser is an automated electrical current / load breaking device that may be set to function in several ways. During high fire danger conditions we may set the reclosers to non-reclose meaning that once they detect a fault they will not attempt to close again until manually checked / lines patrolled, and then re-closed.
- **Wildfire Response and Recovery**
These are procedures meant to respond and react to a wildfire or the effects of a wildfire on our system. The second part of this is recovery, which consists of procedures and actions that are followed and performed to ensure safe restoration of power, re-occupancy of neighborhoods, or communication after an event.
- 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, LMUD 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.

2. Programs

III. ROLES AND RESPONSIBILITIES

A. UTILITY GOVERNANCE STRUCTURE FOR WILDFIRE MITIGATION PLAN



LMUD is governed as a California Municipal Utility pursuant to the Municipal Utility Act of the State of California. The Utility is governed by a 5-member Board of Directors who are directly elected to represent Districts within the Utility Service Territory. Management of LMUD, its facilities, personnel and finances are overseen by the General Manager who oversees implementation of the Wildfire Mitigation Plan. The Assistant General Manager over Operations provides guidance to staff regarding vegetation management, selection of equipment, and development of procedures to minimize the potential of ignitions and fires within the LMUD service territory. The Electric Operations Manager will direct actions taken by field employees during periods of wildfire threat or actual wildfire events. Measurement of effectiveness, reporting, and review of measures will be overseen by the Assistant General Manager. Communications regarding Public Safety and other vital information regarding the status of the power system, expected or possible events, or actual events will be managed by the Public Relations Manager.

B. WILDFIRE PREVENTION

LMUD's staff is responsible for electric facility design (Staking and Operations Dept.), Maintenance is conducted by the Operations Dept, and vegetation management is conducted by a contractor who follows guidelines and work assigned by the Operations Dept.

- Operate system in a manner that will minimize potential wildfire risks.
- Take all reasonable and practicable actions to minimize the risk of a catastrophic wildfire caused by LMUD electric facilities.
- Coordinate with federal, state, and local fire management personnel as necessary or appropriate to implement [LMUD's] Wildfire Mitigation Plan.
- Immediately report fires, pursuant to existing LMUD 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 standard requirements, including the industry standards established by the California Public Utilities Commission.
- Collect and maintain 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

During high fire risk periods or during actual wildfire events LMUD will be in communication with PG&E Control Center in Vacaville to determine system status. In the event of a PG&E Public Safety Power Shutoff due to high wildfire threat conditions LMUD will coordinate with a local power generator (HL Power, a 30 MW Biomass Energy Plant). An agreement between our two companies (known as an Islanding Agreement) allows for direct servicing of our LMUD customer load by HL Power during an emergency. Islanding refers to supplying power to LMUD customers from a local power generator when PG&E electric supply into our service territory is turned off or interrupted by an emergency event. This islanding process is initiated with notice from PG&E that power supply through the Caribou Transmission line could be shut off. LMUD and HL Power would then coordinate the timing and load considerations for islanding to take place. This process has been used many times in the past for periods of up to 27 days. The procedures for islanding are well developed and will work well with the exception of periods when the HL Power Plant is involved in a major maintenance outage. A major maintenance event is a period when major systems such as Boiler, Generator, or Steam Turbine are disassembled and repairs are being performed.

LMUD utility staff have the following obligations regarding fire prevention, response and investigation:

- Take all reasonable and practicable actions to prevent and suppress fires resulting from LMUD electric facilities. This includes continuous inspection and review of equipment

and lines for condition, and evaluation of equipment that could reduce the chance of ignitions or wildfires caused by sparking or arcing at various points in the LMUD System such as fuse and cutout locations, recloser locations, various types of connections to distribution lines.

- Follow LMUD protocols during Red Flag Warnings such as evaluating conditions along individual circuits in LMUD territory and making determinations as to effectiveness of changing recloser function to “non-reclose”. Evaluation of equipment protective relay settings is also an on-going effort. Opportunities to set equipment so that lower potential for spark or ignition may be determined to be useful or effective.

D. COORDINATION WITH WATER UTILITIES/DEPARTMENT

During high wildfire threat conditions or during actual wildfire events LMUD will be in communication with all major and critical water infrastructure customers as well as all residential customers. Communications will be provided to LMUD customers in the event that LMUD has to take actions that affect certain circuits. In most cases LMUD will have the ability to provide power to all circuits through the “Islanding” process with HL Power. Exceptions to this would include an active wildfire of unknown origin burning towards or growing to envelop an LMUD system, substation, customer facility, LMUD transmission or LMUD distribution line.

E. COORDINATION WITH COMMUNICATION INFRASTRUCTURE PROVIDERS

During high wildfire threat conditions or during actual wildfire events LMUD will be in communication with all major and critical communications infrastructure customers as well as all residential customers. We will coordinate with OES, CalFire, Lassen County Administration, City of Susanville Administration, County Office of Education, Sheriff’s Dept, CHP, Banner Lassen Hospital, Water Supply Districts (Susanville, Westwood, Lake Levitt, Spalding, Lake Forest). We will also communicate with both large customers and residential LMUD customers in the event that LMUD has to take actions that affect certain circuits. In most cases LMUD will have the ability to provide power to all circuits through the “Islanding” process with HL Power. Exceptions to this would include an active wildfire of unknown origin burning towards or growing to envelop an LMUD system, substation, customer facility, LMUD transmission or LMUD distribution line.

F. STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a local governmental agency,¹ LMUD has planning, communication, and coordination obligations pursuant to the California Office of Emergency Services’ Standardized Emergency Management System (“SEMS”) Regulations,² 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,

¹ As defined in Cal. Gov. Code § 8680.2.

² 19 CCR § 2407.

regional, and state.³ Pursuant to this structure, LMUD annually coordinates and communicates with the relevant safety agencies as well as other relevant local and state agencies. LMUD has participated in hazard and emergency planning review program overseen by CalOES local emergency response officials. Key contacts and procedures for notifications and communications during emergencies, including wildfires have been developed. The type of emergency caused by wildfire and / or loss of power has been anticipated and plans discussed in the OES and County Emergency Operation Plan. LMUD is responsible for notifying OES, County, City officials and agencies in the event of a wildfire or a loss of electric power due to fire damaged equipment or equipment that could be affected in the path of a wildfire.

Under the SEMS structure, a significant amount of preparation is done through advanced planning at the county level, including the coordination of effort of public, private, and nonprofit organizations. These participants include OES, CalFire, Lassen County Administration, City of Susanville Administration, County Dept of Education, Sheriff's Dept, CHP, Banner Lassen Hospital, Water Supply Districts (Susanville, Westwood, Lake Levitt, Spalding, Lake Forest) and Susanville gas utility, Fire Districts, and non-profits (such as the churches for emergency shelters or American Red Cross).

Pursuant to the SEMS structure, LMUD participates in annual training exercises. [This is being developed at the time of publication of this Plan.]

LMUD is a member of the California Utility Emergency Association, which plays a key role in ensuring communications between utilities during emergencies. LMUD 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.

³ Cal. Gov. Code § 2403(b):

- (1) "Field response level" commands emergency response personnel and resources to carry out tactical decisions and activities in direct response to an incident or threat.
- (2) "Local government level" manages and coordinates the overall emergency response and recovery activities within their jurisdiction.
- (3) "Operational area level" manages and/or coordinates information, resources, and priorities among local governments within the operational area and serves as the coordination and communication link between the local government level and the regional level.
- (4) "Regional level" manages and coordinates information and resources among operational areas within the mutual aid region designated pursuant to Government Code §8600 and between the operational areas and the state level. This level along with the state level coordinates overall state agency support for emergency response activities.
- (5) "State level" manages state resources in response to the emergency needs of the other levels, manages and coordinates mutual aid among the mutual aid regions and between the regional level and state level, and serves as the coordination and communication link with the federal disaster response system.

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

- Extended drought, low humidity;
- Vegetation type;
- Vegetation Density;
- Weather including high winds and lightning;
- Human activities including campfires, shooting, towing or machinery (sparks and friction);
- Terrain many diverse areas canyons, volcanic outcrops, steep or thickly treed areas;
- Changing Weather Patterns (Climate Change)
- Communities in close proximity to WUI at Risk
- Fire History

B. ENTERPRISEWIDE SAFETY RISKS

LMUD has not experienced utility caused wildfires to any serious extent (all small and easily contained, largest less than several acres). We do however, experience wildfires of unknown, human caused, or weather related types. In 2018 we sustained a fire in the area west of Eagle lake known as the Whaleback Fire. This fire consumed 18,000 acres and narrowly missed the community of Spalding, no homes were lost, no injuries were sustained and no cause was determined. The damage done to electrical infrastructure was significant and resulted in a 60 day outage due to loss of 6.5 miles of a wooden pole distribution line that fed electric power to the community of Spalding. A generator was brought in for a 60-day period during a rebuild of the line. Due to the location of the line that was lost, in lava beds very rocky and steep terrain, it was more cost effective to rebuild the line underground along the side of the County Road A-1.

This year in 2019 a small fire was detected near an LMUD power line along State Hwy 139. This fortunately was contained easily by fire crews to several acres. The cause was a wire conductor that came loose from an overhead line and touched vegetation in the right of way. Line was fully patrolled and repairs performed as necessary.

The LMUD service territory is diverse geographically and includes grasslands, sagebrush desert, lakes and shorelines, thickly forested areas and urban towns and communities that are heavily treed. The total service territory for LMUD includes 1900 square miles and significant distances are traveled by employees to maintain, improve and restore service.

C. CHANGES TO CPUC FIRE THREAT MAP

There have been no changes to the CPUC Fire Threat Map as of June of 2019. LMUD participated in the review of maps in and around the service territory. All of the surrounding areas and areas within our service territory are classified as Tier 2 fire risk.

D. HIGH FIRE THREAT DISTRICT

LMUD directly participated in the development of the California Public Utilities Commission's (CPUC) Fire-Threat Map,⁴ which designates a High-Fire Threat District. In the map development process, LMUD served as a territory lead, and worked with utility staff and local fire & government officials to identify the areas of LMUD's service territory that are at an elevated or extreme risk of power line ignited wildfire. LMUD has incorporated the High Fire Threat District into its construction, inspection, maintenance, repair, and clearance practices, where applicable.

E. WEATHER MONITORING

LMUD monitors current and forecasted weather data from a variety of sources including:

- United States National Weather Service
- United States Forest Service Wildland Fire Assessment System
- National Fire Danger Rating System
- National Interagency Fire Center – Predictive Services for Northern and Southern California.
- [Local OES / County Fire District Warnings]

LMUD assigns one of four operating conditions based on the relevant weather data and knowledge of local conditions:

- (1) Normal:** During normal conditions, no changes are made to operations or work policy.
- (2) Elevated:** During elevated fire-risk conditions, [July through October and winds above 20 and below 30 MPH].
- (3) Extreme:** During extreme fire-risk conditions, [July through October and High winds of 30 MPH and Higher].
- (4) Red Flag:** If the National Weather Service declares a Red Flag Warning for any portion of LMUD's service territory, then LMUD will place appropriate circuits on "non-reclose" and additional patrols will be authorized during the Red Flag event.

⁴ Adopted by CPUC Decision 17-12-024.

F. DESIGN AND CONSTRUCTION STANDARDS

LMUD's electric facilities are designed and constructed to meet or exceed the relevant federal, state, or industry standard. LMUD treats CPUC General Order (GO) 95 as a key industry standard for design and construction standards for overhead electrical facilities. LMUD meets or exceeds all standards in GO 95. Additionally, LMUD monitors and follows as appropriate the National Electric Safety Code.

G. VEGETATION MANAGEMENT

LMUD meets or exceeds the minimum industry standard vegetation management practices. For both transmission and distribution level facilities, LMUD 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. LMUD 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, LMUD performs an evaluation of every tree that has the potential to strike overhead facilities if it were to fail on an annual basis. LMUD 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, will work with the land owner to remove the tree or portion of the tree that poses a risk.

H. INSPECTIONS

LMUD meets or exceeds the minimum inspection requirements provided in CPUC GO 165 and CPUC GO 95, Rule 18. Pursuant to these rules, LMUD inspects electric facilities in the High Fire Threat District more frequently than the other areas of its service territory. Additionally, LMUD 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.

LMUD also plans to implement the use of aerial drones in 2019-2020 for patrolling surveys in certain areas of its service territory to provide infrared and visual depictions of LMUD facilities, terrain, vegetation and other obstacles. This tool helps prioritize obstacles that need to be cleared to maintain safety and reliability.

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

LMUD 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]. LMUD monitors drought conditions and other relevant factors throughout the year to determine if inspections should be completed on a shorter timeframe.

I. WORKFORCE TRAINING

LMUD has implemented work rules and complementary training programs for its workforce to help reduce the likelihood of the ignition of wildfires. Monthly safety briefings include our new responsibilities to prepare wildfire mitigation plans and accompanying measures. We will update and include briefings on these requirements as we implement and develop new or updated measures and procedures.

J. RECLOSING POLICY

During Red Flag fire danger conditions we may set the reclosers to non-reclose meaning that once they detect a fault they will not attempt to close again until manually checked / lines patrolled, and then re-closed.

Relay settings may also be modified as determined necessary to reduce the fault current or time and duration of a fault or short circuit event. This will be evaluated on a circuit by circuit basis.

K. DEENERGIZATION

LMUD intends to utilize the strategies described here including vegetation management, proper equipment patrolling and maintenance and awareness of conditions to avoid the need to preemptively shut off power (known as deenergization) due to fire-threat conditions. LMUD will make a case-by-case decision to change recloser function or relay settings based on the following considerations:

- Red Flag Warnings issued by the National Weather Service for fire weather zones that contain LMUD circuits;
- LMUD 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 LMUD fire experts and vegetation experts;
- Input from local and state fire authorities regarding the potential consequences of wildfires in select locations;
- On-going fire activity throughout LMUD territory and California;
- Ability to notify customers;
- Notifications to local governments and public officials; and
- Potential impacts to communities and customers

L. EQUIPMENT CHANGES AND MODIFICATIONS

LMUD operates many circuits that are protected by reclosers and fused cutouts, several services on each all the way up to several hundred services and are located normally at accessible locations such as along roadways or intersections where line trucks can easily access. Breakers are for controlling larger major portions of our load and are located at each of our 7 substations.

Newer equipment called trip saver fuses (in effect a recloser that can be programmed) is now available that we have selected for certain locations to prevent blown fuses that would normally occur on these fused circuits. Elimination of a fuse eliminates a source of ignition even though we clear brush to bare earth in a 20-foot diameter circle around all poles with fuses or other equipment this further limits the potential for a fire to begin at this pole located equipment. Additionally, non-expulsion or Cooper ELF fuses contain the shower of sparks and metal that normally vent from a distribution voltage fuse. We have evaluated locations for the installation of some of these fuses and will be installing in the next budget year for testing. This will allow the testing for reliability and function at specific locations where they may be of benefit in reducing the potential for fires at these pole top equipment locations.

LMUD is working on upgrade of a SCADA monitoring system to a fully functional SCADA system with integrated controls for substations and reclosers. We expect to upgrade this system in 2020 and begin controlling remotely during periods of red flag warnings.

1. IMPACTS TO PUBLIC SAFETY

Communications antenna sites located on mountain peaks are very important to both emergency communications and routine telephone and radio communications in Lassen County. These facilities do have electric generators but these are generally a short term power solution and during a fire emergency. Accessibility to re-fuel these generators could be limited because of fire travel or growth. Well water and municipal water systems are dependent on electricity to operate and water pressure for fire suppression can be severely impacted by loss of electric power. Ability to produce water to slow or stop the spread of fire by homeowners or businesses is critical. Hospital operations, Sheriff and Police departments, CHP and fire and emergency response personnel depend on ability to communicate and use vehicles fueled by gasoline or diesel. If power is lost to fueling stations this emergency response capability can be severely limited. People who depend on oxygen generators or other medical devices that are electrically powered along with their ability to communicate can be severely impacted. For

these reasons de-energization in an extremely large utility service territory poses severe risk to life and property that should be avoided.

2. CUSTOMER NOTIFICATION PROTOCOLS

Communications to our customers and local agencies is very important in coordinating preparations and plans for minimization of wildfire risk and increasing awareness of necessary actions that many involved public agencies and emergency response agencies may have to implement. Our first level of communication is a text alert system that our customers sign up for that allows up to the minute information to be provided to customers in our service territory. Additionally, LMUD has a contact procedure with PG&E and critical emergency response agencies in the event that Public Safety Power Shutoffs by PG&E become possible due to high fire danger weather conditions.

V. COMMUNITY OUTREACH AND PUBLIC AWARENESS

LMUD communicates with our customers, communities and local and state fire agencies by attending public meetings, preparing publications in both print and on social media, and presentations at official meetings of City, and County organizations along with the Lassen County Fire Safe Committee, Office of Emergency Services Local Representatives. LMUD has sought and incorporated input from stakeholders on this plan and we will annually review the plan to update and adjust as necessary.

LMUD has attended official noticed meetings of the Susanville City Council, Lassen County Fire Safe Council, Westwood Community Council and made presentations to these groups about wildfire concerns and LMUD Planning obligations and requirements. Input from these stakeholders has been sought and incorporated in this plan.

LMUD will continue to promote and support forest thinning operations in areas adjacent to its transmission and distribution corridors by working with landowners (private, Forest Service, BLM), and local entities capable of obtaining and managing available grant funding to conduct forest thinning work. These include entities such as the Lassen County Resource Conservation District and the Lassen County Fire Safe Committee. Additionally, LMUD will continue its support of the Lassen County Community Wildfire Protection Plan (CWPP). The CWPP is a Lassen County approved plan put together by numerous local, state and federal agencies, as well as local private stakeholders and non-profits. The CWPP is focused on landscape-level fuel reduction activities throughout LMUD's service territory. Rankings of projects within the CWPP are extremely important in maximizing the probability of obtaining grant funding for future fuel reduction projects.

LMUD issues a public newsmagazine to customers on a monthly basis. This year LMUD has prepared two stories for publication in this customer magazine. One was Wildfires and Safety are Constant Concerns and Public Safety Power Shutoffs. These articles are intended to inform the public about wildfires and current concerns that we all share.

VI. RESTORATION OF SERVICE

In the event of a wildfire or other emergency event, LMUD will coordinate activities to restore service. LMUD will restore power, following an event, in cooperation with County Administration, County Sheriff, City officials as well as OES and Cal Fire, Susanville Fire, Susanville Police, and Public Works Departments, OES or other named Incident Commander.

LMUD management will oversee restoration and response activities. In the event that additional staff is needed, LMUD may leverage mutual aid agencies, other adjacent utilities, 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 - LMUD 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. LMUD 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, LMUD 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, LMUD 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. Instances of widespread catastrophic damage the necessary materials and labor could be in shortage and may delay work.

Rebuild - The rebuild effort lead by LMUD 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. LMUD will incorporate new materials and technologies as indicated and available.

Restore - LMUD, 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:

1. Public safety in the affected areas;
2. Worker safety in performing the restoration work;
3. Life-support or critical customers;

4. Critical infrastructure (Key City & County facilities and accounts; Sheriffs 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.);
5. 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.);
6. To reduce the total number of customers affected;
7. To reduce the length of time customers have been without power.

In directing restoration efforts to best achieve the above priorities, LMUD Operations 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:

1. HL Power Biomass Power Plant;
2. Other energy supply resources (to ensure power can be delivered/received via Western Area Power Administration, the PG&E transmission system);
3. Substations;
4. Distribution circuits (14.4 kV, 12 kV and 7200 V);
5. Distribution feeders;
6. Distribution transformers;
7. Service lines.

VII. EVALUATION OF THE PLAN

A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

LMUD 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:

- LMUD 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
- LMUD has knowledge that the fire occurred.

In future Wildfire Mitigation Plans, LMUD 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 [LMUD'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. LMUD will divide the wires down metric between wires down inside and outside of the High Fire Threat District.

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

B. IMPACT OF METRICS ON PLAN

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

C. MONITORING AND AUDITING THE PLAN

This Wildfire Mitigation Plan will be presented to the LMUD Board of Directors (the Board). LMUD will present this plan to the Board on an annual basis. Additionally, a qualified independent evaluator will present a report on this plan to the Board.

D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

LMUD staff and qualified external stakeholders are encouraged to identify Wildfire Mitigation Plan deficiencies or potential deficiencies to the Assistant General Manager Operations as soon as possible when observed. The Assistant General Manager 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:

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

The Assistant General Manager will go over the log at regularly scheduled Leadership and Supervisor Meetings.

E. MONITORING THE EFFECTIVENESS OF INSPECTIONS

LMUD will perform review of inspections on either a 5-year schedule or 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 Assistant General Manager 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:

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

The Assistant General Manager will review the audit findings and assign corrective action as applicable. A copy of the audit report will be routed to the General Manager.

VIII. INDEPENDENT AUDITOR

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

LMUD will have the Plan reviewed using a contract prepared by LMUD staff following the initial approval of the LMUD Board of Directors.

The report from the independent evaluator will be available on LMUD's website. The auditor will present the report and findings to the LMUD Board at a public meeting.

