

LODI ELECTRIC UTILITY

WILDFIRE MITIGATION PLAN

VERSION 0.91

DRAFT

August 28, 2019



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I. OVERVIEW

A. POLICY STATEMENT

Lodi Electric Utility's (LEU's) overarching goal is to provide safe, reliable, and economic electric service to its local community. In order to meet this goal, LEU strives to construct, maintain, and operate its electrical lines and equipment in a manner that minimizes the risk of catastrophic wildfire posed by its electrical lines and equipment.

LEU is a department within the City of Lodi. As a public entity whose service territory is contained entirely within the City limits, LEU's interests are entirely aligned with the City's and the population we serve; we have no fiduciary obligation to any shareholders taking precedence over our customer-residents, nor any other priorities greater than Lodi's. LEU is singularly focused on serving Lodi, to the greatest extent possible. Lodi's wildfire prevention and mitigation efforts are thus benefited by Lodi's organizational structure and focus.

B. PURPOSE OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan describes the range of activities that LEU 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 Lodi's City Council and is implemented by the Electric Utility Director. 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.

LEU is located in a region of the state with a very low wildfire risk. No part of LEU's service territory is located in or near the High Fire Threat District designed in the California Public Utilities Commission's (CPUC) Fire Threat Map. Lodi Electric's service territory is predominantly categorized as either "non-fuel" or "moderate" in the California Department of Forestry and Fire Protection's (CALFIRE) Fire and Resource Assessment Program (FRAP) Fire Threat Map¹. Cal Fire also provides the following statement with regard to the Local Responsibility Area for the County of San Joaquin, which LEU's Service Territory is entirely within, "Update, 6/2008: CAL FIRE has determined that this county has no Very High Fire Hazard Severity Zones in LRA. Therefore [San Joaquin] county will not have a map of recommended VHFHSZ in LRA"². Based on a review of local conditions and historical fires, Lodi Electric has determined that its electrical lines and equipment do not pose a significant risk of catastrophic wildfire.

Despite this low risk, LEU takes appropriate actions to help its region prevent and respond to the increasing risk of wildfires. In its role as a public agency, LEU closely coordinates with other local

¹ Cal Fire Map ID: FTHREAT_MAP, Oct. 20, 2005

² Cal Fire Map ID: FHSZL06_1_MAP, Oct. 02, 2007,

http://www.fire.ca.gov/fire_prevention/fhsz_maps_sanjoaquin (05/22/2019)

safety and emergency officials to help protect against fires and respond to emergencies. LEU follows applicable design, construction, operation, and maintenance requirements that reduce safety risks associated with its system. This Wildfire Mitigation Plan describes the safety-related measures that LEU follows to reduce its risk of causing wildfires.

C. BACKGROUND

LEU has no known history of causing any widespread fire, nor suffering a widespread and prolonged outage due to any fire. While no utility is fully immune to fire, LEU's history of outages and fire is consistent with operating a utility in an urban area.

Per the City of Lodi's General Plan, "The Planning Area is not characterized by substantial areas of wildlands. The topography of the area is relatively homogenous and steep slopes that could contribute to wildland fires are not common. Data provided by the California Department of Conservation Fire and Resource Assessment Program in 2007 indicate that no portions of the [City's] Planning Area are classified as having a "High" or "Very High" risk."³

LEU's Service Territory is limited to a dense urban footprint (approximately 13.7 square miles of land). With an estimated service-territory population of more than 68,000, there are approximately on-average 5,000 persons per square mile of LEU service-territory, offering tremendous visibility on LEU's infrastructure. Problems within LEU's territory are therefore generally discovered very quickly. LEU's compact territory also allows LEU to reach nearly every utility asset within a 10-minute drive from its headquarters. The high visibility and close proximity generally result in quick discovery and addressing of problems. This is in contrast with utilities having thousands of miles of line in the middle of dry forests, far from urban areas, lacking any real visibility, and with potentially great travel distances required when responding to a problem.

Wildfire risk is greatly reduced by LEU's topography and setting. LEU is relatively flat, lacking mountains, valleys, and other hard to access locations. LEU is bordered on the northern edge by the Mokelumne River. LEU is further benefited by advantageous land use in the surrounding area. In contrast with utilities traversing through large wilderness areas with decades of dry fuel accumulation, LEU is surrounded by miles of actively managed grape vineyards. Grape vineyards, with their open-space, moisture content, and active management, are frequently considered a very good firebreak, "The fire just came up to the edge of the vineyard and stopped."⁴ Further, much of LEU's underground circuitry exists on the perimeter of LEU's service territory, and functions as a buffer between LEU's overhead infrastructure and the unimproved land abutting LEU's service territory.

³ City of Lodi, General Plan, 4/2010 § 8.4

⁴ Mohan, Geoffrey. "Vineyards may have kept the wine country fire from getting worse." Los Angeles Times, web. <https://www.latimes.com/business/la-fi-vineyards-firebreak-20171012-story.html>

D. 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; and
- Review and validation of the plan.

II. OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

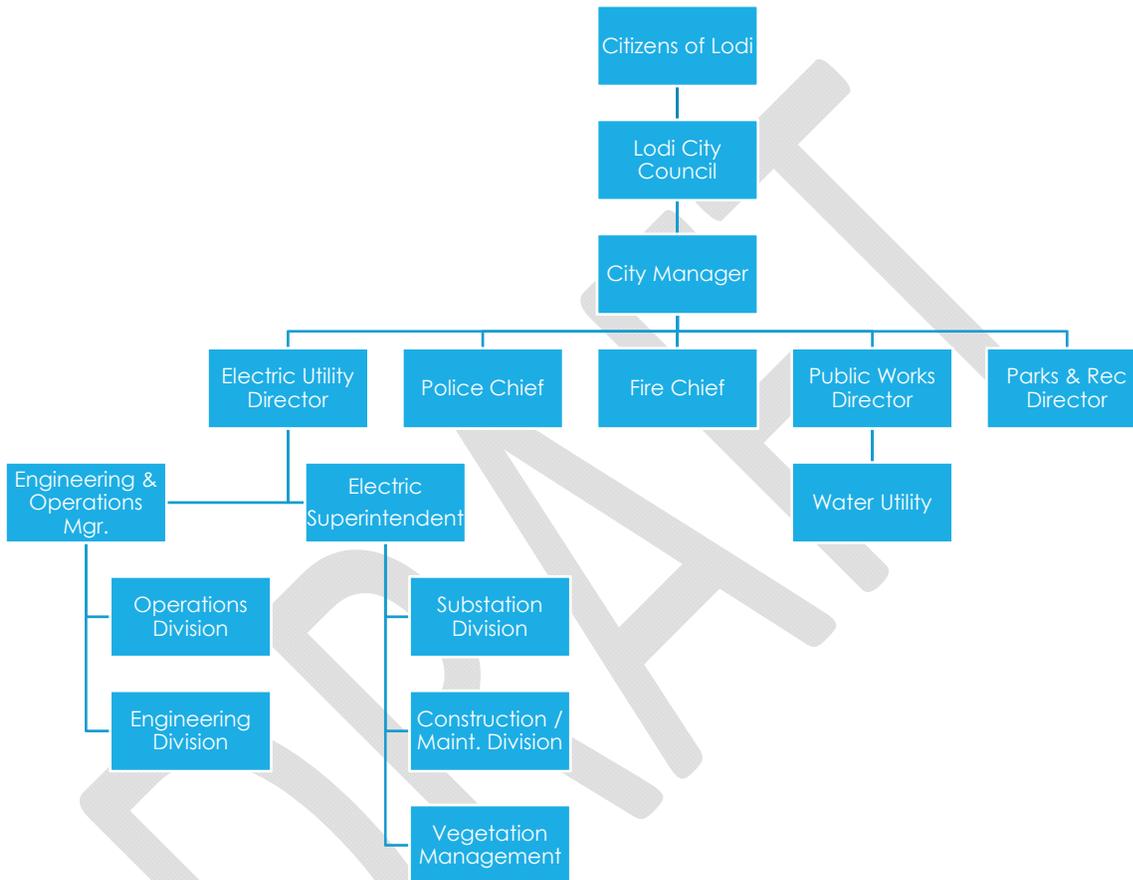
The primary goal of this Wildfire Mitigation Plan is to describe LEU's programs, practices, and measures in-place, which effectively reduce the probability that LEU's electric supply system could be the origin or contributing source for the ignition of a wildfire. To support this goal, LEU regularly evaluates the prudent and cost-effective improvements to its physical assets, operations, and training that can help reduce the risk of equipment-related fires.

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, LEU will continue to assess new industry practices and technologies that will reduce the likelihood of an interruption (frequency) in service and improve the restoration (duration) of service.

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III. ROLES AND RESPONSIBILITIES

A. UTILITY GOVERNANCE STRUCTURE



Excerpted City of Lodi Organization Chart, As Relevant to Wildfire Mitigation

LEU's governance begins with the citizens of Lodi electing a City Council. The City Council appoints a city manager who in turn hires directors and chiefs to run the various departments and utilities within the City's auspices.

A key difference between LEU and Investor Owned Utilities (IOUs) is that LEU is publicly owned and overseen by the very community it serves; LEU has no shareholders and is not-for-profit.

B. WILDFIRE PREVENTION

Under the City's organizational arrangement, LEU's Director has overall responsibility for the implementation and execution of this plan; LEU's Engineering and Operations Manager oversees responsibility for electric facility design; and LEU's Electric Superintendent oversees responsibility for construction, maintenance, inspections, and vegetation management.

Other City departments contribute greatly to wildfire prevention efforts. Lodi's Fire Department conducts various forms of community outreach and has historically worked with Lodi's Parks & Recreation Department to conduct annual inspections of trees and vegetation in certain within certain properties controlled by the City, with the goal of identifying and removing fire-fuels such as dead trees or underbrush which may have accumulated.

C. WILDFIRE RESPONSE AND RECOVERY

LEU is available to its customers 24 hours per day, seven days per week, 365 days per year. During a wildfire or other public safety event, LEU's operations center has the ability to dispatch personnel to aide as needed around the clock. In the event that an incident requires more personnel than LEU has on hand, LEU has mutual-aid agreements in place and available to provide nearly unlimited line-worker resources.

LEU staff has the following obligations regarding fire prevention, response, and investigation:

- Operate the electrical 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 LEU's electric facilities.
- Coordinate with federal, state, and local fire management personnel as necessary or appropriate to implement LEU's Wildfire Mitigation Plan.
- Immediately report fires, pursuant to existing POU 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 suitable training programs for all employees having obligations for implementation of this Wildfire Mitigation Plan.

The City has established and positioned numerous public safety and water-utility resources, available to assist in combating wildfires and assisting with other public safety events and emergencies.

In 2019/2020 the City's Fire Department will be staffed with 57 personnel, including 55 firefighters, company officers, or chief officers.

The Insurance Services Office (ISO) measures the effectiveness of fire-mitigation services in fire protection areas throughout the country⁵. The ISO assigns each area a Public Protection Classification (PPC) rating between one and ten (where one is the best, and ten is the worst). As of May 2019, Lodi has the nearly highest ISO PPC rating of two. The Lodi Fire Department's high ranking places Lodi, in the top 95 percent of the ISO's fire-mitigation effectiveness rankings, nationwide. A Class 2 ISO rating "indicates that the Fire Department is strategically placed throughout the City, and has adequate personnel, equipment, and expertise to serve the current population."⁶



Source: <https://www.isomitigation.com/ppc/program-works/facts-and-figures-about-ppc-codes-around-the-country/> 5/9/2019

Unlike many volunteer fire departments, Lodi's Fire Department is staffed with professional firefighters 24/7/365 and maintains a constant high-level of readiness." As of 8/7/2019, the department met the self-imposed National Fire Protection Association's response time criteria of 6 minutes for 90% of all calls.⁷

As of 2018, the City operated 28 groundwater wells providing a total pumping capacity of 37,910 gallons per minute^{8,9} in addition to a Surface Water Treatment Plant, which currently has a capacity of 10-million gallons per day^{10,11}. The 28 wells are computer controlled and "operate automatically on pressure demand, so that when water use increases, more wells are started"¹². "Seven wells are fitted with emergency diesel powered generators. (...will help maintain water

⁵ http://www.iso.com/isoPassportHelp/reading_loc_ppc_reports.htm

⁶ City of Lodi, General Plan, 4/2010 § 3.3

⁷ Lodi Ca. Incident Compliance Percentage Report, June July 2019

⁸ City of Lodi, Public Works, Annual Water Quality Report For 2018

⁹ City of Lodi, Public Works, Water Master Plan, 2012, § 2.1

¹⁰ City of Lodi, Urban Water Management Plan, Pg. 40

¹¹ City of Lodi, Public Works, Annual Water Quality Report For 2018

¹² City of Lodi, Public Works, Annual Water Quality Report For 2018

pressure during power outages....)"¹³ The City has 4.1 million gallons of water storage, spread across three different tanks¹⁴, and is scheduled to receive an additional million-gallon storage tank in October of 2019, increasing storage capacity to 5.1 million gallons¹⁵. During peak-season (roughly coinciding with high-heat and fire-season), the City's Water Utility's operating practice is to maintain its massive storage reserves at a nearly-full capacity.

"The City of Lodi owns and operates 28 emergency standby generator sets that range in size between six kilowatt (kW) to 2,000kW. The generators are located at critical facilities where operation during an extended power outage is necessary to maintain public health and/or safety. Examples of these facilities include fire stations, water wells, the Surface Water Treatment Plant, sanitary lift stations, White Slough Water Pollution Control Facility (WSWPCF), the police station, and Lodi Public Library."¹⁶

The City has also undertaken replacement projects to upsize two and three inch water mains, to larger sizes, capable of providing more flows during fires.¹⁷ Additionally, Lodi's Fire Department has the ability to pump water from the Mokelumne River -- a nearly unlimited fire-water resource on the northern edge of town. Lodi's Fire Department also has access to wide-area mutual-aid resources, able to provide yet more water tenders and substantial additional fire-fighting resources.

The General Plan reports the following policing resources, "For 2019, the Police Department has budgeted 111 full-time employees, with 77 sworn officers, and 72 volunteers."¹⁸

"The City has adopted the San Joaquin County Hazard Mitigation Plan. This plan identifies measures to reduce the impacts of natural and manmade hazards and to facilitate the recovery and repair of structures if damage should occur from hazardous events."¹⁹

"The City provides street standards for all street types, thus ensuring appropriate standards for emergency access and evacuation."²⁰

D. COORDINATION WITH WATER UTILITY AND PUBLIC SAFETY

Lodi's Fire Department, Lodi's Public Works (including the Water Utility), and Lodi's Electric Utility, are all departments within the same organization. This unified structure results in frequent contact and communication between the departments on many fronts and topics, and a beneficial familiarity in working together. Lodi's Fire Department, (generally by way of its 24-hour

¹³ City of Lodi, Public Works, Annual Water Quality Report For 2018

¹⁴ City of Lodi, General Plan, 4/2010 § 3.3

¹⁵ City of Lodi, Urban Water Management Plan, Fig. 6-1

¹⁶ City of Lodi, City Council meeting, June-19 2019, Agenda Item C-11

¹⁷ City of Lodi, General Plan, 4/2010 § 3.3

¹⁸ City of Lodi, General Plan, 4/2010 § 8.5

¹⁹ City of Lodi, General Plan, 4/2010 § 8.5

²⁰ City of Lodi, General Plan, 4/2010 § 8.5

Fire Dispatch), is well-versed in requesting assistance from LEU during emergencies. Fire Dispatch requests LEU's assistance for every structure fire; for all other fires (e.g. vehicle fires) LEU assistance is always available, with utilization determined on a case-by-case basis by the event's Incident Commander. Examples of LEU assistance include, to de-energize lines for fire and rescue operations, and to assess the hazards when overhead lines are on the ground (such as due to car accidents). While Lodi's Police Department requests assistance from LEU less often, the same available communication channels and ready access exist.

The Water Utility's infrastructure is designed to automatically increase pressure and water-supply to the areas of the system where it's needed, 24 hours per day, without any human involvement required. In the rare event that an unusually large or prolonged event requires more water than is normally possible, Lodi's Water Utility staff are available 24 hours per day; Lodi's Fire Department is able to notify the Water Utility of any unusual need. Upon such notification, the Water Utility has some additional ability to manually increase supply and pressure, and allocate more water to certain parts of town.

E. COORDINATION WITH COMMUNICATION INFRASTRUCTURE PROVIDERS

In the event of a disaster, Lodi has various different communication channels available for notifying and messaging the public.

- Lodi has access to the County of San Joaquin's emergency alert system – able to interrupt radio and television programming to provide an emergency message.
- The County of San Joaquin also has a cell-phone triangulation system, able to message cell phones within a user-definable region. This system is available to Lodi for emergency use.
- Lodi has the ability to broadcast a message onto the AM spectrum.
- Lodi Unified School District has public-messaging capabilities available to the City.
- Lodi is currently developing a reverse-911 system, whereby emergency personnel can send an emergency notification message to area cell-phones, land-lines, and VOIP phones. This system is estimated to be available to Lodi by 2021.
- LEU also provides notifications on our website www.lodielectric.com and is presently developing an Outage Management System (OMS) and an Interactive Voice Response (IVR) system, to be used for notification purposes once completed.

F. STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a local governmental agency,²¹ the City of Lodi has planning, communication, and coordination obligations pursuant to the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations,²² adopted in accordance with Government Code section 8607. The SEMS Regulations specify roles, responsibilities, and

²¹ As defined in Cal. Gov. Code § 8680.2.

²² 19 CCR § 2407.

structures of communications at five different levels: field response, local government, operational area, regional, and state.²³ Pursuant to this structure, the City of Lodi annually coordinates and communicates with the relevant safety agencies as well as other relevant local and state agencies.

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. San Joaquin County serves as the Operational Area; Lodi's representation includes the City of Lodi's Fire Chief. The Operational Area includes local and regional organizations that bring relevant expertise to the wildfire prevention and recovery planning process.

Pursuant to the SEMS structure, City of Lodi representatives participate in regular meetings (typically monthly) and various simulation exercises (typically yearly), wherein various disasters (e.g. flood, earthquake, fire, etc.) are simulated.

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

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

²³ 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.

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

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

- Extended drought
- High winds
- Vegetation density

B. ENTERPRISEWIDE SAFETY RISKS

Fire risks due to drought and windy conditions are low within LEU's service territory. Lodi is a well-developed area with over 50 percent underground high voltage circuitry. 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 LEU's service territory and overhead transmission lines coming into the City of Lodi) on the fire threat map was created to identify wildfire safety risks. LEU's service territory and transmission lines fall under the category of Tier 1 (i.e. low risk). The description of tiered fire threat zones are shown in Table 1 and the overlay of LEU's service territory over the CPUC fire threat map is shown as Exhibit 1 below.

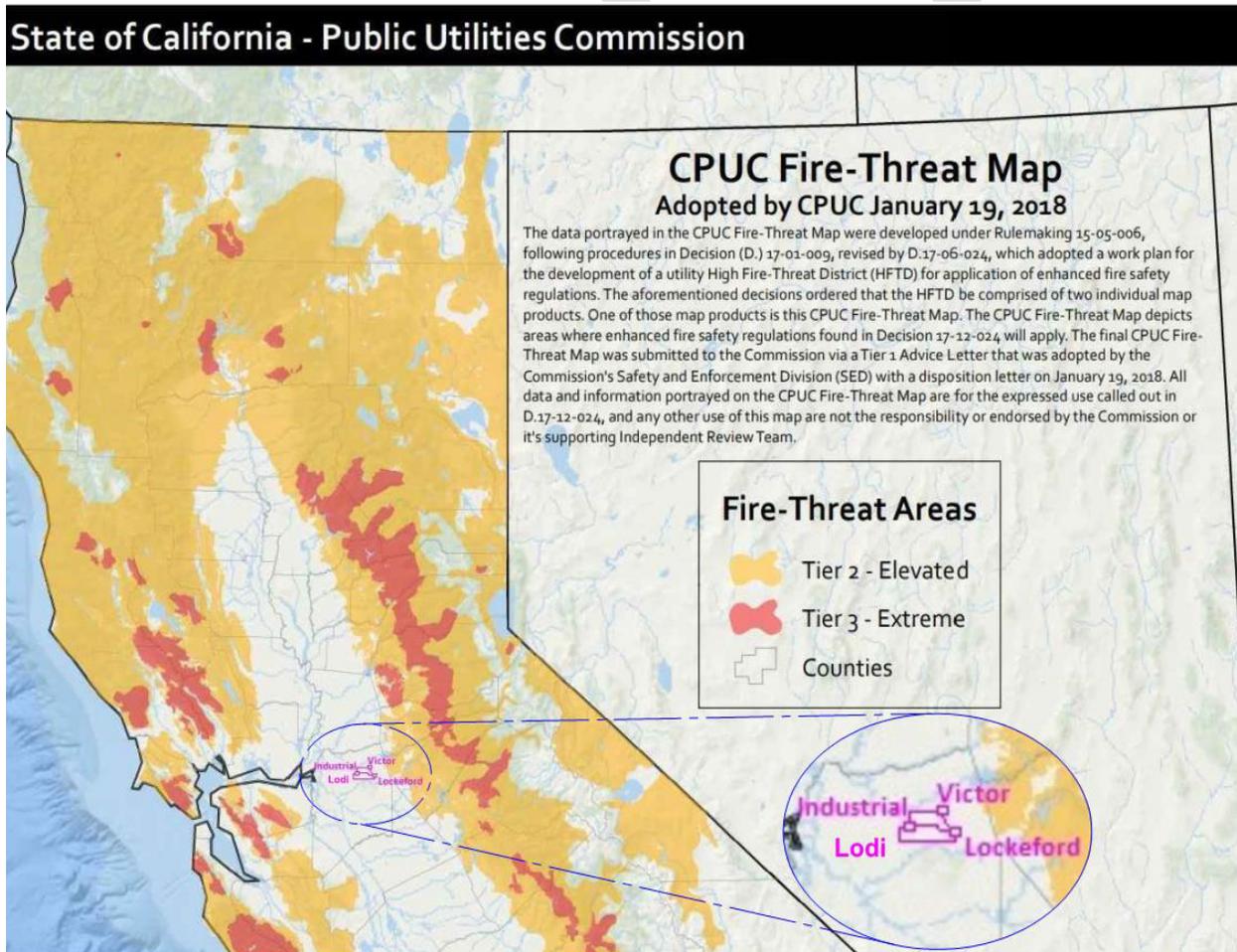
Table - 1

Description of tiered fire threat zones

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.

Exhibit – 1

Overlay of LEU's service territory over the CPUC fire threat map



Note: Three 60kV transmission lines originating from PG&E's Lockeford substation enter LEU's service territory at the Industrial substation.

C. CHANGES TO CPUC FIRE THREAT MAP

Currently LEU 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).

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V. WILDFIRE PREVENTATIVE STRATEGIES

A. HIGH FIRE THREAT DISTRICT

LEU, as a member of CMUA, participated in the development of the CPUC's fire-threat map which designates a high-fire threat district. In the map development process, LEU served as a territory lead, and worked with utility staff and local fire and government officials to identify the areas of LEU's service territory that are at an elevated or extreme risk of power line ignited wildfire. It was determined that LEU's service territory and 60 kV transmission lines leading into the service territory are located outside of the high fire threat district as designated by the CPUC Fire-Threat Map.

B. WEATHER MONITORING

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

- LEU's in-house weather station
- United States National Weather Service
- "PG&E Weather Awareness" website²⁴ (an aggregation of regional PSPS, wind, temperature, Red-Flag and other information)
- "PG&E PSPS Maps" website²⁵

C. DESIGN AND CONSTRUCTION STANDARDS

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

D. VEGETATION MANAGEMENT

LEU meets or exceeds the minimum industry standard vegetation management practices. The recommended time-of-trim guidelines do not establish a mandatory standard, but instead provide useful guidance to utilities. LEU will use specific knowledge of growing conditions and tree species to determine the appropriate time-of-trim-clearance in various circumstances.

GO 95, Rule 35, Table 1

Case	Type of Clearance	Trolley Contact,	Supply Conductors	Supply Conductors	Supply Conductors
------	-------------------	------------------	-------------------	-------------------	-------------------

²⁴ https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-weather-map.page?WT.mc_id=Vanity_weather

²⁵ https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-event-maps.page

		Feeder and Span Wires, 0-5kv	and Supply Cables, 750 - 22,500 Volts	and Supply Cables, 22.5 - 300 kV	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
Radial clearances for any conductor of a line operating at 2,400 or more volts, but less than 72,000 volts	4 feet
Radial clearances for any conductor of a line operating at 72,000 or more volts, but less than 110,000 volts	6 feet
Radial clearances for any conductor of a line operating at 110,000 or more volts, but less than 300,000 volts	10 feet
Radial clearances for any conductor of a line operating at 300,000 or more volts	15 feet

LEU's typical practice for trimming exceeds GO-95 Table-1, as well as the recommendations in GO-95 Appendix-E Case-13. LEU's standard practice in trimming is to provide a minimum five-foot clear zone area around all secondary-voltage overhead infrastructure, a minimum ten-foot clear zone around all primary-voltage overhead infrastructure, and a minimum 15-foot clear

zone around all sub-transmission and transmission overhead infrastructure. In instances including when our arborists believe that this high degree of trimming may kill a tree, they will occasionally reduce these large clearances, never going below GO-95's proscribed values.

LEU, Typical Trimming Clearances:		
Secondary Voltage ≤ 600V	Primary Voltage 12 kV LL	Sub-Transmission / Transmission Voltage 60 kV LL
5'	10'	15'

While LEU's typical-practices already greatly exceed the state's GO-95 requirements, LEU will at times trim vegetation even further for various reasons including arboricultural best practices, matching prior trimming cuts, aesthetics, or customer request.

Additional features of LEU's tree trimming program:

- Prioritization given to dense-vegetation areas.
- Consideration for vegetation-species, when determining prioritization.
- When LEU encounters fast-growing or invasive species beneath overhead power lines, subject to permission from tree's owner, LEU will undertake complete removal in lieu of trimming.
- If LEU can anticipate an imminent seasonal growth spurt, LEU will generally trim deciduous trees beyond LEU's typical amounts.
- LEU has at its disposal two dedicated tree crews; LEU's tree contractor has over 900 employees²⁶, and offers the ability to greatly scale-up on a job-by-job basis should a particular job need additional crews and resources.
- LEU's contractor can provide cranes, as needed.
- Every tree in proximity of electric infrastructure will be visited every 18-24-months, some even more frequently.
- While customer initiation is not required, customers with concerns can submit a request to have their vegetation situation reviewed. Customer-initiated requests are visited for assessment purposes within 48-hours, and frequently as fast as same-day. LEU receives an estimated 10-20 of these requests per week.

E. INSPECTIONS

²⁶ <https://westcoastarborists.com/>

LEU meets or exceeds the minimum inspection requirements provided in CPUC GO 165 and CPUC GO 95, Rule 18. Additionally, LEU staff uses their knowledge of the specific environmental and geographical conditions to determine when certain areas require more frequent inspections.

General Order 165

Table 1 -- Distribution Inspection Cycles (Maximum Intervals in Years)

	Patrol		Detailed		Intrusive	
	Urban	Rural	Urban	Rural	Urban	Rural
Transformers						
Overhead	1	2 ¹	5	5	---	---
Underground	1	2	3	3	---	---
Padmounted	1	2	5	5	---	---
Switching/Protective Devices						
Overhead	1	2 ¹	5	5	---	---
Underground	1	2	3	3	---	---
Padmounted	1	2	5	5	---	---
Regulators/Capacitors						
Overhead	1	2 ¹	5	5	---	---
Underground	1	2	3	3	---	---
Padmounted	1	2	5	5	---	---
Other Distribution Equipment						
Overhead Conductor and Cables	1	2 ¹	5	5	---	---
Streetlighting	1	2	x	x	---	---
Wood Poles under 15 years	1	2	x	x	---	---
Wood Poles over 15 years which have not been subject to intrusive inspection	1	2	x	x	10	10
Wood poles which passed intrusive inspection	---	---	---	---	20	20

(1) Patrol inspections in rural areas shall be increased to once per year in Extreme and Very High Fire Threat Zones in the following counties: Imperial, Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura. Extreme and Very High Fire Threat Zones are designated on the Fire and Resource Assessment Program (FRAP) Map prepared by the California Department of Forestry and Fire Protection's Fire and Resource or the modified FRAP Map prepared by San Diego Gas & Electric

Company (SDG&E) and adopted by Decision 12-01-032 in Phase 2 of Rulemaking 08-11-005. The fire threat map is to be used to establish approximate boundaries and Utilities should use their own expertise and judgment to determine if local conditions require them to adjust the boundaries of the map.

F. RECLOSING POLICY

In contrast with the majority of electric utilities in California, at present, LEU does not have any reclosers deployed downstream of LEU's substations.

All of LEU's circuit breakers have reclosing functionality, controlled by SCADA. They are programmed to have a single reclose operation with a 3 second delay. LEU has the capability, should it be deemed necessary, to change the relay or reclosing settings during adverse conditions.

G. DE-ENERGIZATION

LEU has the authority to preemptively shut off power due to fire-threat conditions; however, this option will only be used in extraordinary circumstances. Due to minimal risk of LEU's electrical supply facilities causing a power-line ignited wildfire, LEU is not adopting specific protocols for de-energizing any portions of its electric distribution system. LEU will re-evaluate this determination in future updates to this Wildfire Mitigation Plan.

Since the practice of de-energizing lines (aka "Public Safety Power Shutoff") is undertaken as a preventative measure to prevent a potential event of unknown certainty, based largely upon weather predictions of unknown accuracy, it carries the risk of being undertaken unnecessarily.

While utilities in certain sparsely populated, hard-to-access wildland areas will occasionally conduct a de-energization, the decision to do so in dense urban population centers such as the City of Lodi, introduces its own safety concerns:

- A large percentage of Lodi's signalized intersections do not have battery backups. During loss of power, numerous four-way arterial intersections (and others) lose their traffic-signal and street-lighting, greatly increasing the risk of traffic accidents.
- Depending on the area involved, de-energization may remove the primary source of power to certain Water Utility infrastructure, whose wells, pumps and other assets are distributed across LEU's territory. The continued delivery of water is integral to combating fires and providing safe clean drinking water to the residents of the City.
- Lodi occasionally reaches high summertime temperatures. Upon loss of power, certain vulnerable residents who depend on air conditioning can suffer heat-related medical issues.

- Some customers' medical conditions require specialized powered medical equipment. While the best-practice would be for these customers to maintain backup sources and to pre-arrange exit plans, many do not. Further, these customers do not always identify themselves to LEU, creating the situation where any powerline under consideration for de-energization risks disconnecting an unknown number of these critical customers.
- Industry-wide, many house fires have been caused by customers who attempt to use a stove during a power outage, mistakenly leaving it in the on position, and are not present when power is restored.
- Under fire-threat conditions, which may already cause first responders to be stretched thin, de-energization imposes additional demands on first responders, such as combating looting, controlling unpowered intersections, evacuating residents, responding to heat-related medical issues, etc. and more.
- Cell phones, laptops, electric cars, and other battery-powered objects are unable to charge during loss-of-power.
- During Northern California's 2017 wildfires, five persons died, unable to open their garage-doors after loss of power²⁷.
- Once the conditions triggering de-energization have passed, many utilities will methodically patrol every section of every line to verify their condition is acceptable for re-energization (e.g. free of tree-branches and in good condition). Unlike a momentary outage with an instantaneous restoration, this inspection process can be very lengthy and increases each of the above impacts.

²⁷ <https://www.sacbee.com/news/politics-government/capitol-alert/article218811560.html>

VI. COMMUNITY OUTREACH AND PUBLIC AWARENESS

LEU will present the draft version of this plan to the Lodi City Council during public meetings. Currently LEU plans to hold two public meetings before adopting this plan. LEU will contract with an independent third party to perform an annual audit of this Wildfire Mitigation Plan. The audit findings will be presented to the Lodi City Council at a public meeting where the general public will have the opportunity to provide comments. In addition, LEU will post this plan on the LEU website www.lodielectric.com and make it available for public review in the City Clerk's office.

VII. RESTORATION OF SERVICE

LEU has an Electric Emergency Plan (EEP) which governs the order in which loads are restored to service. The EEP shows the order in which circuits are to be brought up following a city wide blackout. Vital loads are restored first followed by non-vital loads. In the event of a partial outage, circuits will be brought back as conditions permit in the order of priority listed in the EEP.

VIII. EVALUATING OF THE PLAN

A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

LEU 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:

- An LEU facility was associated with the origin of the fire²⁸;
- 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
- LEU has knowledge that the fire occurred.

In future Wildfire Mitigation Plans, LEU 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 LEU'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.

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

B. IMPACT OF METRICS ON PLAN

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

C. MONITORING AND AUDITING THE PLAN

²⁸ Origin of the Fire distinguishes from fires of external origin e.g. a discarded cigarette butt, arson etc., which then spreads to involve utility facilities. This distinction is in keeping with the goal of identifying and minimizing utility-sources of fire, and not diluting the metric's value with fires of unrelated origin.

This Wildfire Mitigation Plan will be presented to the Lodi City Council. LEU will present this plan to the Lodi City Council on an annual basis. Additionally, a qualified independent evaluator will present a report on this plan to the Lodi City Council.

D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

The LEU Wildfire Mitigation Plan will be internally audited for completeness and effectiveness annually in preparation for the presentation to the Lodi City Council. Additionally, a third-party auditor will review the plan and provide feedback to LEU and the Lodi City Council as described in VIII.C. Findings from the above audits will be recorded by LEU's Operations Division and appropriate corrections to the Wildfire Mitigation Plan and supporting procedures and processes will be made.

E. MONITORING THE EFFECTIVENESS OF INSPECTIONS

A key mitigation measure against wildfires in LEU's service territory is foliage management. LEU uses contract tree trimmers who audit the foliage in need of management and they perform the actual foliage management. LEU then performs independent inspections/patrols which are focused in part on foliage in the vicinity of power lines. In addition, LEU 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 and managed to closure through a Computer Maintenance Management System (CMMS). 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 LEU Wildfire Mitigation plan.

IX. INDEPENDENT AUDITOR

Public Utilities Code section 8387(c) requires LEU 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 Lodi Electric Utility's website and presented to the Lodi City Council at a public meeting.

LEU, a member of the Northern California Power Agency (NCPA), will leverage the expertise of NCPA in selecting and engaging an independent evaluator as required in PUC Section 8387(c).

The above-referenced evaluator will perform an audit of the LEU Wildfire Mitigation Plan annually. The third-party evaluator will be provided the plan and given the opportunity to audit the LEU processes as necessary to complete the audit. The bulk of the audit should be performed on site at LEU's main office located at 1331 S. Ham Lane, Lodi, CA 95242. Some amount of electronic information sharing in preparation for the audit and following the audit will be allowed. Following the completion of the audit, the third-party evaluator shall provide an outbrief with relevant LEU staff and prepare a written report of findings which shall be presented to the Lodi City Council at a public meeting.

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

X. CROSS REFERENCES TO SB-901 REQUIREMENTS

CROSS REFERENCES TO SB 901 REQUIREMENTS		
Requirement	Statutory Language	Location in POU Template
Persons Responsible	PUC § 8387(b)(2)(A): An accounting of the responsibilities of persons responsible for executing the plan.	Section III
Objectives of the Plan	PUC § 8387(b)(2)(B): The objectives of the wildfire mitigation plan.	Section II
Preventive Strategies	PUC § 8387(b)(2)(C): A description of the preventive 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.	Section V
Evaluation Metrics	PUC § 8387(b)(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.	Section VIII.A

Impact of Metrics	PUC § 8387(b)(2)(E): A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.	Section VIII.B
Deenergization Protocols	PUC § 8387(b)(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.	Section V.F Section V.G
Customer Notification Procedures	PUC § 8387(b)(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.	Section III.D Section III.E Section III.F Section V.G
Vegetation Management	PUC § 8387(b)(2)(H): Plans for vegetation management.	Section V.D
Inspections	PUC § 8387(b)(2)(I): Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	Section V.E
Prioritization of Wildfire Risks	PUC § 8387(b)(2)(J): A 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: (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. (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.	Section IV.A Section IV.B
CPUC Fire Threat Map Adjustments	PUC § 8387(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.	Section IV.C
Enterprisewide Risks	PUC § 8387(b)(2)(L): A methodology for identifying and presenting enterprisewide safety risk and wildfire-related risk.	Section IV.B

Restoration of Service	PUC § 8387(b)(2)(M): A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire .	Section VII
Monitor and Audit	<p>PUC § 8387(b)(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:</p> <p>(i) Monitor and audit the implementation of the wildfire mitigation plan.</p> <p>(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.</p> <p>(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.</p>	Section VIII.C-E
Qualified Independent Evaluator	<p>PUC § 8387(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.</p>	Section IX

Information <u>NOT</u> REQUIRED BY SB 901	
Template Topic	Location in POU Template
Policy Statement	Section I.A
Purpose of the Plan	Section I.B
Background	Section I.C
Organization of the Plan	Section I.D
Coordination with water utilities	Section III.D
Coordination with communication companies	Section III.E
Standardized Emergency Management Systems	Section III.F
High Fire Threat District	Section V.A
Weather Monitoring	Section V.B
Design and Construction	Section V.C
Community Outreach	Section VI